

APPENDIX

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Terrestrial and Aquatic Ecology Technical Report

Part 6 of 7

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

APPENDIX

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Terrestrial and Aquatic Ecology Technical Report

Appendix H Flora species lists

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

Family	Scientific Name	Common Name	NC Act status	EPBC Act status	Native/Non-native
Acanthaceae	<i>Brunoniella australis</i>	Blue trumpet	SL	-	Native
Aizoaceae	<i>Carpobrotus aequilaterus</i>	Coastal pigweed	-	-	Non-native
Amaranthaceae	<i>Alternanthera pungens</i>	Khaki weed	-	-	Non-native
Amaranthaceae	<i>Amaranthus viridis</i>	Green amaranth	-	-	Non-native
Amaranthaceae	<i>Gomphrena celosioides</i>	Gomphrena weed	-	-	Non-native
Amaranthaceae	<i>Nyssanthus diffusa</i>	Barbed-wire weed	C	-	Native
Amaranthaceae	<i>semilanatus</i>		C	-	Native
Apiaceae	<i>Centella asiatica</i>		C	-	Native
Apiaceae	<i>Foeniculum vulgare</i>	Fennel	-	-	Non-native
Apocynaceae	<i>Alstonia constricta</i>	Bitterbark	C	-	Native
Apocynaceae	<i>Araujia sericifera</i>	Moth plant	-	-	Non-native
Apocynaceae	<i>Carissa ovata</i>	Currantbush	C	-	Native
Apocynaceae	<i>Gomphocarpus physocarpus</i>	Balloon cottonbush	-	-	Non-native
Apocynaceae	<i>Nerium oleander</i>	Oleander	-	-	Non-native
Apocynaceae	<i>Parsonsia eucalyptophylla</i>	Gargaloo	C	-	Native
Apocynaceae	<i>Parsonsia lanceolata</i>	Northern silkpod	C	-	Native
Apocynaceae	<i>Parsonsia straminea</i>	Monkey rope	C	-	Native
Asparagaceae	<i>Asparagus africanus</i>	Ornamental asparagus	-	-	Non-native
Asphodelaceae	<i>Bulbine semibarbata</i>	Wild onion	C	-	Native
Asteraceae	<i>Ambrosia artemisiifolia</i>	Annual ragweed	-	-	Non-native
Asteraceae	<i>Arctotheca calendula</i>	Cape weed	-	-	Non-native
Asteraceae	<i>Bidens pilosa</i>		-	-	Non-native
Asteraceae	<i>Brachyscome chrysoglossa</i>		C	-	Native
Asteraceae	<i>Brachyscome dentata</i>		C	-	Native
Asteraceae	<i>Calotis cuneifolia</i>	Burr daisy	C	-	Native
Asteraceae	<i>Calotis hispidula</i>	Bogan flea	C	-	Native
Asteraceae	<i>Calotis lappulacea</i>	Yellow burr daisy	C	-	Native
Asteraceae	<i>Calyptocarpus vialis</i>	Creeping cinderella weed	-	-	Non-native
Asteraceae	<i>Cassinia laevis</i>		C	-	Native
Asteraceae	<i>Chrysocephalum apiculatum</i>	Yellow buttons	C	-	Native
Asteraceae	<i>Cirsium vulgare</i>	Spear thistle	-	-	Non-native
Asteraceae	<i>Conyza canadensis</i>	Canadian fleabane	-	-	Non-native
Asteraceae	<i>Eclipta prostrata</i>	White eclipta	-	-	Non-native
Asteraceae	<i>Euchiton sphaericus</i>		C	-	Native
Asteraceae	<i>Macroptilium atropurpureum</i>	Siratro	-	-	Non-native
Asteraceae	<i>discolor</i>		C	-	Native
Asteraceae	<i>Picris barbarorum</i>		V	-	Native
Asteraceae	<i>luteoalbum</i>	Jersey cudweed	C	-	Native
Asteraceae	<i>Senecio madagascariensis</i>	Fireweed	-	-	Non-native
Asteraceae	<i>pinnatifolius</i>		C	-	Native
Asteraceae	<i>Sigesbeckia orientalis</i>	Indian weed	C	-	Native
Asteraceae	<i>Soliva anthemifolia</i>	Dwarf jo jo weed	-	-	Non-native
Asteraceae	<i>Soliva sessilis</i>		-	-	Non-native
Asteraceae	<i>Sonchus oleraceus</i>	Common sowthistle	-	-	Non-native
Asteraceae	<i>Tagetes minuta</i>	Stinking roger	-	-	Non-native
Asteraceae	<i>Tamarix aphylla</i>	Athol pine	-	-	Non-native
Asteraceae	<i>Vittadinia sulcata</i>	Native daisy	C	-	Native
Asteraceae	<i>Xanthium occidentale</i>	Nagoora burr	-	-	Non-native
Asteraceae	<i>Zinnia peruviana</i>	Wild zinnia	-	-	Non-native
Basellaceae	<i>Anredera cordifolia</i>	Madeira vine	-	-	Non-native
Bignoniaceae	<i>Jacaranda mimosifolia</i>	Jacaranda	-	-	Non-native
Bignoniaceae	<i>Pandorea pandorana</i>	Wonga vine	C	-	Native
Boraginaceae	<i>Heliotropium amplexicaule</i>	Blue heliotrope	-	-	Non-native
Brassicaceae	<i>Brassica tournefortii</i>	Wild turnip	-	-	Non-native
Brassicaceae	<i>Capsella bursapastoris</i>	Shepherd's purse	-	-	Non-native
Brassicaceae	<i>Lepidium africanum</i>	Common peppergrass	-	-	Non-native
Brassicaceae	<i>Lepidium bonariense</i>	Argentine peppergrass	-	-	Non-native

Family	Scientific Name	Common Name	NC Act status	EPBC Act status	Native/Non-native
Brassicaceae	<i>Lepidium virginicum</i>	Virginian peppergrass	-	-	Non-native
Cactaceae	<i>Cereus uruguayanus</i>		-	-	Non-native
Cactaceae	<i>Harrisia martinii</i>		-	-	Non-native
Cactaceae	<i>Opuntia aurantiaca</i>	Tiger pear	-	-	Non-native
Cactaceae	<i>Opuntia stricta</i>		-	-	Non-native
Cactaceae	<i>Opuntia tomentosa</i>	Velvety tree pear	-	-	Non-native
Caesalpiniaceae	<i>Cassia brewsteri</i>		C	-	Native
Campanulaceae	<i>Wahlenbergia communis</i>	Tufted bluebell	SL	-	Native
Campanulaceae	<i>Wahlenbergia gracilis</i>	Sprawling bluebell	SL	-	Native
Capparaceae	<i>Apophyllum anomalum</i>	Broom bush	C	-	Native
Capparaceae	<i>Capparis canescens</i>		C	-	Native
Capparaceae	<i>Capparis lasiantha</i>	Nipan	C	-	Native
Capparaceae	<i>Capparis mitchellii</i>		C	-	Native
Caryophyllaceae	<i>Stellaria media</i>	Chickweed	-	-	Non-native
Casuarinaceae	<i>Allocasuarina inophloia</i>		C	-	Native
Casuarinaceae	<i>Allocasuarina luehmannii</i>	Bull oak	C	-	Native
Casuarinaceae	<i>Casuarina cristata</i>	Belah	C	-	Native
Chenopodiaceae	<i>Atriplex leptocarpa</i>	Slender fruit saltbush	C	-	Native
Chenopodiaceae	<i>Atriplex muelleri</i>	Lagoon saltbush	C	-	Native
Chenopodiaceae	<i>Atriplex semibaccata</i>	Creeping saltbush	C	-	Native
Chenopodiaceae	<i>Chenopodium album</i>	Fat-hen	-	-	Non-native
Chenopodiaceae	<i>Einadia hastata</i>		C	-	Native
Chenopodiaceae	<i>Maireana microphylla</i>		C	-	Native
Chenopodiaceae	<i>Salsola australis</i>		C	-	Native
Chenopodiaceae	<i>Sclerolaena birchii</i>	Galvanised burr	C	-	Native
Chenopodiaceae	<i>Sclerolaena tetracuspis</i>	Brigalow burr	C	-	Native
Commelinaceae	<i>Commelina diffusa</i>	Wandering jew	C	-	Native
Commelinaceae	<i>Murdannia graminea</i>	Murdannia	C	-	Native
Convolvulaceae	<i>Convolvulus erubescens</i>	Australian bindweed	C	-	Native
Convolvulaceae	<i>Dichondra repens</i>	Kidney weed	C	-	Native
Convolvulaceae	<i>Ipomoea cairica</i>		-	-	Non-native
Convolvulaceae	<i>Ipomoea indica</i>	Blue morning-glory	-	-	Non-native
Crassulaceae	<i>Bryophyllum delagoense</i>	Mother of millions	-	-	Non-native
Cupressaceae	<i>Callitris glaucophylla</i>	White cypress pine	C	-	Native
Cyperaceae	<i>Carex appressa</i>		C	-	Native
Cyperaceae	<i>Cyperus bifax</i>	Western nutgrass	C	-	Native
Cyperaceae	<i>Cyperus difformis</i>	Rice sedge	C	-	Native
Cyperaceae	<i>Cyperus eragrostis</i>		-	-	Non-native
Cyperaceae	<i>Cyperus exaltatus</i>	Tall flatsedge	C	-	Native
Cyperaceae	<i>Cyperus fulvus</i>		C	-	Native
Cyperaceae	<i>Cyperus gracilis</i>		C	-	Native
Cyperaceae	<i>Cyperus iria</i>		C	-	Native
Cyperaceae	<i>Cyperus rotundus</i>	Nutgrass	-	-	Non-native
Cyperaceae	<i>Cyperus vaginatus</i>		C	-	Native
Cyperaceae	<i>Eleocharis plana</i>	Ribbed spikerush	C	-	Native
Cyperaceae	<i>Eleocharis pusilla</i>	Small spikerush	C	-	Native
Cyperaceae	<i>Fimbristylis dichotoma</i>	Common fringe-rush	C	-	Native
Cyperaceae	<i>Gahnia aspera</i>		C	-	Native
Ericaceae	<i>Leucopogon biflorus</i>		C	-	Native
Ericaceae	<i>Leucopogon mitchellii</i>		C	-	Native
Ericaceae	<i>Melichrus urceolatus</i>	Honey gorse	C	-	Native
Euphorbiaceae	<i>Euphorbia drummondii</i>		C	-	Native
Euphorbiaceae	<i>Euphorbia peplus</i>	Petty spurge	-	-	Non-native
Euphorbiaceae	<i>Ricinus communis</i>	Castor oil bush	-	-	Non-native
Fabaceae	<i>Acacia neriifolia</i>	Oleander wattle	C	-	Native
Fabaceae	<i>Aeschynomene indica</i>	Budda pea	C	-	Native
Fabaceae	<i>Cullen tenax</i>	Emu-foot	C	-	Native

Family	Scientific Name	Common Name	NC Act status	EPBC Act status	Native/Non-native
Fabaceae	<i>Desmodium brachypodum</i>	Large ticktrefoil	C	-	Native
Fabaceae	<i>Desmodium gunnii</i>		C	-	Native
Fabaceae	<i>Desmodium rhytidophyllum</i>		C	-	Native
Fabaceae	<i>Glycine tabacina</i>	Glycine pea	C	-	Native
Fabaceae	<i>Glycine tomentella</i>	Woolly glycine	C	-	Native
Fabaceae	<i>Hardenbergia violacea</i>		C	-	Native
Fabaceae	<i>Indigofera hirsuta</i>	Hairy indigo	C	-	Native
Fabaceae	<i>Jacksonia scoparia</i>		C	-	Native
Fabaceae	<i>Medicago lupulina</i>	Black medic	-	-	Non-native
Fabaceae	<i>Medicago polymorpha</i>	Burr medic	-	-	Non-native
Fabaceae	<i>australis</i>		C	-	Native
Fabaceae	<i>cannabina</i>		C	-	Native
Fabaceae	<i>Tipuana tipu</i>	Tipuana	-	-	Non-native
Fabaceae	<i>Trifolium repens</i> var. <i>repens</i>	White clover	-	-	Non-native
Fabaceae	<i>Vicia sativa</i> subsp. <i>nigra</i>		-	-	Non-native
Geraniaceae	<i>Erodium cicutarium</i>	Common crowfoot	-	-	Non-native
Goodeniaceae	<i>Goodenia rotundifolia</i>		C	-	Native
Juncaceae	<i>Juncus usitatus</i>		C	-	Native
Lamiaceae	<i>Ajuga australis</i>	Australian bugle	C	-	Native
Lamiaceae	<i>Mentha satureioides</i>	Native pennyroyal	C	-	Native
Lamiaceae	<i>Plectranthus parviflorus</i>		C	-	Native
Lamiaceae	<i>Salvia verbenaca</i>	Wild sage	-	-	Non-native
Lauraceae	<i>Cassytha pubescens</i>	Downy devil's twine	C	-	Native
Laxmanniaceae	<i>Eustrephus latifolius</i>	Wombat berry	C	-	Native
Laxmanniaceae	<i>Laxmannia compacta</i>	Compact wire lily	C	-	Native
Laxmanniaceae	<i>Laxmannia gracilis</i>	Slender wire lily	C	-	Native
Laxmanniaceae	<i>Lomandra hystrix</i>		C	-	Native
Laxmanniaceae	<i>Lomandra longifolia</i>	Spiny-head mat-rush	C	-	Native
Lomandraceae	<i>Lomandra leucocephala</i> subsp. <i>leucocephala</i>		C	-	Native
Loranthaceae	<i>Amyema bifurcata</i>		C	-	Native
Loranthaceae	<i>Amyema cabbagei</i>		C	-	Native
Loranthaceae	<i>Amyema gaudichaudii</i>		C	-	Native
Loranthaceae	<i>orientalis</i>		C	-	Native
Loranthaceae	<i>angustifolia</i>		C	-	Native
Malvaceae	<i>Abutilon otocarpum</i>		C	-	Native
Malvaceae	<i>Gossypium hirsutum</i>	Cotton	-	-	Non-native
Malvaceae	<i>Malva parviflora</i>	Small-flowered mallow	-	-	Non-native
Malvaceae	<i>Pavonia hastata</i>	Pink pavonia	-	-	Non-native
Malvaceae	<i>Sida fibulifera</i>		C	-	Native
Malvaceae	<i>Sida rhombifolia</i>		-	-	Non-native
Marsileaceae	<i>Marsilea drummondii</i>	Common nardoo	C	-	Native
Marsileaceae	<i>Marsilea hirsuta</i>	Hairy nardoo	C	-	Native
Meliaceae	<i>Melia azedarach</i>	White cedar	C	-	Native
Mimosaceae	<i>Acacia amblygona</i>	Fan wattle	C	-	Native
Mimosaceae	<i>Acacia aprepta</i>	Miles mulga	C	-	Native
Mimosaceae	<i>Acacia complanata</i>	Flatstem wattle	C	-	Native
Mimosaceae	<i>Acacia conferta</i>		C	-	Native
Mimosaceae	<i>Acacia decora</i>	Pretty wattle	C	-	Native
Mimosaceae	<i>Acacia harpophylla</i>	Brigalow	C	-	Native
Mimosaceae	<i>Acacia implexa</i>	Lightwood	C	-	Native
Mimosaceae	<i>Acacia pendula</i>	Myall	C	-	Native
Mimosaceae	<i>Acacia polybotrya</i>	Silver wattle	C	-	Native
Mimosaceae	<i>Acacia polybotrya</i>	Western silver wattle	C	-	Native
Mimosaceae	<i>Acacia salicina</i>	Doolan	C	-	Native
Mimosaceae	<i>Acacia shirleyi</i>	Lancewood	C	-	Native
Mimosaceae	<i>Acacia stenophylla</i>	Belalie	C	-	Native

Family	Scientific Name	Common Name	NC Act status	EPBC Act status	Native/Non-native
Mimosaceae	<i>Vachellia farnesiana</i>	Mimosa bush	-	-	Non-native
Molluginaceae	<i>Glinus lotoides</i>	Hairy carpet weed	C	-	Native
Moraceae	<i>Morus alba</i>	White mulberry	-	-	Non-native
Myrtaceae	<i>Angophora floribunda</i>	Rough-barked apple	C	-	Native
Myrtaceae	<i>Angophora leiocarpa</i>	Rusty gum	C	-	Native
Myrtaceae	<i>Calytrix tetragona</i>	Fringe-myrtle	C	-	Native
Myrtaceae	<i>Corymbia clarksoniana</i>		C	-	Native
Myrtaceae	<i>Corymbia tessellaris</i>	Moreton Bay ash	C	-	Native
Myrtaceae	<i>Corymbia torelliana</i>	Cadaghi	C	-	Native
Myrtaceae	<i>Eucalyptus albens</i>	White box	C	-	Native
Myrtaceae	<i>Eucalyptus chloroclada</i>	Baradine red gum	C	-	Native
Myrtaceae	<i>Eucalyptus crebra</i>	Narrow-leaved red ironbark	C	-	Native
Myrtaceae	<i>nubilis</i>		C	-	Native
Myrtaceae	<i>Eucalyptus melliodora</i>	Yellow box	C	-	Native
Myrtaceae	<i>Eucalyptus microcarpa</i>	Inland grey box	C	-	Native
Myrtaceae	<i>Eucalyptus moluccana</i>	Gum-topped box	C	-	Native
Myrtaceae	<i>Eucalyptus orgadophila</i>	Mountain coolibah	C	-	Native
Myrtaceae	<i>Eucalyptus populnea</i>	Poplar box	C	-	Native
Myrtaceae	<i>Homalocalyx polyandrus</i>		C	-	Native
Myrtaceae	<i>Leptospermum brevipes</i>		C	-	Native
Myrtaceae	<i>Melaleuca bracteata</i>		C	-	Native
Myrtaceae	<i>Melaleuca densispicata</i>		C	-	Native
Myrtaceae	<i>Melaleuca linariifolia</i>	Snow-in summer	C	-	Native
Myrtaceae	<i>Micromyrtus sessilis</i>		C	-	Native
Najadaceae	<i>Najas tenuifolia</i>	water nymph	C	-	Native
Nyctaginaceae	<i>Boerhavia dominii</i>	Tar vine	C	-	Native
Nyctaginaceae	<i>Bougainvillea glabra</i>		-	-	Non-native
Nymphaeaceae	<i>Nymphaea gigantea</i>		C	-	Native
Oleaceae	<i>Jasminum dianthifolium</i>		C	-	Native
Oleaceae	<i>Jasminum simplicifolium</i> subsp. <i>australiense</i>	Stiff jasmine	C	-	Native
Orchidaceae	<i>Cymbidium canaliculatum</i>	Black orchid	SL	-	Native
Oxalidaceae	<i>Oxalis chnoodes</i>		C	-	Native
Passifloraceae	<i>Passiflora subpeltata</i>	White passion flower	-	-	Non-native
Phyllanthaceae	<i>Phyllanthus virgatus</i>		C	-	Native
Phytolaccaceae	<i>Phytolacca octandra</i>	Inkweed	-	-	Non-native
Picrodendraceae	<i>Petalostigma pubescens</i>	Quinine tree	C	-	Native
Pittosporaceae	<i>Bursaria incana</i>		C	-	Native
Pittosporaceae	<i>spinosa</i>		C	-	Native
Pittosporaceae	<i>Pittosporum angustifolium</i>	Gumbi gumbi	C	-	Native
Pittosporaceae	<i>Pittosporum spinescens</i>		C	-	Native
Plantaginaceae	<i>Bacopa monnieri</i>		C	-	Native
Plantaginaceae	<i>Plantago lanceolata</i>		-	-	Non-native
Poaceae	<i>Alloteropsis semialata</i>	Cockatoo grass	C	-	Native
Poaceae	<i>Alopecurus geniculatus</i>	Marsh foxtail	-	-	Non-native
Poaceae	<i>Ancistrachne uncinulata</i>	Hooky grass	C	-	Native
Poaceae	<i>Aristida caput-medusae</i>		C	-	Native
Poaceae	<i>Aristida contorta</i>	Bunched kerosene grass	C	-	Native
Poaceae	<i>Aristida echinata</i>		C	-	Native
Poaceae	<i>Aristida lazardis</i>		C	-	Native
Poaceae	<i>Aristida leptopoda</i>	White speargrass	C	-	Native
Poaceae	<i>Aristida ramosa</i>	Purple wiregrass	C	-	Native
Poaceae	<i>Arundinella nepalensis</i>	Reedgrass	C	-	Native
Poaceae	<i>Astrebula lappacea</i>	Curly mitchell grass	C	-	Native
Poaceae	<i>Austrostipa ramosissima</i>	Bamboo grass	C	-	Native
Poaceae	<i>Austrostipa verticillata</i>	Slender bamboo grass	C	-	Native

Family	Scientific Name	Common Name	NC Act status	EPBC Act status	Native/Non-native
Poaceae	<i>Avena fatua</i>	Wild oats	-	-	Non-native
Poaceae	<i>Avena sativa</i>	Common oats	-	-	Non-native
Poaceae	<i>Bothriochloa erianthoides</i>	Fluffy tip	C	-	Native
Poaceae	<i>Bothriochloa ewartiana</i>	Desert bluegrass	C	-	Native
Poaceae	<i>Bothriochloa pertusa</i>	Indian couch	-	-	Non-native
Poaceae	<i>Brachyachne convergens</i>	Common native couch	C	-	Native
Poaceae	<i>Bromus catharticus</i>	Prairie grass	-	-	Non-native
Poaceae	<i>Capillipedium spicigerum</i>	Spicytop	C	-	Native
Poaceae	<i>Cenchrus ciliaris</i>	Buffel grass	-	-	Non-native
Poaceae	<i>Chloris gayana</i>	Rhodes grass	-	-	Non-native
Poaceae	<i>Chloris pectinata</i>	Comb chloris	C	-	Native
Poaceae	<i>Chloris truncata</i>		C	-	Native
Poaceae	<i>Chloris ventricosa</i>	Tall chloris	C	-	Native
Poaceae	<i>Chrysopogon fallax</i>		C	-	Native
Poaceae	<i>Cymbopogon oblectus</i>		C	-	Native
Poaceae	<i>Cymbopogon refractus</i>	Barbed-wire grass	C	-	Native
Poaceae	<i>Dactyloctenium radulans</i>	Button grass	C	-	Native
Poaceae	<i>Digitaria ammophila</i>	Silky umbrella grass	C	-	Native
Poaceae	<i>Digitaria porrecta</i>	Finger panic grass	NT	-	Native
Poaceae	<i>Digitaria brownii</i>		C	-	Native
Poaceae	<i>Digitaria diffusa</i>		C	-	Native
Poaceae	<i>Echinochloa colona</i>	Awnless barnyard grass	-	-	Non-native
Poaceae	<i>Echinochloa crus-galli</i>	Barnyard grass	-	-	Non-native
Poaceae	<i>Eleusine tristachya</i>	Goose grass	-	-	Non-native
Poaceae	<i>Enneapogon avenaceus</i>		C	-	Native
Poaceae	<i>Entolasia minutifolia</i>		C	-	Native
Poaceae	<i>Eragrostis brownii</i>	Brown's lovegrass	C	-	Native
Poaceae	<i>Eragrostis cilianensis</i>		-	-	Non-native
Poaceae	<i>Eragrostis curvula</i>	African love grass	-	-	Non-native
Poaceae	<i>Eragrostis elongata</i>		C	-	Native
Poaceae	<i>Eragrostis lacunaria</i>	Purple lovegrass	C	-	Native
Poaceae	<i>Eragrostis leptostachya</i>	Fairy grass	C	-	Native
Poaceae	<i>Eragrostis microcarpa</i>		C	-	Native
Poaceae	<i>Eragrostis parviflora</i>	Weeping lovegrass	C	-	Native
Poaceae	<i>Eragrostis sororia</i>		C	-	Native
Poaceae	<i>Eragrostis tenuifolia</i>	Elastic grass	-	-	Non-native
Poaceae	<i>Eremochloa bimaculata</i>	Poverty grass	C	-	Native
Poaceae	<i>Eulalia aurea</i>	Silky browntop	C	-	Native
Poaceae	<i>Homopholis belsonii</i>	Belson's panic	E	V	Native
Poaceae	<i>Hyparrhenia hirta</i>	Coolati grass	-	-	Non-native
Poaceae	<i>Imperata cylindrica</i>	Blady grass	C	-	Native
Poaceae	<i>Iseilema membranaceum</i>	Small flinders grass	C	-	Native
Poaceae	<i>Melinis repens</i>	Red natal grass	-	-	Non-native
Poaceae	<i>Oplismenus aemulus</i>	Creeping shade grass	C	-	Native
Poaceae	<i>Panicum effusum</i>		C	-	Native
Poaceae	<i>Paspalidium caespitosum</i>	Brigalow grass	C	-	Native
Poaceae	<i>Paspalidium distans</i>	Shotgrass	C	-	Native
Poaceae	<i>Paspalidium globoideum</i>	Sago grass	C	-	Native
Poaceae	<i>Paspalum dilatatum</i>	Paspalum	-	-	Non-native
Poaceae	<i>Paspalum distichum</i>	Water couch	C	-	Native
Poaceae	<i>Paspalum urvillei</i>	Vasey grass	-	-	Non-native
Poaceae	<i>Poa fordeana</i>	Sweet swampgrass	C	-	Native
Poaceae	<i>Setaria sphacelata</i>	Whorled pigeon grass	-	-	Non-native
Poaceae	<i>Setaria surgens</i>		C	-	Native
Poaceae	<i>Sorghum bicolor</i>	Forage sorghum	-	-	Non-native
Poaceae	<i>Sorghum halepense</i>	Johnson grass	-	-	Non-native
Poaceae	<i>Sporobolus caroli</i>	Fairy grass	C	-	Native

Family	Scientific Name	Common Name	NC Act status	EPBC Act status	Native/Non-native
Poaceae	<i>Sporobolus creber</i>		C	-	Native
Poaceae	<i>Themeda avenacea</i>		C	-	Native
Poaceae	<i>Themeda quadrivalvis</i>	Grader grass	-	-	Non-native
Poaceae	<i>Themeda triandra</i>	Kangaroo grass	C	-	Native
Poaceae	<i>Triodia scariosa</i>		C	-	Native
Poaceae	<i>Urochloa mosambicensis</i>	Sabi grass	-	-	Non-native
Poaceae	<i>panicoides</i>		-	-	Non-native
Poaceae	<i>Walwhalleya subxerophila</i>		C	-	Native
Polygonaceae	<i>Persicaria decipiens</i>	Slender knotweed	C	-	Native
Polygonaceae	<i>Persicaria orientalis</i>	Princes feathers	C	-	Native
Polygonaceae	<i>Persicaria prostrata</i>	Creeping knotweed	C	-	Native
Polygonaceae	<i>Rumex brownii</i>	Swamp dock	C	-	Native
Polygonaceae	<i>Rumex crispus</i>	Curled dock	-	-	Non-native
Portulacaceae	<i>Portulaca oleracea</i>	Pigweed	-	-	Non-native
Portulacaceae	<i>Portulaca pilosa</i>		-	-	Non-native
Proteaceae	<i>Grevillea striata</i>	Beefwood	C	-	Native
Rhamnaceae	<i>Alphitonia excelsa</i>	Soap tree	C	-	Native
Rhamnaceae	<i>Ventilago viminalis</i>	Supplejack	C	-	Native
Rubiaceae	<i>Asperula conferta</i>		C	-	Native
Rubiaceae	<i>Pomax umbellata</i>		C	-	Native
Rubiaceae	<i>Richardia stellaris</i>		-	-	Non-native
Rutaceae	<i>Boronia occidentalis</i>		C	-	Native
Rutaceae	<i>Citrus glauca</i>	Native lime	C	-	Native
Rutaceae	<i>Geijera parviflora</i>	Wilga	C	-	Native
Salicaceae	<i>Salix babylonica</i>	Weeping willow	-	-	Non-native
Santalaceae	<i>Exocarpos cupressiformis</i>	Native cherry	C	-	Native
Santalaceae	<i>Santalum lanceolatum</i>		C	-	Native
Sapindaceae	<i>Alectryon diversifolius</i>	Scrub boonaree	C	-	Native
Sapindaceae	<i>Atalaya hemiglauca</i>		C	-	Native
Scrophulariaceae	<i>Eremophila debilis</i>	Winter apple	C	-	Native
Scrophulariaceae	<i>Eremophila longifolia</i>	Berrigan	C	-	Native
Scrophulariaceae	<i>Eremophila mitchellii</i>	False sandlewood	C	-	Native
Scrophulariaceae	<i>Myoporum acuminatum</i>	Coastal boobialla	C	-	Native
Solanaceae	<i>Datura ferox</i>	Fierce thornapple	-	-	Non-native
Solanaceae	<i>Lycium ferocissimum</i>	African boxthorn	-	-	Non-native
Solanaceae	<i>Solanum esuriale</i>	Quena	C	-	Native
Stackhousiaceae	<i>Stackhousia muricata</i>		C	-	Native
Thymelaeaceae	<i>Pimelea neoanglica</i>	Poison pimelea	C	-	Native
Ulmaceae	<i>Celtis sinensis</i>	Chinese elm	-	-	Non-native
Verbenaceae	<i>Glandularia aristigera</i>		-	-	Non-native
Verbenaceae	<i>Phyla canescens</i>		-	-	Non-native
Verbenaceae	<i>Verbena bonariensis</i>	Purpletop	-	-	Non-native
Vitaceae	<i>Clematicissus opaca</i>		C	-	Native
Xanthorrhoeaceae	<i>Xanthorrhoea johnsonii</i>		SL	-	Native
Zygophyllaceae	<i>Tribulus terrestris</i>	Caltrop	C	-	Native

APPENDIX

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Terrestrial and Aquatic Ecology Technical Report

Appendix I Fauna species lists

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

Family	Scientific Name	Common Name	Conservation status		Native/Non-native	Restricted matter
			NC Act	EPBC Act		
Acanthizidae	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped thornbill	C	-	Native	
Acanthizidae	<i>Acanthiza nana</i>	Yellow thornbill	C	-	Native	
Acanthizidae	<i>Acanthiza pusilla</i>	Brown thornbill	C	-	Native	
Acanthizidae	<i>Gerygone olivacea</i>	White-throated gerygone	C	-	Native	
Acanthizidae	<i>Smicrornis brevirostris</i>	Weebill	C	-	Native	
Accipitridae	<i>Elanus axillaris</i>	Black-shouldered kite	C	-	Native	
Accipitridae	<i>Haliastur sphenurus</i>	Whistling kite	C	-	Native	
Agamidae	<i>Pogona barbata</i>	Bearded dragon	C	-	Native	
Agamidae	<i>Tympanocryptis condaminesis</i>	Condamine earless dragon	E	E	Native	
Anatidae	<i>Anas superciliosa</i>	Pacific black duck	C	-	Native	
Anatidae	<i>Chenonetta jubata</i>	Australian wood duck	C	-	Native	
Anatidae	<i>Dendrocygna eytoni</i>	Plumed whistling-duck	C	-	Native	
Anatidae	<i>Malacorhynchus membranaceus</i>	Pink-eared duck	C	-	Native	
Anhingidae	<i>Anhinga novaehollandiae</i>	Australasian darter	C	-	Native	
Ardeidae	<i>Ardea alba</i>	Great egret	C	-	Native	
Ardeidae	<i>Egretta novaehollandiae</i>	White-faced heron	C	-	Native	
Ardeidae	<i>Nycticorax caledonicus</i>	Nankeen night-heron	C	-	Native	
Artamidae	<i>Artamus leucorhynchus</i>	White-breasted woodswallow	C	-	Native	
Artamidae	<i>Artamus superciliosus</i>	White-browed woodswallow	C	-	Native	
Artamidae	<i>Cracticus nigrogularis</i>	Pied butcherbird	C	-	Native	
Artamidae	<i>Cracticus tibicen</i>	Australian magpie	C	-	Native	
Artamidae	<i>Cracticus torquatus</i>	Grey butcherbird	C	-	Native	
Artamidae	<i>Strepera graculina</i>	Pied currawong	C	-	Native	
Bovidae	<i>Bos taurus</i>	European cattle	-	-	Non-native	
Bovidae	<i>Capra hircus</i>	Goat	-	-	Non-native	Class 3
Cacatuidae	<i>Cacatua galerita</i>	Sulphur-crested cockatoo	C	-	Native	
Cacatuidae	<i>Cacatua sanguinea</i>	Little corella	C	-	Native	
Cacatuidae	<i>Calyptorhynchus banksii</i>	Red-tailed black-cockatoo	C	-	Native	
Cacatuidae	<i>Eolophus roseicapilla</i>	Galah	C	-	Native	
Cacatuidae	<i>Nymphicus hollandicus</i>	Cockatiel	C	-	Native	
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced cuckoo-shrike	C	-	Native	
Campephagidae	<i>Lalage tricolor</i>	White-winged triller	C	-	Native	
Canidae	<i>Canis lupus familiaris</i>	Dog	-	-	Non-native	Class 3
Canidae	<i>Vulpes vulpes</i>	Red fox	-	-	Non-native	Class 3
Casuariidae	<i>Dromaius novaehollandiae</i>	Emu	C	-	Native	
Charadriidae	<i>Vanellus miles novaehollandiae</i>	Masked lapwing (southern subspecies)	C	-	Native	
Cisticolidae	<i>Cisticola exilis</i>	Golden-headed cisticola	C	-	Native	
Climacteridae	<i>Climacteris picumnus</i>	Brown treecreeper	C	-	Native	
Climacteridae	<i>Cormobates leucophaea</i>	White-throated treecreeper	C	-	Native	
Columbidae	<i>Columba livia</i>	Rock dove	-	-	Non-native	

Family	Scientific Name	Common Name	Conservation status		Native/Non-native	Restricted matter
			NC Act	EPBC Act		
Columbidae	<i>Geopelia humeralis</i>	Bar-shouldered dove	C	-	Native	
Columbidae	<i>Geopelia striata</i>	Peaceful dove	C	-	Native	
Columbidae	<i>Ocyphaps lophotes</i>	Crested pigeon	C	-	Native	
Corcoracidae	<i>Corcorax melanorhamphos</i>	White-winged chough	C	-	Native	
Corcoracidae	<i>Struthidea cinerea</i>	Apostlebird	C	-	Native	
Corvidae	<i>Corvus coronoides</i>	Australian raven	C	-	Native	
Corvidae	<i>Corvus orru</i>	Torresian crow	C	-	Native	
Cuculidae	<i>Cacomantis pallidus</i>	Pallid cuckoo	C	-	Native	
Cuculidae	<i>Chrysococcyx minutillus</i>	Little bronze cuckoo	C	-	Native	
Diplodactylidae	<i>Strophurus williamsi</i>	Soft-spined gecko	C	-	Native	
Elapidae	<i>Demansia psammophis</i>	Yellow-faced whipsnake	C	-	Native	
Elapidae	<i>Pseudechis australis</i>	Mulga snake	C	-	Native	
Equidae	<i>Equus caballus</i>	Horse	-	-	Non-native	
Estrildidae	<i>Neochmia temporalis</i>	Red-browed finch	C	-	Native	
Estrildidae	<i>Taeniopygia bichenovii</i>	Double-barred finch	C	-	Native	
Estrildidae	<i>Taeniopygia guttata</i>	Zebra finch	C	-	Native	
Falconidae	<i>Falco cenchroides</i>	Nankeen kestrel	C	-	Native	
Gekkonidae	<i>Heteronotia binoei</i>	Bynoe's gecko	C	-	Native	
Hirundinidae	<i>Hirundo neoxena</i>	Welcome swallow	C	-	Native	
Hirundinidae	<i>Petrochelidon ariel</i>	Fairy martin	C	-	Native	
Leporidae	<i>Lepus capensis</i>	Fare	-	-	Non-native	
Leporidae	<i>Oryctolagus cuniculus</i>	Rabbit	-	-	Non-native	Class 3
Limnodynastidae	<i>Limnodynastes tasmaniensis</i>	Spotted grassfrog	C	-	Native	
Macropodidae	<i>Macropus giganteus</i>	Eastern grey kangaroo	C	-	Native	
Macropodidae	<i>Macropus robustus</i>	Common wallaroo	C	-	Native	
Macropodidae	<i>Macropus rufogriseus</i>	Red-necked wallaby	C	-	Native	
Macropodidae	<i>Wallabia bicolor</i>	Swamp wallaby	C	-	Native	
Maluridae	<i>Malurus cyaneus</i>	Superb fairy-wren	C	-	Native	
Maluridae	<i>Malurus lamberti</i>	Variegated fairy-wren	C	-	Native	
Meliphagidae	<i>Acanthagenys rufogularis</i>	Spiny-cheeked honeyeater	C	-	Native	
Meliphagidae	<i>Caligavis chrysops</i>	Yellow-faced honeyeater	C	-	Native	
Meliphagidae	<i>Lichmera indistincta</i>	Brown honeyeater	C	-	Native	
Meliphagidae	<i>Manorina melanocephala</i>	Noisy miner	C	-	Native	
Meliphagidae	<i>Melithreptus lunatus</i>	White-naped honeyeater	C	-	Native	
Meliphagidae	<i>Nesoptilotis leucotis</i>	White-eared honeyeater	C	-	Native	
Meliphagidae	<i>Philemon corniculatus</i>	Noisy friarbird	C	-	Native	

Family	Scientific Name	Common Name	Conservation status		Native/Non-native	Restricted matter
			NC Act	EPBC Act		
Meliphagidae	<i>Plectorhyncha lanceolata</i>	Striped honeyeater	C	-	Native	
Meliphagidae	<i>Ptilotula penicillata</i>	White-plumed honeyeater	C	-	Native	
Meropidae	<i>Merops ornatus</i>	Rainbow bee-eater	C	-	Native	
Miniopteridae	<i>Miniopterus schreibersii oceanensi</i>	Eastern bentwing bat	C	-	Native	
Molossidae	<i>Mormopterus ridei</i>	Eastern freetail bat	C	-	Native	
Molossidae	<i>Tadarida australis</i>	White-striped freetail bat	C	-	Native	
Monarchidae	<i>Grallina cyanoleuca</i>	Magpie-lark	C	-	Native	
Motacillidae	<i>Anthus novaeseelandiae</i>	Australasian pipit	C	-	Native	
Muridae	<i>Hydromys chrysogaster</i>	Water rat	C	-	Native	
Myobatrachidae	<i>Crinia parinsignifera</i>	Beeping froglet	C	-	Native	
Myobatrachidae	<i>Uperoleia fusca</i>	Dusky gungan	C	-	Native	
Nectariniidae	<i>Dicaeum hirundinaceum</i>	Mistletoebird	C	-	Native	
Neosittidae	<i>Daphoenositta chrysoptera</i>	Varied sittella	C	-	Native	
Pachycephalidae	<i>Colluricincla harmonica</i>	Grey shrike-thrush	C	-	Native	
Pachycephalidae	<i>Falcunculus frontatus</i>	Crested shrike-tit	C	-	Native	
Pachycephalidae	<i>Pachycephala pectoralis</i>	Golden whistler	C	-	Native	
Pachycephalidae	<i>Pachycephala rufiventris</i>	Rufous whistler	C	-	Native	
Pardalotidae	<i>Pardalotus punctatus</i>	Spotted pardalote	C	-	Native	
Pardalotidae	<i>Pardalotus striatus</i>	Striated pardalote	C	-	Native	
Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian pelican	C	-	Native	
Petauridae	<i>Petaurus australis</i>	Yellow-bellied glider	C	-	Native	
Petroicidae	<i>Eopsaltria australis</i>	Eastern yellow robin	C	-	Native	
Petroicidae	<i>Petroica goodenovii</i>	Red-capped robin	C	-	Native	
Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	Little black cormorant	C	-	Native	
Phasianidae	<i>Coturnix ypsilophora</i>	Brown quail	C	-	Native	
Podicipedidae	<i>Poliocephalus poliocephalus</i>	Hoary-headed grebe	C	-	Native	
Pomatostomidae	<i>Pomatostomus temporalis</i>	Grey-crowned babbler	C	-	Native	
Psittacidae	<i>Aprosmictus erythropterus</i>	Red-winged parrot	C	-	Native	
Psittacidae	<i>Barnardius zonarius</i>	Australian ringneck	C	-	Native	
Psittacidae	<i>Platycercus adscitus</i>	Pale-headed rosella	C	-	Native	
Psittacidae	<i>Platycercus eximius</i>	Eastern rosella	C	-	Native	
Psittacidae	<i>Trichoglossus chlorolepidotus</i>	Scaly-breasted lorikeet	C	-	Native	

Family	Scientific Name	Common Name	Conservation status		Native/Non-native	Restricted matter
			NC Act	EPBC Act		
Pteropodidae	<i>Pteropus poliocephalus</i>	Grey-headed flying-fox	C	V	Native	
Ptilonorhynchidae	<i>Chlamydera maculata</i>	Spotted bowerbird	C	-	Native	
Recurvirostridae	<i>Himantopus himantopus</i>	Black-winged stilt	C	-	Native	
Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey fantail	C	-	Native	
Rhipiduridae	<i>Rhipidura leucophrys</i>	Willie wagtail	C	-	Native	
Scincidae	<i>Carlia pectoralis</i>	Open-litter rainbow skink	C	-	Native	
Scincidae	<i>Concinnia tenuis</i>	Bar-sided skink	C	-	Native	
Scincidae	<i>Cryptoblepharus plagiocephalus</i>	Snake-eyed skink	C	-	Native	
Sturnidae	<i>Acridotheres tristis</i>	Common myna	-	-	Non-native	
Sturnidae	<i>Sturnus vulgaris</i>	Common starling	-	-	Non-native	
Suidae	<i>Sus scrofa</i>	Pig	-	-	Non-native	Class 3
Tachyglossidae	<i>Tachyglossus aculeatus</i>	Short-beaked echidna	SL	-	Native	
Threskiornithidae	<i>Threskiornis spinicollis</i>	Straw-necked ibis	C	-	Native	
Timaliidae	<i>Zosterops lateralis</i>	Silvereeye	C	-	Native	
Varanidae	<i>Varanus panoptes</i>	Yellow-spotted monitor	C	-	Native	
Vespertilionidae	<i>Chalinolobus gouldii</i>	Gould's wattled bat	C	-	Native	
Vespertilionidae	<i>Nyctophilus species</i>	Long-eared bat species	V*	V*	Native	
Vespertilionidae	<i>Scotorepens greyii/Scotorepens sp.</i>	Broad-nosed bats	C	-	Native	
Vespertilionidae	<i>Scotorepens orion/Falsistrellus tas</i>	Eastern broad-nosed bat	C	-	Native	
Vespertilionidae	<i>Vespadelus darlingtoni</i>	Large forest bat	C	-	Native	
Vespertilionidae	<i>Vespadelus troughtoni</i>	Eastern cave bat	C	-	Native	
Vespertilionidae	<i>Vespadelus vulturnus</i>	Little forest bat	C	-	Native	

APPENDIX

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Terrestrial and Aquatic Ecology Technical Report

Appendix J Database search results

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

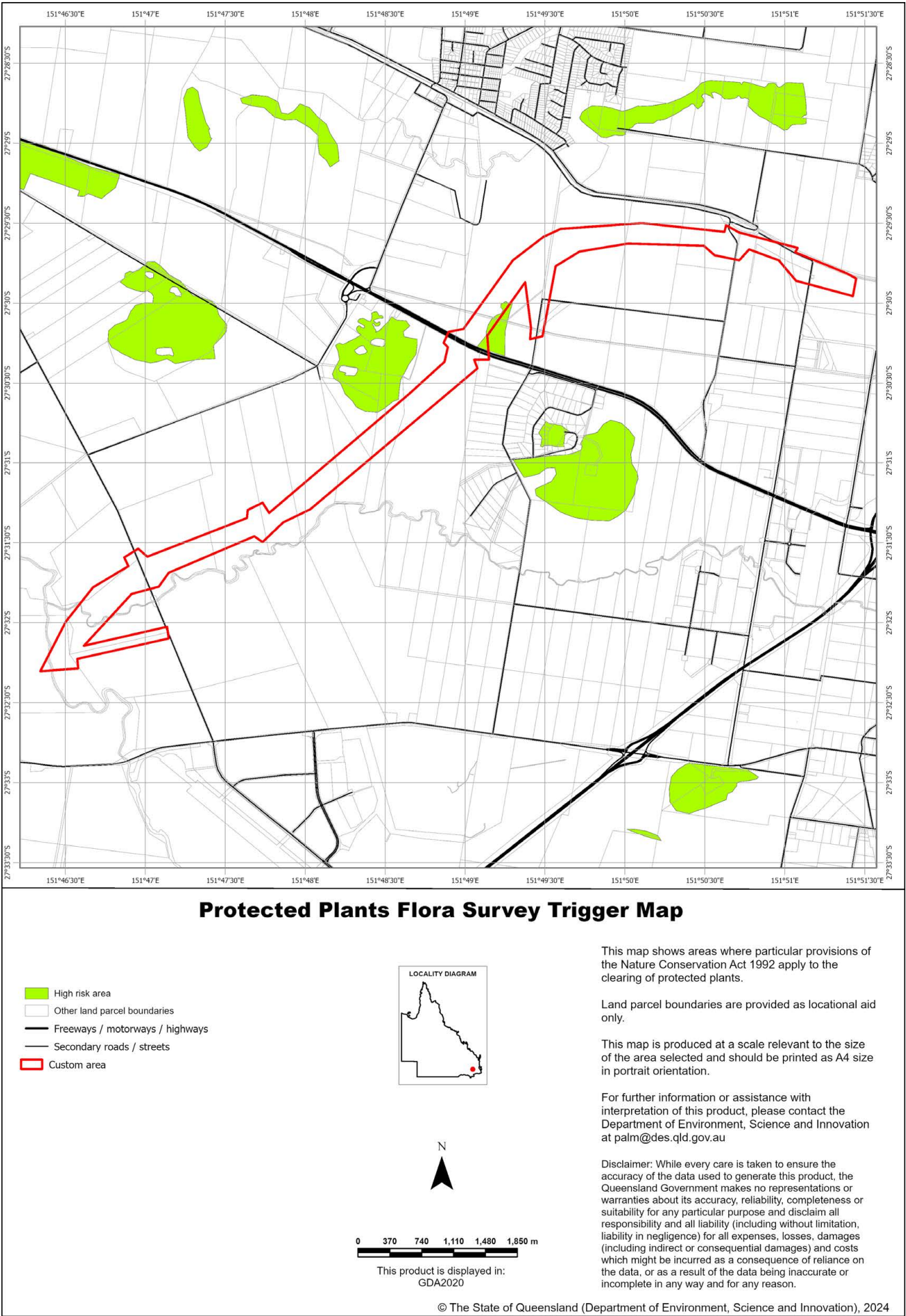


APPENDIX J DATABASE SEARCH RESULTS

FIGURE J-1 VEGETATION MANAGEMENT ACT SUPPORTING MAP

FIGURE J-2 VEGETATION MANAGEMENT ACT WETLANDS MAP

FIGURE J-3 ESSENTIAL HABITAT MAP



Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see [section 89](#) of the Act.

Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.

WetlandMaps Report



For selected area of interest Custom input

Current as at 5/06/2024

Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest(AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

Disclaimer

The State of Queensland, as represented by this department, gives no warranty in relation to the data (including without limitation, accuracy, reliability, completeness or fitness for a particular purpose) hosted on this website.

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Summary Information

Below is an overview of the area of interest.

Custom input
with area of 315.37 ha

Local Government(s)
Toowoomba Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Eastern Darling Downs

Catchment(s)
Condamine River

Drainage sub-basin
Balonne-Condamine

NRM Regions

The area of interest is in the following NRM region:

Southern Queensland Landscapes

Water Resource Plan Boundaries

The area of interest is in the following Water Resource Plan:

Condamine and Balonne

Great Artesian Basin and Other Regional Aquifers

Learn more about how Wetlands are mapped in Queensland

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include::**

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude::**

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria
- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Links and support

Other sites that deliver wetland related information include:

Wetland *Summary* tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

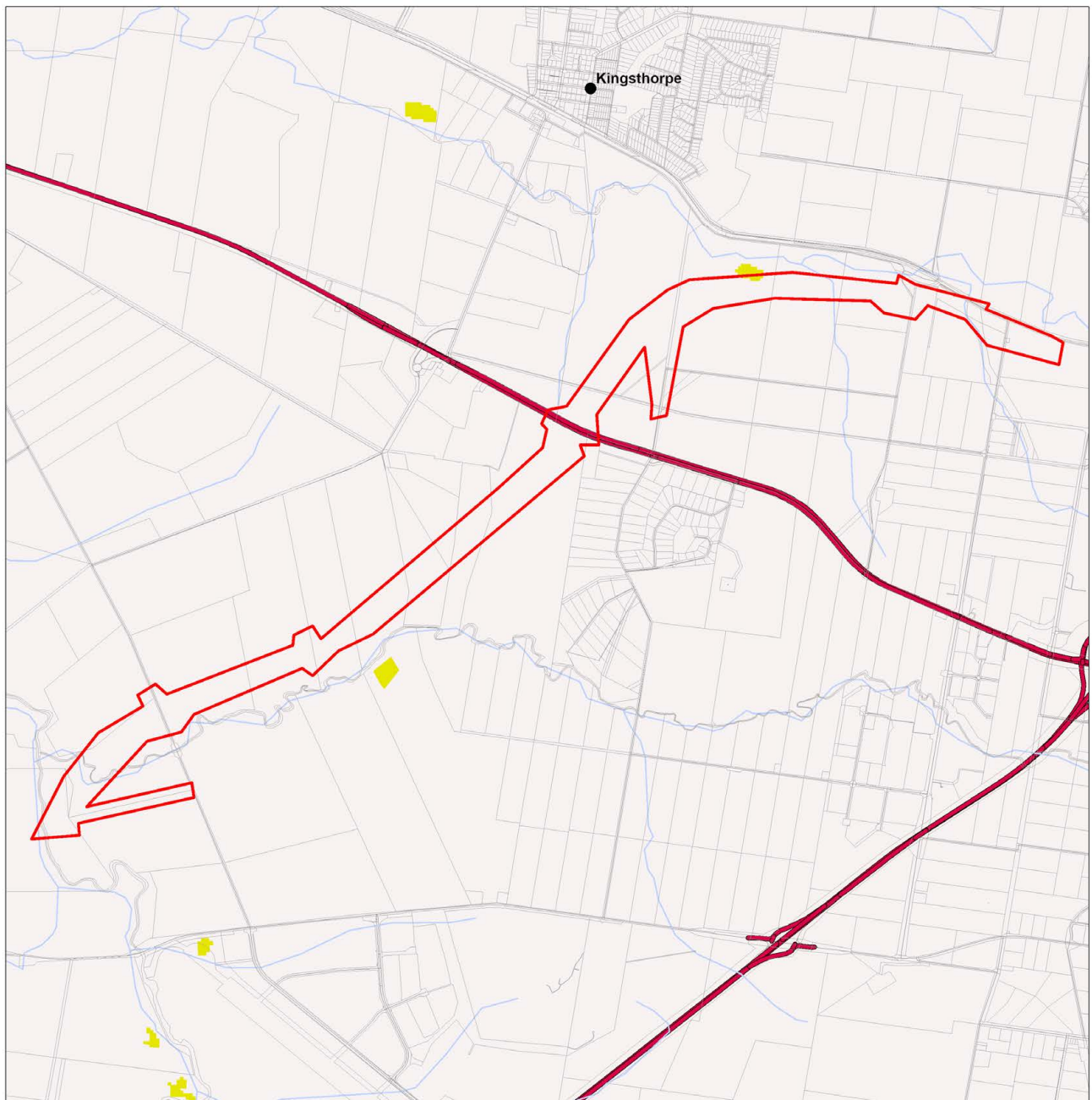
Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

Regional Ecosystem Mapping information: <https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

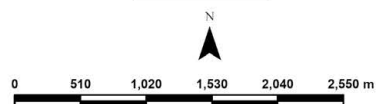
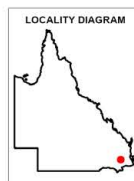
Aquatic Conservation Assessments: [Aquatic Conservation Assessments \(ACA\) and AquaBAMM \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Dependant Ecosystems information: <https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Queensland Wetland Map

- Springs
- Dams and weirs
- Towns
- Freeways/Highways
- Roads
- Cadastral Boundaries
- Sub-basin
- Riverine System Drainage Lines**
 - Major
 - Minor
- Wetland Mapping**
 - Hydrologically natural Wetlands**
 - Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
 - Hydrologically Modified and Artificial Wetlands**
 - Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
 - Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
 - Contains Wetlands (1 - 50%)
 - Custom area

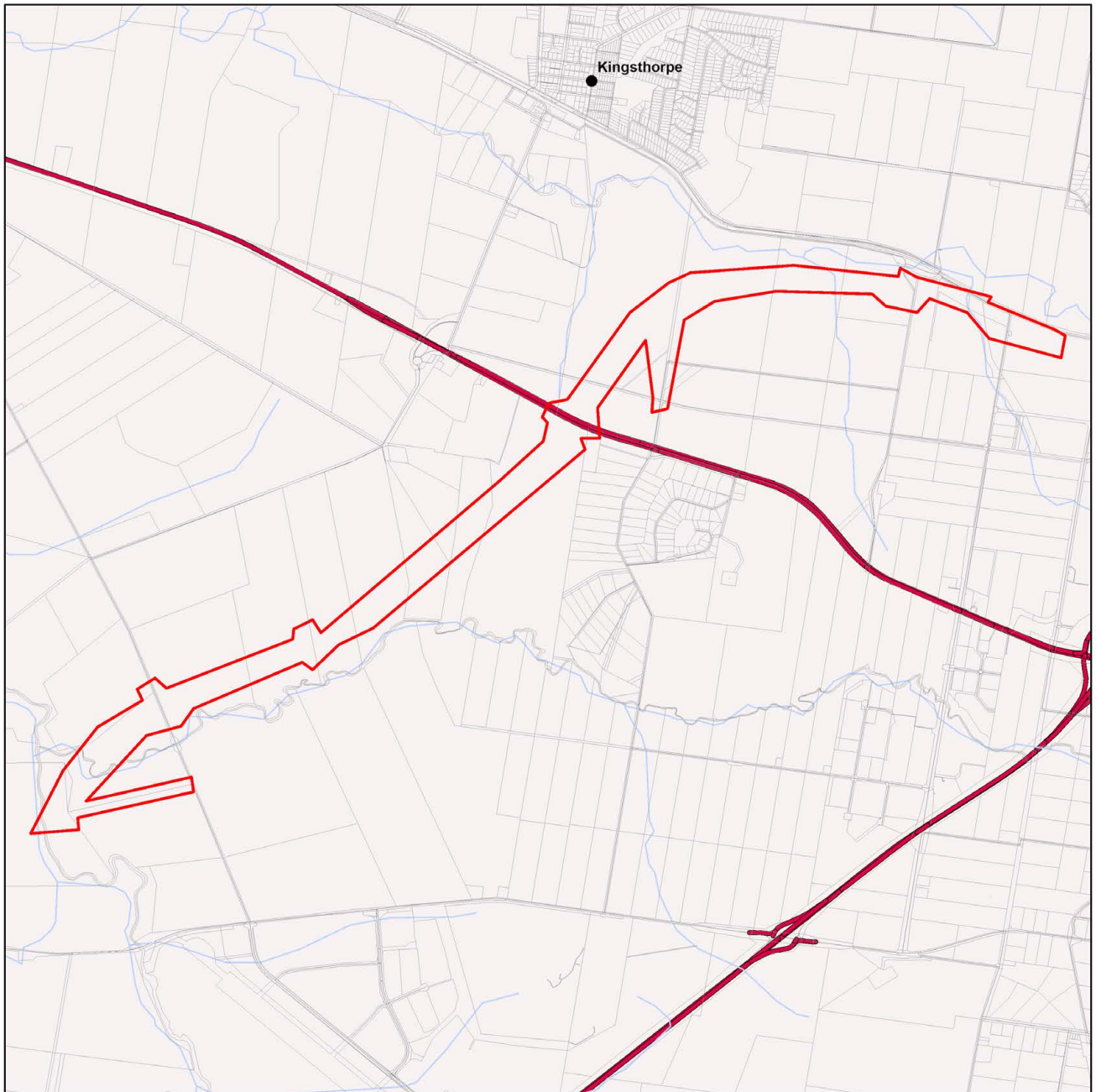


This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

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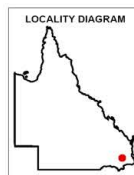


Queensland Wetlands of Importance Map

- Towns
- Cadastral Boundaries
- Freeways/Highways
- Roads
- Sub-basin
- Directory of Important Wetlands
- Ramsar Wetlands

Riverine System Drainage Lines

- Major
- Minor
- Custom area



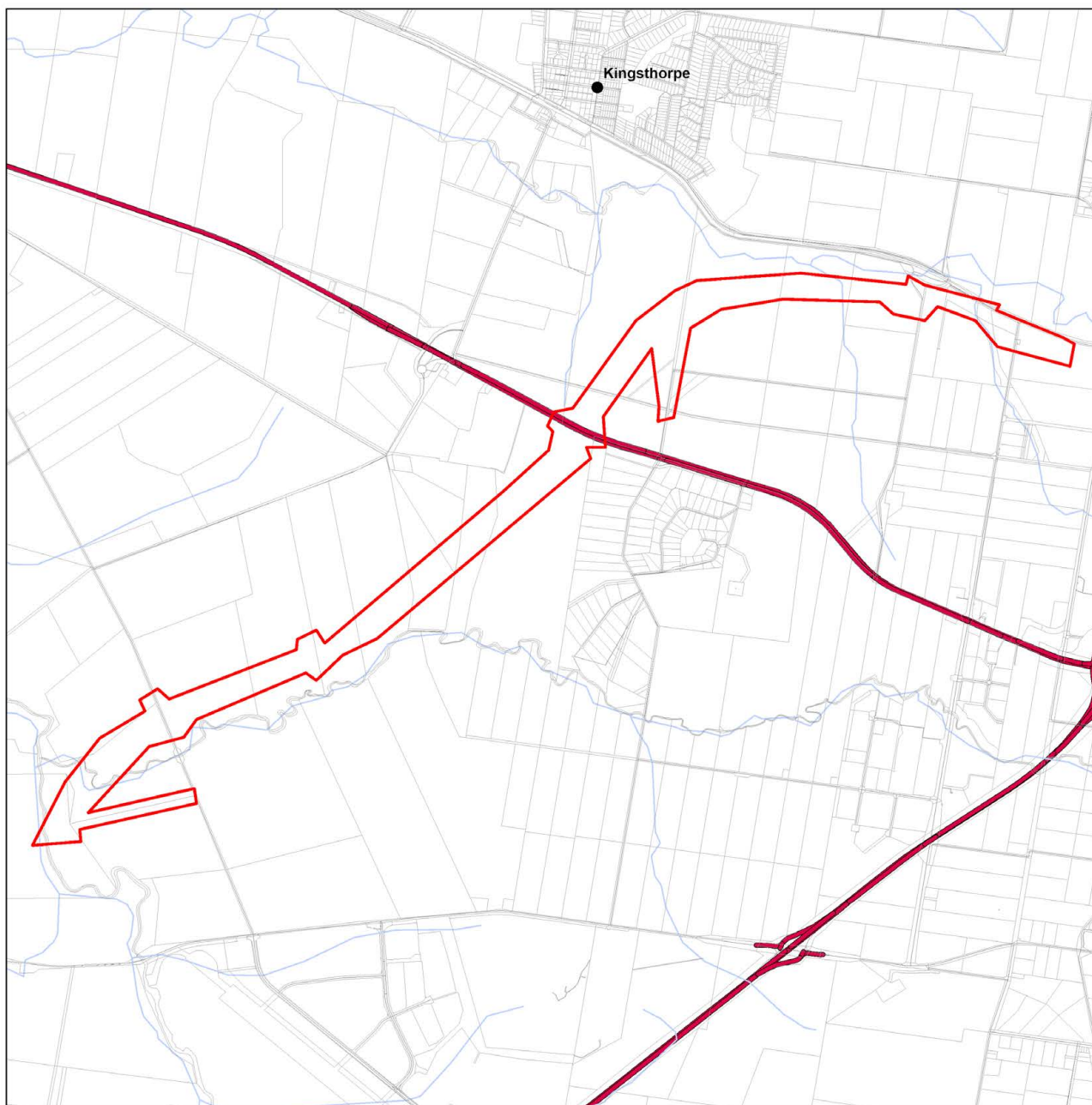
0 475 950 1,425 1,900 2,375 m

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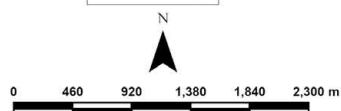
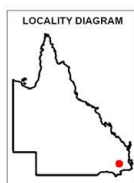
This product is displayed in GDA2020

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Queensland Protected Area Map

- Towns
- ▬ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▬ Sub-basin
- Riverine System Drainage Lines**
 - ▬ Major
 - ▬ Minor
- Marine Parks**
 - ▬ General Use Zone
 - ▬ Habitat Protection Zone
 - ▬ Estuarine Conservation Zone
 - ▬ Conservation Park Zone
 - ▬ Buffer Zone
 - ▬ Scientific Research Zone
 - ▬ Marine National Park Zone
 - ▬ Preservation Zone
- Protected Areas**
 - ▬ National Park
 - ▬ National Park (Scientific)
 - ▬ National Park (CYPAL)
 - ▬ Conservation Park
 - ▬ Resources Reserve
 - ▬ Forest Reserve
 - ▬ State Forest
 - ▬ Timber Reserve
 - ▬ Custom area



This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

Wetland habitat types in the AOI. Total area: 0.62 ha

Wetland Class	Habitat type	Area (ha)
LAC	NOA	0.62

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps

Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps

Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the input coordinates.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website <https://www.resources.qld.gov.au/>

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Custom input, with area 315.37 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Toowoomba Regional	Balonne-Condamine	Brigalow Belt	Eastern Darling Downs

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.00	0.00
Of concern	1.48	0.47
No concern at present	2.11	0.67
Total remnant vegetation	3.59	1.14

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated into a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website <https://www.resources.qld.gov.au/>.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

*****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.*

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.8.11	Dichanthium sericeum grassland on Cainozoic igneous rocks	Of concern	1.48	0.47
11.8.5	Eucalyptus orgadophila open woodland on Cainozoic igneous rocks	No concern at present	2.11	0.67
non-remnant	None	None	311.79	98.86

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.8.11	Pre-clearing 601000 ha; Remnant 2021 169000 ha	30b	Not a Wetland	Low
11.8.5	Pre-clearing 631000 ha; Remnant 2021 344000 ha	11a	Not a Wetland	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.8.11	11.8.11: Habitat for threatened plant species including <i>Trioncinia retroflexa</i> and <i>Dichanthium queenslandicum</i> . <i>T. retroflexa</i> is currently known from three small populations.
11.8.5	11.8.5: In southern part of bioregion, habitat for a number of threatened plant species including <i>Picris evae</i> and <i>Thesium australe</i> and near threatened species <i>Digitaria porrecta</i> and <i>Discaria pubescens</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>). 11.8.5a: This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: <https://publications.qld.gov.au/dataset/redd/resource/>

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	311.79	98.86
11a	Moist to dry open forests to woodlands dominated by <i>Eucalyptus orgadophila</i> (mountain coolibah). Some areas dominated by <i>E. tereticornis</i> (blue gum), <i>E. melliodora</i> (yellow box), <i>E. albens</i> (white box), <i>E. crebra</i> (narrow-leaved red ironbark) or <i>E. melanophloia</i> (silver-leaved ironbark).	2.11	0.67
30b	Tussock grasslands dominated by <i>Astrebla</i> spp. (mitchell grass) or <i>Dichanthium</i> spp. (bluegrass) often with <i>Iseilema</i> spp. on undulating downs or clay plains.	1.48	0.47

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: <http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

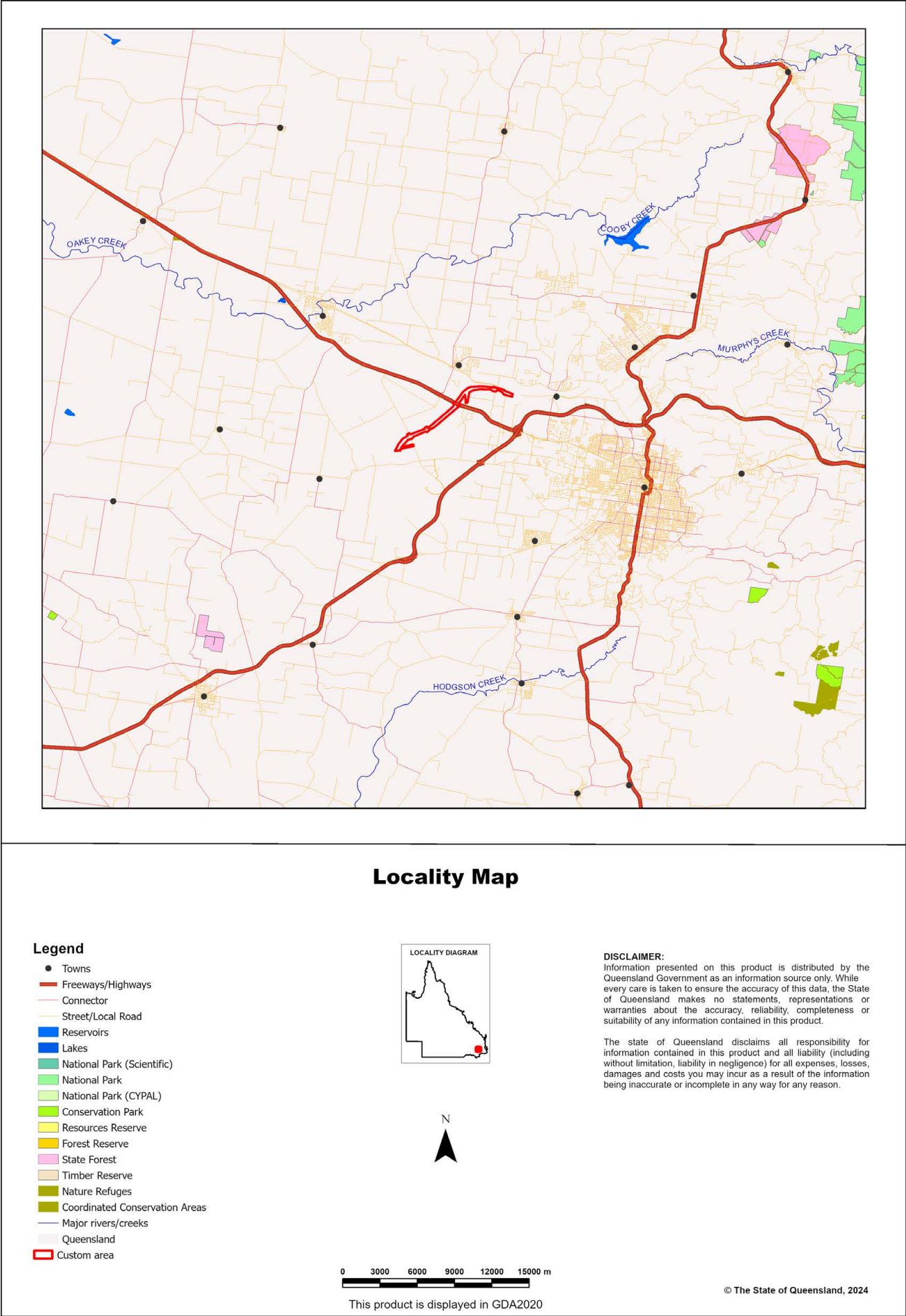
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

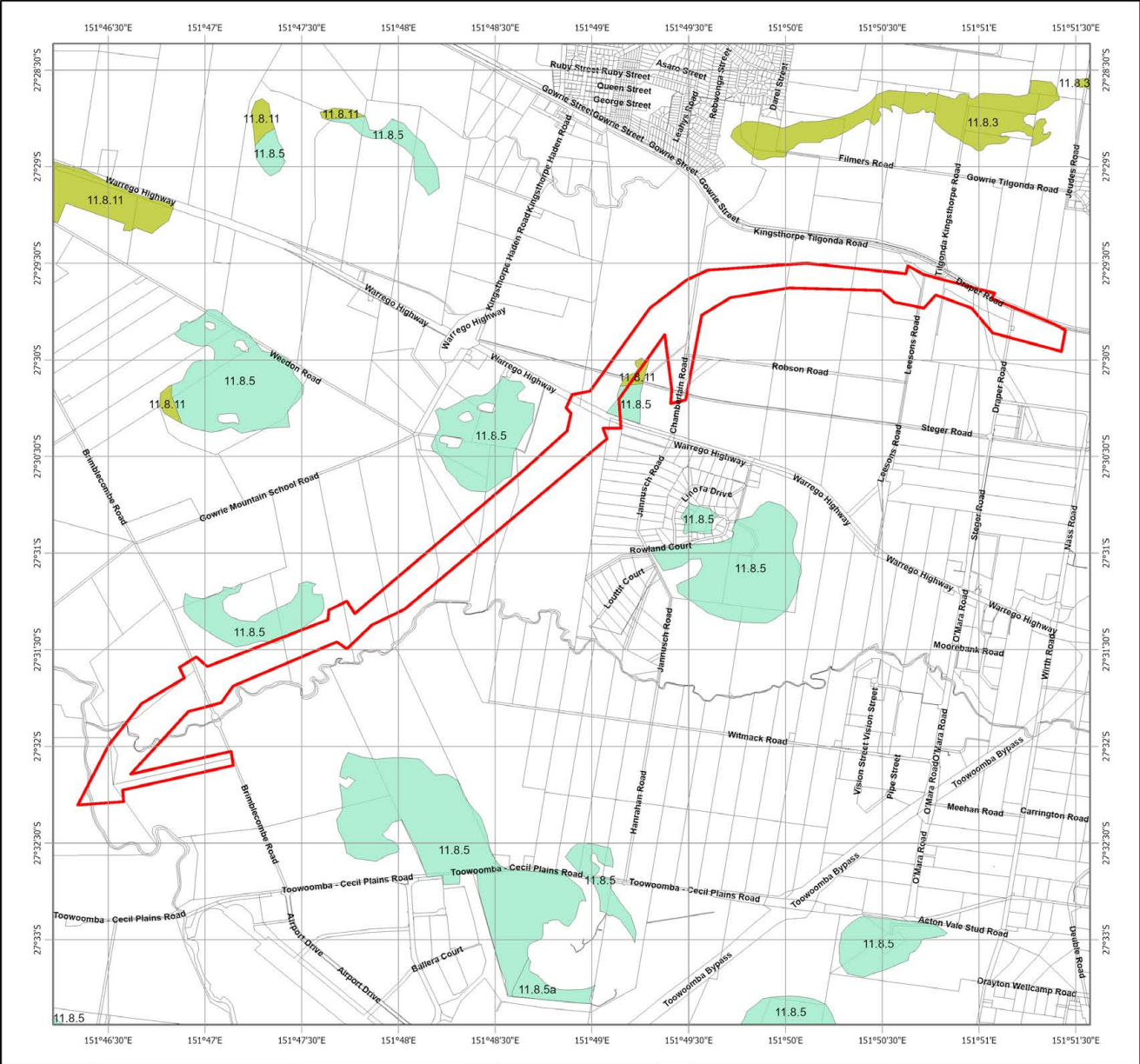
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.8.11	Available	Available
11.8.5	Available	Available
non-remnant	Not currently available	Not currently available

Maps

Map 1 - Location



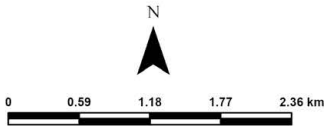
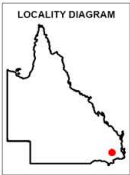
Map 2 - Remnant 2021 regional ecosystems



Remnant 2021 Regional Ecosystems

Biodiversity Status

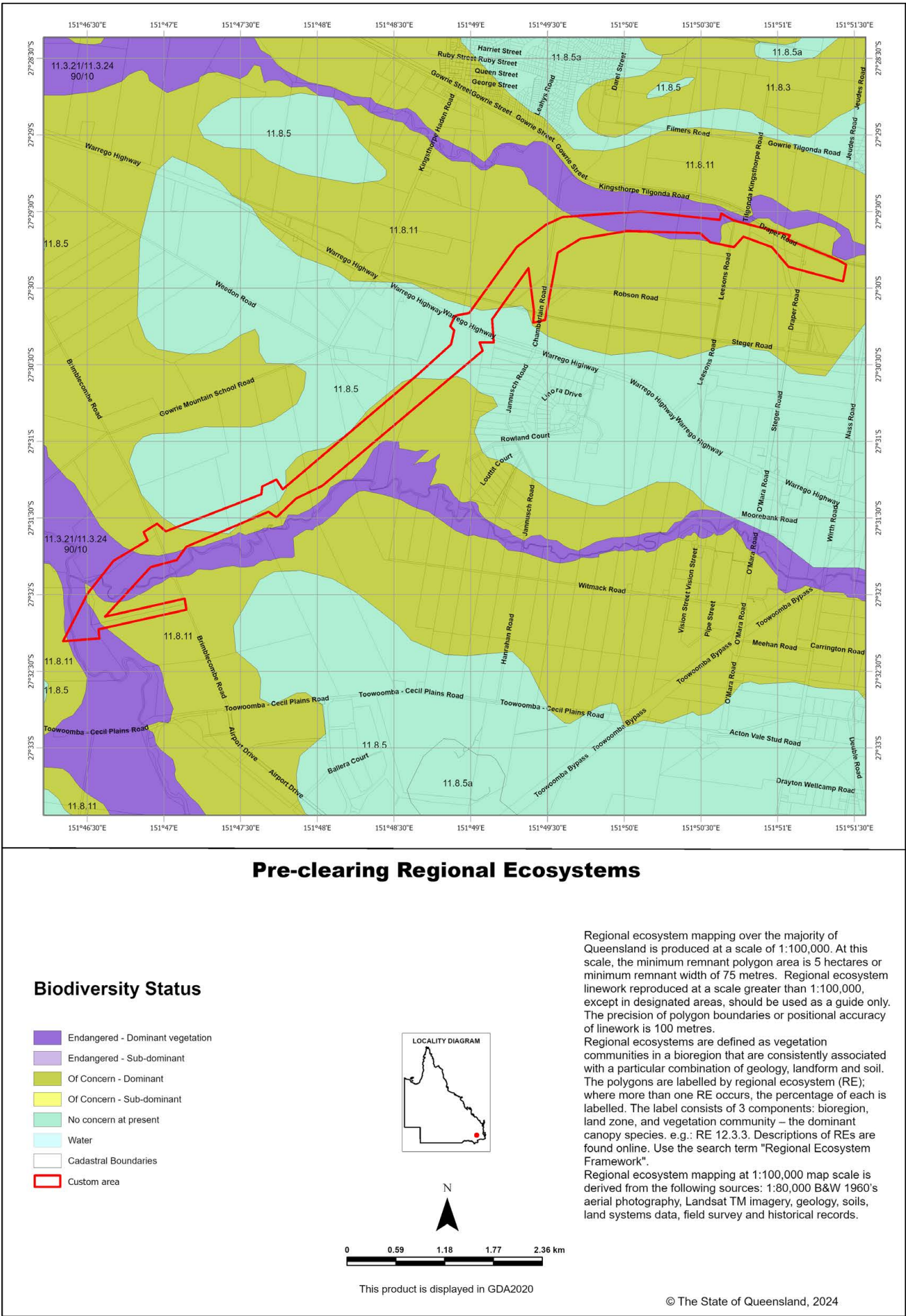
- Endangered - Dominant vegetation
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Non-remnant vegetation, cultivated or built environment
- Plantation
- Water
- Cadastral Boundaries
- Custom area



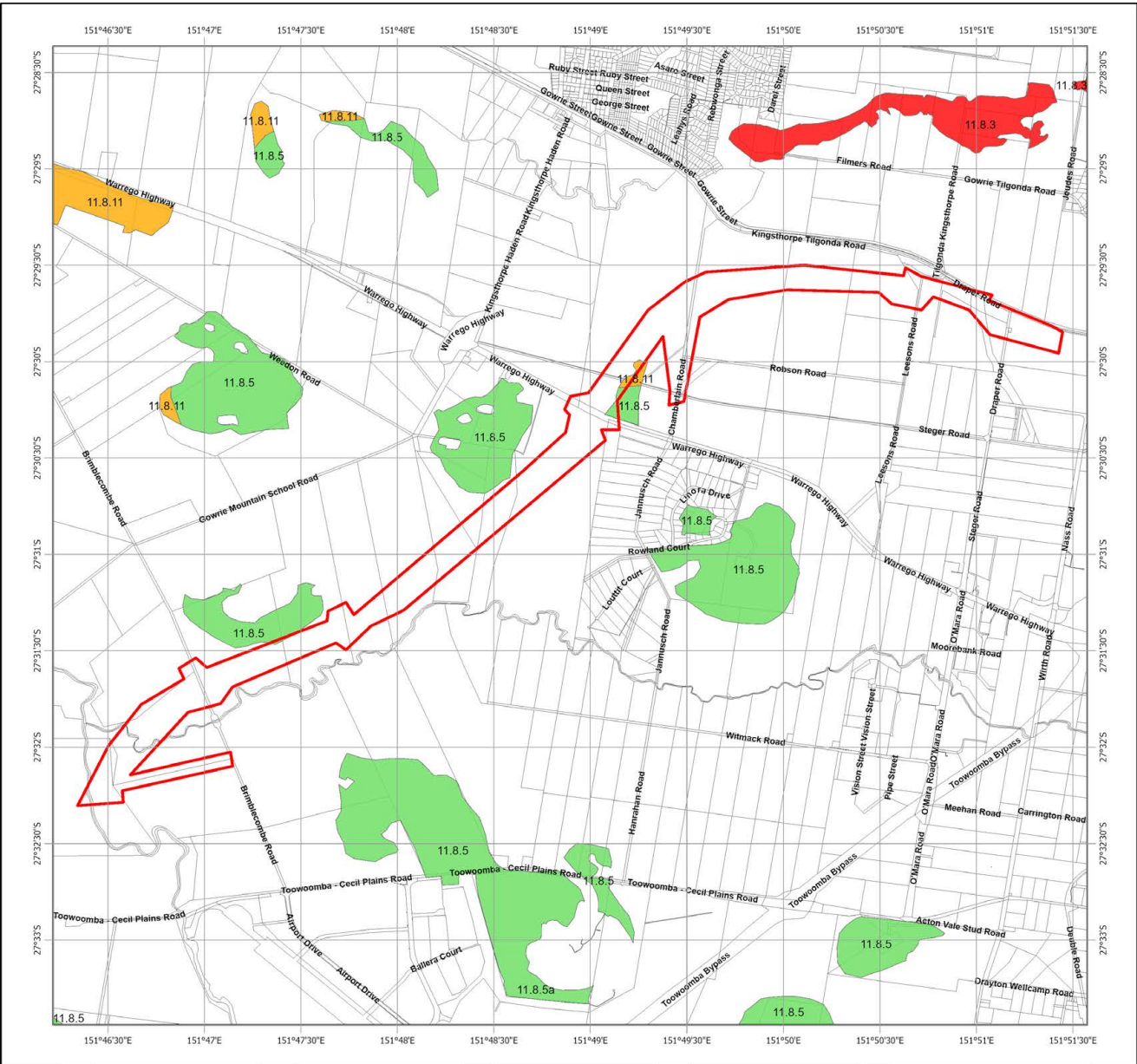
This product is projected into GDA2020

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The polygons are labelled by regional ecosystem (RE); where more than one RE occurs, the percentage of each is labelled. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

Map 3 - Pre-clearing regional ecosystems



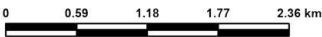
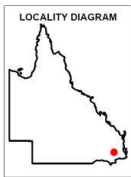
Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

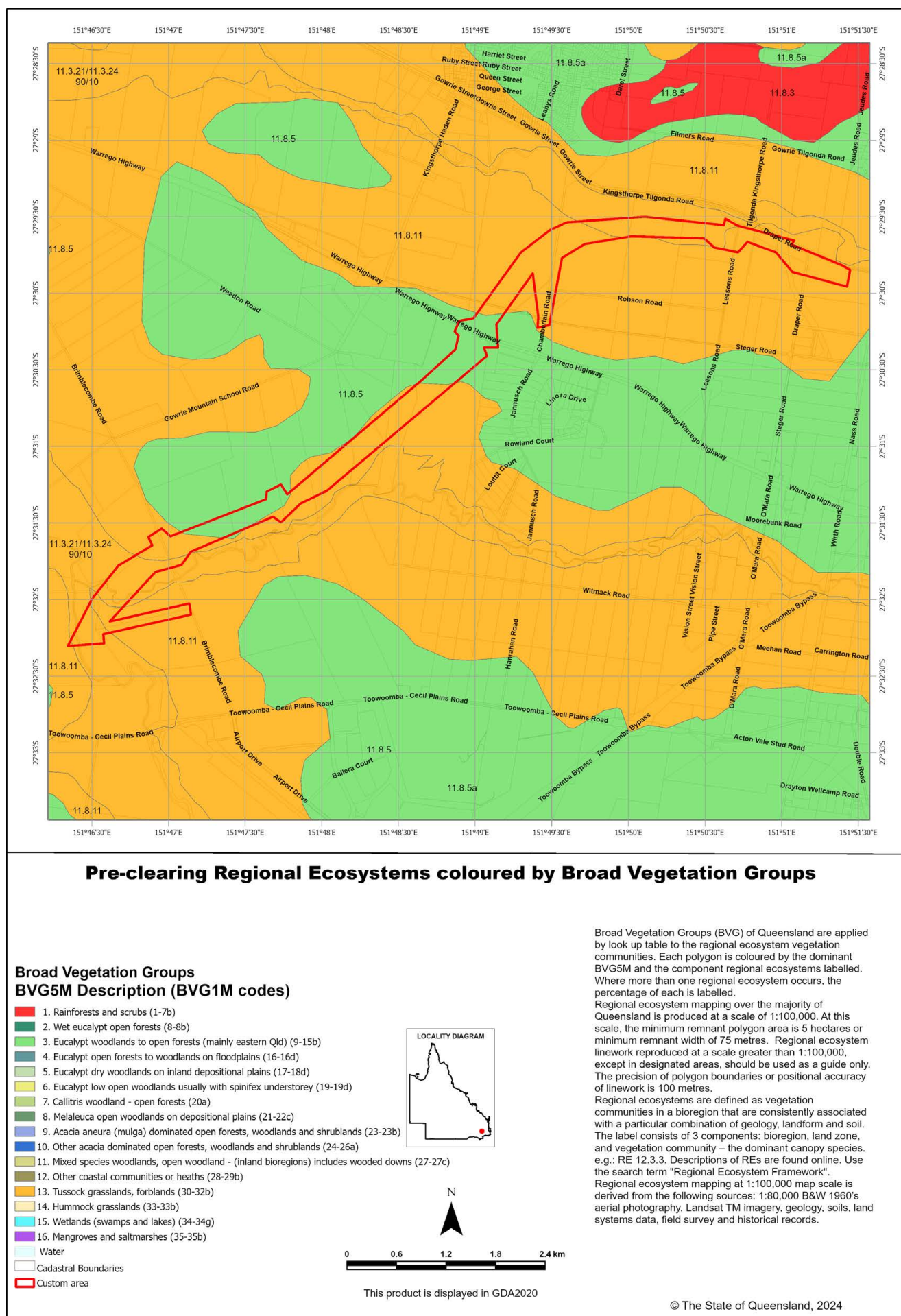
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries
- Custom area



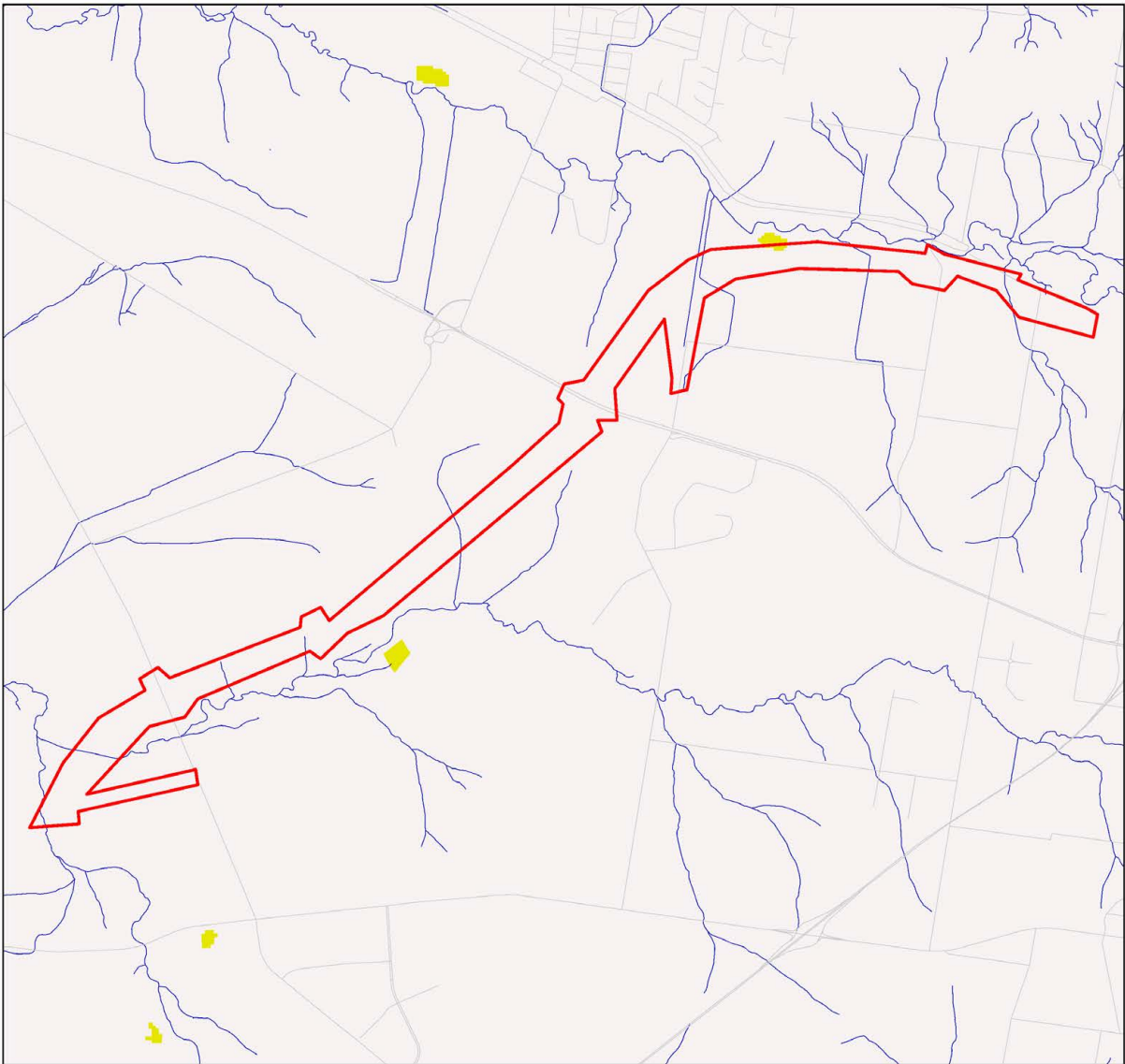
This product is displayed in GDA2020

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records. Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.

Map 5 - Pre-clearing regional ecosystems by BVG (5M)



Map 6 - Wetlands and waterways



Wetlands and Waterways

- Towns
 - Roads
 - Springs
 - Rivers/Creeks
 - Directory of Important Wetlands
 - Ramsar Sites - QLD
- Wetland Type**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
- Queensland
- Custom area



DISCLAIMER:
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The state of Queensland disclaims all responsibility for information contained in this product and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.

Links and Other Information Sources

The Department of Environment, Science and Innovation's Website -

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/> provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation>

The methodology for mapping regional ecosystems can be downloaded from:

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

Benchmarks can be obtained from: <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/spatial-catalogue)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

<https://qldglobe.information.qld.gov.au/>

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science.

<https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086>

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F., Richter, D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane.

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/>

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

[Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/information/spatial-catalogue)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and a field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@des.qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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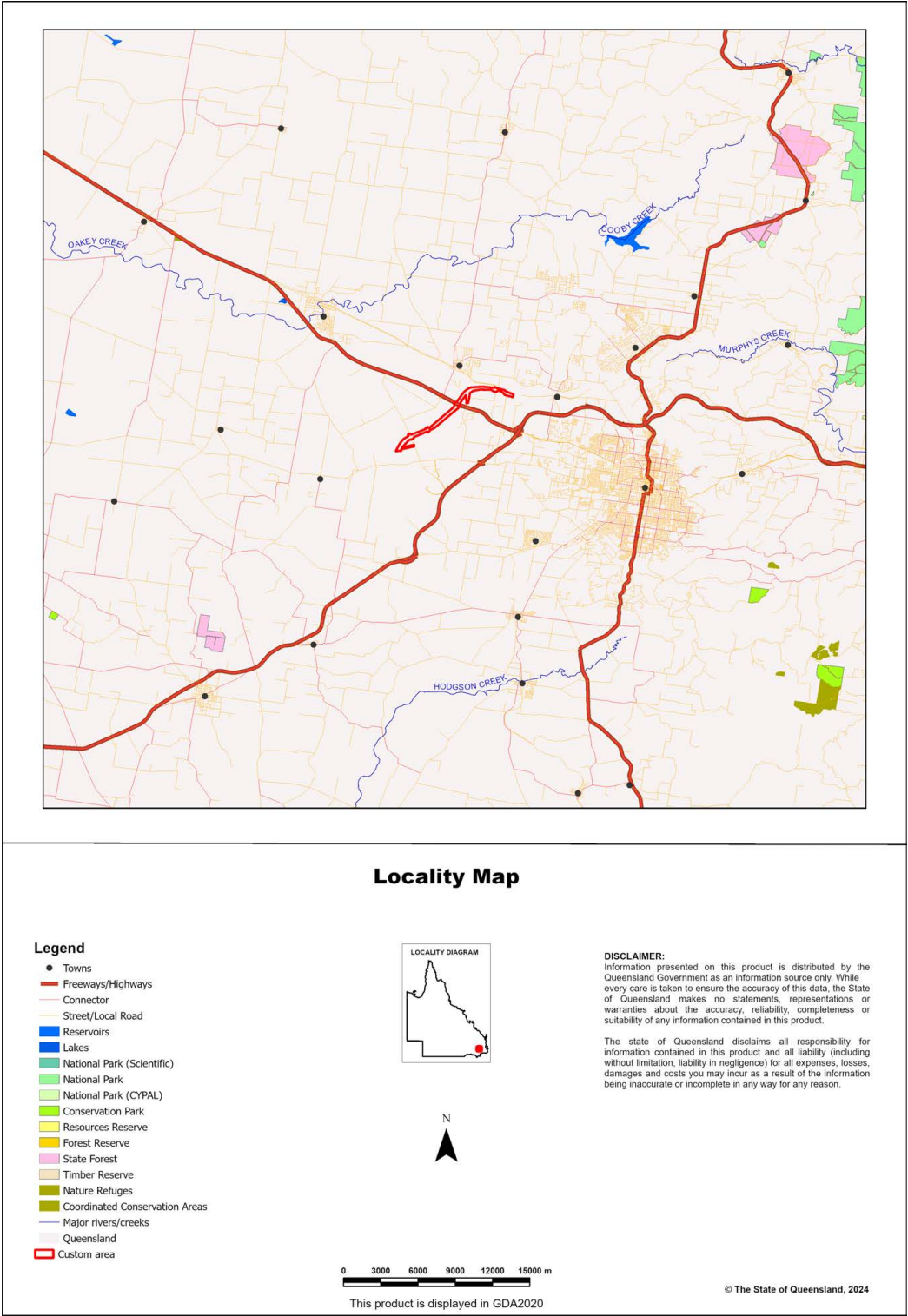
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI: Custom input, with area 315.37 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Toowoomba Regional	Balonne-Condamine	Brigalow Belt	Eastern Darling Downs



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
- *Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004* ;
- *Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008*;
- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	0 ha	0.0%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	1.48 ha	0.5%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	0 ha	0.0%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	3.1 ha	1.0%
8e Regulated Vegetation - intersecting a watercourse	1.6 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0 ha	0.0%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways**4. Strategic Environmental Areas (SEA)**

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species**7a. Threatened (endangered or vulnerable) wildlife**

Not applicable

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>	Keys boronia	V	None
<i>Calyptrorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarius casuarius johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Euastacus bindal</i>	Mount Elliot crayfish	CR	None
<i>Euastacus binzayedii</i>		CR	None
<i>Euastacus eungella</i>		E	None
<i>Euastacus hystricosus</i>		E	None
<i>Euastacus jagara</i>	Jagara hairy crayfish	CR	None
<i>Euastacus maidae</i>		CR	None
<i>Euastacus monteithorum</i>		E	None
<i>Euastacus robertsi</i>		E	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Melaleuca irbyana</i>	swamp tea-tree	E	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>	bopple nut	V	None
<i>Petrogale penicillata</i>	brush-tailed rock-wallaby	V	None
<i>Petrogale coenensis</i>	Cape York rock-wallaby	V	None
<i>Petrogale purpureicollis</i>	purple-necked rock-wallaby	V	None
<i>Petrogale sharmani</i>	Sharmans rock-wallaby	V	None
<i>Petrogale xanthopus celeris</i>	yellow-footed rock-wallaby (Qld subspecies)	V	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

(No results)

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

**Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL). Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)*

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.8.11	O-dom	rem_oc

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Not applicable

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Not applicable

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets**9a. Legally secured offset areas - offset register areas**

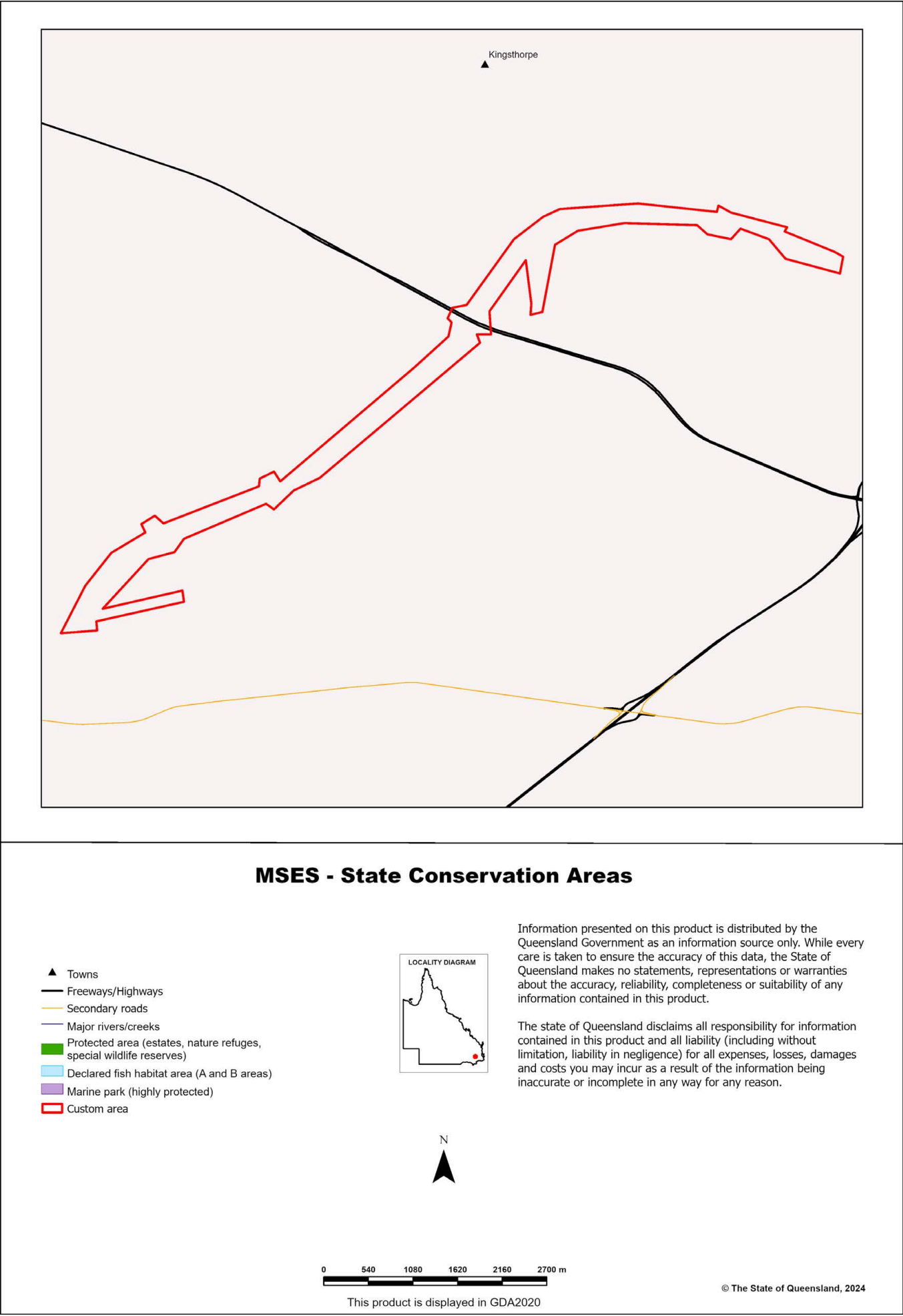
(No results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

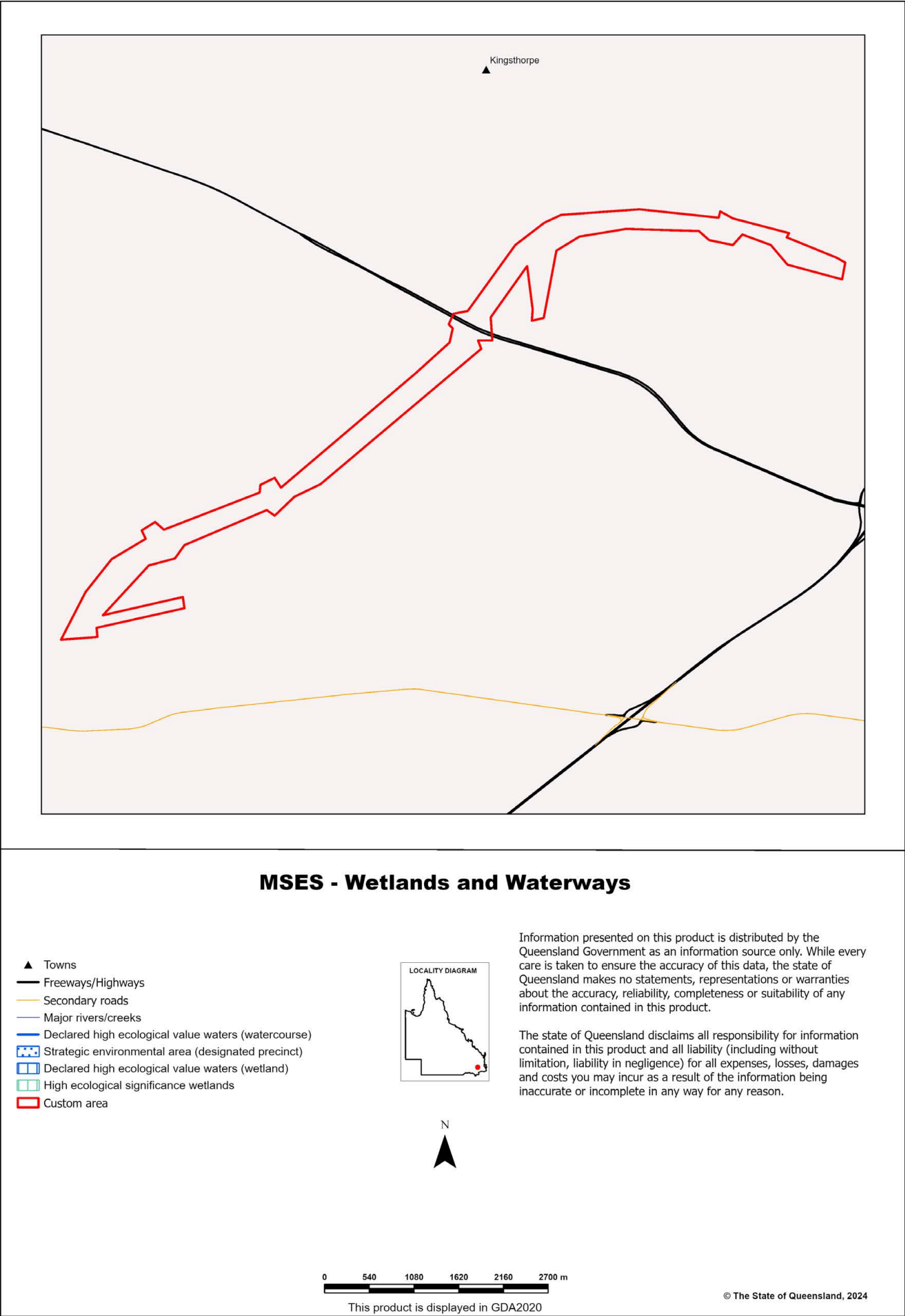
(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

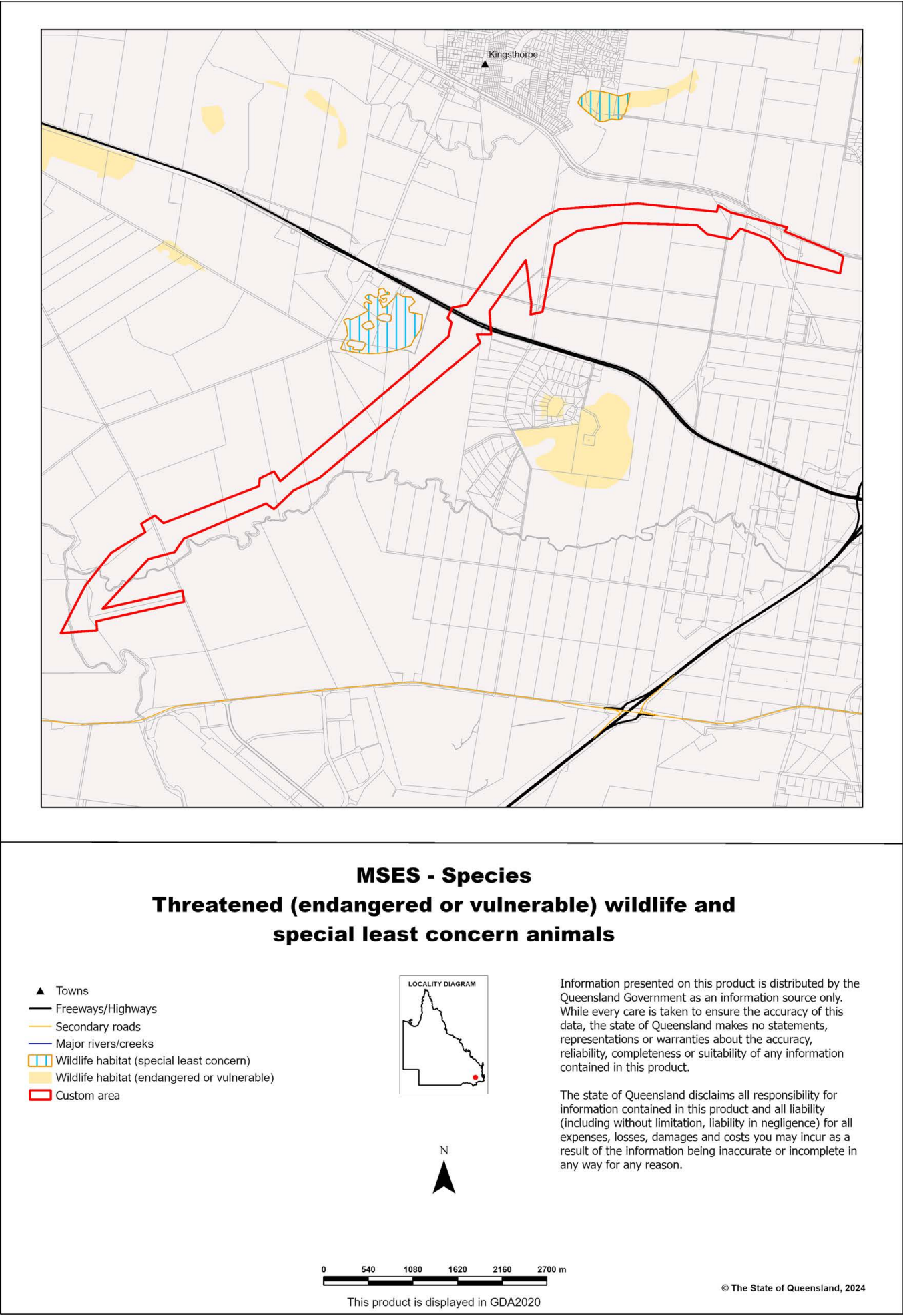
Map 1 - MSES - State Conservation Areas



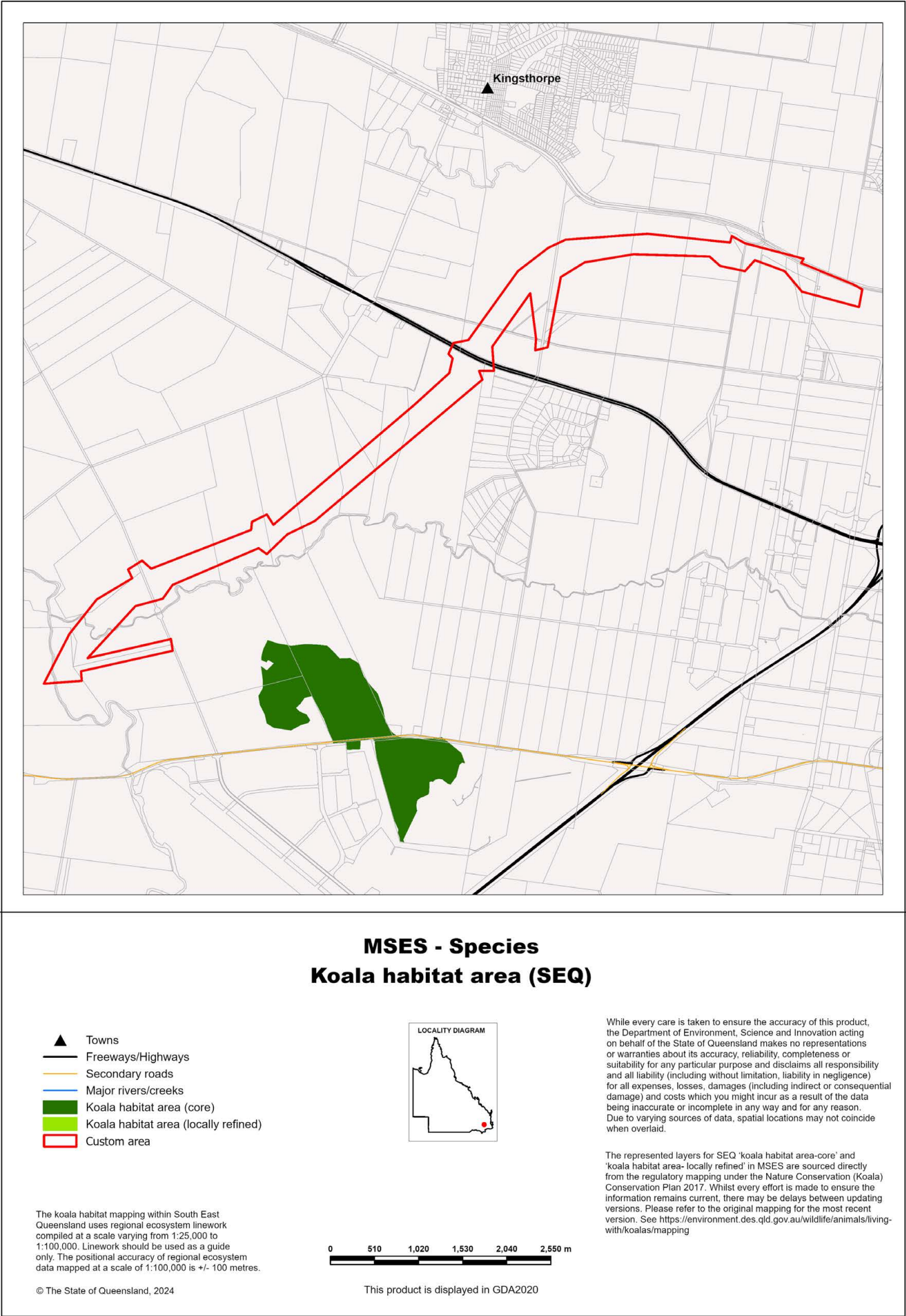
Map 2 - MSES - Wetlands and Waterways



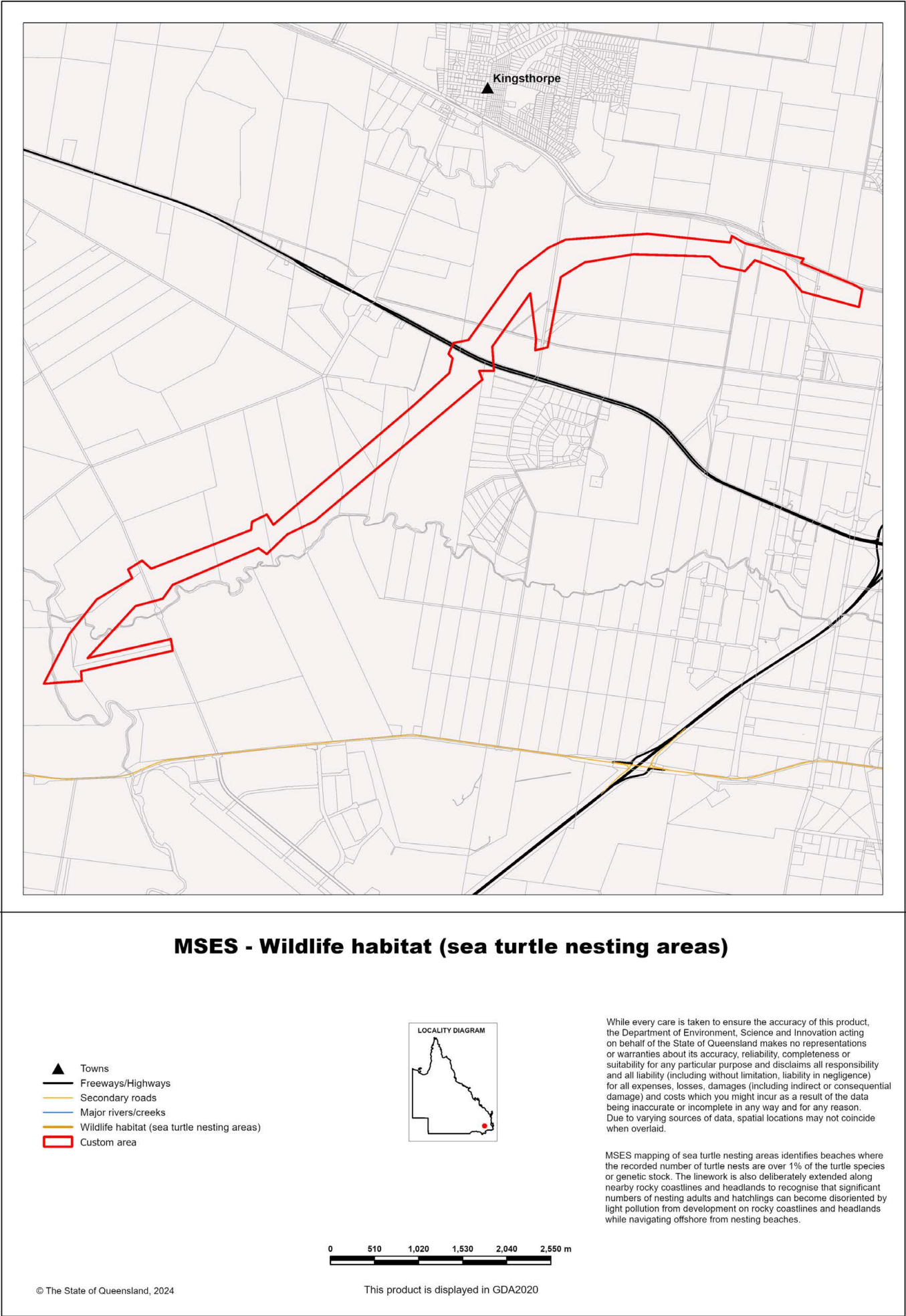
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



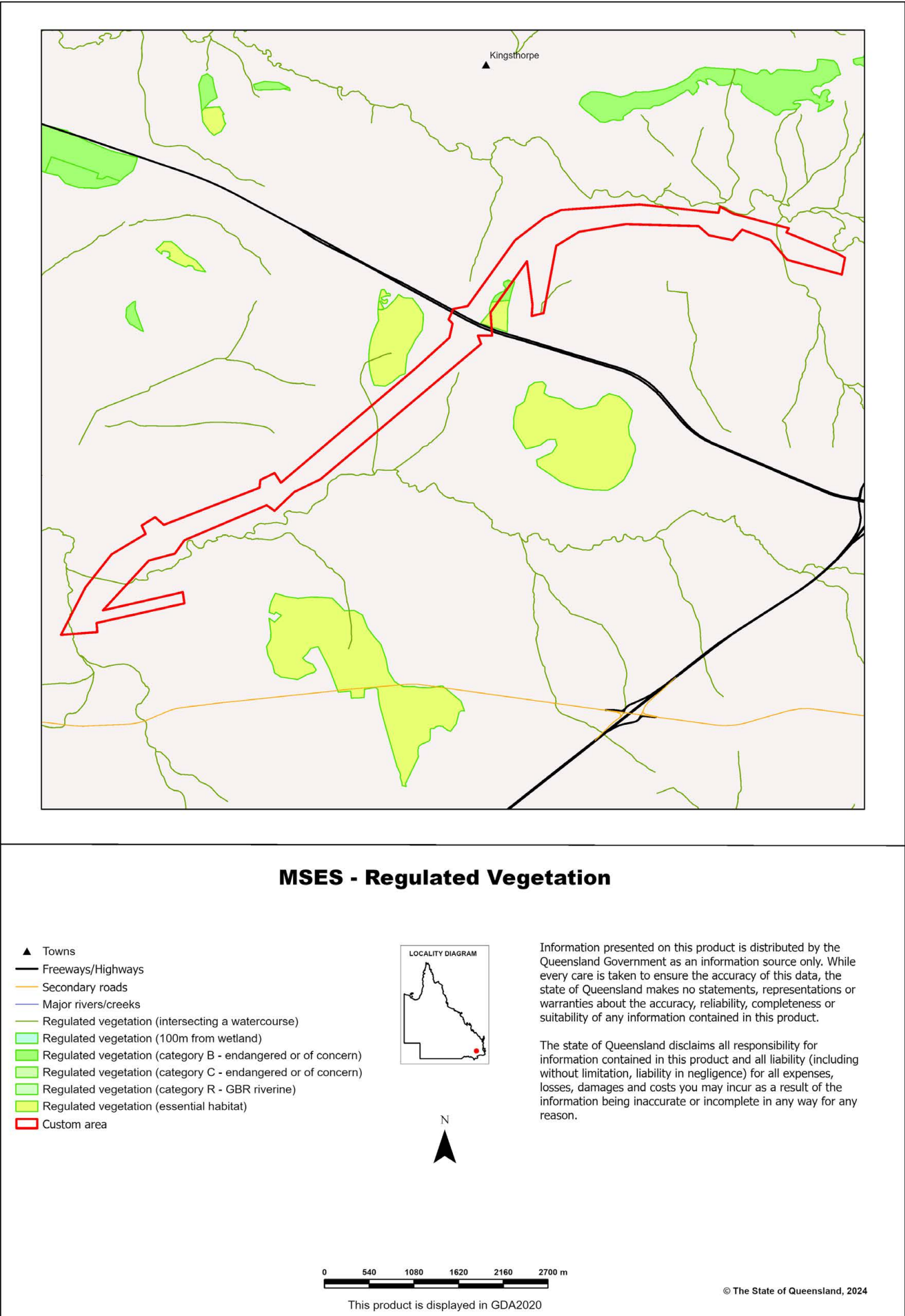
Map 3b - MSES - Species - Koala habitat area (SEQ)



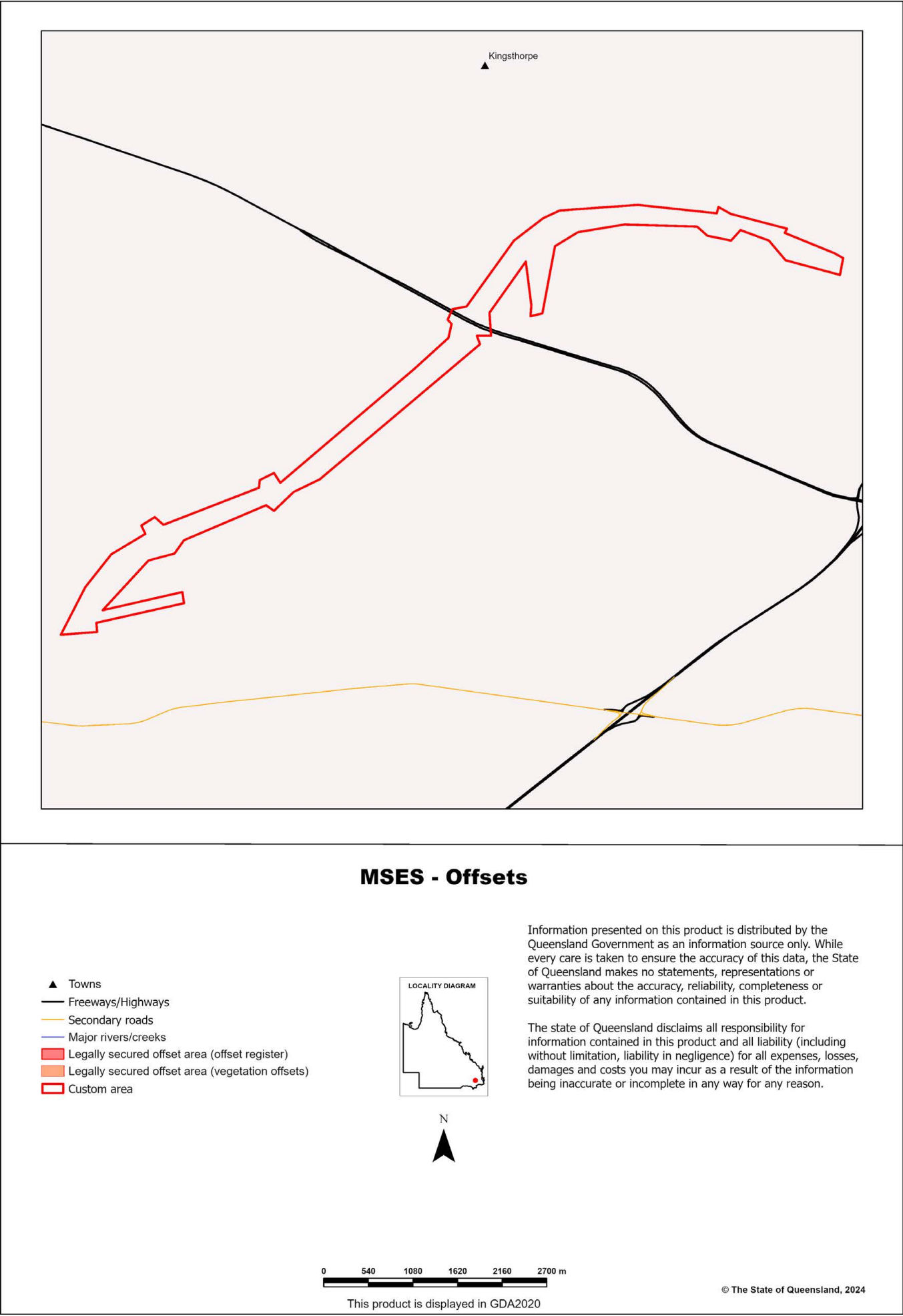
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DESI	- Department of Environment, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or Area of Interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "Central co-ordinates" option, the resulting assessment area encompasses an area extending from 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: biodiversity.planning@des.qld.gov.au

Disclaimer

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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Custom input, with area 315.37 ha

Local Government(s)
Toowoomba Regional
Bioregion(s)
Brigalow Belt
Subregion(s)
Eastern Darling Downs
Catchment(s)
Balonne-Condamine

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Brigalow Belt v2.1	Queensland Murray-Darling and Bulloo Basins v2.1	Queensland Murray-Darling and Bulloo Basins v.2.1

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.00	0.00
Of concern	1.48	0.47
No concern at present	2.11	0.67

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of Environment, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
Regional	2.53	0.80
State	1.48	0.47

Table 5: Non-riverine wetlands intersecting the AOI

Non-riverine wetland types intersecting the area of interest	#
Number of Lacustrine wetlands	1
Total number of non-riverine wetlands	1

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

Name	Permanency
DRY CREEK	Non-perennial
WESTBROOK CREEK	Non-perennial

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of Environment, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	299.96	95.11
Very Low	15.42	4.89

Table 8: Summary table, aquatic conservation significance (non-riverine)

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
Low	0.62	0.20

Biodiversity Planning Assessments

Introduction

The Department of Environment, Science and Innovation (DESI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DESI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

<http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State	1.48	0.47
Regional	2.53	0.80

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in

protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Local or Other Values	Refer to diagnostic data for additional information	2.53	0.80
Regional	Remnant contains at least one Of Concern RE (B1)	1.48	0.47

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	0.00	0.00	0.00	0.00	3.15	1.00	0.87	0.28
B1: Ecosystem Value (Bioregion)	0.00	0.00	1.48	0.47	2.53	0.80	0.00	0.00
B2: Ecosystem Value (Subregion)	1.48	0.47	2.53	0.80	0.00	0.00	0.00	0.00
C: Tract Size	0.00	0.00	0.00	0.00	0.00	0.00	4.02	1.27
D1: Relative RE Size (Bioregion)	0.00	0.00	0.00	0.00	0.00	0.00	4.02	1.27
D2: Relative RE Size (Subregion)	0.00	0.00	0.00	0.00	0.00	0.00	4.02	1.27
F: Ecosystem Diversity	0.00	0.00	1.48	0.47	1.66	0.53	0.87	0.28

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
G: Context and Connection	0.00	0.00	0.00	0.00	3.15	1.00	0.87	0.28

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Regional	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	2.53	0.80
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	1.48	0.47

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al.* 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to assess overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ia: Centres of Endemism	1.48	0.47	0.00	0.00	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	1.48	0.47	2.53	0.80	0.00	0.00	0.00	0.00
Ic: Disjunct Populations	1.48	0.47	0.00	0.00	0.00	0.00	0.00	0.00
Id: Limits of Geographic Ranges	0.00	0.00	1.48	0.47	0.00	0.00	0.00	0.00
Ie: High Species Richness	0.00	0.00	1.48	0.47	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:

- Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
- Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
- Maintaining large scale seasonal/migratory species processes and movement of fauna;
- Maximising connectivity between large tracts/patches of remnant vegetation;
- Identifying key areas for rehabilitation and offsets; and

- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial

- Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
- Follow major watershed/catchment and/or coastal boundaries;
- Incorporate major altitudinal/geological/climatic gradients;
- Include and maximise connectivity between large tracts/patches of remnant vegetation;
- Include and maximise connectivity between remnant vegetation in good condition; and

- Riparian

- Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
	4.02	1.27

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
brbs_fl_36	Mountain coolibah remnants, Eastern Darling Downs	Regional	lb (refugia): H
brbs_l_15	Relictual subregions (less than 30% remnant vegetation) - remnant vegetation	Regional	lb (refugia): H
brbs_l_41	Remnant grasslands, Eastern Darling Downs	State	la (endemic richness): VH; lb (refugia): VH; lc (disjunct populations): VH; ld (range limits): H; le (species richness): H

Expert panel decision descriptions:

Decision Number	Description
brbs_fl_36	The Eastern Darling Downs subregion contains the southern limits of mountain coolibah <i>Eucalyptus orgadophila</i> woodlands on basalt hills (11.8.5). The community is considered to provide important habitat for several threatened plant species including: <i>Digitaria porrecta</i> , <i>Discaria pubescens</i> , <i>Picris evae</i> and <i>Thesium australe</i> .
brbs_l_15	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Relictual subregions (less than 30% remnant vegetation remaining) for the Brigalow Belt include; Upper Belyando Flood out (11.8), Isaac - Comet Downs (11.11), Callide Creek Downs (11.19), Dawson River Downs (11.21), Taroom Downs (11.25), Dulacca Downs (11.28), Weribone High (11.29), Tara Downs (11.30), Eastern Darling Downs (11.31), Moonie R. - Commoron Creek Floodout (11.33), Moonie - Barwon Interfluvium (11.34), Warrambool - Moonie (11.35), Macintyre - Weir Fan (11.36), Narrandool (11.38). Remnant vegetation provides a refuge from clearing in fragmented subregions and should be retained to maintain biodiversity. Refer to brbn_l_89 for the northern BRB implementation of this decision.
brbs_l_41	Remnants of once more extensive grasslands (less than 2% remains) dominated by <i>Dichanthium</i> spp. or <i>Astrelba</i> spp. within the Eastern Darling Downs subregion provide a refuge for a variety of threatened flora, e.g. <i>Digitaria porrecta</i> , <i>Rhaponticum australe</i> , <i>Thesium australe</i> and <i>Solanum papaverifolium</i> , many of which occur as disjunct populations or at the limit of their geographic range. These areas are also recognised as being of important for reptile fauna including <i>Carlia tetradactyla</i> , shingle-back <i>Tiliqua rugosa</i> , spotted black snake <i>Pseudechis guttatus</i> , <i>Delma inornata</i> , common delma <i>D. plebeia</i> and threatened Condamine earless dragon <i>Tympanocryptis condaminensis</i> , the latter known to occur only from grasslands around Bongeen. Another notable fauna endemic is the only grassland snail found in Queensland, <i>Jimbouria rodhobsoni</i> . Disjunct populations of the endangered long-legged worm-skink <i>Anomalopus mackayi</i> are also found in similar habitat within the area. Nb. In future panel reviews, the significance of all Brigalow Belt remnant natural grasslands should be reviewed.

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in Queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning processes

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland Info:

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	299.96	95.11
Very Low	15.42	4.89

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	149.58	47.43	0.00	0.00	165.79	52.57	0.00	0.00
2. Naturalness catchment	0.00	0.00	149.58	47.43	165.79	52.57	0.00	0.00
3. Diversity and richness	0.00	0.00	0.00	0.00	299.96	95.11	15.42	4.89
4. Threatened species and ecosystems	0.00	0.00	150.38	47.68	0.00	0.00	165.00	52.32
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	315.37	100.00	0.00	0.00
6. Special features	0.00	0.00	299.96	95.11	0.00	0.00	0.00	0.00
7. Connectivity	315.37	100.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
cb_r_ec_31	Upland riverine reaches with flows sustained by groundwater seeps	Condamine-Balonne	7.2.1	4
cb_r_ec_45	Riverine drought refugia (High relative value)	Condamine-Balonne	6.1.1,6.2.1,6.3.1,6.3.4	3,3,3,3

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
cb_r_ec_31	Groundwater connectivity with riverine ecosystems were viewed as important by the expert panel as inflow of groundwater, especially where granite geology exists, sustains rivers and creeks during drier periods. Water exchange can happen through fractured rock aquifers, but more typically coincides with sandy bottomed riverbeds. Flows are not necessarily perennial during drought.
cb_r_ec_45	Drought refugia are an important feature in a semi-arid landscape. Values include <i>Tandanus</i> (Ell tailed catfish). Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). This decision was implemented using persistent waterhole mapping help by DES. The percentage length of persistent waterholes per riverine spatial unit was calculated using Geofab v2.1 watercourses and DES persistent waterhole mapping. The Jenks Natural Breaks classification algorithm was used to categorise spatial units into four classes (i.e. Very High, High, Medium, Low). Spatial units in the Medium class were used for this decision. Spatial units in the Very High and High class were used for Riverine drought refugia (Very High relative value) decision (i.e. cb_r_ec_06).

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
Low	0.62	0.20

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.20
2. Naturalness catchment	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.20
3. Diversity and richness	0.00	0.00	0.62	0.20	0.00	0.00	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.20
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, HerbreCs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Digitaria porrecta</i>		NT					FL
<i>Grantiella picta</i>	painted honeyeater	V	V	High			FA
<i>Leuzea australis</i>		V	V				FL
<i>Phascolarctos cinereus</i>	koala	E	E				FA
<i>Phascolarctos cinereus</i>	koala	E	E	Low			FA
<i>Picris evae</i>		V	V				FL
<i>Sophora fraseri</i>	brush sophora	V	V				FL
<i>Turnix melanogaster</i>	black-breasted button-quail	V	V				FA

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Turnix melanogaster</i>	black-breasted button-quail	V	V	Critical			FA

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DESI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

*JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.

**I - wetland indicator species; D - wetland dependent species.

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
<i>Mogurnda adspersa</i>	Southern Purplespotted Gudgeon	FA
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Identified flora/fauna
<i>Acrocephalus australis</i>	Australian reed-warbler	FA
<i>Gallinago hardwickii</i>	Latham's snipe	FA
<i>Limnodynastes dumerilii</i>	grey bellied pobblebonk	FA
<i>Mogurnda adspersa</i>	southern purplespotted gudgeon	FA

Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

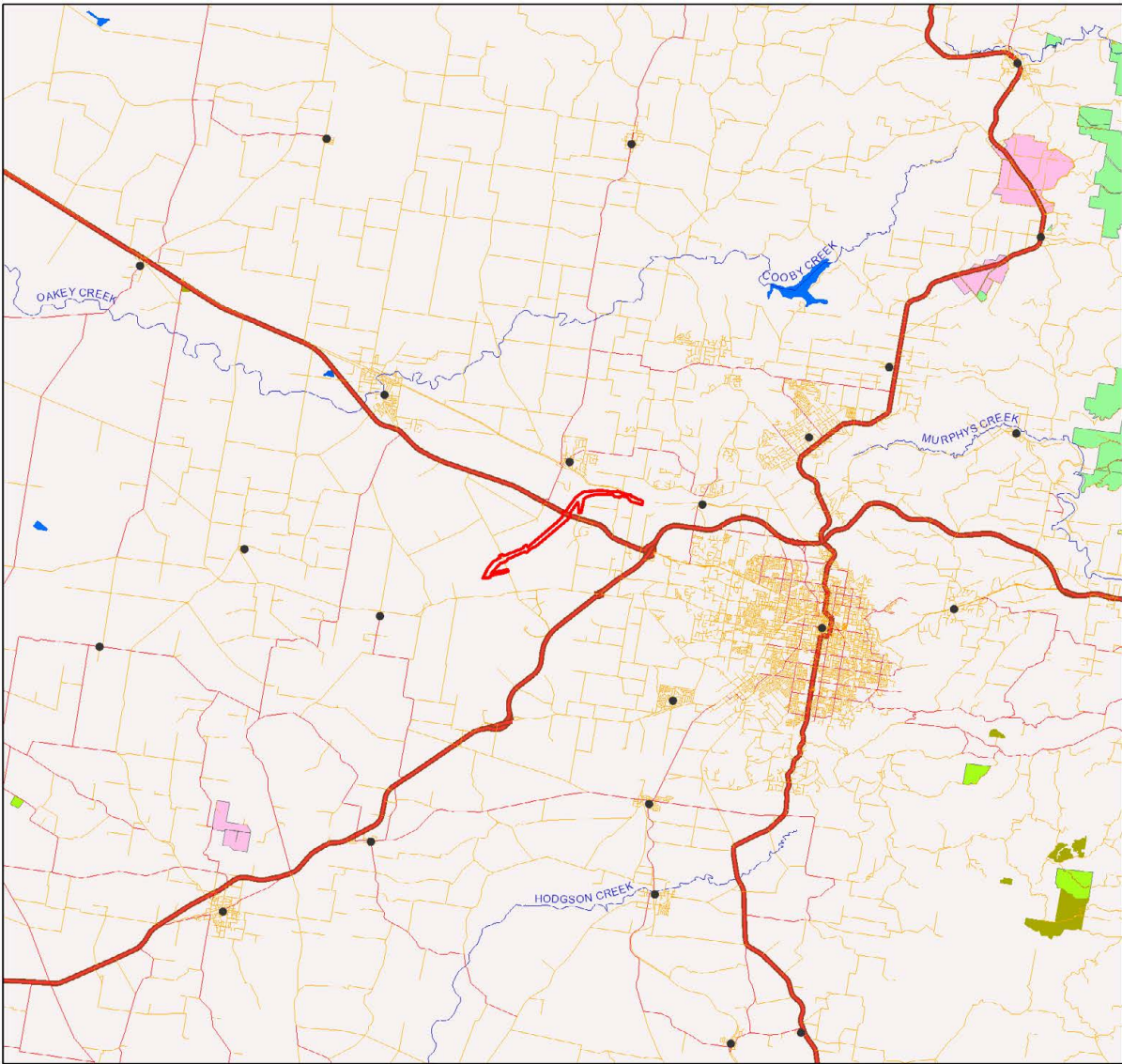
Species	Common name	Identified flora/fauna
<i>Acrocephalus australis</i>	Australian reed-warbler	FA
<i>Gallinago hardwickii</i>	Latham's snipe	FA

Species	Common name	Identified flora/fauna
<i>Limnodynastes dumerilii</i>	grey bellied pobblebonk	FA
<i>Limnodynastes salmini</i>	salmon striped frog	FA
<i>Mogurnda adspersa</i>	southern purplespotted gudgeon	FA

NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

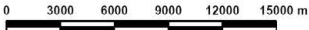
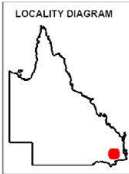
Maps

Map 1 - Locality Map



Locality Map

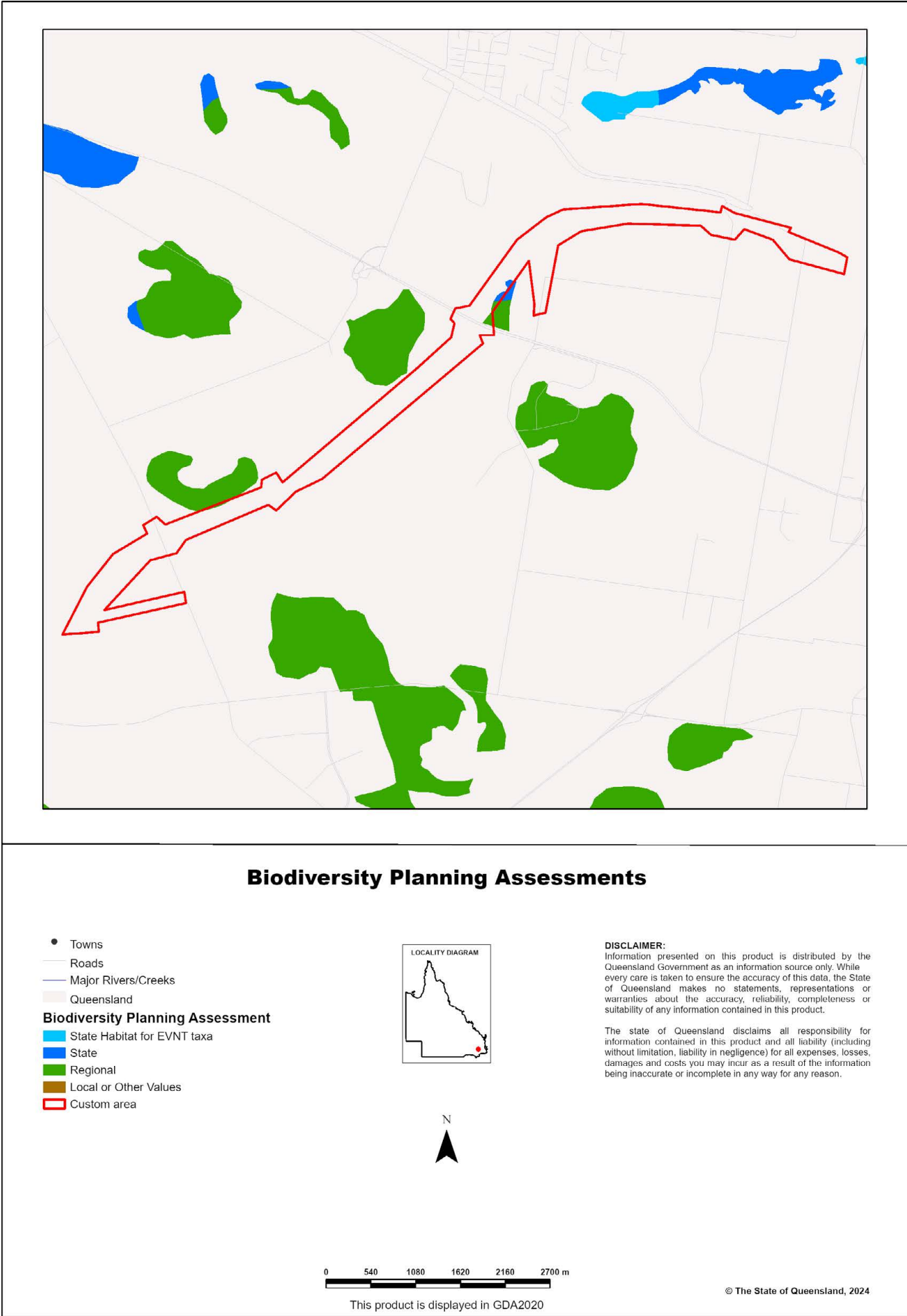
- Legend**
- Towns
 - Freeways/Highways
 - Connector
 - Street/Local Road
 - Reservoirs
 - Lakes
 - National Park (Scientific)
 - National Park
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Nature Refuges
 - Coordinated Conservation Areas
 - Major rivers/creeks
 - Queensland
 - Custom area



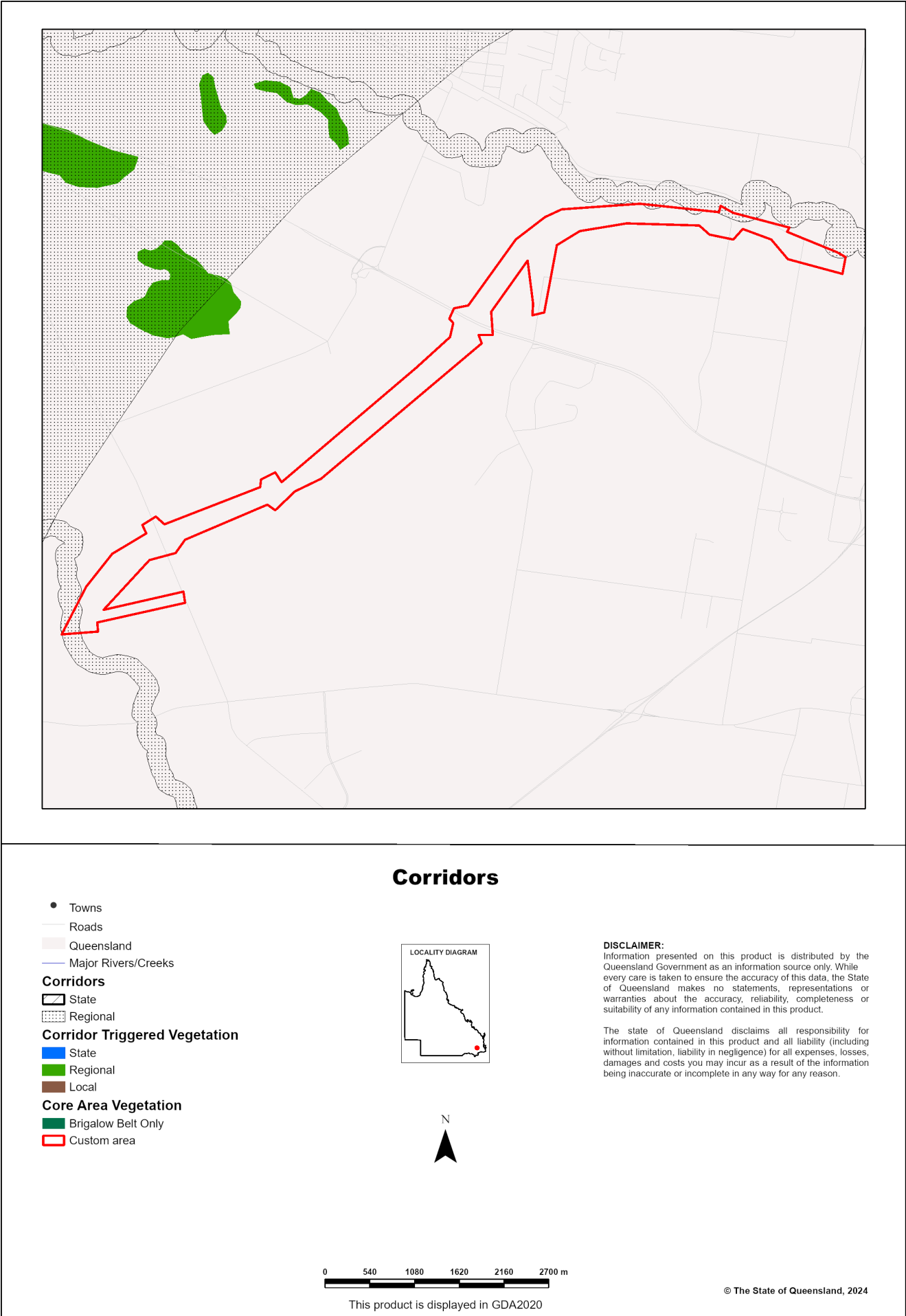
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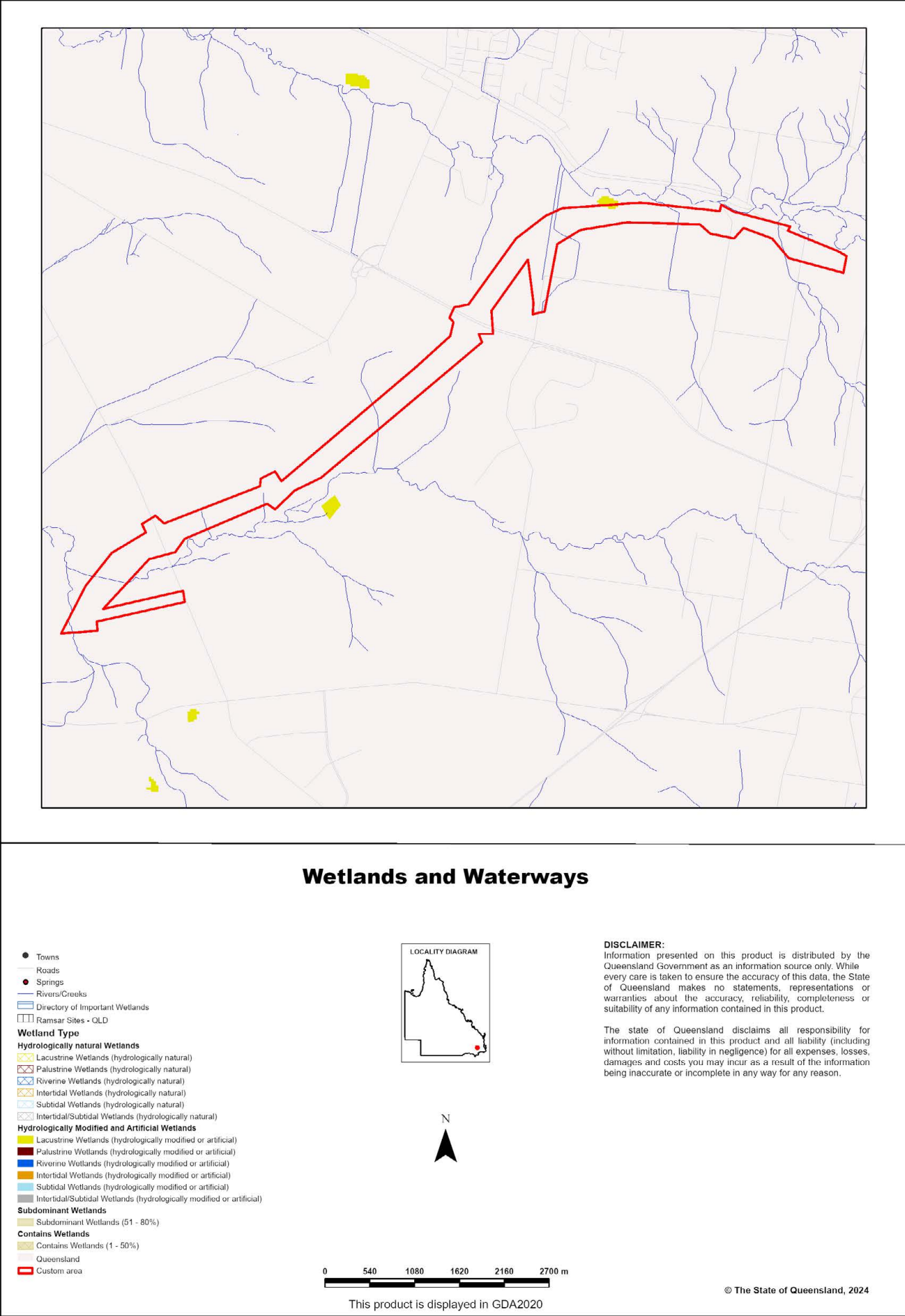
Map 2 - Biodiversity Planning Assessment (BPA)



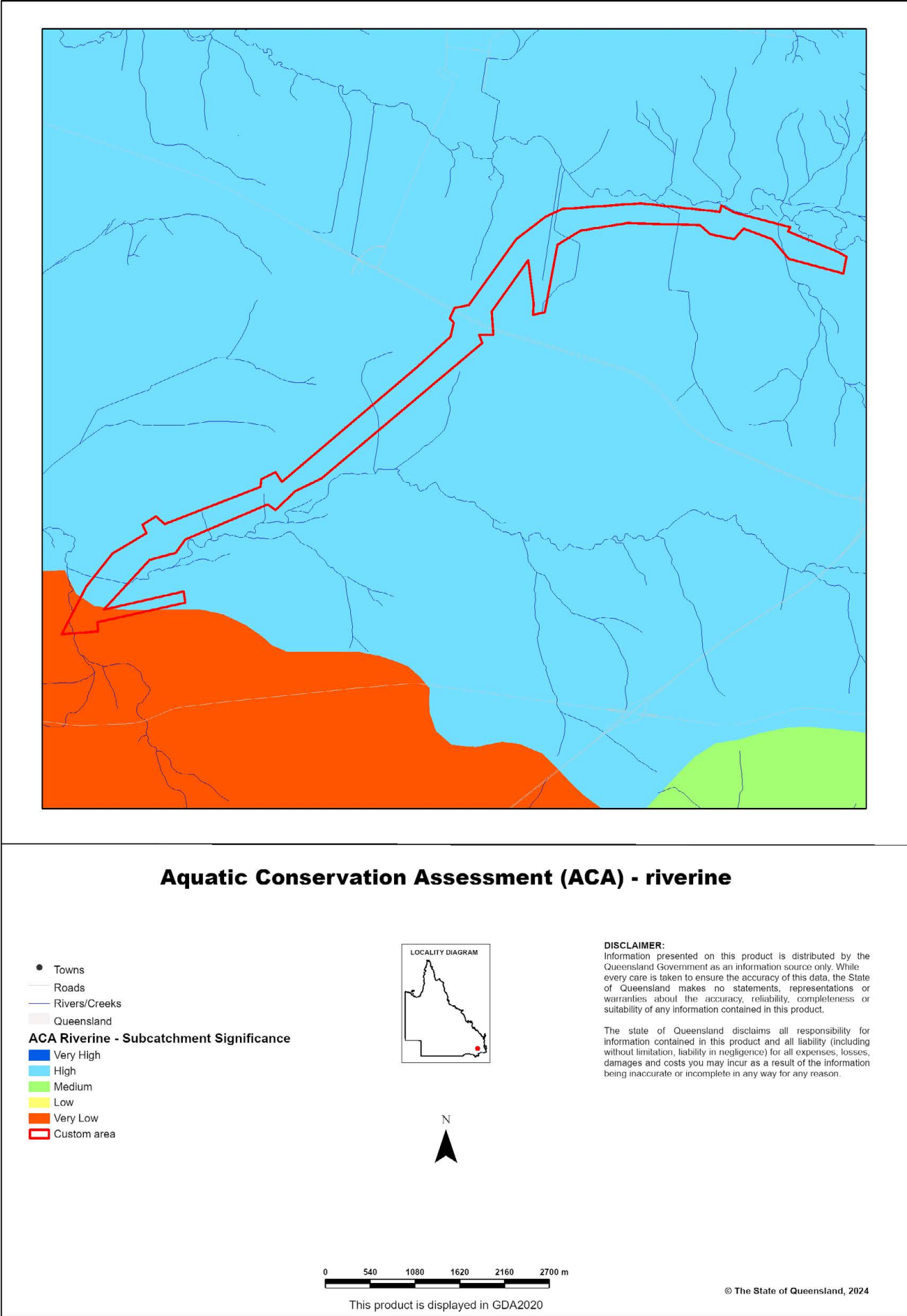
Map 3 - Corridors



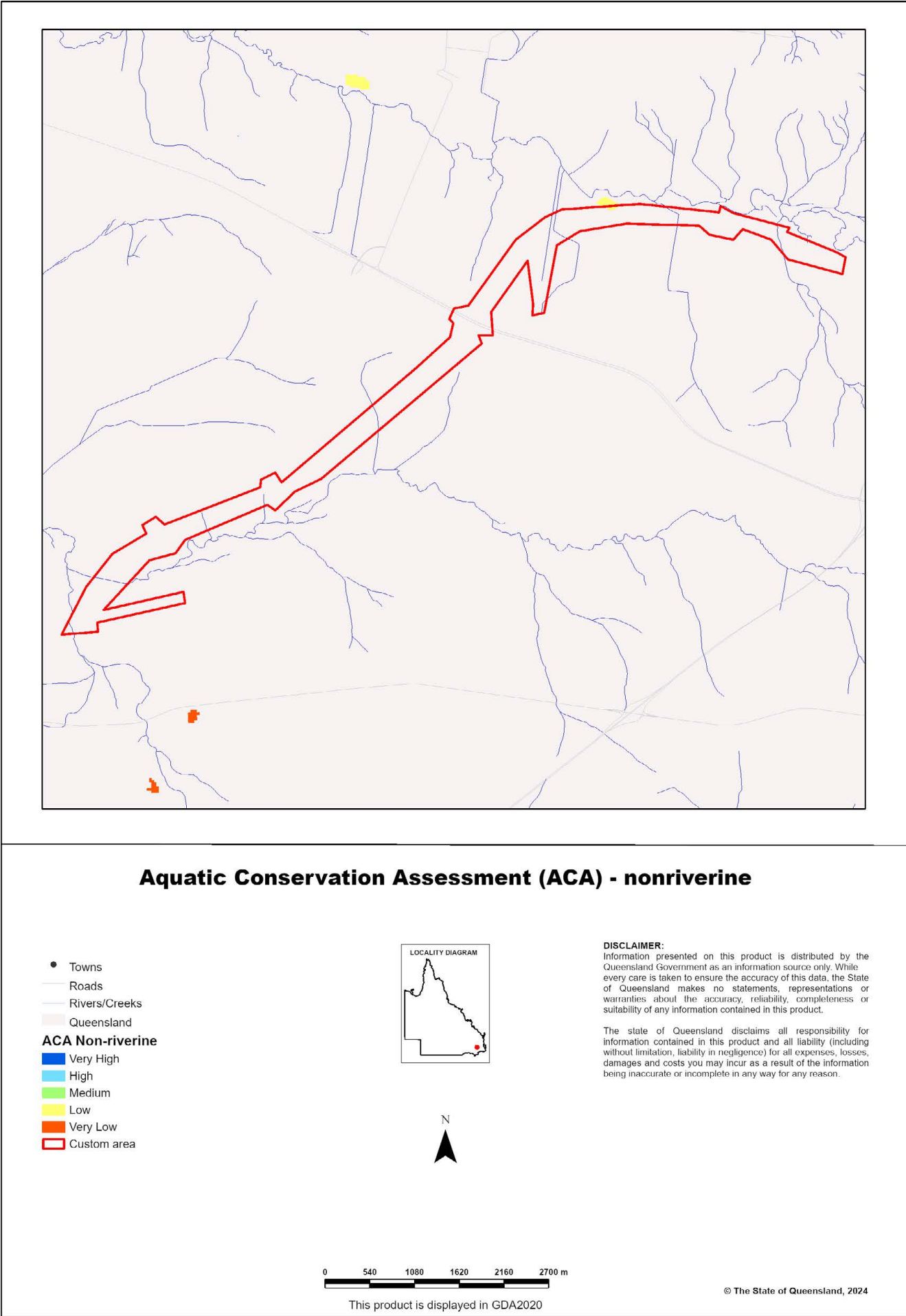
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



References

Clayton, P.D., Fielder, D.F., Howell, S. and Hill, C.J. (2006) *Aquatic biodiversity assessment and mapping method (AquaBAMM): a conservation values assessment tool for wetlands with trial application in the Burnett River catchment*. Published by the Environmental Protection Agency, Brisbane. ISBN 1-90928-07-3. Available at

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Morton, S. R., Short, J. and Barker, R. D. with an Appendix by G.F. Griffin and G. Pearce (1995). *Refugia for Biological Diversity in Arid and Semi-arid Australia*. Biodiversity Series, Paper No. 4, Biodiversity Unit, Environment Australia.

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

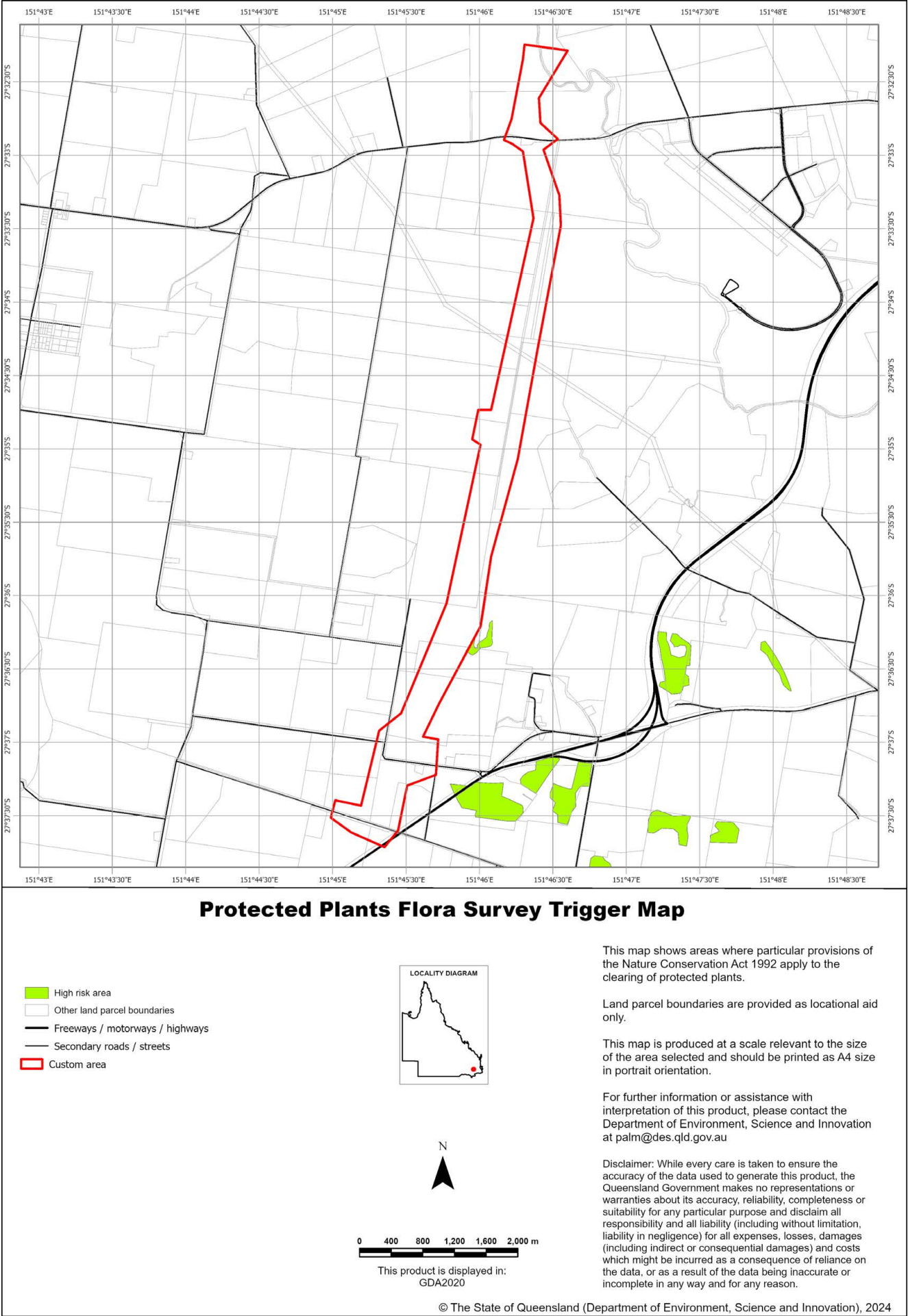
Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einiasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v2.3 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.6
Threatened Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:

<http://dds.information.qld.gov.au/DDS>

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DESI	- Department of Environment, Science and Innovation
EPBC	- <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see [section 89](#) of the Act.

Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and a field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@des.qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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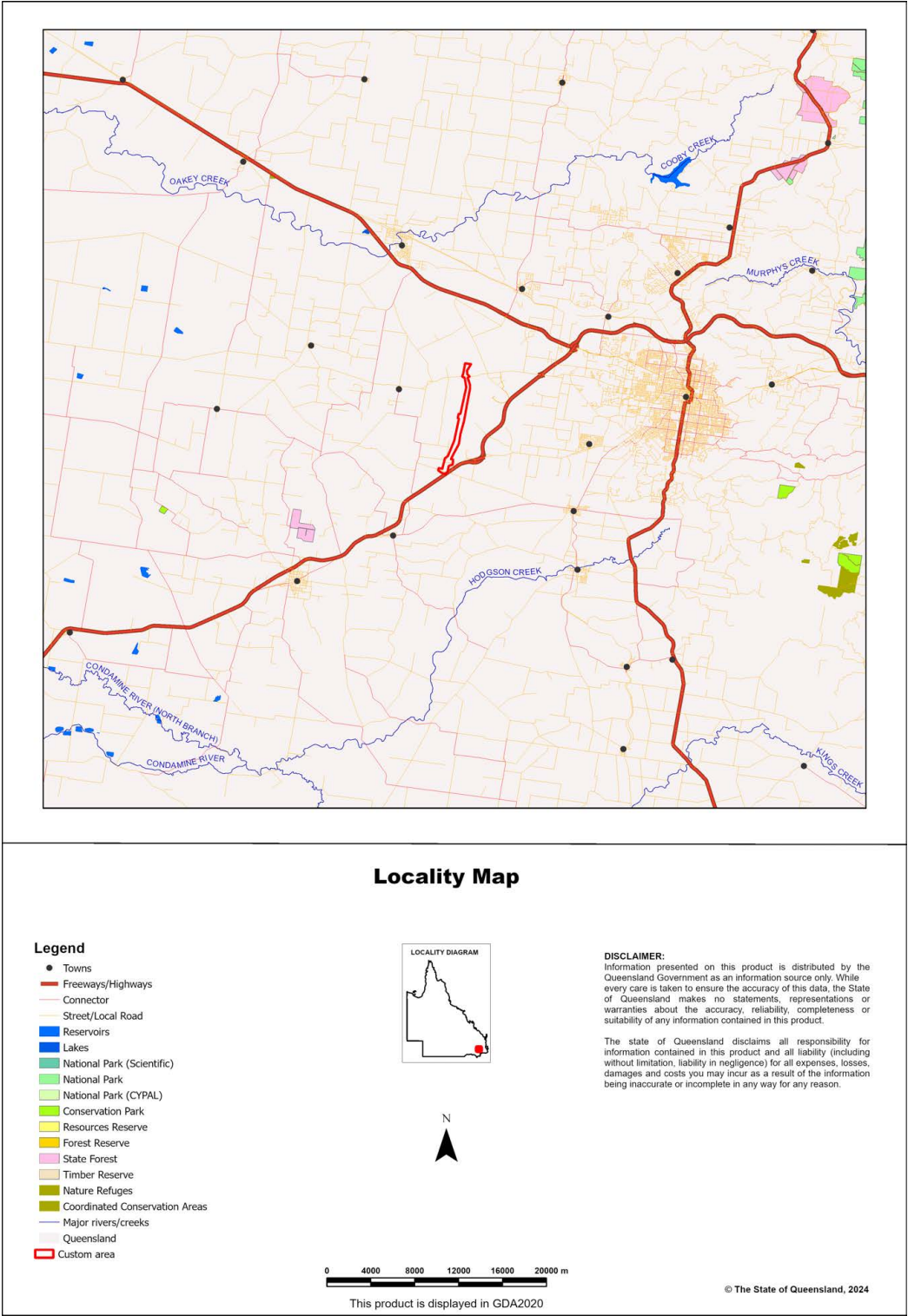
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI: Custom input, with area 424.73 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Toowoomba Regional	Balonne-Condamine	Brigalow Belt	Eastern Darling Downs



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
- *Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004* ;
- *Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008*;
- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	8.18 ha	1.9%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	15.66 ha	3.7%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	0.75 ha	0.2%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	0 ha	0.0%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	15.66 ha	3.7%
8e Regulated Vegetation - intersecting a watercourse	4.2 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0 ha	0.0%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways**4. Strategic Environmental Areas (SEA)**

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species**7a. Threatened (endangered or vulnerable) wildlife**

Values are present

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Values are present

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>	Keys boronia	V	None
<i>Calyptrorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarius casuarius johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Euastacus bindal</i>	Mount Elliot crayfish	CR	None
<i>Euastacus binzayedii</i>		CR	None
<i>Euastacus eungella</i>		E	None
<i>Euastacus hystricosus</i>		E	None
<i>Euastacus jagara</i>	Jagara hairy crayfish	CR	None
<i>Euastacus maidae</i>		CR	None
<i>Euastacus monteithorum</i>		E	None
<i>Euastacus robertsi</i>		E	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Melaleuca irbyana</i>	swamp tea-tree	E	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>	bopple nut	V	None
<i>Petrogale penicillata</i>	brush-tailed rock-wallaby	V	None
<i>Petrogale coenensis</i>	Cape York rock-wallaby	V	None
<i>Petrogale purpureicollis</i>	purple-necked rock-wallaby	V	None
<i>Petrogale sharmani</i>	Sharmans rock-wallaby	V	None
<i>Petrogale xanthopus celeris</i>	yellow-footed rock-wallaby (Qld subspecies)	V	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

Scientific name	Common name	NCA status	EPBC status	Migratory status
<i>Phascolarctos cinereus</i>	koala	E	E	None

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

**Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL). Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)*

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.21	O-dom	rem_oc

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Not applicable

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Not applicable

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets

9a. Legally secured offset areas - offset register areas

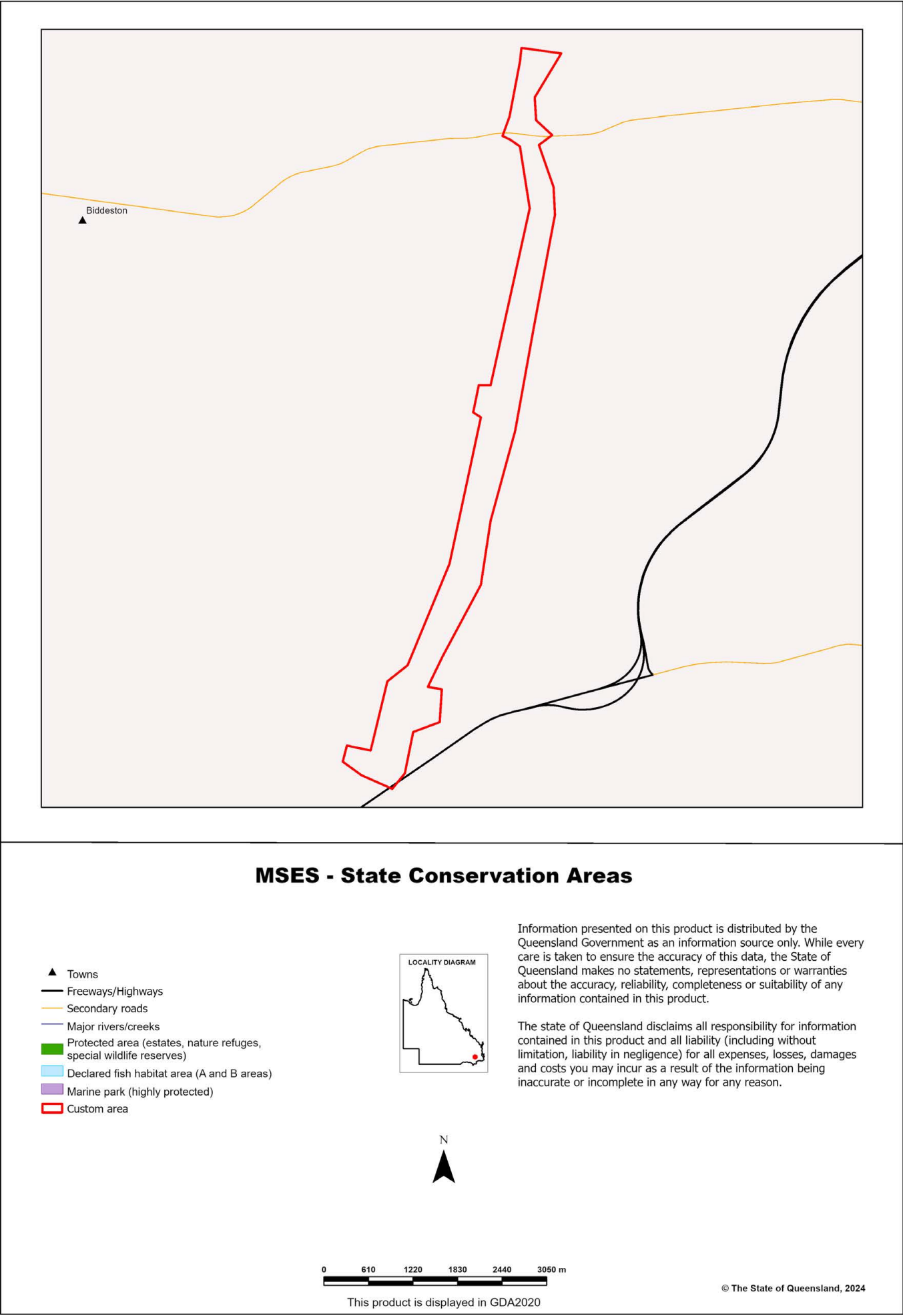
(No results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

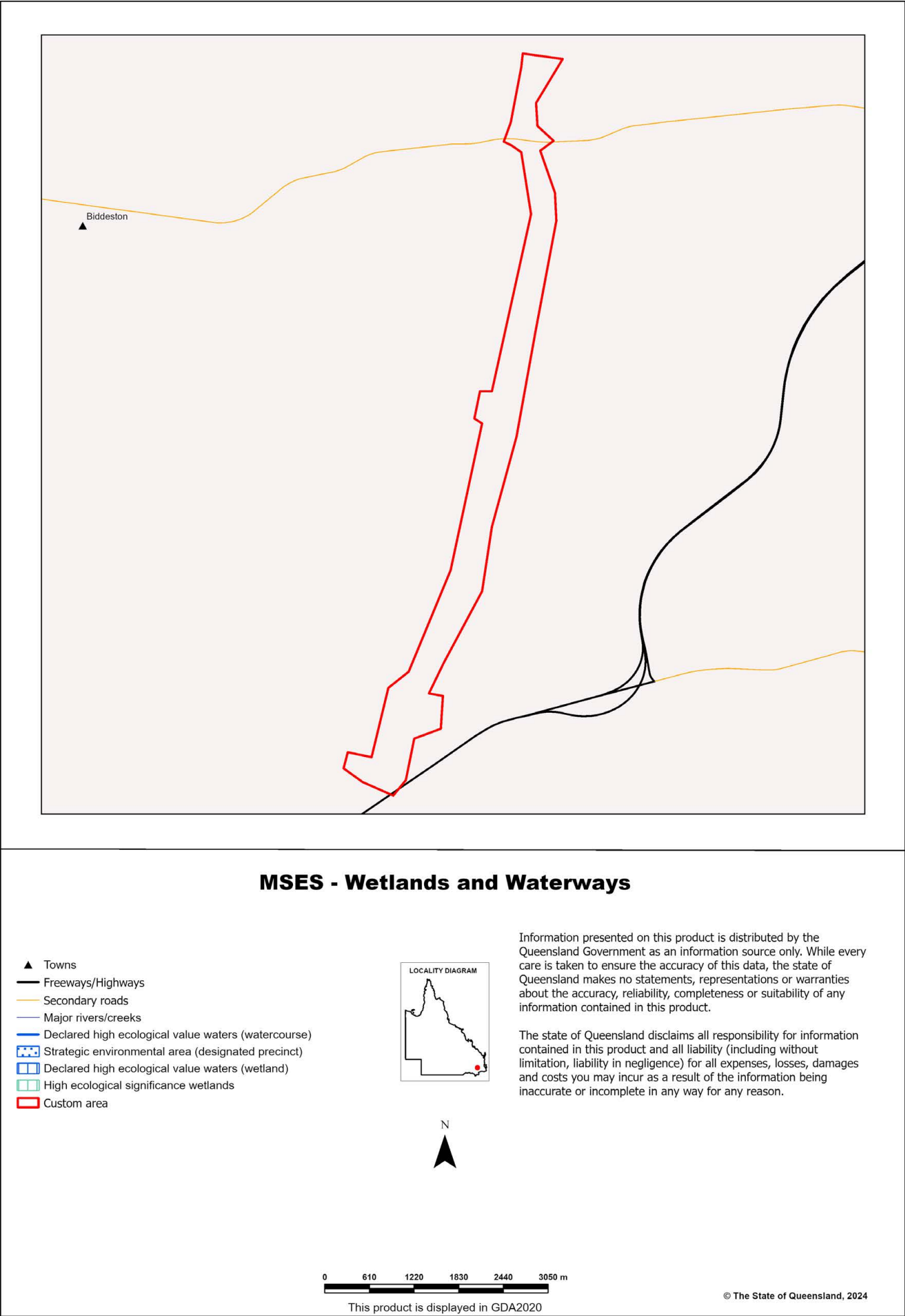
(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

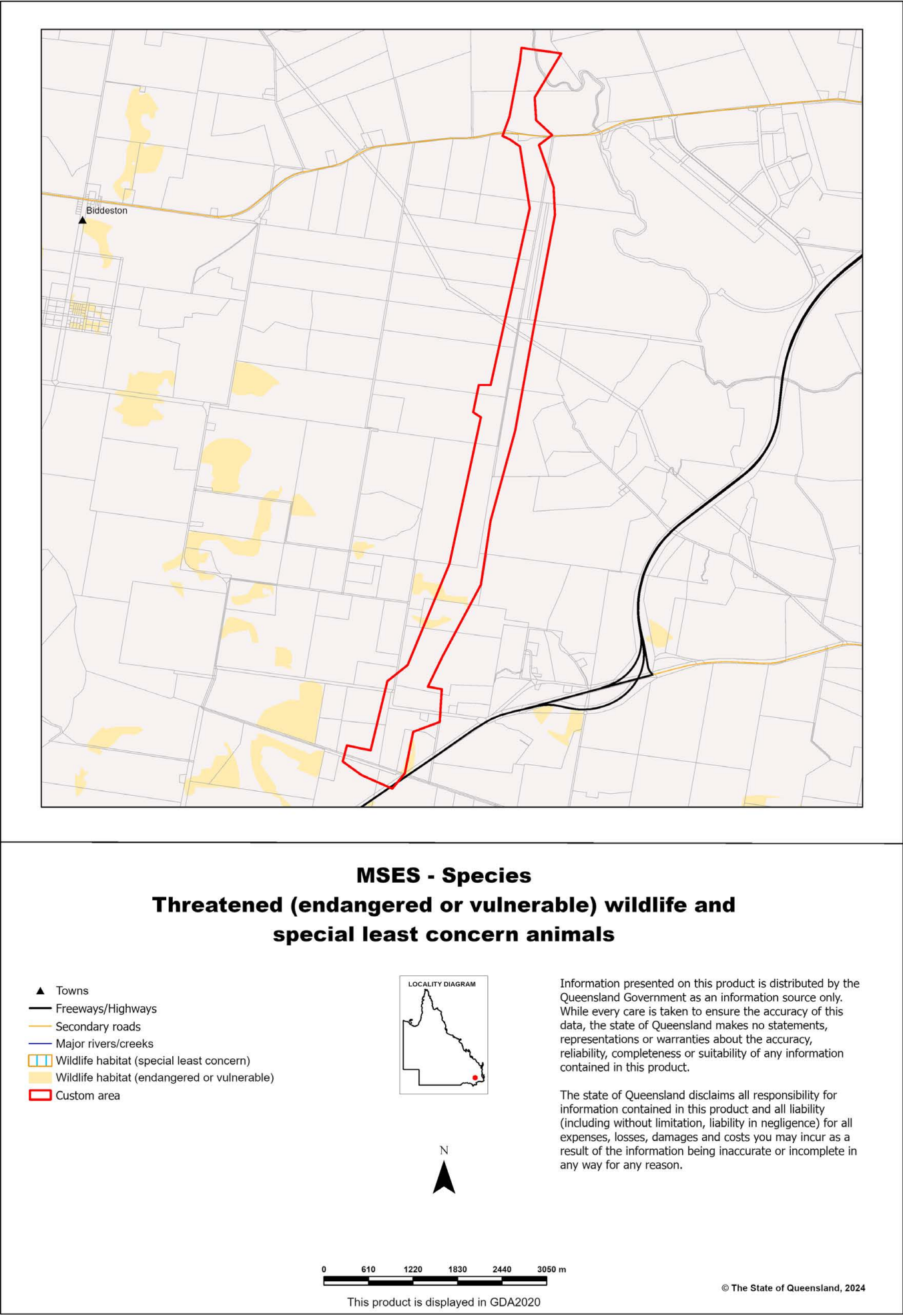
Map 1 - MSES - State Conservation Areas



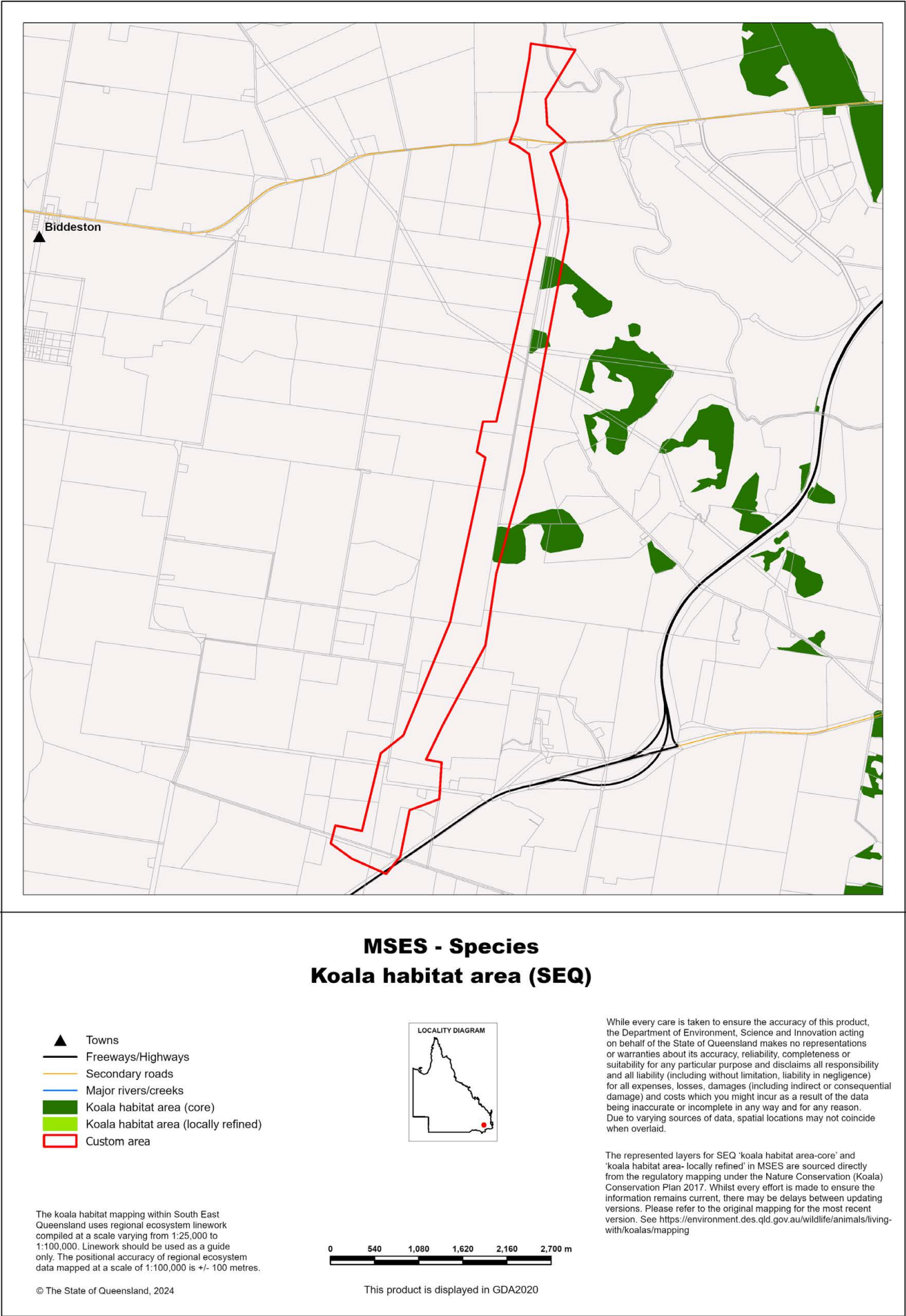
Map 2 - MSES - Wetlands and Waterways



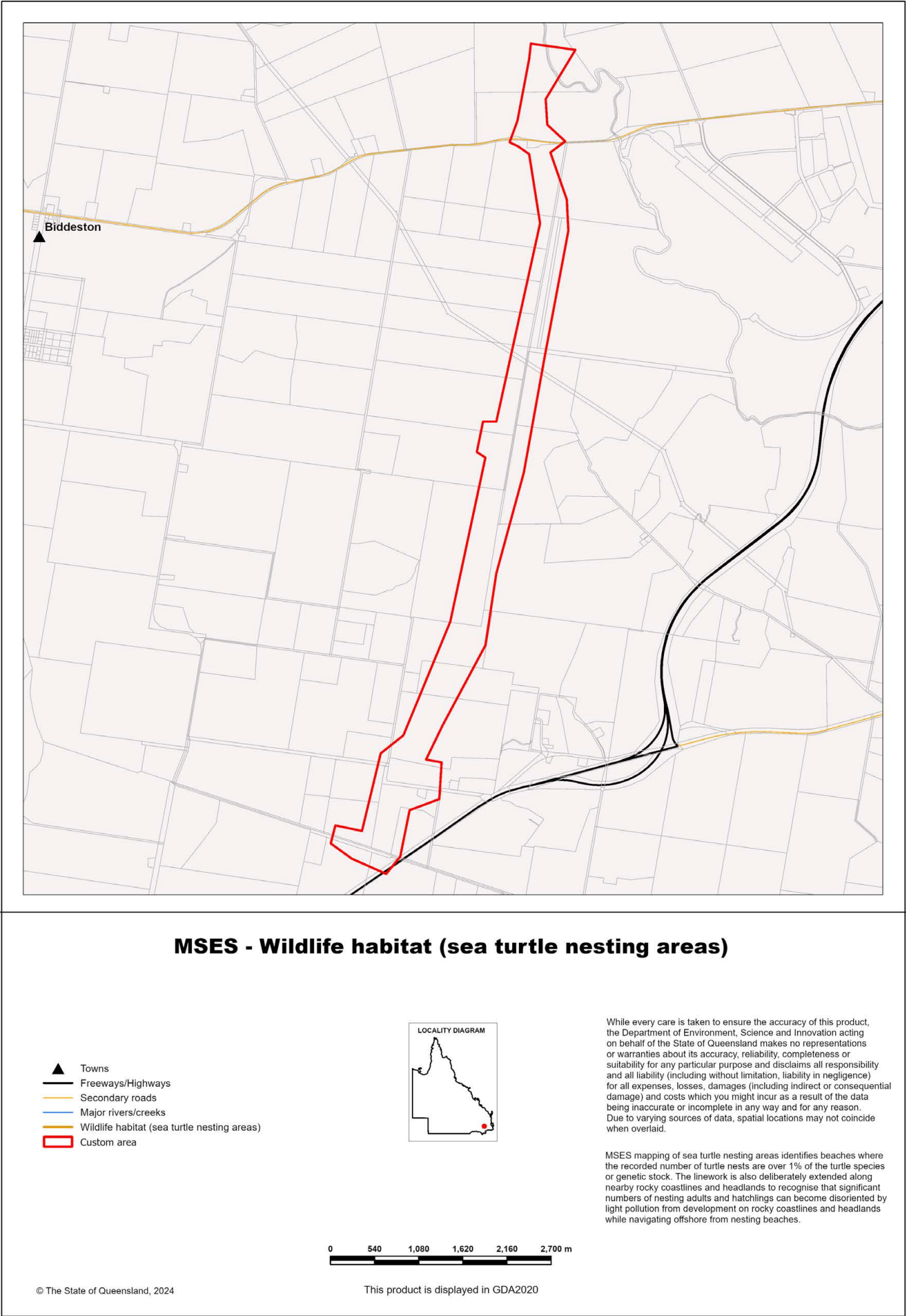
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



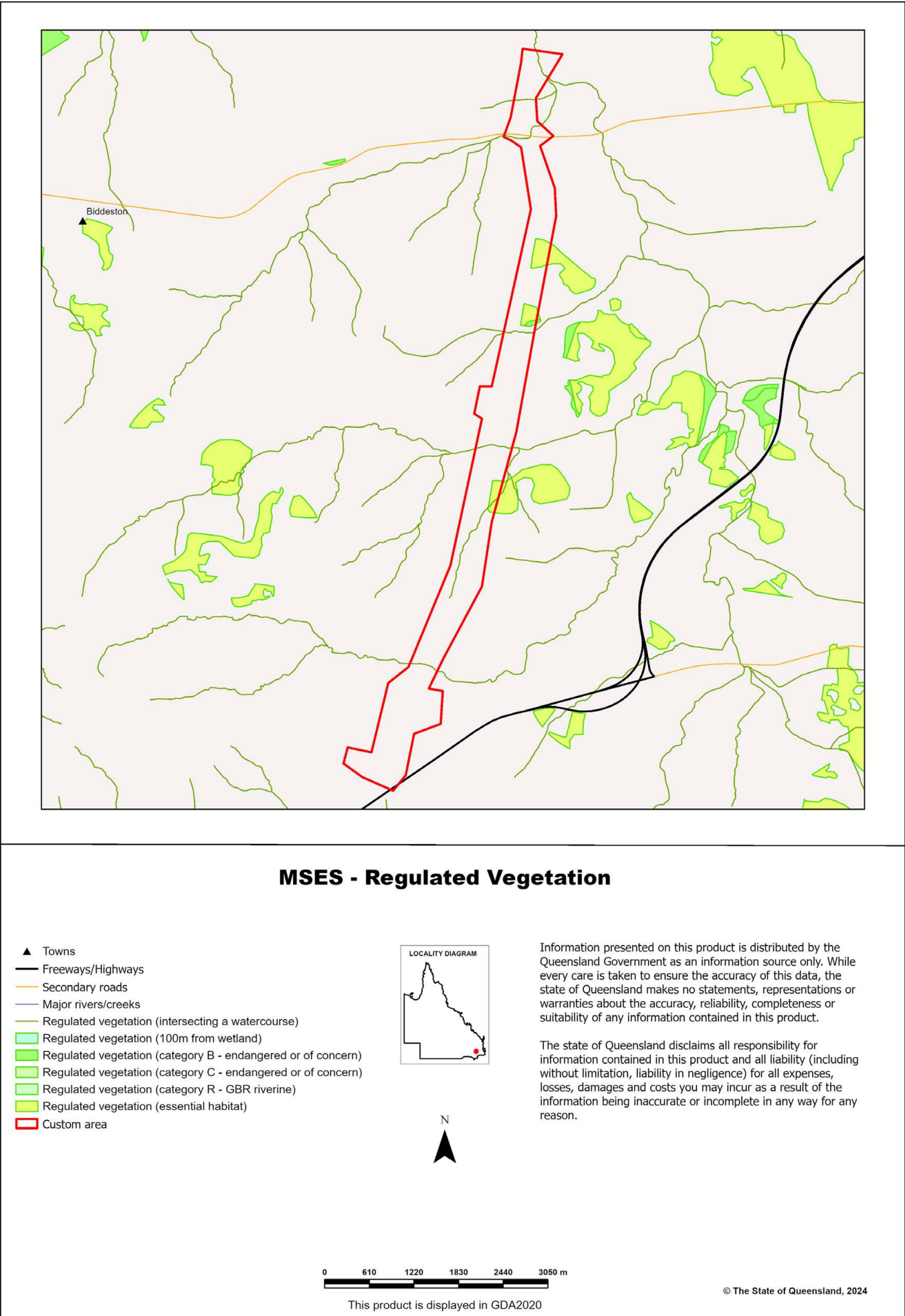
Map 3b - MSES - Species - Koala habitat area (SEQ)



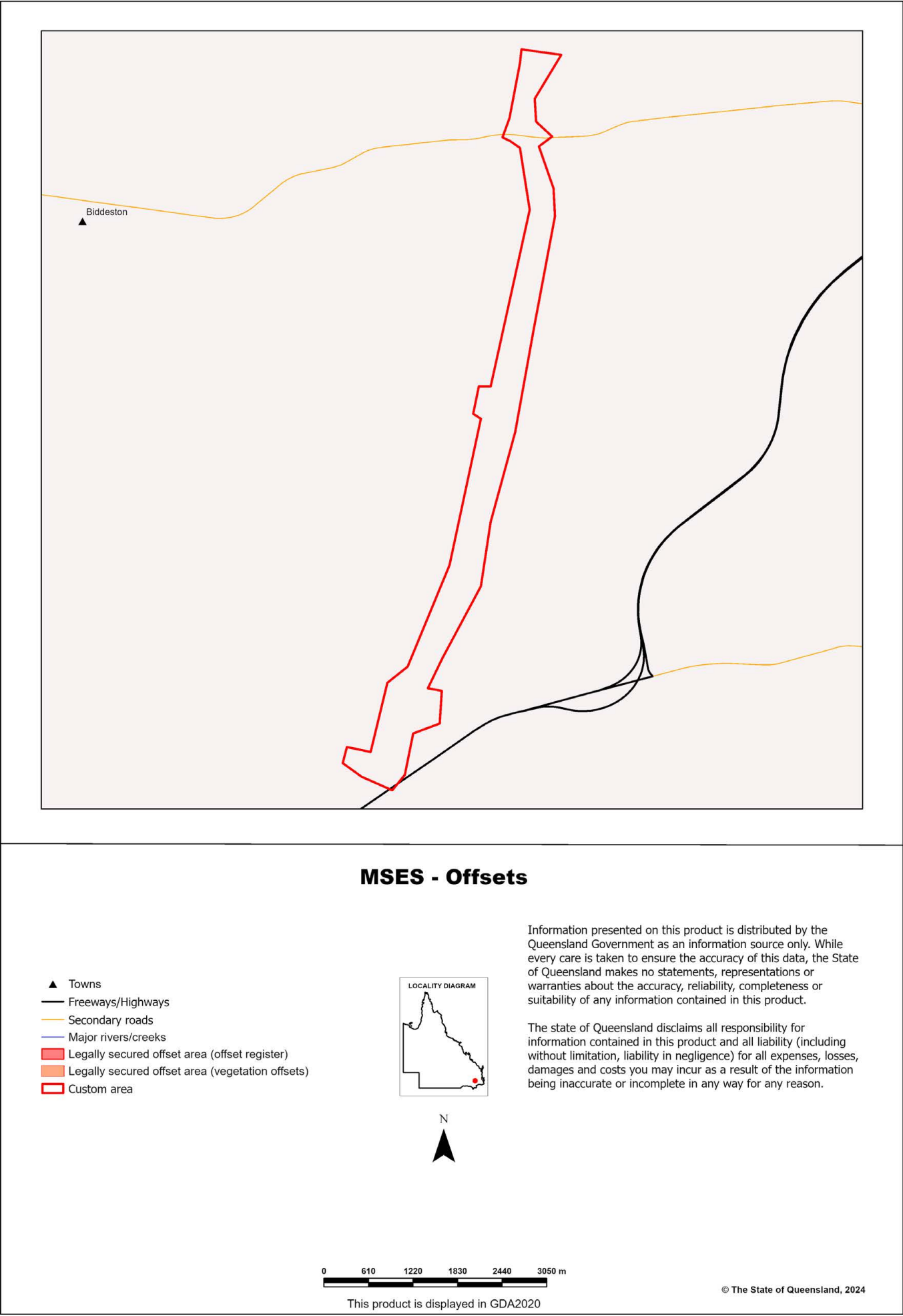
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DESI	- Department of Environment, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999

WetlandMaps Report



For selected area of interest Custom input

Current as at 5/06/2024

Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest(AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

Disclaimer

The State of Queensland, as represented by this department, gives no warranty in relation to the data (including without limitation, accuracy, reliability, completeness or fitness for a particular purpose) hosted on this website.

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Summary Information

Below is an overview of the area of interest.

Custom input
with area of 424.73 ha

Local Government(s)
Toowoomba Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Eastern Darling Downs

Catchment(s)
Condamine River

Drainage sub-basin
Balonne-Condamine

NRM Regions

The area of interest is in the following NRM region:

Southern Queensland Landscapes

Water Resource Plan Boundaries

The area of interest is in the following Water Resource Plan:

Condamine and Balonne

Great Artesian Basin and Other Regional Aquifers

Learn more about how Wetlands are mapped in Queensland

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include::**

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude::**

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria
- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Links and support

Other sites that deliver wetland related information include:

Wetland *Summary* tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

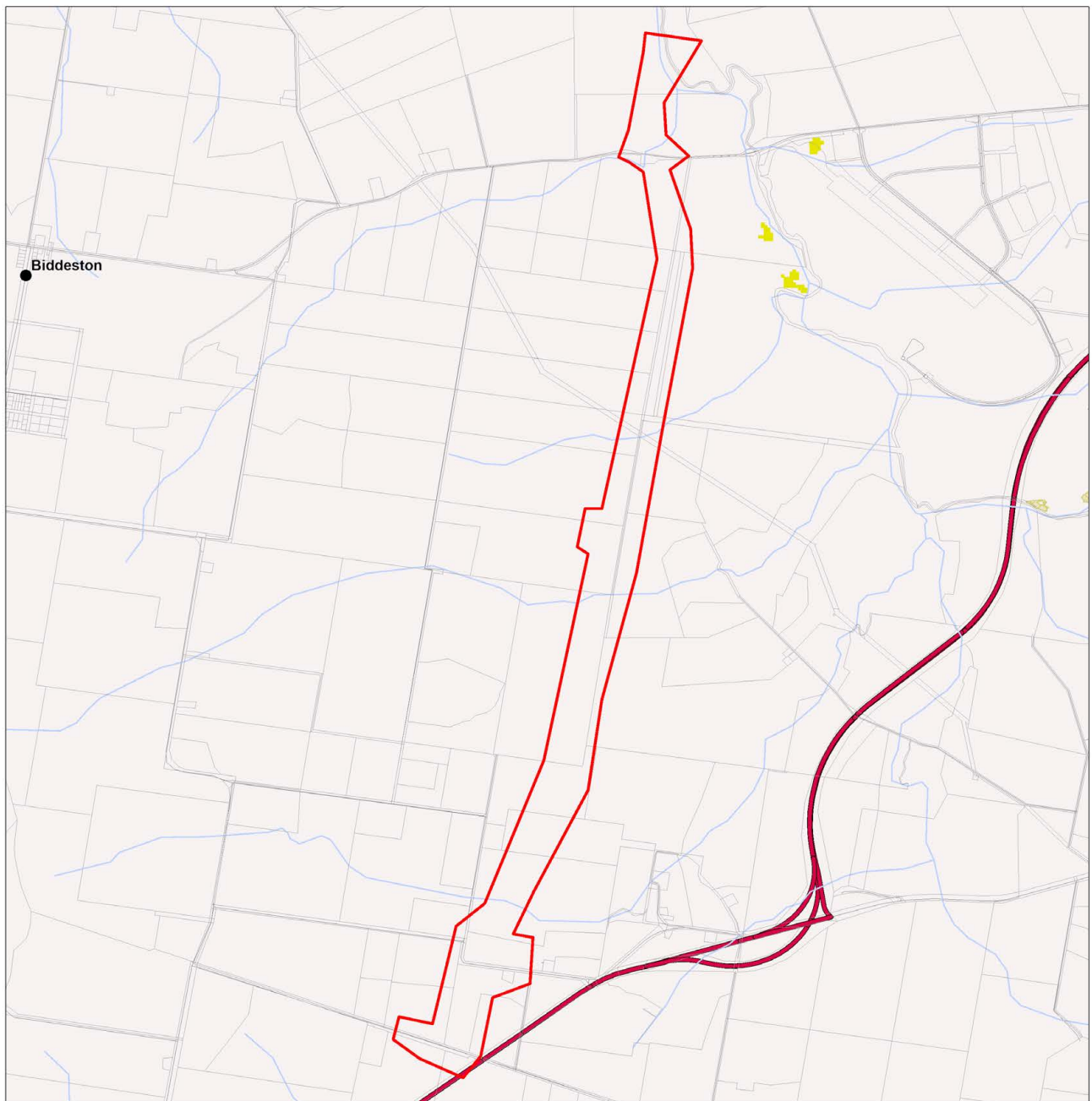
Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

Regional Ecosystem Mapping information:
<https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

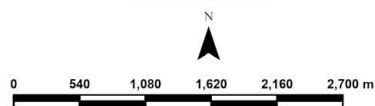
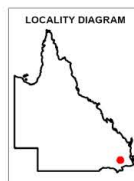
Aquatic Conservation Assessments: [Aquatic Conservation Assessments \(ACA\) and AquaBAMM \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Dependant Ecosystems information:
<https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Queensland Wetland Map

- ▲ Springs
- Dams and weirs
- Towns
- Freeways/Highways
- Roads
- Cadastral Boundaries
- Sub-basin
- Riverine System Drainage Lines**
 - Major
 - Minor
- Wetland Mapping**
 - Hydrologically natural Wetlands**
 - Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
 - Hydrologically Modified and Artificial Wetlands**
 - Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
 - Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
 - Contains Wetlands (1 - 50%)
 - Custom area

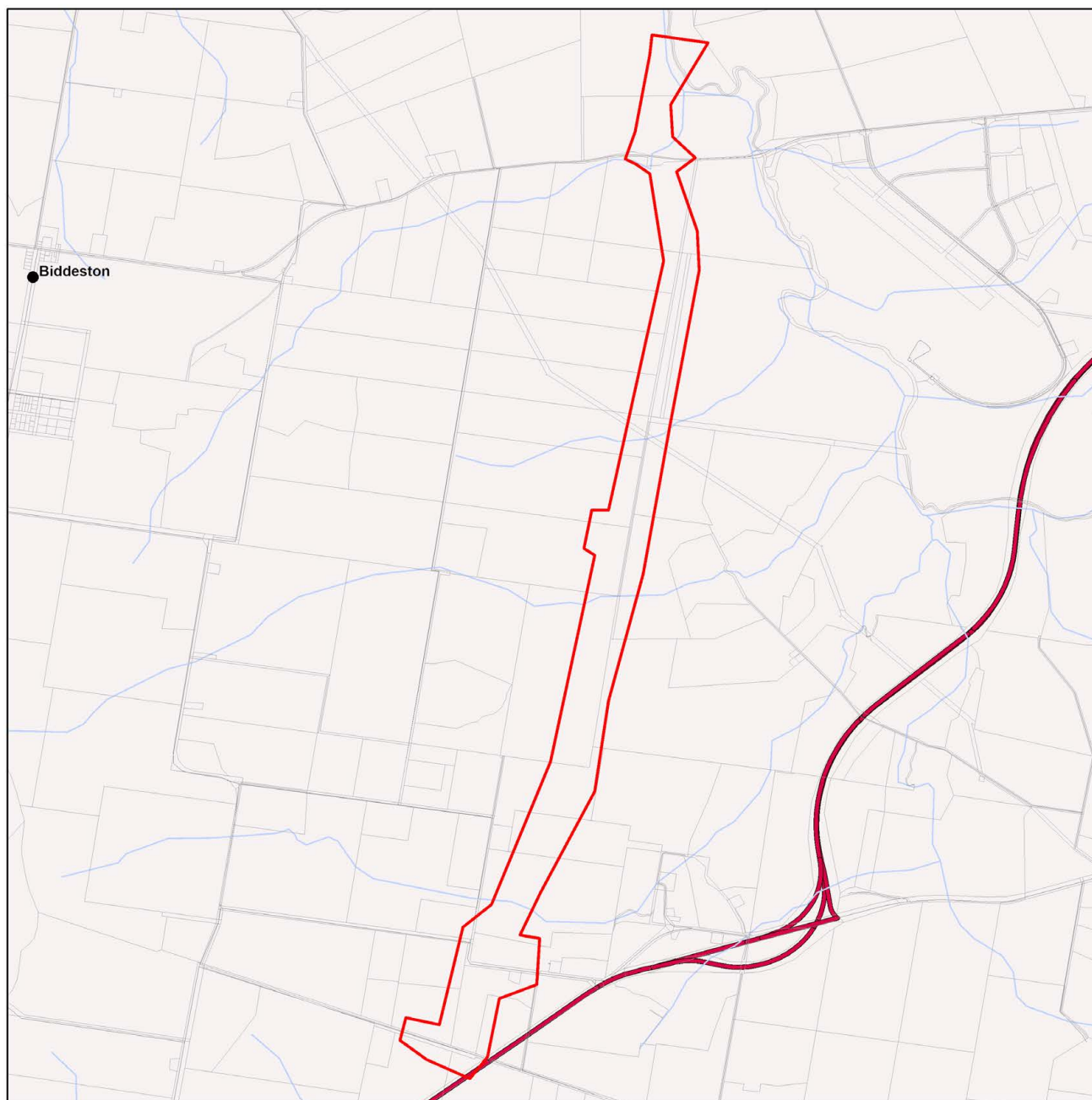


This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

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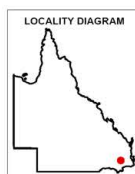


Queensland Wetlands of Importance Map

- Towns
- ▭ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▭ Sub-basin
- ▭ Directory of Important Wetlands
- ▭ Ramsar Wetlands

Riverine System Drainage Lines

- ▬ Major
- ▬ Minor
- ▭ Custom area

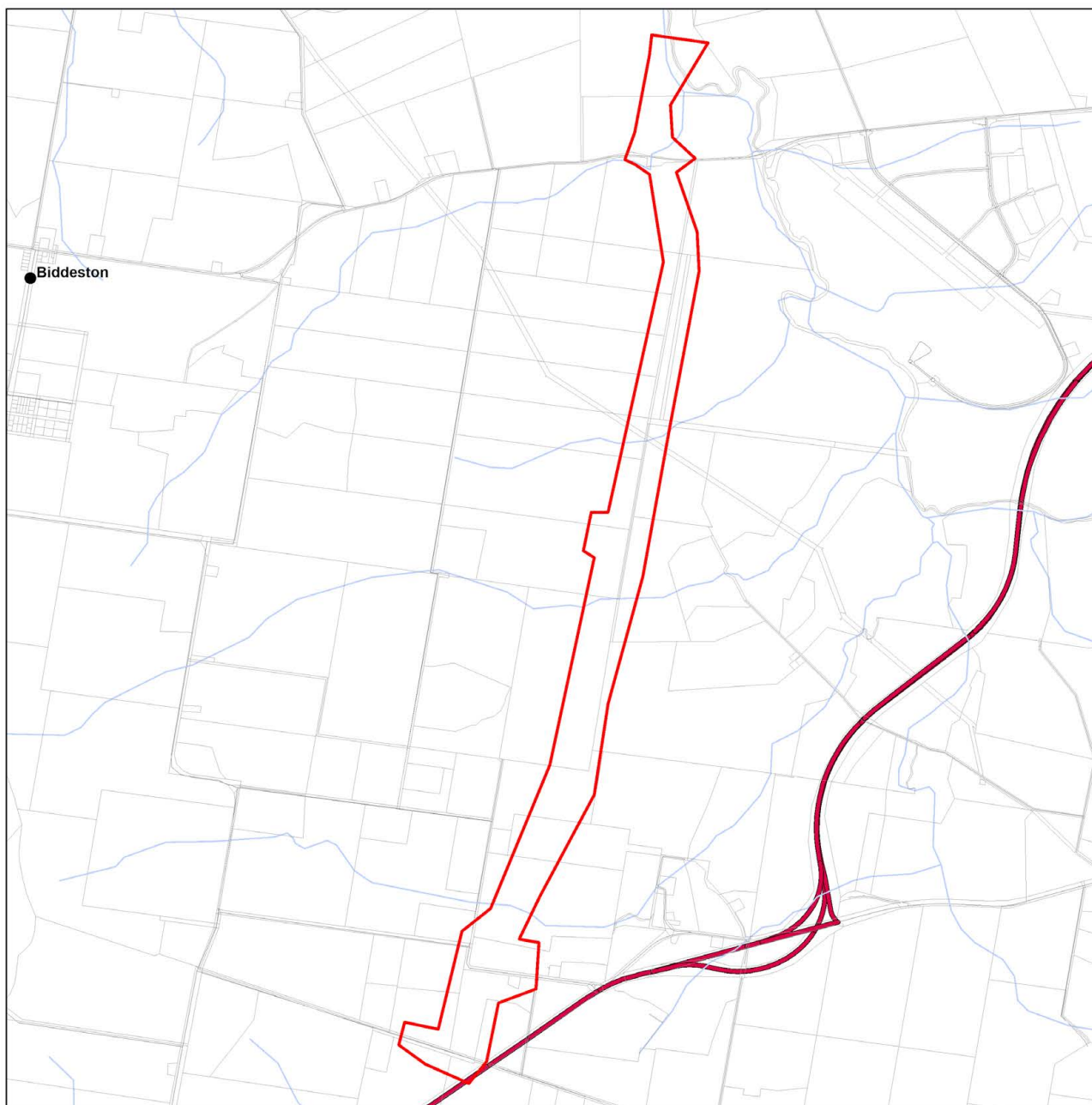


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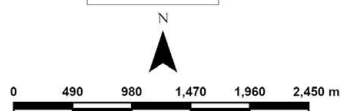
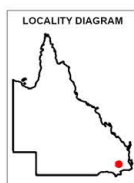
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Queensland Protected Area Map

- Towns
- ▬ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▬ Sub-basin
- Riverine System Drainage Lines**
 - ▬ Major
 - ▬ Minor
- Marine Parks**
 - General Use Zone
 - Habitat Protection Zone
 - Estuarine Conservation Zone
 - Conservation Park Zone
 - Buffer Zone
 - Scientific Research Zone
 - Marine National Park Zone
 - Preservation Zone
- Protected Areas**
 - National Park
 - National Park (Scientific)
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Custom area



This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

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Wetland habitat types in the AOI. Total area: 0 ha

There are no results for Queensland Wetland Mapping in the AOI

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps

Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps

Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the input coordinates.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website <https://www.resources.qld.gov.au/>

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Custom input, with area 424.73 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Toowoomba Regional	Balonne-Condamine	Brigalow Belt	Eastern Darling Downs

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.75	0.18
Of concern	0.00	0.00
No concern at present	39.28	9.25
Total remnant vegetation	40.03	9.42

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated into a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website <https://www.resources.qld.gov.au/>.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

*****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.*

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.3.21	Dichanthium sericeum and/or Astrebla spp. grassland on alluvial plains. Cracking clay soils	Endangered	0.75	0.18
11.8.5	Eucalyptus orgadophila open woodland on Cainozoic igneous rocks	No concern at present	39.28	9.25
non-remnant	None	None	384.70	90.58

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.3.21	Pre-clearing 453000 ha; Remnant 2021 58000 ha	30a	Not a Wetland	Low
11.8.5	Pre-clearing 631000 ha; Remnant 2021 344000 ha	11a	Not a Wetland	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.3.21	11.3.21: Habitat for threatened flora species including <i>Thesium australe</i> , <i>Picris evae</i> , <i>Dichanthium queenslandicum</i> and the near threatened flora species <i>Digitaria porrecta</i> and fauna species including grassland earless dragon <i>Tympanocryptis pinguicolla</i> , five-clawed worm skink <i>Anomalopus mackayi</i> and grey snake <i>Hemiaspis damelii</i> .
11.8.5	11.8.5: In southern part of bioregion, habitat for a number of threatened plant species including <i>Picris evae</i> and <i>Thesium australe</i> and near threatened species <i>Digitaria porrecta</i> and <i>Discaria pubescens</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>). 11.8.5a: This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: <https://publications.qld.gov.au/dataset/redd/resource/>

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	384.70	90.58
11a	Moist to dry open forests to woodlands dominated by <i>Eucalyptus orgadophila</i> (mountain coolibah). Some areas dominated by <i>E. tereticornis</i> (blue gum), <i>E. melliodora</i> (yellow box), <i>E. albens</i> (white box), <i>E. crebra</i> (narrow-leaved red ironbark) or <i>E. melanophloia</i> (silver-leaved ironbark).	39.28	9.25
30a	Tussock grasslands dominated by <i>Astrebla</i> spp. (mitchell grass) or <i>Dichanthium</i> spp. (bluegrass) often with <i>Eulalia aurea</i> (silky browntop) on alluvia.	0.75	0.18

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: <http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

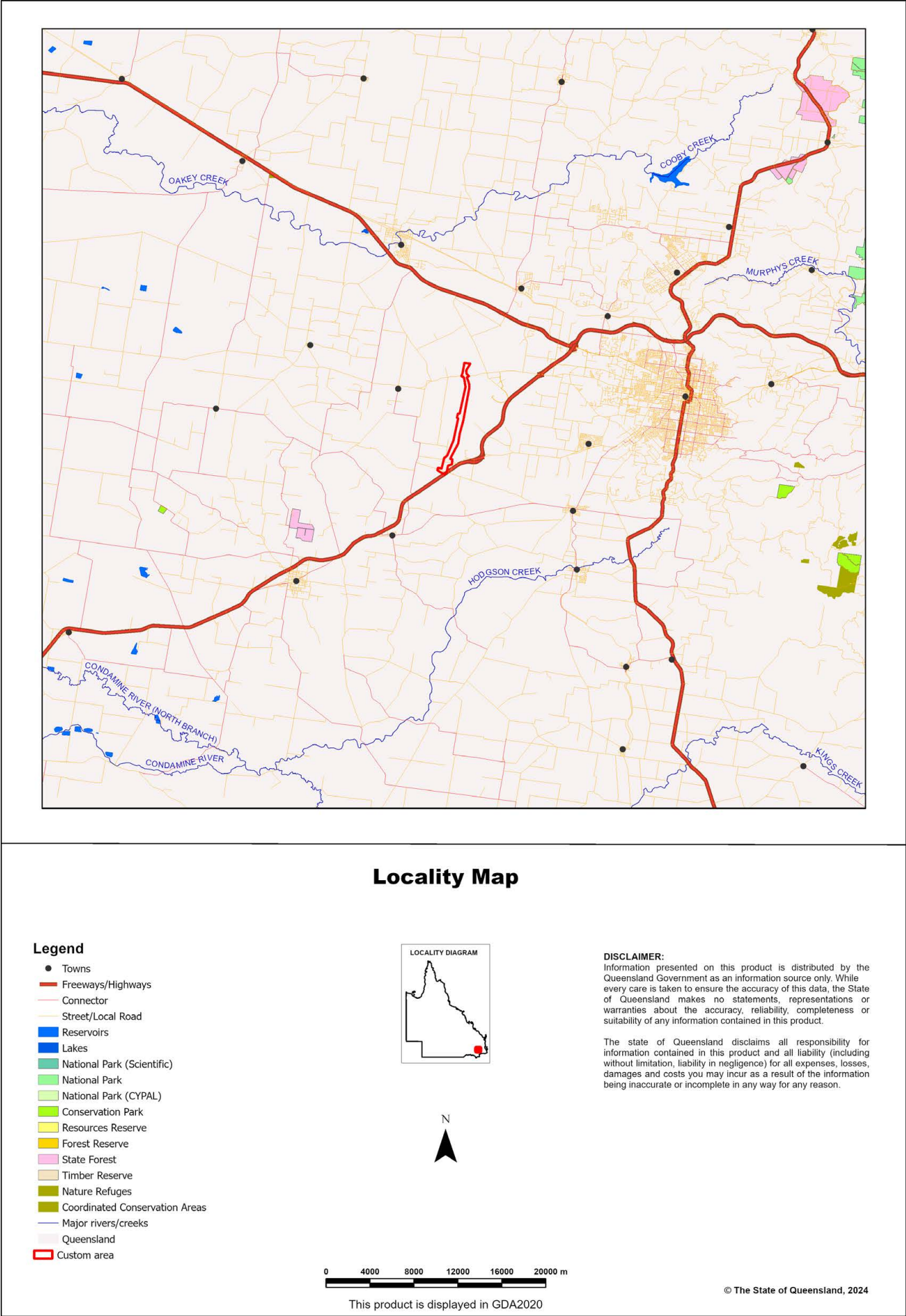
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

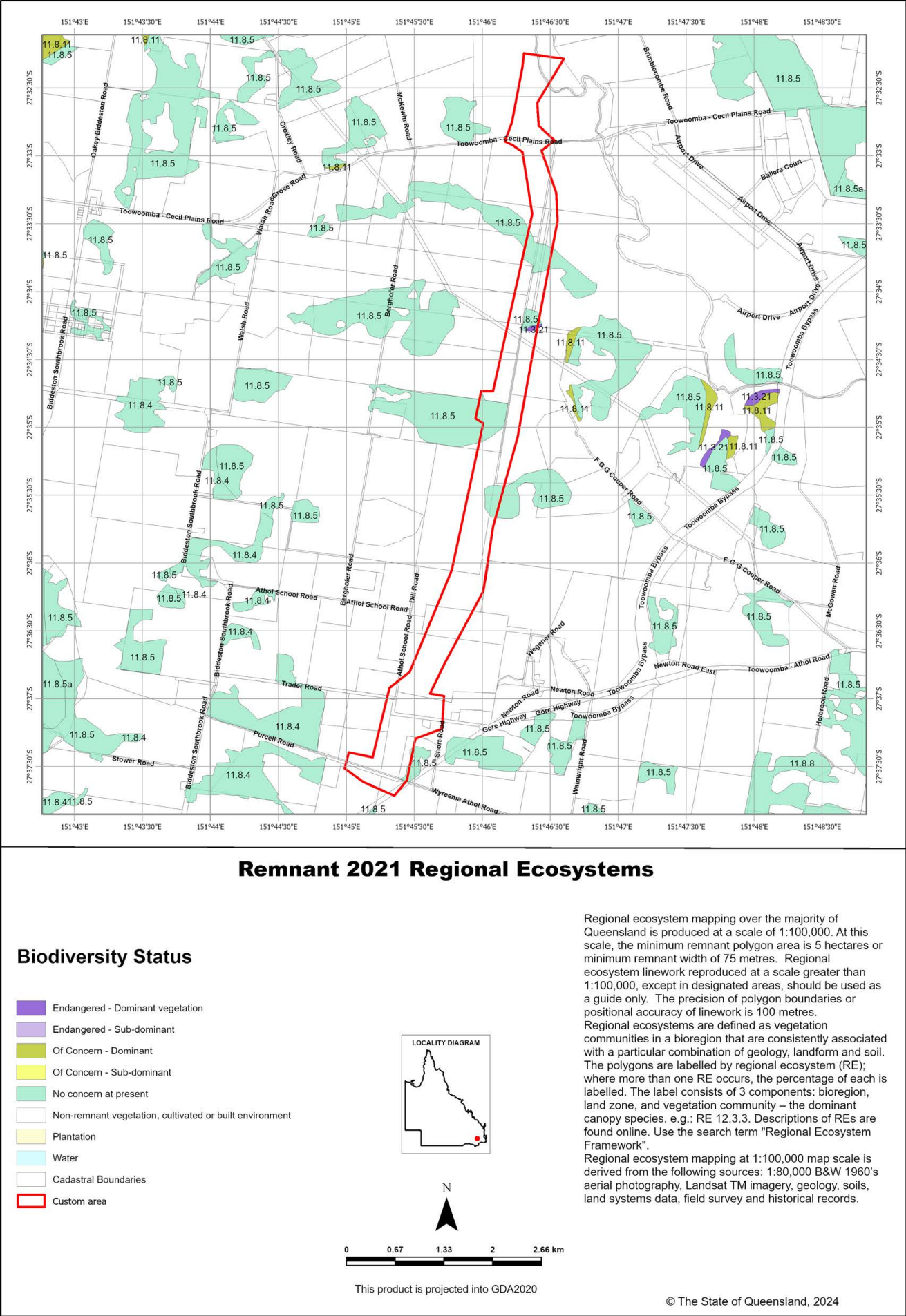
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.3.21	Not currently available	Available
11.8.5	Available	Available
non-remnant	Not currently available	Not currently available

Maps

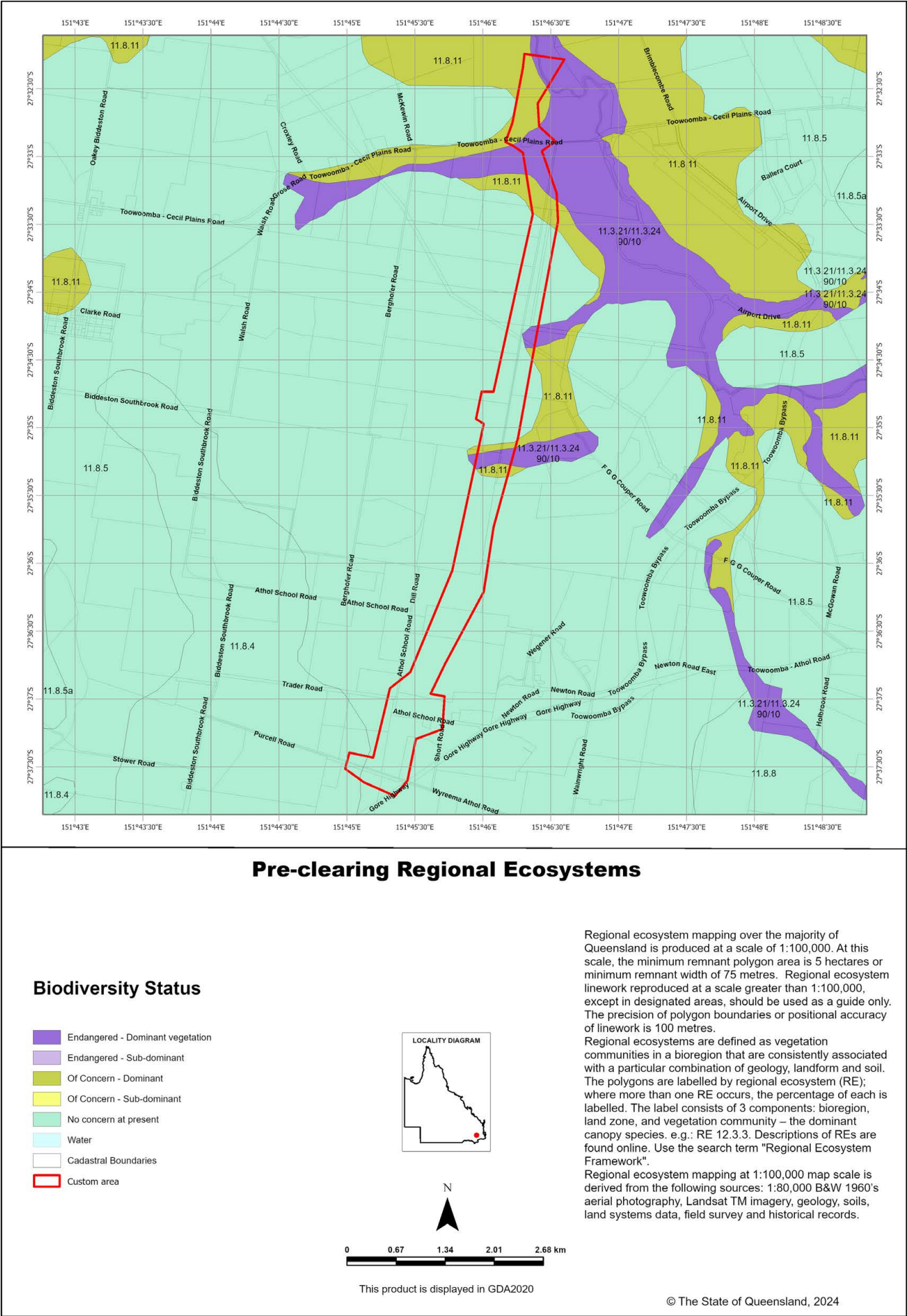
Map 1 - Location



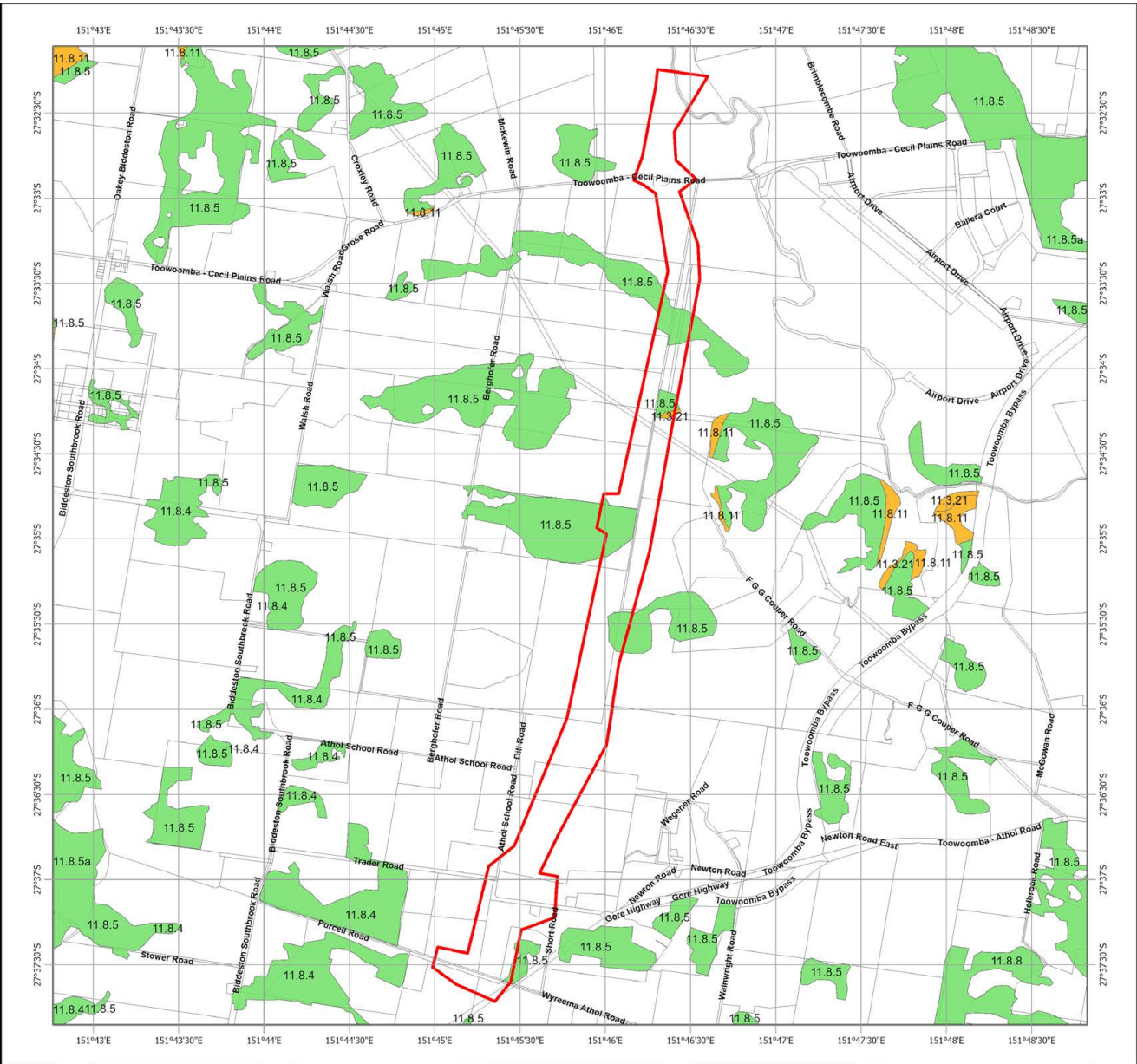
Map 2 - Remnant 2021 regional ecosystems



Map 3 - Pre-clearing regional ecosystems



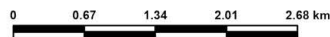
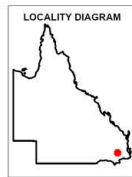
Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

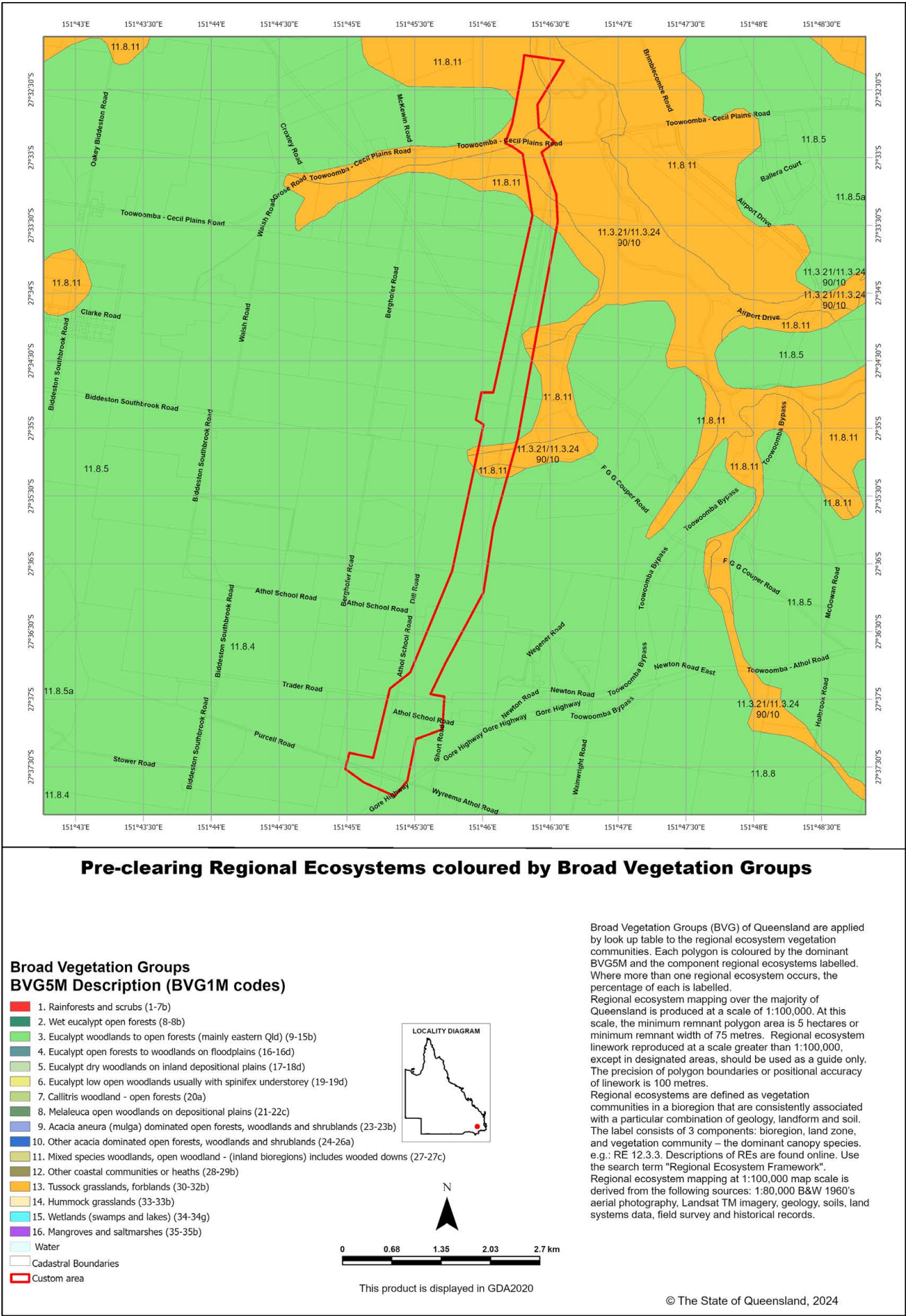
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries
- Custom area



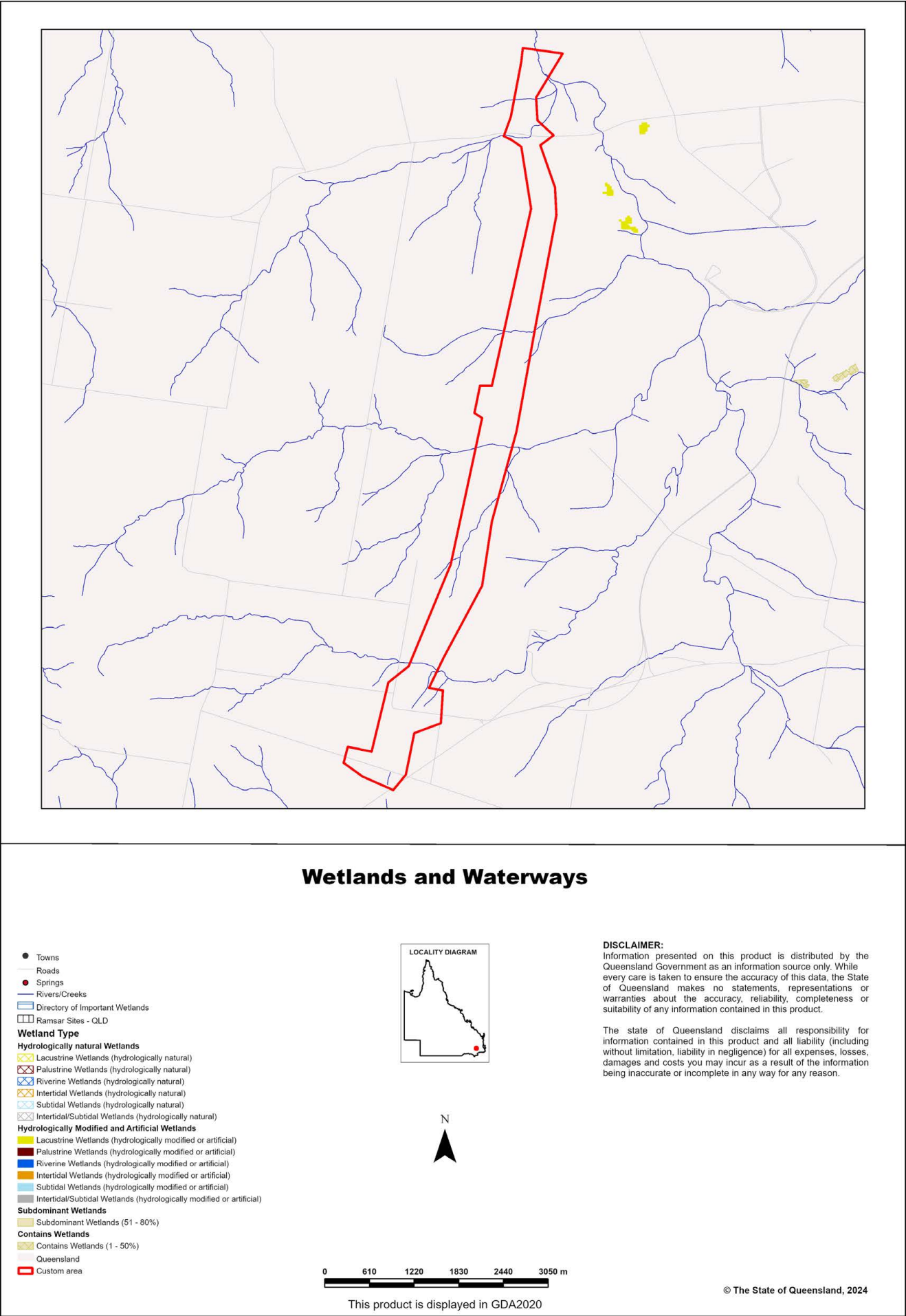
This product is displayed in GDA2020

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records. Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.

Map 5 - Pre-clearing regional ecosystems by BVG (5M)



Map 6 - Wetlands and waterways



Links and Other Information Sources

The Department of Environment, Science and Innovation's Website -

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/> provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation>

The methodology for mapping regional ecosystems can be downloaded from:

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

Benchmarks can be obtained from: <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/spatial-catalogue)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

<https://qldglobe.information.qld.gov.au/>

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science.

<https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086>

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F., Richter, D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane.

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/>

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

[Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/information/spatial-catalogue)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Custom input

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Please direct queries about these reports to: biodiversity.planning@des.qld.gov.au

Disclaimer

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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Custom input, with area 424.73 ha

Local Government(s)
Toowoomba Regional
Bioregion(s)
Brigalow Belt
Subregion(s)
Eastern Darling Downs
Catchment(s)
Balonne-Condamine

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Brigalow Belt v2.1	Queensland Murray-Darling and Bulloo Basins v2.1	Queensland Murray-Darling and Bulloo Basins v.2.1

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.75	0.18
Of concern	0.00	0.00
No concern at present	39.28	9.25

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of Environment, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
Regional	39.28	9.25
State	0.75	0.18

Table 5: Non-riverine wetlands intersecting the AOI

(No Records)

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

Name	Permanency
WESTBROOK CREEK	Non-perennial

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of Environment, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	120.09	28.27
Very Low	304.64	71.73

Table 8: Summary table, aquatic conservation significance (non-riverine)
(No Records)

Biodiversity Planning Assessments

Introduction

The Department of Environment, Science and Innovation (DESI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DESI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

<http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State	0.75	0.18
Regional	39.28	9.25

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in

protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Local or Other Values	Refer to diagnostic data for additional information	39.28	9.25
State	Remnant contains at least 1 Endangered RE (B1) & Nat. Threatened Ecol. Community (B1)	0.75	0.18

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	0.00	0.00	0.00	0.00	23.47	5.53	16.56	3.90
B1: Ecosystem Value (Bioregion)	0.75	0.18	0.00	0.00	39.28	9.25	0.00	0.00
B2: Ecosystem Value (Subregion)	0.75	0.18	39.28	9.25	0.00	0.00	0.00	0.00
C: Tract Size	0.00	0.00	0.00	0.00	0.00	0.00	40.03	9.42
D1: Relative RE Size (Bioregion)	0.00	0.00	0.00	0.00	0.00	0.00	40.03	9.42
D2: Relative RE Size (Subregion)	0.00	0.00	0.00	0.00	0.00	0.00	40.03	9.42
F: Ecosystem Diversity	0.00	0.00	0.00	0.00	4.93	1.16	35.10	8.26

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
G: Context and Connection	4.18	0.98	0.00	0.00	0.75	0.18	35.10	8.26

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Regional	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	39.28	9.25
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	0.75	0.18

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al.* 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to assess overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ia: Centres of Endemism	0.75	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	0.75	0.18	39.28	9.25	0.00	0.00	0.00	0.00
Ic: Disjunct Populations	0.75	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Id: Limits of Geographic Ranges	0.00	0.00	0.75	0.18	0.00	0.00	0.00	0.00
Ie: High Species Richness	0.00	0.00	0.75	0.18	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:

- Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
- Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
- Maintaining large scale seasonal/migratory species processes and movement of fauna;
- Maximising connectivity between large tracts/patches of remnant vegetation;
- Identifying key areas for rehabilitation and offsets; and

- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial

- Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
- Follow major watershed/catchment and/or coastal boundaries;
- Incorporate major altitudinal/geological/climatic gradients;
- Include and maximise connectivity between large tracts/patches of remnant vegetation;
- Include and maximise connectivity between remnant vegetation in good condition; and

- Riparian

- Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
	40.03	9.42

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
brbs_fl_36	Mountain coolibah remnants, Eastern Darling Downs	Regional	lb (refugia): H
brbs_l_15	Relictual subregions (less than 30% remnant vegetation) - remnant vegetation	Regional	lb (refugia): H
brbs_l_41	Remnant grasslands, Eastern Darling Downs	State	la (endemic richness): VH; lb (refugia): VH; lc (disjunct populations): VH; ld (range limits): H; le (species richness): H

Expert panel decision descriptions:

Decision Number	Description
brbs_fl_36	The Eastern Darling Downs subregion contains the southern limits of mountain coolibah <i>Eucalyptus orgadophila</i> woodlands on basalt hills (11.8.5). The community is considered to provide important habitat for several threatened plant species including: <i>Digitaria porrecta</i> , <i>Discaria pubescens</i> , <i>Picris evae</i> and <i>Thesium australe</i> .
brbs_l_15	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Relictual subregions (less than 30% remnant vegetation remaining) for the Brigalow Belt include; Upper Belyando Flood out (11.8), Isaac - Comet Downs (11.11), Callide Creek Downs (11.19), Dawson River Downs (11.21), Taroom Downs (11.25), Dulacca Downs (11.28), Weribone High (11.29), Tara Downs (11.30), Eastern Darling Downs (11.31), Moonie R. - Commoron Creek Floodout (11.33), Moonie - Barwon Interfluve (11.34), Warrambool - Moonie (11.35), Macintyre - Weir Fan (11.36), Narrandool (11.38). Remnant vegetation provides a refuge from clearing in fragmented subregions and should be retained to maintain biodiversity. Refer to brbn_l_89 for the northern BRB implementation of this decision.
brbs_l_41	Remnants of once more extensive grasslands (less than 2% remains) dominated by <i>Dichanthium</i> spp. or <i>Astrelba</i> spp. within the Eastern Darling Downs subregion provide a refuge for a variety of threatened flora, e.g. <i>Digitaria porrecta</i> , <i>Rhaponticum australe</i> , <i>Thesium australe</i> and <i>Solanum papaverifolium</i> , many of which occur as disjunct populations or at the limit of their geographic range. These areas are also recognised as being of important for reptile fauna including <i>Carlia tetradactyla</i> , shingle-back <i>Tiliqua rugosa</i> , spotted black snake <i>Pseudechis guttatus</i> , <i>Delma inornata</i> , common delma <i>D. plebeia</i> and threatened Condamine earless dragon <i>Tympanocryptis condaminensis</i> , the latter known to occur only from grasslands around Bongeen. Another notable fauna endemic is the only grassland snail found in Queensland, <i>Jimbouria rodhobsoni</i> . Disjunct populations of the endangered long-legged worm-skink <i>Anomalopus mackayi</i> are also found in similar habitat within the area. Nb. In future panel reviews, the significance of all Brigalow Belt remnant natural grasslands should be reviewed.

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in Queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning processes

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland Info:

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	120.09	28.27
Very Low	304.64	71.73

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	120.09	28.27	0.00	0.00	304.64	71.73	0.00	0.00
2. Naturalness catchment	91.12	21.45	0.00	0.00	333.62	78.55	0.00	0.00
3. Diversity and richness	0.00	0.00	0.00	0.00	91.12	21.45	333.62	78.55
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	424.73	100.00
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	304.64	71.73	0.00	0.00
6. Special features	0.00	0.00	28.97	6.82	0.00	0.00	0.00	0.00
7. Connectivity	424.73	100.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
cb_r_ec_24	Semi-permanent waterholes (riverine)	Condamine-Balonne	6.1.1,6.2.1,6.3.1,6.3.4	3,3,3,3
cb_r_ec_31	Upland riverine reaches with flows sustained by groundwater seeps	Condamine-Balonne	7.2.1	4

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
cb_r_ec_24	Drought refugia are an important feature in a semi-arid landscape. Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). Other values include <i>Tandanus</i> (Ell tailed catfish). This decision was implemented using Water Observations from Space published by Geoscience Australia.
cb_r_ec_31	Groundwater connectivity with riverine ecosystems were viewed as important by the expert panel as inflow of groundwater, especially where granite geology exists, sustains rivers and creeks during drier periods. Water exchange can happen through fractured rock aquifers, but more typically coincides with sandy bottomed riverbeds. Flows are not necessarily perennial during drought.

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

(No Records)

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Naturalness catchment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Diversity and richness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, HerbreCs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Leuzea australis</i>		V	V				FL
<i>Phascolarctos cinereus</i>	koala	E	E	Low			FA
<i>Phascolarctos cinereus</i>	koala	E	E				FA
<i>Picris evae</i>		V	V				FL

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DESI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

*JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.

**I - wetland indicator species; D - wetland dependent species.

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
<i>Mogurnda adspersa</i>	Southern Purplespotted Gudgeon	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Identified flora/fauna
<i>Limnodynastes dumerilii</i>	grey bellied pobblebonk	FA
<i>Mogurnda adspersa</i>	southern purplespotted gudgeon	FA

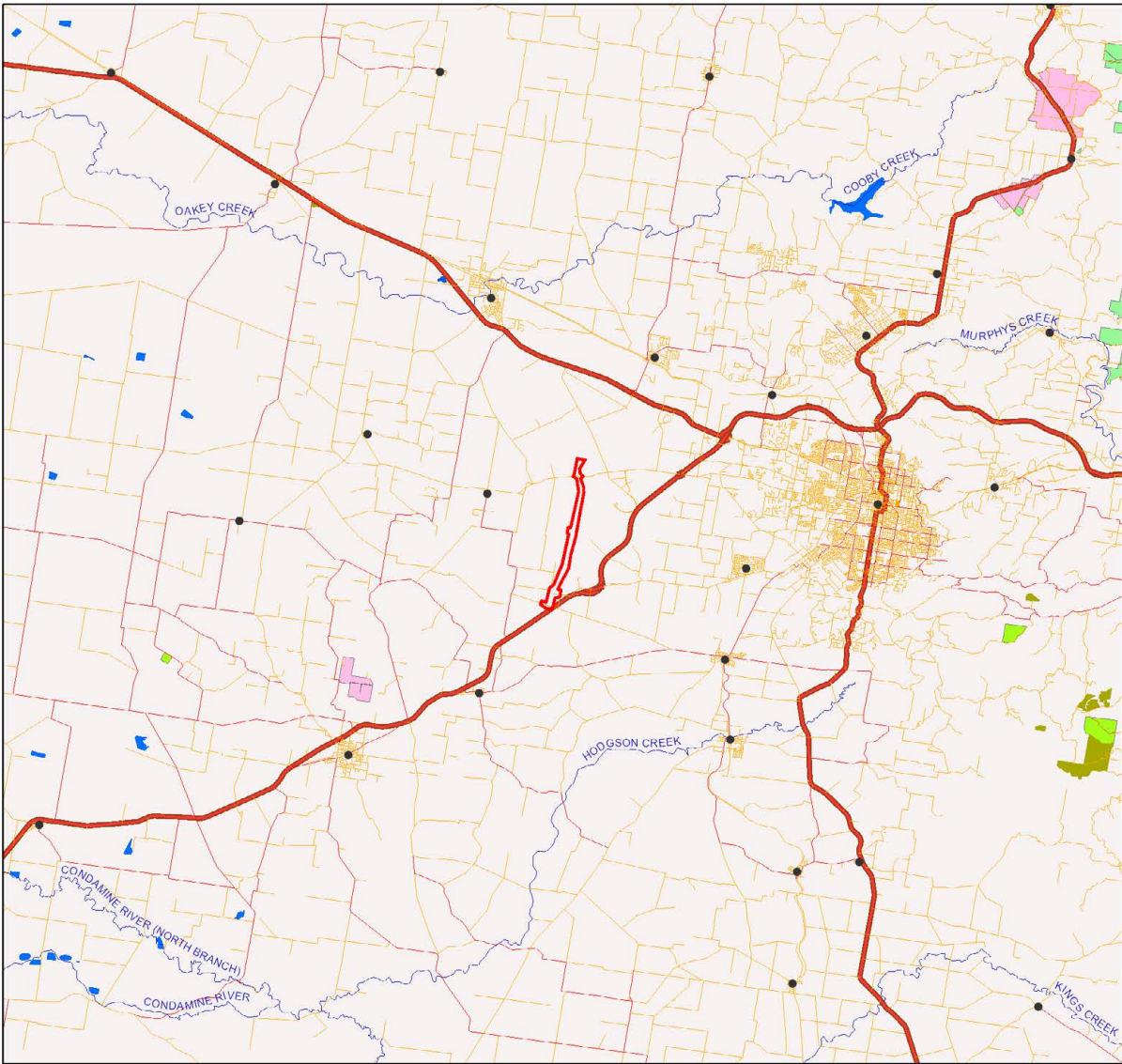
Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

Species	Common name	Identified flora/fauna
<i>Limnodynastes dumerilii</i>	grey bellied pobblebonk	FA
<i>Mogurnda adspersa</i>	southern purplespotted gudgeon	FA

NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

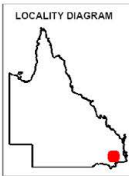
Maps

Map 1 - Locality Map



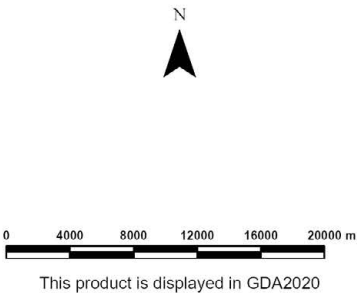
Locality Map

- Legend**
- Towns
 - Freeways/Highways
 - Connector
 - Street/Local Road
 - Reservoirs
 - Lakes
 - National Park (Scientific)
 - National Park
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Nature Refuges
 - Coordinated Conservation Areas
 - Major rivers/creeks
 - Queensland
 - Custom area

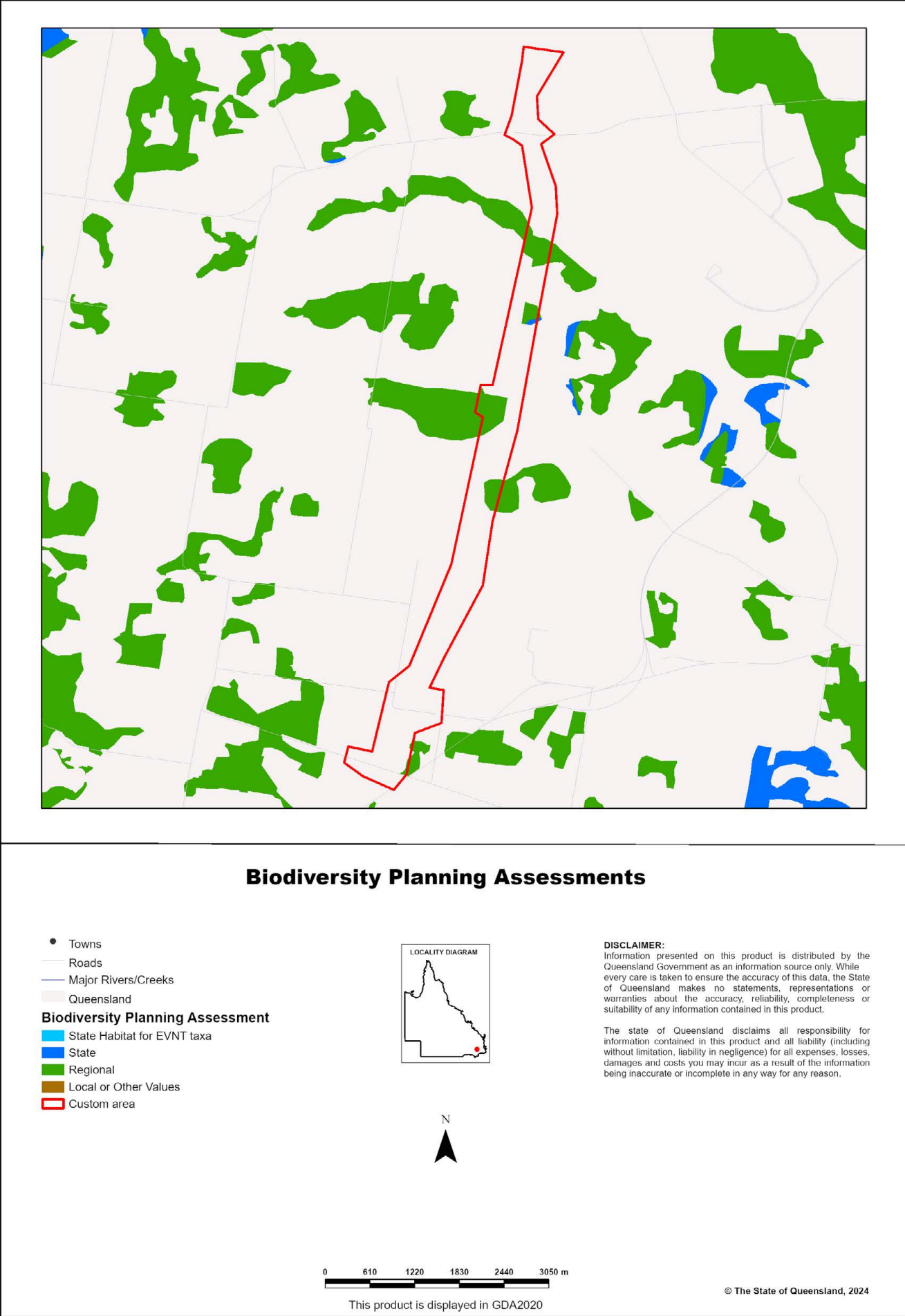


DISCLAIMER:
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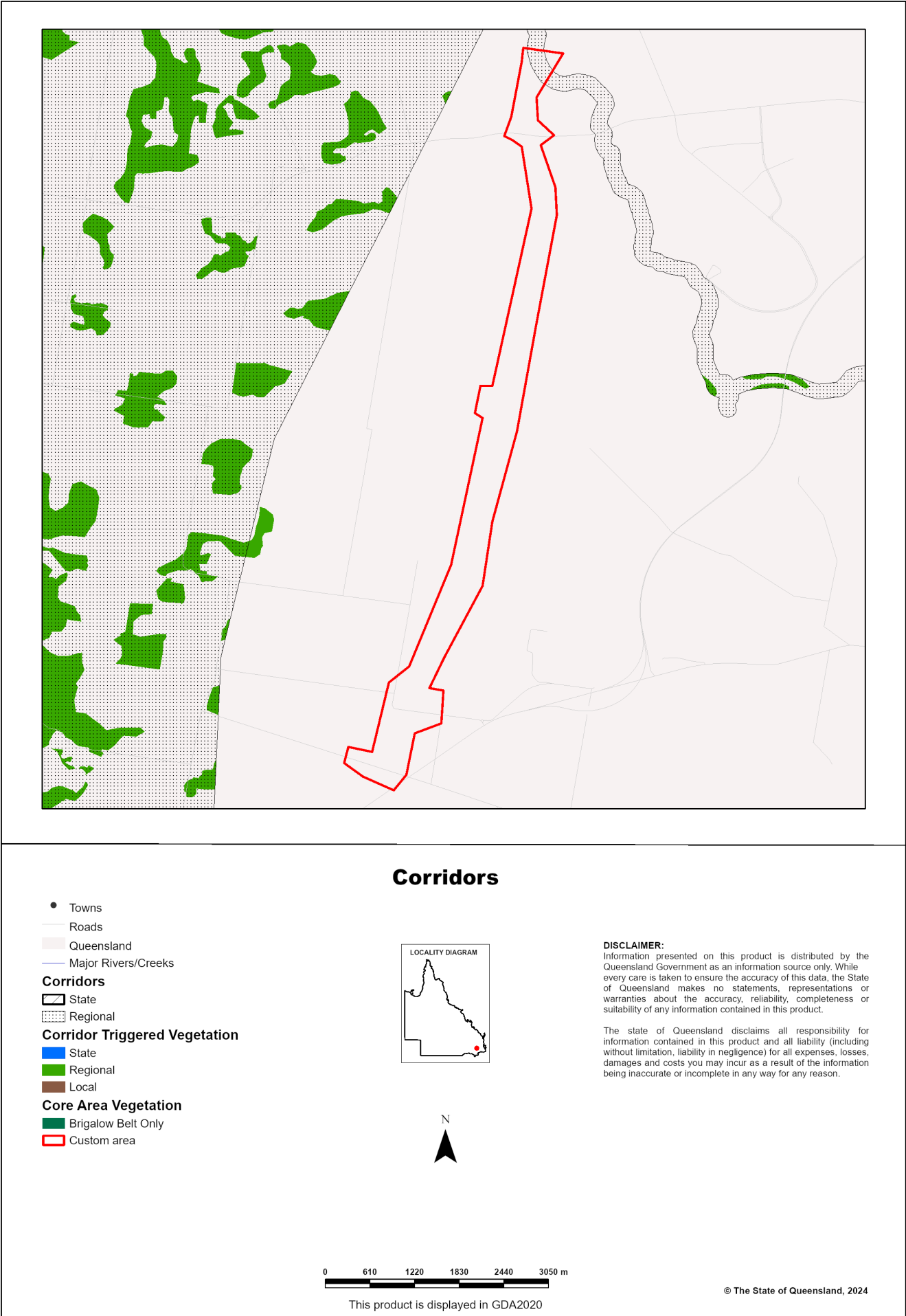
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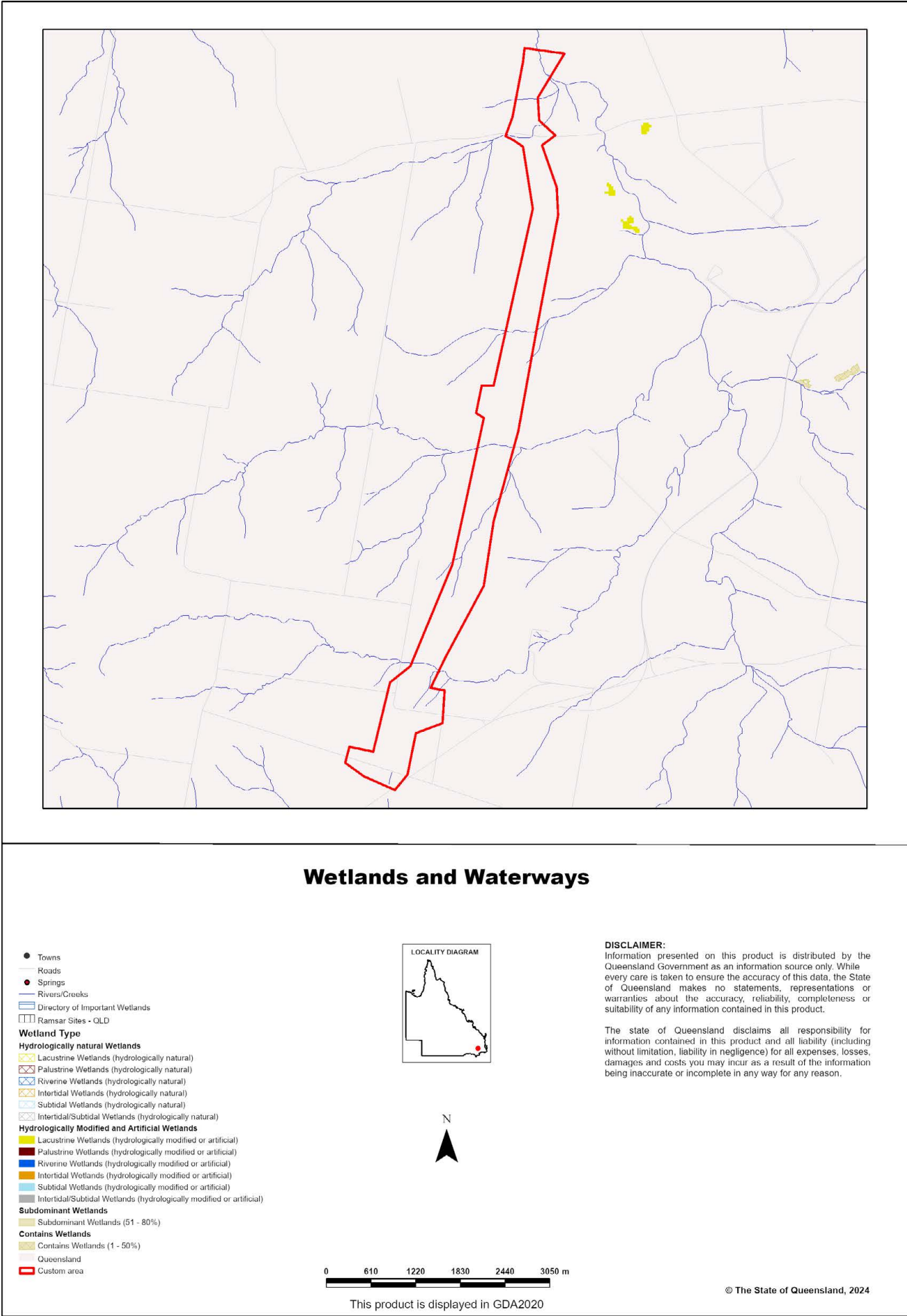
Map 2 - Biodiversity Planning Assessment (BPA)



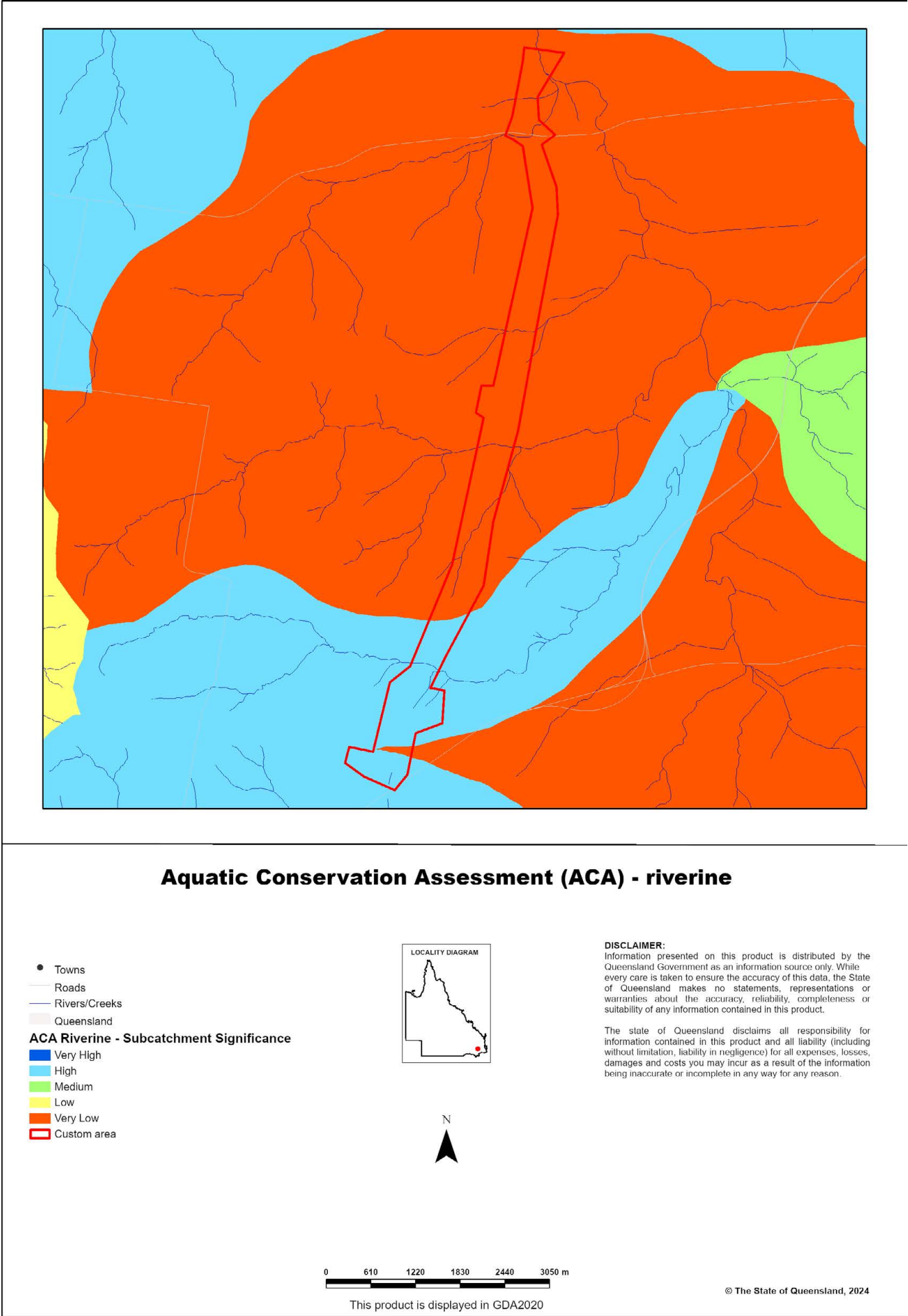
Map 3 - Corridors



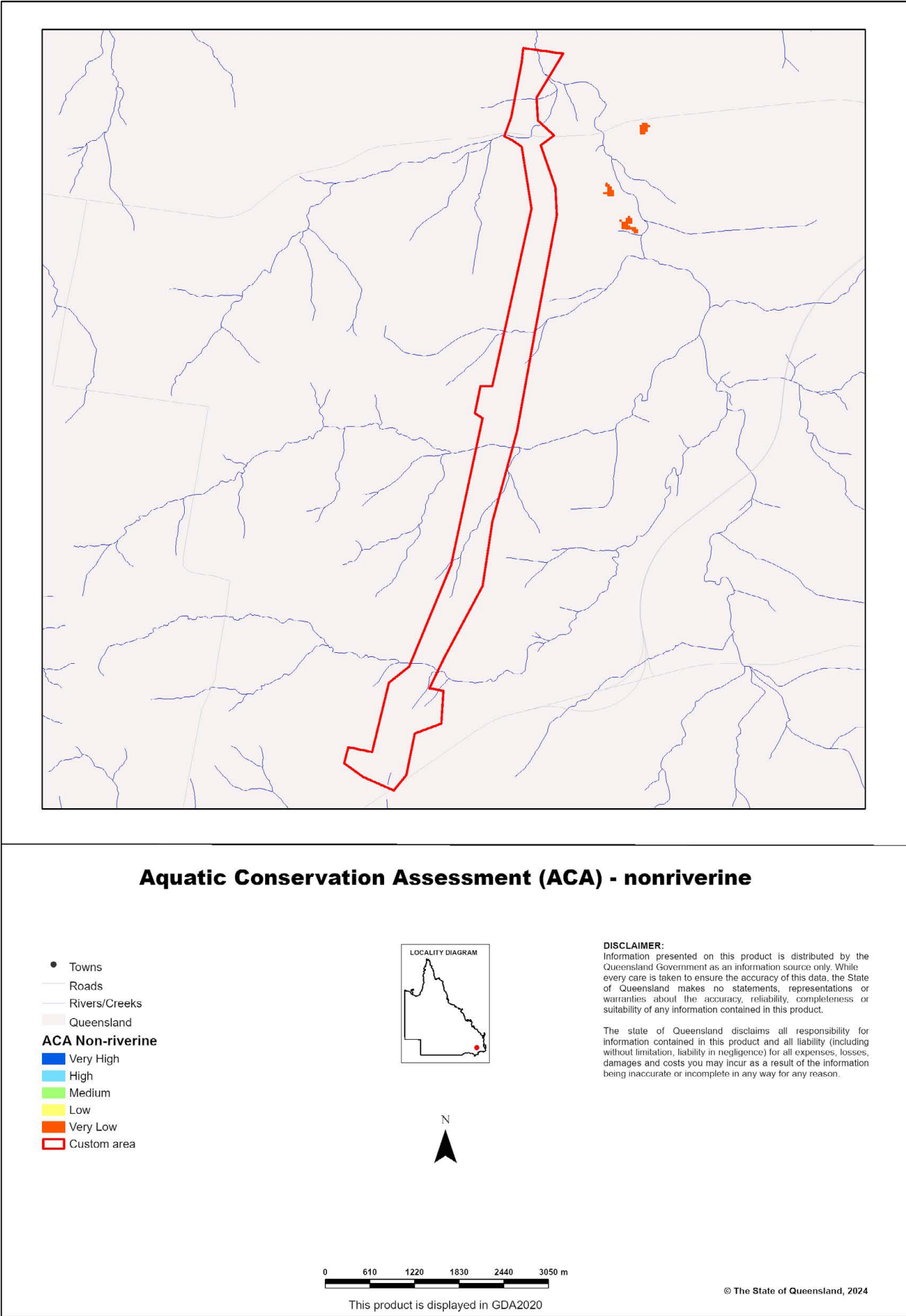
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



References

Clayton, P.D., Fielder, D.F., Howell, S. and Hill, C.J. (2006) *Aquatic biodiversity assessment and mapping method (AquaBAMM): a conservation values assessment tool for wetlands with trial application in the Burnett River catchment*. Published by the Environmental Protection Agency, Brisbane. ISBN 1-90928-07-3. Available at

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca/>

Environment and Heritage Protection 2014, *Biodiversity Assessment and Mapping Methodology*. Version 2.2. Department of Environment and Heritage Protection, Brisbane.

Morton, S. R., Short, J. and Barker, R. D. with an Appendix by G.F. Griffin and G. Pearce (1995). *Refugia for Biological Diversity in Arid and Semi-arid Australia*. Biodiversity Series, Paper No. 4, Biodiversity Unit, Environment Australia.

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

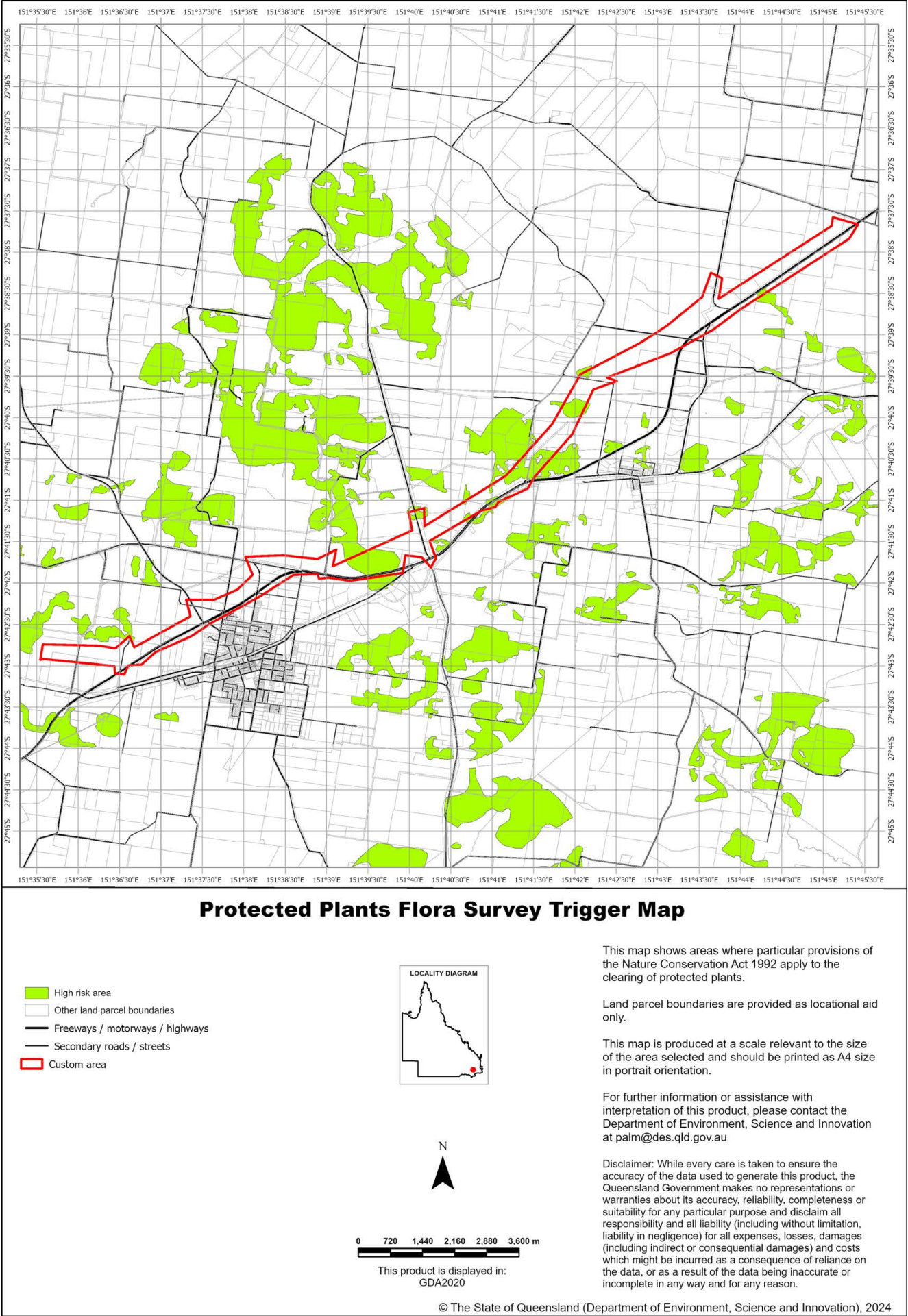
Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einiasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v2.3 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.6
Threatened Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:

<http://dds.information.qld.gov.au/DDS>

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DESI	- Department of Environment, Science and Innovation
EPBC	- <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see [section 89](#) of the Act.

Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.

WetlandMaps Report



For selected area of interest Custom input

Current as at 5/06/2024

Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest(AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

Disclaimer

The State of Queensland, as represented by this department, gives no warranty in relation to the data (including without limitation, accuracy, reliability, completeness or fitness for a particular purpose) hosted on this website.

The user accepts sole responsibility and risk associated with the use and results of department data hosted on this website, irrespective of the purpose to which such use or results are applied. It is recommended that users consider independently verifying any information obtained from this website.

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Summary Information

Below is an overview of the area of interest.

Custom input
with area of 939.74 ha

Local Government(s)
Toowoomba Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Eastern Darling Downs

Catchment(s)
Condamine River

Drainage sub-basin
Balonne-Condamine

NRM Regions

The area of interest is in the following NRM region:

Southern Queensland Landscapes

Water Resource Plan Boundaries

The area of interest is in the following Water Resource Plan:

Condamine and Balonne

Great Artesian Basin and Other Regional Aquifers

Learn more about how Wetlands are mapped in Queensland

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include::**

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude::**

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria
- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Links and support

Other sites that deliver wetland related information include:

Wetland *Summary* tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

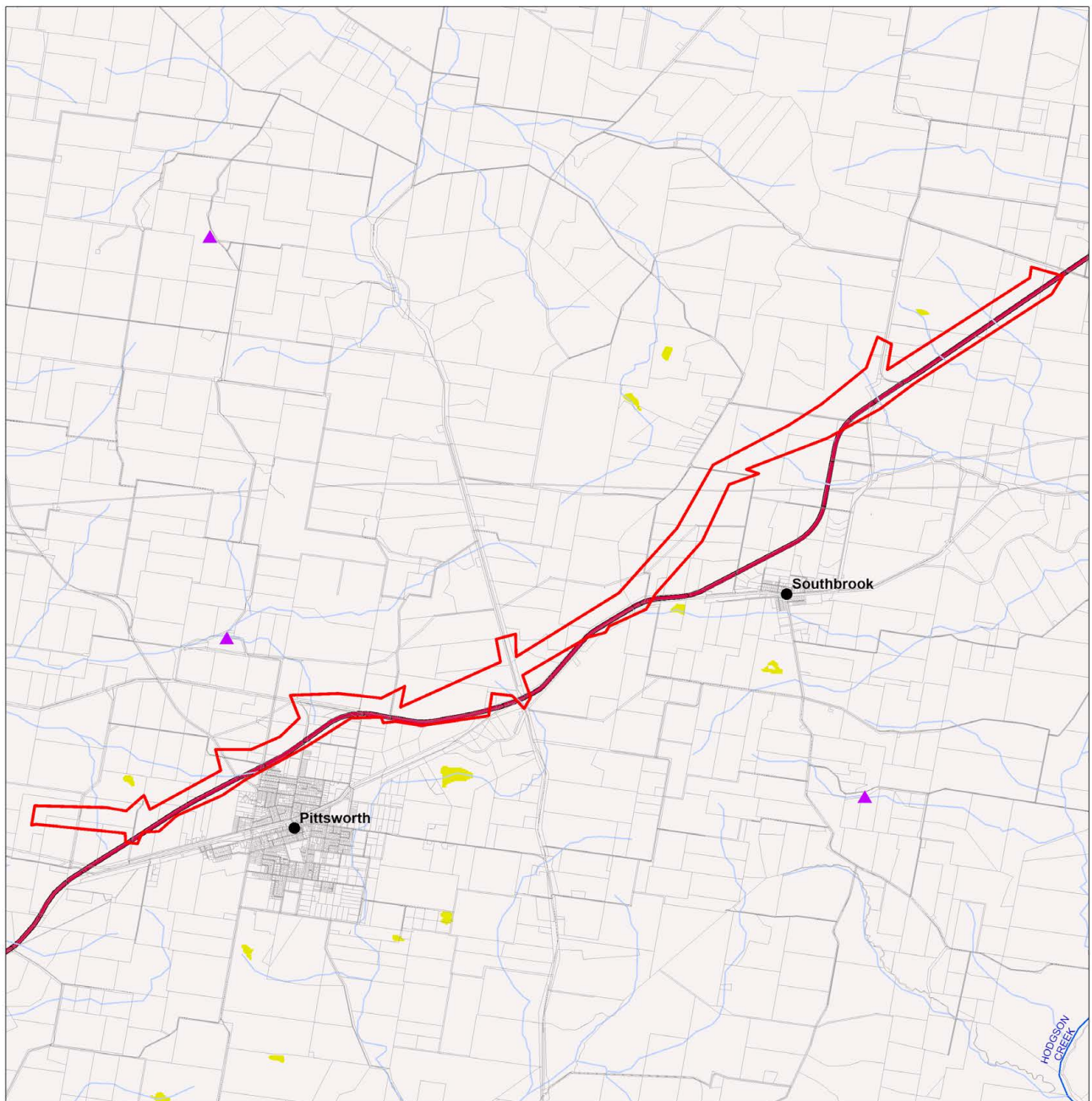
Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

Regional Ecosystem Mapping information:
<https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

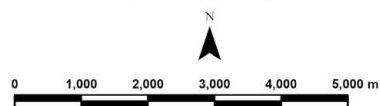
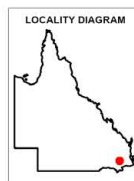
Aquatic Conservation Assessments: [Aquatic Conservation Assessments \(ACA\) and AquaBAMM \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Dependant Ecosystems information:
<https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Queensland Wetland Map

- ▲ Springs
- Dams and weirs
- Towns
- Freeways/Highways
- Roads
- Cadastral Boundaries
- Sub-basin
- Riverine System Drainage Lines**
- Major
- Minor
- Wetland Mapping**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
- Palustrine Wetlands (hydrologically natural)
- Riverine Wetlands (hydrologically natural)
- Intertidal Wetlands (hydrologically natural)
- Subtidal Wetlands (hydrologically natural)
- Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
- Palustrine Wetlands (hydrologically modified or artificial)
- Riverine Wetlands (hydrologically modified or artificial)
- Intertidal Wetlands (hydrologically modified or artificial)
- Subtidal Wetlands (hydrologically modified or artificial)
- Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
- Custom area



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This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

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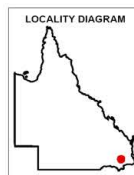


Queensland Wetlands of Importance Map

- Towns
- ▭ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▭ Sub-basin
- ▭ Directory of Important Wetlands
- ▭ Ramsar Wetlands

Riverine System Drainage Lines

- ▬ Major
- ▬ Minor
- ▭ Custom area



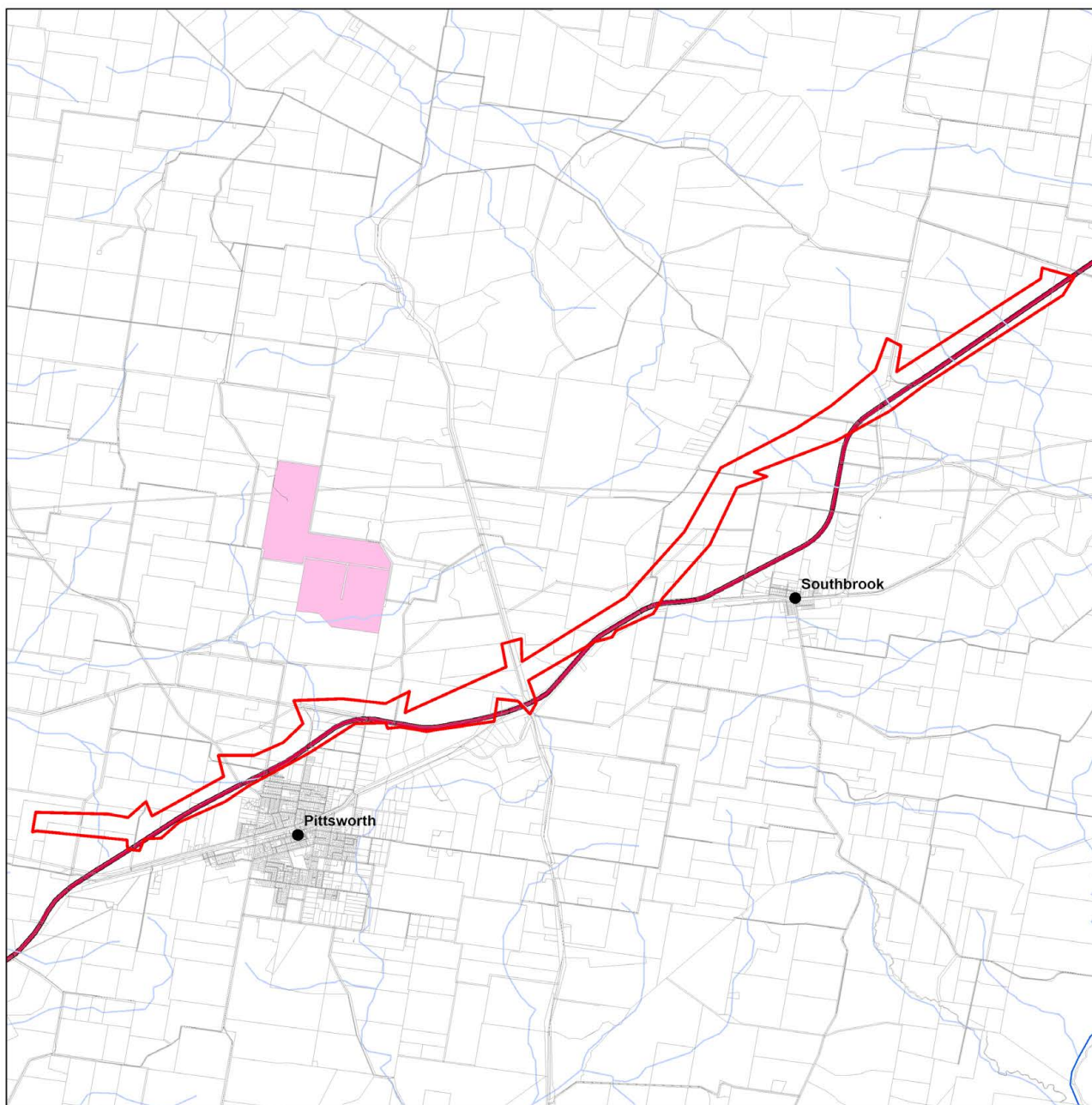
0 925 1,850 2,775 3,700 4,625 m

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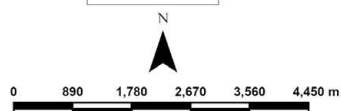
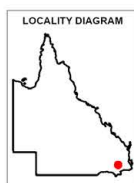
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Queensland Protected Area Map

- Towns
- ▬ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▬ Sub-basin
- Riverine System Drainage Lines**
 - ▬ Major
 - ▬ Minor
- Marine Parks**
 - General Use Zone
 - Habitat Protection Zone
 - Estuarine Conservation Zone
 - Conservation Park Zone
 - Buffer Zone
 - Scientific Research Zone
 - Marine National Park Zone
 - Preservation Zone
- Protected Areas**
 - National Park
 - National Park (Scientific)
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Custom area



This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

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Wetland habitat types in the AOI. Total area: 0 ha

There are no results for Queensland Wetland Mapping in the AOI

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps

Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps

Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the input coordinates.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website <https://www.resources.qld.gov.au/>

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Custom input, with area 939.74 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Toowoomba Regional	Balonne-Condamine	Brigalow Belt	Eastern Darling Downs

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.00	0.00
Of concern	0.00	0.00
No concern at present	117.47	12.50
Total remnant vegetation	117.47	12.50

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated into a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website <https://www.resources.qld.gov.au/>.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

*****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.*

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.8.4	Eucalyptus melanophloia woodland to open woodland on Cainozoic igneous rocks.	No concern at present	82.14	8.74
11.8.5	Eucalyptus orgadophila open woodland on Cainozoic igneous rocks	No concern at present	35.33	3.76
non-remnant	None	None	822.27	87.50

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.8.4	Pre-clearing 217000 ha; Remnant 2021 151000 ha	11a	Not a Wetland	High
11.8.5	Pre-clearing 631000 ha; Remnant 2021 344000 ha	11a	Not a Wetland	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.8.4	11.8.4: Potential habitat for NCA listed species: <i>Acacia arbiana</i> , <i>Acacia islana</i> , <i>Bertya pedicellata</i> , <i>Grevillea hockingsii</i> , <i>Haloragis exalata</i> subsp. <i>velutina</i> , <i>Marsdenia brevifolia</i> , <i>Sannantha brachypoda</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.8.5	11.8.5: In southern part of bioregion, habitat for a number of threatened plant species including <i>Picris evae</i> and <i>Thesium australe</i> and near threatened species <i>Digitaria porrecta</i> and <i>Discaria pubescens</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>). 11.8.5a: This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: <https://publications.qld.gov.au/dataset/redd/resource/>

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	822.27	87.50
11a	Moist to dry open forests to woodlands dominated by <i>Eucalyptus orgadophila</i> (mountain coolibah). Some areas dominated by <i>E. tereticornis</i> (blue gum), <i>E. melliodora</i> (yellow box), <i>E. albens</i> (white box), <i>E. crebra</i> (narrow-leaved red ironbark) or <i>E. melanophloia</i> (silver-leaved ironbark).	117.47	12.50

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: <http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

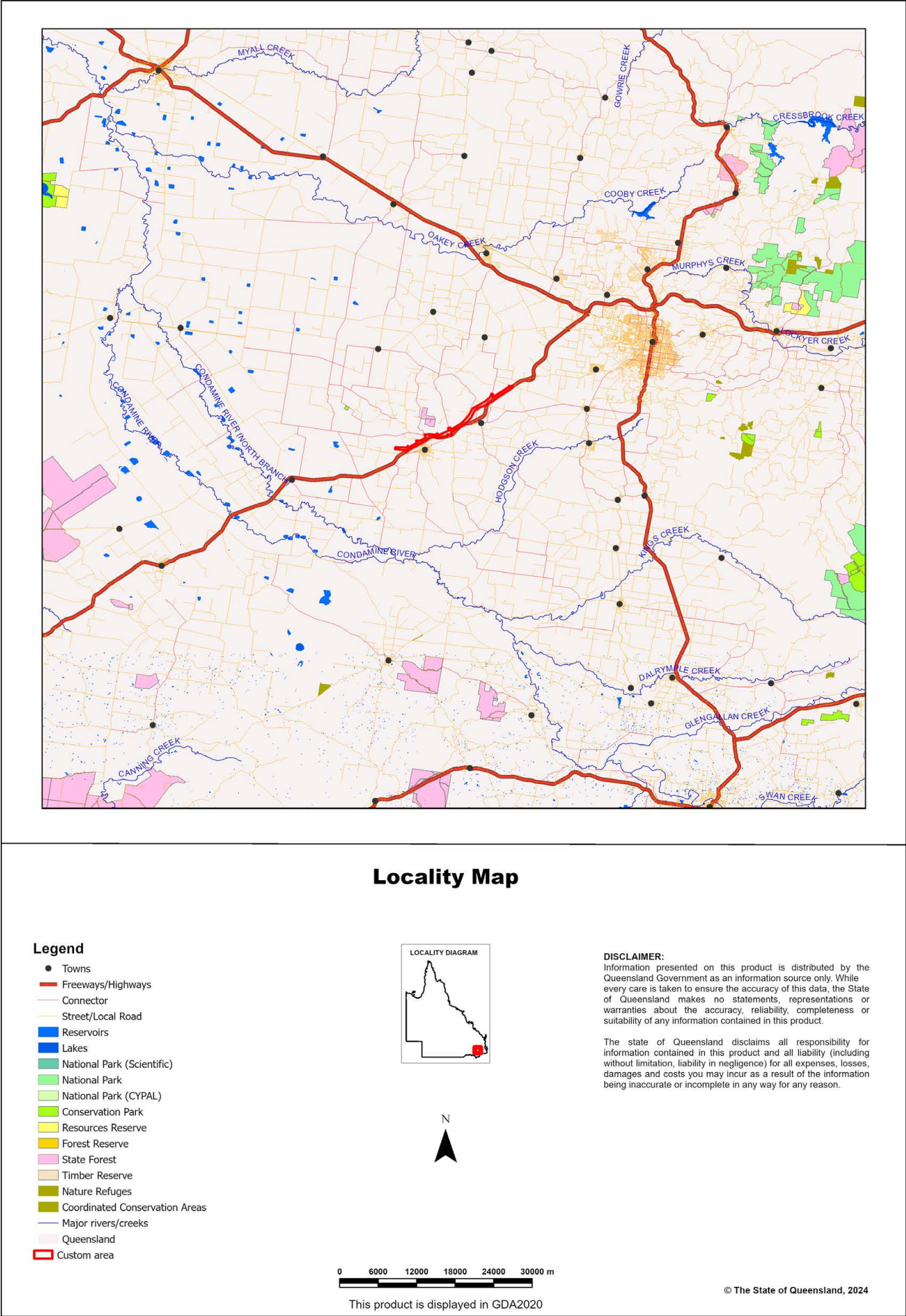
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

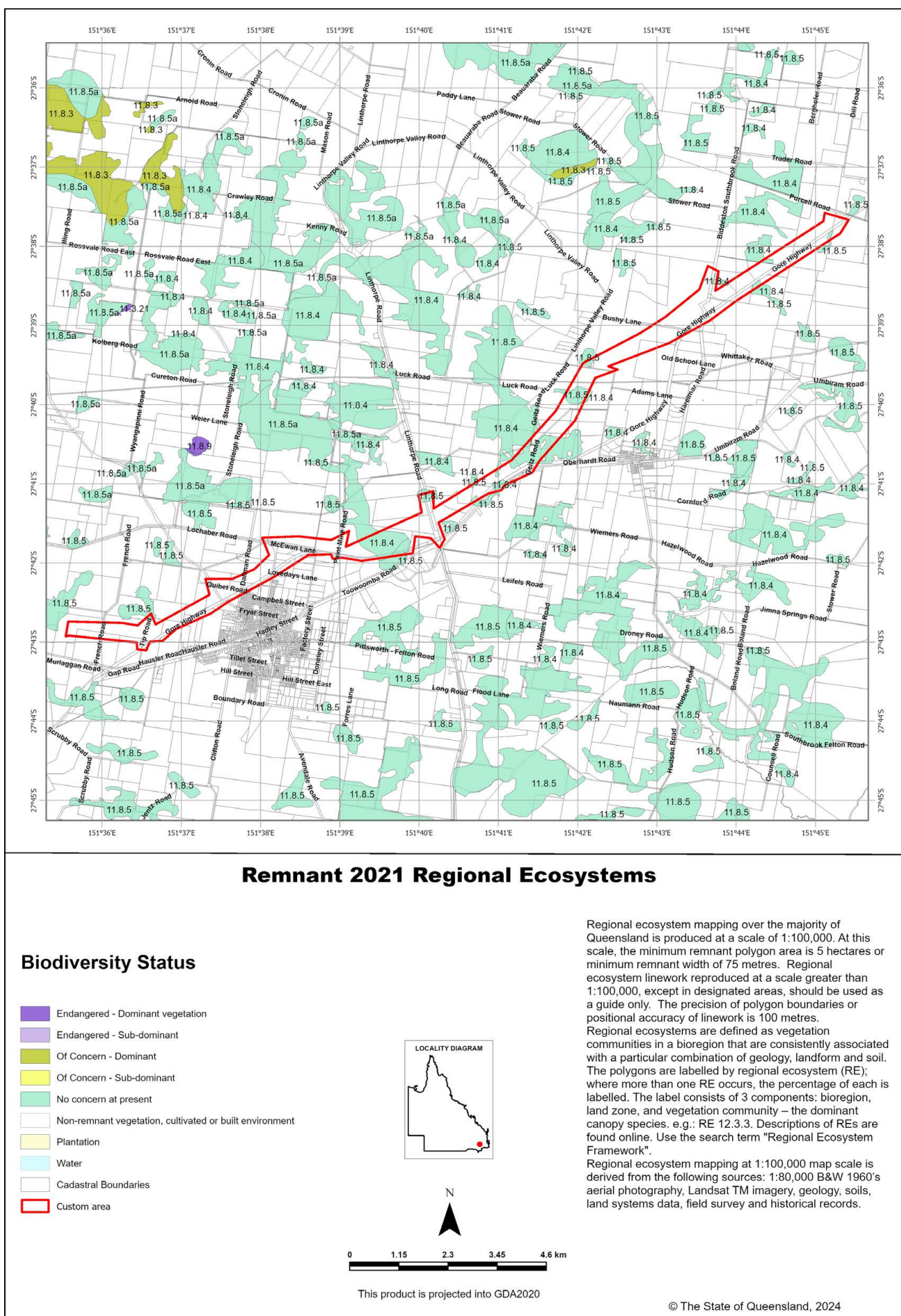
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.8.4	Available	Available
11.8.5	Available	Available
non-remnant	Not currently available	Not currently available

Maps

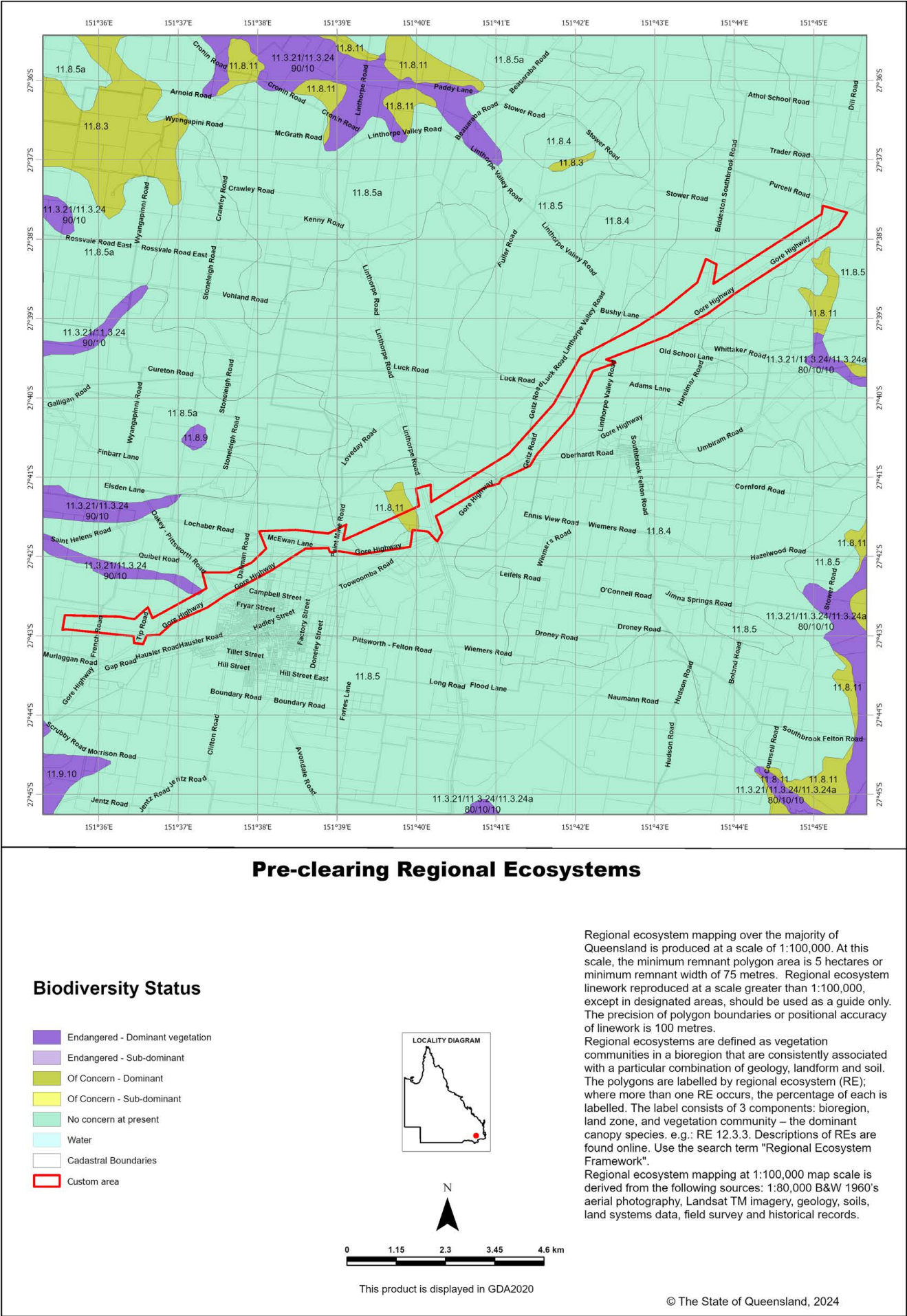
Map 1 - Location



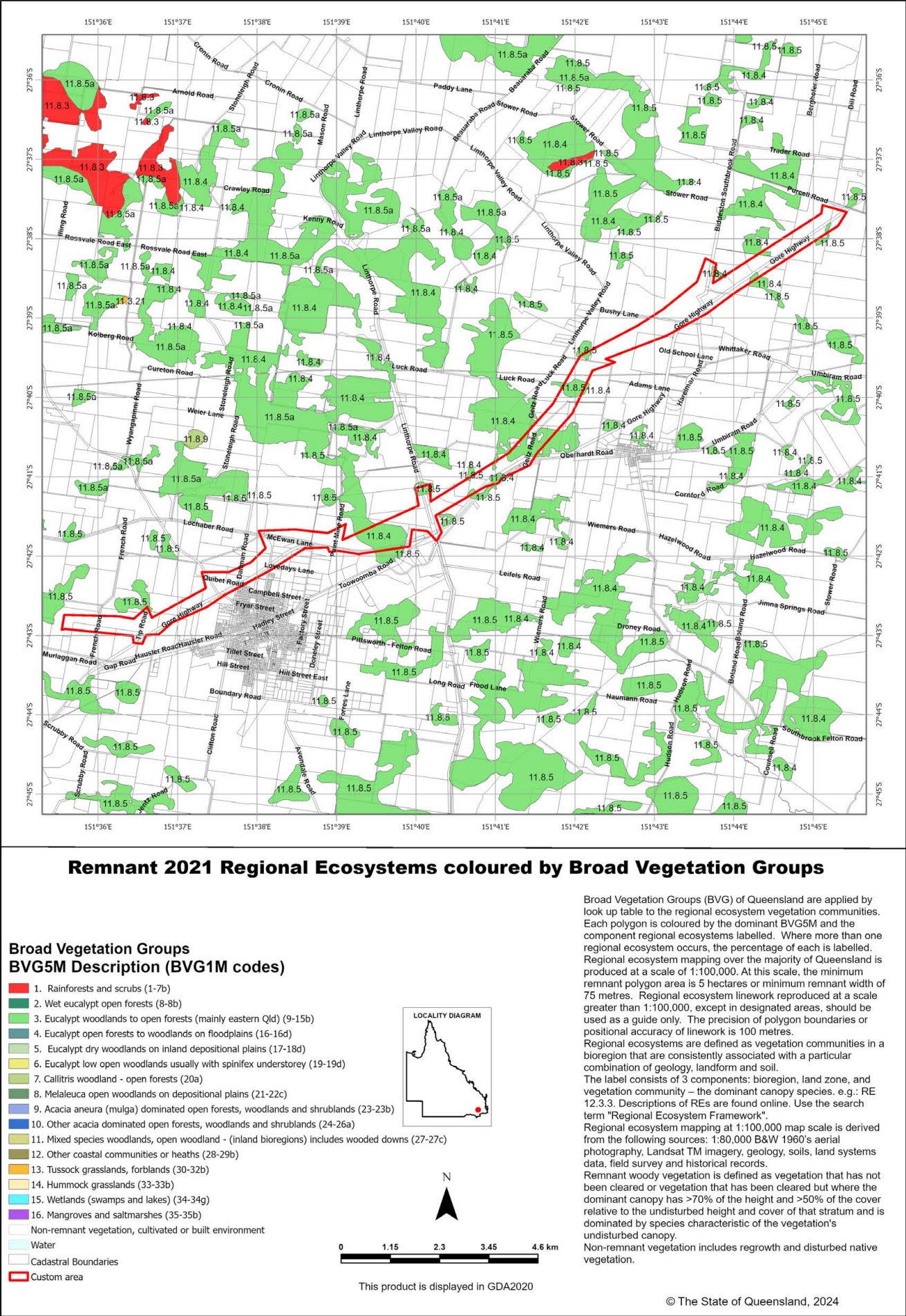
Map 2 - Remnant 2021 regional ecosystems



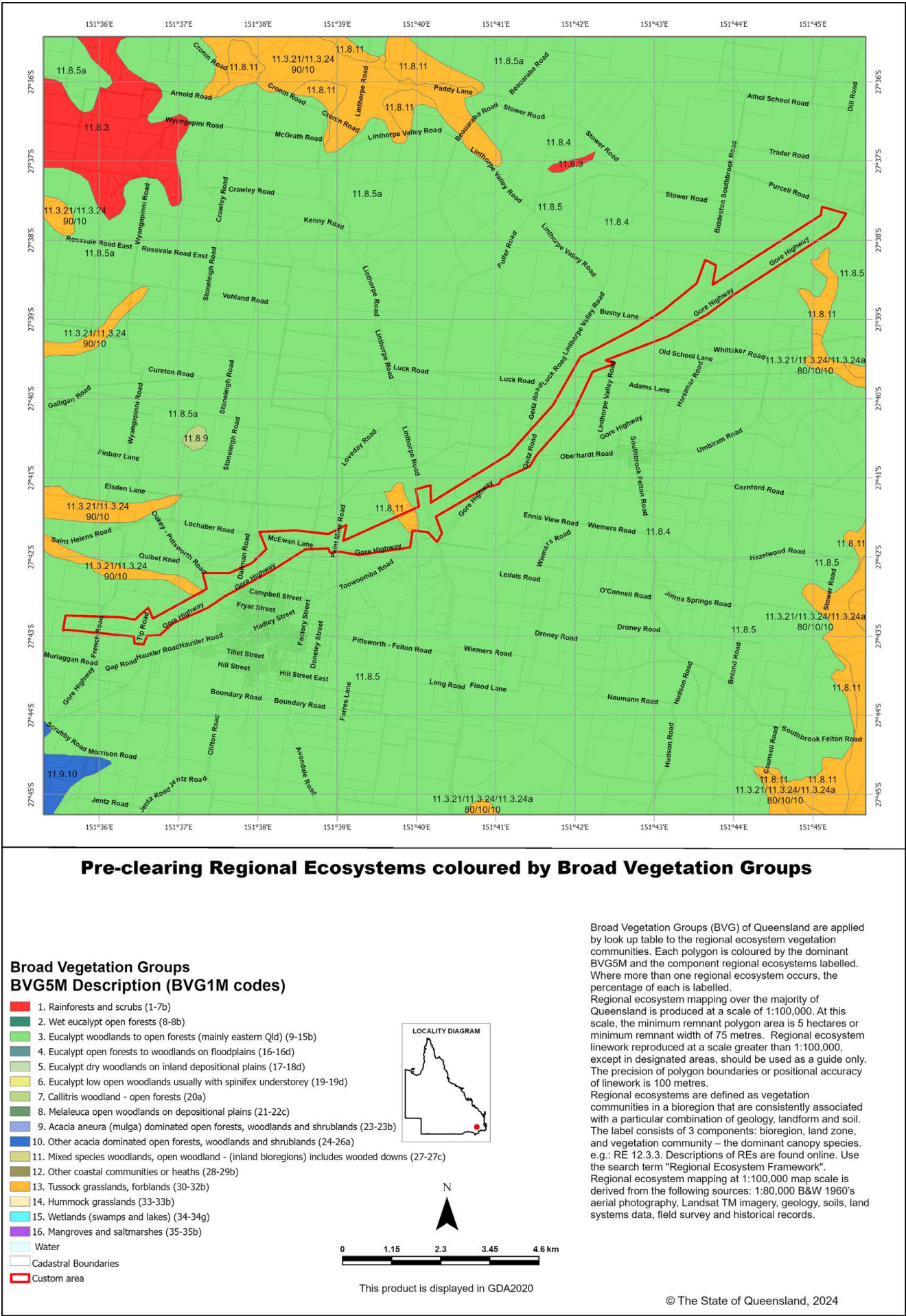
Map 3 - Pre-clearing regional ecosystems



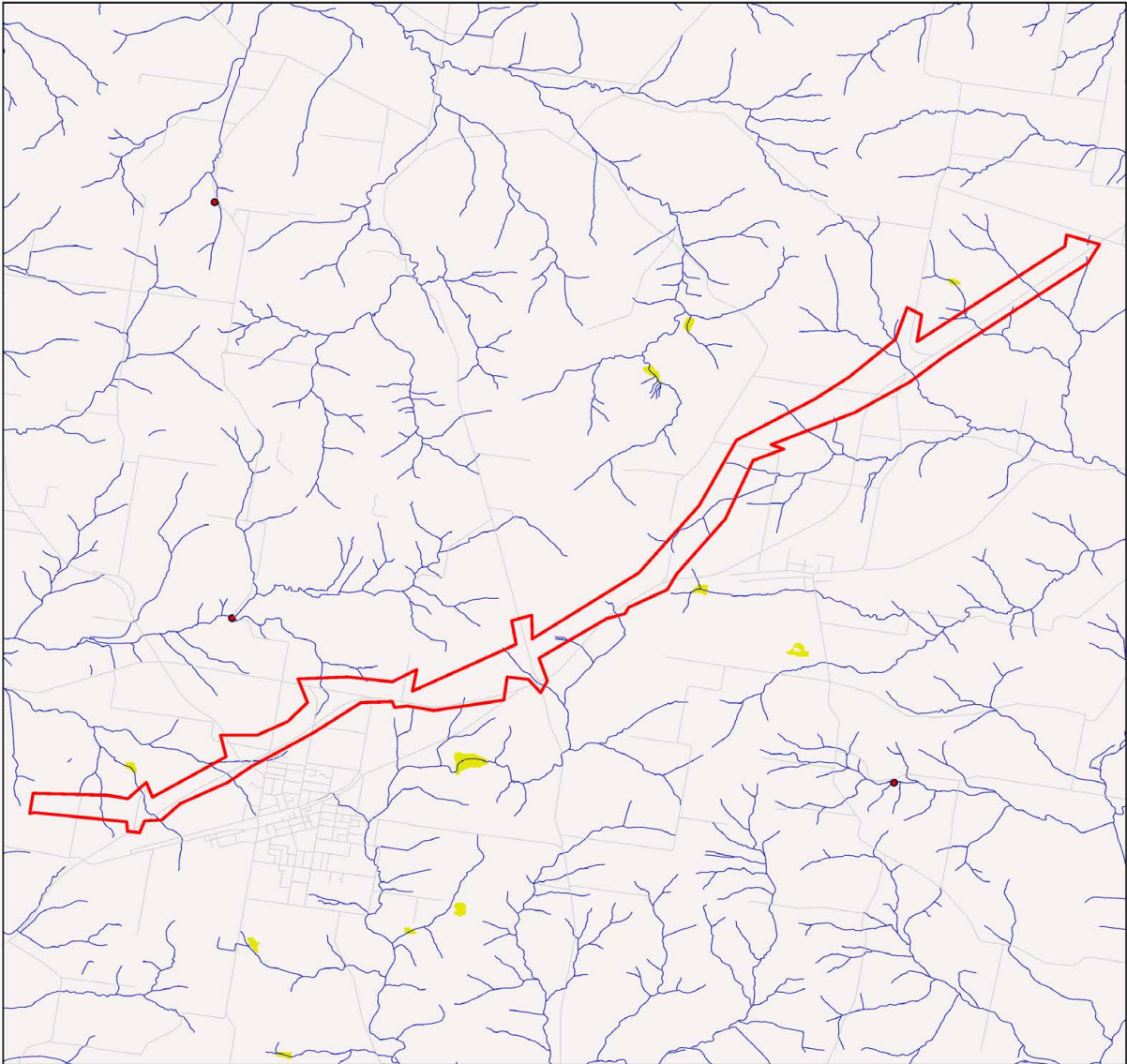
Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Map 5 - Pre-clearing regional ecosystems by BVG (5M)

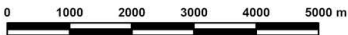


Map 6 - Wetlands and waterways



Wetlands and Waterways

- Towns
 - Roads
 - Springs
 - Rivers/Creeks
 - Directory of Important Wetlands
 - Ramsar Sites - QLD
- Wetland Type**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
- Queensland
- Custom area



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Links and Other Information Sources

The Department of Environment, Science and Innovation's Website -

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/> provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation>

The methodology for mapping regional ecosystems can be downloaded from:

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

Benchmarks can be obtained from: <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/spatial-catalogue)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

<https://qldglobe.information.qld.gov.au/>

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science.

<https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086>

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F., Richter, D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane.

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/>

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

[Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/information/spatial/catalogue)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Custom input

Environmental Reports - General Information

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All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and a field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@des.qld.gov.au

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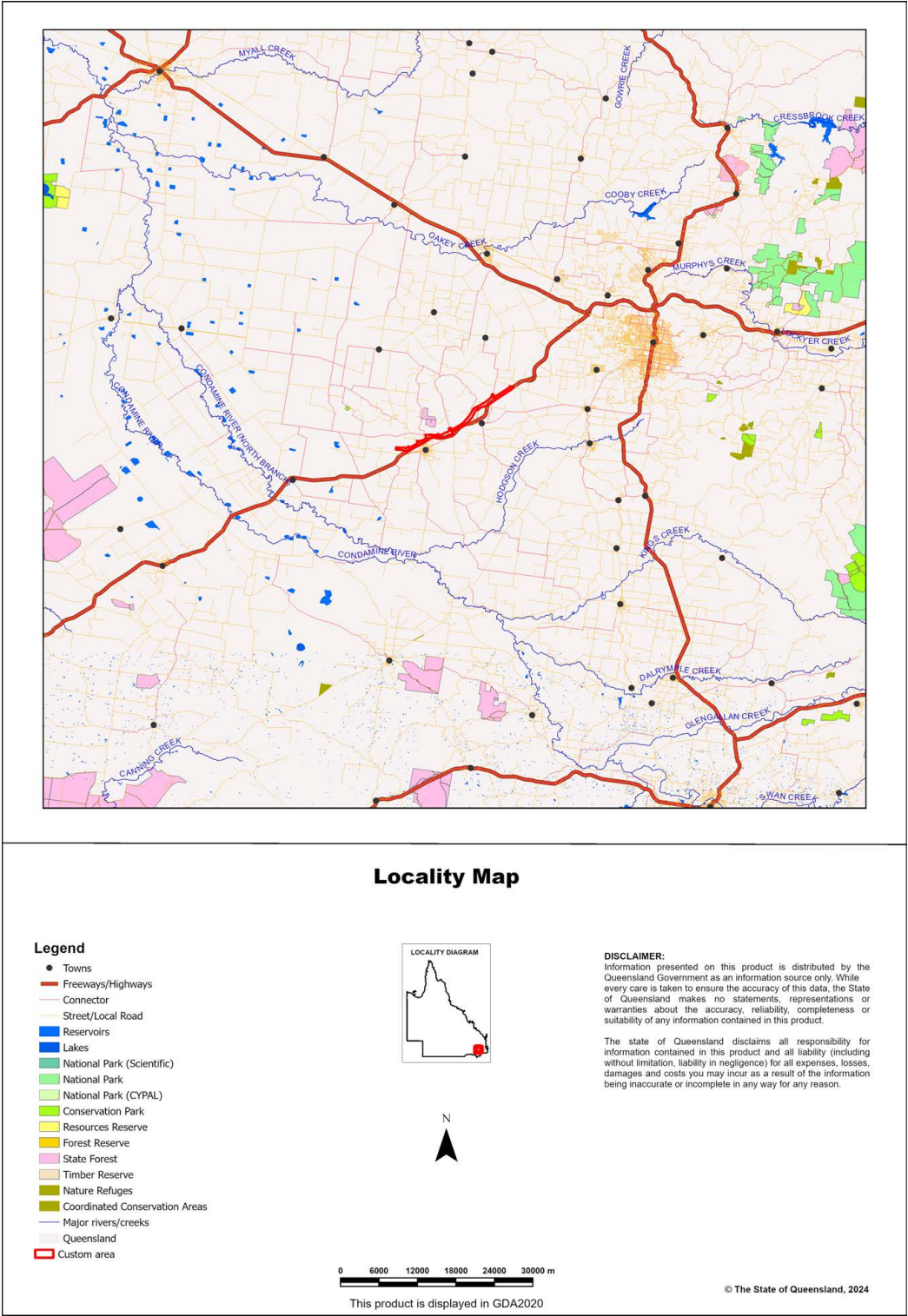
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI: Custom input, with area 939.74 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Toowoomba Regional	Balonne-Condamine	Brigalow Belt	Eastern Darling Downs



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
- *Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004* ;
- *Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008*;
- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	100.29 ha	10.7%
7b Special least concern animals	39.48 ha	4.2%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	0 ha	0.0%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	0 ha	0.0%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	97.95 ha	10.4%
8e Regulated Vegetation - intersecting a watercourse	9.1 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0 ha	0.0%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways**4. Strategic Environmental Areas (SEA)**

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species**7a. Threatened (endangered or vulnerable) wildlife**

Values are present

7b. Special least concern animals

Values are present

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>	Keys boronia	V	None
<i>Calyptrorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarius casuarius johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Euastacus bindal</i>	Mount Elliot crayfish	CR	None
<i>Euastacus binzayedii</i>		CR	None
<i>Euastacus eungella</i>		E	None
<i>Euastacus hystricosus</i>		E	None
<i>Euastacus jagara</i>	Jagara hairy crayfish	CR	None
<i>Euastacus madae</i>		CR	None
<i>Euastacus monteithorum</i>		E	None
<i>Euastacus robertsi</i>		E	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Melaleuca irbyana</i>	swamp tea-tree	E	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>	bopple nut	V	None
<i>Petrogale penicillata</i>	brush-tailed rock-wallaby	V	None
<i>Petrogale coenensis</i>	Cape York rock-wallaby	V	None
<i>Petrogale purpureicollis</i>	purple-necked rock-wallaby	V	None
<i>Petrogale sharmani</i>	Sharmans rock-wallaby	V	None
<i>Petrogale xanthopus celeris</i>	yellow-footed rock-wallaby (Qld subspecies)	V	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

Scientific name	Common name	NCA status	EPBC status	Migratory status
<i>Anomalopus mackayi</i>	long-legged worm-skink	E	V	None
<i>Phascolarctos cinereus</i>	koala	E	E	None
<i>Picris barbarorum</i>		V	None	None
<i>Picris evae</i>		V	V	None
<i>Leuzea australis</i>		V	V	None
<i>Dichanthium queenslandicum</i>		V	E	None
<i>Cyperus clarus</i>		V	None	None

Special least concern animal species records

Scientific name	Common name	Migratory status
<i>Calidris melanotos</i>	pectoral sandpiper	M-J/R/B/E

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

*Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL). Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Not applicable

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Not applicable

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Not applicable

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets**9a. Legally secured offset areas - offset register areas**

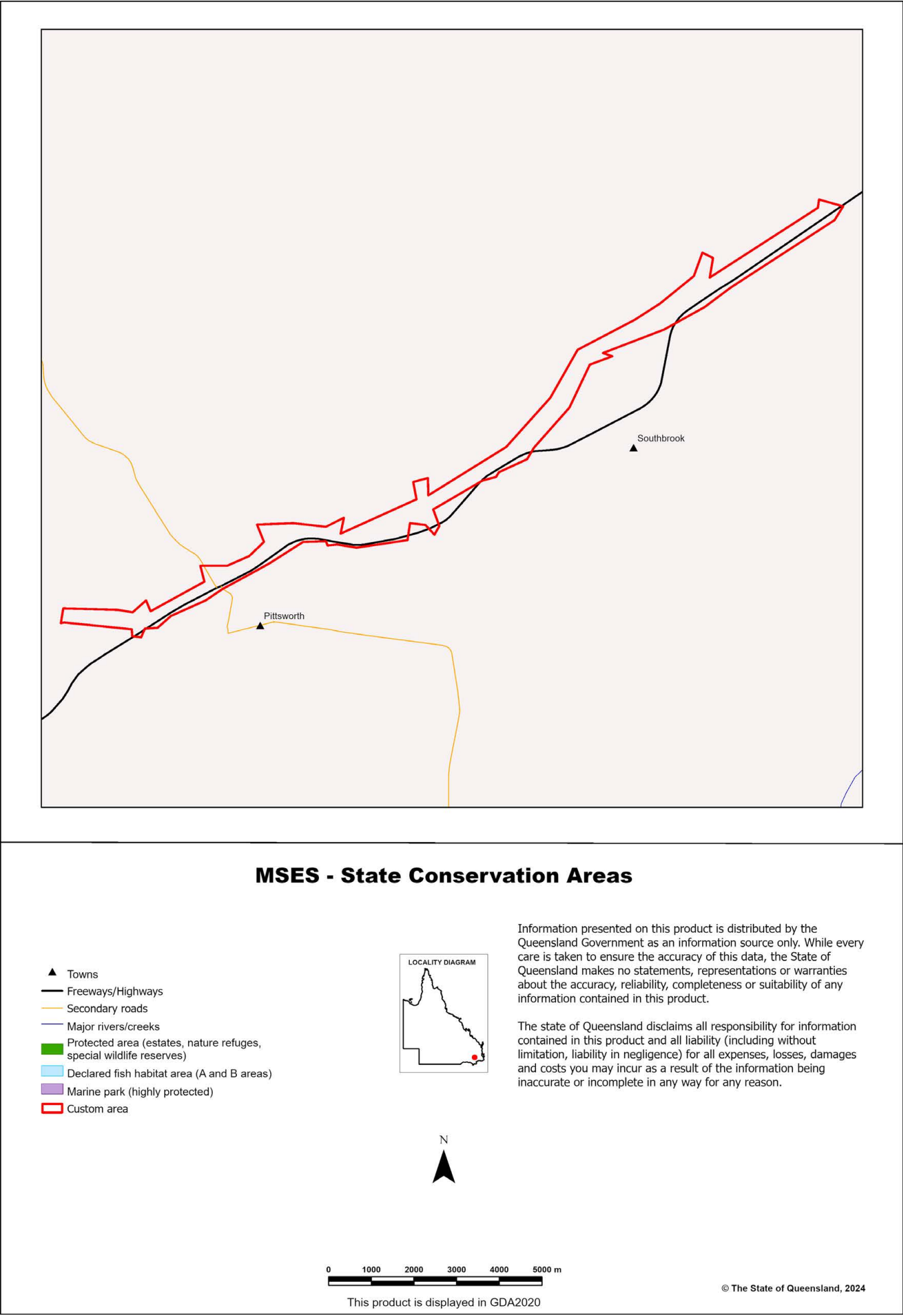
(No results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

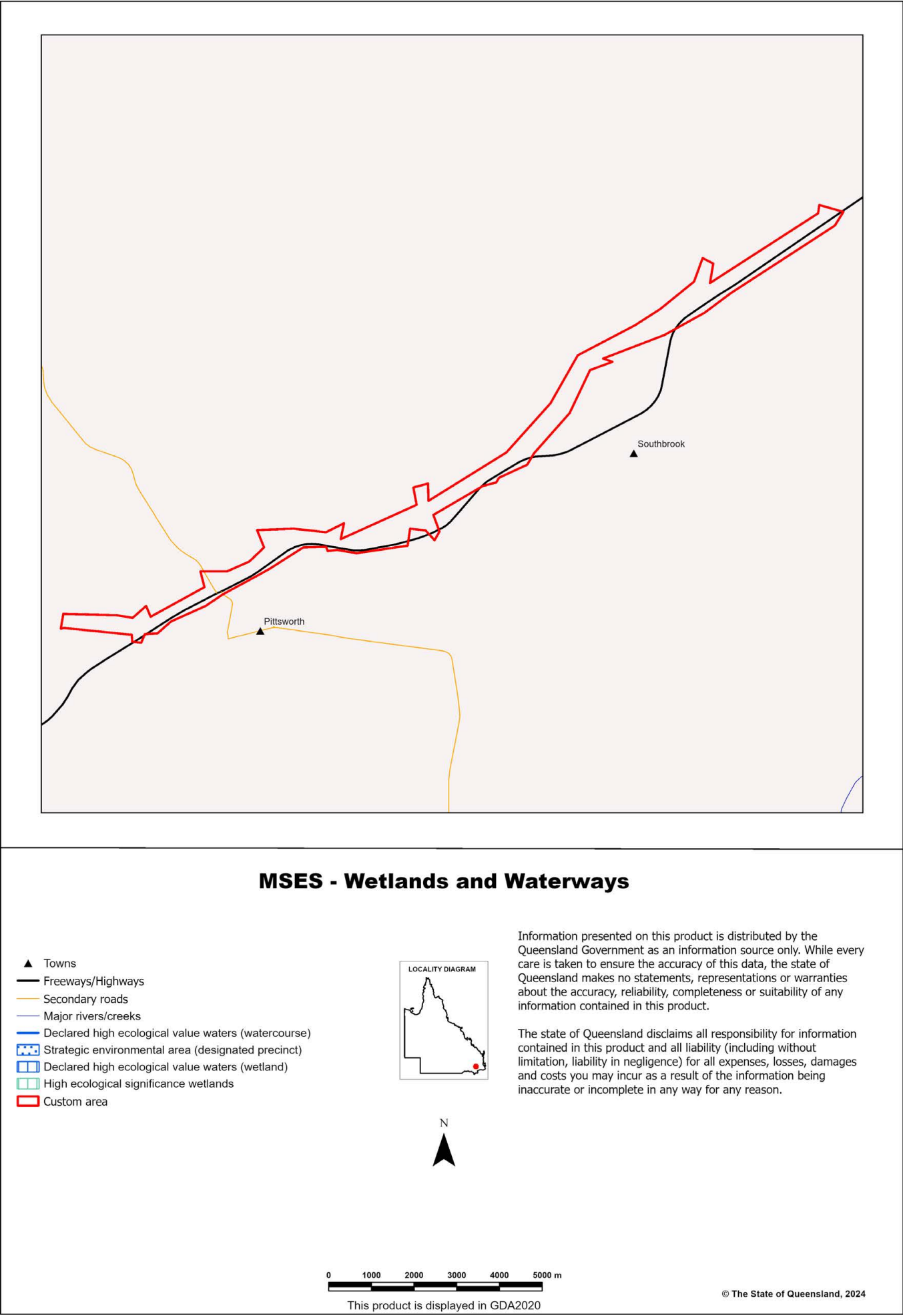
(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

Map 1 - MSES - State Conservation Areas



Map 2 - MSES - Wetlands and Waterways

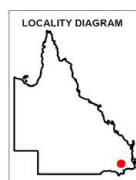


Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



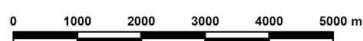
MSES - Species
Threatened (endangered or vulnerable) wildlife and special least concern animals

- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
-  Wildlife habitat (special least concern)
-  Wildlife habitat (endangered or vulnerable)
-  Custom area



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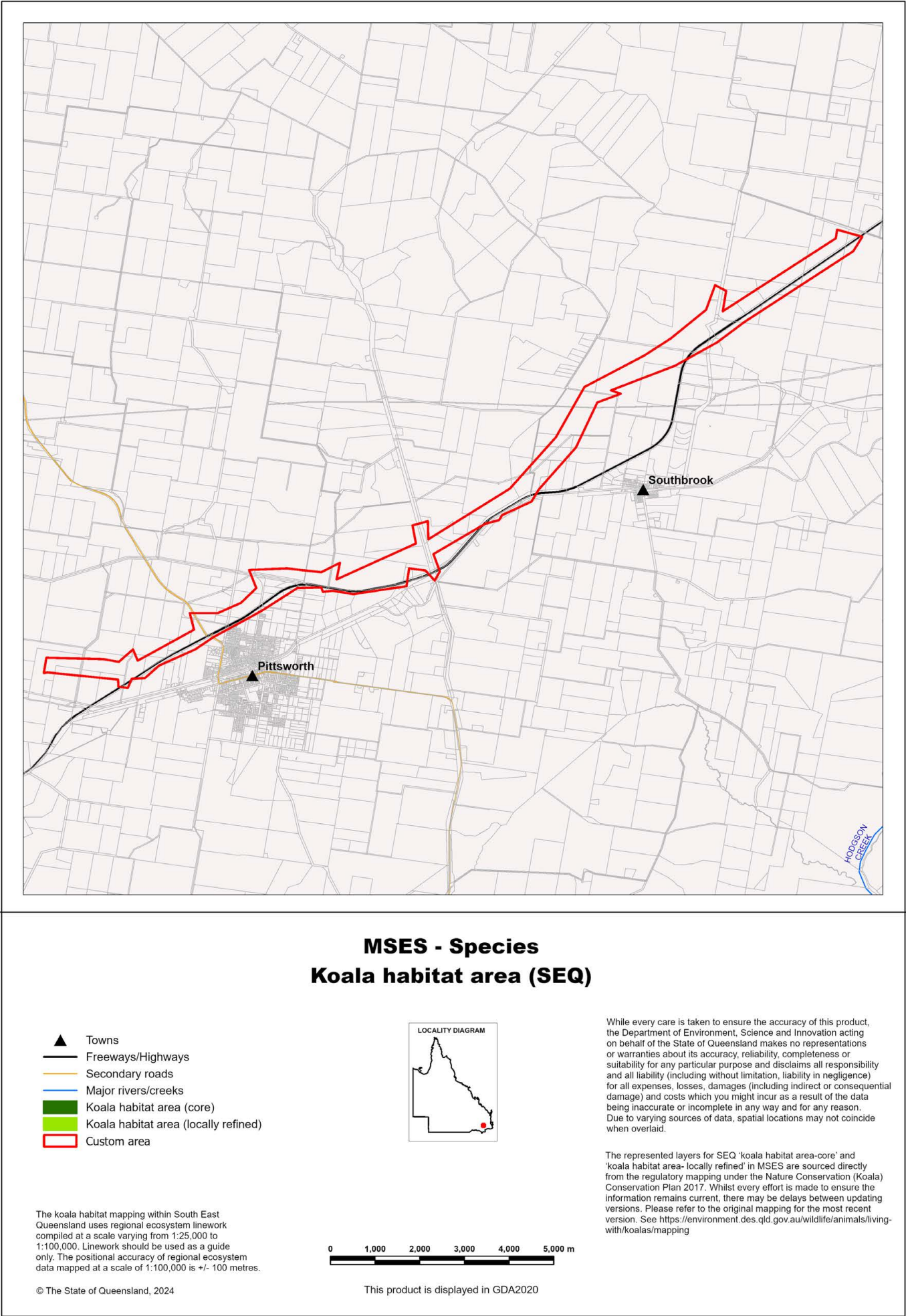
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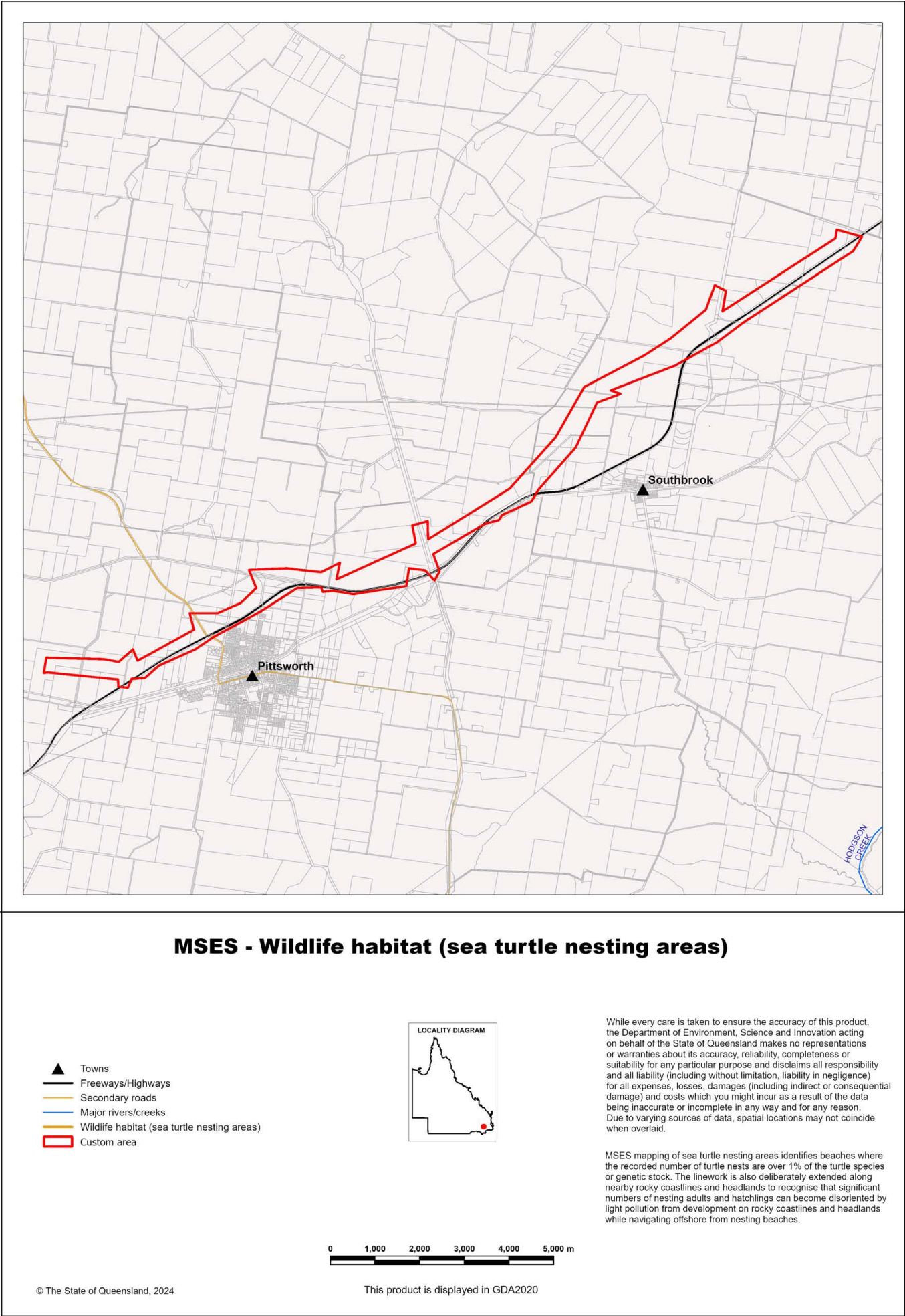
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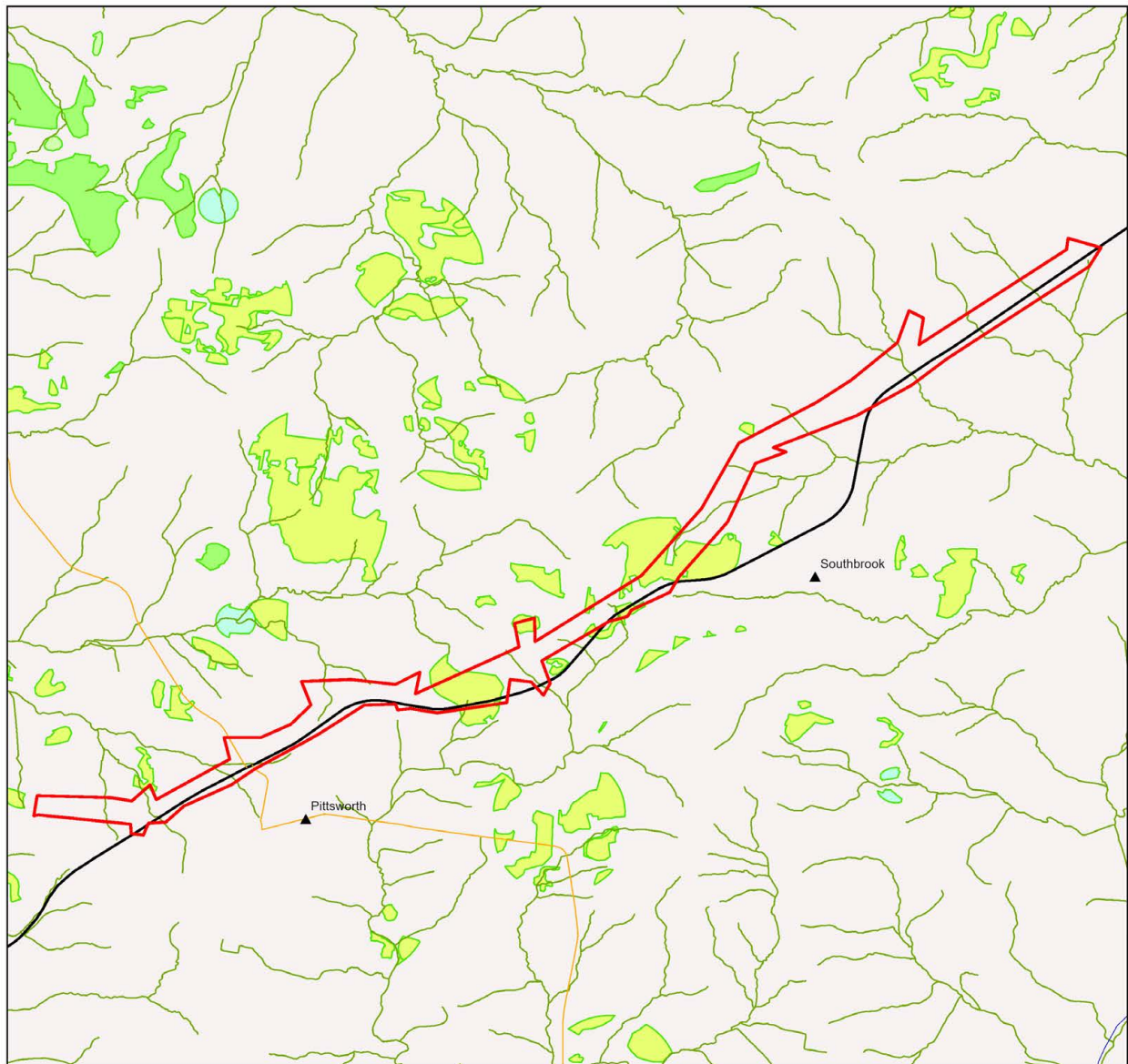
Map 3b - MSES - Species - Koala habitat area (SEQ)



Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)

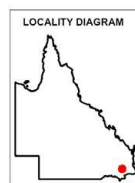


Map 4 - MSES - Regulated Vegetation



MSES - Regulated Vegetation

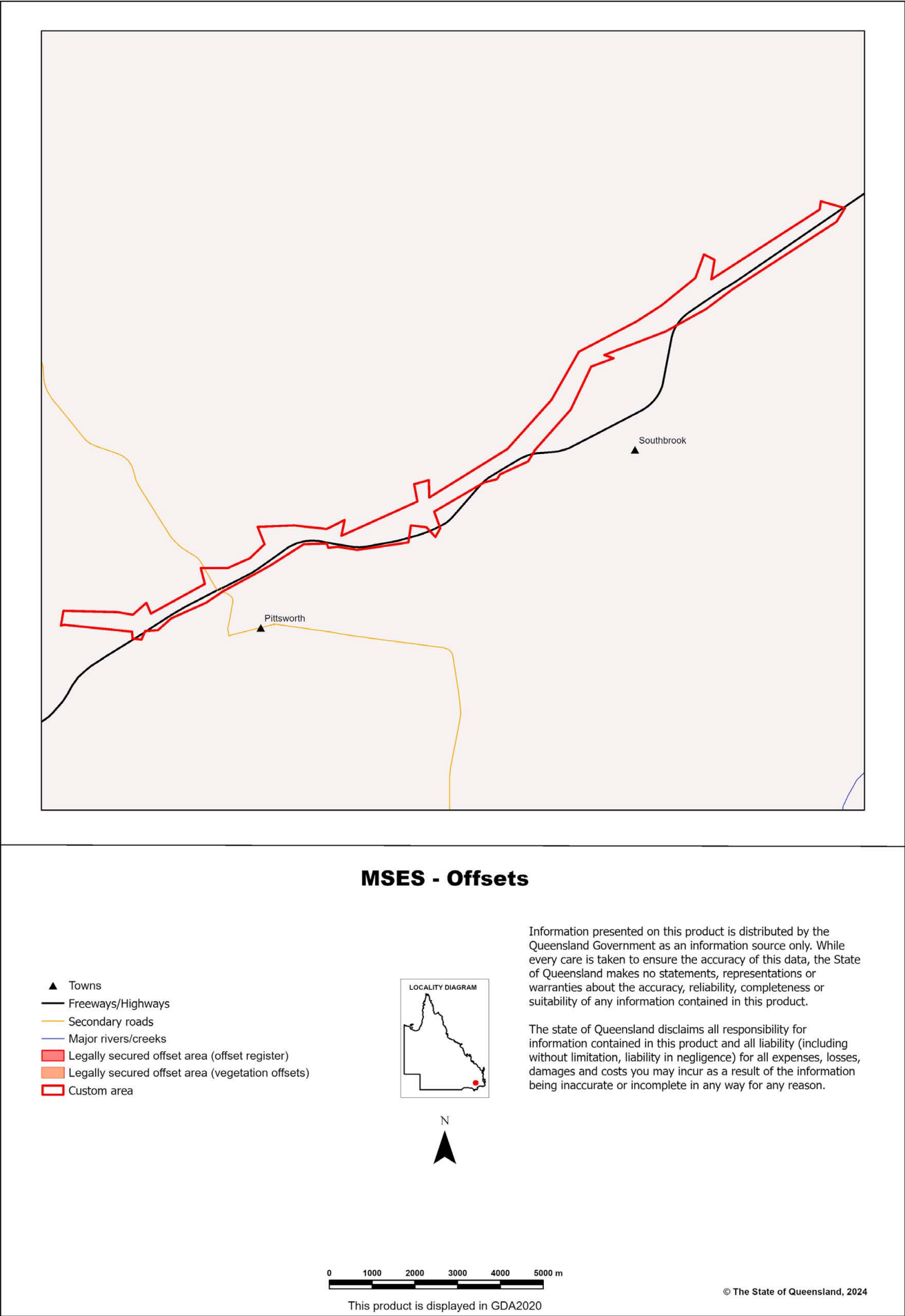
- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Regulated vegetation (intersecting a watercourse)
- Regulated vegetation (100m from wetland)
- Regulated vegetation (category B - endangered or of concern)
- Regulated vegetation (category C - endangered or of concern)
- Regulated vegetation (category R - GBR riverine)
- Regulated vegetation (essential habitat)
- Custom area



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Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DESI	- Department of Environment, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or Area of Interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "Central co-ordinates" option, the resulting assessment area encompasses an area extending from 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: biodiversity.planning@des.qld.gov.au

Disclaimer

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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Custom input, with area 939.74 ha

Local Government(s)
Toowoomba Regional
Bioregion(s)
Brigalow Belt
Subregion(s)
Eastern Darling Downs
Catchment(s)
Balonne-Condamine

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Brigalow Belt v2.1	Queensland Murray-Darling and Bulloo Basins v2.1	Queensland Murray-Darling and Bulloo Basins v.2.1

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.00	0.00
Of concern	0.00	0.00
No concern at present	117.47	12.50

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of Environment, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
Regional	102.28	10.88
State Habitat for EVNT taxa	21.83	2.32

Table 5: Non-riverine wetlands intersecting the AOI

(No Records)

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

(No Records)

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of Environment, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	735.56	78.27
Very Low	204.18	21.73

Table 8: Summary table, aquatic conservation significance (non-riverine)

(No Records)

Biodiversity Planning Assessments

Introduction

The Department of Environment, Science and Innovation (DESI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DESI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

<http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State Habitat for EVNT taxa	21.83	2.32
Regional	102.28	10.88

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in

protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Local or Other Values	Refer to diagnostic data for additional information	100.27	10.67
Regional	Remnant contains at least 1 Vulnerable or Near Threatened species (A)	2.01	0.21
State	Remnant contains at least 1 Endangered or 2 Vulnerable or Near Threatened species (A)	21.83	2.32

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	21.83	2.32	2.01	0.21	100.27	10.67	0.00	0.00
B1: Ecosystem Value (Bioregion)	0.00	0.00	0.00	0.00	124.11	13.21	0.00	0.00
B2: Ecosystem Value (Subregion)	0.00	0.00	124.11	13.21	0.00	0.00	0.00	0.00
C: Tract Size	0.00	0.00	0.00	0.00	36.34	3.87	87.78	9.34
D1: Relative RE Size (Bioregion)	0.00	0.00	0.00	0.00	0.00	0.00	124.11	13.21
D2: Relative RE Size (Subregion)	0.00	0.00	36.34	3.87	39.90	4.25	47.88	5.09

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
F: Ecosystem Diversity	0.00	0.00	11.30	1.20	47.13	5.02	65.68	6.99
G: Context and Connection	0.00	0.00	0.00	0.00	109.02	11.60	15.09	1.61

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Regional	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	7.37	0.78
Regional	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I) & Remnant forms part of a bioregional corridor (J)	116.74	12.42

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al.* 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to access overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ia: Centres of Endemism	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	0.00	0.00	124.11	13.21	0.00	0.00	0.00	0.00
Ic: Disjunct Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Id: Limits of Geographic Ranges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ie: High Species Richness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:

- Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
- Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
- Maintaining large scale seasonal/migratory species processes and movement of fauna;
- Maximising connectivity between large tracts/patches of remnant vegetation;
- Identifying key areas for rehabilitation and offsets; and

- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial

- Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
- Follow major watershed/catchment and/or coastal boundaries;
- Incorporate major altitudinal/geological/climatic gradients;
- Include and maximise connectivity between large tracts/patches of remnant vegetation;
- Include and maximise connectivity between remnant vegetation in good condition; and

- Riparian

- Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
	7.37	0.78
Regional	116.74	12.42

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
brbs_I_15	Relictual subregions (less than 30% remnant vegetation) - remnant vegetation	Regional	lb (refugia): H
brbs_I_17b			
brbs_fl_36	Mountain coolibah remnants, Eastern Darling Downs	Regional	lb (refugia): H

Expert panel decision descriptions:

Decision Number	Description
brbs_l_15	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Relictual subregions (less than 30% remnant vegetation remaining) for the Brigalow Belt include; Upper Belyando Flood out (11.8), Isaac - Comet Downs (11.11), Callide Creek Downs (11.19), Dawson River Downs (11.21), Taroom Downs (11.25), Dulacca Downs (11.28), Weribone High (11.29), Tara Downs (11.30), Eastern Darling Downs (11.31), Moonie R. - Commonon Creek Floodout (11.33), Moonie - Barwon Interfluve (11.34), Warrambool - Moonie (11.35), Macintyre - Weir Fan (11.36), Narrandool (11.38). Remnant vegetation provides a refuge from clearing in fragmented subregions and should be retained to maintain biodiversity. Refer to brbn_l_89 for the northern BRB implementation of this decision.
brbs_l_17b	
brbs_fl_36	The Eastern Darling Downs subregion contains the southern limits of mountain coolibah <i>Eucalyptus orgadophila</i> woodlands on basalt hills (11.8.5). The community is considered to provide important habitat for several threatened plant species including: <i>Digitaria porrecta</i>, <i>Discaria pubescens</i>, <i>Picris evae</i> and <i>Thesium australe</i>.

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in Queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning processes

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland Info:

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	735.56	78.27
Very Low	204.18	21.73

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	444.33	47.28	291.23	30.99	204.18	21.73	0.00	0.00
2. Naturalness catchment	0.00	0.00	0.00	0.00	939.74	100.00	0.00	0.00
3. Diversity and richness	0.00	0.00	0.00	0.00	0.00	0.00	939.74	100.00
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	939.74	100.00
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	495.42	52.72	0.00	0.00
6. Special features	0.00	0.00	444.33	47.28	0.00	0.00	0.00	0.00
7. Connectivity	939.74	100.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
cb_r_ec_24	Semi-permanent waterholes (riverine)	Condamine-Balonne	6.1.1,6.2.1,6.3.1,6.3.4	3,3,3,3
cb_r_ec_31	Upland riverine reaches with flows sustained by groundwater seeps	Condamine-Balonne	7.2.1	4

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
cb_r_ec_24	Drought refugia are an important feature in a semi-arid landscape. Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). Other values include <i>Tandanus</i> (Elliott's catfish). This decision was implemented using Water Observations from Space published by Geoscience Australia.
cb_r_ec_31	Groundwater connectivity with riverine ecosystems were viewed as important by the expert panel as inflow of groundwater, especially where granite geology exists, sustains rivers and creeks during drier periods. Water exchange can happen through fractured rock aquifers, but more typically coincides with sandy bottomed riverbeds. Flows are not necessarily perennial during drought.

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

(No Records)

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Naturalness catchment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Diversity and richness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, HerbreCs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Anomalopus mackayi</i>	long-legged worm-skink	E	V	High			FA
<i>Cyperus clarus</i>		V					FL
<i>Dasyurus maculatus maculatus</i>	spotted-tailed quoll (southern subspecies)	E	E	High			FA
<i>Dichanthium queenslandicum</i>		V	E				FL
<i>Digitaria porrecta</i>		NT					FL
<i>Grantiella picta</i>	painted honeyeater	V	V	High			FA
<i>Leuzea australis</i>		V	V				FL
<i>Phascolarctos cinereus</i>	koala	E	E	Low			FA

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Picris barbarorum</i>		V					FL
<i>Picris evae</i>		V	V				FL
<i>Tympanocryptis condaminensis</i>	Condamine earless dragon	E	E	High			FA

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DESI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

*JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.

**I - wetland indicator species; D - wetland dependent species.

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
<i>Climacteris picumnus</i>	Brown Treecreeper	FA
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	FA
<i>Varanus varius</i>	Lace Monitor	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. Furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Identified flora/fauna
<i>Acrocephalus australis</i>	Australian reed-warbler	FA
<i>Biziura lobata</i>	musk duck	FA
<i>Calidris melanotos</i>	pectoral sandpiper	FA
<i>Chelodina expansa</i>	broad-shelled river turtle	FA
<i>Plegadis falcinellus</i>	glossy ibis	FA

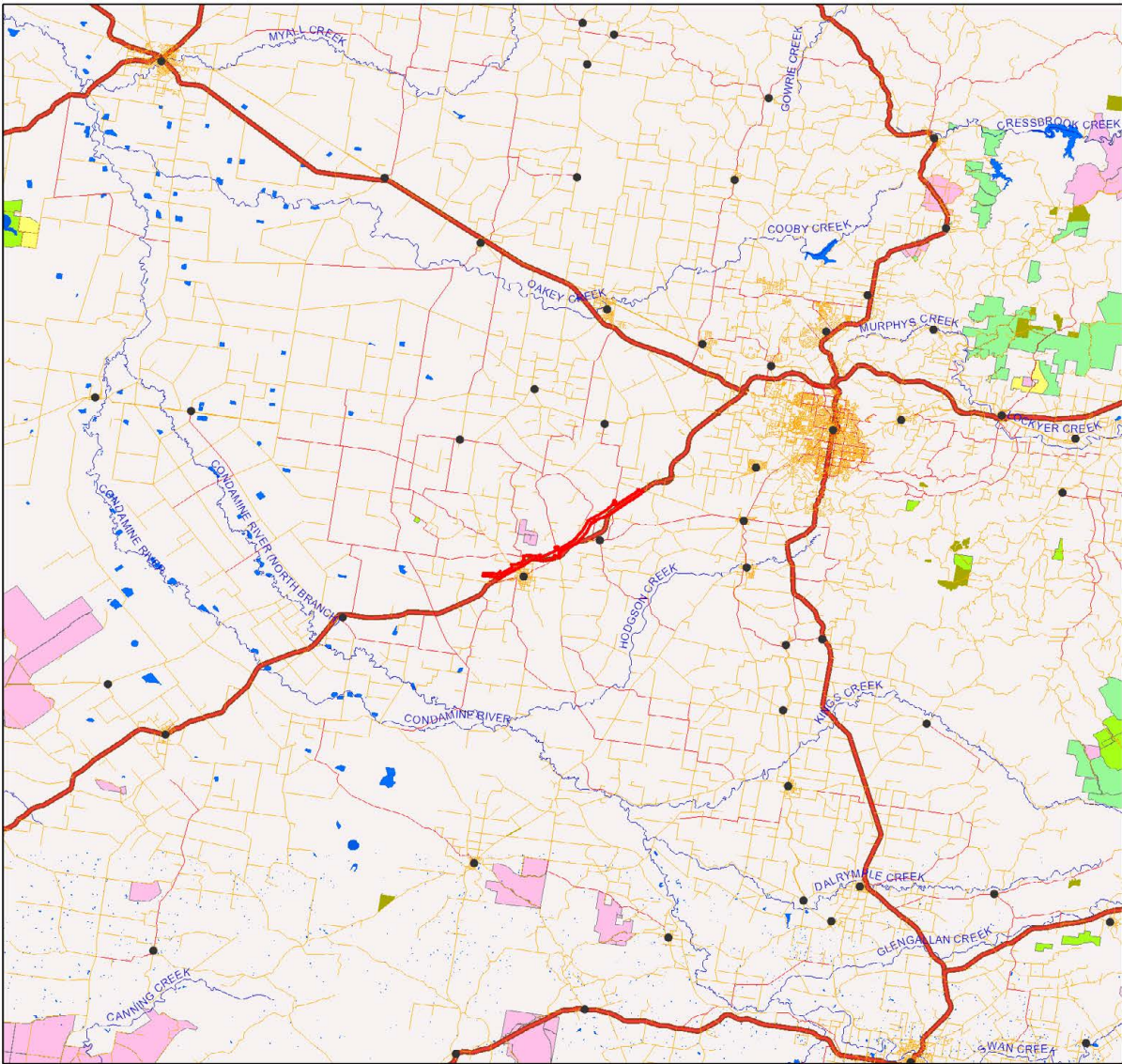
Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

Species	Common name	Identified flora/fauna
<i>Acrocephalus australis</i>	Australian reed-warbler	FA
<i>Biziura lobata</i>	musk duck	FA
<i>Calidris melanotos</i>	pectoral sandpiper	FA
<i>Chelodina expansa</i>	broad-shelled river turtle	FA
<i>Limnodynastes salmini</i>	salmon striped frog	FA
<i>Litoria balatus</i>	bleating treefrog	FA
<i>Plegadis falcinellus</i>	glossy ibis	FA

NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

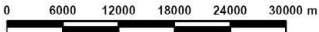
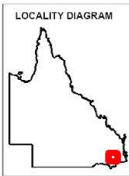
Maps

Map 1 - Locality Map



Locality Map

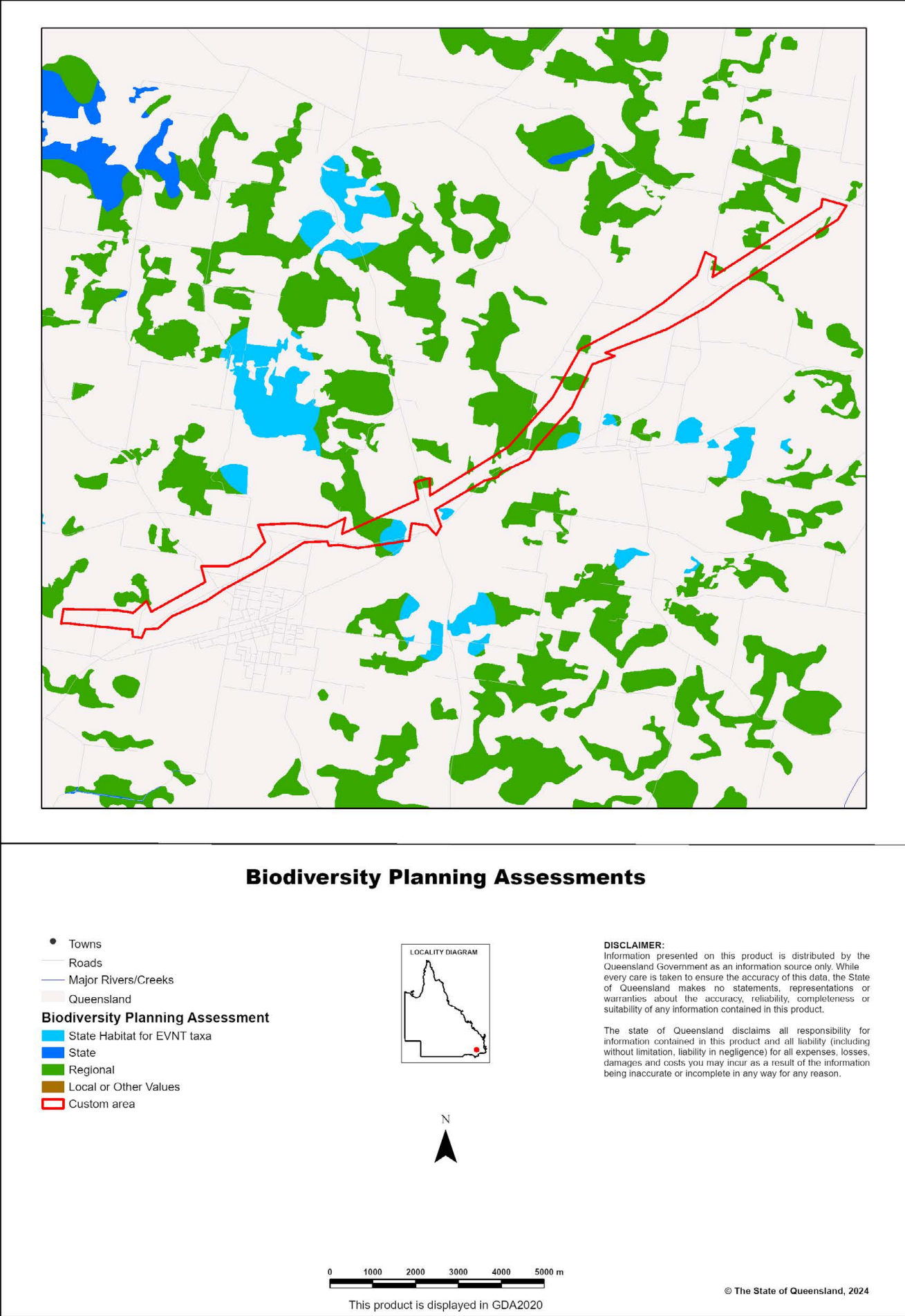
- Legend**
- Towns
 - Freeways/Highways
 - Connector
 - Street/Local Road
 - Reservoirs
 - Lakes
 - National Park (Scientific)
 - National Park
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Nature Refuges
 - Coordinated Conservation Areas
 - Major rivers/creeks
 - Queensland
 - Custom area



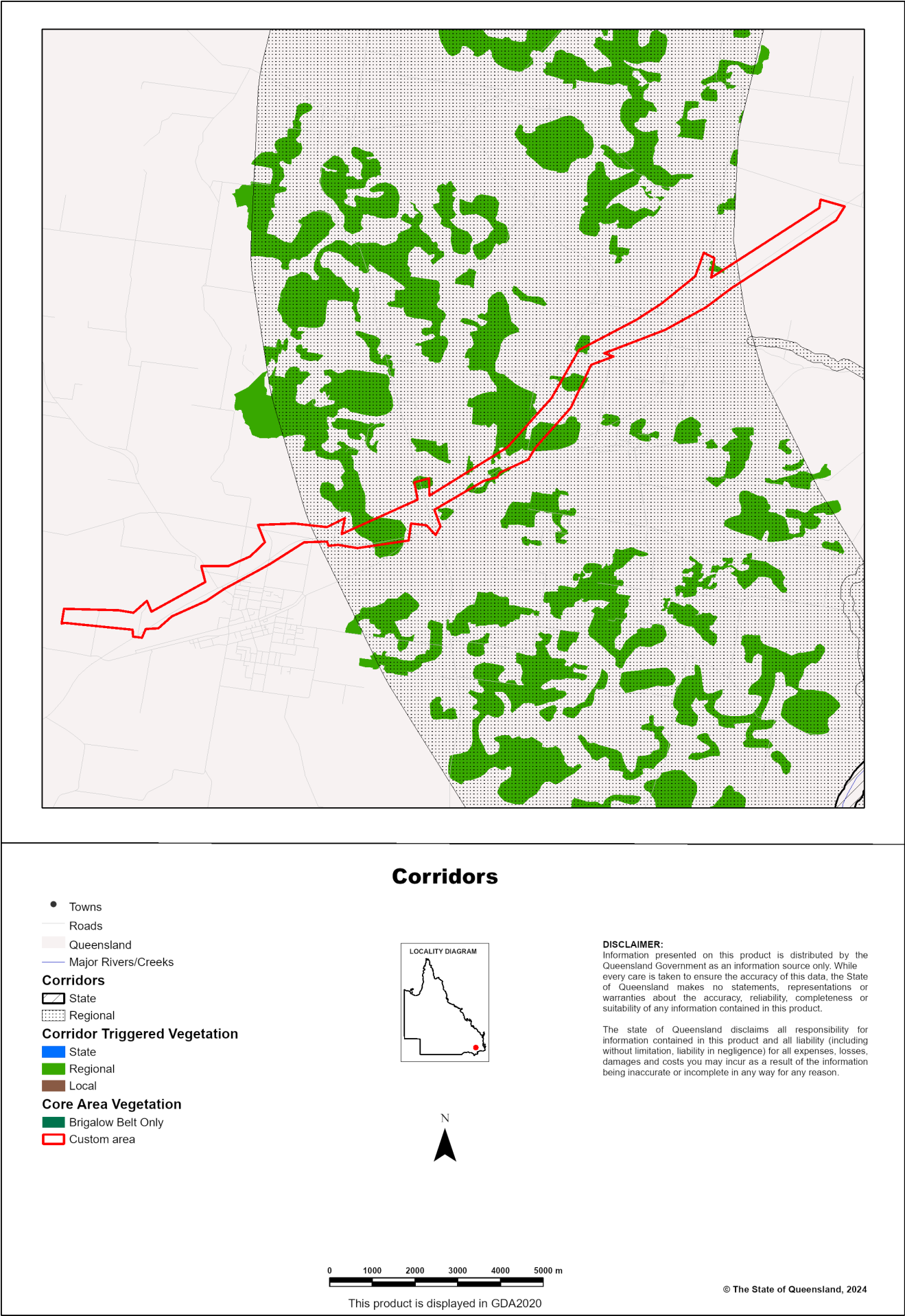
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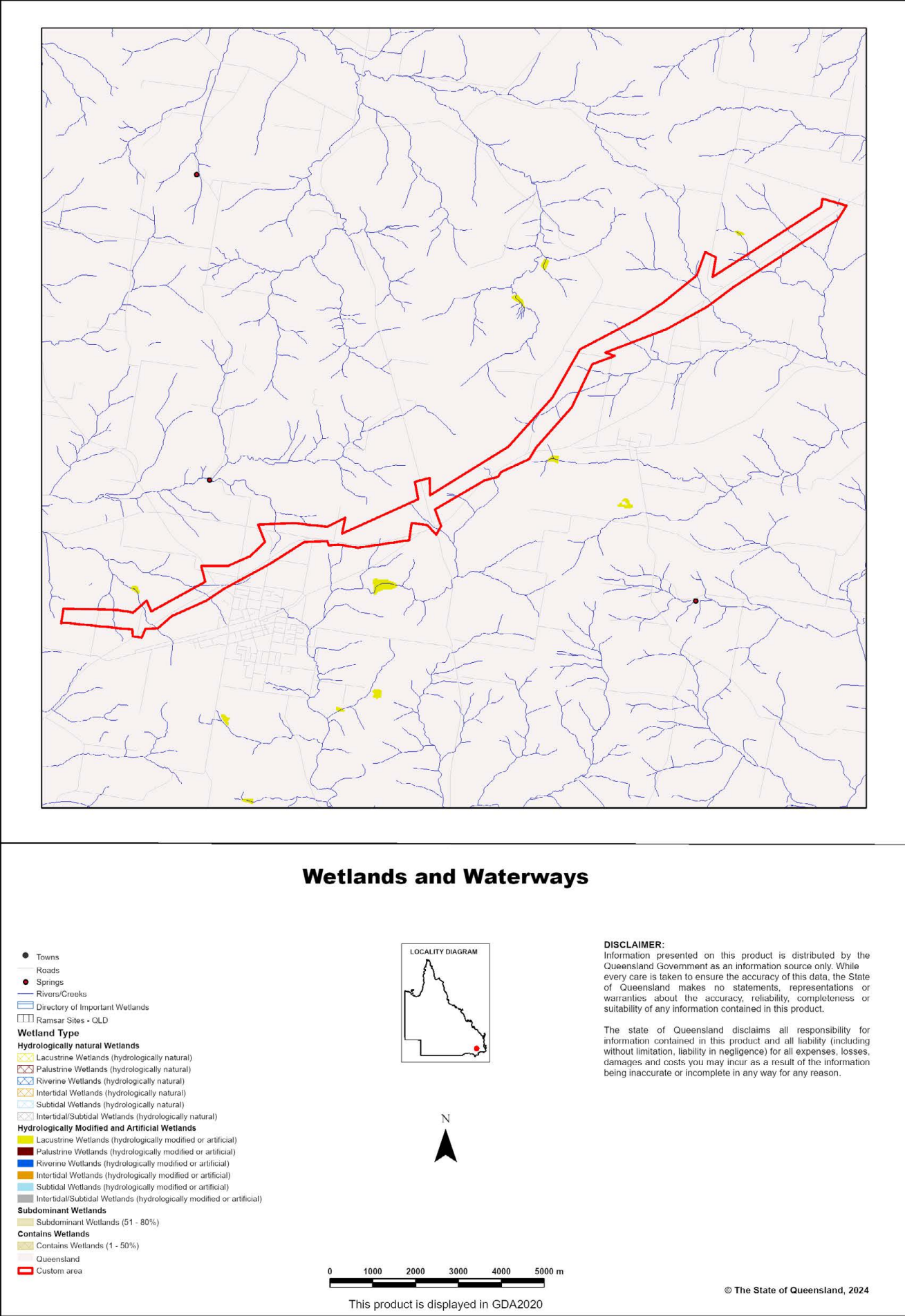
Map 2 - Biodiversity Planning Assessment (BPA)



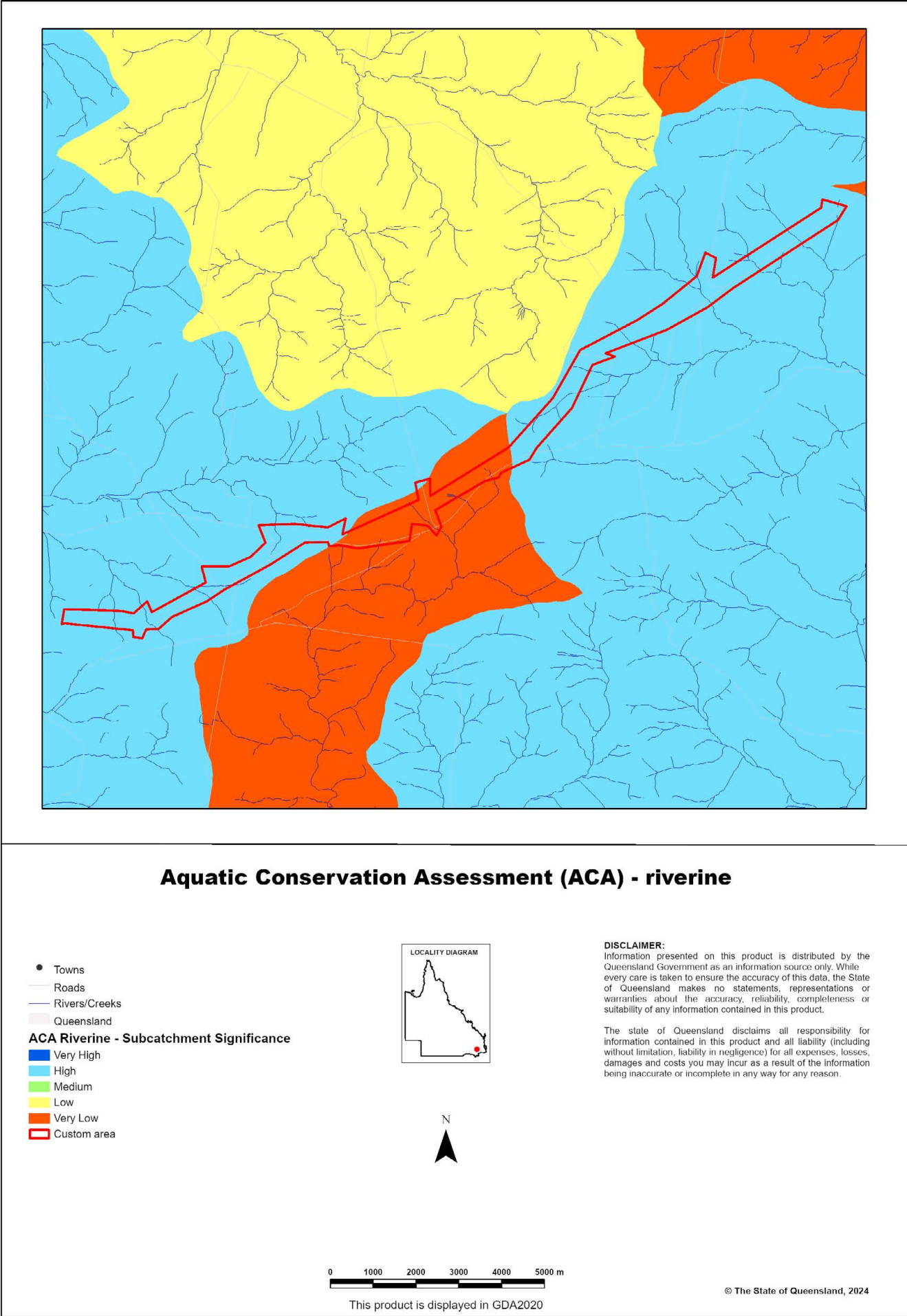
Map 3 - Corridors



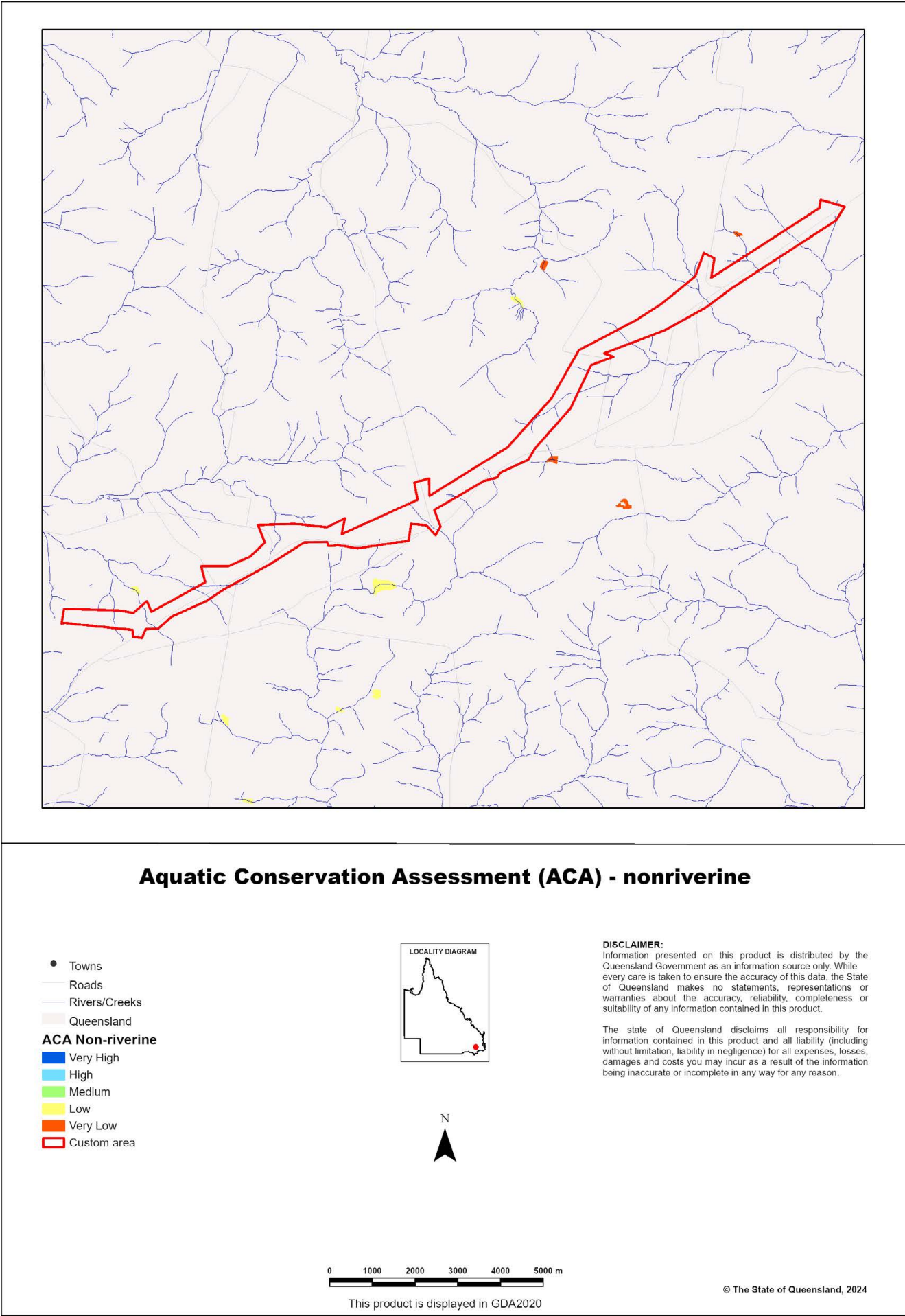
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



References

Clayton, P.D., Fielder, D.F., Howell, S. and Hill, C.J. (2006) *Aquatic biodiversity assessment and mapping method (AquaBAMM): a conservation values assessment tool for wetlands with trial application in the Burnett River catchment*. Published by the Environmental Protection Agency, Brisbane. ISBN 1-90928-07-3. Available at

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Morton, S. R., Short, J. and Barker, R. D. with an Appendix by G.F. Griffin and G. Pearce (1995). *Refugia for Biological Diversity in Arid and Semi-arid Australia*. Biodiversity Series, Paper No. 4, Biodiversity Unit, Environment Australia.

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

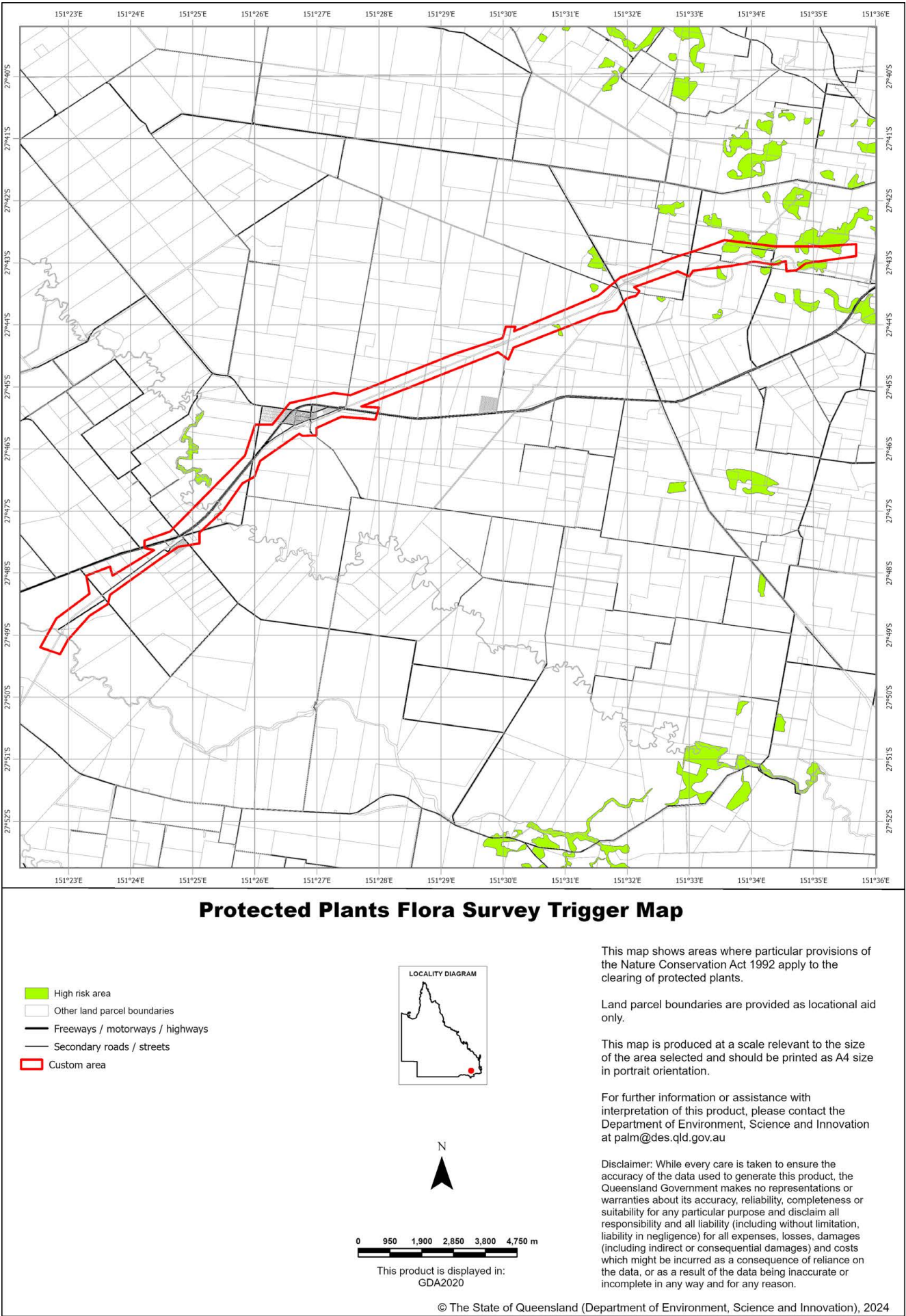
Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einiasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v2.3 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.6
Threatened Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:

<http://dds.information.qld.gov.au/DDS>

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DESI	- Department of Environment, Science and Innovation
EPBC	- <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see [section 89](#) of the Act.

Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.

WetlandMaps Report



For selected area of interest Custom input

Current as at 5/06/2024

Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest(AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

Disclaimer

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Summary Information

Below is an overview of the area of interest.

Custom input
with area of 1437.24 ha

Local Government(s)
Toowoomba Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Eastern Darling Downs

Catchment(s)
Condamine River

Drainage sub-basin
Balonne-Condamine

NRM Regions

The area of interest is in the following NRM region:

Southern Queensland Landscapes

Water Resource Plan Boundaries

The area of interest is in the following Water Resource Plan:

Condamine and Balonne

Great Artesian Basin and Other Regional Aquifers

Learn more about how Wetlands are mapped in Queensland

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include::**

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude::**

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria
- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Links and support

Other sites that deliver wetland related information include:

Wetland *Summary* tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

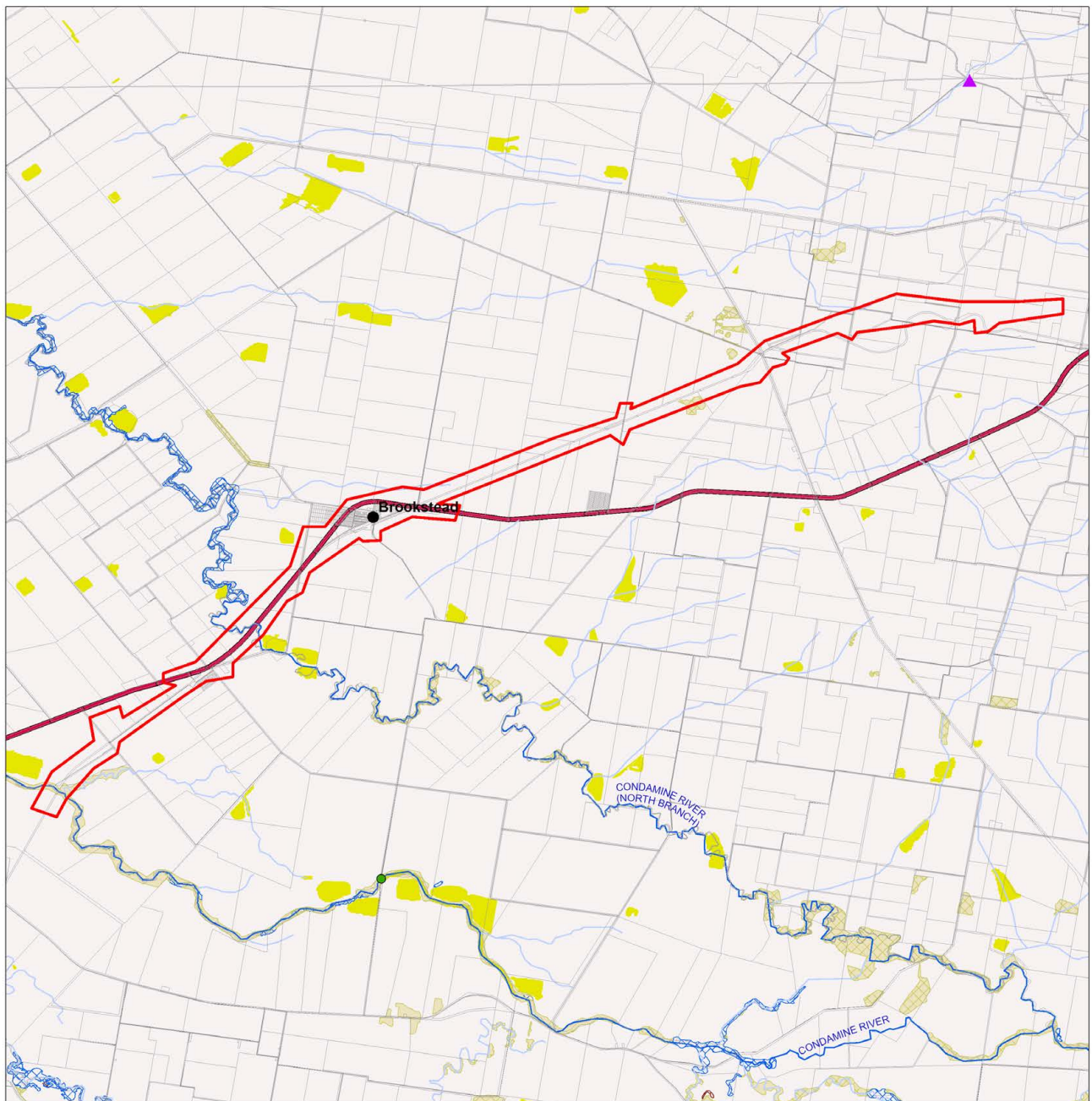
Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

Regional Ecosystem Mapping information:
<https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

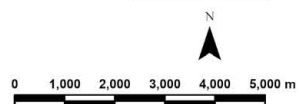
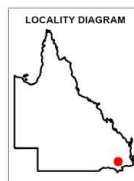
Aquatic Conservation Assessments: [Aquatic Conservation Assessments \(ACA\) and AquaBAMM \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Dependant Ecosystems information:
<https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Queensland Wetland Map

- Springs
- Dams and weirs
- Towns
- Freeways/Highways
- Roads
- Cadastral Boundaries
- Sub-basin
- Riverine System Drainage Lines**
 - Major
 - Minor
- Wetland Mapping**
 - Hydrologically natural Wetlands**
 - Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
 - Hydrologically Modified and Artificial Wetlands**
 - Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
 - Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
 - Contains Wetlands (1 - 50%)
 - Custom area

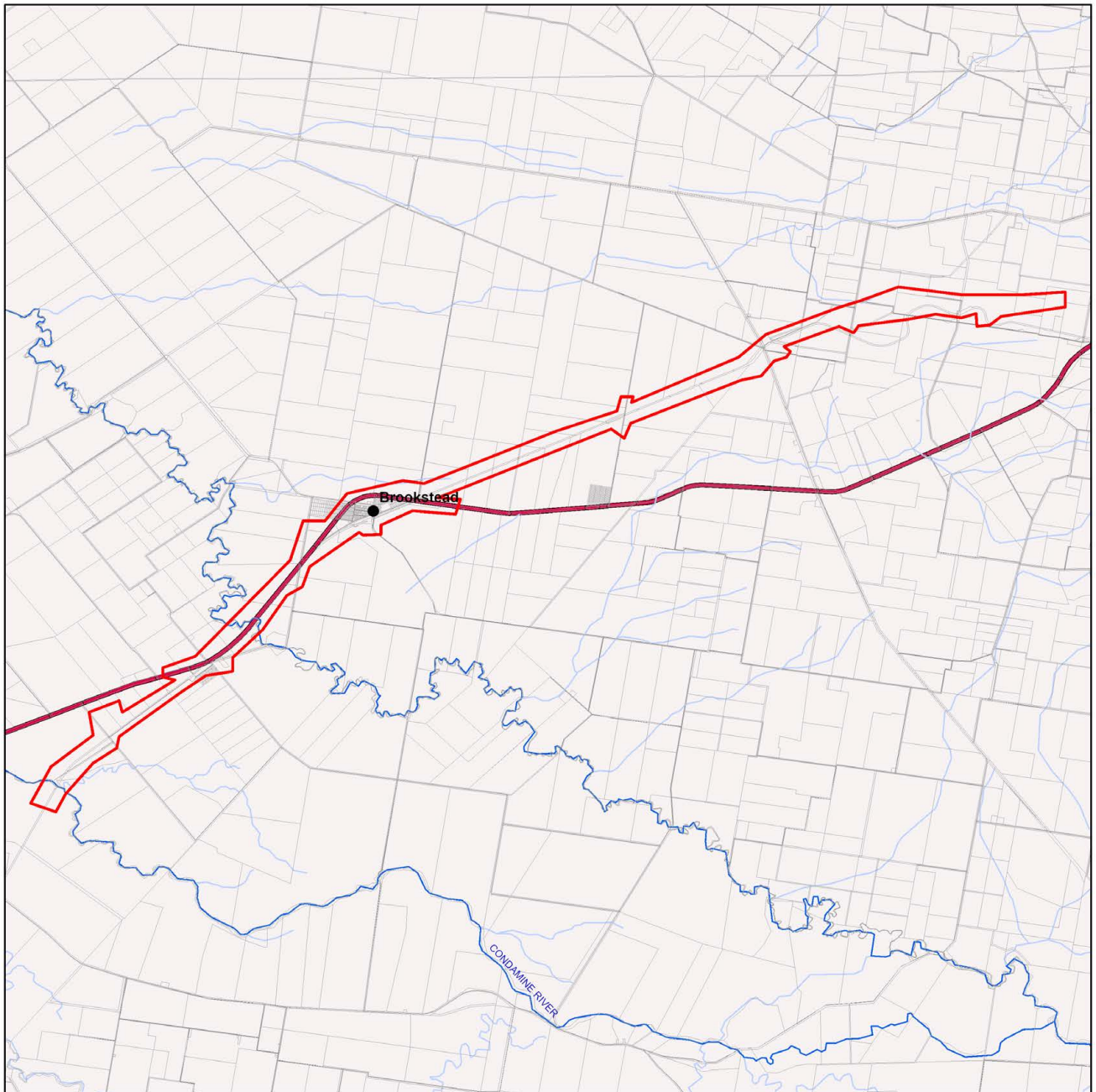


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This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

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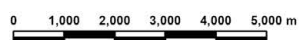
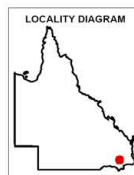


Queensland Wetlands of Importance Map

- Towns
- ▭ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▭ Sub-basin
- ▭ Directory of Important Wetlands
- ▭ Ramsar Wetlands

Riverine System Drainage Lines

- ▬ Major
- ▬ Minor
- ▭ Custom area

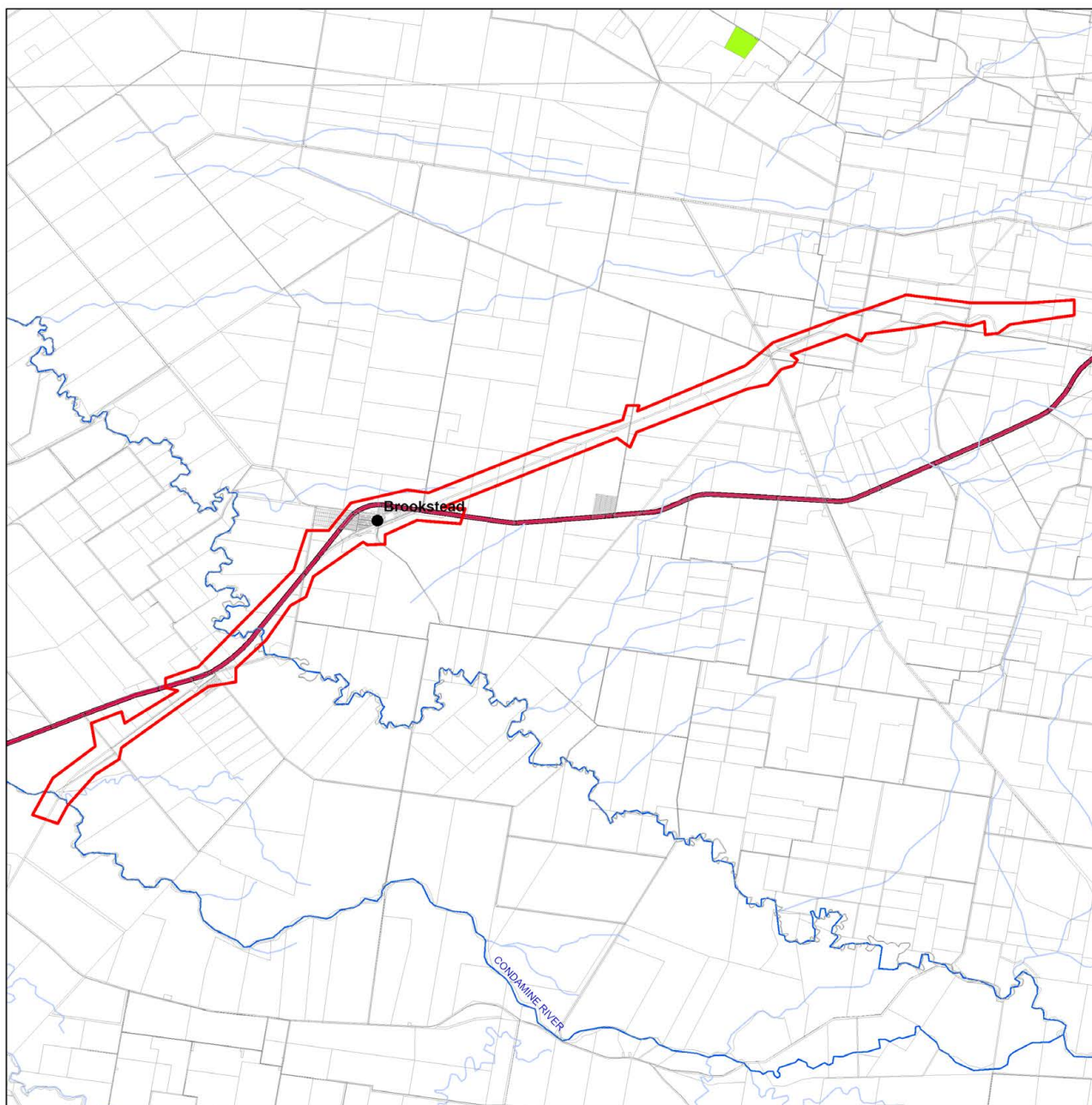


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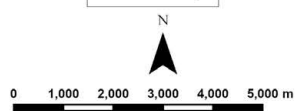
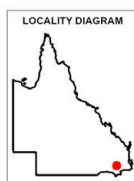
This product is displayed in GDA2020

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Queensland Protected Area Map

- Towns
- ▬ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▬ Sub-basin
- Riverine System Drainage Lines**
 - ▬ Major
 - ▬ Minor
- Marine Parks**
 - General Use Zone
 - Habitat Protection Zone
 - Estuarine Conservation Zone
 - Conservation Park Zone
 - Buffer Zone
 - Scientific Research Zone
 - Marine National Park Zone
 - Preservation Zone
- Protected Areas**
 - National Park
 - National Park (Scientific)
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Custom area



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This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

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Wetland habitat types in the AOI. Total area: 19.43 ha

Wetland Class	Habitat type	Area (ha)
RIV	NOA/PC02d	13.70
CPA	NOA	5.73

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands

Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps
Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps

Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the input coordinates.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website <https://www.resources.qld.gov.au/>

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Custom input, with area 1437.24 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Toowoomba Regional	Balonne-Condamine	Brigalow Belt	Eastern Darling Downs

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.00	0.00
Of concern	13.70	0.95
No concern at present	53.21	3.70
Total remnant vegetation	66.91	4.66

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated into a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website <https://www.resources.qld.gov.au/>.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

*****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.*

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.3.25	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Of concern	6.85	0.48
11.3.27b	Freshwater wetlands	Of concern	0.68	0.05
11.3.4	Eucalyptus tereticornis and/or Eucalyptus spp. woodland on alluvial plains	Of concern	6.16	0.43
11.8.5	Eucalyptus orgadophila open woodland on Cainozoic igneous rocks	No concern at present	53.21	3.70
non-remnant	None	None	1,370.33	95.34

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.3.25	Pre-clearing 813000 ha; Remnant 2021 531000 ha	16a	Riverine	Low
11.3.27b	Pre-clearing 63000 ha; Remnant 2021 43000 ha	34d	Palustrine	Low
11.3.4	Pre-clearing 684000 ha; Remnant 2021 178000 ha	16c	Not a Wetland	Low

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.8.5	Pre-clearing 631000 ha; Remnant 2021 344000 ha	11a	Not a Wetland	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.3.25	11.3.25: Shown to be associated with a high fauna species richness in the Taroom area (Venz et al. 2002). Within parts of the Fitzroy catchment, this RE is known habitat for the threatened freshwater turtle <i>Rheodytes leukops</i> . Known to be important habitat for other riparian freshwater turtle species. This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.3.27b	11.3.27: Habitat for a diverse range of fauna species (Venz et al. 2002) particularly birds. 11.3.27a: Provides wetland habitat for a flora and fauna.
11.3.4	11.3.4: Potential habitat for NCA listed species: <i>Acacia pedleyi</i> , <i>Callicarpa thozetii</i> , <i>Cycas megacarpa</i> , <i>Cycas ophiolitica</i> , <i>Digitaria porrecta</i> , <i>Eriocaulon carsonii</i> subsp. <i>orientale</i> , <i>Livistona nitida</i> , <i>Rhaponticum australe</i> , <i>Samadera bidwillii</i> , <i>Sannantha brachypoda</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.8.5	11.8.5: In southern part of bioregion, habitat for a number of threatened plant species including <i>Picris evae</i> and <i>Thesium australe</i> and near threatened species <i>Digitaria porrecta</i> and <i>Discaria pubescens</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>). 11.8.5a: This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: <https://publications.qld.gov.au/dataset/redd/resource/>

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	1,370.33	95.34
11a	Moist to dry open forests to woodlands dominated by <i>Eucalyptus orgadophila</i> (mountain coolibah). Some areas dominated by <i>E. tereticornis</i> (blue gum), <i>E. melliodora</i> (yellow box), <i>E. albens</i> (white box), <i>E. crebra</i> (narrow-leaved red ironbark) or <i>E. melanophloia</i> (silver-leaved ironbark).	53.21	3.70
16a	Open forest and woodlands dominated by <i>Eucalyptus camaldulensis</i> (river red gum) (or <i>E. tereticornis</i> (blue gum)) and/or <i>E. coolabah</i> (coolabah) (or <i>E. microtheca</i> (coolabah)) fringing drainage lines. Associated species may include <i>Melaleuca</i> spp., <i>Corymbia tessellaris</i> (carbeen), <i>Angophora</i> spp., <i>Casuarina cunninghamiana</i> (riveroak). Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	6.85	0.48
16c	Woodlands and open woodlands dominated by <i>Eucalyptus coolabah</i> (coolabah) or <i>E. microtheca</i> (coolabah) or <i>E. largiflorens</i> (black box) or <i>E. tereticornis</i> (blue gum) or <i>E. chlorophylla</i> on floodplains. Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	6.16	0.43
34d	Palustrine wetlands. Freshwater swamps/springs/billabongs on floodplains ranging from permanent and semi-permanent to ephemeral.	0.68	0.05

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: <http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

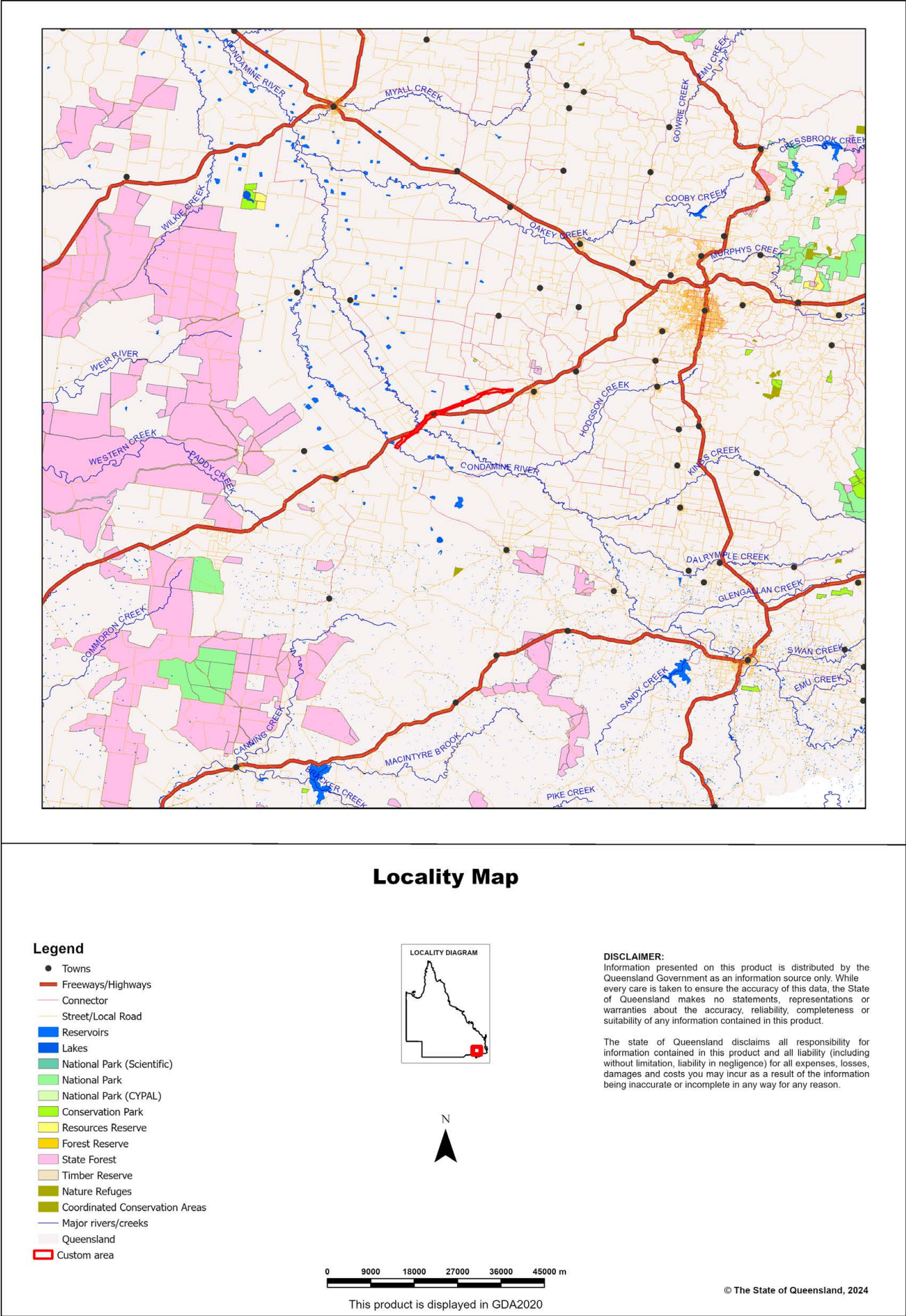
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

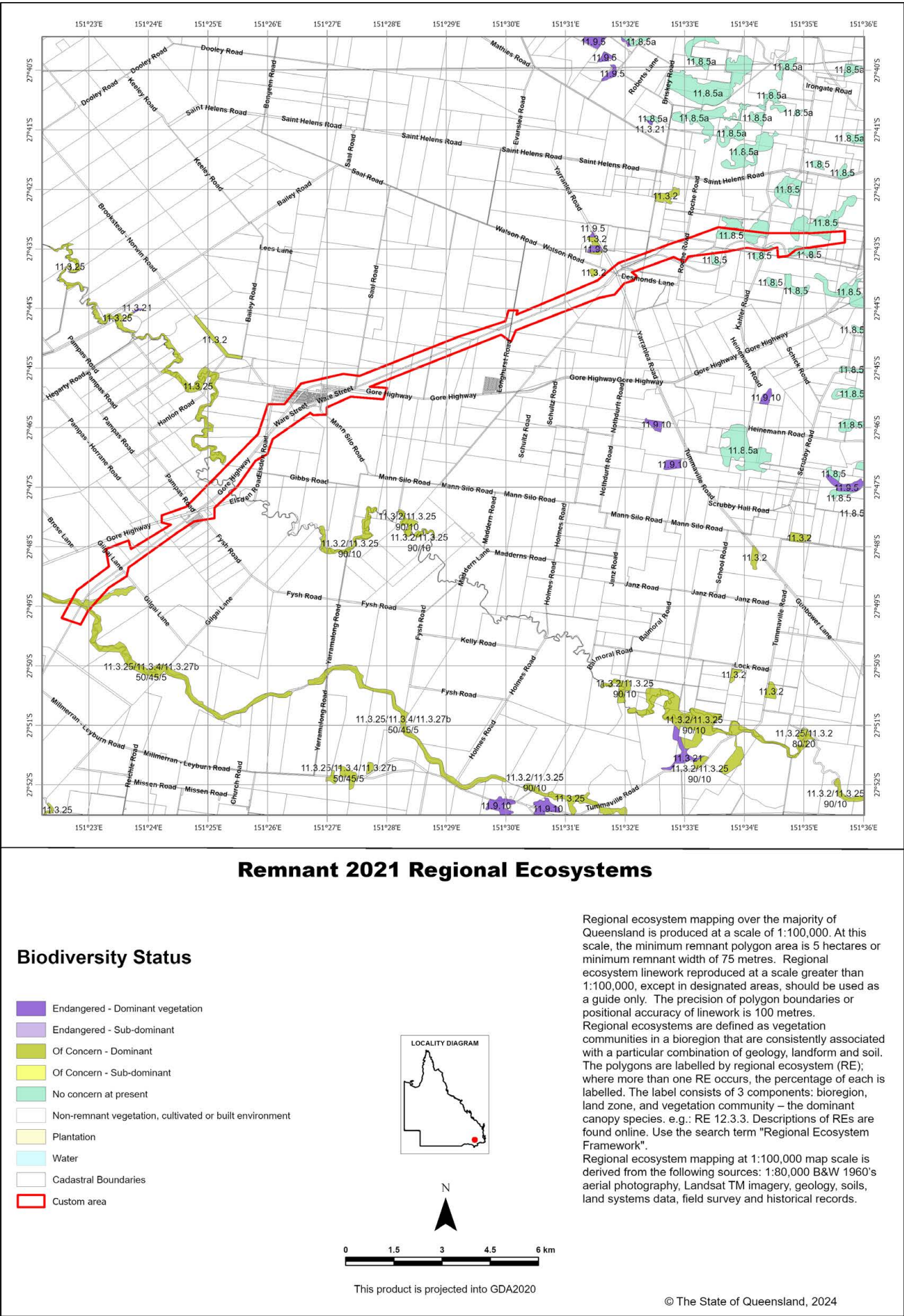
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.3.25	Available	Available
11.3.27b	Available	Available
11.3.4	Available	Available
11.8.5	Available	Available
non-remnant	Not currently available	Not currently available

Maps

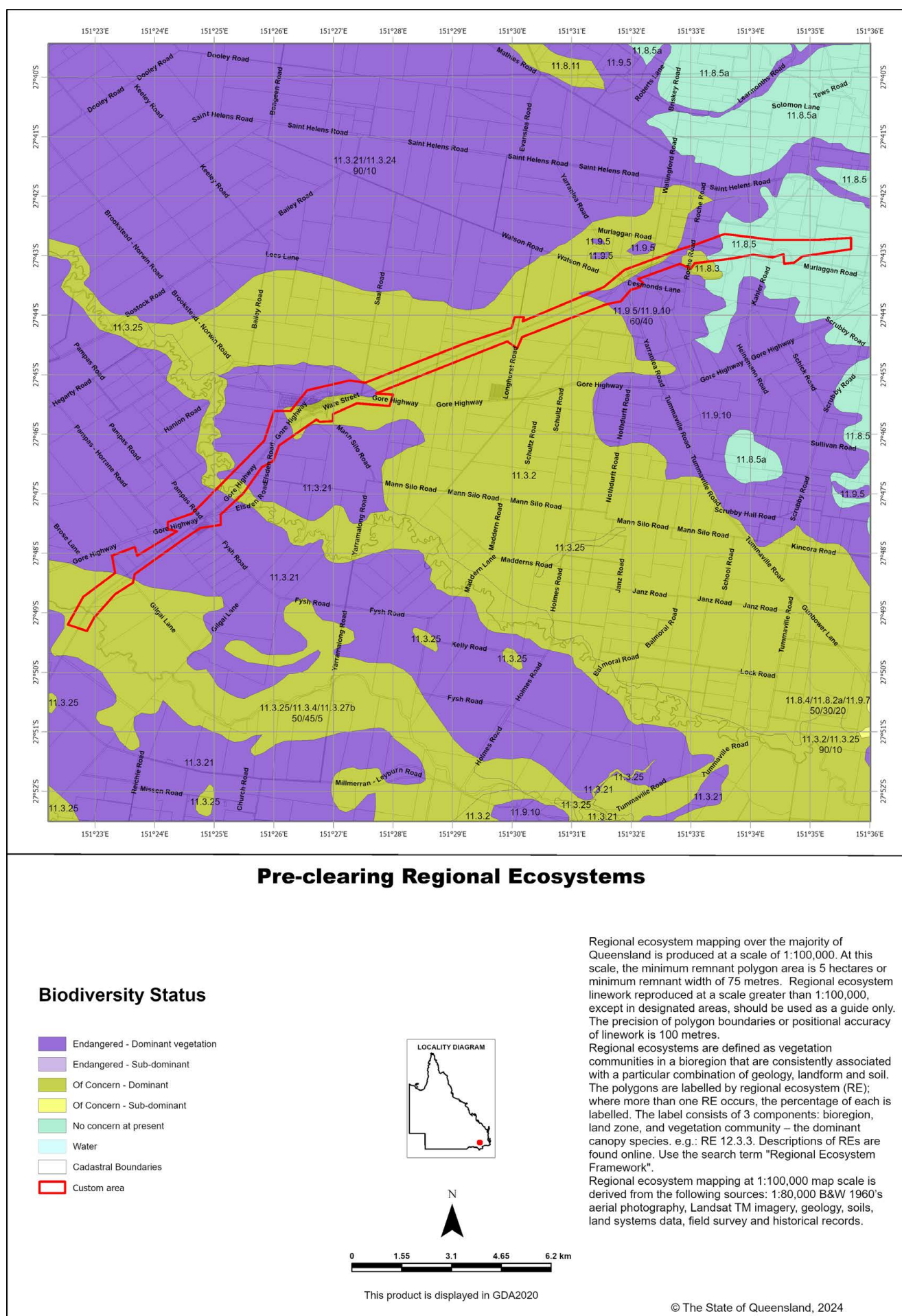
Map 1 - Location



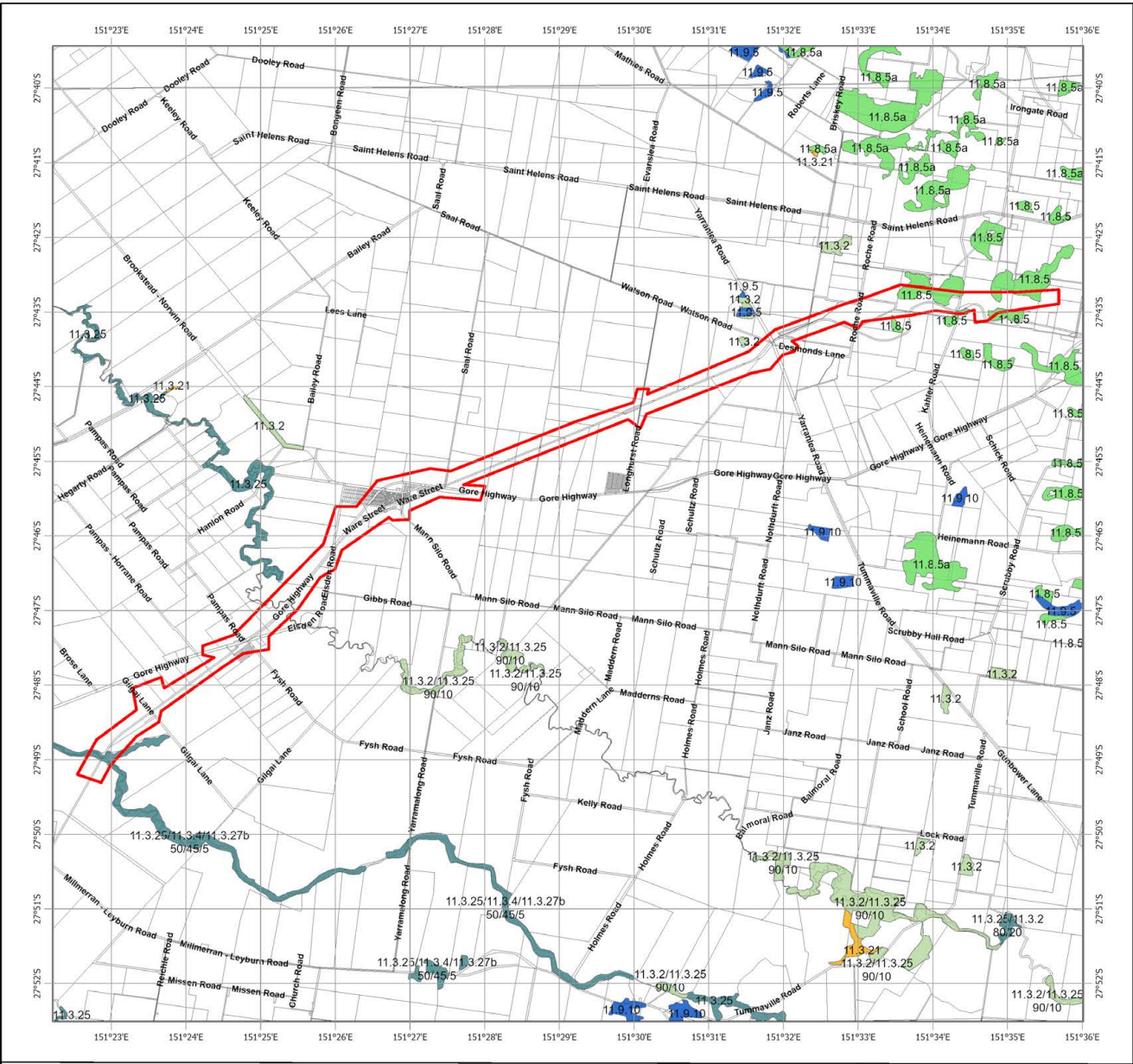
Map 2 - Remnant 2021 regional ecosystems



Map 3 - Pre-clearing regional ecosystems



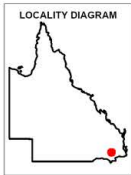
Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries
- Custom area

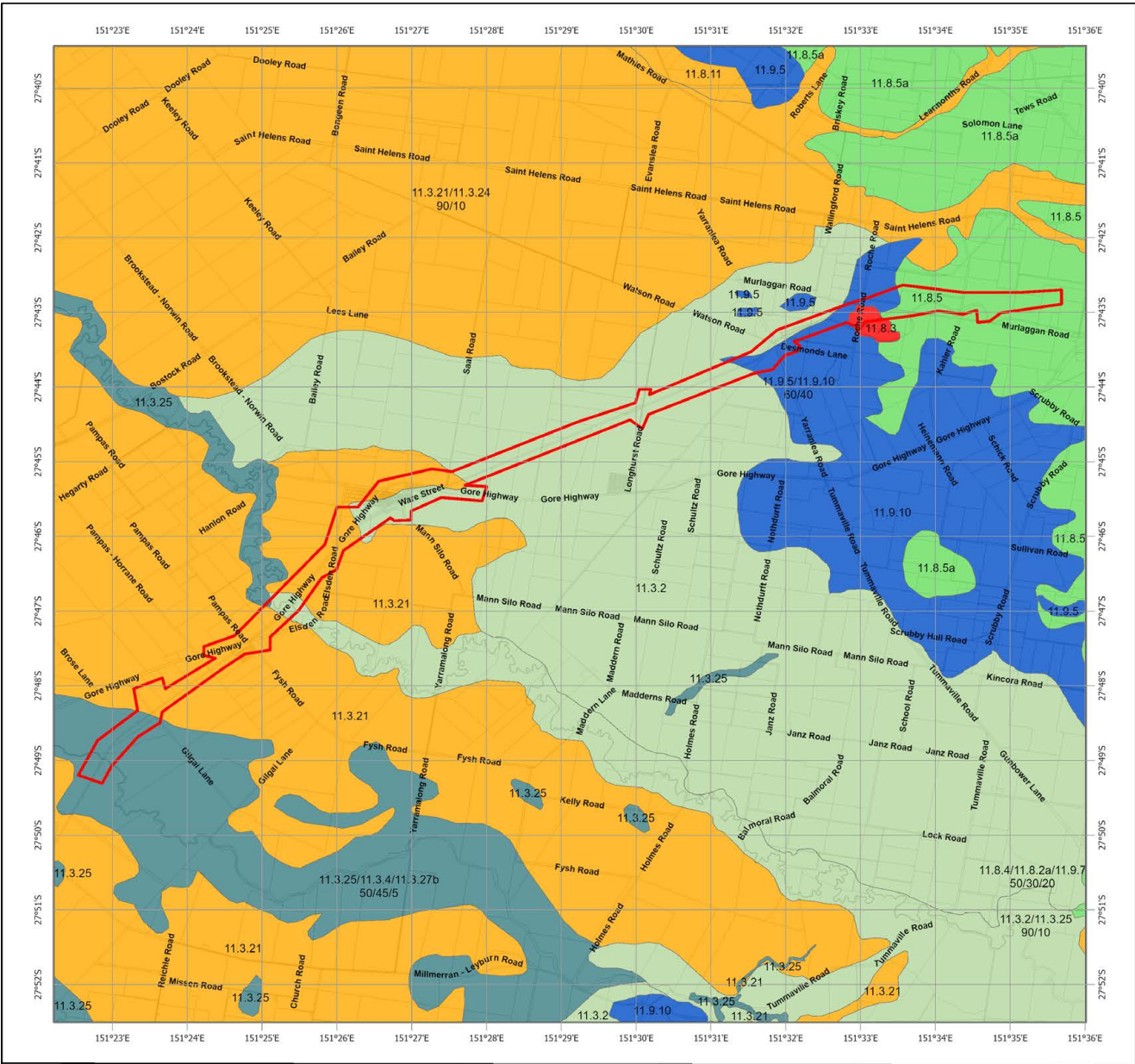


0 1.5 3 4.5 6 km

This product is displayed in GDA2020

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records. Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.

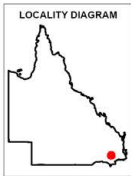
Map 5 - Pre-clearing regional ecosystems by BVG (5M)



Pre-clearing Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Water
- Cadastral Boundaries
- Custom area



0 1.55 3.1 4.65 6.2 km

This product is displayed in GDA2020

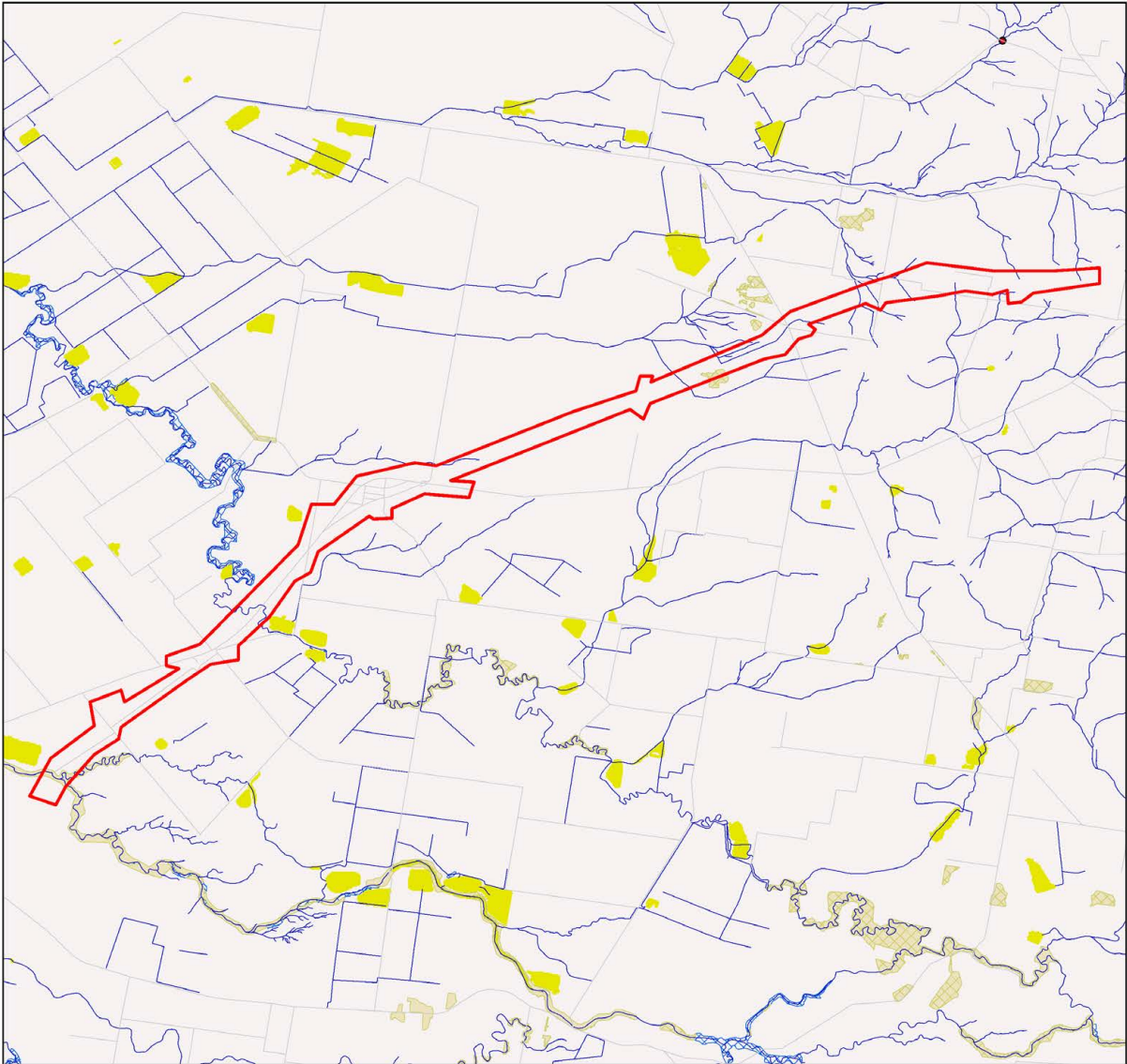
Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled.

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.

Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".

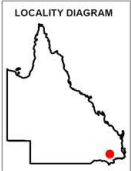
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

Map 6 - Wetlands and waterways



Wetlands and Waterways

- Towns
 - Roads
 - Springs
 - Rivers/Creeks
 - Directory of Important Wetlands
 - Ramsar Sites - QLD
- Wetland Type**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
- Queensland
- Custom area



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Links and Other Information Sources

The Department of Environment, Science and Innovation's Website -

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/> provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation>

The methodology for mapping regional ecosystems can be downloaded from:

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

Benchmarks can be obtained from: <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/spatial-catalogue)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

<https://qldglobe.information.qld.gov.au/>

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Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science.

<https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086>

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F., Richter, D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane.

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/>

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

[Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/information/spatial-catalogue)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and a field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@des.qld.gov.au

Disclaimer

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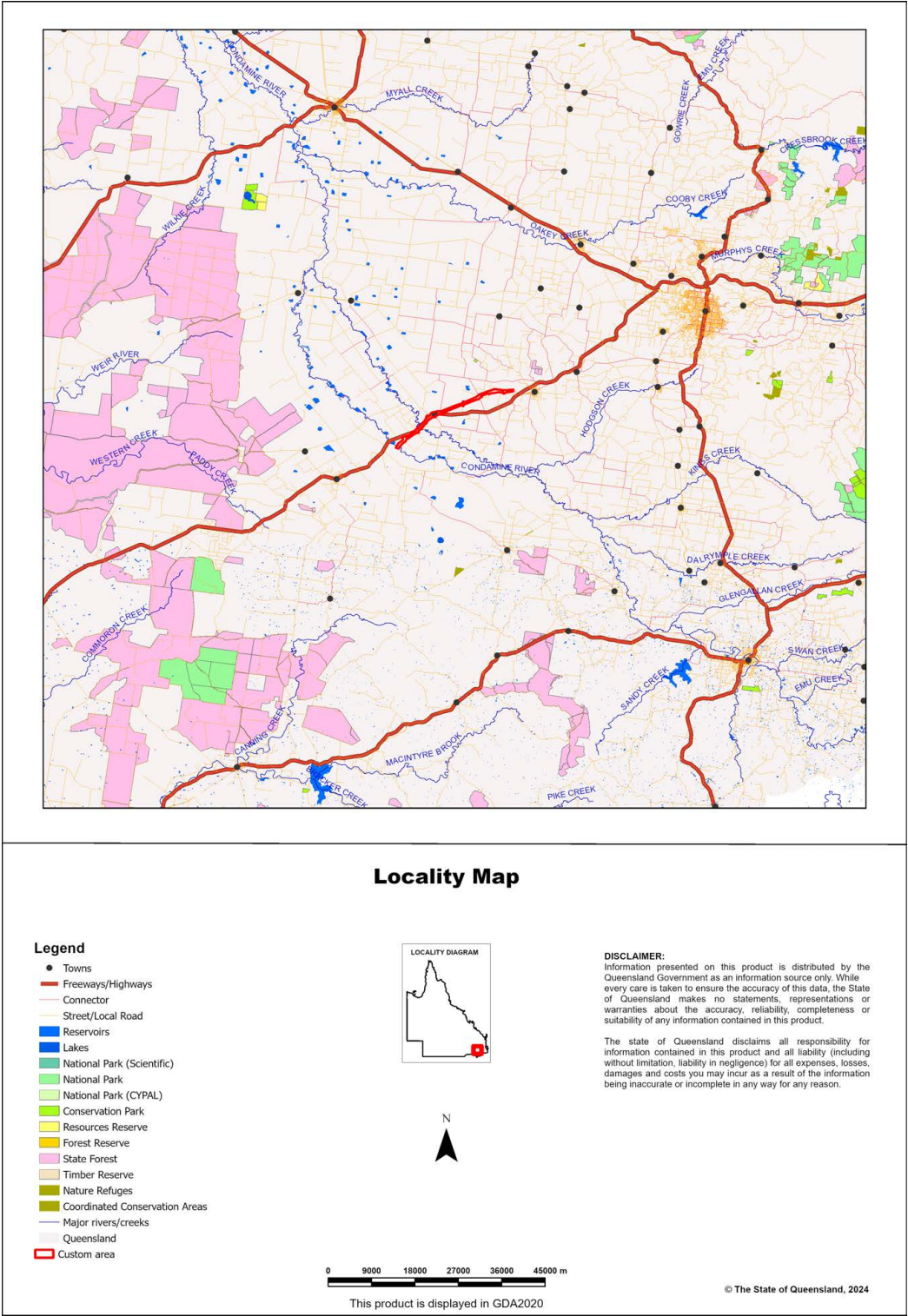
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI: Custom input, with area 1437.24 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Toowoomba Regional	Balonne-Condamine	Brigalow Belt	Eastern Darling Downs



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
- *Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004* ;
- *Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008*;
- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	58.49 ha	4.1%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	13.7 ha	1.0%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	5.73 ha	0.4%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	23.48 ha	1.6%
8e Regulated Vegetation - intersecting a watercourse	10.4 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	13.7 ha	1.0%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways**4. Strategic Environmental Areas (SEA)**

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species**7a. Threatened (endangered or vulnerable) wildlife**

Values are present

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>	Keys boronia	V	None
<i>Calyptrorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarius casuarius johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Euastacus bindal</i>	Mount Elliot crayfish	CR	None
<i>Euastacus binzayedii</i>		CR	None
<i>Euastacus eungella</i>		E	None
<i>Euastacus hystricosus</i>		E	None
<i>Euastacus jagara</i>	Jagara hairy crayfish	CR	None
<i>Euastacus maidae</i>		CR	None
<i>Euastacus monteithorum</i>		E	None
<i>Euastacus robertsi</i>		E	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Melaleuca irbyana</i>	swamp tea-tree	E	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>	bopple nut	V	None
<i>Petrogale penicillata</i>	brush-tailed rock-wallaby	V	None
<i>Petrogale coenensis</i>	Cape York rock-wallaby	V	None
<i>Petrogale purpureicollis</i>	purple-necked rock-wallaby	V	None
<i>Petrogale sharmani</i>	Sharmans rock-wallaby	V	None
<i>Petrogale xanthopus celeris</i>	yellow-footed rock-wallaby (Qld subspecies)	V	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

Scientific name	Common name	NCA status	EPBC status	Migratory status
<i>Phascolarctos cinereus</i>	koala	E	E	None
<i>Leuzea australis</i>		V	V	None
<i>Cyperus clarus</i>		V	None	None

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

*Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL).
Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.25/11.3.4/11.3.27b	O-subdom	rem_oc

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.2	O-dom	hvr_oc

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Regulated vegetation map category	Map number
B	9142

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets

9a. Legally secured offset areas - offset register areas

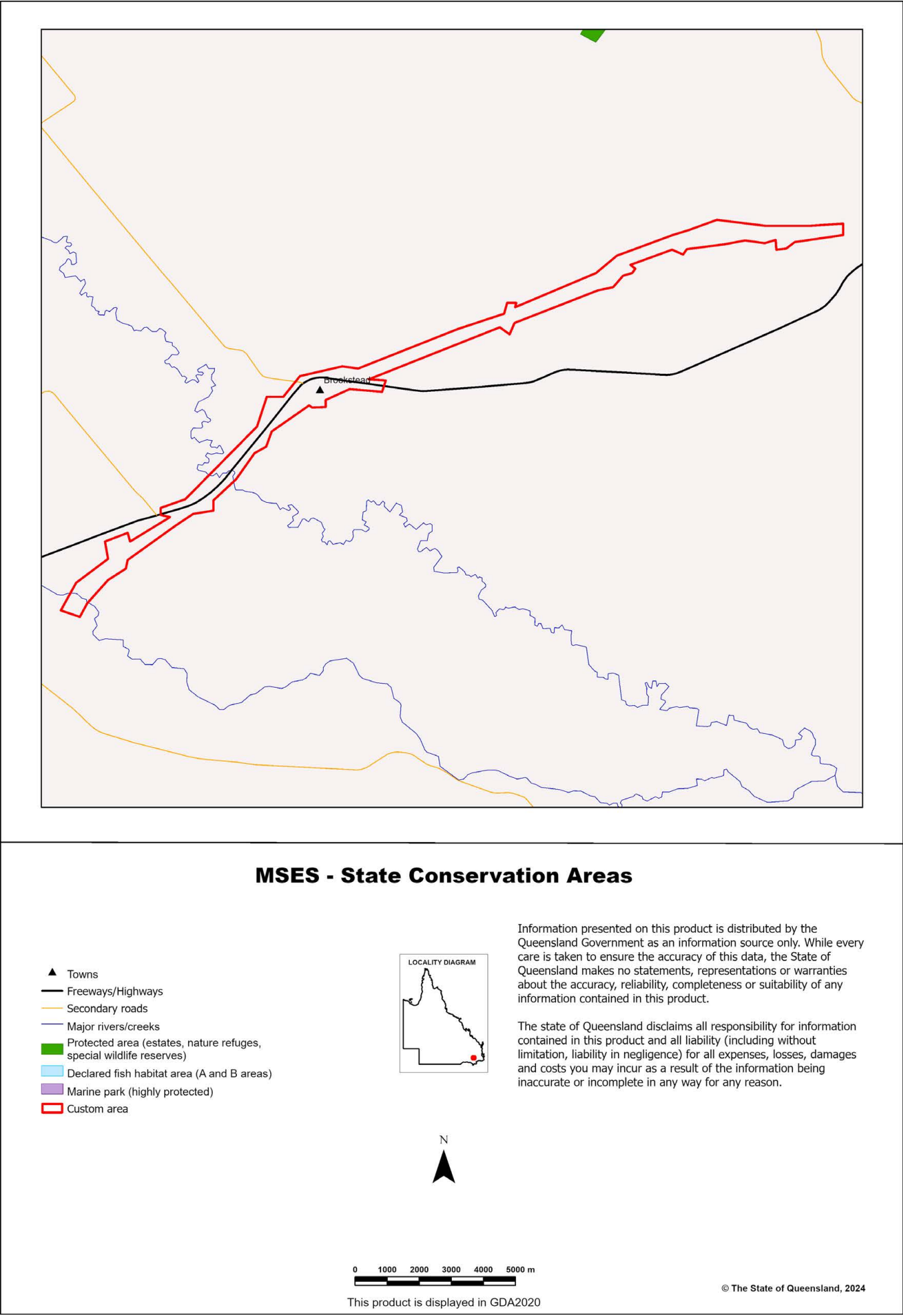
(No results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

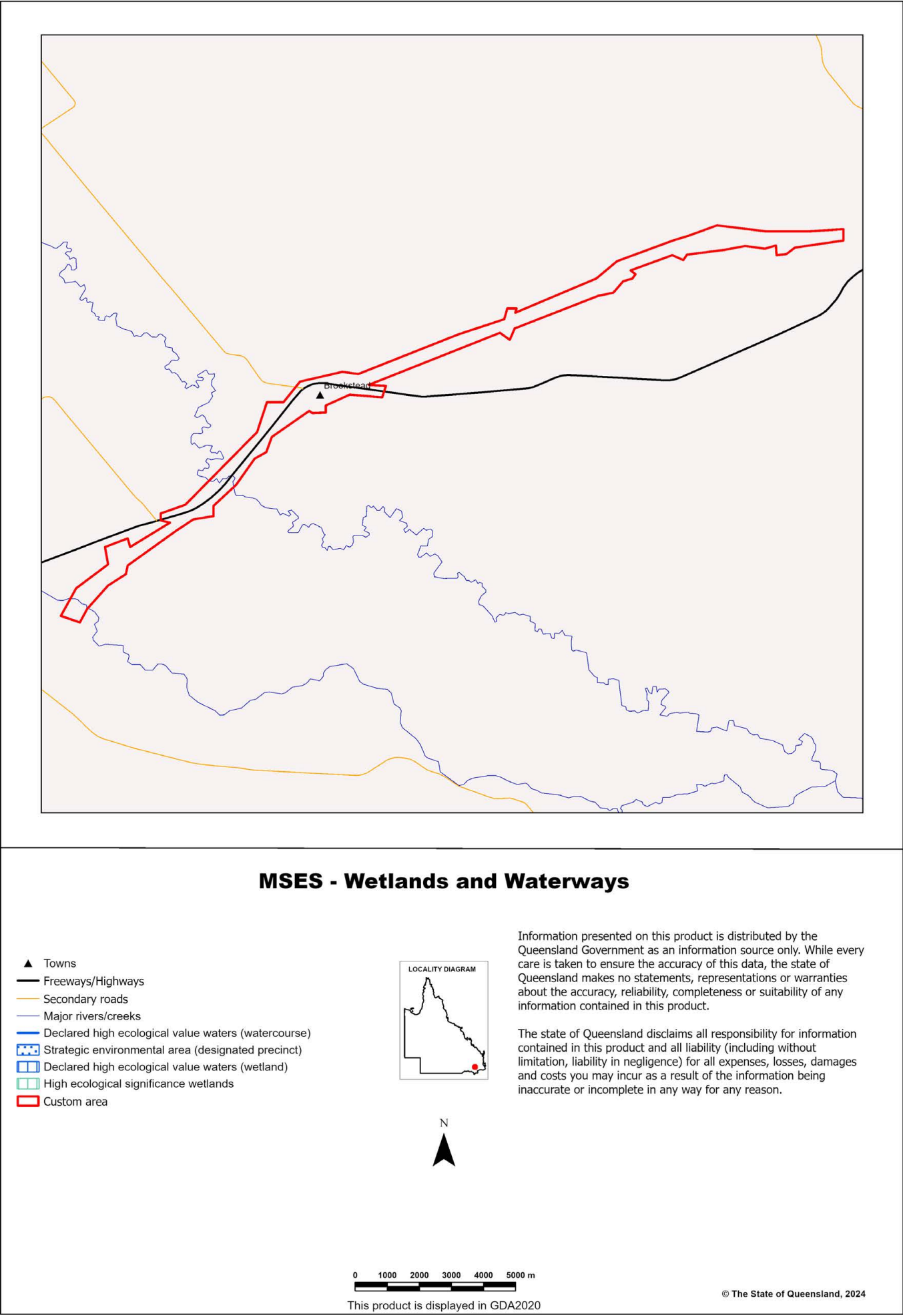
(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

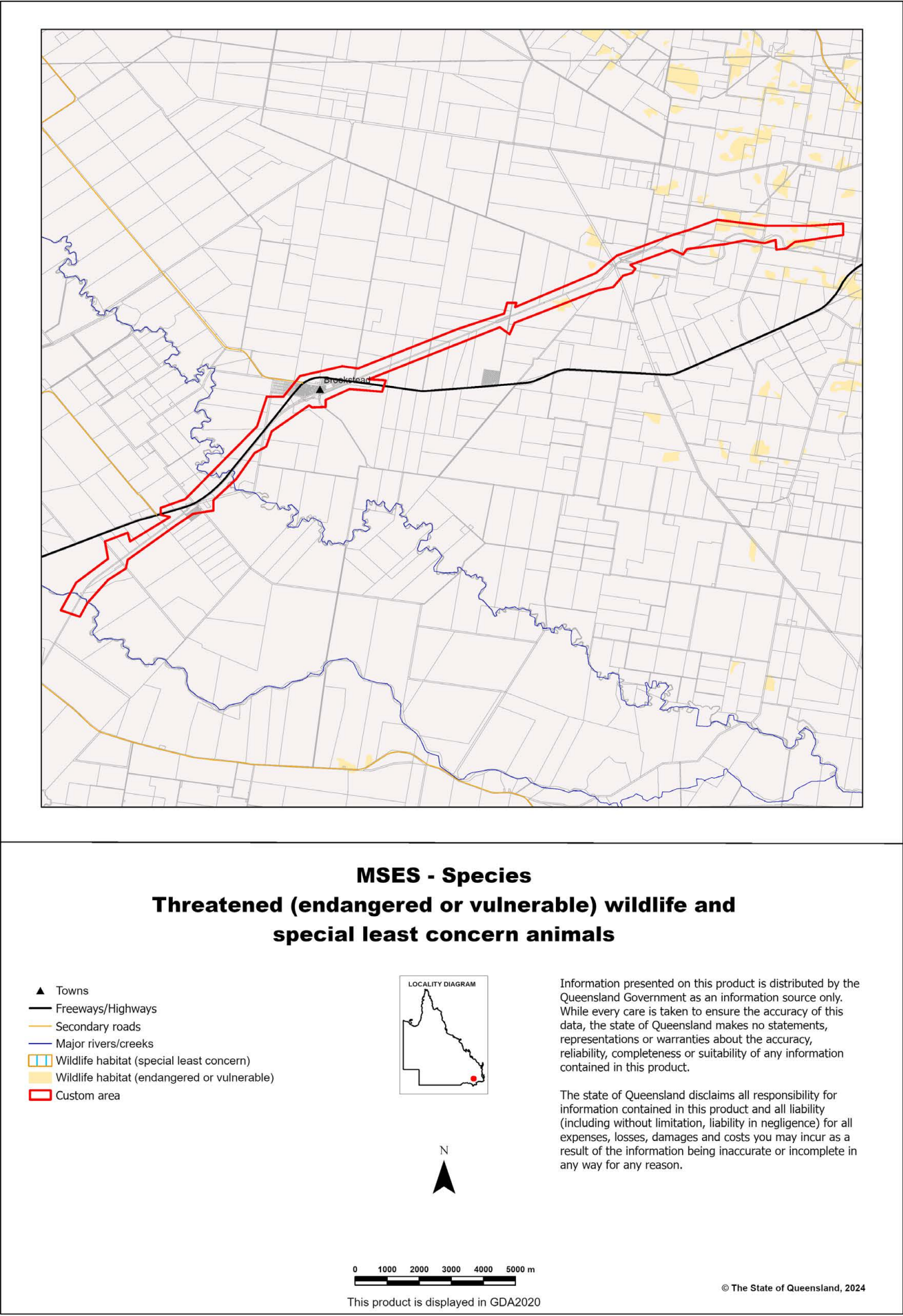
Map 1 - MSES - State Conservation Areas



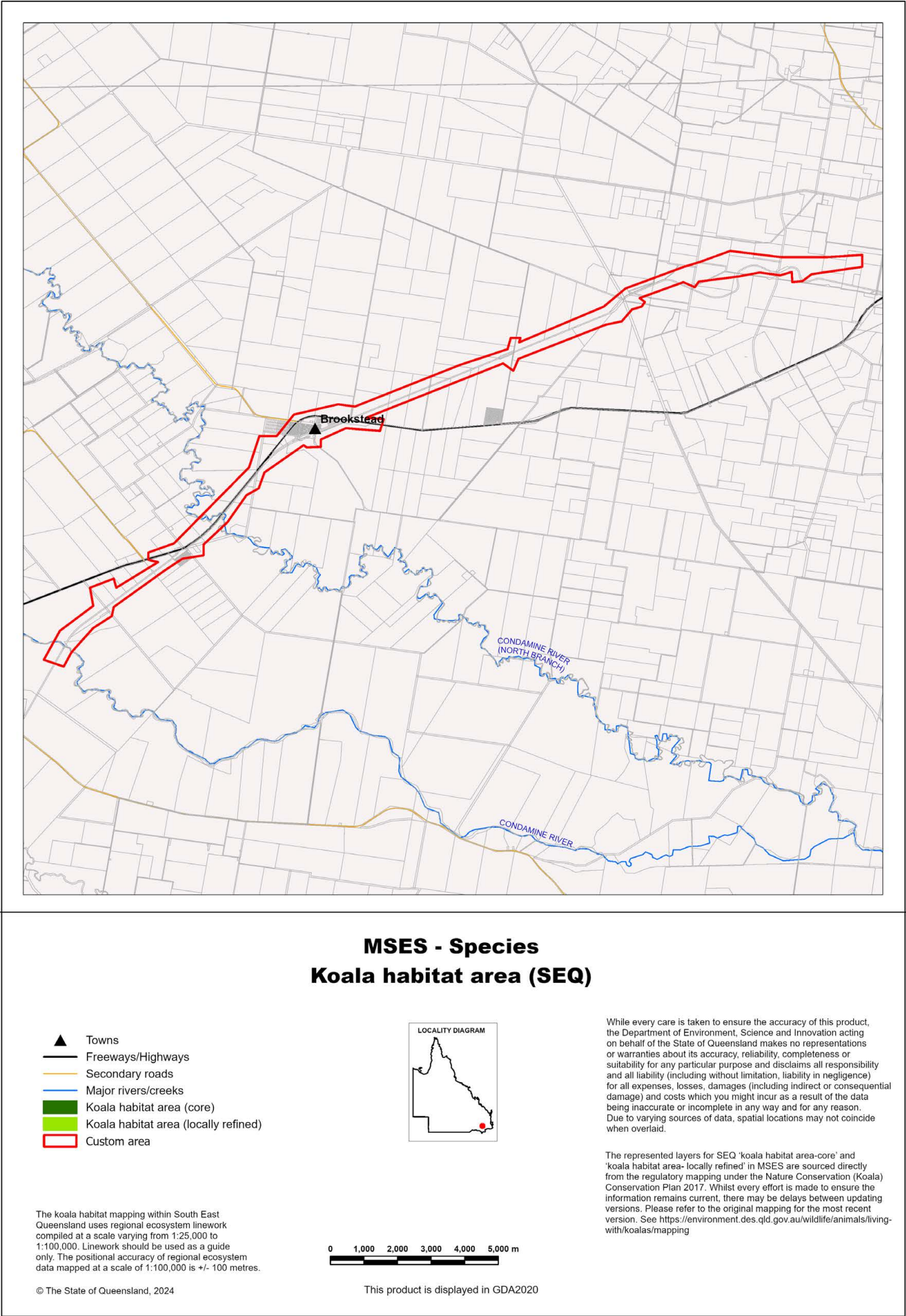
Map 2 - MSES - Wetlands and Waterways



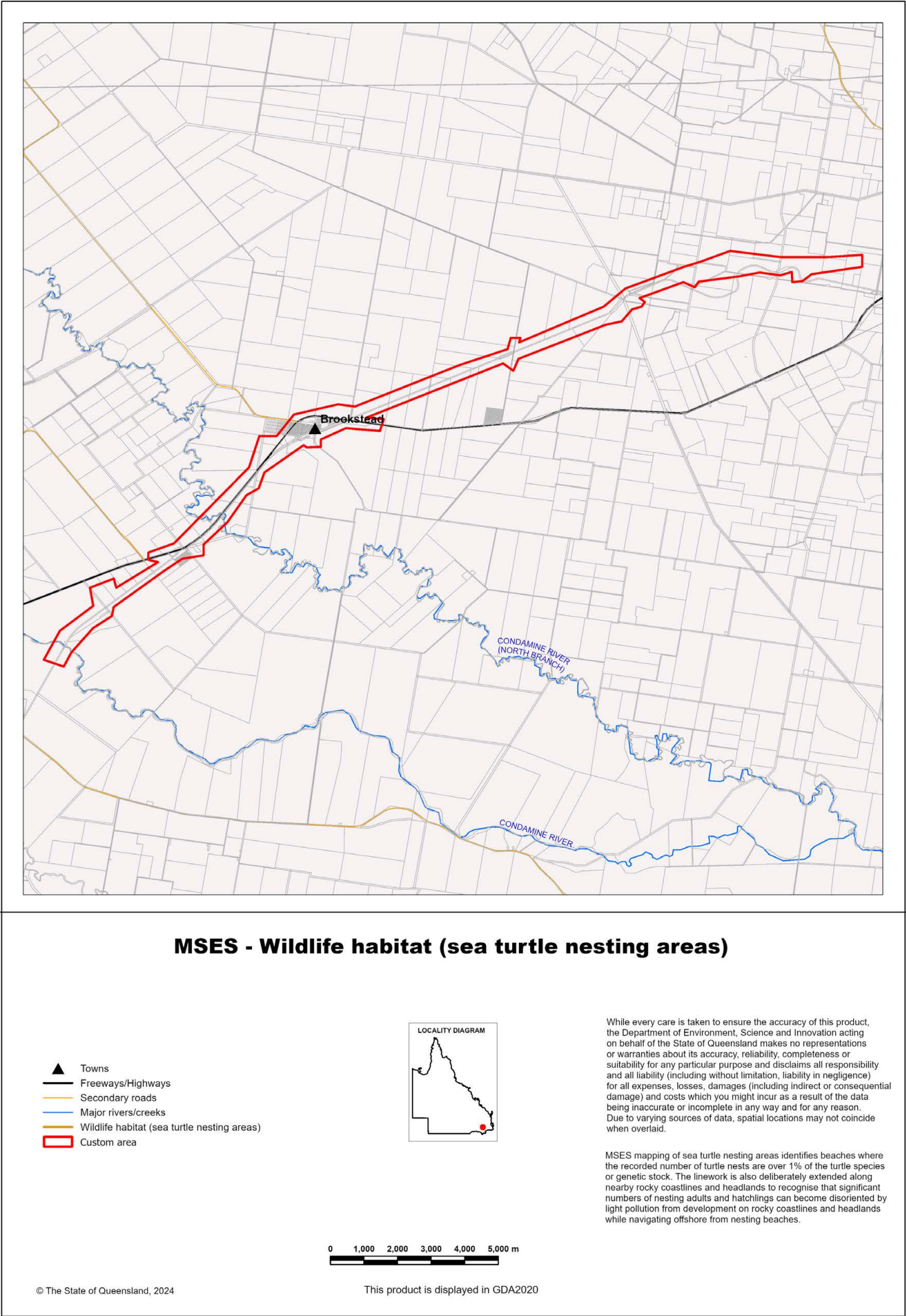
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



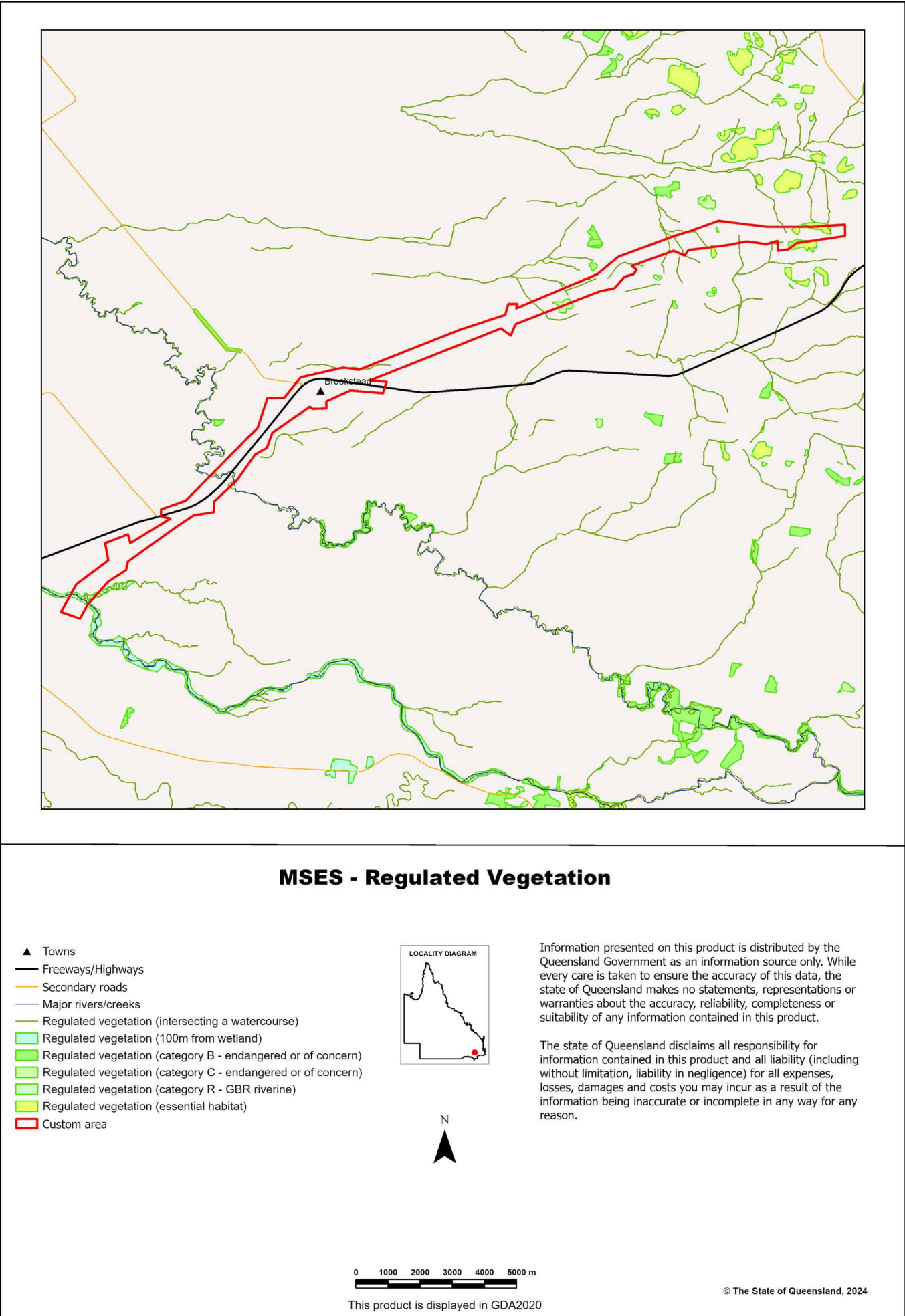
Map 3b - MSES - Species - Koala habitat area (SEQ)



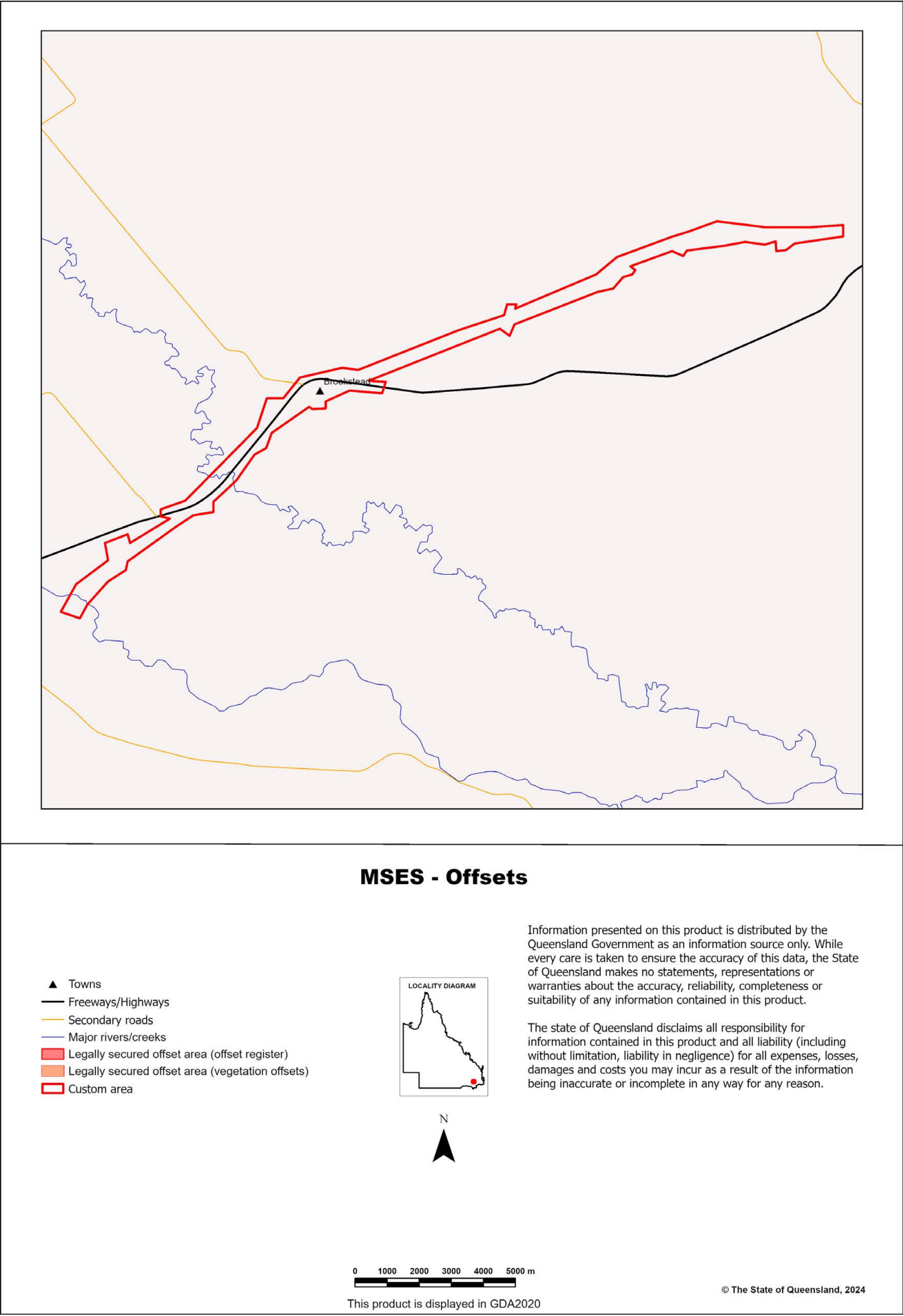
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DESI	- Department of Environment, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or Area of Interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "Central co-ordinates" option, the resulting assessment area encompasses an area extending from 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: biodiversity.planning@des.qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Custom input, with area 1437.24 ha

Local Government(s)
Toowoomba Regional
Bioregion(s)
Brigalow Belt
Subregion(s)
Eastern Darling Downs
Catchment(s)
Balonne-Condamine

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Brigalow Belt v2.1	Queensland Murray-Darling and Bulloo Basins v2.1	Queensland Murray-Darling and Bulloo Basins v.2.1

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.00	0.00
Of concern	13.70	0.95
No concern at present	53.21	3.70

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of Environment, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
Regional	53.31	3.71
State	13.70	0.95

Table 5: Non-riverine wetlands intersecting the AOI

(No Records)

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

Name	Permanency
CONDAMINE RIVER	Non-perennial
CONDAMINE RIVER (NORTH BRANCH)	Non-perennial

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of Environment, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	1,437.24	100.00

Table 8: Summary table, aquatic conservation significance (non-riverine)

(No Records)

Biodiversity Planning Assessments

Introduction

The Department of Environment, Science and Innovation (DESI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DESI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

<http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State	13.70	0.95
Regional	53.31	3.71

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in

protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Local or Other Values	Refer to diagnostic data for additional information	47.44	3.30
Regional	Remnant contains at least 1 Vulnerable or Near Threatened species (A)	5.87	0.41
Regional	Remnant contains at least one Of Concern RE (B1)	13.70	0.95

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	0.00	0.00	5.87	0.41	56.73	3.95	4.40	0.31
B1: Ecosystem Value (Bioregion)	0.00	0.00	13.70	0.95	53.31	3.71	0.00	0.00
B2: Ecosystem Value (Subregion)	0.00	0.00	67.00	4.66	0.00	0.00	0.00	0.00
C: Tract Size	0.00	0.00	0.00	0.00	13.70	0.95	53.31	3.71
D1: Relative RE Size (Bioregion)	0.00	0.00	0.00	0.00	0.00	0.00	67.00	4.66
D2: Relative RE Size (Subregion)	13.70	0.95	0.00	0.00	0.00	0.00	53.31	3.71

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
F: Ecosystem Diversity	0.00	0.00	13.70	0.95	0.00	0.00	53.31	3.71
G: Context and Connection	0.00	0.00	0.00	0.00	13.70	0.95	53.31	3.71

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Regional	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	53.31	3.71
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I) & Remnant forms part of a bioregional corridor (J)	13.70	0.95

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al.* 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to access overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ia: Centres of Endemism	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	13.70	0.95	53.31	3.71	0.00	0.00	0.00	0.00
Ic: Disjunct Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Id: Limits of Geographic Ranges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ie: High Species Richness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:

- Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
- Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
- Maintaining large scale seasonal/migratory species processes and movement of fauna;
- Maximising connectivity between large tracts/patches of remnant vegetation;
- Identifying key areas for rehabilitation and offsets; and

- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial

- Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
- Follow major watershed/catchment and/or coastal boundaries;
- Incorporate major altitudinal/geological/climatic gradients;
- Include and maximise connectivity between large tracts/patches of remnant vegetation;
- Include and maximise connectivity between remnant vegetation in good condition; and

- Riparian

- Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
	53.31	3.71
State	13.70	0.95

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
brbs_fl_36	Mountain coolibah remnants, Eastern Darling Downs	Regional	Ib (refugia): H
brbs_I_15	Relictual subregions (less than 30% remnant vegetation) - remnant vegetation	Regional	Ib (refugia): H
brbs_I_08	Relictual subregions - largest remaining examples of each regional ecosystem in a subregion.	State	Ib (refugia): VH

Decision Number	Description	Panel Recommended Significance	Criteria Values
brbs_l_18a			

Expert panel decision descriptions:

Decision Number	Description
brbs_fl_36	The Eastern Darling Downs subregion contains the southern limits of mountain coolibah <i>Eucalyptus orgadophila</i> woodlands on basalt hills (11.8.5). The community is considered to provide important habitat for several threatened plant species including: <i>Digitaria porrecta</i> , <i>Discaria pubescens</i> , <i>Picris evae</i> and <i>Thesium australe</i> .
brbs_l_15	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Relictual subregions (less than 30% remnant vegetation remaining) for the Brigalow Belt include; Upper Belyando Flood out (11.8), Isaac - Comet Downs (11.11), Callide Creek Downs (11.19), Dawson River Downs (11.21), Taroom Downs (11.25), Dulacca Downs (11.28), Weribone High (11.29), Tara Downs (11.30), Eastern Darling Downs (11.31), Moonie R. - Commoron Creek Floodout (11.33), Moonie - Barwon Interfluve (11.34), Warrambool - Moonie (11.35), Macintyre - Weir Fan (11.36), Narrandool (11.38). Remnant vegetation provides a refuge from clearing in fragmented subregions and should be retained to maintain biodiversity. Refer to brbn_l_89 for the northern BRB implementation of this decision.
brbs_l_08	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. Relictual subregions (less than 30% remnant vegetation remaining) for the Brigalow Belt include the Upper Belyando Flood out (11.8), Isaac - Comet Downs (11.11), Callide Creek Downs (11.19), Dawson River Downs (11.21), Taroom Downs (11.25), Dulacca Downs (11.28), Weribone High (11.29), Tara Downs (11.30), Eastern Darling Downs (11.31), Moonie R. - Commoron Creek Floodout (11.33), Moonie - Barwon Interfluve (11.34), Warrambool - Moonie (11.35), Macintyre - Weir Fan (11.36), Narrandool (11.38). The largest remaining examples of each regional ecosystem in a subregion represent important refuges from clearing in these fragmented landscapes. Refer to brbn_l_87 for the northern BRB implementation of this decision.
brbs_l_18a	

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in Queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning processes

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland Info:

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	1,437.24	100.00

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	899.35	62.57	329.61	22.93	208.29	14.49
2. Naturalness catchment	0.00	0.00	657.90	45.78	779.34	54.22	0.00	0.00
3. Diversity and richness	0.00	0.00	0.00	0.00	0.00	0.00	1,437.24	100.00
4. Threatened species and ecosystems	0.00	0.00	537.90	37.43	0.00	0.00	899.35	62.57
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	1,107.63	77.07	0.00	0.00
6. Special features	0.00	0.00	537.90	37.43	0.00	0.00	0.00	0.00
7. Connectivity	899.35	62.57	329.61	22.93	208.29	14.49	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
cb_r_ec_24	Semi-permanent waterholes (riverine)	Condamine-Balonne	6.1.1,6.2.1,6.3.1,6.3.4	3,3,3,3
cb_r_ec_45	Riverine drought refugia (High relative value)	Condamine-Balonne	6.1.1,6.2.1,6.3.1,6.3.4	3,3,3,3
cb_r_ec_31	Upland riverine reaches with flows sustained by groundwater seeps	Condamine-Balonne	7.2.1	4

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
cb_r_ec_24	Drought refugia are an important feature in a semi-arid landscape. Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). Other values include Tandanus (Ell tailed catfish). This decision was implemented using Water Observations from Space published by Geoscience Australia.
cb_r_ec_45	Drought refugia are an important feature in a semi-arid landscape. Values include Tandanus (Ell tailed catfish). Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). This decision was implemented using persistent waterhole mapping help by DES. The percentage length of persistent waterholes per riverine spatial unit was calculated using Geofab v2.1 watercourses and DES persistent waterhole mapping. The Jenks Natural Breaks classification algorithm was used to categorise spatial units into four classes (i.e. Very High, High, Medium, Low). Spatial units in the Medium class were used for this decision. Spatial units in the Very High and High class were used for Riverine drought refugia (Very High relative value) decision (i.e. cb_r_ec_06).
cb_r_ec_31	Groundwater connectivity with riverine ecosystems were viewed as important by the expert panel as inflow of groundwater, especially where granite geology exists, sustains rivers and creeks during drier periods. Water exchange can happen through fractured rock aquifers, but more typically coincides with sandy bottomed riverbeds. Flows are not necessarily perennial during drought.

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

(No Records)

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Naturalness catchment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Diversity and richness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, HerbreCs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Cyperus clarus</i>		V					FL
<i>Dasyurus maculatus maculatus</i>	spotted-tailed quoll (southern subspecies)	E	E	High			FA
<i>Digitaria porrecta</i>		NT					FL
<i>Grantiella picta</i>	painted honeyeater	V	V	High			FA
<i>Homopholis belsonii</i>	Belson's panic	E	V				FL
<i>Leuzea australis</i>		V	V				FL
<i>Phascolarctos cinereus</i>	koala	E	E	Low			FA
<i>Picris barbarorum</i>		V					FL

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Picris evae</i>		V	V				FL
<i>Tympanocryptis condaminensis</i>	Condamine earless dragon	E	E	High			FA

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DESI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

*JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.

**I - wetland indicator species; D - wetland dependent species.

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. Furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Identified flora/fauna
<i>Acacia stenophylla</i>	belalie	FL
<i>Acrocephalus australis</i>	Australian reed-warbler	FA
<i>Biziura lobata</i>	musk duck	FA
<i>Chelodina expansa</i>	broad-shelled river turtle	FA
<i>Eucalyptus camaldulensis</i>		FL
<i>Plegadis falcinellus</i>	glossy ibis	FA

Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

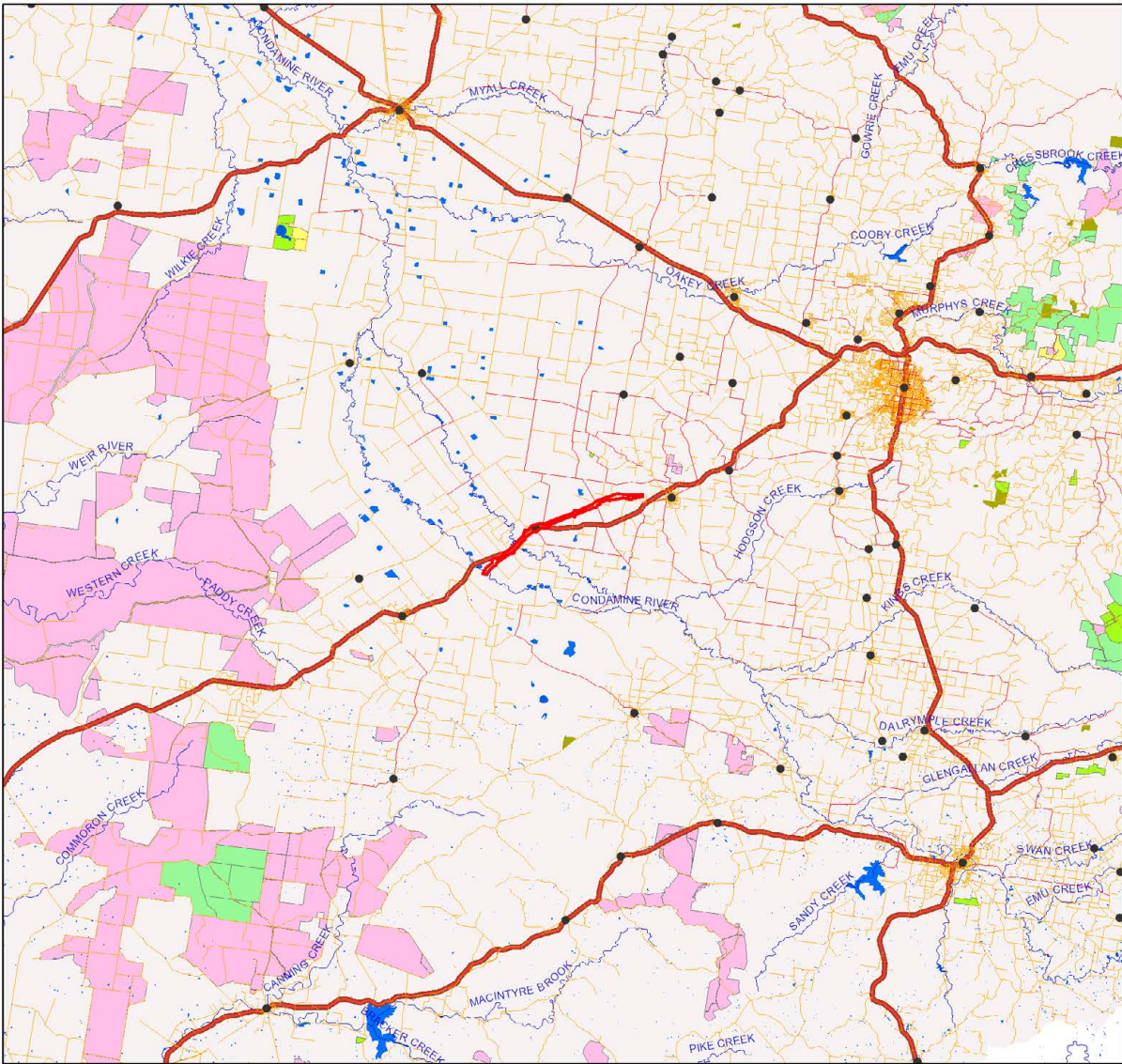
Species	Common name	Identified flora/fauna
<i>Acacia stenophylla</i>	belalie	FL

Species	Common name	Identified flora/fauna
<i>Acrocephalus australis</i>	Australian reed-warbler	FA
<i>Biziura lobata</i>	musk duck	FA
<i>Chelodina expansa</i>	broad-shelled river turtle	FA
<i>Eucalyptus camaldulensis</i>		FL
<i>Marsilea drummondii</i>	common nardoo	FL
<i>Plegadis falcinellus</i>	glossy ibis	FA

NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

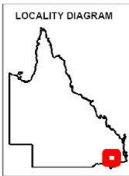
Maps

Map 1 - Locality Map



Locality Map

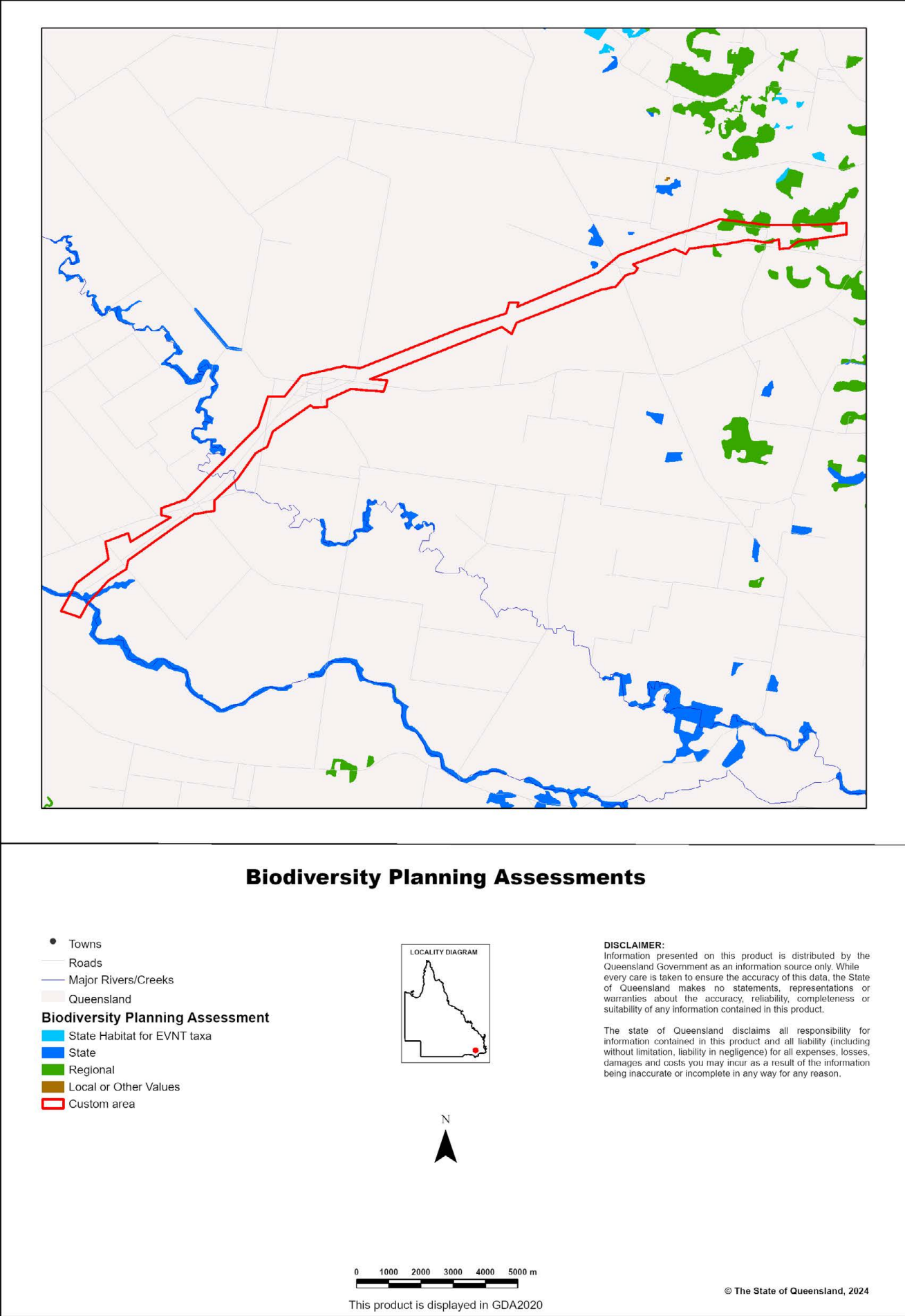
- Legend**
- Towns
 - Freeways/Highways
 - Connector
 - Street/Local Road
 - Reservoirs
 - Lakes
 - National Park (Scientific)
 - National Park
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Nature Refuges
 - Coordinated Conservation Areas
 - Major rivers/creeks
 - Queensland
 - Custom area



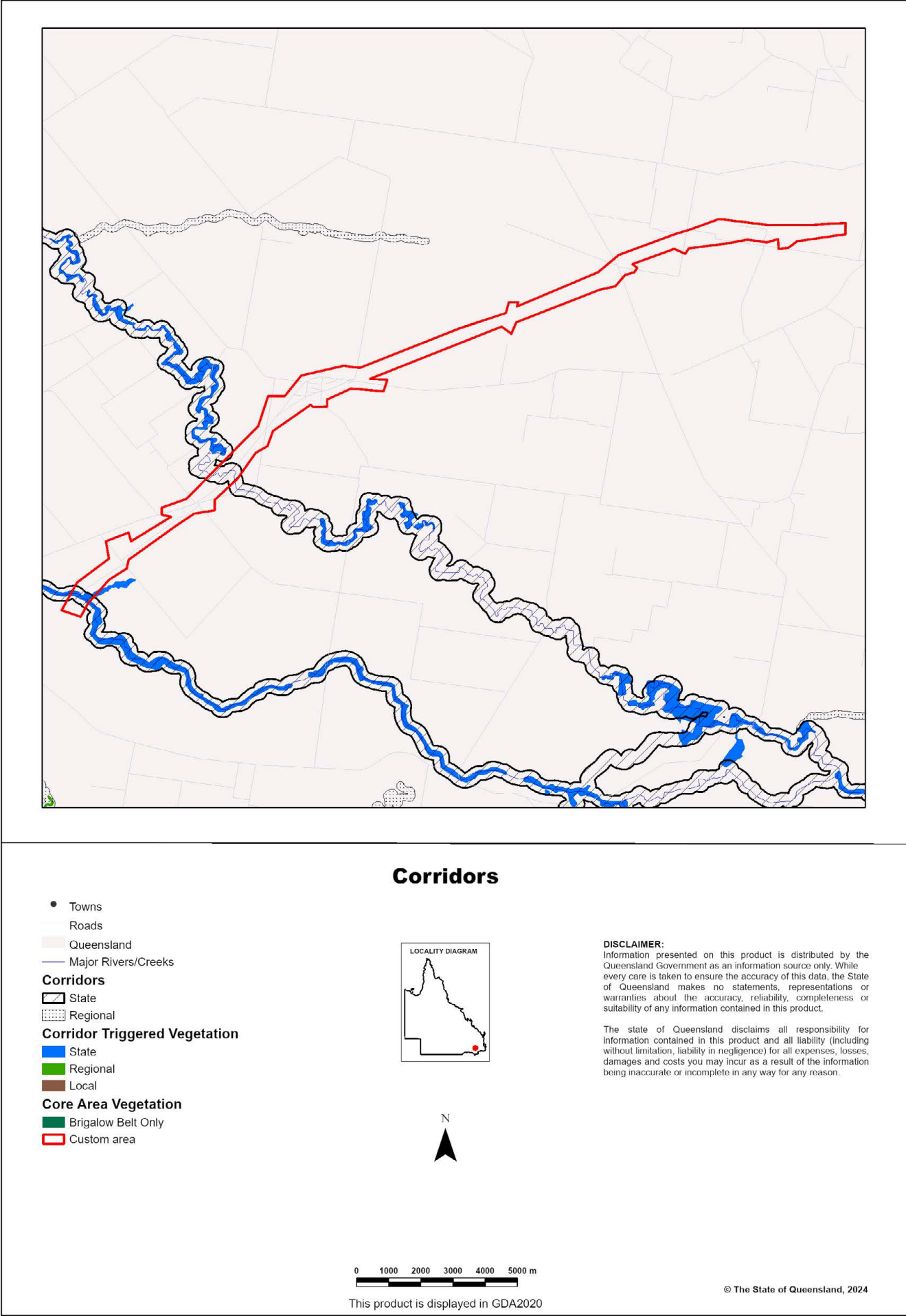
DISCLAIMER:
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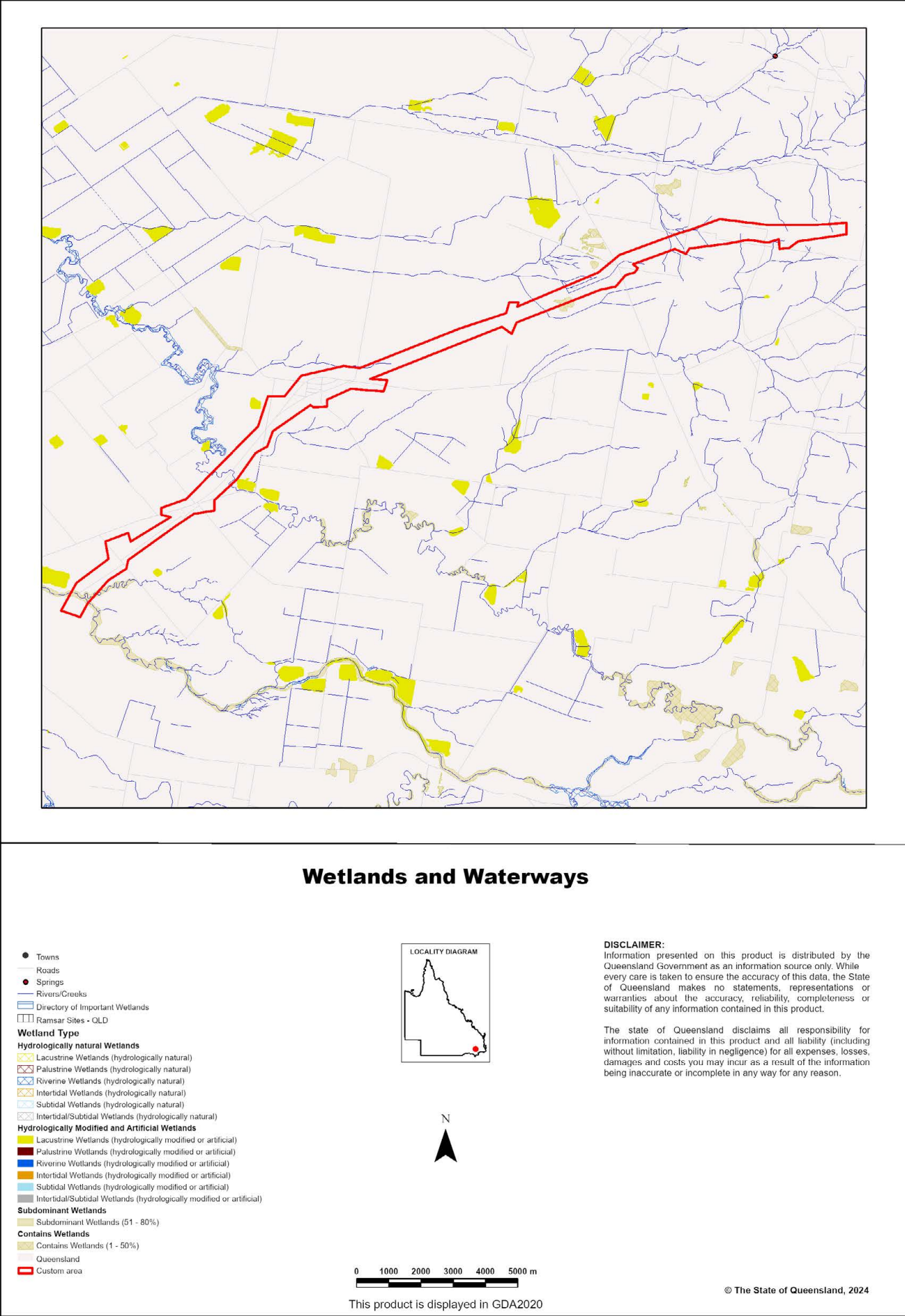
Map 2 - Biodiversity Planning Assessment (BPA)



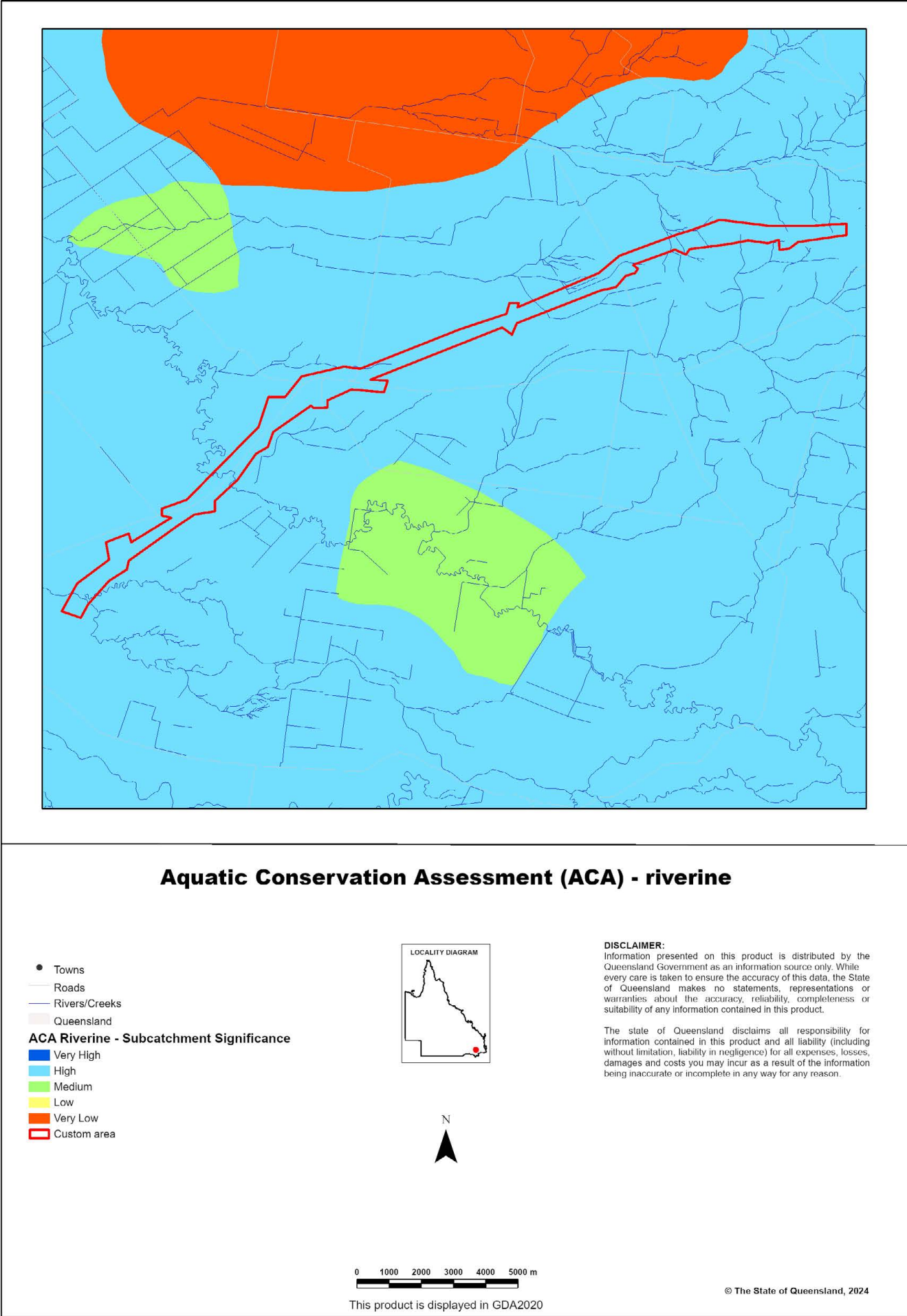
Map 3 - Corridors



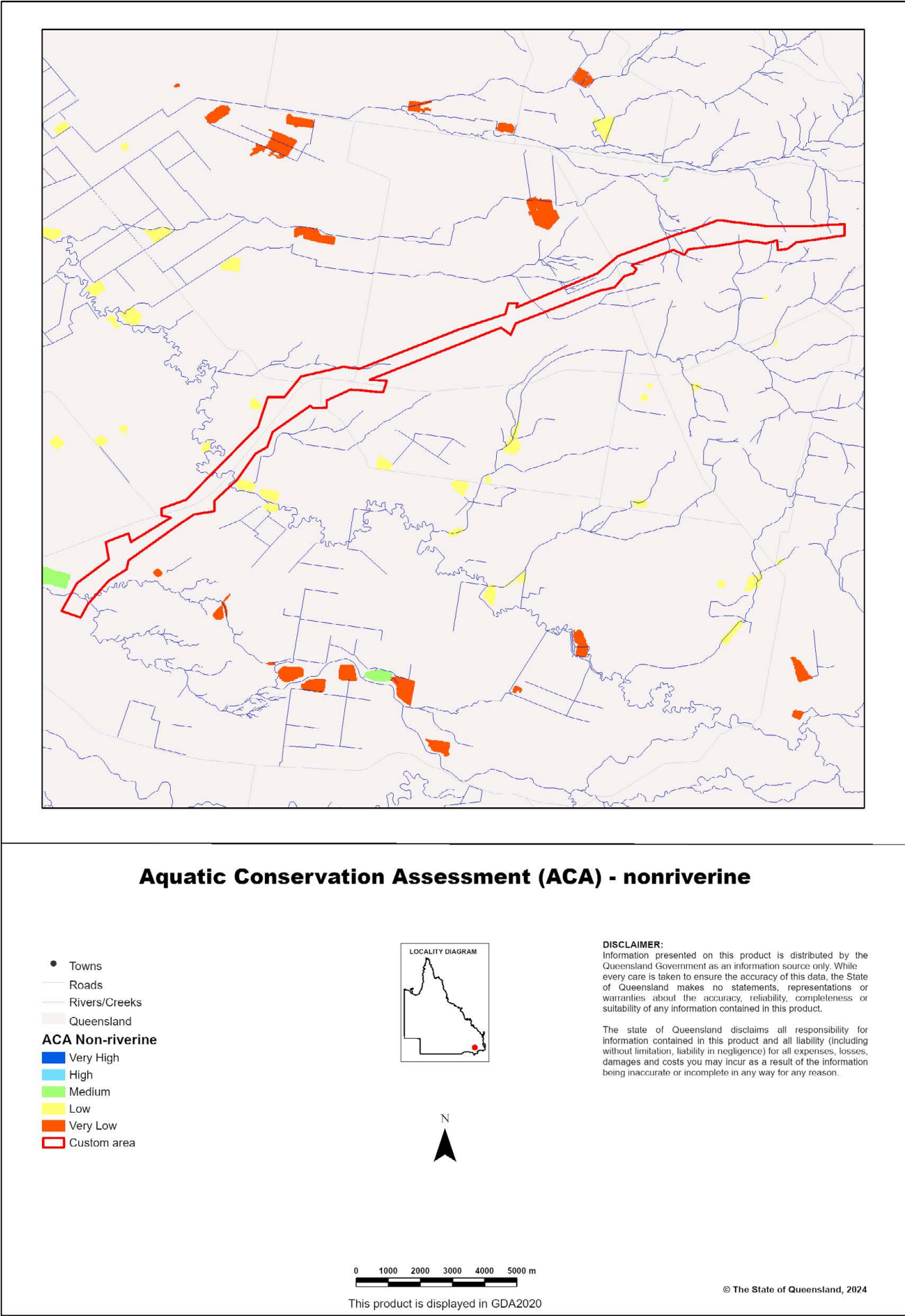
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



References

Clayton, P.D., Fielder, D.F., Howell, S. and Hill, C.J. (2006) *Aquatic biodiversity assessment and mapping method (AquaBAMM): a conservation values assessment tool for wetlands with trial application in the Burnett River catchment*. Published by the Environmental Protection Agency, Brisbane. ISBN 1-90928-07-3. Available at

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca/>

Environment and Heritage Protection 2014, *Biodiversity Assessment and Mapping Methodology*. Version 2.2. Department of Environment and Heritage Protection, Brisbane.

Morton, S. R., Short, J. and Barker, R. D. with an Appendix by G.F. Griffin and G. Pearce (1995). *Refugia for Biological Diversity in Arid and Semi-arid Australia*. Biodiversity Series, Paper No. 4, Biodiversity Unit, Environment Australia.

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

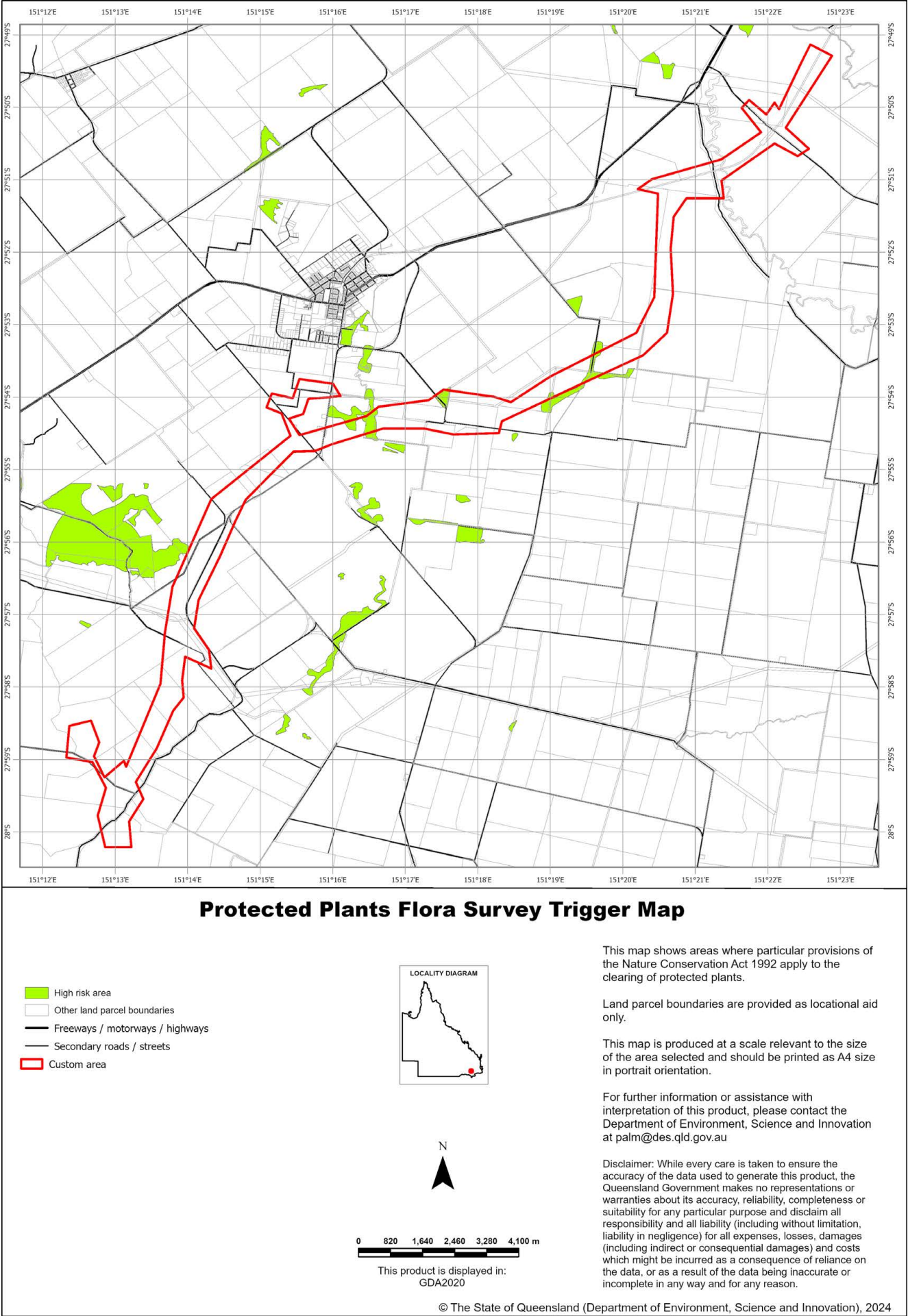
Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einiasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v2.3 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.6
Threatened Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:

<http://dds.information.qld.gov.au/DDS>

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DESI	- Department of Environment, Science and Innovation
EPBC	- <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see [section 89](#) of the Act.

Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.

WetlandMaps Report



For selected area of interest Custom input

Current as at 5/06/2024

Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest(AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

Disclaimer

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Summary Information

Below is an overview of the area of interest.

Custom input
with area of 1869.99 ha

Local Government(s)
Toowoomba Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Eastern Darling Downs
Brigalow Belt	Inglewood Sandstones

Catchment(s)
Condamine River
Macintyre Brook

Drainage sub-basin
Balonne-Condamine
Border Rivers

NRM Regions

The area of interest is in the following NRM region:

Southern Queensland Landscapes

Water Resource Plan Boundaries

The area of interest is in the following Water Resource Plan:

Border Rivers and Moonie

Condamine and Balonne

Great Artesian Basin and Other Regional Aquifers

Learn more about how Wetlands are mapped in Queensland

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include::**

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude::**

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria
- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Links and support

Other sites that deliver wetland related information include:

Wetland *Summary* tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

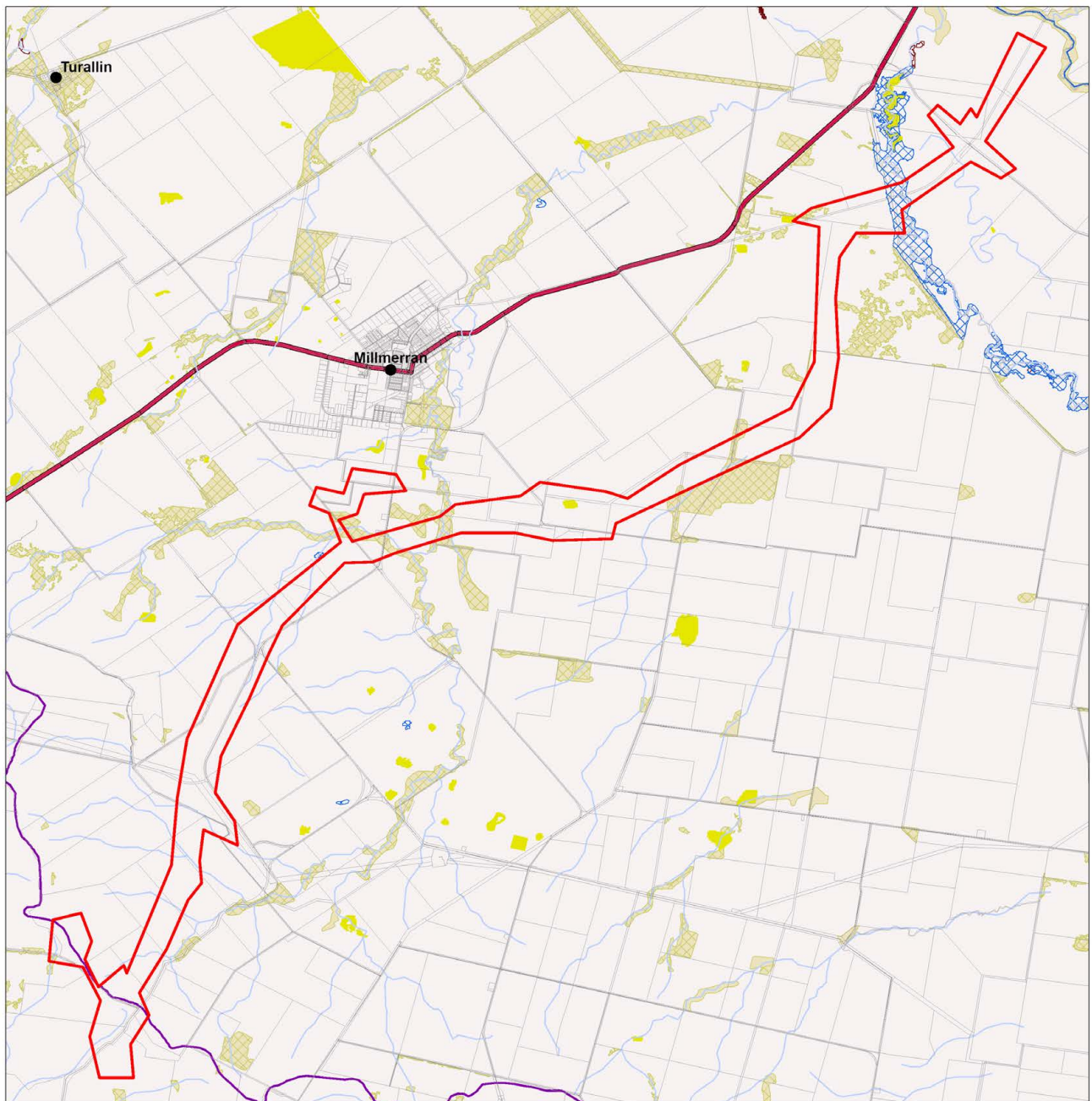
Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

Regional Ecosystem Mapping information:
<https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

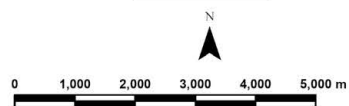
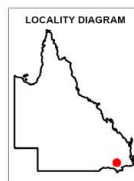
Aquatic Conservation Assessments: [Aquatic Conservation Assessments \(ACA\) and AquaBAMM \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Dependant Ecosystems information:
<https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Queensland Wetland Map

- ▲ Springs
- Dams and weirs
- Towns
- Freeways/Highways
- Roads
- Cadastral Boundaries
- Sub-basin
- Riverine System Drainage Lines**
 - Major
 - Minor
- Wetland Mapping**
- Hydrologically natural Wetlands**
 - Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
 - Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
 - Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
 - Contains Wetlands (1 - 50%)
 - Custom area

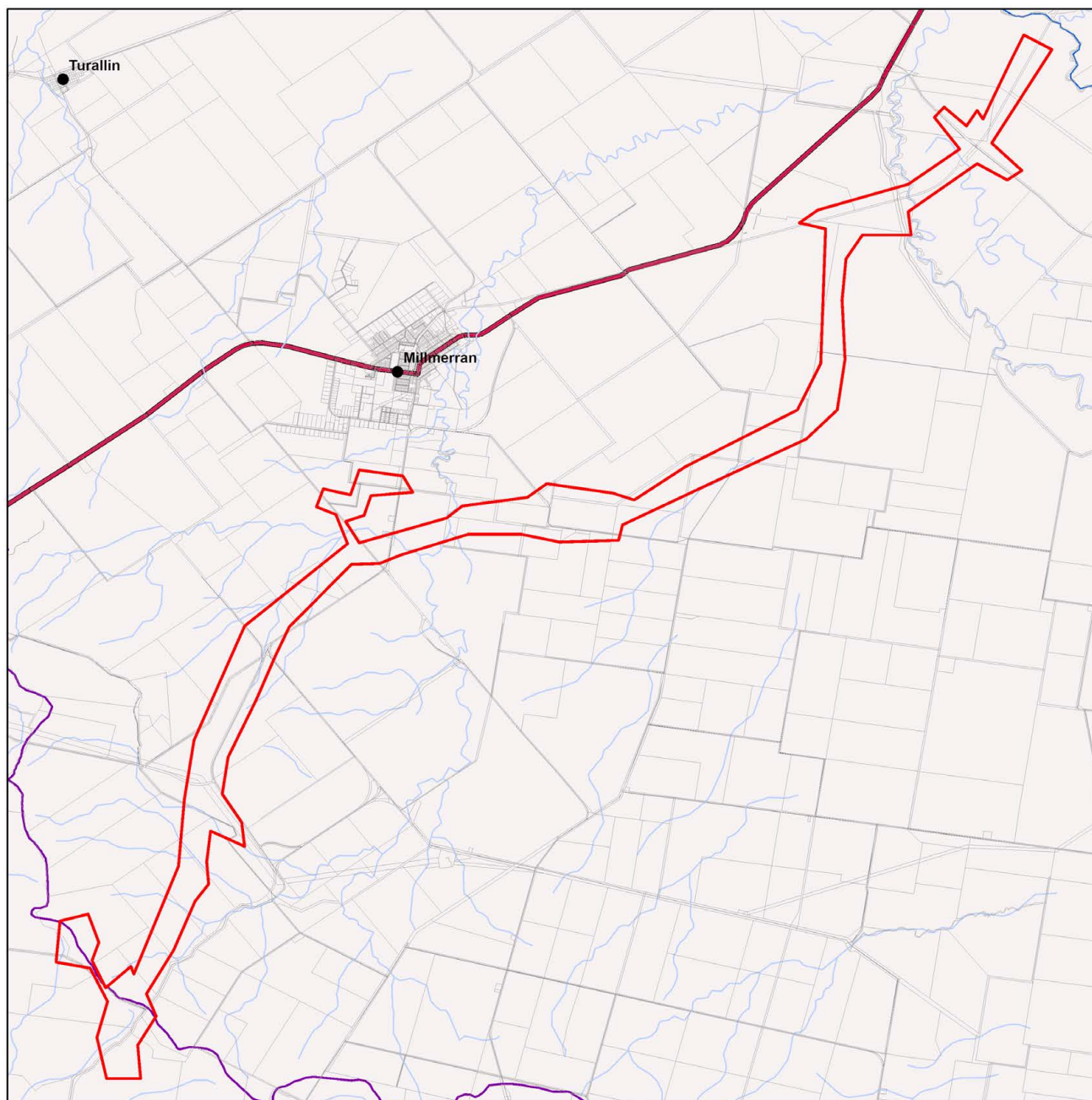


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This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

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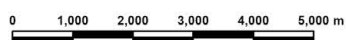
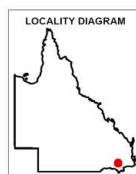


Queensland Wetlands of Importance Map

- Towns
- ▭ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▭ Sub-basin
- ▭ Directory of Important Wetlands
- ▭ Ramsar Wetlands

Riverine System Drainage Lines

- ▬ Major
- ▬ Minor
- ▭ Custom area

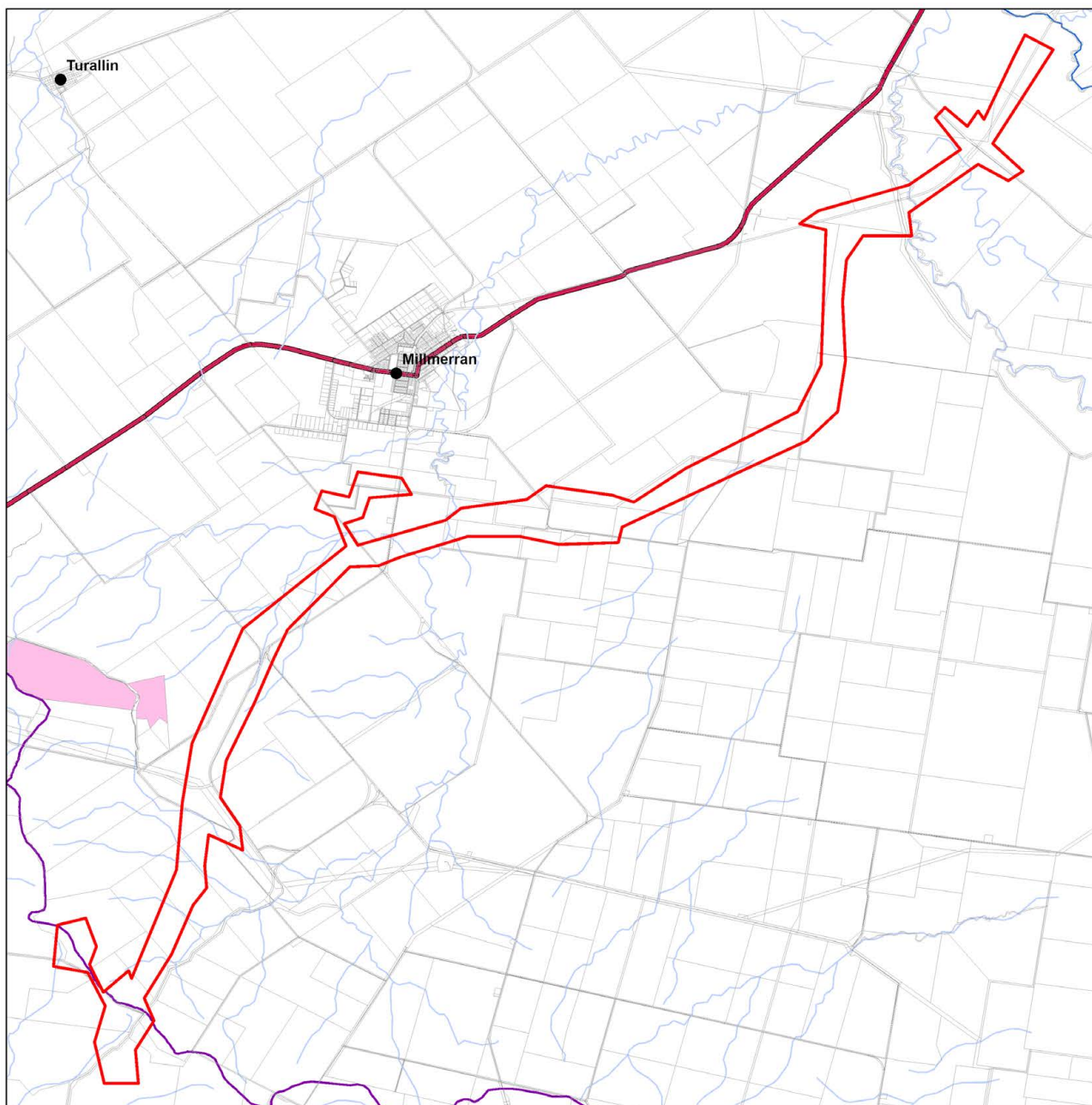


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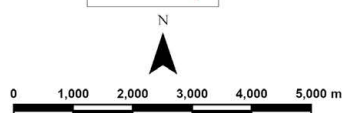
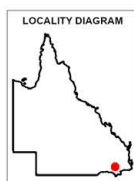
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Queensland Protected Area Map

- Towns
- ▬ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▬ Sub-basin
- Riverine System Drainage Lines**
 - ▬ Major
 - ▬ Minor
- Marine Parks**
 - General Use Zone
 - Habitat Protection Zone
 - Estuarine Conservation Zone
 - Conservation Park Zone
 - Buffer Zone
 - Scientific Research Zone
 - Marine National Park Zone
 - Preservation Zone
- Protected Areas**
 - National Park
 - National Park (Scientific)
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Custom area



This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

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Wetland habitat types in the AOI. Total area: 85.77 ha

Wetland Class	Habitat type	Area (ha)
CPA	NOA/NOA	34.84
RIV	NOA	27.09
CPA	NOA	20.71
LAC	NOA	3.13

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands

Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps
Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps

Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the input coordinates.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website <https://www.resources.qld.gov.au/>

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Custom input, with area 1869.99 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Toowoomba Regional	Balonne-Condamine	Brigalow Belt	Eastern Darling Downs
	Border Rivers	Brigalow Belt	Inglewood Sandstones

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.00	0.00
Of concern	80.65	4.31
No concern at present	10.14	0.54
Total remnant vegetation	90.79	4.86

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated into a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website <https://www.resources.qld.gov.au/>.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.3.2	Eucalyptus populnea woodland on alluvial plains	Of concern	42.51	2.27
11.3.25	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Of concern	28.75	1.54
11.5.1	Eucalyptus crebra and/or E. populnea, Callitris glaucophylla, Angophora leiocarpa, Allocasuarina luehmannii woodland on Cainozoic sand plains and/or remnant surfaces	No concern at present	9.79	0.52
11.8.2a	Eucalyptus tereticornis, E. melliodora woodland on Cainozoic igneous rocks	No concern at present	0.35	0.02
11.8.3	Semi-evergreen vine thicket on Cainozoic igneous rocks	Of concern	9.38	0.50
non-remnant	None	None	1,779.20	95.15

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.3.2	Pre-clearing 1905000 ha; Remnant 2021 499000 ha	17a	Contains Palustrine	Low
11.3.25	Pre-clearing 813000 ha; Remnant 2021 531000 ha	16a	Riverine	Low

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.5.1	Pre-clearing 775000 ha; Remnant 2021 477000 ha	18b	Not a Wetland	Low
11.8.2a	Pre-clearing 53000 ha; Remnant 2021 36000 ha	11a	Not a Wetland	High
11.8.3	Pre-clearing 81000 ha; Remnant 2021 25000 ha	7a	Not a Wetland	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.3.2	11.3.2: Habitat for threatened flora species <i>Homopholis belsonii</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.3.25	11.3.25: Shown to be associated with a high fauna species richness in the Taroom area (Venz et al. 2002). Within parts of the Fitzroy catchment, this RE is known habitat for the threatened freshwater turtle <i>Rheodytes leukops</i> . Known to be important habitat for other riparian freshwater turtle species. This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.5.1	11.5.1: Habitat for threatened plant species including <i>Acacia handonis</i> and <i>Acacia argyrotricha</i> .
11.8.2a	11.8.2: Potential habitat for NCA listed species: <i>Discaria pubescens</i> , <i>Homopholis belsonii</i> , <i>Picris evae</i> , <i>Prasophyllum incompositum</i> , <i>Thesium australe</i> . 11.8.2a: This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.8.3	11.8.3: Habitat for threatened plant species <i>Croton magneticus</i> .
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: <https://publications.qld.gov.au/dataset/redd/resource/>

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	1,779.20	95.15
11a	Moist to dry open forests to woodlands dominated by <i>Eucalyptus orgadophila</i> (mountain coolibah). Some areas dominated by <i>E. tereticornis</i> (blue gum), <i>E. melliodora</i> (yellow box), <i>E. albens</i> (white box), <i>E. crebra</i> (narrow-leaved red ironbark) or <i>E. melanophloia</i> (silver-leaved ironbark).	0.35	0.02
16a	Open forest and woodlands dominated by <i>Eucalyptus camaldulensis</i> (river red gum) (or <i>E. tereticornis</i> (blue gum)) and/or <i>E. coolabah</i> (coolabah) (or <i>E. microtheca</i> (coolabah)) fringing drainage lines. Associated species may include <i>Melaleuca</i> spp., <i>Corymbia tessellaris</i> (carbeen), <i>Angophora</i> spp., <i>Casuarina cunninghamiana</i> (riveroak). Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	28.75	1.54
17a	Woodlands dominated by <i>Eucalyptus populnea</i> (poplar box) (or <i>E. brownii</i> (Reid River box)) on alluvium, sand plains and footslopes of hills and ranges.	42.51	2.27
18b	Woodlands dominated <i>Eucalyptus crebra</i> (sens. lat.) (narrow-leaved red ironbark) frequently with <i>Corymbia</i> spp. or <i>Callitris</i> spp. on flat to undulating plains.	9.79	0.52
7a	Semi-evergreen vine thickets on wide range of substrates.	9.38	0.50

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: <http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

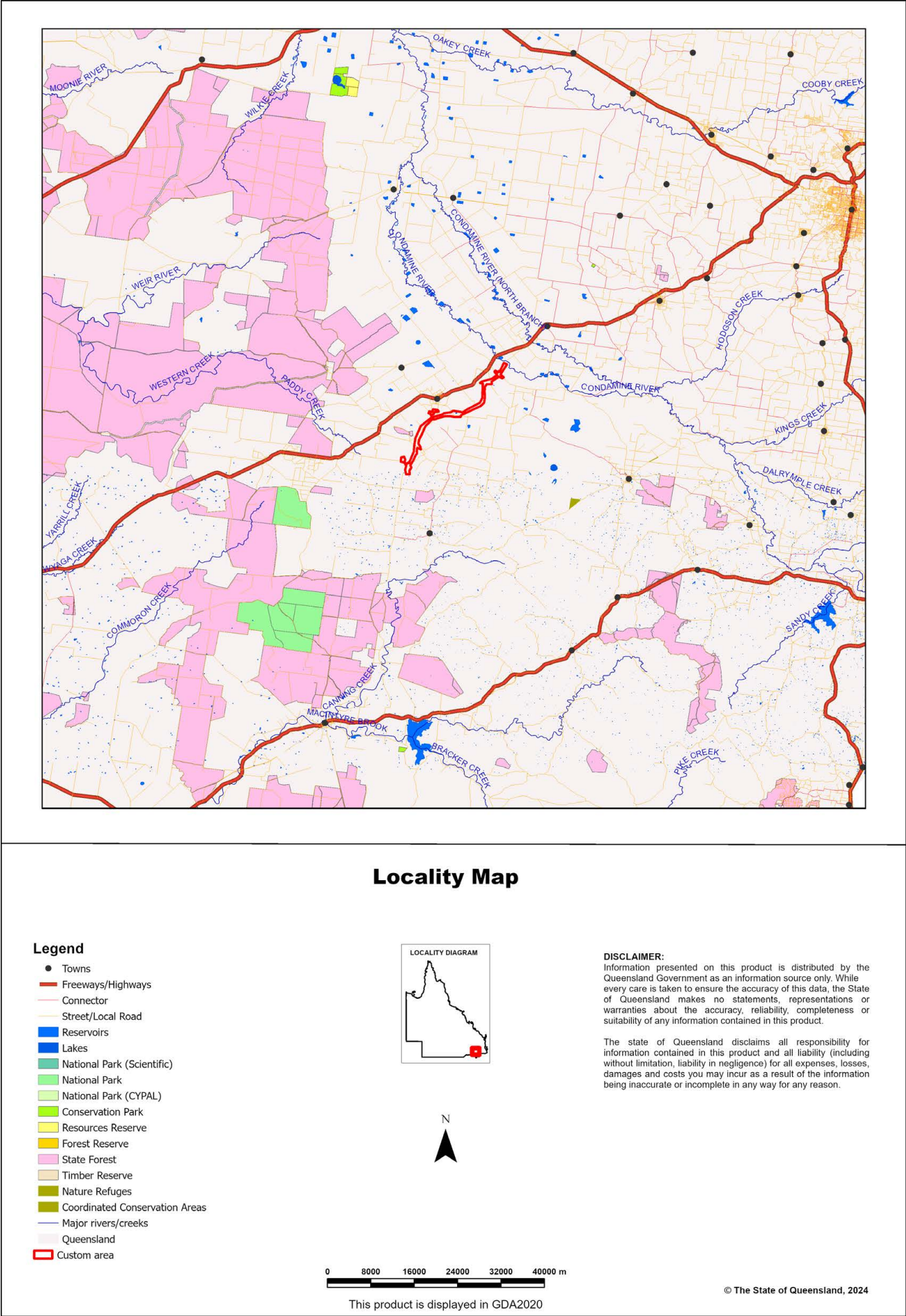
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.3.2	Available	Available
11.3.25	Available	Available
11.5.1	Available	Available
11.8.2a	Available	Available
11.8.3	Available	Available
non-remnant	Not currently available	Not currently available

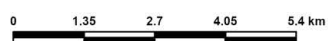
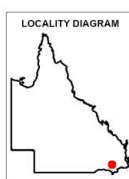
Maps

Map 1 - Location



Biodiversity Status

- | | |
|---|---|
|  | Endangered - Dominant vegetation |
|  | Endangered - Sub-dominant |
|  | Of Concern - Dominant |
|  | Of Concern - Sub-dominant |
|  | No concern at present |
|  | Non-remnant vegetation, cultivated or built environment |
|  | Plantation |
|  | Water |
|  | Cadastral Boundaries |
|  | Custom area |



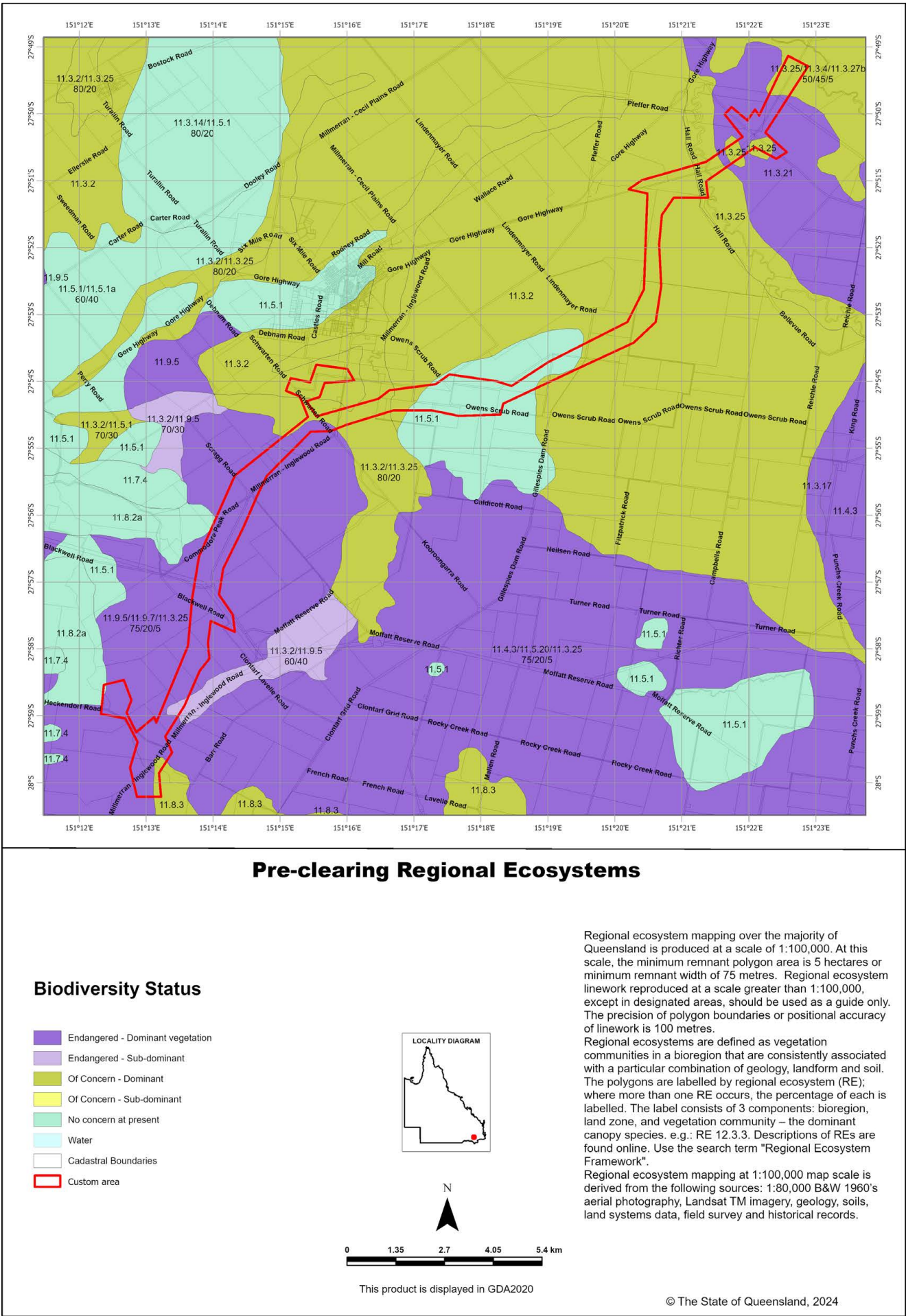
This product is projected into GDA2020

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The polygons are labelled by regional ecosystem (RE); where more than one RE occurs, the percentage of each is labelled. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species, e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".

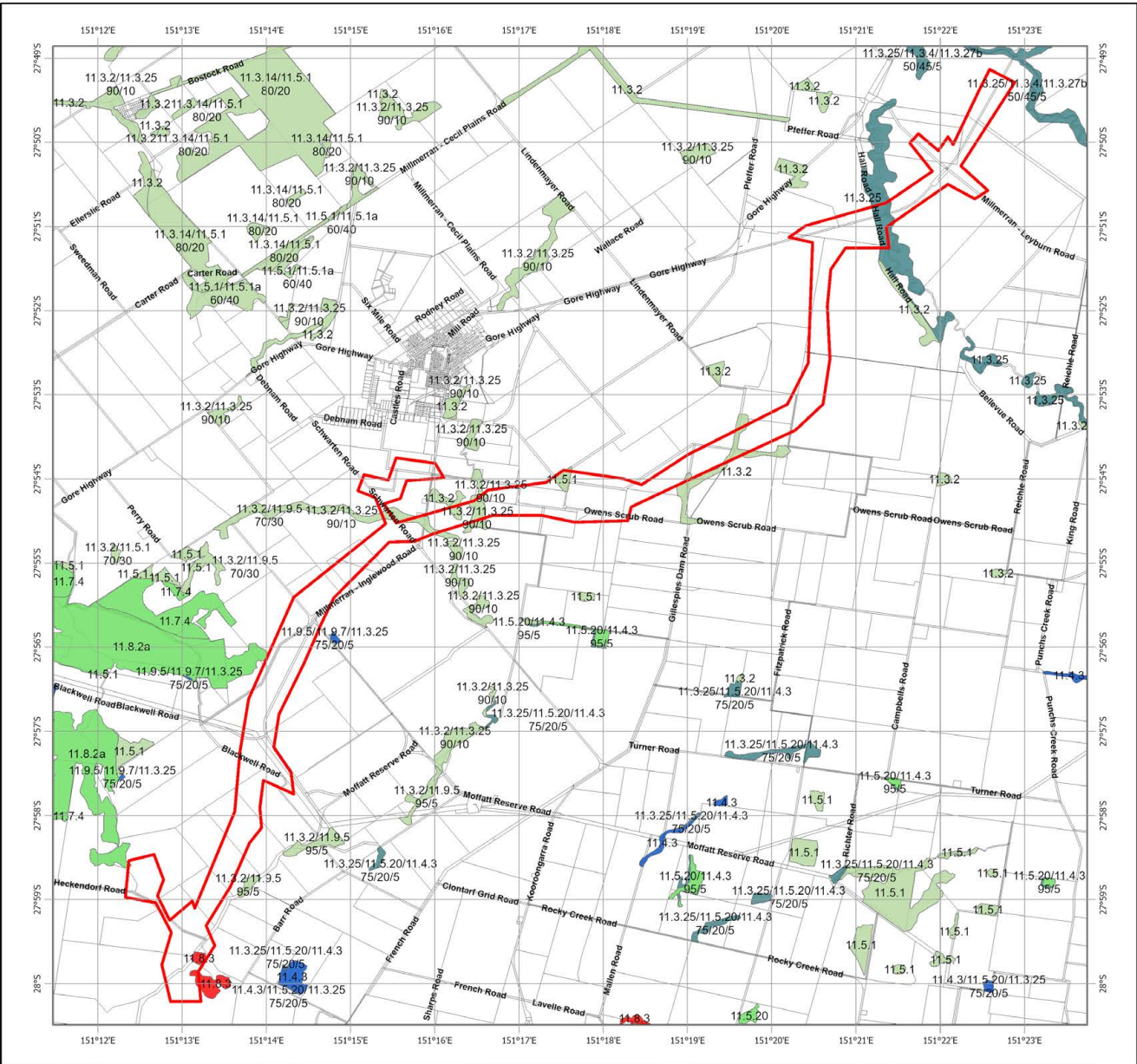
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

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Map 3 - Pre-clearing regional ecosystems



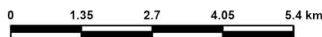
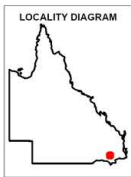
Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

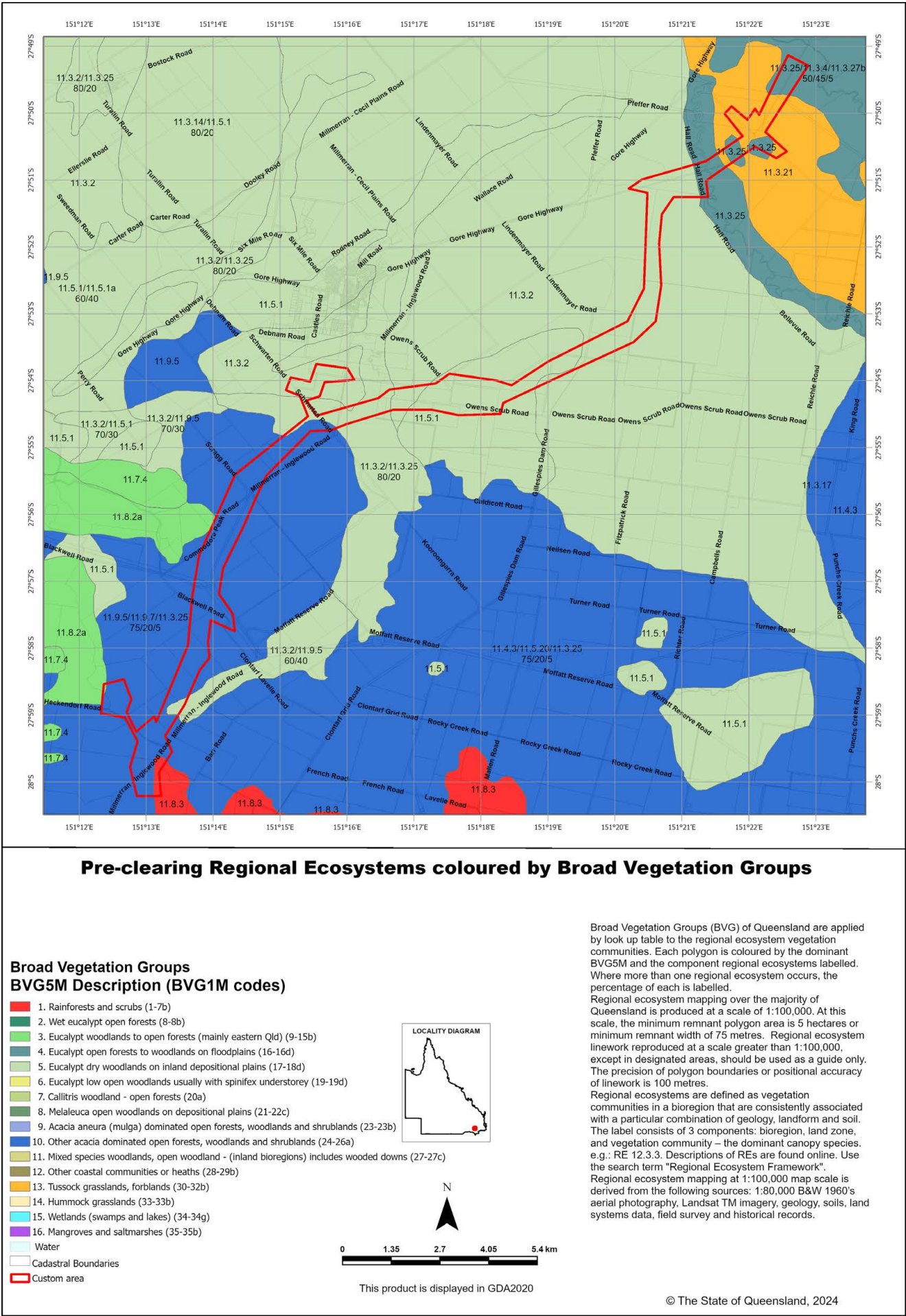
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries
- Custom area



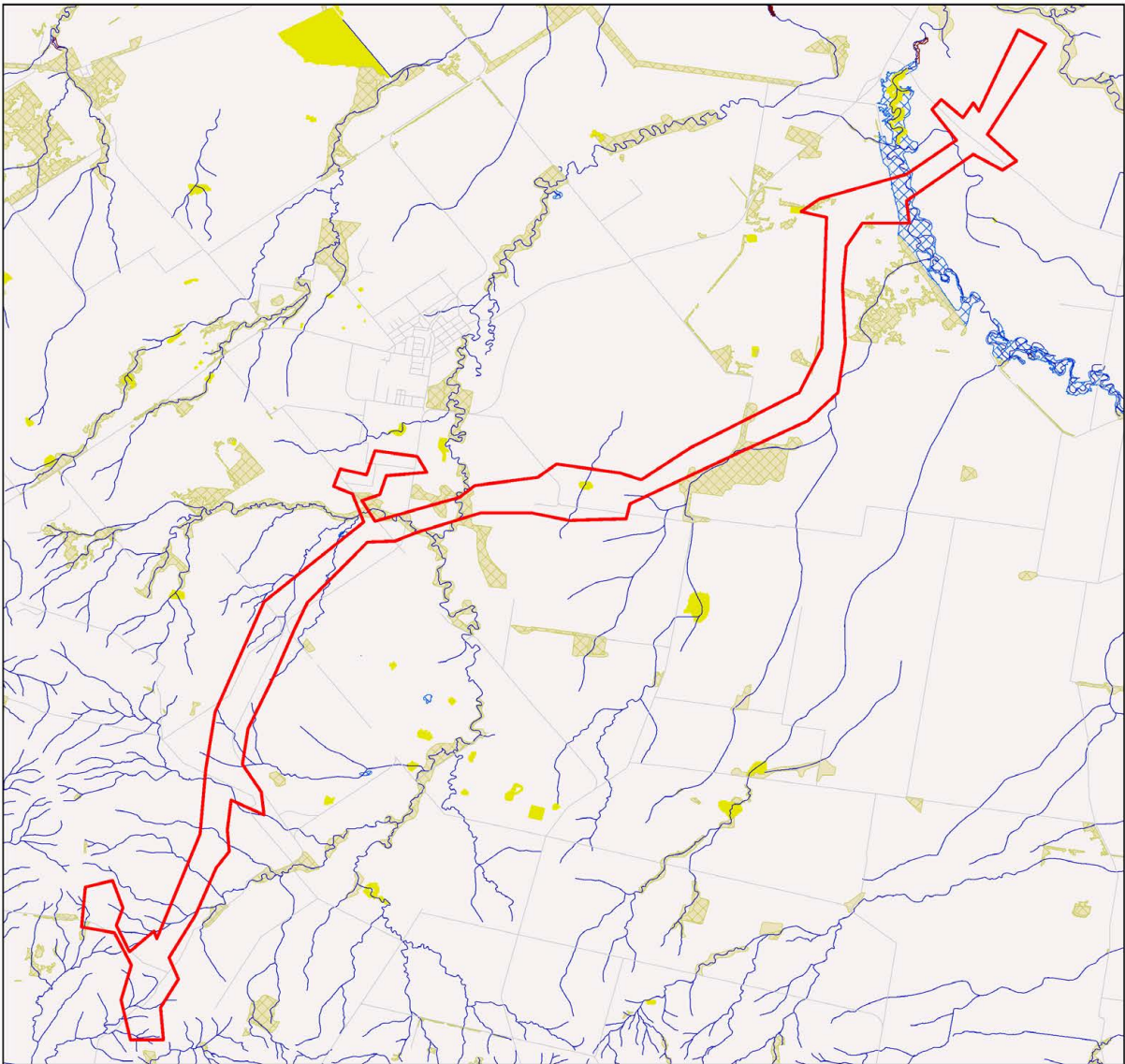
This product is displayed in GDA2020

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records. Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.

Map 5 - Pre-clearing regional ecosystems by BVG (5M)

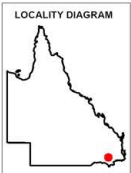


Map 6 - Wetlands and waterways



Wetlands and Waterways

- Towns
 - Roads
 - Springs
 - Rivers/Creeks
 - Directory of Important Wetlands
 - Ramsar Sites - QLD
- Wetland Type**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
- Queensland
- Custom area



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Links and Other Information Sources

The Department of Environment, Science and Innovation's Website -

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/> provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation>

The methodology for mapping regional ecosystems can be downloaded from:

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

Benchmarks can be obtained from: <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/spatial-catalogue)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

<https://qldglobe.information.qld.gov.au/>

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science.

<https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086>

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F., Richter, D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane.

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf.

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/>

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

[Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/information/spatial-catalogue)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and a field survey may be required to validate values on the ground.

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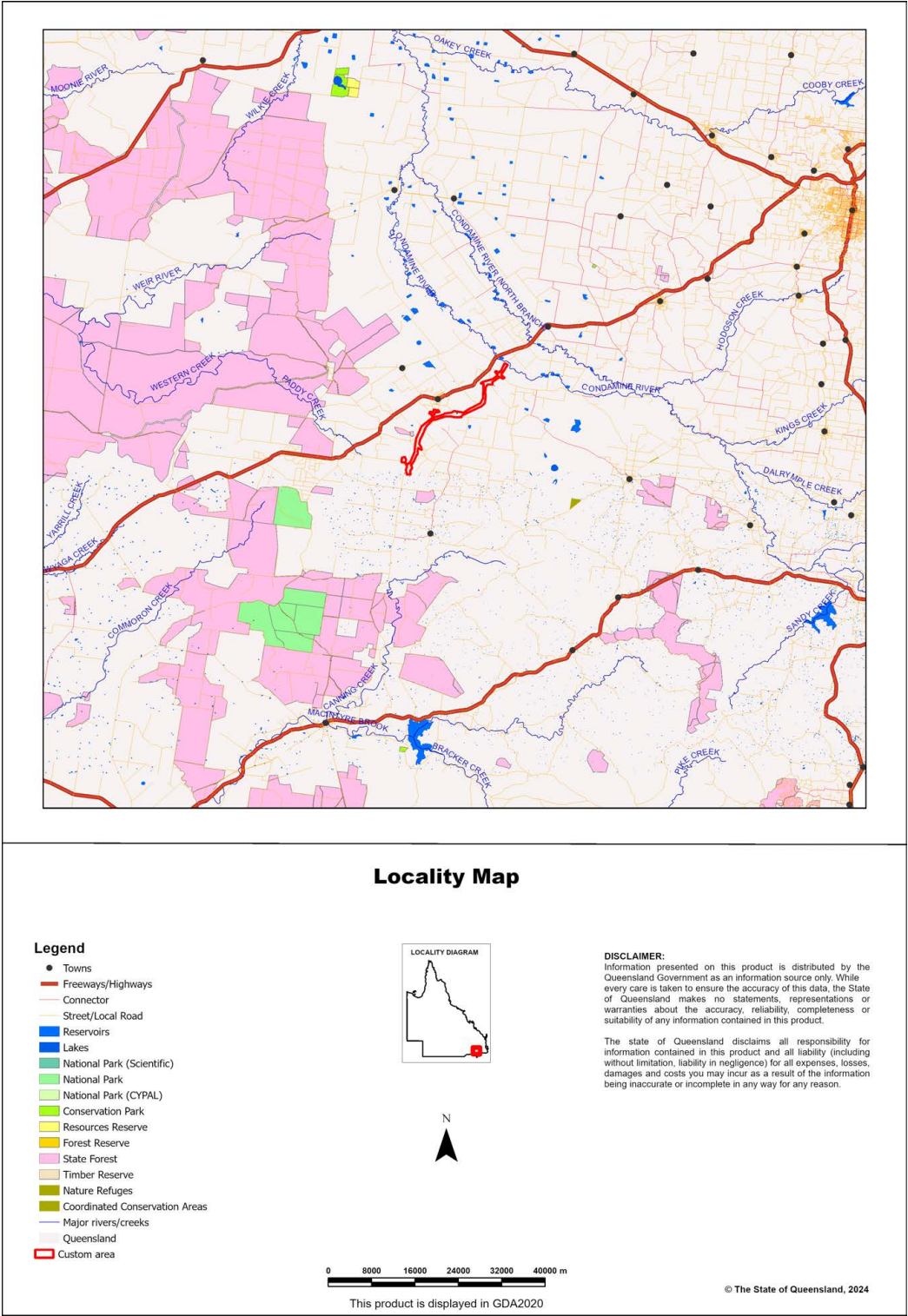
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI: Custom input, with area 1869.99 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Toowoomba Regional	Balonne-Condamine	Brigalow Belt	Eastern Darling Downs
	Border Rivers	Brigalow Belt	Inglewood Sandstones



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
- *Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004 ;*
- *Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008;*
- *Threatened wildlife under the Nature Conservation Act 1992 and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;*
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014 ;*
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	9.84 ha	0.5%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	64.9 ha	3.5%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	0.37 ha	0.0%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	11.76 ha	0.6%
8e Regulated Vegetation - intersecting a watercourse	17 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0 ha	0.0%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways**4. Strategic Environmental Areas (SEA)**

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species**7a. Threatened (endangered or vulnerable) wildlife**

Values are present

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>	Keys boronia	V	None
<i>Calyptrorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarius casuarius johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Euastacus bindal</i>	Mount Elliot crayfish	CR	None
<i>Euastacus binzayedii</i>		CR	None
<i>Euastacus eungella</i>		E	None
<i>Euastacus hystricosus</i>		E	None
<i>Euastacus jagara</i>	Jagara hairy crayfish	CR	None
<i>Euastacus maidae</i>		CR	None
<i>Euastacus monteithorum</i>		E	None
<i>Euastacus robertsi</i>		E	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Melaleuca irbyana</i>	swamp tea-tree	E	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>	bopple nut	V	None
<i>Petrogale penicillata</i>	brush-tailed rock-wallaby	V	None
<i>Petrogale coenensis</i>	Cape York rock-wallaby	V	None
<i>Petrogale purpureicollis</i>	purple-necked rock-wallaby	V	None
<i>Petrogale sharmani</i>	Sharmans rock-wallaby	V	None
<i>Petrogale xanthopus celeris</i>	yellow-footed rock-wallaby (Qld subspecies)	V	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

Scientific name	Common name	NCA status	EPBC status	Migratory status
<i>Homopholis belsonii</i>	Belson's panic	E	V	None

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

*Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL).
Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.2	O-dom	rem_oc
11.3.2/11.3.25	O-dom	rem_oc
11.8.3	O-dom	rem_oc

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.2/11.3.25	O-dom	hvr_oc
11.8.3	O-dom	hvr_oc

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Not applicable

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets**9a. Legally secured offset areas - offset register areas**

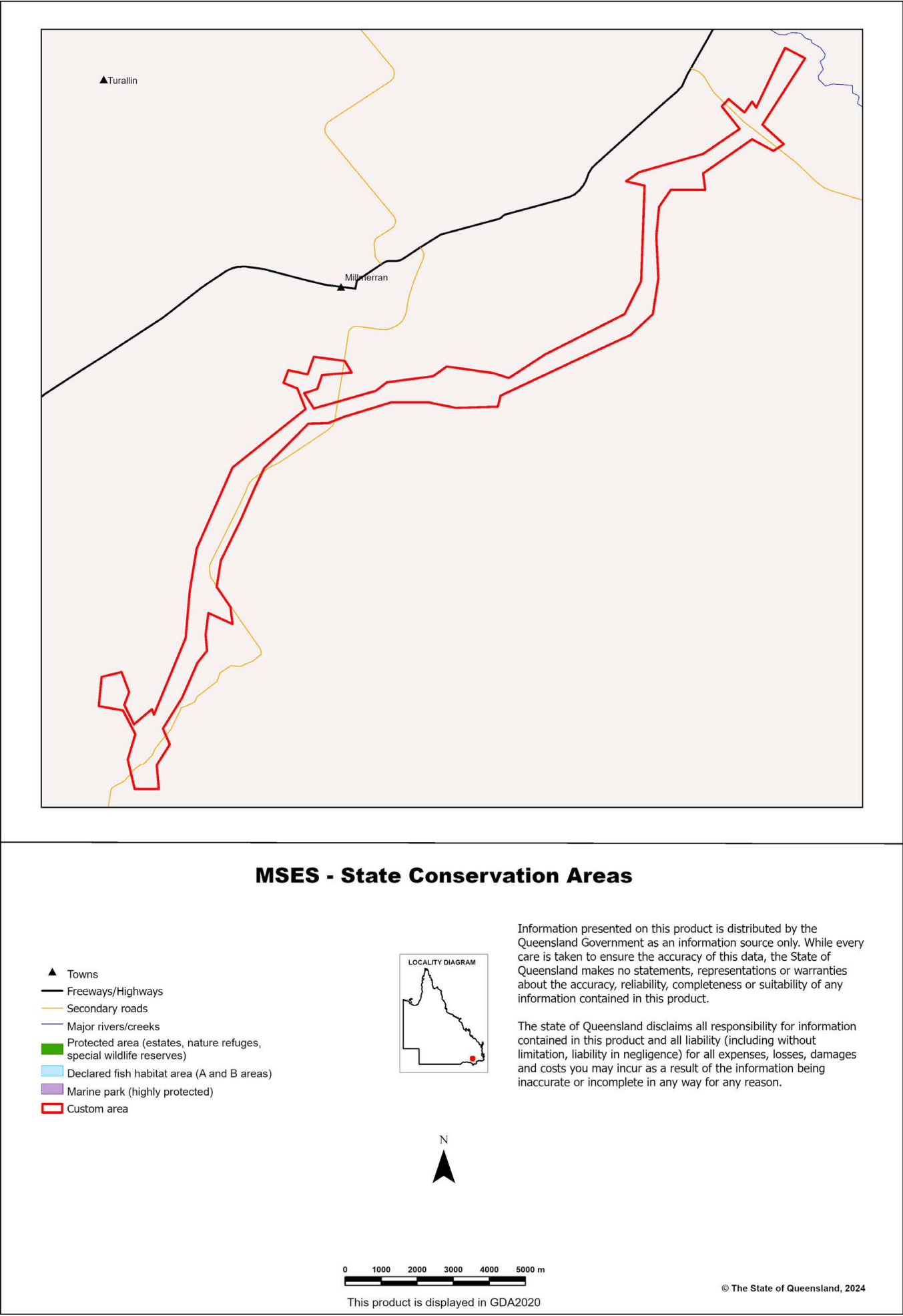
(No results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

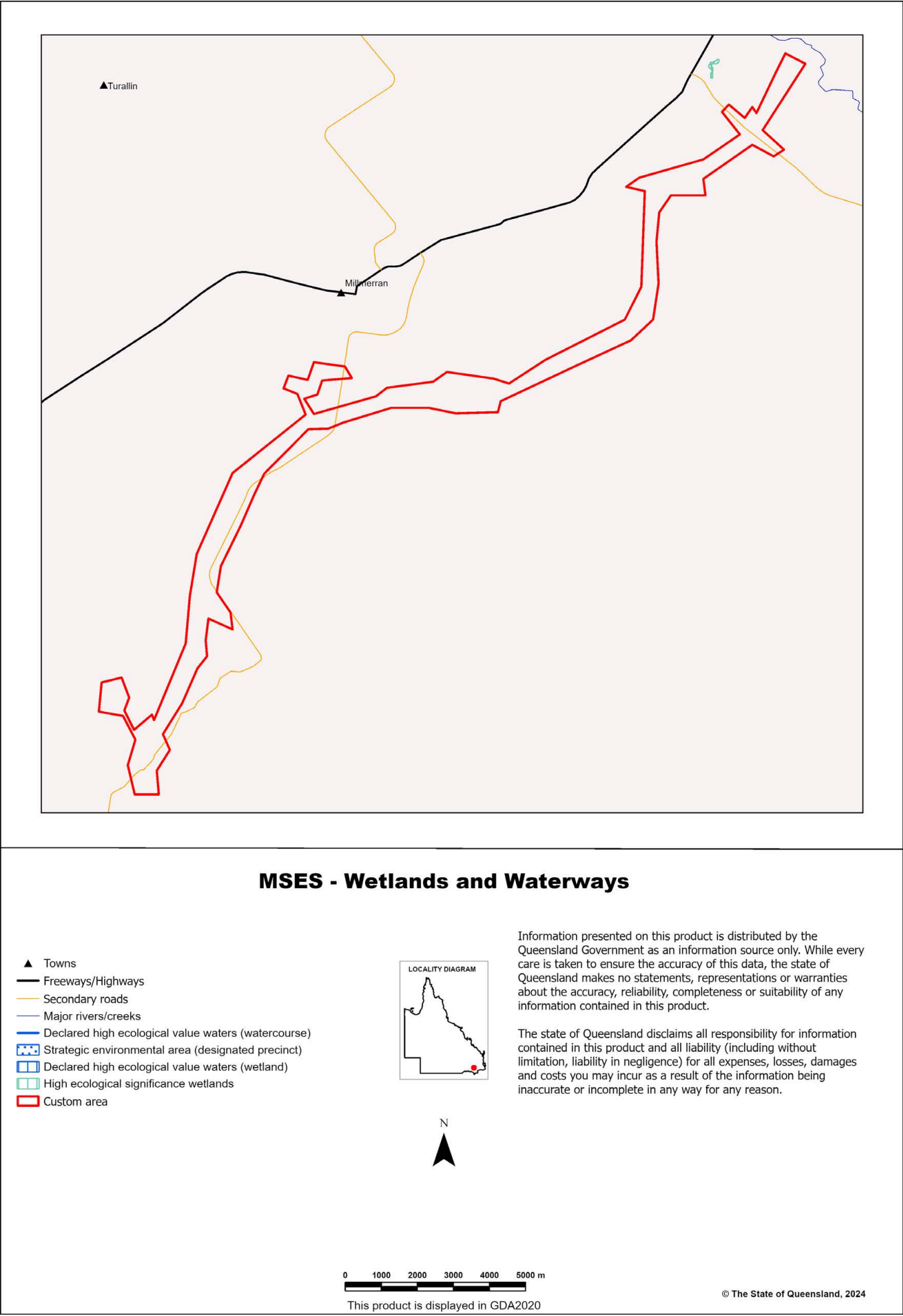
(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

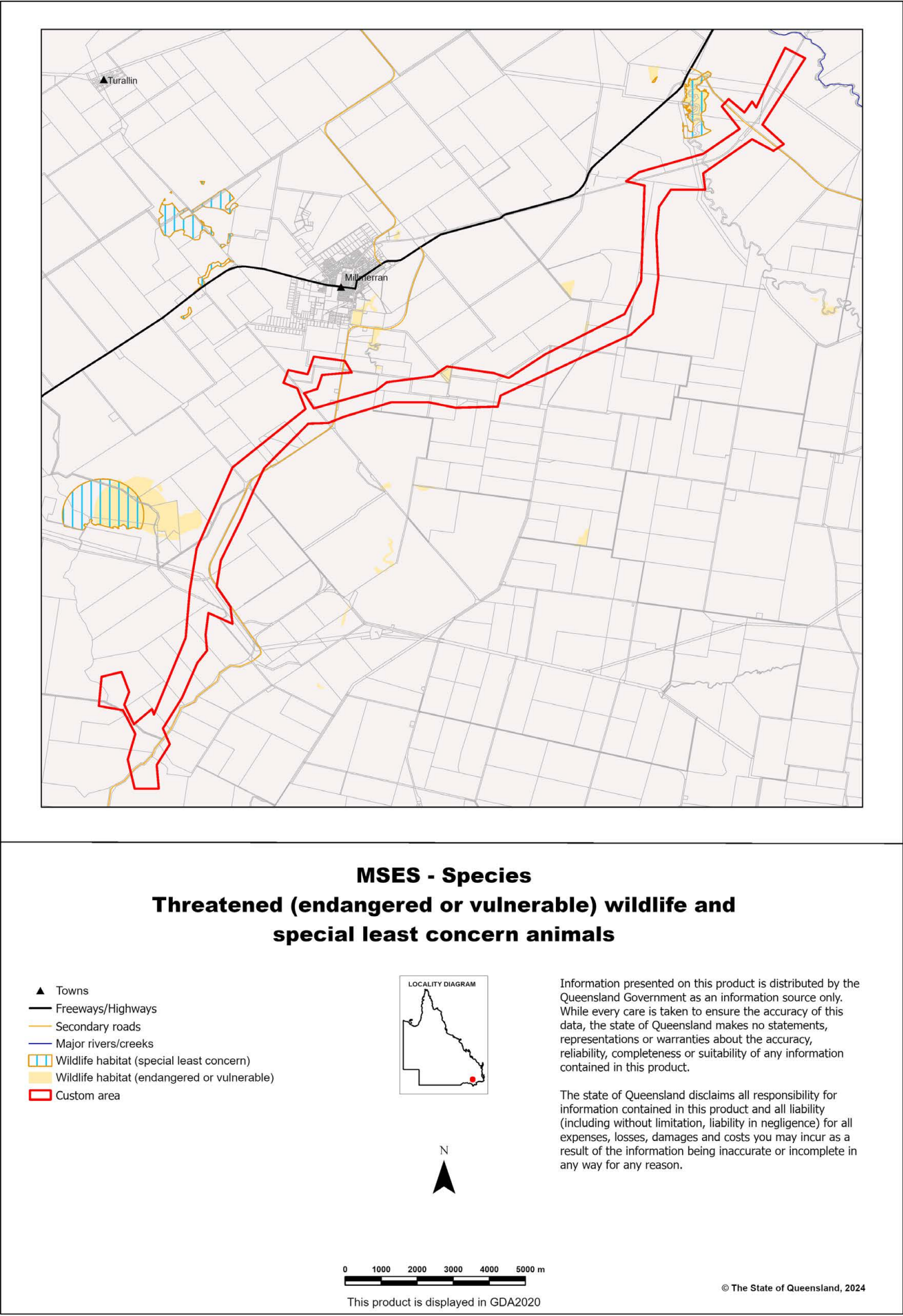
Map 1 - MSES - State Conservation Areas



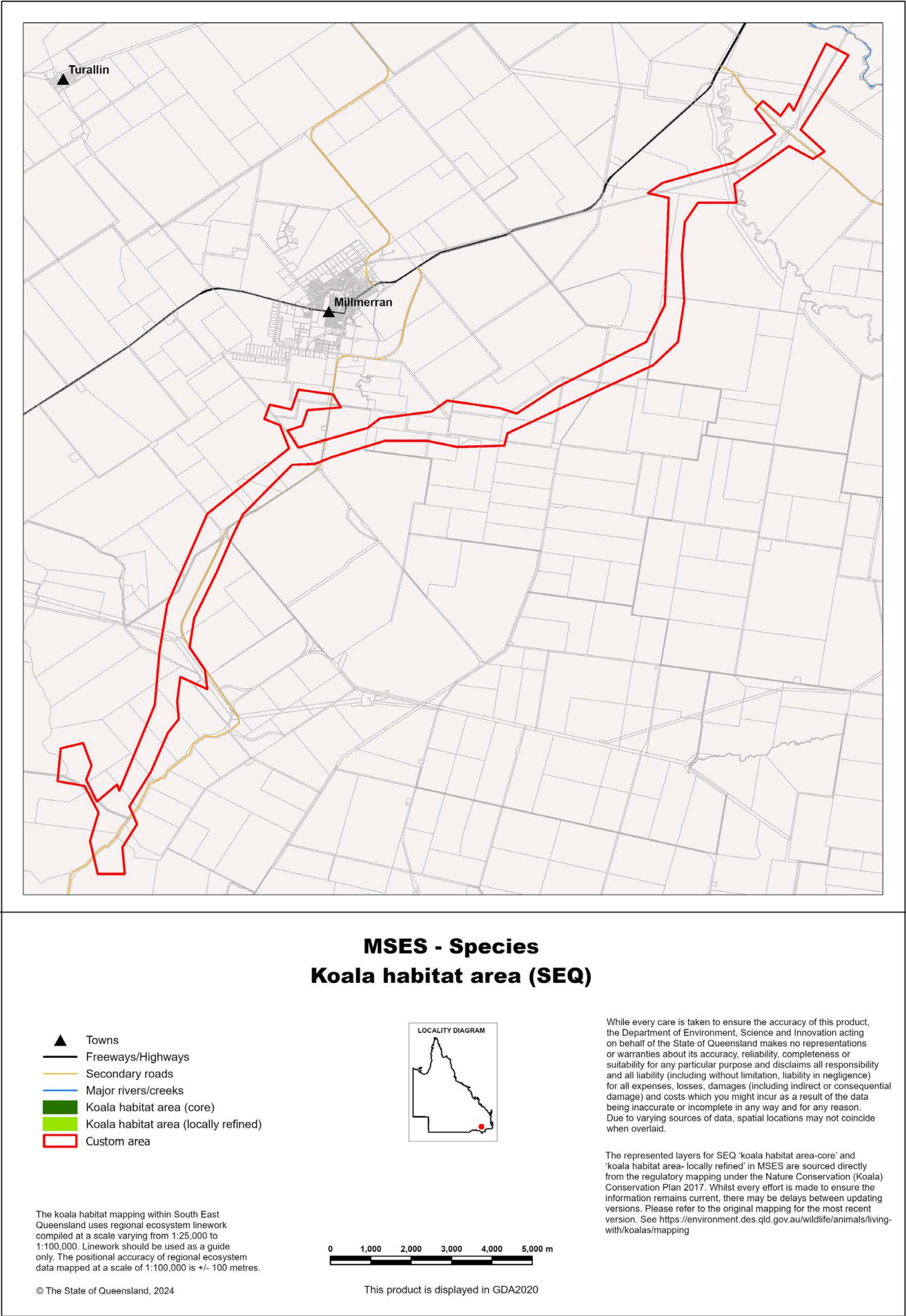
Map 2 - MSES - Wetlands and Waterways



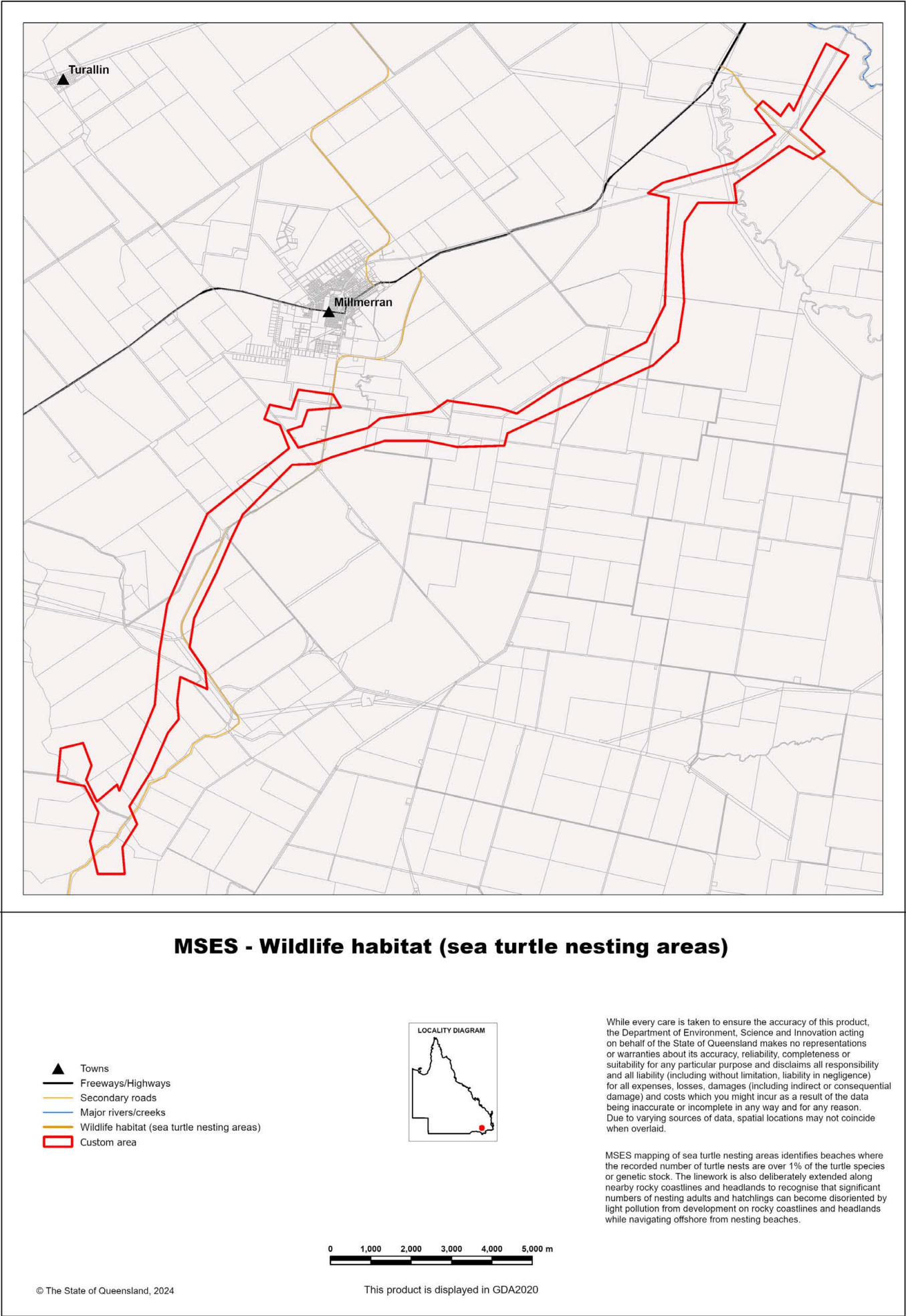
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



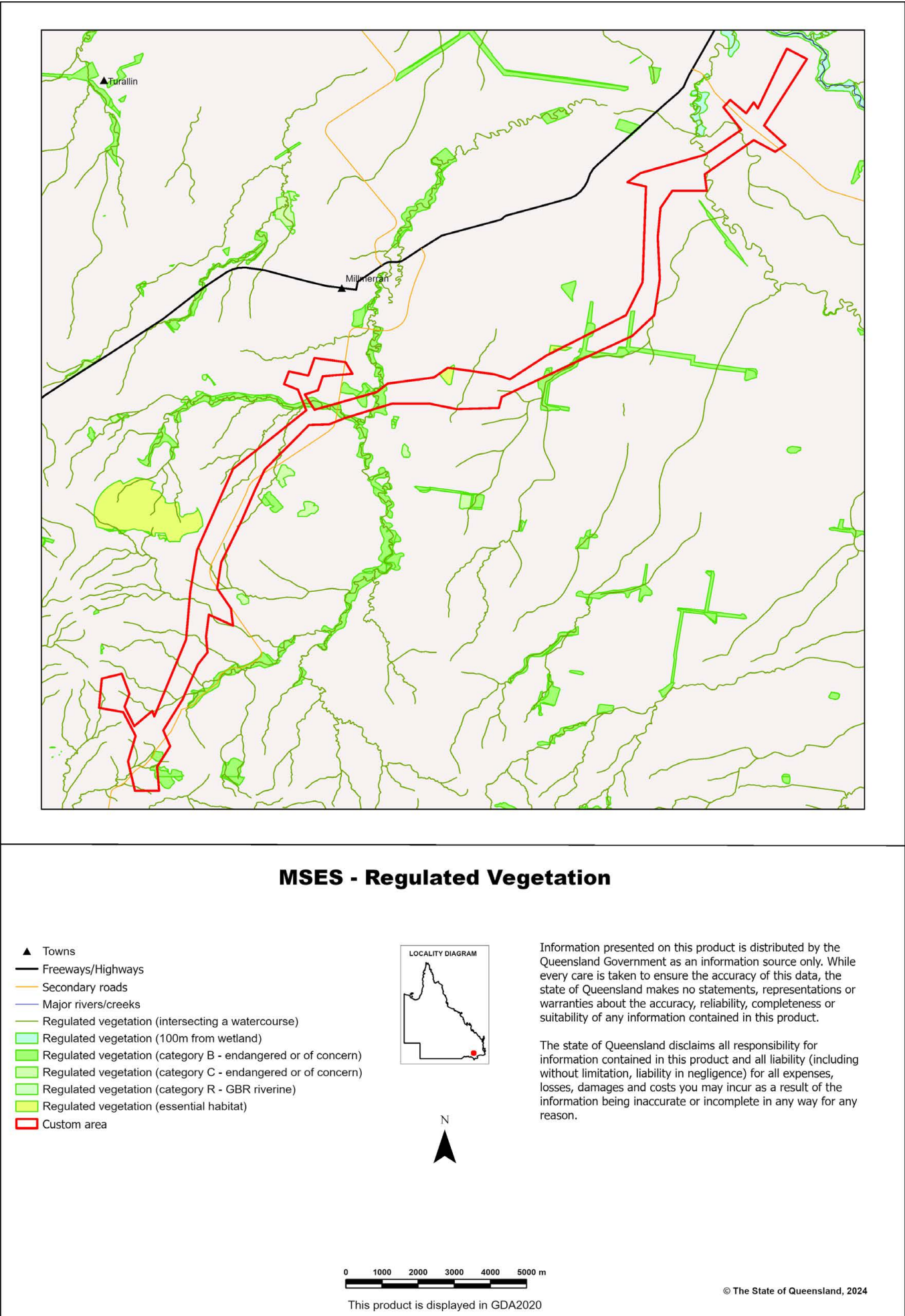
Map 3b - MSES - Species - Koala habitat area (SEQ)



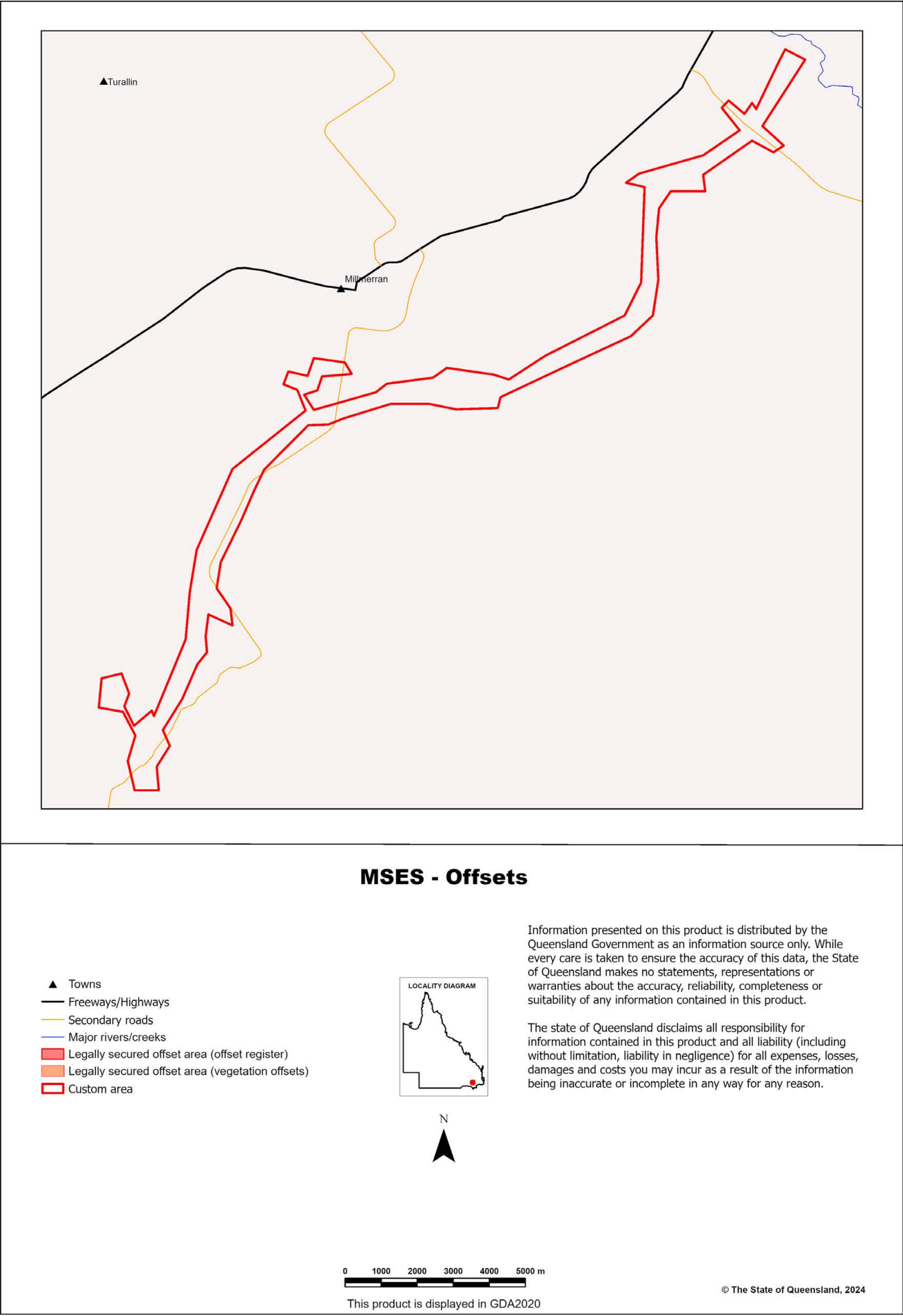
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DESI	- Department of Environment, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or Area of Interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "Central co-ordinates" option, the resulting assessment area encompasses an area extending from 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: biodiversity.planning@des.qld.gov.au

Disclaimer

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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Custom input, with area 1869.99 ha

Local Government(s)
Toowoomba Regional
Bioregion(s)
Brigalow Belt
Brigalow Belt
Subregion(s)
Eastern Darling Downs
Inglewood Sandstones
Catchment(s)
Balonne-Condamine
Border Rivers

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Brigalow Belt v2.1	Queensland Murray-Darling and Bulloo Basins v2.1	Queensland Murray-Darling and Bulloo Basins v.2.1

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.00	0.00
Of concern	80.65	4.31
No concern at present	10.14	0.54

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of Environment, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
Local or Other Values	9.79	0.52
State	81.00	4.33

Table 5: Non-riverine wetlands intersecting the AOI

Non-riverine wetland types intersecting the area of interest	#
Number of Lacustrine wetlands	1

Total number of non-riverine wetlands	1
---------------------------------------	---

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

Name	Permanency
GRASSTREE CREEK	Non-perennial

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of Environment, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	315.35	16.86
Low	840.76	44.96
Medium	713.89	38.18

Table 8: Summary table, aquatic conservation significance (non-riverine)

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
Low	3.06	0.16

Biodiversity Planning Assessments

Introduction

The Department of Environment, Science and Innovation (DESI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DESI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

<http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State	81.00	4.33
Local or Other Values	9.79	0.52

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in

protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Local or Other Values	Refer to diagnostic data for additional information	9.79	0.52
Regional	Remnant contains at least one Of Concern RE (B1)	25.57	1.37
State	Nat. Threatened Ecol. Community (B1) & Remnant contains a RE that is one of the largest of its type in the subregion (D2)	0.35	0.02
State	Nat. Threatened Ecol. Community (B1) & Remnant contains at least one Of Concern RE (B1)	52.04	2.78
State	Remnant contains at least 1 Vulnerable or Near Threatened species (A) & Nat. Threatened Ecol. Community (B1)	3.04	0.16

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	0.00	0.00	3.04	0.16	38.60	2.06	49.15	2.63
B1: Ecosystem Value (Bioregion)	55.43	2.96	25.57	1.37	9.79	0.52	0.00	0.00
B2: Ecosystem Value (Subregion)	9.39	0.50	45.70	2.44	35.71	1.91	0.00	0.00
C: Tract Size	0.00	0.00	0.02	0.00	0.00	0.00	90.77	4.85

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
D1: Relative RE Size (Bioregion)	0.00	0.00	0.00	0.00	0.02	0.00	90.77	4.85
D2: Relative RE Size (Subregion)	3.87	0.21	0.00	0.00	5.86	0.31	81.05	4.33
F: Ecosystem Diversity	0.00	0.00	0.00	0.00	0.00	0.00	90.79	4.86
G: Context and Connection	0.00	0.00	0.00	0.00	44.46	2.38	46.33	2.48

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
	No information	38.98	2.08
Local	Refer to Expert Panel data for additional information	0.02	0.00
Regional	Remnant forms part of a bioregional corridor (J)	26.22	1.40
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I) & Remnant forms part of a bioregional corridor (J)	25.57	1.37

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al.* 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.

- li - areas with a high density of hollow-bearing trees that provide habitat for animals.
- lj - breeding or roosting sites used by a significant number of individuals.
- lk - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to access overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Ia: Centres of Endemism	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	0.00	0.00	25.57	1.37	0.00	0.00	0.00	0.00
Ic: Disjunct Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Id: Limits of Geographic Ranges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ie: High Species Richness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:

- Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
- Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
- Maintaining large scale seasonal/migratory species processes and movement of fauna;
- Maximising connectivity between large tracts/patches of remnant vegetation;
- Identifying key areas for rehabilitation and offsets; and

- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial

- Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
- Follow major watershed/catchment and/or coastal boundaries;
- Incorporate major altitudinal/geological/climatic gradients;
- Include and maximise connectivity between large tracts/patches of remnant vegetation;
- Include and maximise connectivity between remnant vegetation in good condition; and

- Riparian

- Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
	39.00	2.09
Regional	26.22	1.40
State	25.57	1.37

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
brbs_I_18b			
brbs_I_15	Relictual subregions (less than 30% remnant vegetation) - remnant vegetation	Regional	lb (refugia): H
brbs_I_18a			

Expert panel decision descriptions:

Decision Number	Description
brbs_I_18b	
brbs_I_15	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Relictual subregions (less than 30% remnant vegetation remaining) for the Brigalow Belt include; Upper Belyando Flood out (11.8), Isaac - Comet Downs (11.11), Callide Creek Downs (11.19), Dawson River Downs (11.21), Taroom Downs (11.25), Dulacca Downs (11.28), Weribone High (11.29), Tara Downs (11.30), Eastern Darling Downs (11.31), Moonie R. - Commoron Creek Floodout (11.33), Moonie - Barwon Interfluvium (11.34), Warrambool - Moonie (11.35), Macintyre - Weir Fan (11.36), Narrandool (11.38). Remnant vegetation provides a refuge from clearing in fragmented subregions and should be retained to maintain biodiversity. Refer to brbn_I_89 for the northern BRB implementation of this decision.
brbs_I_18a	

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in Queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning processes

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland Info:

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	315.35	16.86
Low	840.76	44.96

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
Medium	713.89	38.18

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	247.36	13.23	147.14	7.87	323.65	17.31	1,151.84	61.60
2. Naturalness catchment	0.00	0.00	470.79	25.18	1,399.20	74.82	0.00	0.00
3. Diversity and richness	0.00	0.00	390.23	20.87	1,264.64	67.63	215.12	11.50
4. Threatened species and ecosystems	0.00	0.00	1,029.23	55.04	693.62	37.09	147.14	7.87
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	1,151.84	61.60	0.00	0.00
6. Special features	0.00	0.00	315.35	16.86	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	315.35	16.86	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
cb_r_ec_24	Semi-permanent waterholes (riverine)	Condamine-Balonne	6.1.1,6.2.1,6.3.1,6.3.4	3,3,3,3
cb_r_ec_45	Riverine drought refugia (High relative value)	Condamine-Balonne	6.1.1,6.2.1,6.3.1,6.3.4	3,3,3,3

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
cb_r_ec_24	Drought refugia are an important feature in a semi-arid landscape. Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). Other values include Tandanus (Ell tailed catfish). This decision was implemented using Water Observations from Space published by Geoscience Australia.
cb_r_ec_45	Drought refugia are an important feature in a semi-arid landscape. Values include Tandanus (Ell tailed catfish). Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). This decision was implemented using persistent waterhole mapping help by DES. The percentage length of persistent waterholes per riverine spatial unit was calculated using Geofab v2.1 watercourses and DES persistent waterhole mapping. The Jenks Natural Breaks classification algorithm was used to categorise spatial units into four classes (i.e. Very High, High, Medium, Low). Spatial units in the Medium class were used for this decision. Spatial units in the Very High and High class were used for Riverine drought refugia (Very High relative value) decision (i.e. cb_r_ec_06).

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
Low	3.06	0.16

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	3.06	0.16
2. Naturalness catchment	0.00	0.00	0.00	0.00	0.00	0.00	3.06	0.16
3. Diversity and richness	0.00	0.00	0.00	0.00	3.06	0.16	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	3.06	0.16
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, HerbreCs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Digitaria porrecta</i>		NT					FL
<i>Homopholis belsonii</i>	Belson's panic	E	V				FL
<i>Phascolarctos cinereus</i>	koala	E	E	Low			FA
<i>Prostanthera</i> sp. (Dunmore D.M.Gordon 8A)		V	V				FL

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DESI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

*JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.

**I - wetland indicator species; D - wetland dependent species.

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
<i>Acrodipsas violacea</i>	'Violet' Ant-blue	FA
<i>Enteropogon paucispiceus</i>		FL
<i>Macquaria ambigua</i>	Yellowbelly	FA
<i>Pyrholaemus sagittatus</i>	Speckled Warbler	FA
<i>Sclerolaena tetracuspis</i>	brigalow burr	FL
<i>Varanus varius</i>	Lace Monitor	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Identified flora/fauna
<i>Acacia stenophylla</i>	belalie	FL
<i>Casuarina cunninghamiana</i>		FL
<i>Eucalyptus camaldulensis</i>		FL
<i>Tandanus tandanus</i>	freshwater catfish	FA

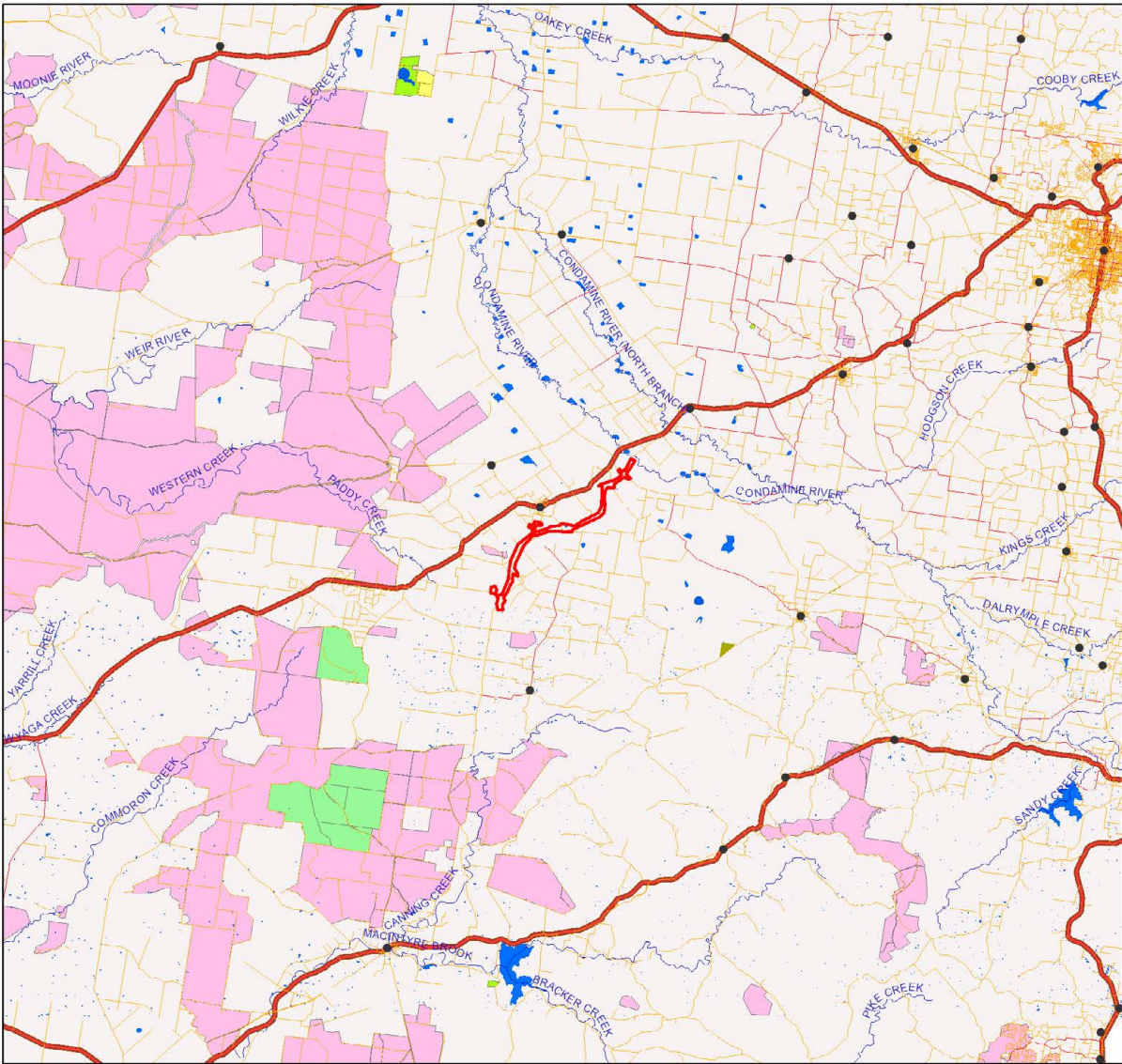
Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

Species	Common name	Identified flora/fauna
<i>Acacia stenophylla</i>	belalie	FL
<i>Eucalyptus camaldulensis</i>		FL
<i>Marsilea drummondii</i>	common nardoo	FL

NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

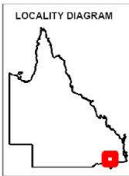
Maps

Map 1 - Locality Map



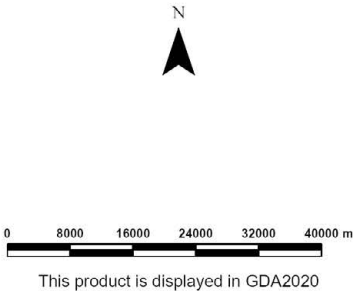
Locality Map

- Legend**
- Towns
 - Freeways/Highways
 - Connector
 - Street/Local Road
 - Reservoirs
 - Lakes
 - National Park (Scientific)
 - National Park
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Nature Refuges
 - Coordinated Conservation Areas
 - Major rivers/creeks
 - Queensland
 - Custom area

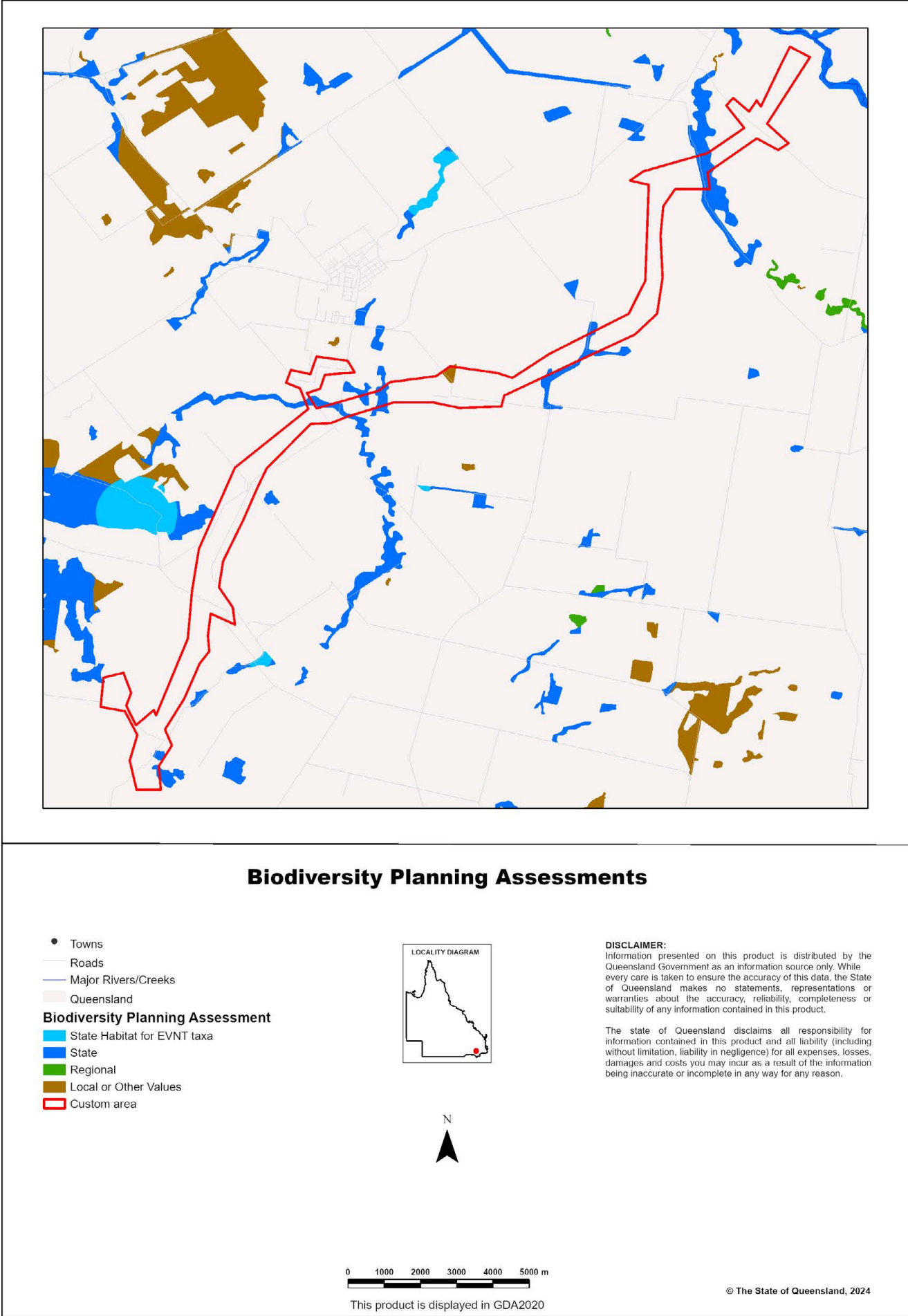


DISCLAIMER:
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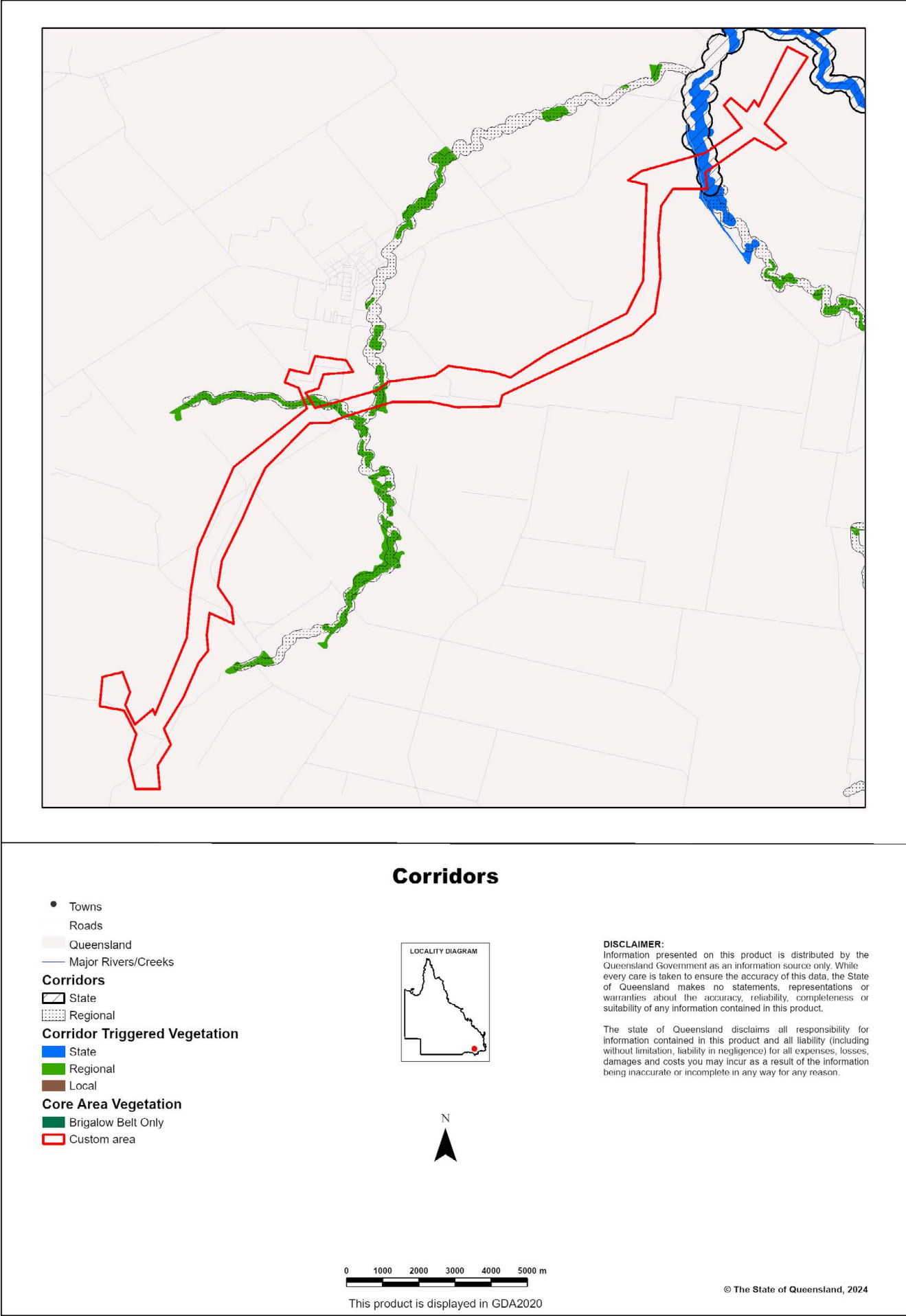
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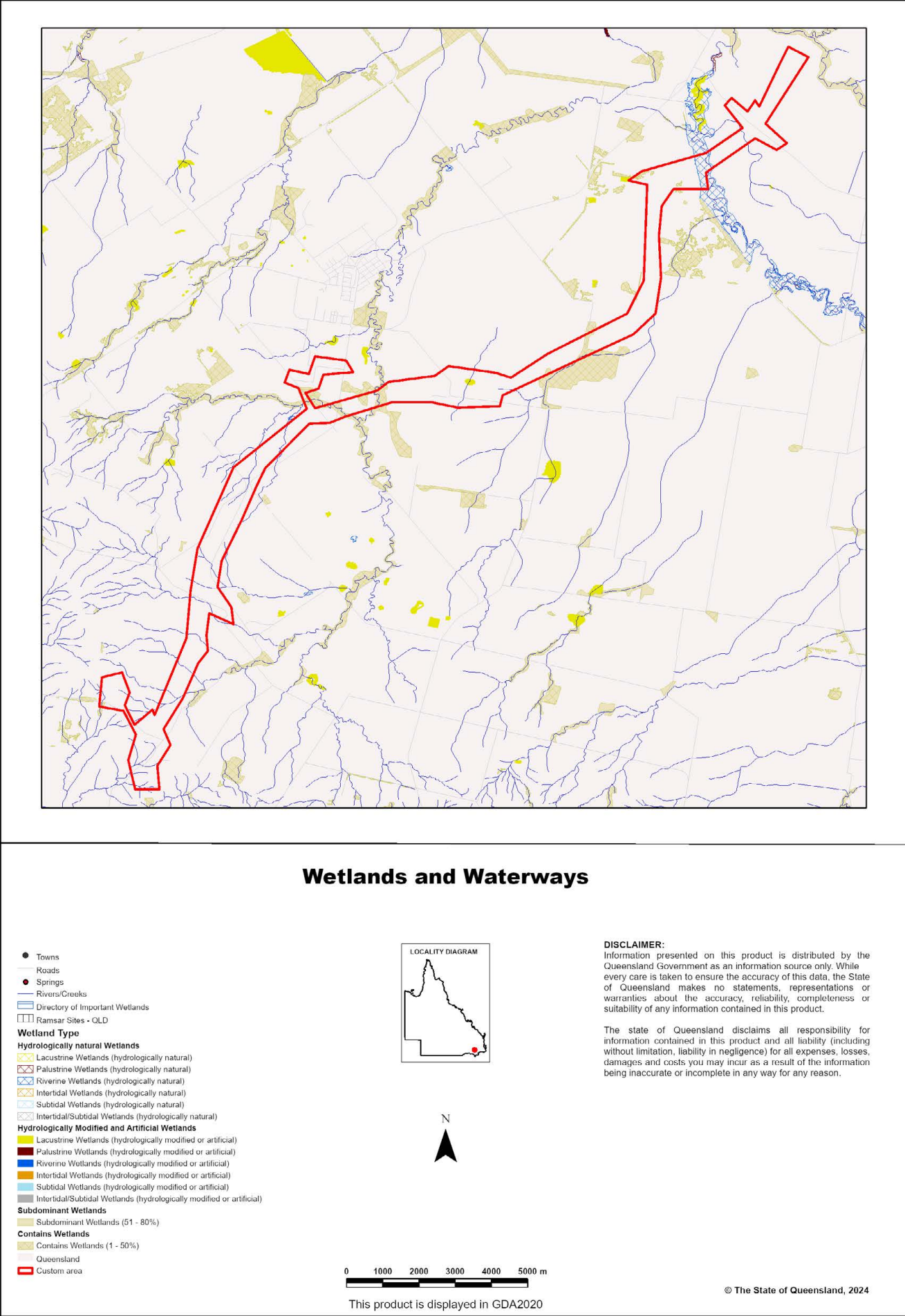
Map 2 - Biodiversity Planning Assessment (BPA)



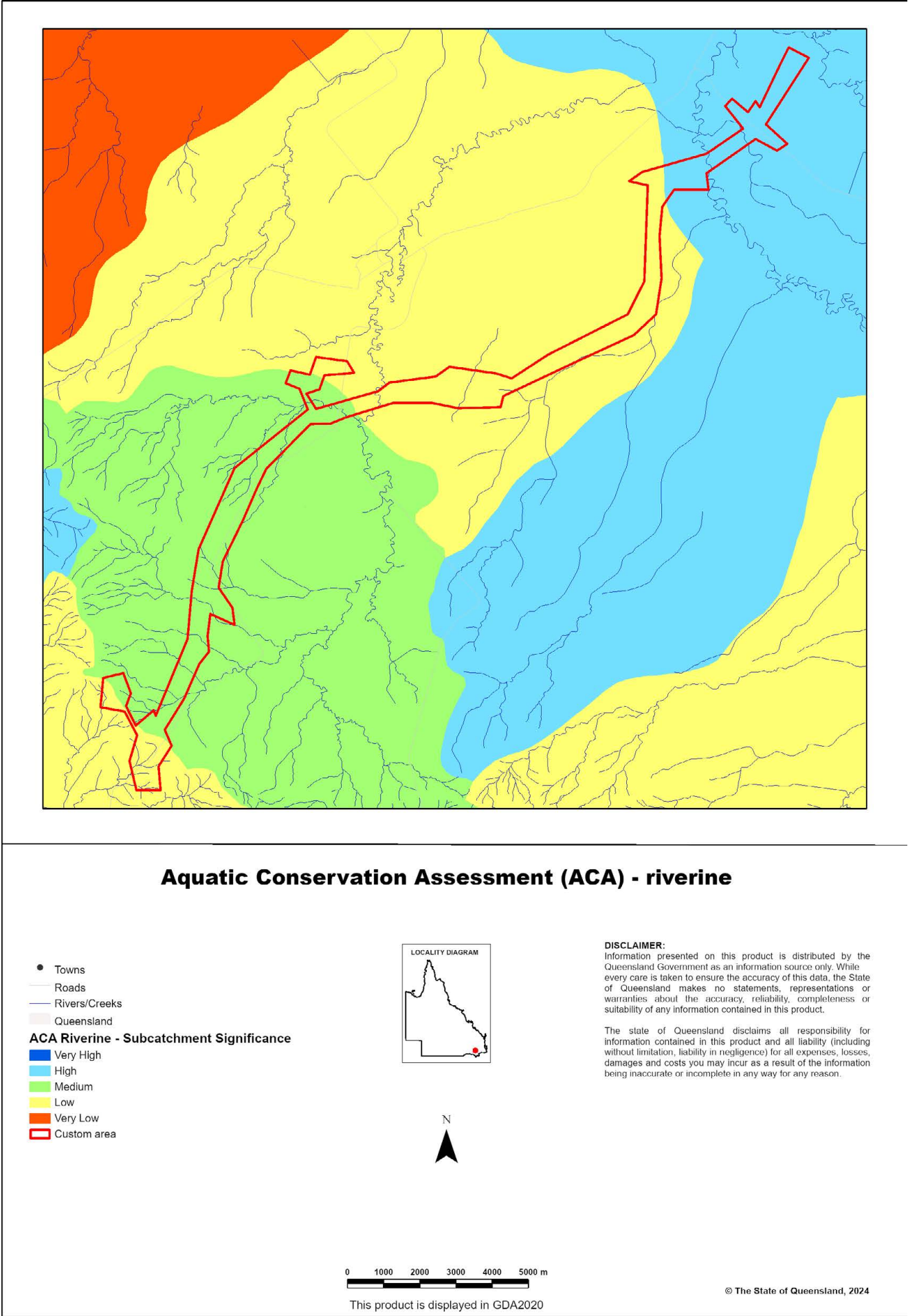
Map 3 - Corridors



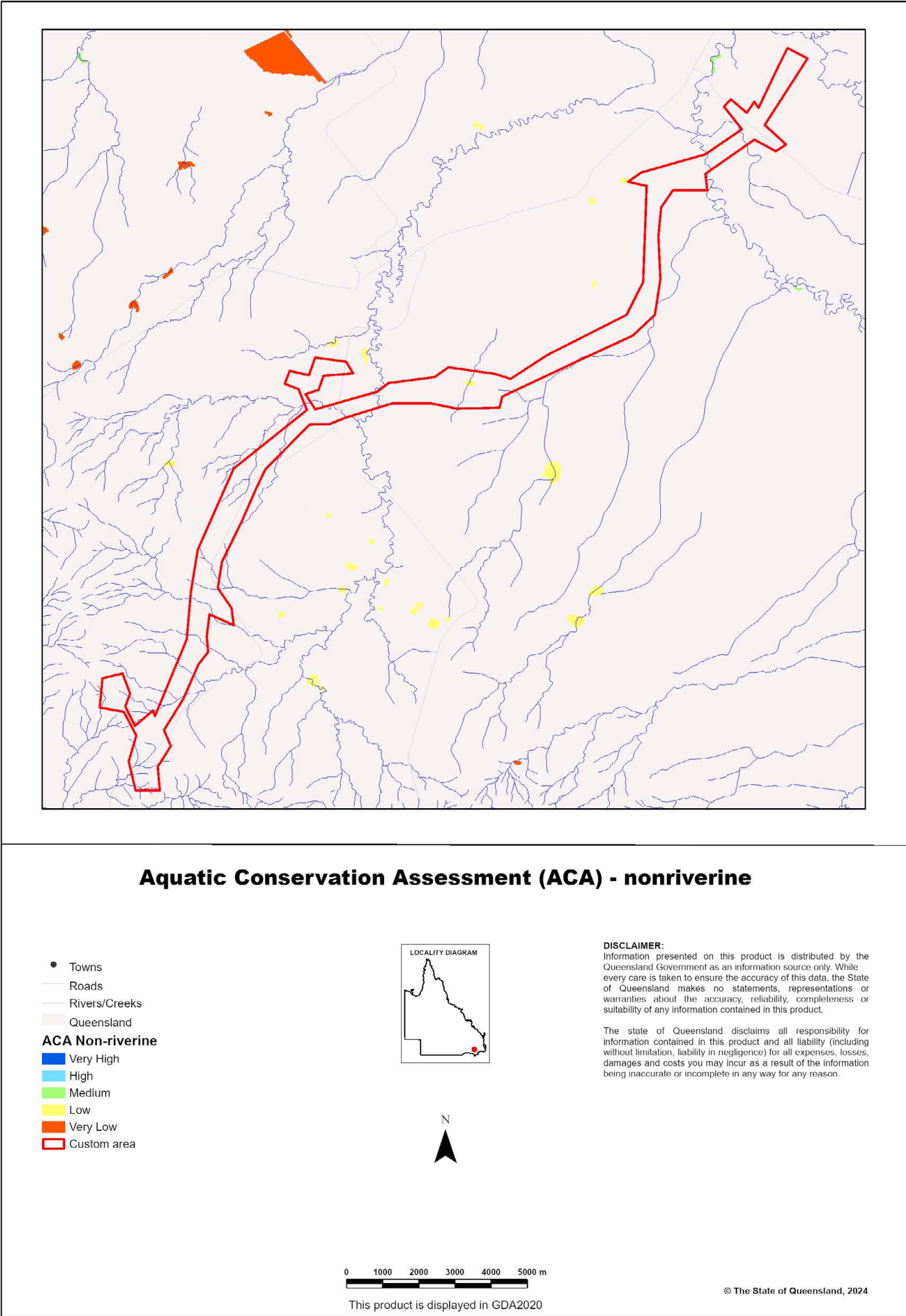
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



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Clayton, P.D., Fielder, D.F., Howell, S. and Hill, C.J. (2006) *Aquatic biodiversity assessment and mapping method (AquaBAMM): a conservation values assessment tool for wetlands with trial application in the Burnett River catchment*. Published by the Environmental Protection Agency, Brisbane. ISBN 1-90928-07-3. Available at

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca/>

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Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einiasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v2.3 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.6
Threatened Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:

<http://dds.information.qld.gov.au/DDS>

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DESI	- Department of Environment, Science and Innovation
EPBC	- <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and a field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@des.qld.gov.au

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Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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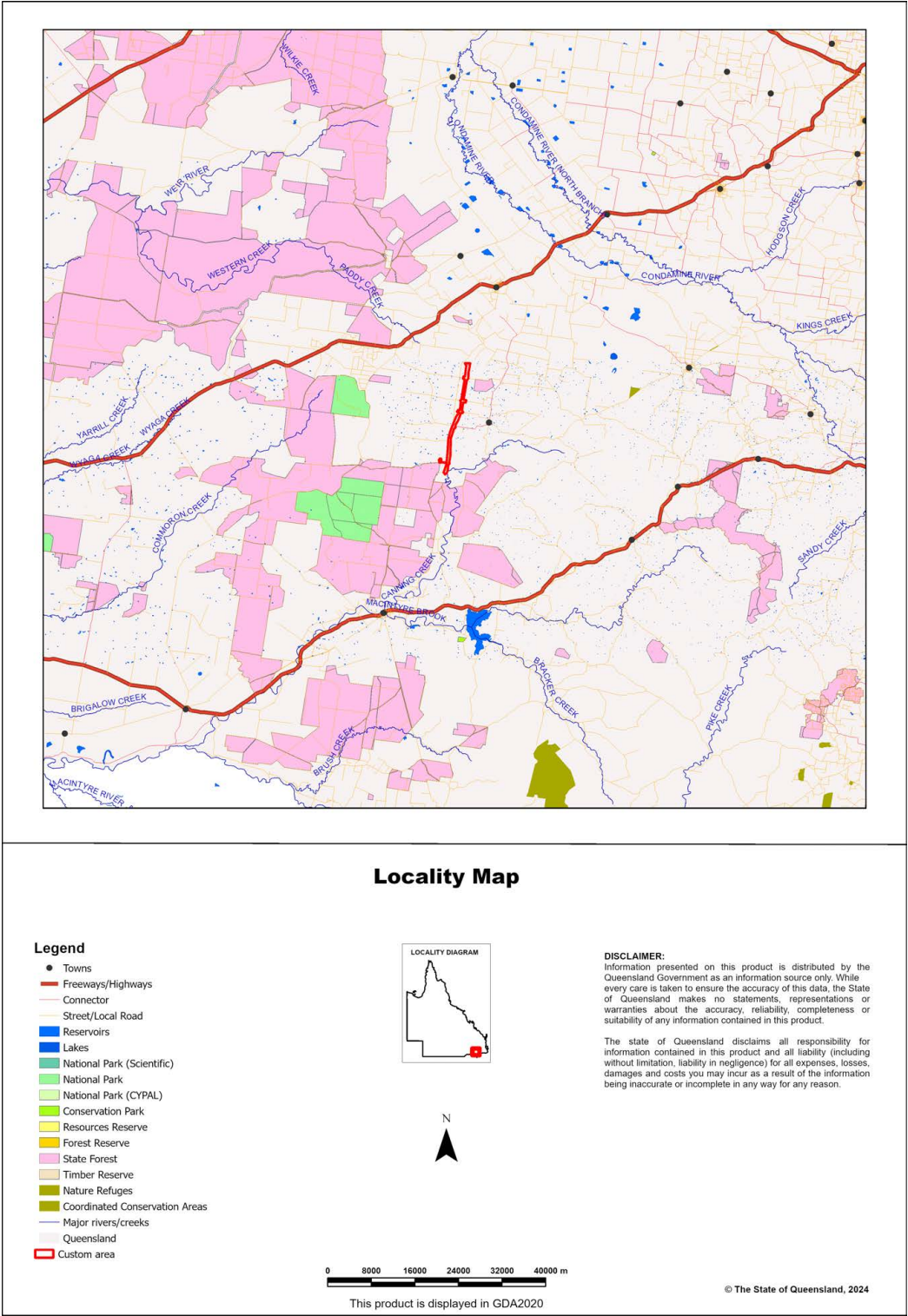
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI: Custom input, with area 1009.09 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Goondiwindi Regional	Border Rivers	Brigalow Belt	Inglewood Sandstones
Toowoomba Regional			



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
- *Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004* ;
- *Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008*;
- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	6.97 ha	0.7%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	0.01 ha	0.0%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	6.46 ha	0.6%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	5.23 ha	0.5%
8e Regulated Vegetation - intersecting a watercourse	16.3 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0 ha	0.0%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways**4. Strategic Environmental Areas (SEA)**

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species**7a. Threatened (endangered or vulnerable) wildlife**

Values are present

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>	Keys boronia	V	None
<i>Calyptrorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarium casuarium johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Euastacus bindal</i>	Mount Elliot crayfish	CR	None
<i>Euastacus binzayedii</i>		CR	None
<i>Euastacus eungella</i>		E	None
<i>Euastacus hystricosus</i>		E	None
<i>Euastacus jagara</i>	Jagara hairy crayfish	CR	None
<i>Euastacus maidae</i>		CR	None
<i>Euastacus monteithorum</i>		E	None
<i>Euastacus robertsi</i>		E	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Melaleuca irbyana</i>	swamp tea-tree	E	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>	bopple nut	V	None
<i>Petrogale penicillata</i>	brush-tailed rock-wallaby	V	None
<i>Petrogale coenensis</i>	Cape York rock-wallaby	V	None
<i>Petrogale purpureicollis</i>	purple-necked rock-wallaby	V	None
<i>Petrogale sharmani</i>	Sharmans rock-wallaby	V	None
<i>Petrogale xanthopus celeris</i>	yellow-footed rock-wallaby (Qld subspecies)	V	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

Scientific name	Common name	NCA status	EPBC status	Migratory status
<i>Acanthophis antarcticus</i>	common death adder	V	None	None
<i>Geophaps scripta scripta</i>	squatter pigeon (southern subspecies)	V	V	None

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

*Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL). Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.2/11.3.4/11.3.25	O-dom	rem_oc

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.2/11.3.4/11.3.25	O-dom	hvr_oc

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Not applicable

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets**9a. Legally secured offset areas - offset register areas**

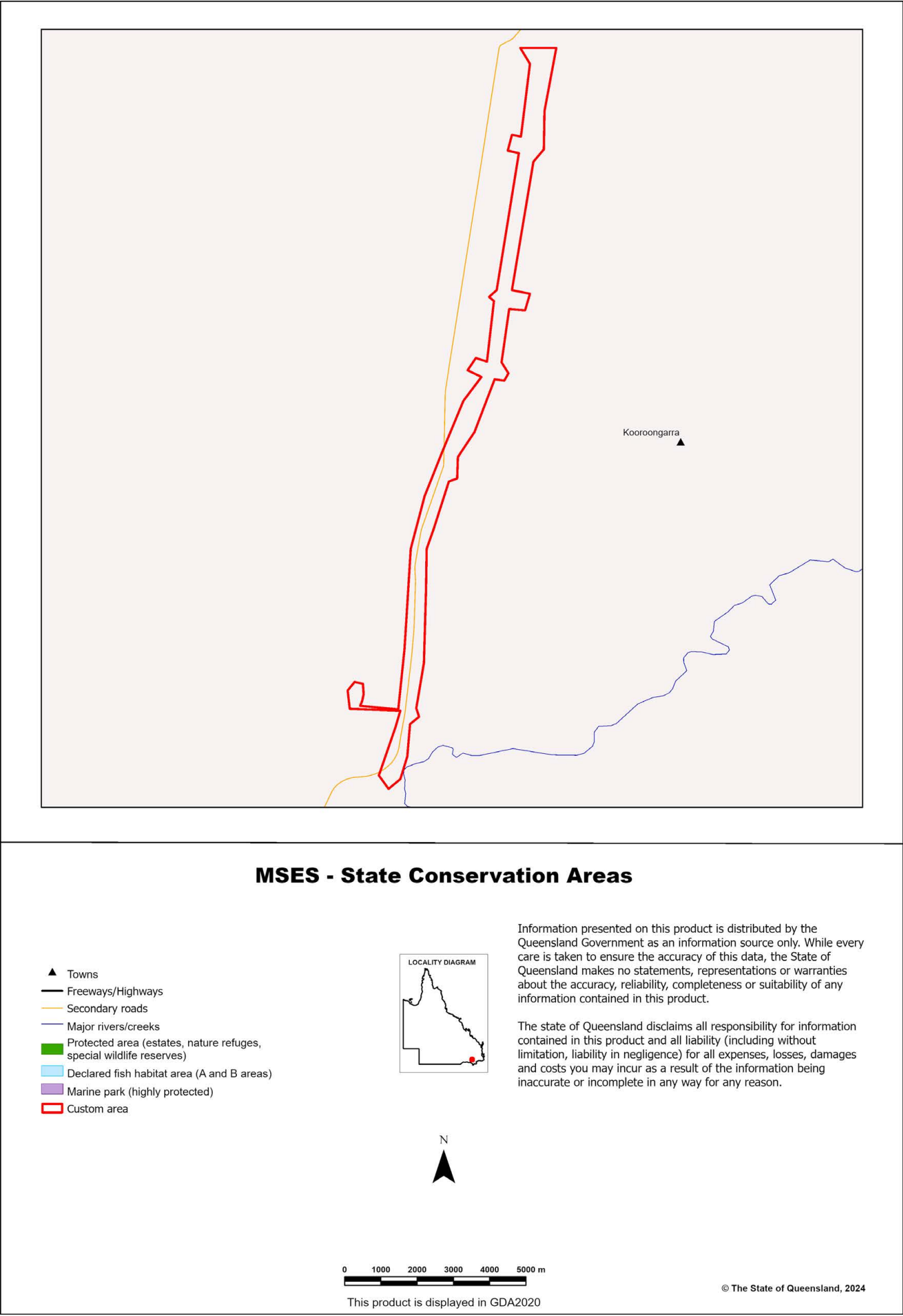
(No results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

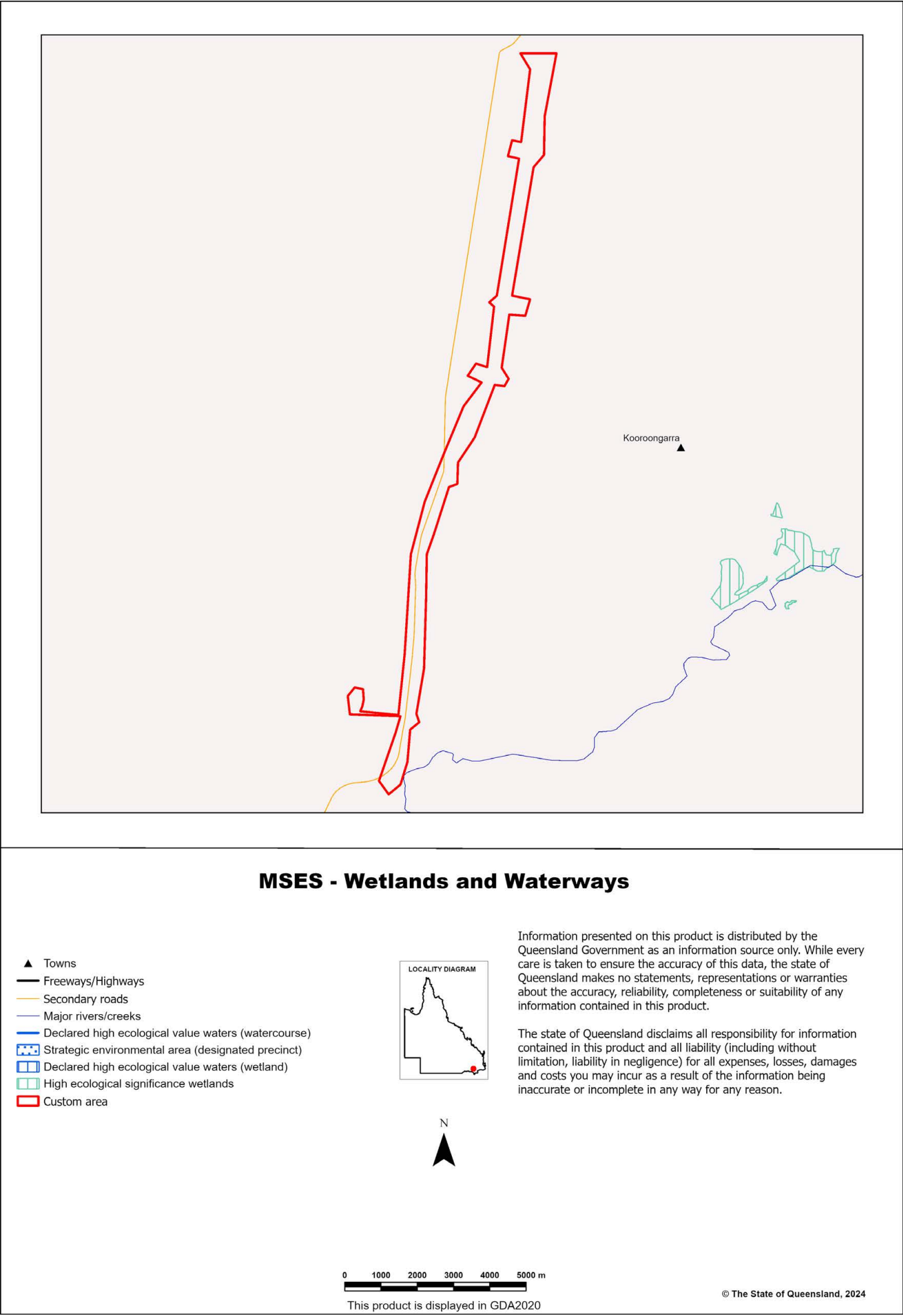
(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

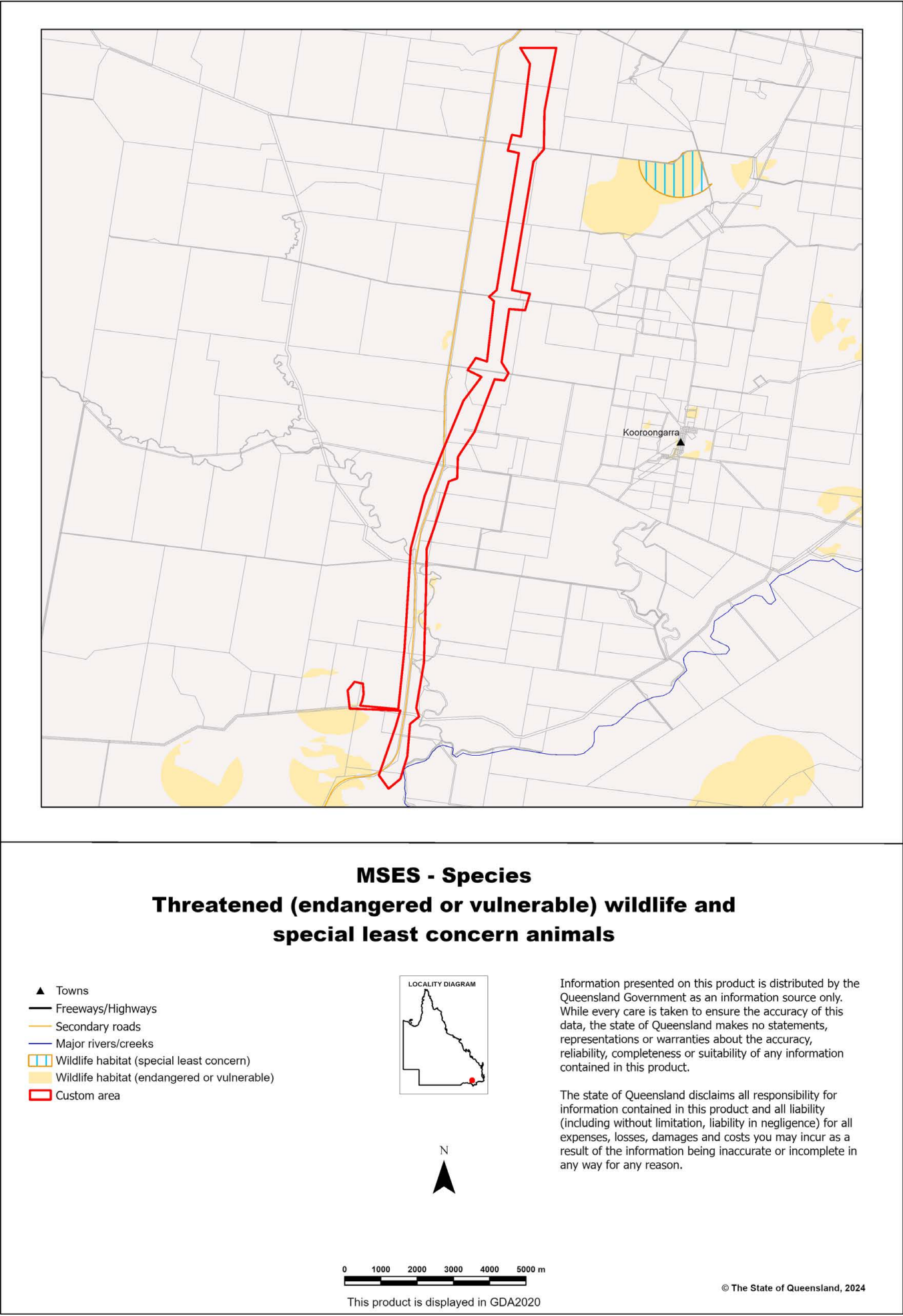
Map 1 - MSES - State Conservation Areas



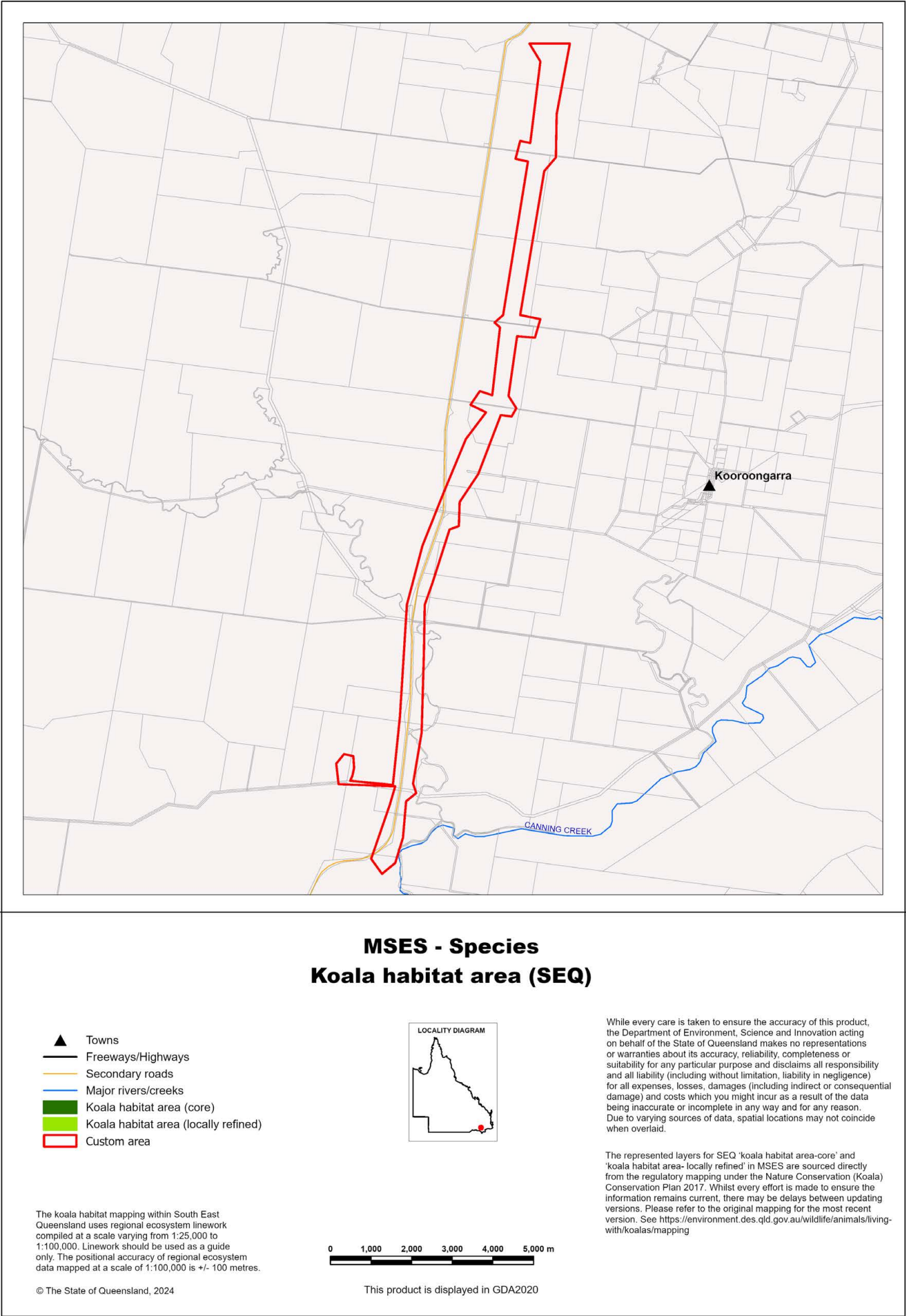
Map 2 - MSES - Wetlands and Waterways



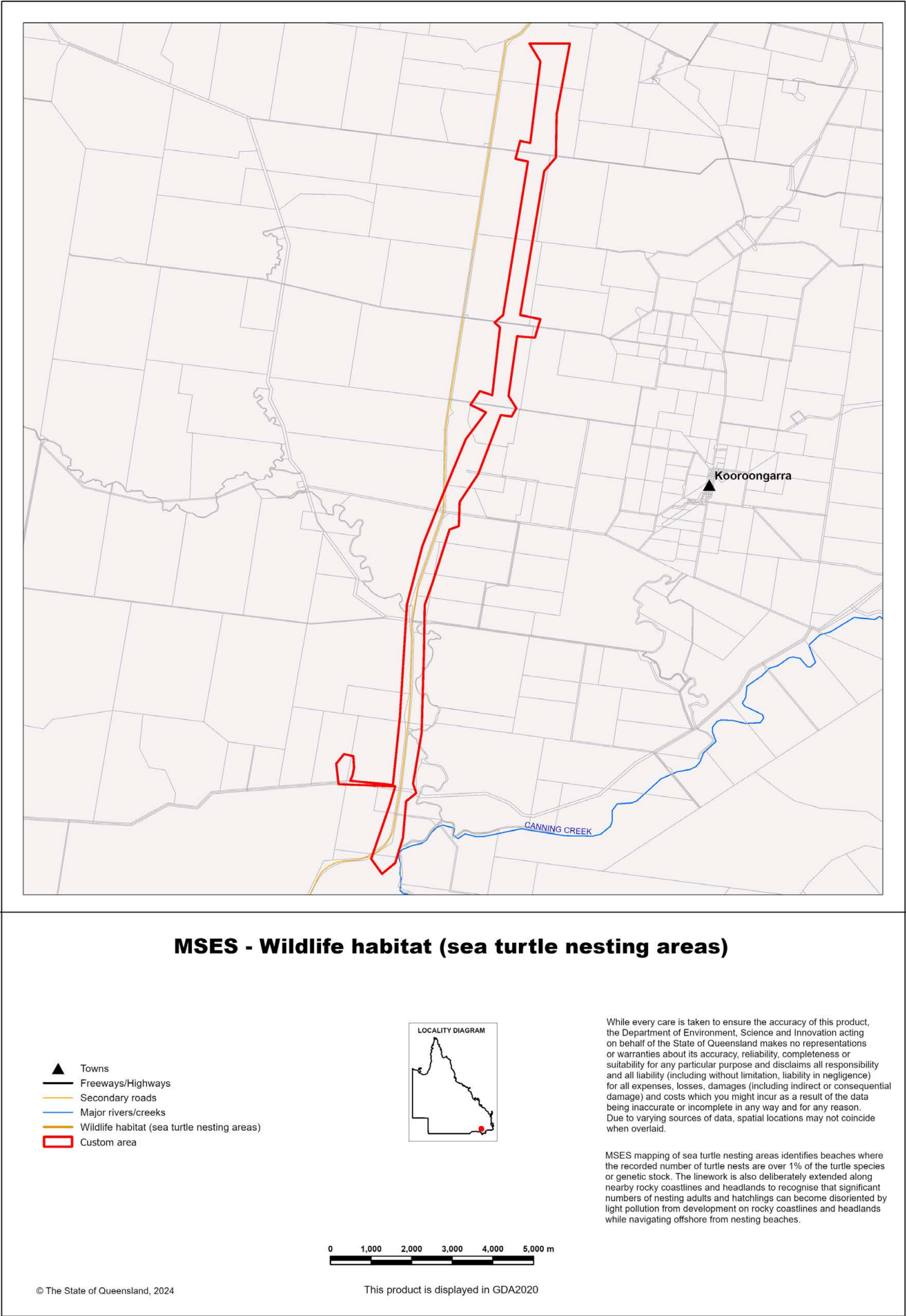
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



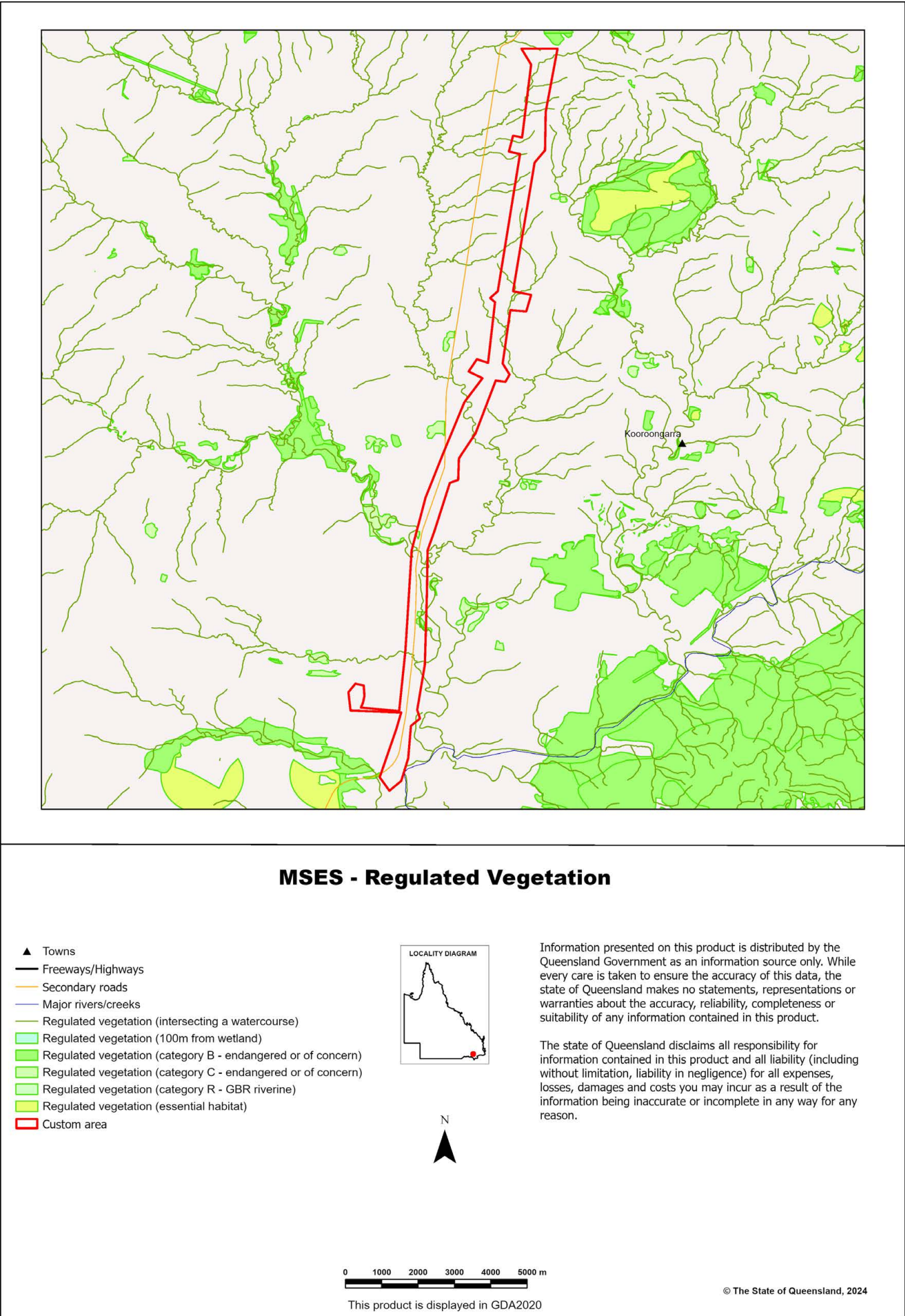
Map 3b - MSES - Species - Koala habitat area (SEQ)



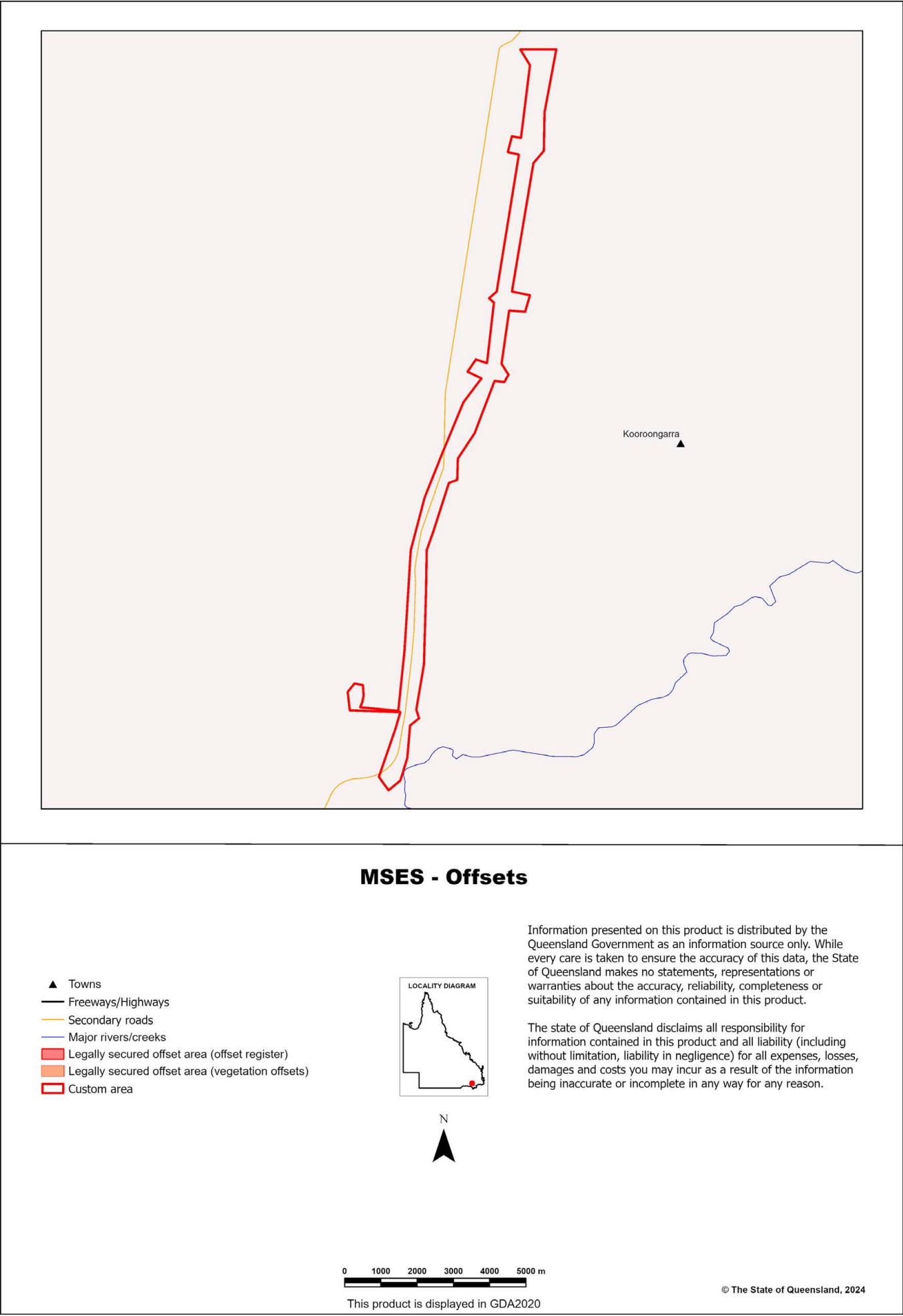
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DESI	- Department of Environment, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999

WetlandMaps Report



For selected area of interest Custom input

Current as at 5/06/2024

Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest(AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

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Summary Information

Below is an overview of the area of interest.

Custom input
with area of 1009.09 ha

Local Government(s)
Goondiwindi Regional
Toowoomba Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Inglewood Sandstones

Catchment(s)
Macintyre Brook

Drainage sub-basin
Border Rivers

NRM Regions

The area of interest is in the following NRM region:

Southern Queensland Landscapes

Water Resource Plan Boundaries

The area of interest is in the following Water Resource Plan:

Border Rivers and Moonie

Great Artesian Basin and Other Regional Aquifers

Learn more about how Wetlands are mapped in Queensland

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include::**

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude::**

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria
- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Links and support

Other sites that deliver wetland related information include:

Wetland *Summary* tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

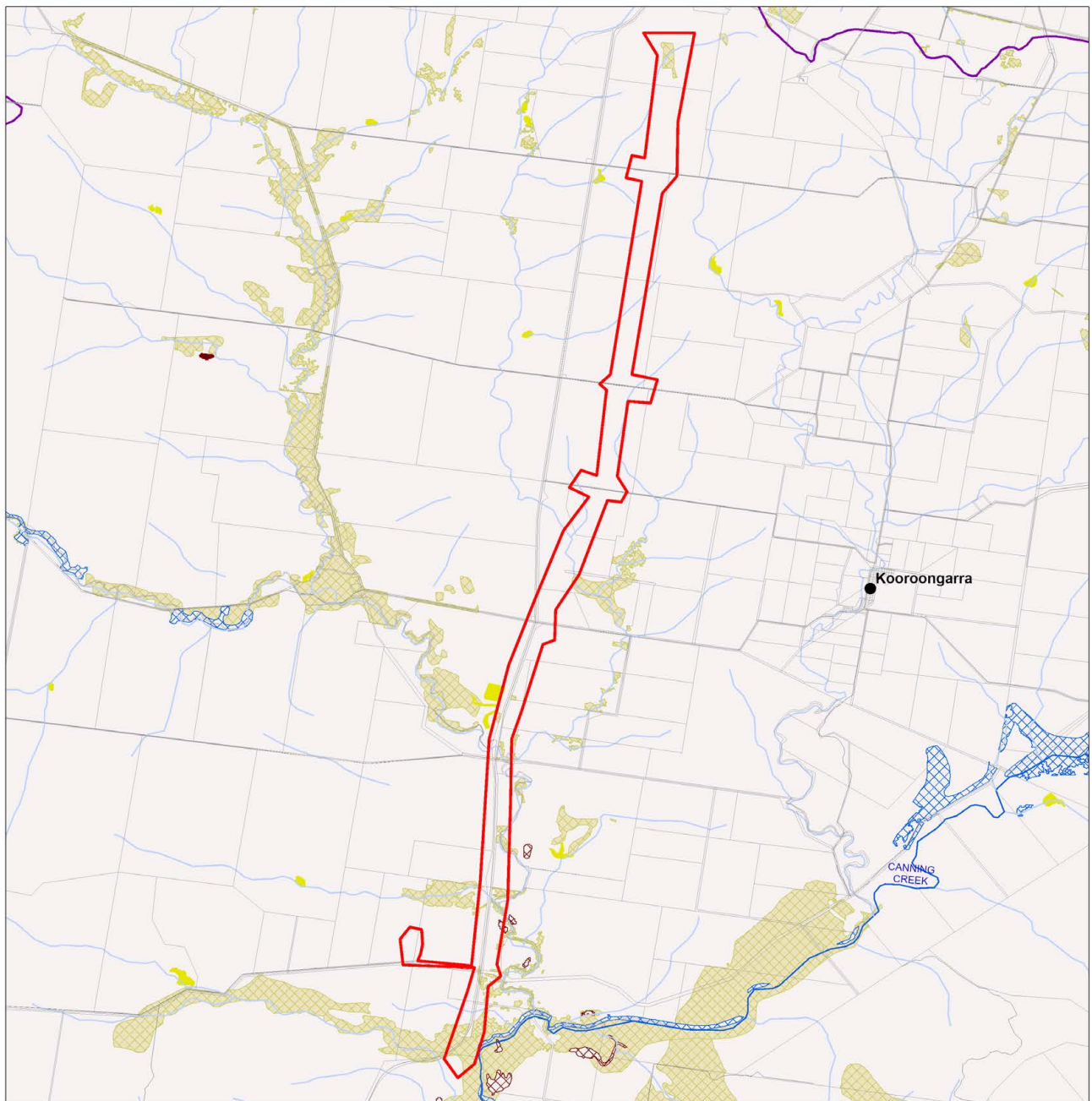
Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

Regional Ecosystem Mapping information: <https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

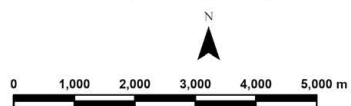
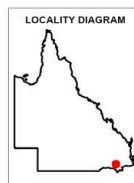
Aquatic Conservation Assessments: [Aquatic Conservation Assessments \(ACA\) and AquaBAMM \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Dependant Ecosystems information: <https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Queensland Wetland Map

- Springs
- Dams and weirs
- Towns
- Freeways/Highways
- Roads
- Cadastral Boundaries
- Sub-basin
- Riverine System Drainage Lines**
 - Major
 - Minor
- Wetland Mapping**
- Hydrologically natural Wetlands**
 - Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
 - Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
 - Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
 - Contains Wetlands (1 - 50%)
 - Custom area

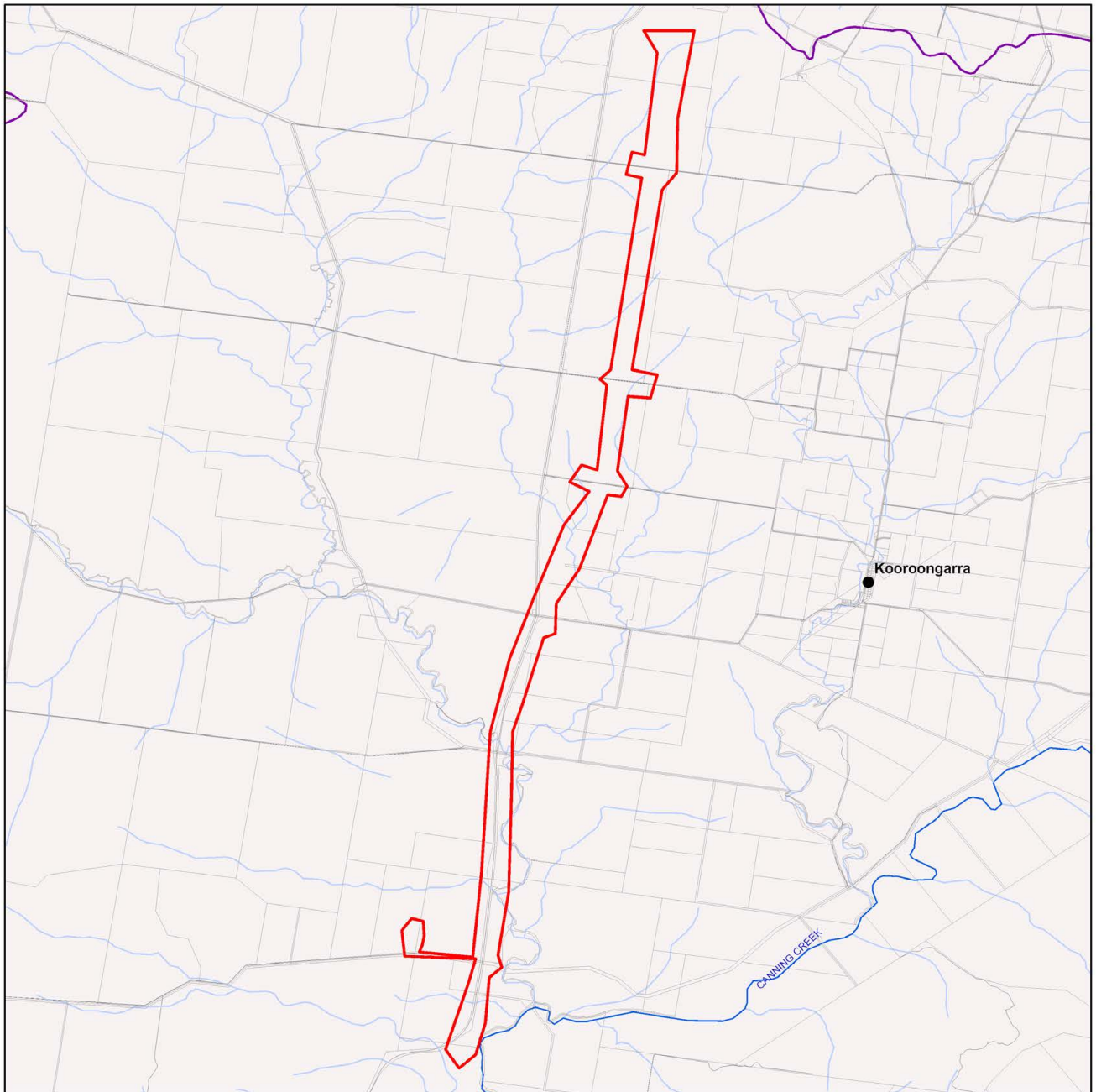


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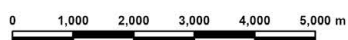
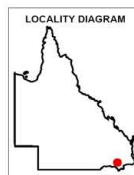


Queensland Wetlands of Importance Map

- Towns
- ▬ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▬ Sub-basin
- ▬ Directory of Important Wetlands
- ▬ Ramsar Wetlands

Riverine System Drainage Lines

- ▬ Major
- ▬ Minor
- ▬ Custom area

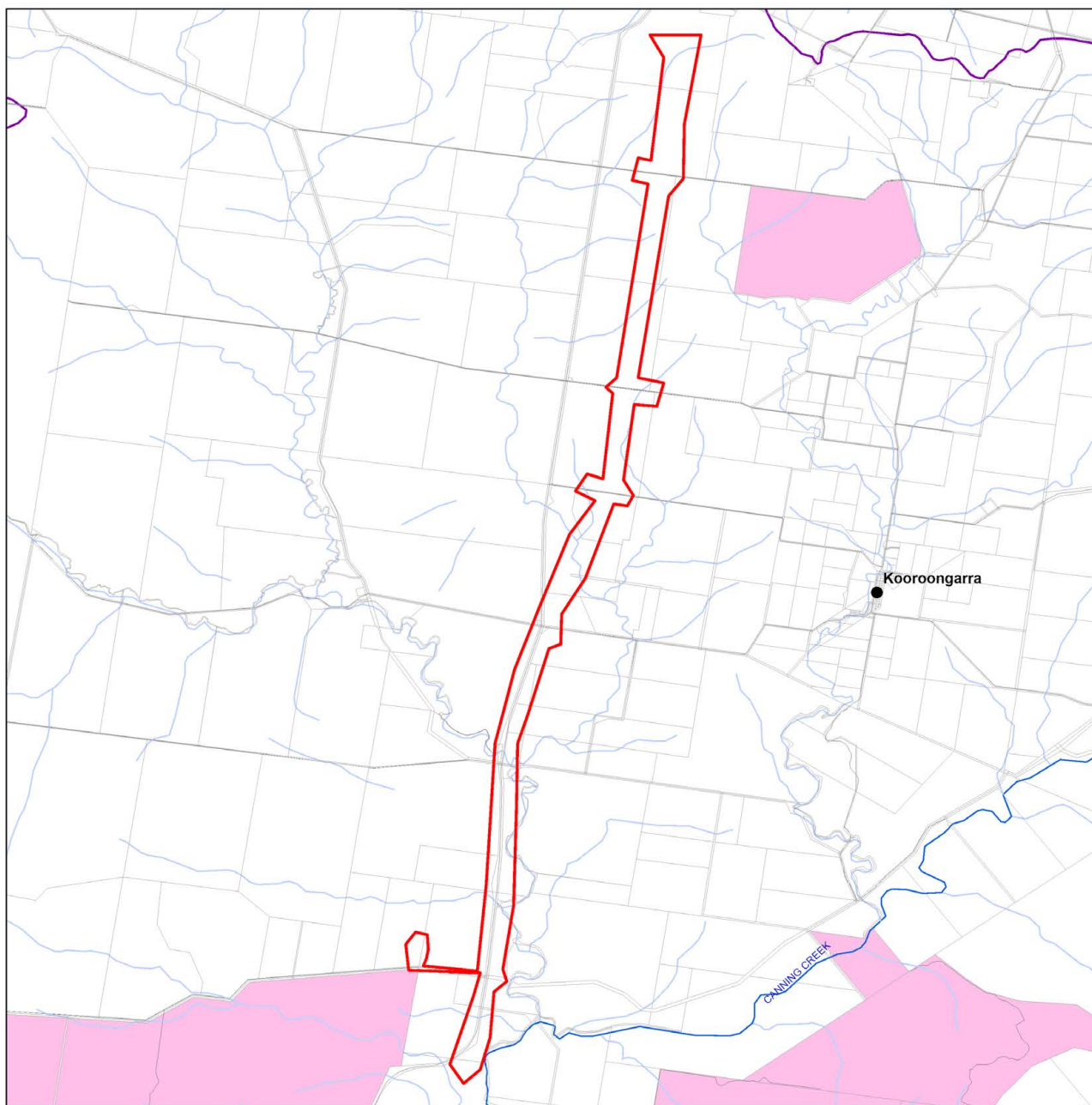


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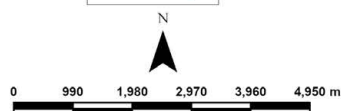
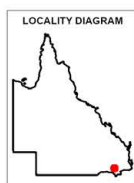
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Queensland Protected Area Map

- Towns
- ▬ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▬ Sub-basin
- Riverine System Drainage Lines**
 - ▬ Major
 - ▬ Minor
- Marine Parks**
 - General Use Zone
 - Habitat Protection Zone
 - Estuarine Conservation Zone
 - Conservation Park Zone
 - Buffer Zone
 - Scientific Research Zone
 - Marine National Park Zone
 - Preservation Zone
- Protected Areas**
 - National Park
 - National Park (Scientific)
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Custom area



This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

Wetland habitat types in the AOI. Total area: 71.88 ha

Wetland Class	Habitat type	Area (ha)
CPA	NOA/NOA	59.45
RIV	NOA	10.60
PAL	PC02d	0.99
LAC	NOA	0.84

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands

Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps
Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps

Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the input coordinates.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website <https://www.resources.qld.gov.au/>

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Custom input, with area 1009.09 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Goondiwindi Regional	Border Rivers	Brigalow Belt	Inglewood Sandstones
Toowoomba Regional			

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.27	0.03
Of concern	0.12	0.01
No concern at present	1.82	0.18
Total remnant vegetation	2.22	0.22

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated into a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website <https://www.resources.qld.gov.au/>.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

*****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.*

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.3.2	Eucalyptus populnea woodland on alluvial plains	Of concern	0.06	less than 0.01
11.3.25	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Of concern	0.01	less than 0.01
11.3.4	Eucalyptus tereticornis and/or Eucalyptus spp. woodland on alluvial plains	Of concern	0.05	less than 0.01
11.5.1a	Eucalyptus crebra and/or E. populnea, Callitris glaucophylla, Angophora leiocarpa, Allocasuarina luehmannii woodland on Cainozoic sand plains and/or remnant surfaces	No concern at present	0.37	0.04
11.5.20	Eucalyptus moluccana and/or E. microcarpa and/or E. woollsiana +/- E. crebra woodland on Cainozoic sand plains	No concern at present	1.09	0.11
11.5.4	Eucalyptus chloroclada, Callitris glaucophylla, C. endlicheri, Angophora leiocarpa woodland on Cainozoic sand plains and/or remnant surfaces	No concern at present	0.37	0.04
11.9.5	Acacia harpophylla and/or Casuarina cristata open forest to woodland on fine-grained sedimentary rocks	Endangered	0.27	0.03
non-remnant	None	None	1,006.87	99.78

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.3.2	Pre-clearing 1905000 ha; Remnant 2021 499000 ha	17a	Contains Palustrine	Low
11.3.25	Pre-clearing 813000 ha; Remnant 2021 531000 ha	16a	Riverine	Low
11.3.4	Pre-clearing 684000 ha; Remnant 2021 178000 ha	16c	Not a Wetland	Low
11.5.1a	Pre-clearing 775000 ha; Remnant 2021 477000 ha	17a	Not a Wetland	Low
11.5.20	Pre-clearing 232000 ha; Remnant 2021 152000 ha	13d	Not a Wetland	Low
11.5.4	Pre-clearing 142000 ha; Remnant 2021 108000 ha	18b	Not a Wetland	Low
11.9.5	Pre-clearing 2276000 ha; Remnant 2021 161000 ha	25a	Not a Wetland	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.3.2	11.3.2: Habitat for threatened flora species <i>Homopholis belsonii</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.3.25	11.3.25: Shown to be associated with a high fauna species richness in the Taroom area (Venz et al. 2002). Within parts of the Fitzroy catchment, this RE is known habitat for the threatened freshwater turtle <i>Rheodytes leukops</i> . Known to be important habitat for other riparian freshwater turtle species. This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.3.4	11.3.4: Potential habitat for NCA listed species: <i>Acacia pedleyi</i> , <i>Callicarpa thozetii</i> , <i>Cycas megacarpa</i> , <i>Cycas ophiolitica</i> , <i>Digitaria porrecta</i> , <i>Eriocaulon carsonii</i> subsp. <i>orientale</i> , <i>Livistona nitida</i> , <i>Rhaponticum australe</i> , <i>Samadera bidwillii</i> , <i>Sannantha brachypoda</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.5.1a	11.5.1: Habitat for threatened plant species including <i>Acacia handonis</i> and <i>Acacia argyrotricha</i> .
11.5.20	11.5.20: Potential habitat for NCA listed species: <i>Acacia handonis</i> , <i>Macrozamia machinii</i> , <i>Macrozamia platyrhachis</i> .

Regional Ecosystem	Special Values
11.5.4	11.5.4: Potential habitat for NCA listed species: <i>Macrozamia machinii</i> .
11.9.5	11.9.5: Habitat for threatened fauna species including <i>Jalmenus eubulus</i> , pale imperial hairstreak butterfly (Eastwood et al. 2008).
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: <https://publications.qld.gov.au/dataset/redd/resource/>

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	1,006.87	99.78
13d	Woodlands dominated by <i>Eucalyptus moluccana</i> (gum-topped box) (or <i>E. microcarpa</i> (inland grey box)) on a range of substrates.	1.09	0.11
16a	Open forest and woodlands dominated by <i>Eucalyptus camaldulensis</i> (river red gum) (or <i>E. tereticornis</i> (blue gum)) and/or <i>E. coolabah</i> (coolabah) (or <i>E. microtheca</i> (coolabah)) fringing drainage lines. Associated species may include <i>Melaleuca</i> spp., <i>Corymbia tessellaris</i> (carbeen), <i>Angophora</i> spp., <i>Casuarina cunninghamiana</i> (riveroak). Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	0.01	less than 0.01
16c	Woodlands and open woodlands dominated by <i>Eucalyptus coolabah</i> (coolabah) or <i>E. microtheca</i> (coolabah) or <i>E. largiflorens</i> (black box) or <i>E. tereticornis</i> (blue gum) or <i>E. chlorophylla</i> on floodplains. Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	0.05	less than 0.01
17a	Woodlands dominated by <i>Eucalyptus populnea</i> (poplar box) (or <i>E. brownii</i> (Reid River box)) on alluvium, sand plains and footslopes of hills and ranges.	0.43	0.04
18b	Woodlands dominated <i>Eucalyptus crebra</i> (sens. lat.) (narrow-leaved red ironbark) frequently with <i>Corymbia</i> spp. or <i>Callitris</i> spp. on flat to undulating plains.	0.37	0.04

BVG (1 Million)	Description	Area (Ha)	% of AOI
25a	Open forests to woodlands dominated by <i>Acacia harpophylla</i> (brigalow) sometimes with <i>Casuarina cristata</i> (belah) on heavy clay soils. Includes areas co-dominated with <i>A. cambagei</i> (gidgee) and/or emergent eucalypts.	0.27	0.03

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: <http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

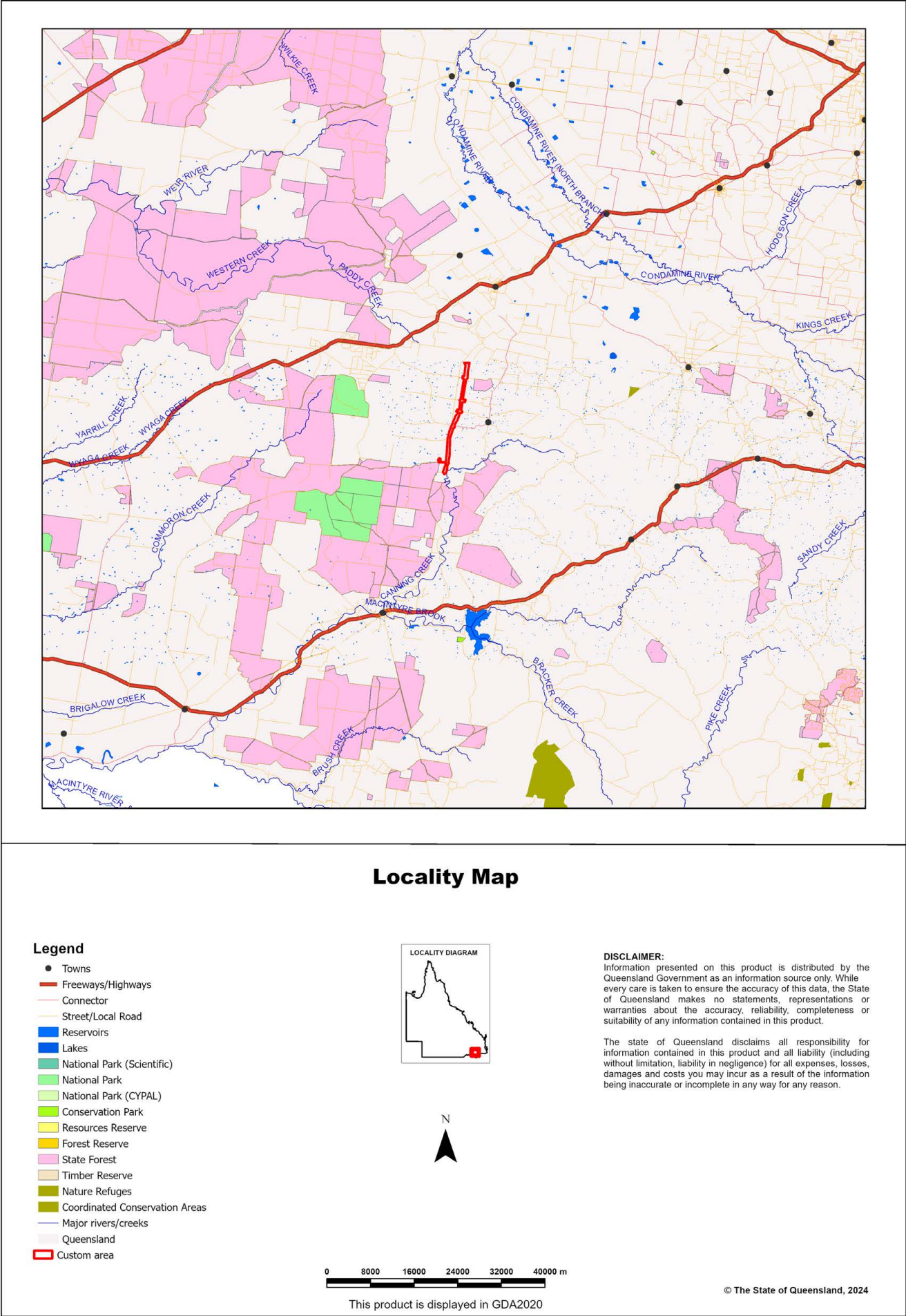
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

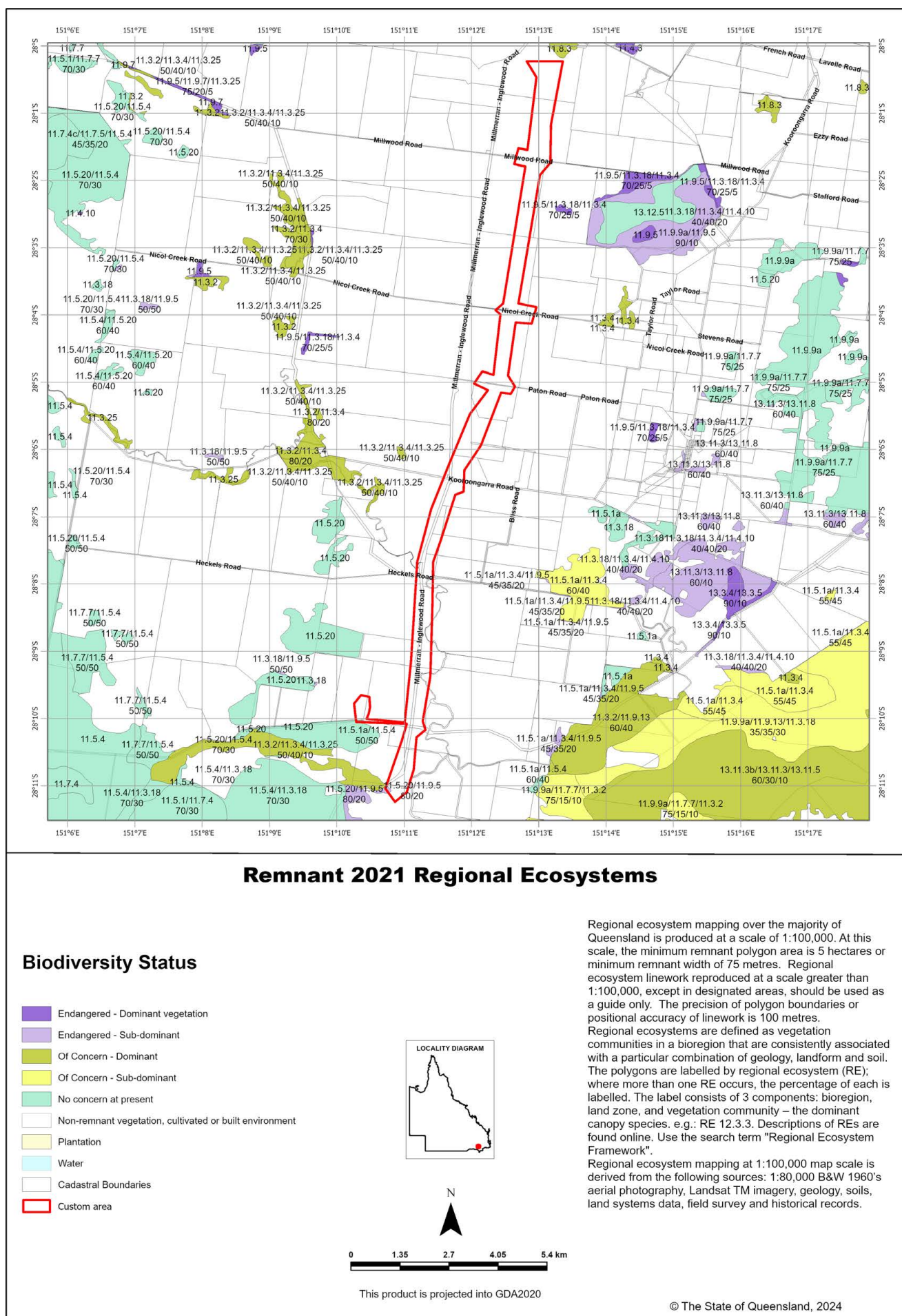
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.3.2	Available	Available
11.3.25	Available	Available
11.3.4	Available	Available
11.5.1a	Available	Available
11.5.20	Available	Available
11.5.4	Available	Available
11.9.5	Available	Available
non-remnant	Not currently available	Not currently available

Maps

Map 1 - Location

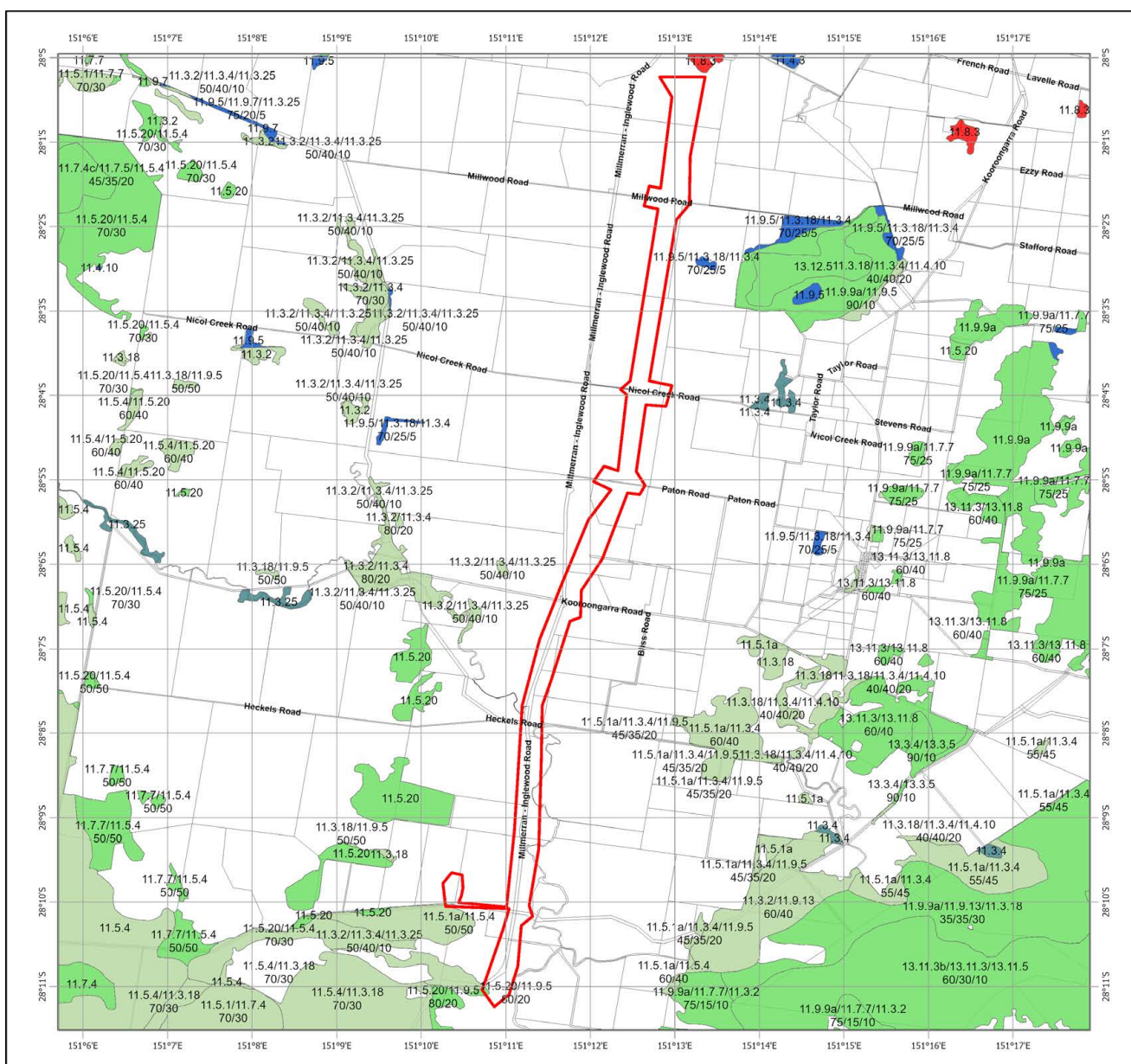


Map 2 - Remnant 2021 regional ecosystems



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Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



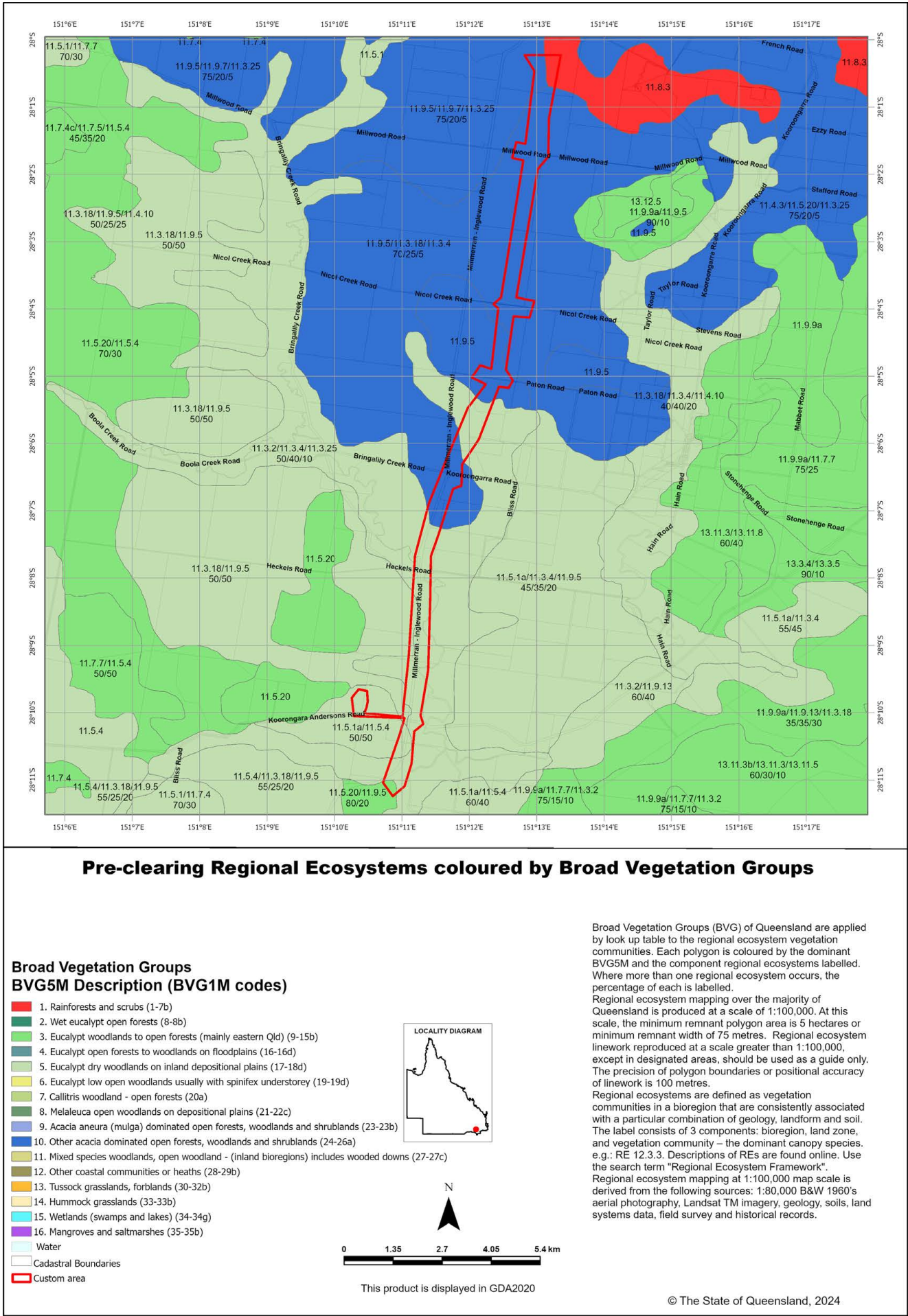
Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

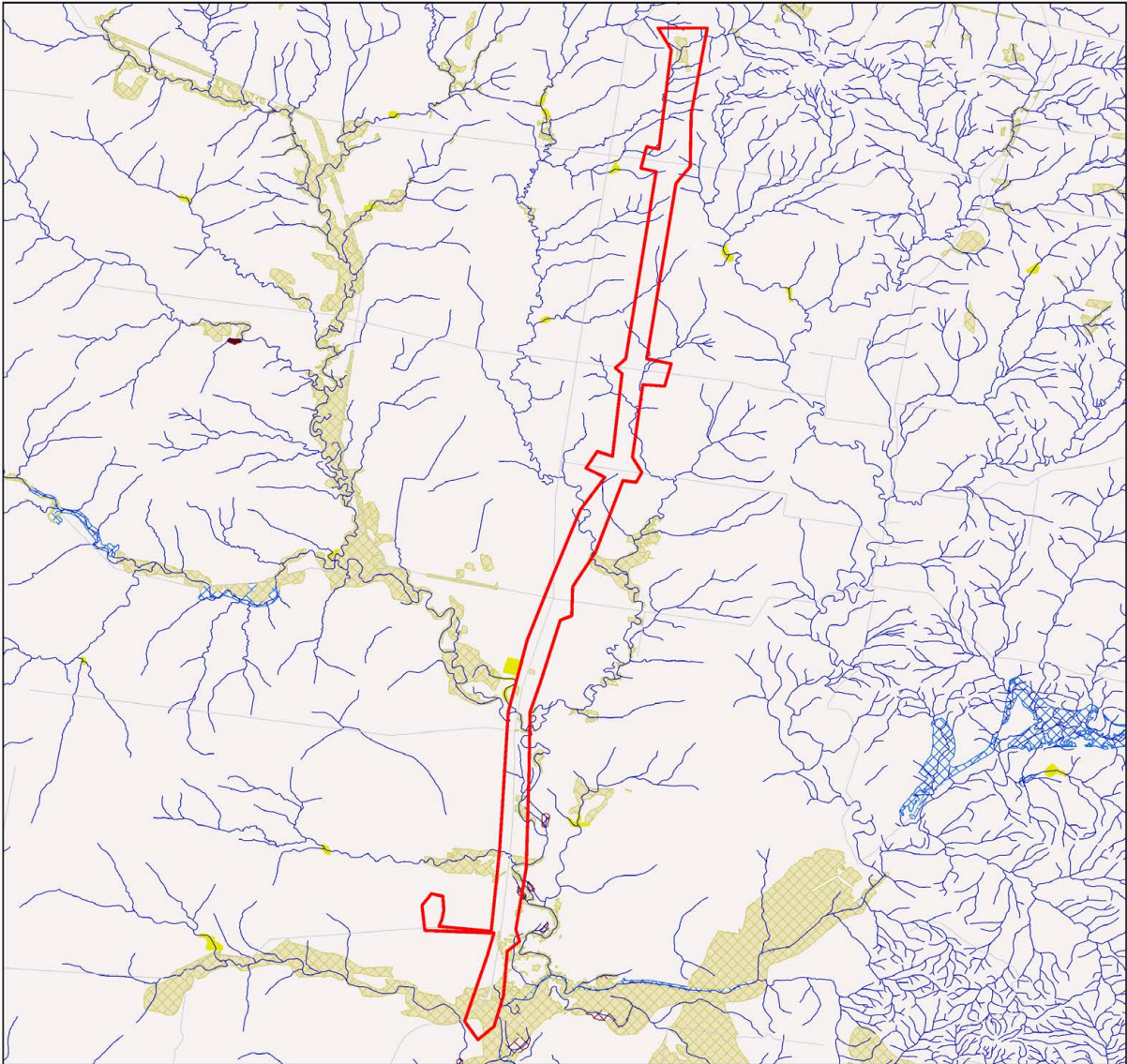
-
1. Rainforests and scrubs (1-7b)
2. Wet eucalypt open forests (8-8b)
3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
4. Eucalypt open forests to woodlands on floodplains (16-16d)
5. Eucalypt dry woodlands on inland depositional plains (17-18d)
6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
7. Callitris woodland - open forests (20a)
8. Melaleuca open woodlands on depositional plains (21-22c)
9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
12. Other coastal communities or heaths (28-29b)
13. Tussock grasslands, forblands (30-32b)
14. Hummock grasslands (33-33b)
15. Wetlands (swamps and lakes) (34-34g)
16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries
- Custom area
- 0 1.35 2.7
- LOCALITY

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species, e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records. Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.

Map 5 - Pre-clearing regional ecosystems by BVG (5M)

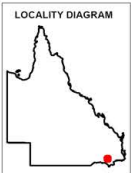


Map 6 - Wetlands and waterways



Wetlands and Waterways

- Towns
 - Roads
 - Springs
 - Rivers/Creeks
 - Directory of Important Wetlands
 - Ramsar Sites - QLD
- Wetland Type**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
- Queensland
- Custom area



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Links and Other Information Sources

The Department of Environment, Science and Innovation's Website -

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/> provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation>

The methodology for mapping regional ecosystems can be downloaded from:

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

Benchmarks can be obtained from: <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/spatial-catalogue)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

<https://qldglobe.information.qld.gov.au/>

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science.

<https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086>

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F., Richter, D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane.

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf.

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/>

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

[Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/information/spatial-catalogue)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or Area of Interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "Central co-ordinates" option, the resulting assessment area encompasses an area extending from 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: biodiversity.planning@des.qld.gov.au

Disclaimer

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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Custom input, with area 1009.09 ha

Local Government(s)
Goondiwindi Regional
Toowoomba Regional
Bioregion(s)
Brigalow Belt
Subregion(s)
Inglewood Sandstones
Catchment(s)
Border Rivers

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Brigalow Belt v2.1	Queensland Murray-Darling and Bulloo Basins v2.1	Queensland Murray-Darling and Bulloo Basins v.2.1

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.27	0.03
Of concern	0.12	0.01
No concern at present	1.82	0.18

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of Environment, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
Local or Other Values	1.06	0.11
State	2.22	0.22

Table 5: Non-riverine wetlands intersecting the AOI

Non-riverine wetland types intersecting the area of interest	#
Number of Lacustrine wetlands	2
Number of Palustrine wetlands	1
Total number of non-riverine wetlands	3

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

Name	Permanency
NICOL CREEK	Non-perennial

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of Environment, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	293.22	29.06
Low	706.71	70.03
Medium	9.15	0.91

Table 8: Summary table, aquatic conservation significance (non-riverine)

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
Medium	0.99	0.10
Very Low	0.84	0.08

Biodiversity Planning Assessments

Introduction

The Department of Environment, Science and Innovation (DESI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DESI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

<http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State	2.22	0.22
Local or Other Values	1.06	0.11

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in

protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
		1.06	0.11
Local or Other Values	Refer to diagnostic data for additional information	0.74	0.07
State	Nat. Threatened Ecol. Community (B1)	1.36	0.13
State	Nat. Threatened Ecol. Community (B1) & Remnant contains at least one Of Concern RE (B1)	0.12	0.01

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	0.00	0.00	0.00	0.00	2.22	0.22	0.00	0.00
B1: Ecosystem Value (Bioregion)	1.48	0.15	0.00	0.00	0.74	0.07	0.00	0.00
B2: Ecosystem Value (Subregion)	0.00	0.00	0.12	0.01	2.09	0.21	0.00	0.00
C: Tract Size	0.86	0.09	0.00	0.00	0.00	0.00	1.36	0.13
D1: Relative RE Size (Bioregion)	0.00	0.00	0.00	0.00	0.00	0.00	2.22	0.22
D2: Relative RE Size (Subregion)	0.00	0.00	0.00	0.00	0.00	0.00	2.22	0.22

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
F: Ecosystem Diversity	1.48	0.15	0.74	0.07	0.00	0.00	0.00	0.00
G: Context and Connection	0.00	0.00	0.00	0.00	2.22	0.22	0.00	0.00

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Local	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	1.06	0.11
Regional	Remnant forms part of a bioregional corridor (J)	1.36	0.13
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	0.86	0.09

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al.* 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to access overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.00	0.00	0.00	0.00	0.74	0.07	0.00	0.07
Ia: Centres of Endemism	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	0.00	0.00	0.00	0.00	1.06	0.11	0.00	0.11
Ic: Disjunct Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Id: Limits of Geographic Ranges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ie: High Species Richness	0.86	0.09	0.00	0.00	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:

- Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
- Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
- Maintaining large scale seasonal/migratory species processes and movement of fauna;
- Maximising connectivity between large tracts/patches of remnant vegetation;
- Identifying key areas for rehabilitation and offsets; and

- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial

- Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
- Follow major watershed/catchment and/or coastal boundaries;
- Incorporate major altitudinal/geological/climatic gradients;
- Include and maximise connectivity between large tracts/patches of remnant vegetation;
- Include and maximise connectivity between remnant vegetation in good condition; and

- Riparian

- Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
	1.92	0.19
Regional	1.36	0.13

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
brbs_fa_69	Yelarbon and Bringalily State Forest Tracts.	State	1e (species richness): VH
brbs_l_48	Locally significant natural palustrine & lacustrine wetlands	Local	1b (refugia): M
brbs_l_18b			

Expert panel decision descriptions:

Decision Number	Description
brbs_fa_69	Open eucalypt woodlands on either shallow soils (in areas of higher elevation) or sandy plains dominate. Diversity of terrestrial vertebrate taxa is very high with approximately 350 recorded. Among the threatened taxa known are Dunmall's snake <i>Furina dunmalli</i> , Major Mitchell's cockatoo <i>Lophochroa leadbeateri</i> , regent honeyeater <i>Anthochaera phrygia</i> , painted honeyeater <i>Grantiella picta</i> , spotted-tailed quoll <i>Dasyurus m. maculatus</i> and greater glider <i>Petauroides volans</i> . Priority taxa include both endemics such as brigalow scaly-foot <i>Paradelma orientalis</i> , and declining taxa, e.g. brown treecreeper <i>Climacteris picumnus</i> , speckled warbler <i>Chthonicola sagittata</i> and hooded robin <i>Melanodryas cucullata</i> .
brbs_l_48	The panel considered that relatively natural palustrine and lacustrine wetlands and waterbodies within the Brigalow Belt bioregion act as important refugia, especially during periods of drought. Whilst State significant wetlands are captured under Criterion B1, and regionally significant wetlands under the decision brbn_l_47, the panel agreed that all remaining relatively natural wetland complexes of less than 5ha in size be classed as being of at least local significance. Refer to brbn_l_93 for the northern BRB implementation of this decision.
brbs_l_18b	

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in Queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning processes

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland Info:

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	293.22	29.06
Low	706.71	70.03

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
Medium	9.15	0.91

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	907.68	89.95	31.77	3.15	69.64	6.90
2. Naturalness catchment	22.62	2.24	986.47	97.76	0.00	0.00	0.00	0.00
3. Diversity and richness	92.26	9.14	9.15	0.91	0.00	0.00	907.68	89.95
4. Threatened species and ecosystems	0.00	0.00	22.62	2.24	0.00	0.00	986.47	97.76
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	36.40	3.61	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	302.37	29.97	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
bd_r_ec_31	Upland riverine reaches with flows sustained by groundwater seeps	Border Rivers	7.2.1	4

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
bd_r_ec_31	Groundwater connectivity with riverine ecosystems were viewed as important by the expert panel as inflow of groundwater (especially where granite geology exists), sustains rivers and creeks during drier periods. Water exchange can happen through fractured rock aquifers, but more typically coincides with sandy bottomed riverbeds. Flows are not necessarily perennial during drought.

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
Medium	0.99	0.10
Very Low	0.84	0.08

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	1.83	0.18
2. Naturalness catchment	0.00	0.00	0.00	0.00	0.00	0.00	1.83	0.18
3. Diversity and richness	0.00	0.00	0.00	0.00	0.00	0.00	1.83	0.18
4. Threatened species and ecosystems	0.00	0.00	0.99	0.10	0.00	0.00	0.84	0.08
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.99	0.10	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, HerbreCs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Acanthophis antarcticus</i>	common death adder	V		Moderate			FA
<i>Coleus insularis</i>	Millmerran mint bush	CR					FL
<i>Geophaps scripta scripta</i>	squatter pigeon (southern subspecies)	V	V				FA
<i>Homopholis belsonii</i>	Belson's panic	E	V				FL
<i>Jalmenus eubulus</i>	pale imperial hairstreak	V		Moderate			FA

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DESI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

*JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.

**I - wetland indicator species; D - wetland dependent species.

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
<i>Climacteris picumnus</i>	Brown Treecreeper	FA
<i>Climacteris picumnus</i>	brown treecreeper	FA
<i>Enteropogon paucispiceus</i>		FL
<i>Macquaria ambigua</i>	Yellowbelly	FA
<i>Microeca fascians</i>	jacky winter	FA
<i>Pomatostomus temporalis</i>	grey-crowned babbler	FA
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	FA
<i>Pyrrholaemus sagittatus</i>	speckled warbler	FA
<i>Sclerolaena tetracuspis</i>	brigalow burr	FL
<i>Varanus varius</i>	Lace Monitor	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Identified flora/fauna
<i>Melaleuca densispicata</i>		FL

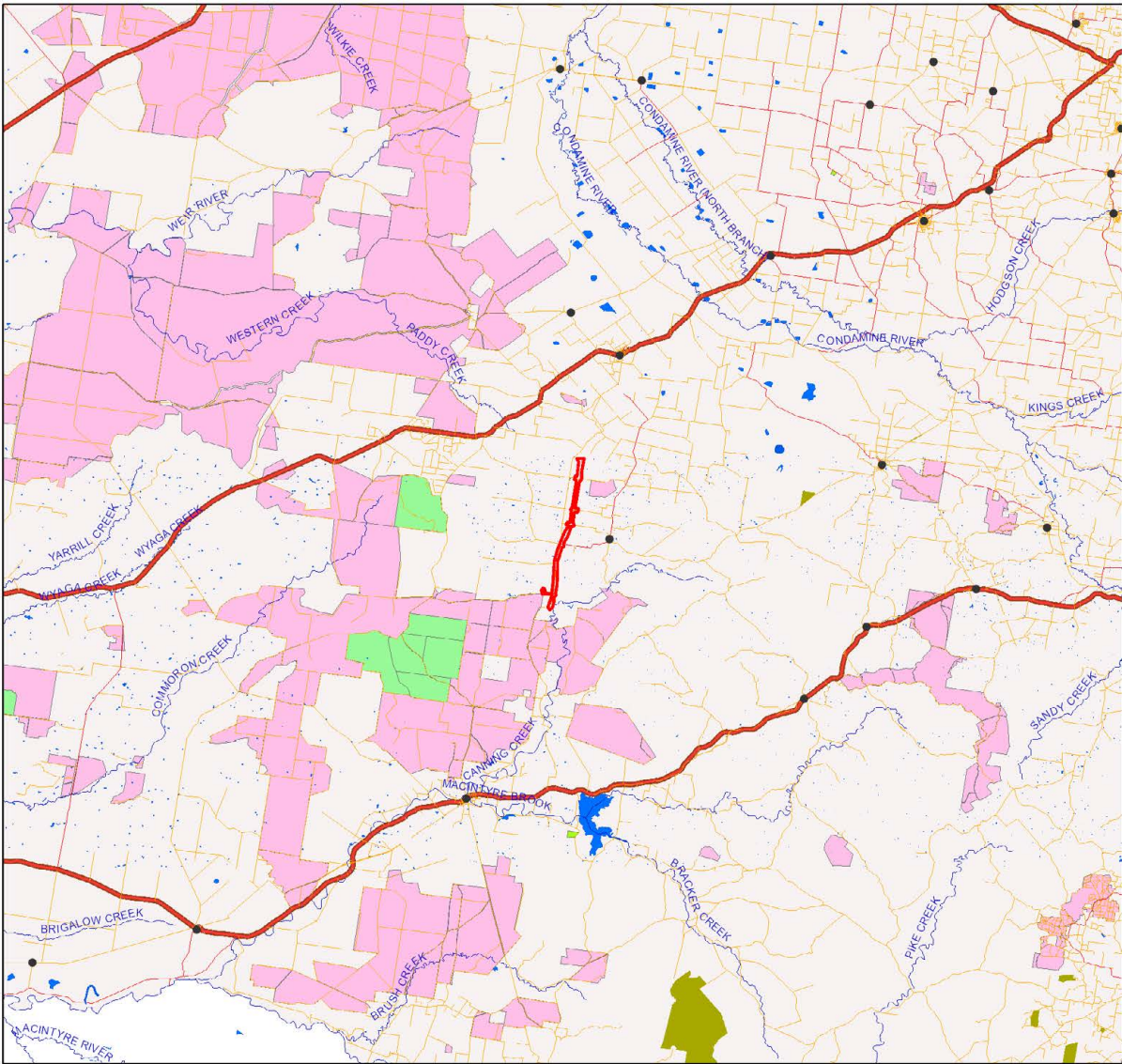
Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

Species	Common name	Identified flora/fauna
<i>Melaleuca densispicata</i>		FL

NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

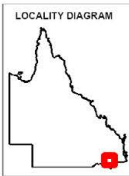
Maps

Map 1 - Locality Map



Locality Map

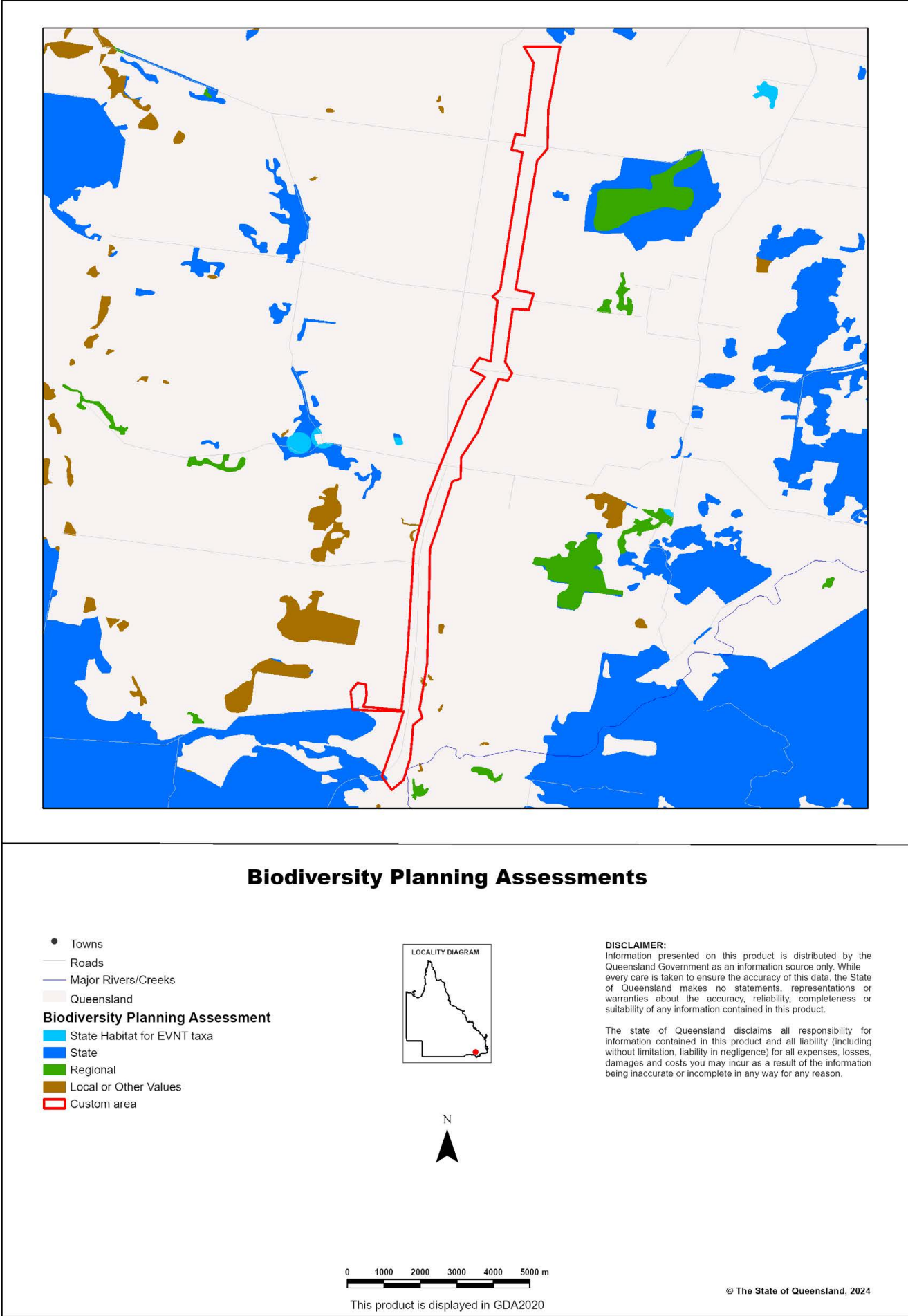
- Legend**
- Towns
 - Freeways/Highways
 - Connector
 - Street/Local Road
 - Reservoirs
 - Lakes
 - National Park (Scientific)
 - National Park
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Nature Refuges
 - Coordinated Conservation Areas
 - Major rivers/creeks
 - Queensland
 - Custom area



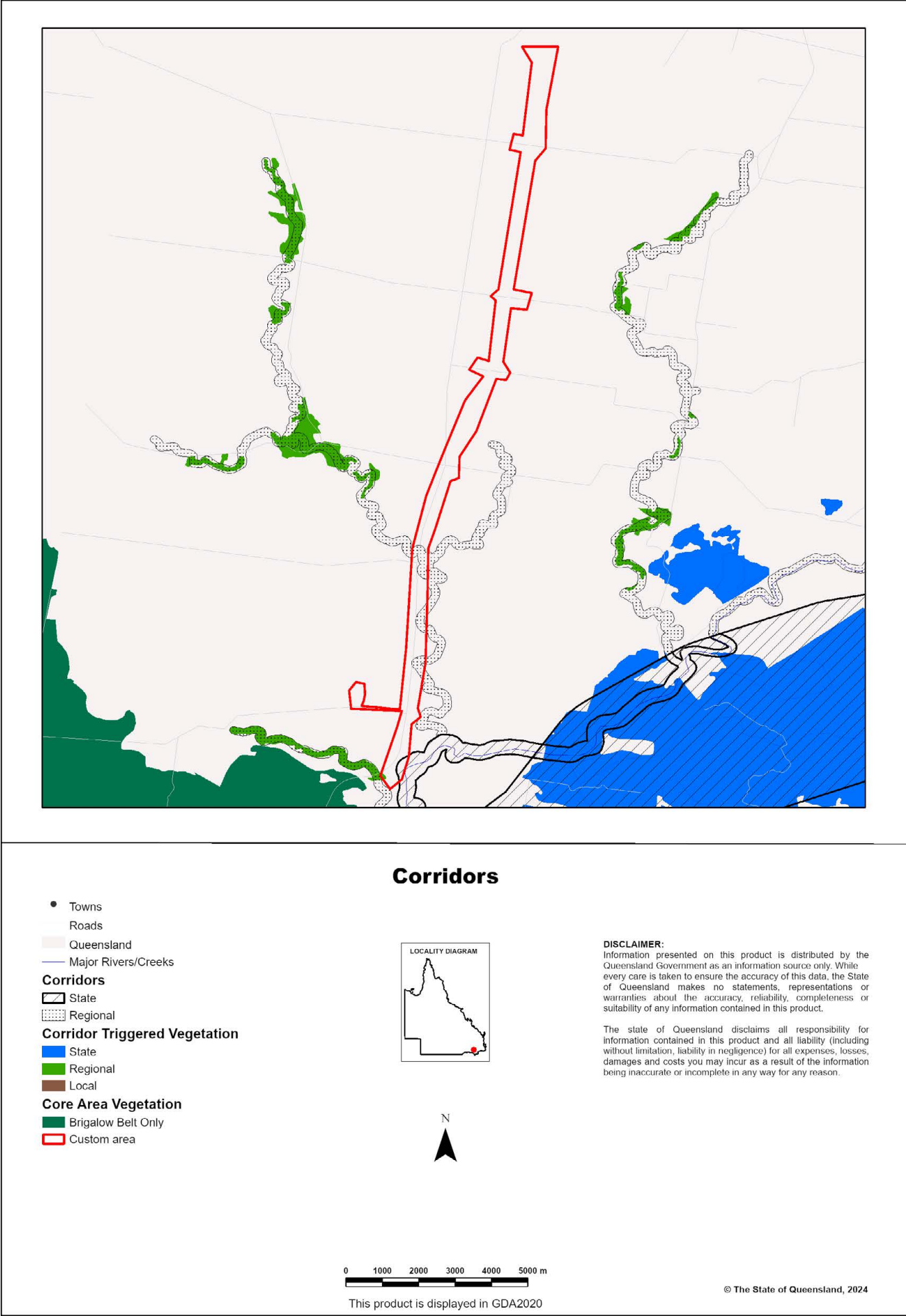
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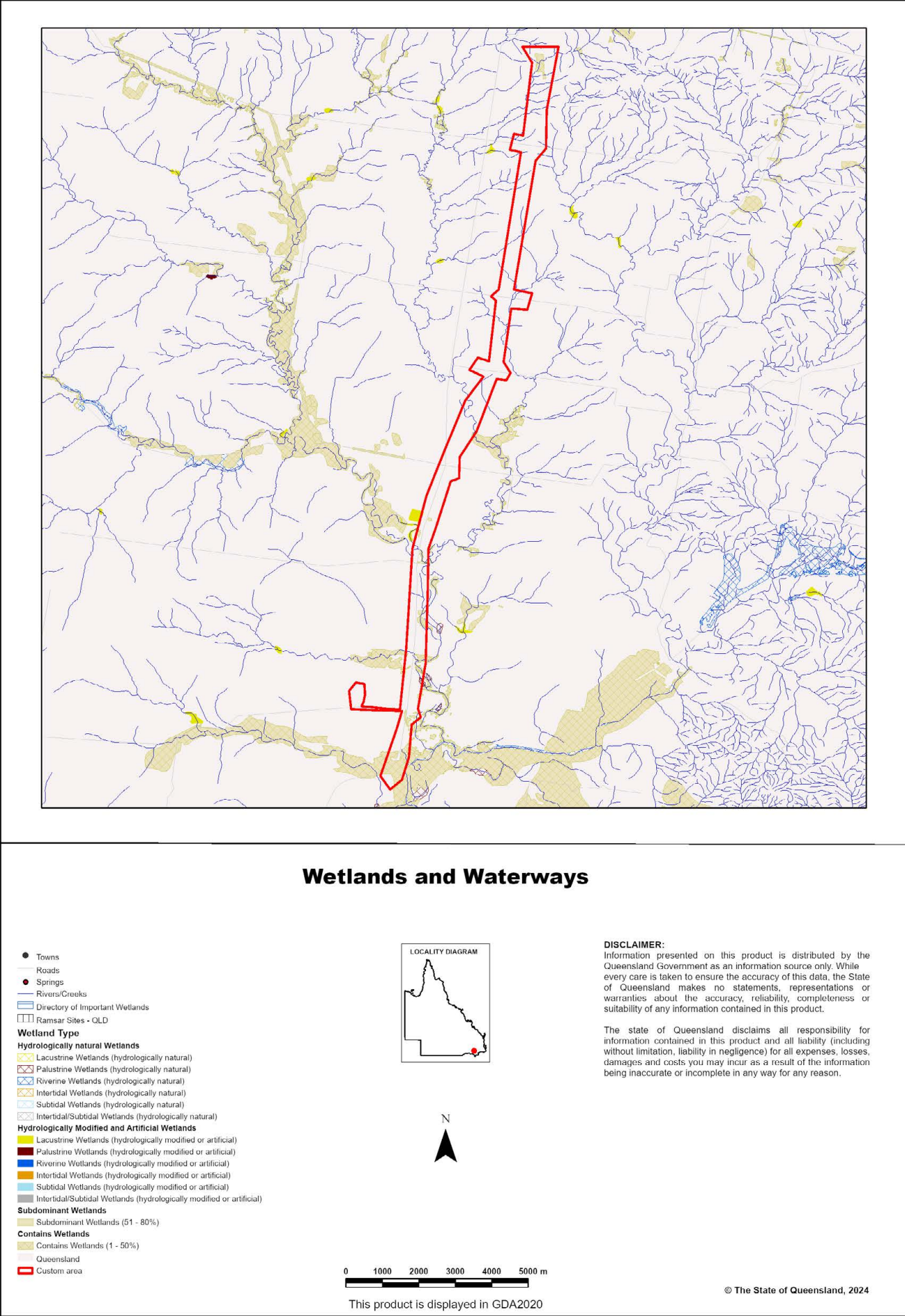
Map 2 - Biodiversity Planning Assessment (BPA)



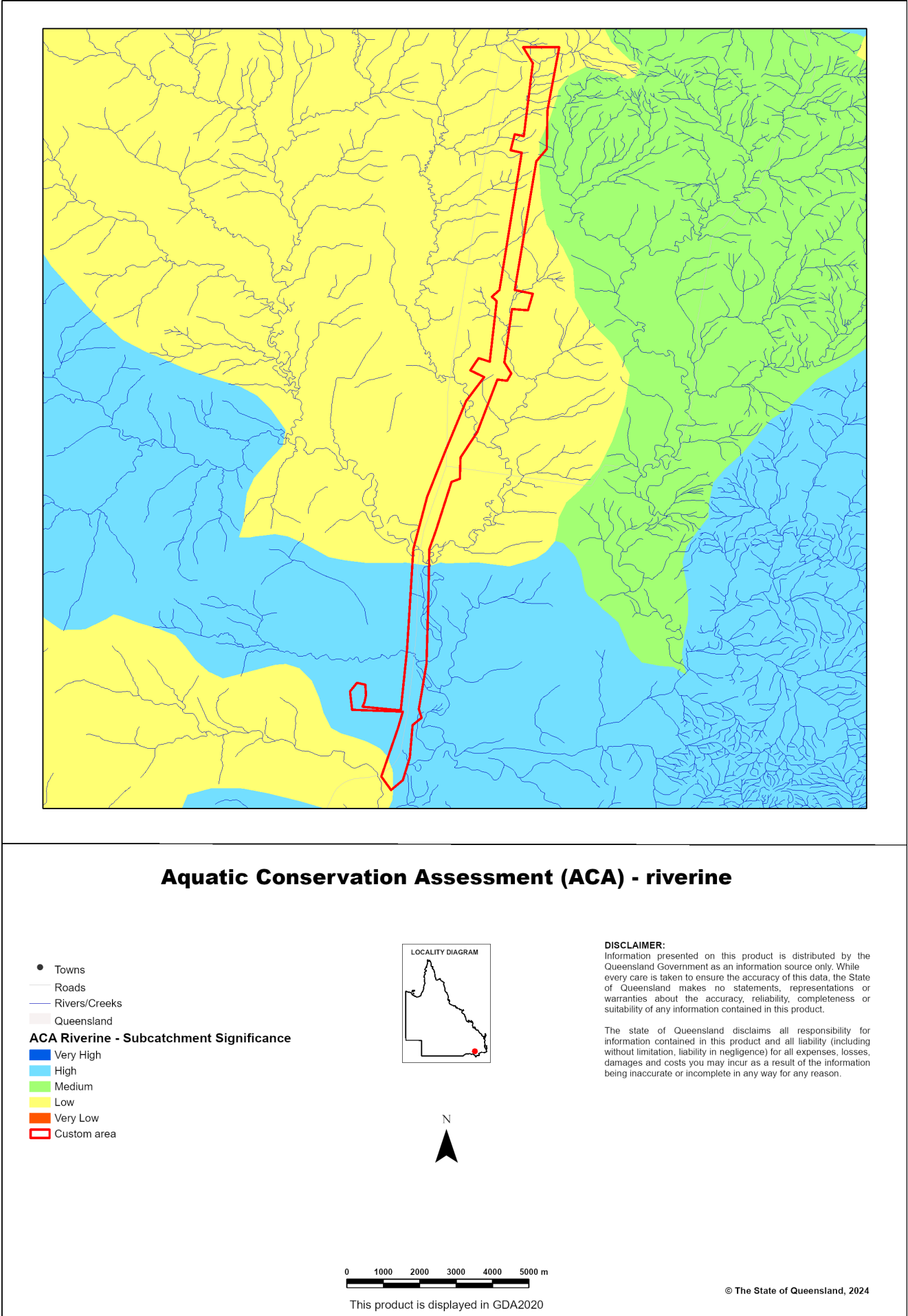
Map 3 - Corridors



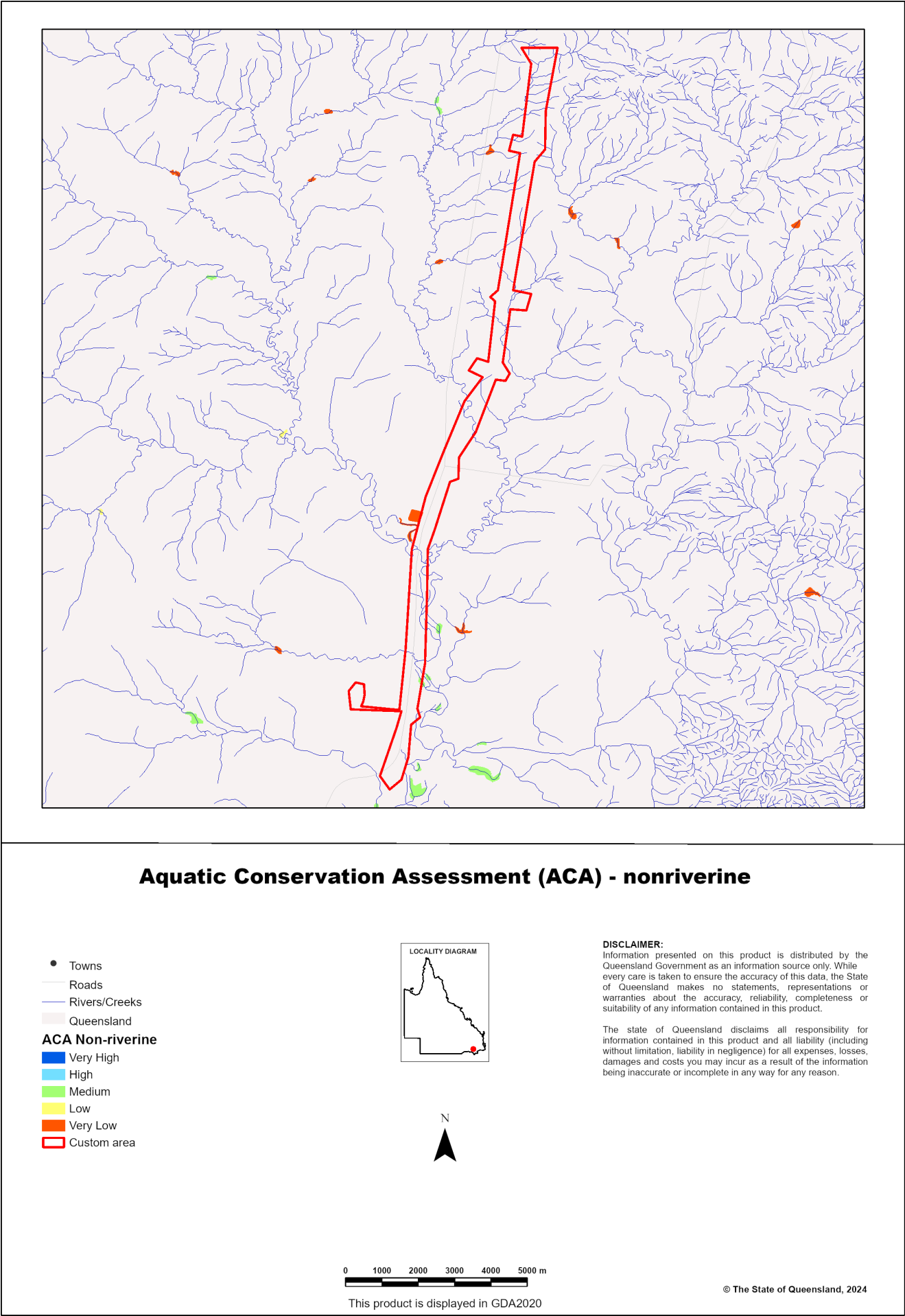
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



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Clayton, P.D., Fielder, D.F., Howell, S. and Hill, C.J. (2006) *Aquatic biodiversity assessment and mapping method (AquaBAMM): a conservation values assessment tool for wetlands with trial application in the Burnett River catchment*. Published by the Environmental Protection Agency, Brisbane. ISBN 1-90928-07-3. Available at

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Morton, S. R., Short, J. and Barker, R. D. with an Appendix by G.F. Griffin and G. Pearce (1995). *Refugia for Biological Diversity in Arid and Semi-arid Australia*. Biodiversity Series, Paper No. 4, Biodiversity Unit, Environment Australia.

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

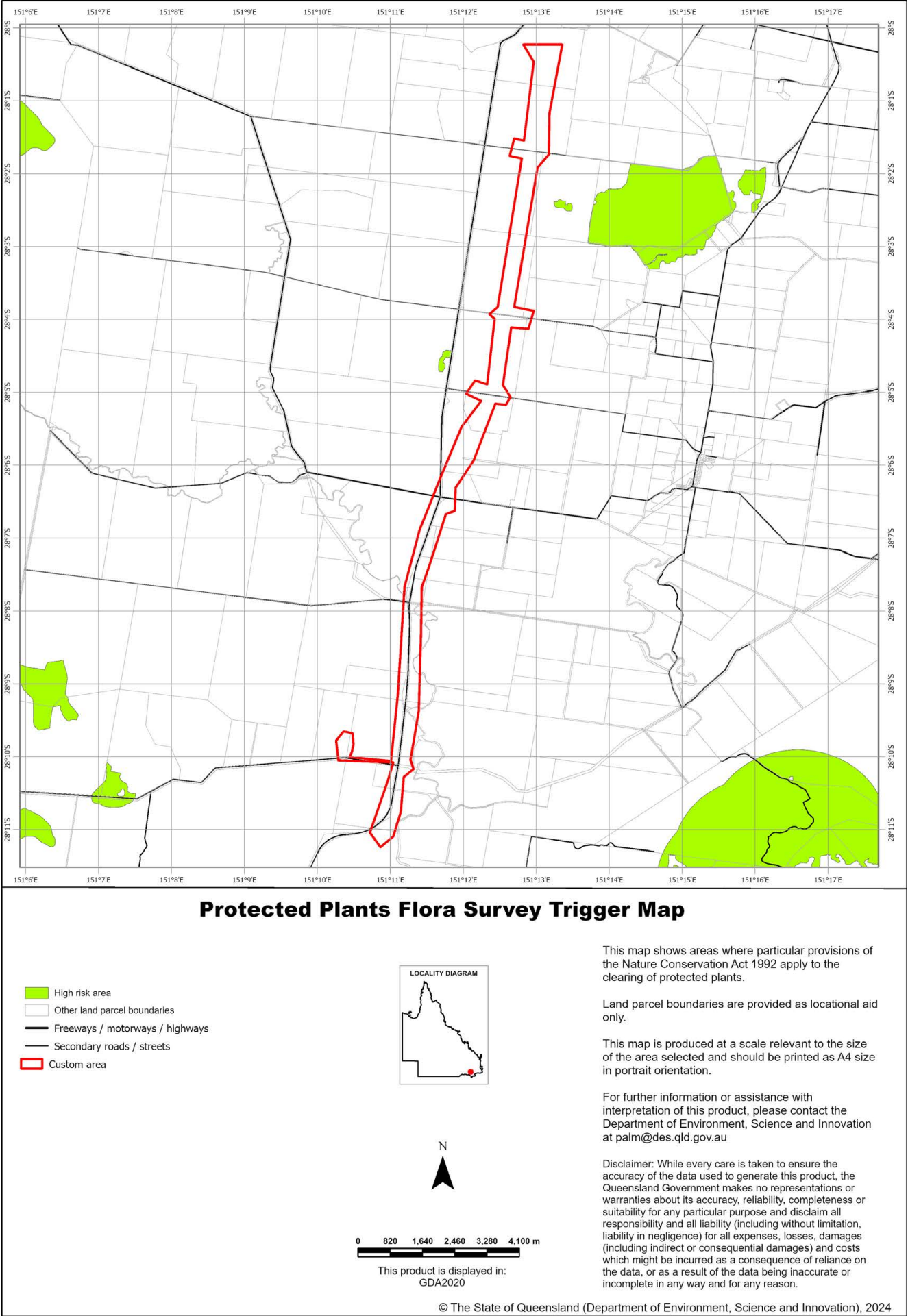
Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einiasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v2.3 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.6
Threatened Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:

<http://dds.information.qld.gov.au/DDS>

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DESI	- Department of Environment, Science and Innovation
EPBC	- <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see [section 89](#) of the Act.

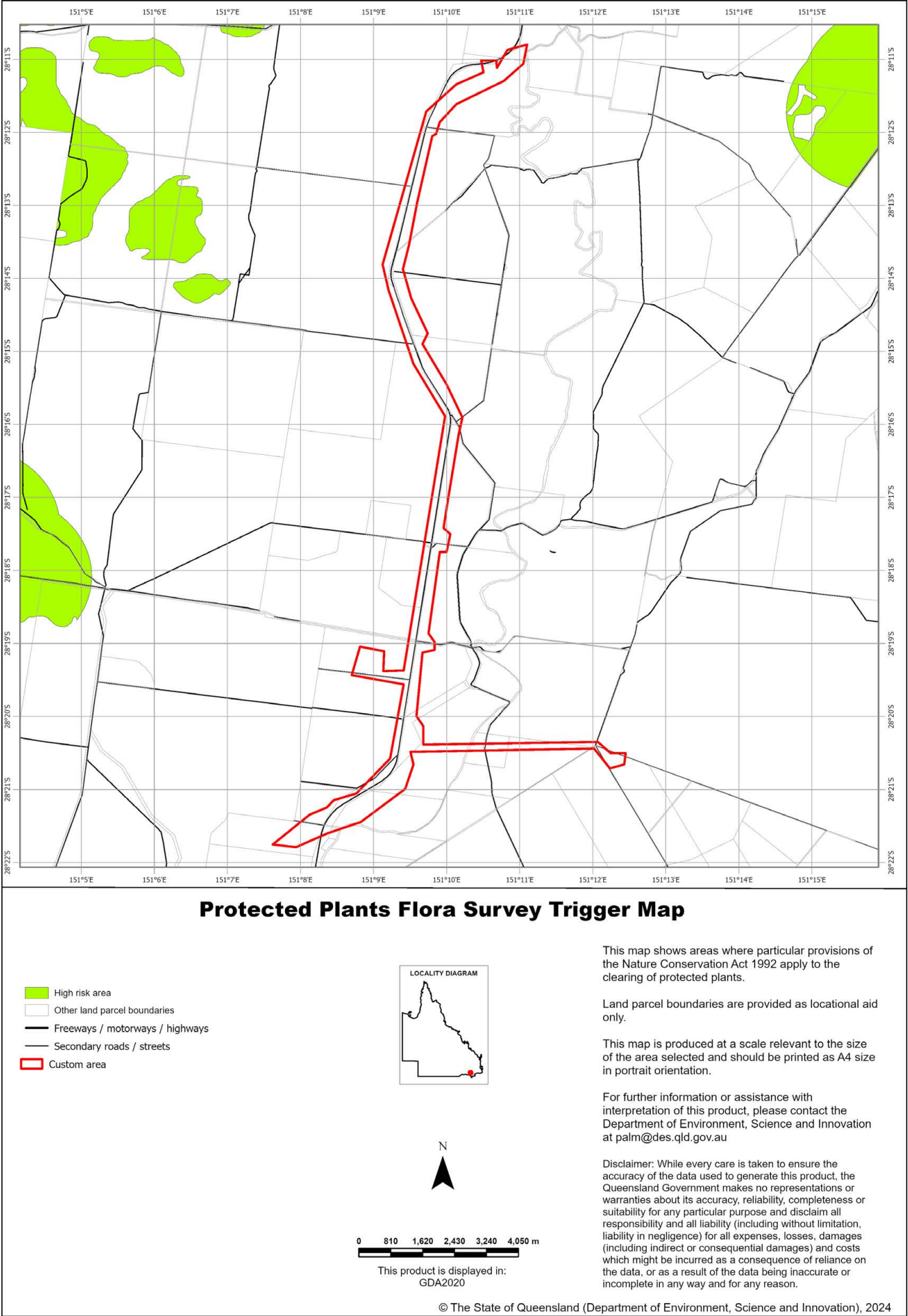
Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.



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WetlandMaps Report



For selected area of interest Custom input

Current as at 5/06/2024

Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest(AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

Disclaimer

The State of Queensland, as represented by this department, gives no warranty in relation to the data (including without limitation, accuracy, reliability, completeness or fitness for a particular purpose) hosted on this website.

The user accepts sole responsibility and risk associated with the use and results of department data hosted on this website, irrespective of the purpose to which such use or results are applied. It is recommended that users consider independently verifying any information obtained from this website.

To the maximum extent permitted by applicable law, in no event shall the department be liable for any special, incidental, indirect, or consequential loss whatsoever (including, but not limited to, damages for loss of profits or confidential or other information, for business interruption, for personal injury, for loss of privacy, for failure to meet any duty including of good faith or of reasonable care, for negligence, for any other pecuniary or other loss whatsoever including, without limitation, legal costs on a solicitor own client basis) arising out of, or in any way related to, the use of or inability to use the data.



Summary Information

Below is an overview of the area of interest.

Custom input
with area of 1166.63 ha

Local Government(s)
Goondiwindi Regional
Toowoomba Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Inglewood Sandstones

Catchment(s)
Macintyre Brook

Drainage sub-basin
Border Rivers

NRM Regions

The area of interest is in the following NRM region:

Southern Queensland Landscapes

Water Resource Plan Boundaries

The area of interest is in the following Water Resource Plan:

Border Rivers and Moonie

Great Artesian Basin and Other Regional Aquifers

Learn more about how Wetlands are mapped in Queensland

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include::**

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude::**

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria
- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Links and support

Other sites that deliver wetland related information include:

Wetland *Summary* tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

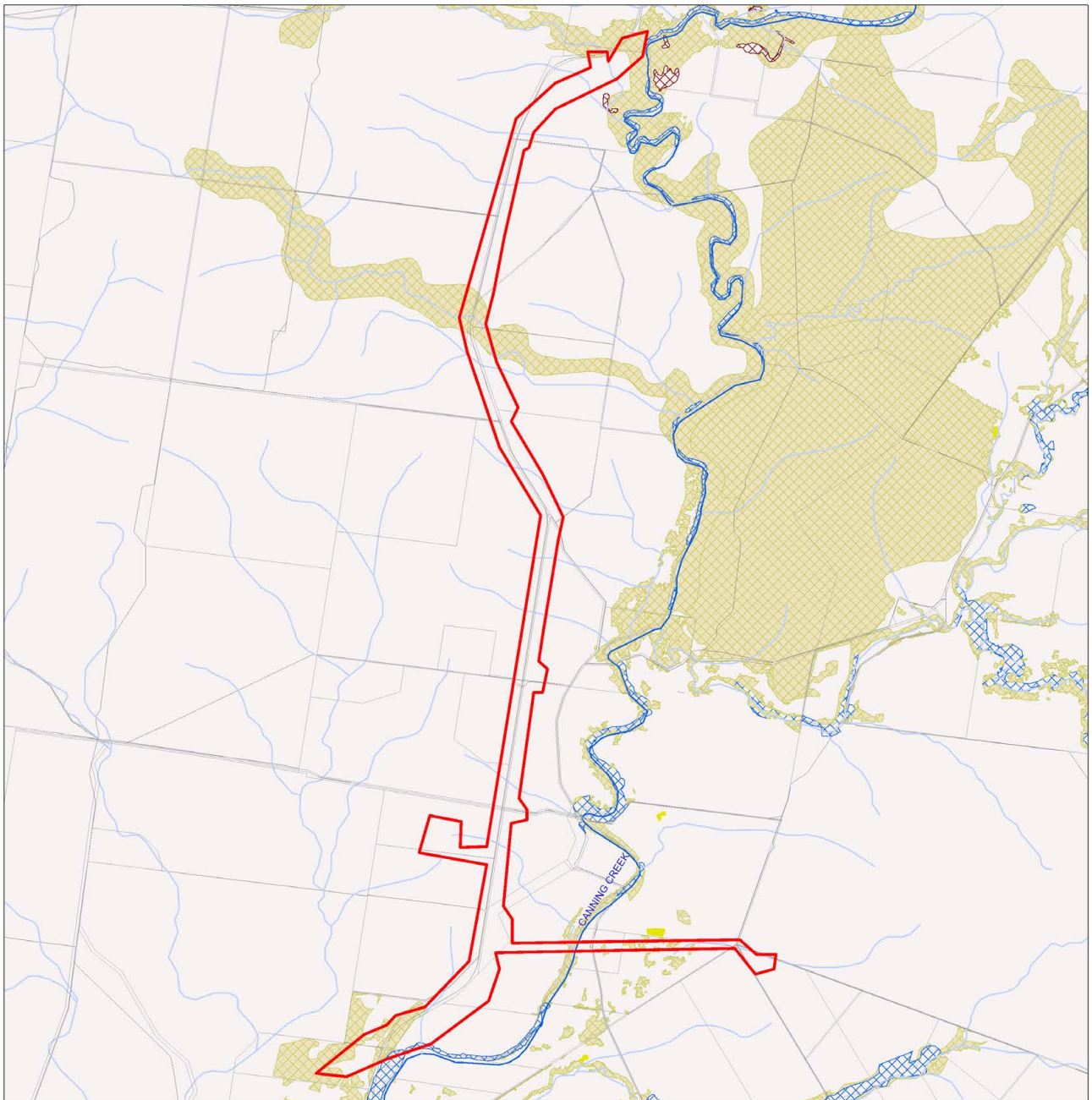
Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

Regional Ecosystem Mapping information:
<https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

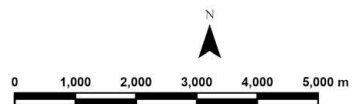
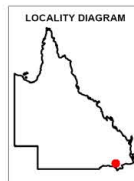
Aquatic Conservation Assessments: [Aquatic Conservation Assessments \(ACA\) and AquaBAMM \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Dependant Ecosystems information:
<https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Queensland Wetland Map

- Springs
- Dams and weirs
- Towns
- Freeways/Highways
- Roads
- Cadastral Boundaries
- Sub-basin
- Riverine System Drainage Lines**
 - Major
 - Minor
- Wetland Mapping**
- Hydrologically natural Wetlands**
 - Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
 - Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
 - Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
 - Contains Wetlands (1 - 50%)
 - Custom area

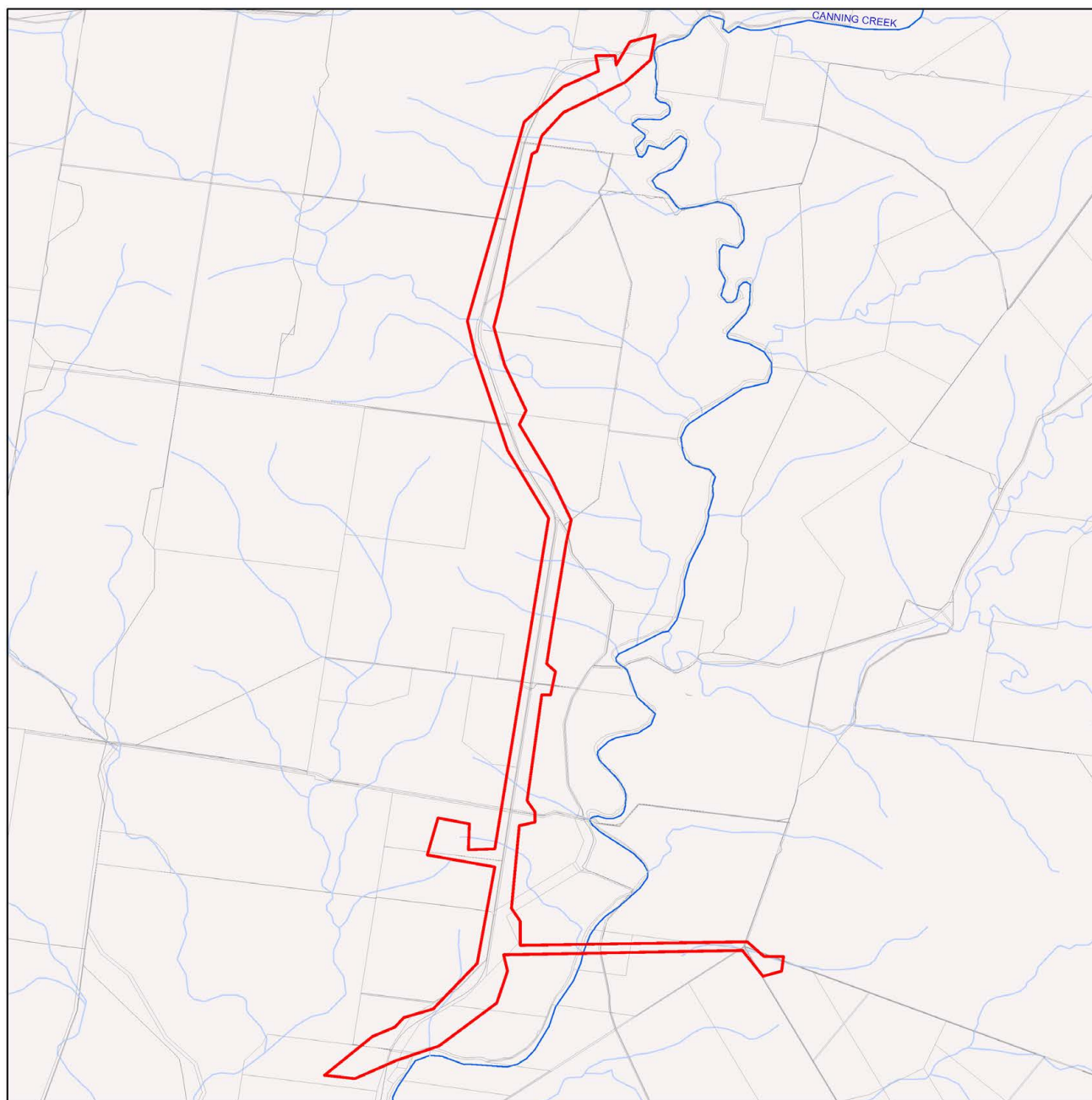


This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

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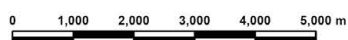
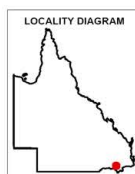


Queensland Wetlands of Importance Map

- Towns
- Cadastral Boundaries
- Freeways/Highways
- Roads
- Sub-basin
- Directory of Important Wetlands
- Ramsar Wetlands

Riverine System Drainage Lines

- Major
- Minor
- Custom area

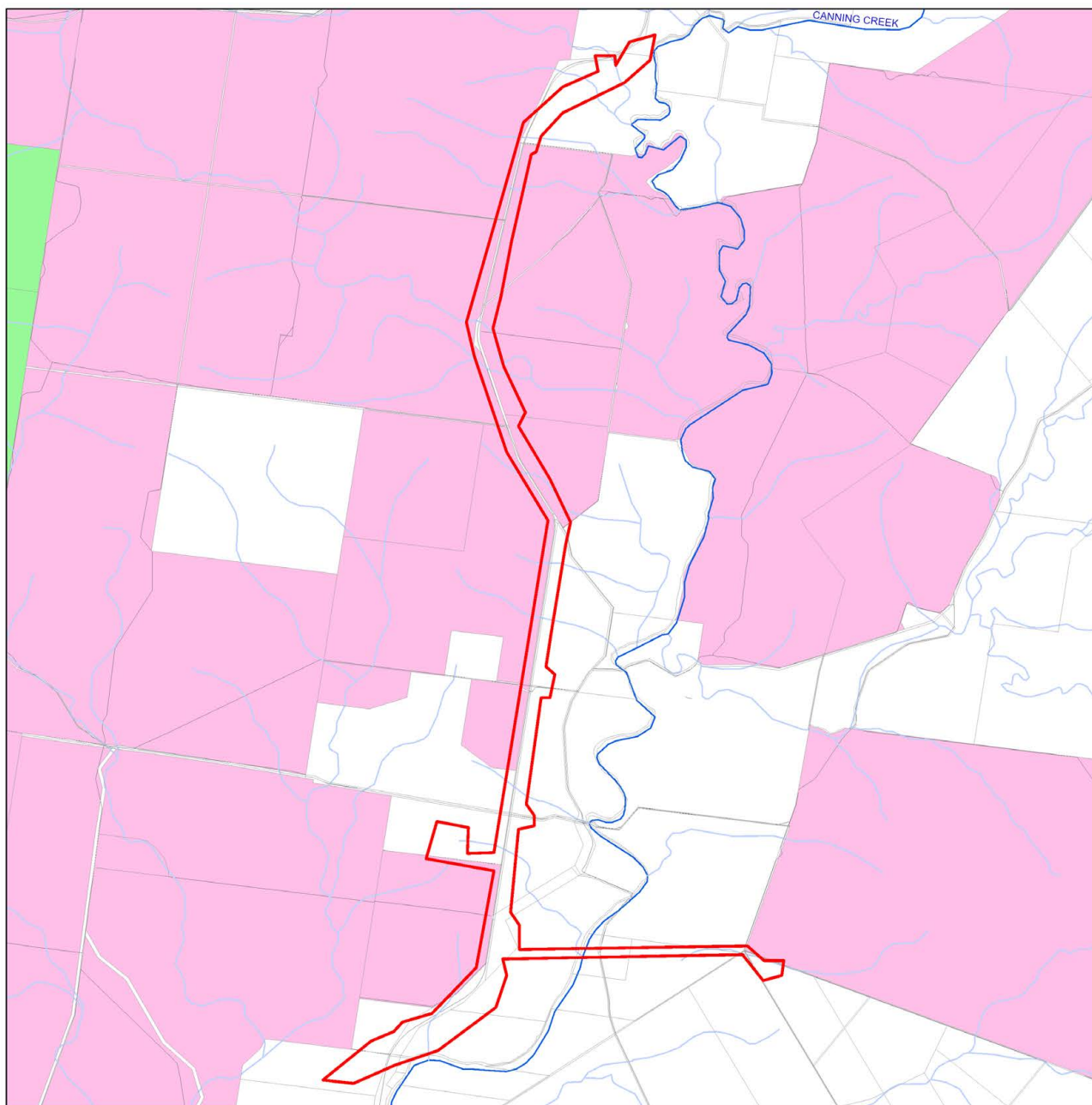


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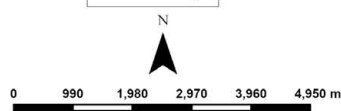
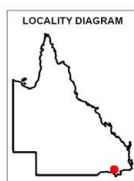
This product is displayed in GDA2020

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Queensland Protected Area Map

- Towns
- ▬ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▬ Sub-basin
- Riverine System Drainage Lines**
 - ▬ Major
 - ▬ Minor
- Marine Parks**
 - ▬ General Use Zone
 - ▬ Habitat Protection Zone
 - ▬ Estuarine Conservation Zone
 - ▬ Conservation Park Zone
 - ▬ Buffer Zone
 - ▬ Scientific Research Zone
 - ▬ Marine National Park Zone
 - ▬ Preservation Zone
- Protected Areas**
 - ▬ National Park
 - ▬ National Park (Scientific)
 - ▬ National Park (CYPAL)
 - ▬ Conservation Park
 - ▬ Resources Reserve
 - ▬ Forest Reserve
 - ▬ State Forest
 - ▬ Timber Reserve
 - ▬ Custom area



This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

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Wetland habitat types in the AOI. Total area: 123.38 ha

Wetland Class	Habitat type	Area (ha)
CPA	NOA	51.43
RIV	NOA	40.58
CPA	NOA/NOA	25.90
RIV	NOA/NOA	5.47

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands

Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps
Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps

Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and a field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@des.qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Goondiwindi Regional	Border Rivers	Brigalow Belt	Inglewood Sandstones
Toowoomba Regional			



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
- *Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004* ;
- *Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008*;
- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	143.35 ha	12.3%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	80.06 ha	6.9%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	26.04 ha	2.2%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	141.26 ha	12.1%
8e Regulated Vegetation - intersecting a watercourse	11 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0 ha	0.0%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways**4. Strategic Environmental Areas (SEA)**

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species**7a. Threatened (endangered or vulnerable) wildlife**

Values are present

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>	Keys boronia	V	None
<i>Calyptrorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarius casuarius johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Euastacus bindal</i>	Mount Elliot crayfish	CR	None
<i>Euastacus binzayedii</i>		CR	None
<i>Euastacus eungella</i>		E	None
<i>Euastacus hystricosus</i>		E	None
<i>Euastacus jagara</i>	Jagara hairy crayfish	CR	None
<i>Euastacus maidae</i>		CR	None
<i>Euastacus monteithorum</i>		E	None
<i>Euastacus robertsi</i>		E	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Melaleuca irbyana</i>	swamp tea-tree	E	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>	bopple nut	V	None
<i>Petrogale penicillata</i>	brush-tailed rock-wallaby	V	None
<i>Petrogale coenensis</i>	Cape York rock-wallaby	V	None
<i>Petrogale purpureicollis</i>	purple-necked rock-wallaby	V	None
<i>Petrogale sharmani</i>	Sharmans rock-wallaby	V	None
<i>Petrogale xanthopus celeris</i>	yellow-footed rock-wallaby (Qld subspecies)	V	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

Scientific name	Common name	NCA status	EPBC status	Migratory status
<i>Furina dunmalli</i>	Dunmall's snake	V	V	None
<i>Phascolarctos cinereus</i>	koala	E	E	None
<i>Jalmenus eubulus</i>	pale imperial hairstreak	V	None	None

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

**Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL). Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)*

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.2/11.3.4/11.3.25	O-dom	rem_oc
11.3.25/11.3.2	O-subdom	rem_oc
11.3.4/11.5.1/11.3.25	O-dom	rem_oc
11.5.20/11.9.5	E-subdom	rem_end
11.9.7/11.3.4	O-dom	rem_oc
11.9.9a/11.9.13/11.9.9	O-subdom	rem_oc

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.2/11.3.4/11.9.7	O-dom	hvr_oc

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Not applicable

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets**9a. Legally secured offset areas - offset register areas**

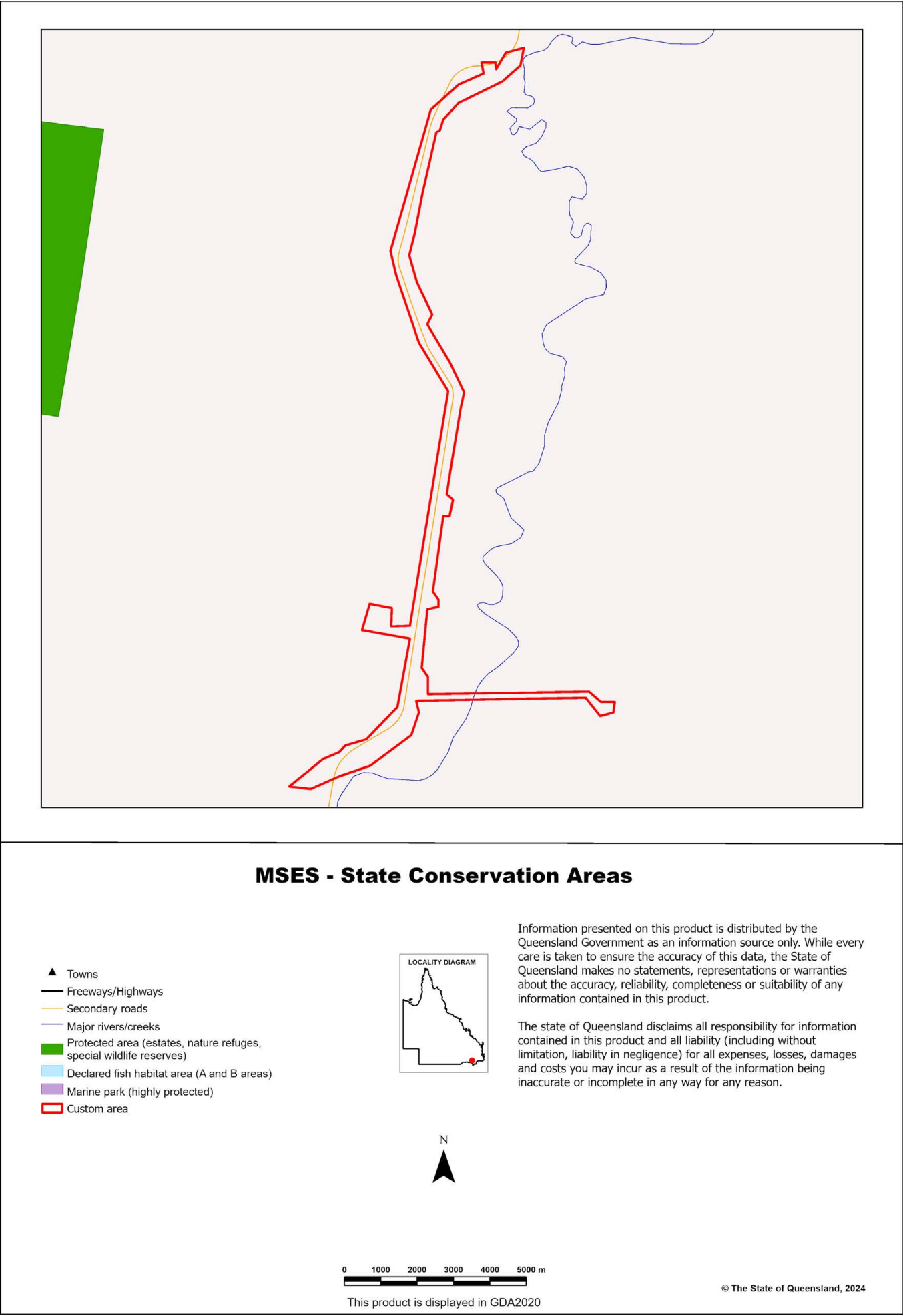
(No results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

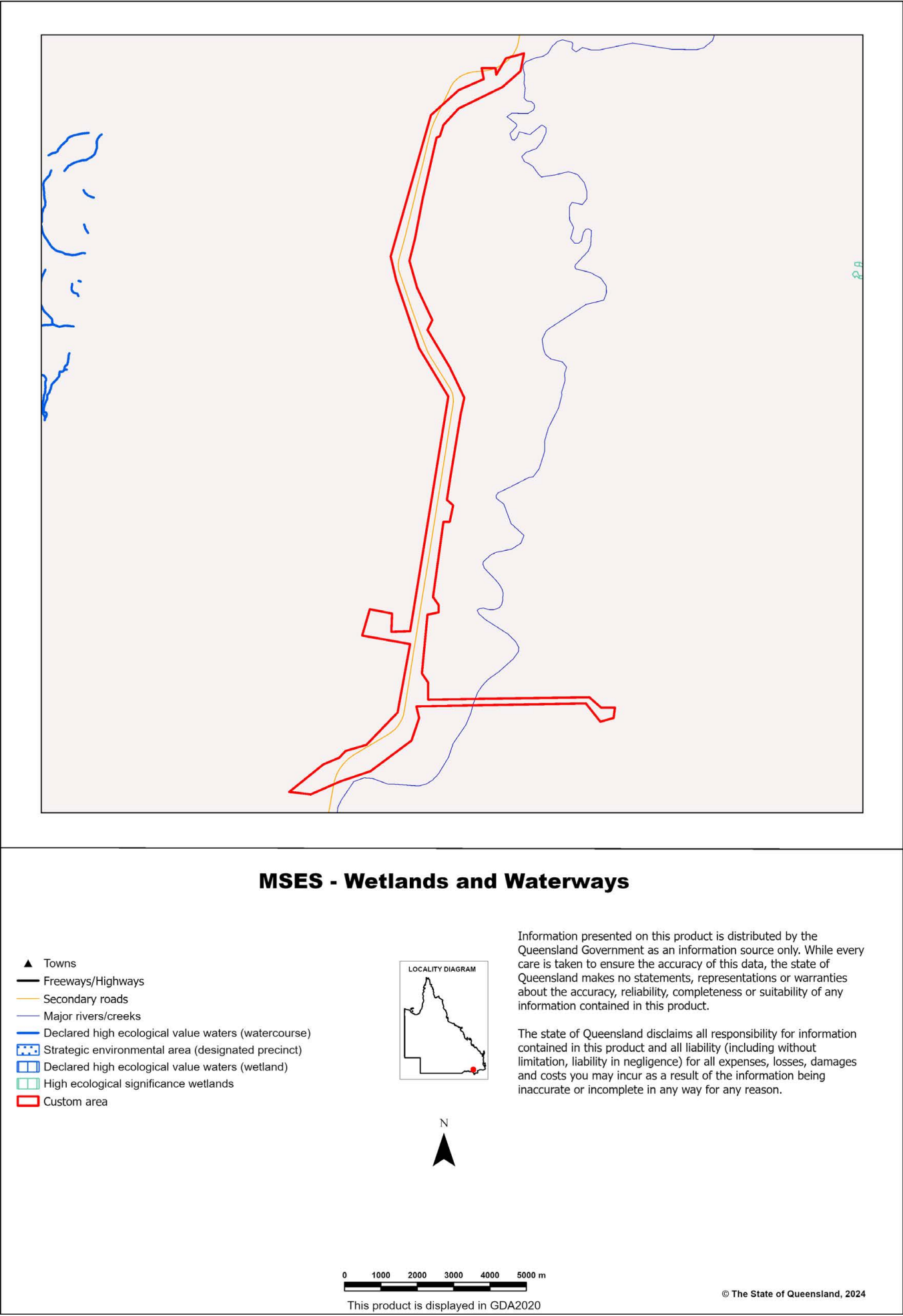
(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

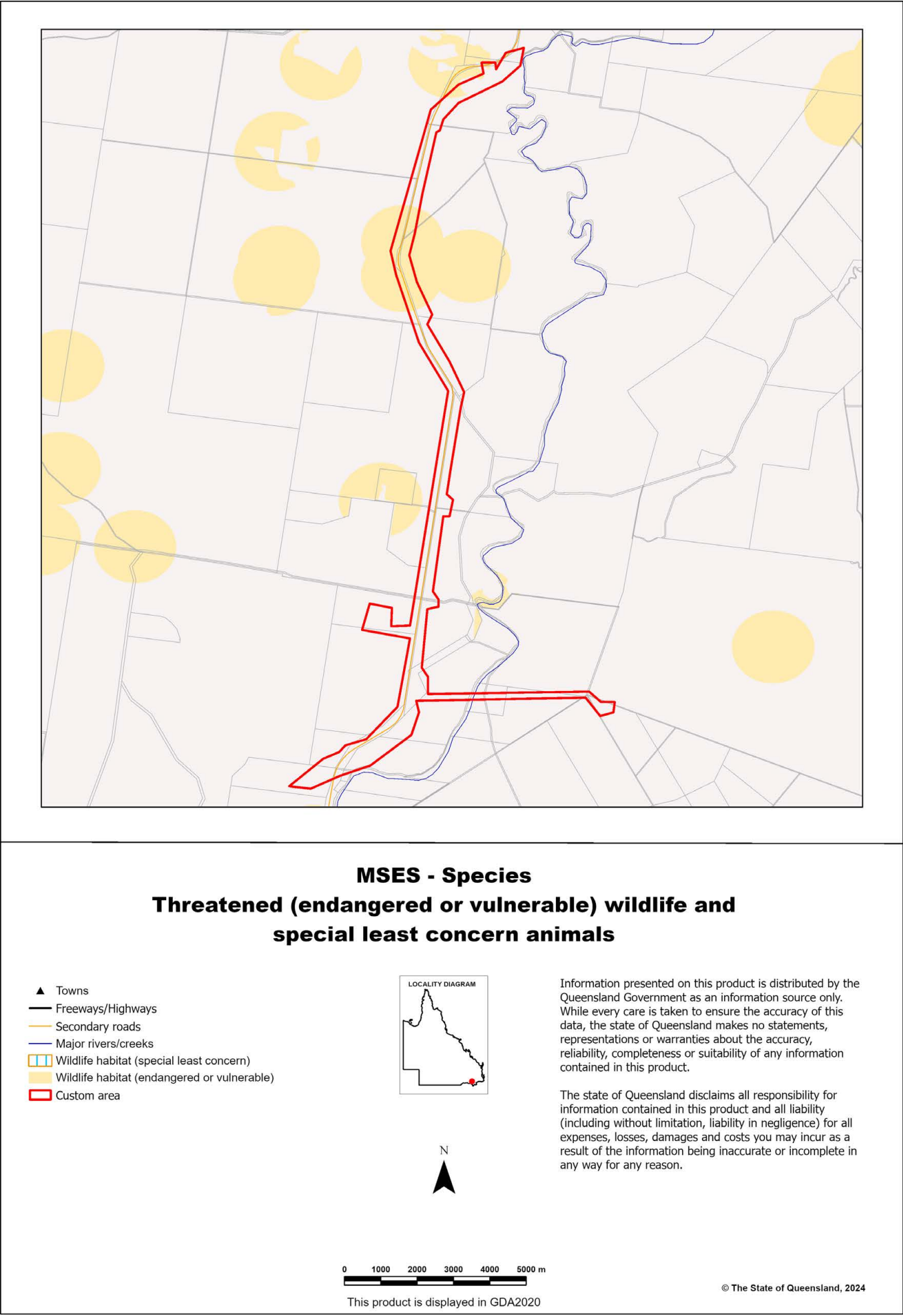
Map 1 - MSES - State Conservation Areas



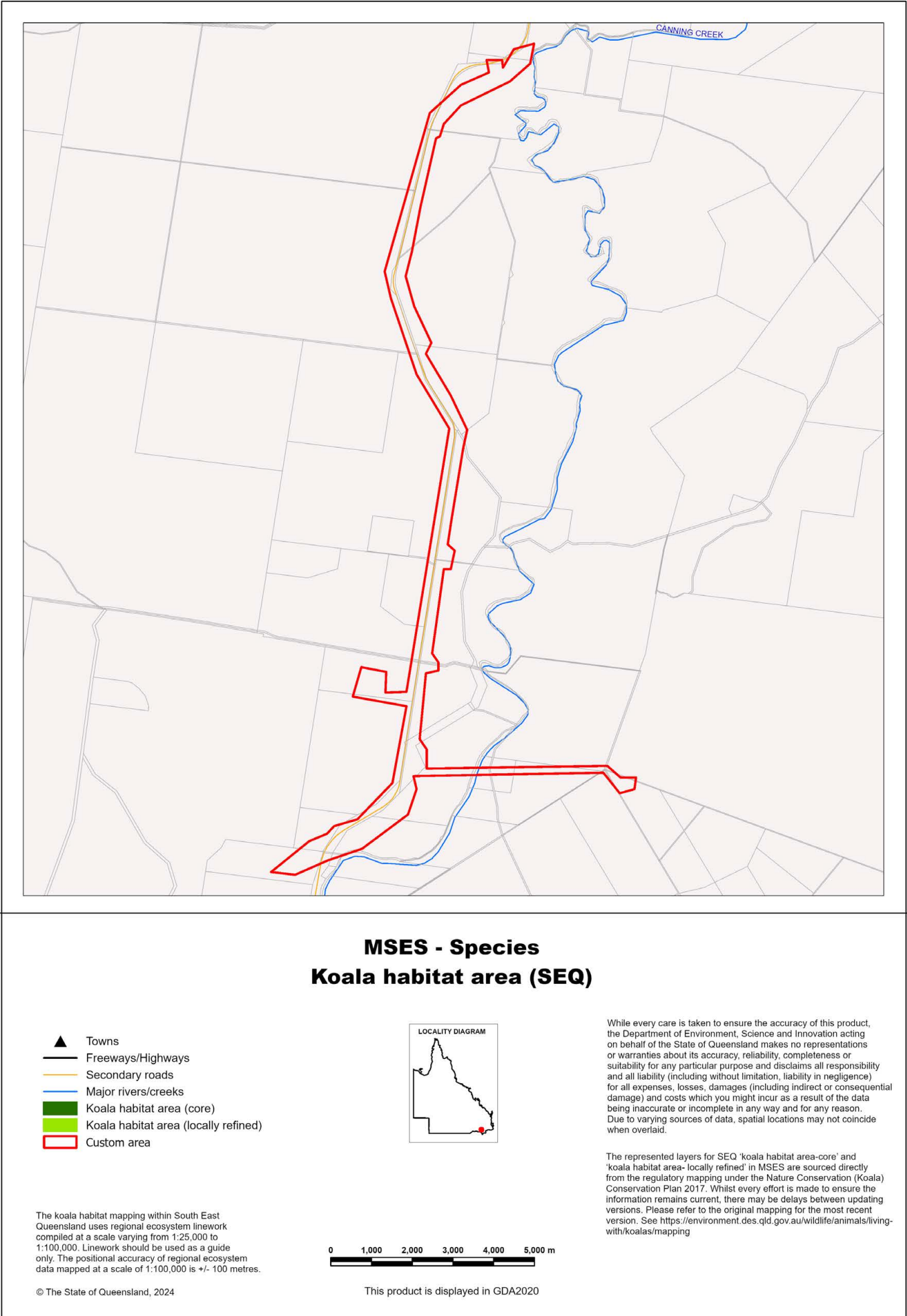
Map 2 - MSES - Wetlands and Waterways



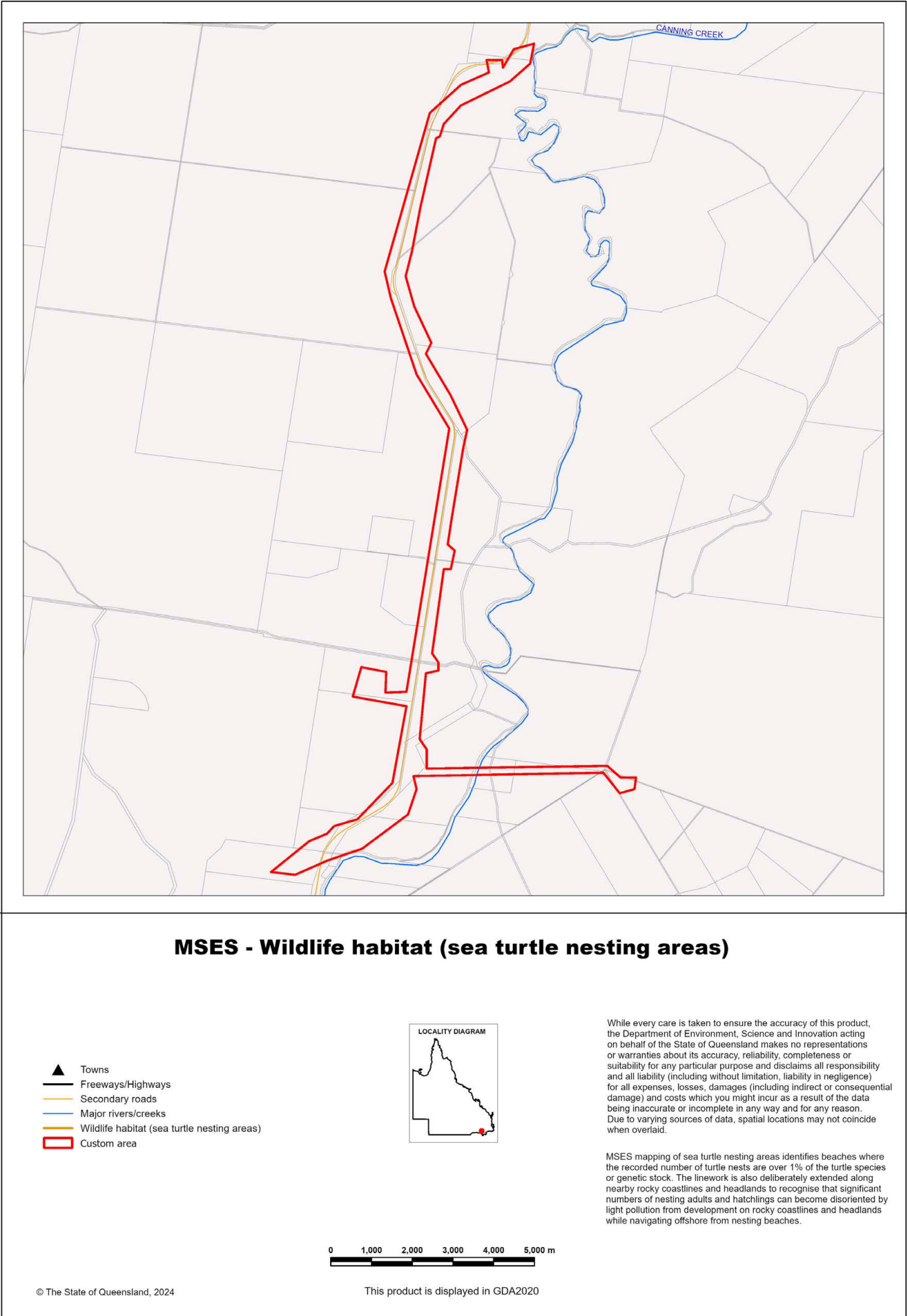
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



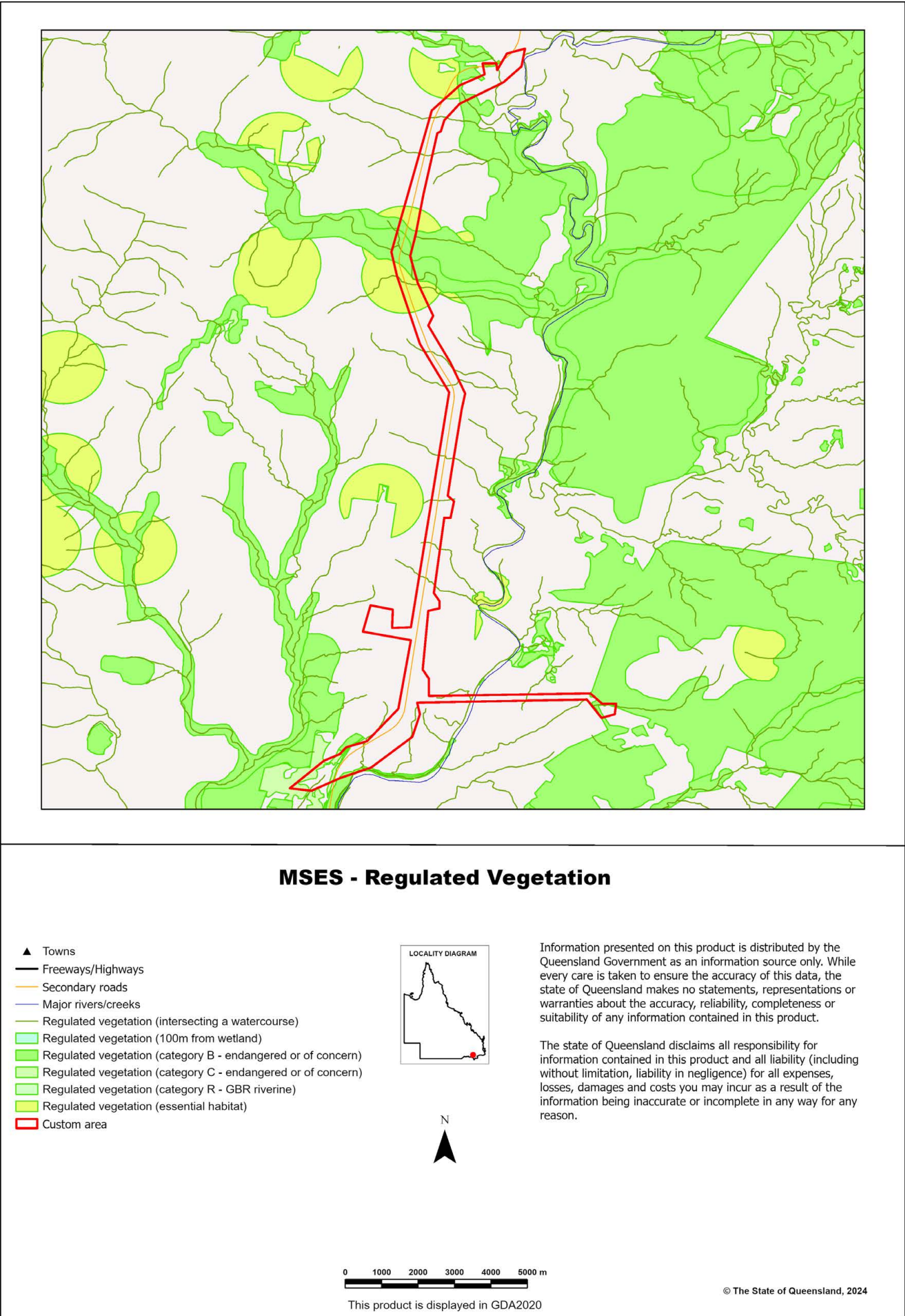
Map 3b - MSES - Species - Koala habitat area (SEQ)



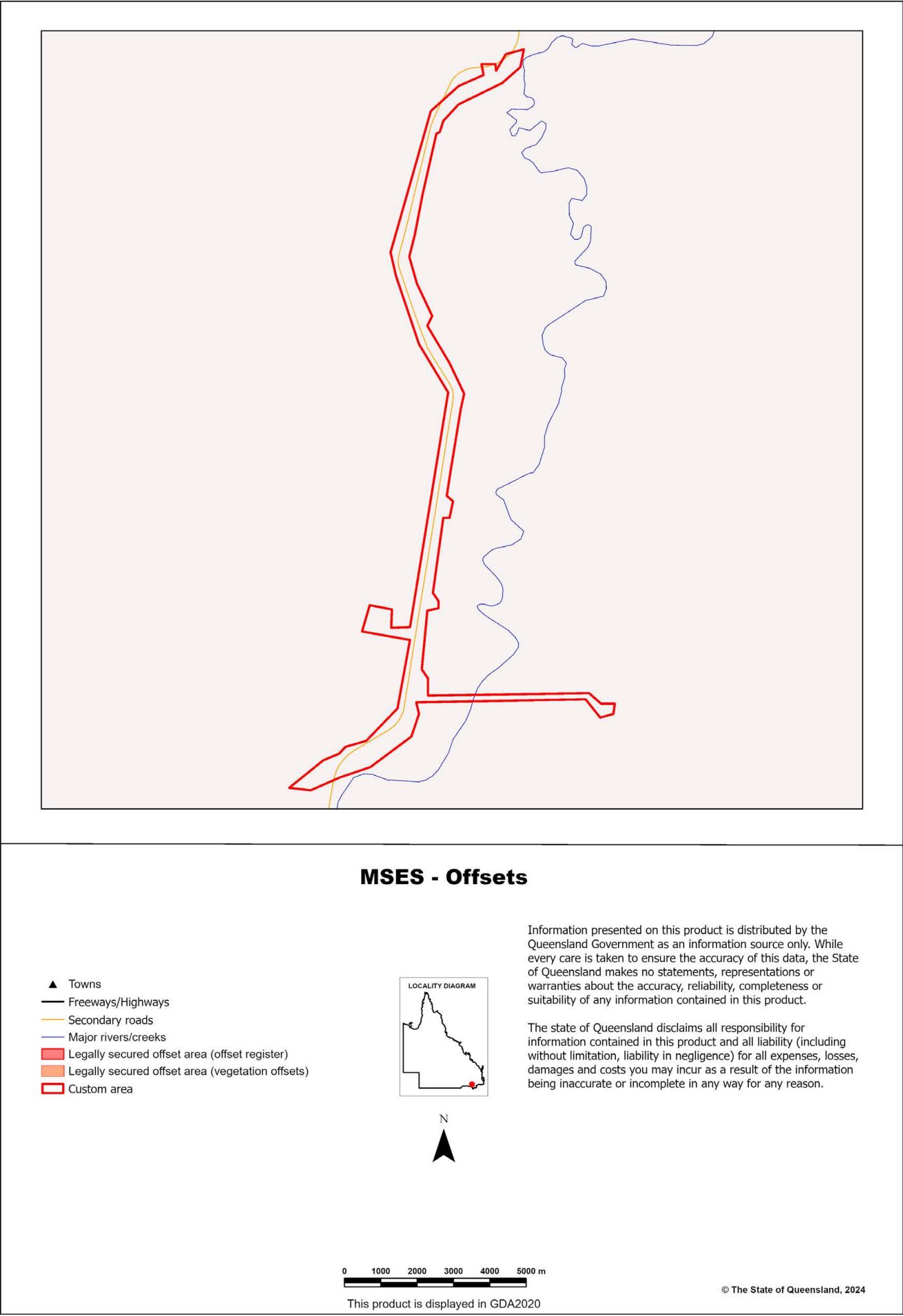
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DESI	- Department of Environment, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the input coordinates.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website <https://www.resources.qld.gov.au/>

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Custom input, with area 1166.63 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Goondiwindi Regional	Border Rivers	Brigalow Belt	Inglewood Sandstones
Toowoomba Regional			

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	5.63	0.48
Of concern	37.79	3.24
No concern at present	456.80	39.16
Total remnant vegetation	500.22	42.88

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated into a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website <https://www.resources.qld.gov.au/>.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.3.18	Eucalyptus populnea, Callitris glaucophylla, Allocasuarina luehmannii shrubby woodland on alluvium	No concern at present	41.33	3.54
11.3.2	Eucalyptus populnea woodland on alluvial plains	Of concern	1.78	0.15
11.3.25	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Of concern	13.61	1.17
11.3.4	Eucalyptus tereticornis and/or Eucalyptus spp. woodland on alluvial plains	Of concern	19.71	1.69
11.5.1	Eucalyptus crebra and/or E. populnea, Callitris glaucophylla, Angophora leiocarpa, Allocasuarina luehmannii woodland on Cainozoic sand plains and/or remnant surfaces	No concern at present	72.98	6.26
11.5.20	Eucalyptus moluccana and/or E. microcarpa and/or E. woollsiana +/- E. crebra woodland on Cainozoic sand plains	No concern at present	97.70	8.37
11.5.4	Eucalyptus chloroclada, Callitris glaucophylla, C. endlicheri, Angophora leiocarpa woodland on Cainozoic sand plains and/or remnant surfaces	No concern at present	239.34	20.52
11.9.13	Eucalyptus moluccana or E. microcarpa open forest on fine grained sedimentary rocks	Of concern	2.34	0.20
11.9.5	Acacia harpophylla and/or Casuarina cristata open forest to woodland on fine-grained sedimentary rocks	Endangered	5.63	0.48
11.9.7	Eucalyptus populnea, Eremophila mitchellii shrubby woodland on fine-grained sedimentary rocks	Of concern	0.35	0.03
11.9.9	Eucalyptus crebra woodland on fine-grained sedimentary rocks	No concern at present	1.56	0.13
11.9.9a	Eucalyptus crebra woodland on fine-grained sedimentary rocks	No concern at present	3.89	0.33
non-remnant	None	None	666.41	57.12

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.3.18	Pre-clearing 140000 ha; Remnant 2021 78000 ha	17a	Not a Wetland	Low
11.3.2	Pre-clearing 1905000 ha; Remnant 2021 499000 ha	17a	Contains Palustrine	Low
11.3.25	Pre-clearing 813000 ha; Remnant 2021 531000 ha	16a	Riverine	Low
11.3.4	Pre-clearing 684000 ha; Remnant 2021 178000 ha	16c	Not a Wetland	Low
11.5.1	Pre-clearing 775000 ha; Remnant 2021 477000 ha	18b	Not a Wetland	Low
11.5.20	Pre-clearing 232000 ha; Remnant 2021 152000 ha	13d	Not a Wetland	Low
11.5.4	Pre-clearing 142000 ha; Remnant 2021 108000 ha	18b	Not a Wetland	Low
11.9.13	Pre-clearing 64000 ha; Remnant 2021 19000 ha	13d	Not a Wetland	Low
11.9.5	Pre-clearing 2276000 ha; Remnant 2021 161000 ha	25a	Not a Wetland	Low
11.9.7	Pre-clearing 506000 ha; Remnant 2021 103000 ha	17a	Not a Wetland	Low
11.9.9	Pre-clearing 257000 ha; Remnant 2021 126000 ha	13c	Not a Wetland	Low
11.9.9a	Pre-clearing 257000 ha; Remnant 2021 126000 ha	15a	Not a Wetland	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.3.18	None
11.3.2	11.3.2: Habitat for threatened flora species <i>Homopholis belsonii</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.3.25	11.3.25: Shown to be associated with a high fauna species richness in the Taroom area (Venz et al. 2002). Within parts of the Fitzroy catchment, this RE is known habitat for the threatened freshwater turtle <i>Rheodytes leukops</i> . Known to be important habitat for other riparian freshwater turtle species. This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.3.4	11.3.4: Potential habitat for NCA listed species: <i>Acacia pedleyi</i> , <i>Callicarpa thozetii</i> , <i>Cycas megacarpa</i> , <i>Cycas ophiolitica</i> , <i>Digitaria porrecta</i> , <i>Eriocaulon carsonii</i> subsp. <i>orientale</i> , <i>Livistona nitida</i> , <i>Rhaponticum australe</i> , <i>Samadera bidwillii</i> , <i>Sannantha brachypoda</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.5.1	11.5.1: Habitat for threatened plant species including <i>Acacia handonis</i> and <i>Acacia argyrotricha</i> .
11.5.20	11.5.20: Potential habitat for NCA listed species: <i>Acacia handonis</i> , <i>Macrozamia machinii</i> , <i>Macrozamia platyrhachis</i> .
11.5.4	11.5.4: Potential habitat for NCA listed species: <i>Macrozamia machinii</i> .
11.9.13	11.9.13: Habitat for uncommon mallee eucalypt species including <i>Eucalyptus bakeri</i> and <i>E. viridis</i> in the Inglewood-Warwick area.
11.9.5	11.9.5: Habitat for threatened fauna species including <i>Jalmenus eubulus</i> , pale imperial hairstreak butterfly (Eastwood et al. 2008).
11.9.7	None
11.9.9	11.9.9: Potential habitat for NCA listed species: <i>Capparis humistrata</i> , <i>Leucopogon</i> sp. (Coolmunda D.Halford Q1635), <i>Omphalea celata</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.9.9a	11.9.9: Potential habitat for NCA listed species: <i>Capparis humistrata</i> , <i>Leucopogon</i> sp. (Coolmunda D.Halford Q1635), <i>Omphalea celata</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: <https://publications.qld.gov.au/dataset/redd/resource/>

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	666.41	57.12
13c	Woodlands of <i>Eucalyptus crebra</i> (sens. lat.) (narrow-leaved red ironbark), <i>E. drepanophylla</i> (grey ironbark), <i>E. fibrosa</i> (dusky-leaved ironbark), <i>E. shirleyi</i> (shirley's silver-leaved ironbark) on granitic and metamorphic ranges.	1.56	0.13
13d	Woodlands dominated by <i>Eucalyptus moluccana</i> (gum-topped box) (or <i>E. microcarpa</i> (inland grey box)) on a range of substrates.	100.04	8.58
15a	Woodlands and open forests dominated by <i>Eucalyptus youmanii</i> (Youman's stringybark), <i>E. scoparia</i> (Wallangarra white gum), <i>E. caliginosa</i> (broad-leaved stringybark) or <i>E. melliodora</i> (yellow box) occurring on traprock.	3.89	0.33
16a	Open forest and woodlands dominated by <i>Eucalyptus camaldulensis</i> (river red gum) (or <i>E. tereticornis</i> (blue gum)) and/or <i>E. coolabah</i> (coolabah) (or <i>E. microtheca</i> (coolabah)) fringing drainage lines. Associated species may include <i>Melaleuca</i> spp., <i>Corymbia tessellaris</i> (carbeen), <i>Angophora</i> spp., <i>Casuarina cunninghamiana</i> (riveroak). Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	13.61	1.17
16c	Woodlands and open woodlands dominated by <i>Eucalyptus coolabah</i> (coolabah) or <i>E. microtheca</i> (coolabah) or <i>E. largiflorens</i> (black box) or <i>E. tereticornis</i> (blue gum) or <i>E. chlorophylla</i> on floodplains. Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	19.71	1.69
17a	Woodlands dominated by <i>Eucalyptus populnea</i> (poplar box) (or <i>E. brownii</i> (Reid River box)) on alluvium, sand plains and footslopes of hills and ranges.	43.47	3.73
18b	Woodlands dominated <i>Eucalyptus crebra</i> (sens. lat.) (narrow-leaved red ironbark) frequently with <i>Corymbia</i> spp. or <i>Callitris</i> spp. on flat to undulating plains.	312.32	26.77
25a	Open forests to woodlands dominated by <i>Acacia harpophylla</i> (brigalow) sometimes with <i>Casuarina cristata</i> (belah) on heavy clay soils. Includes areas co-dominated with <i>A. cambagei</i> (gidgee) and/or emergent eucalypts.	5.63	0.48

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: <http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

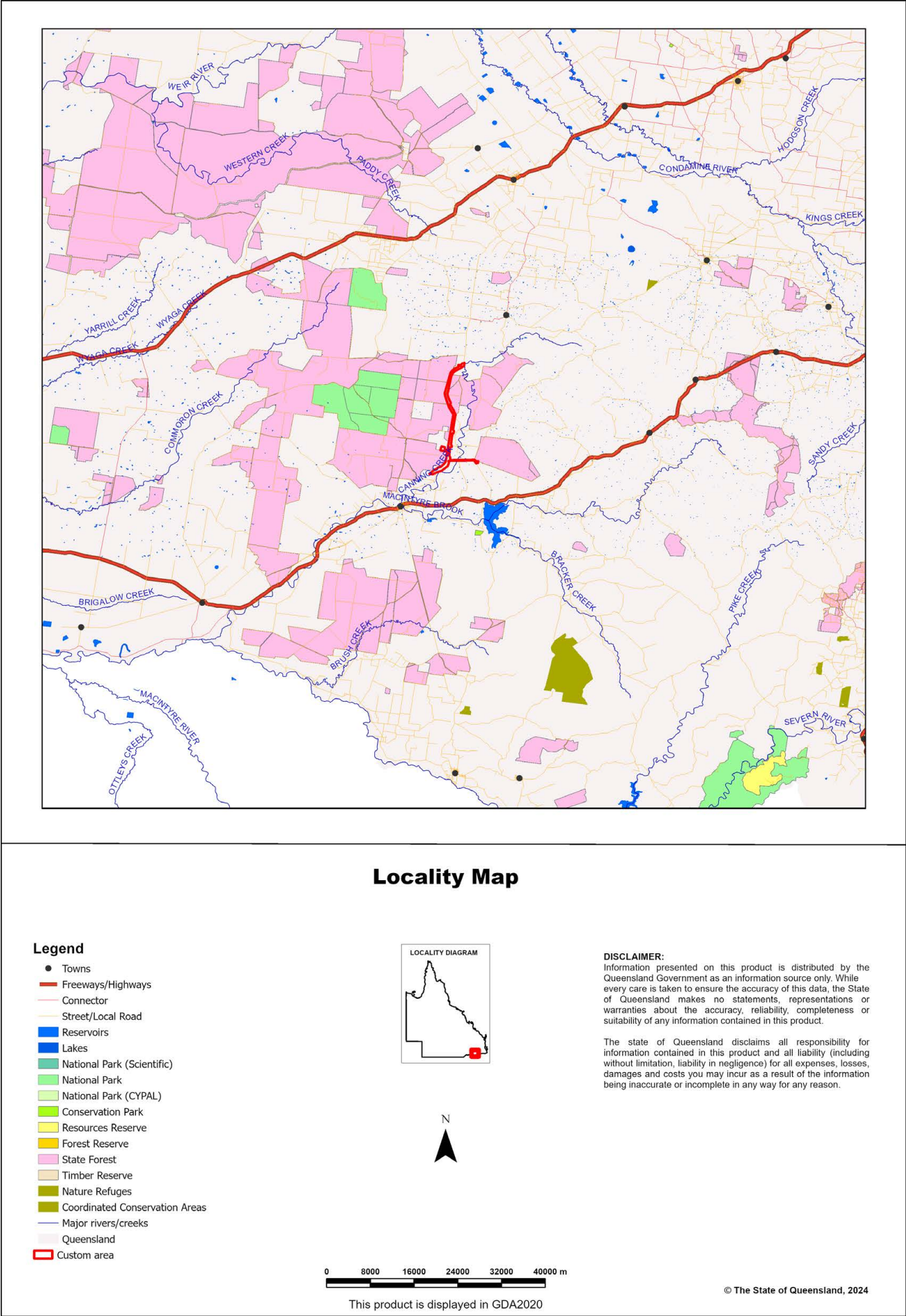
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

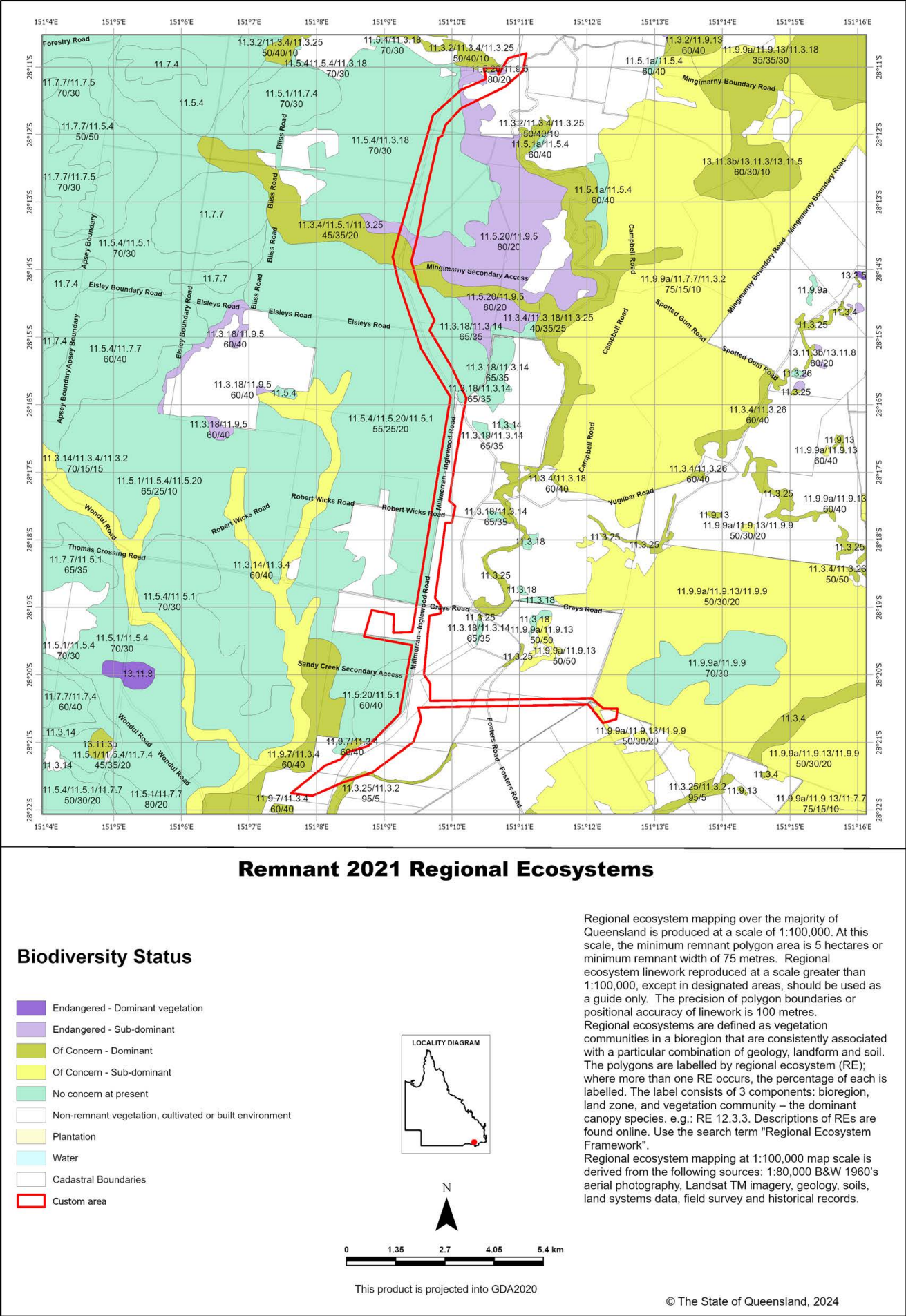
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.3.18	Available	Available
11.3.2	Available	Available
11.3.25	Available	Available
11.3.4	Available	Available
11.5.1	Available	Available
11.5.20	Available	Available
11.5.4	Available	Available
11.9.13	Available	Not currently available
11.9.5	Available	Available
11.9.7	Available	Available
11.9.9	Available	Available
11.9.9a	Available	Not currently available
non-remnant	Not currently available	Not currently available

Maps

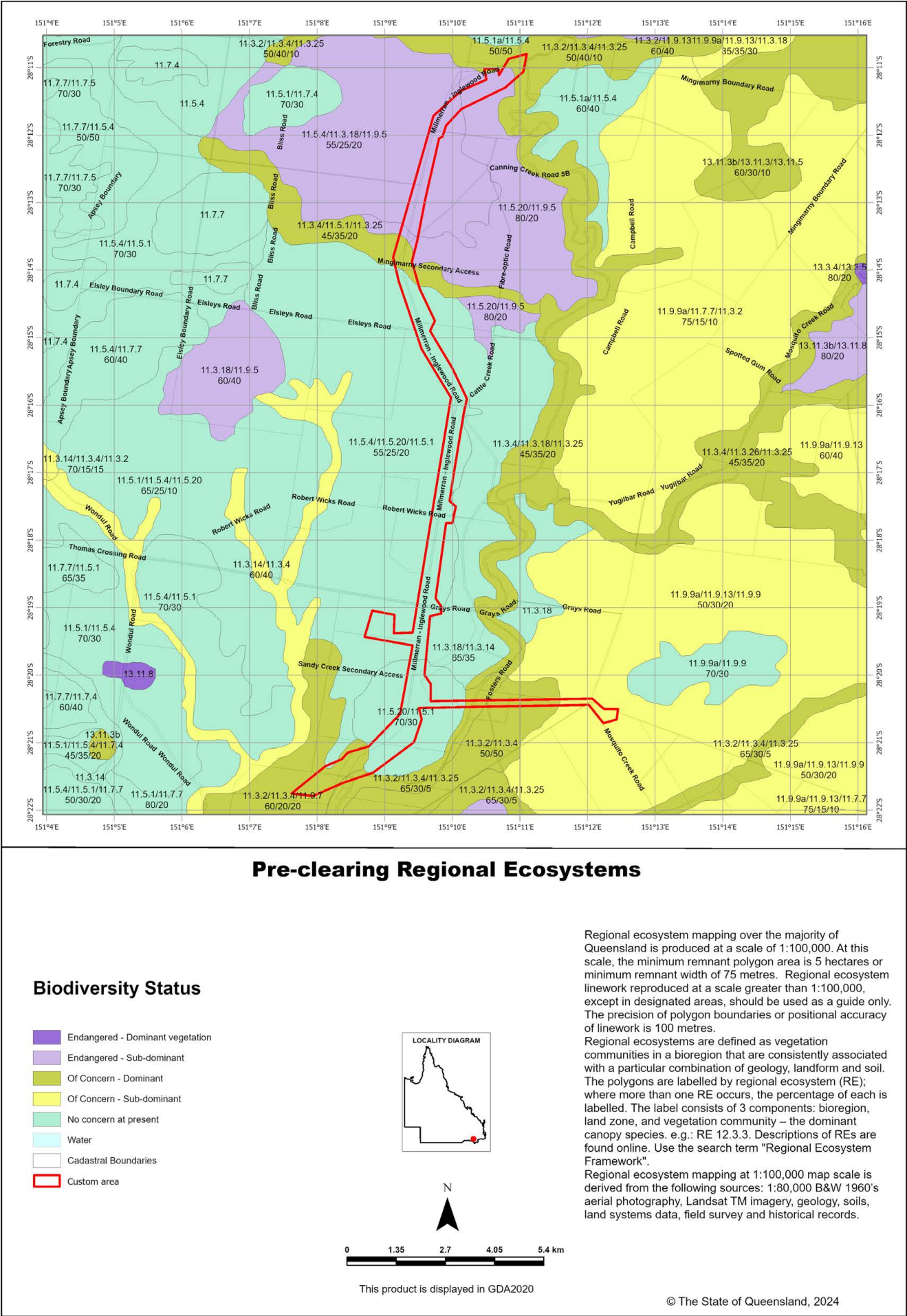
Map 1 - Location



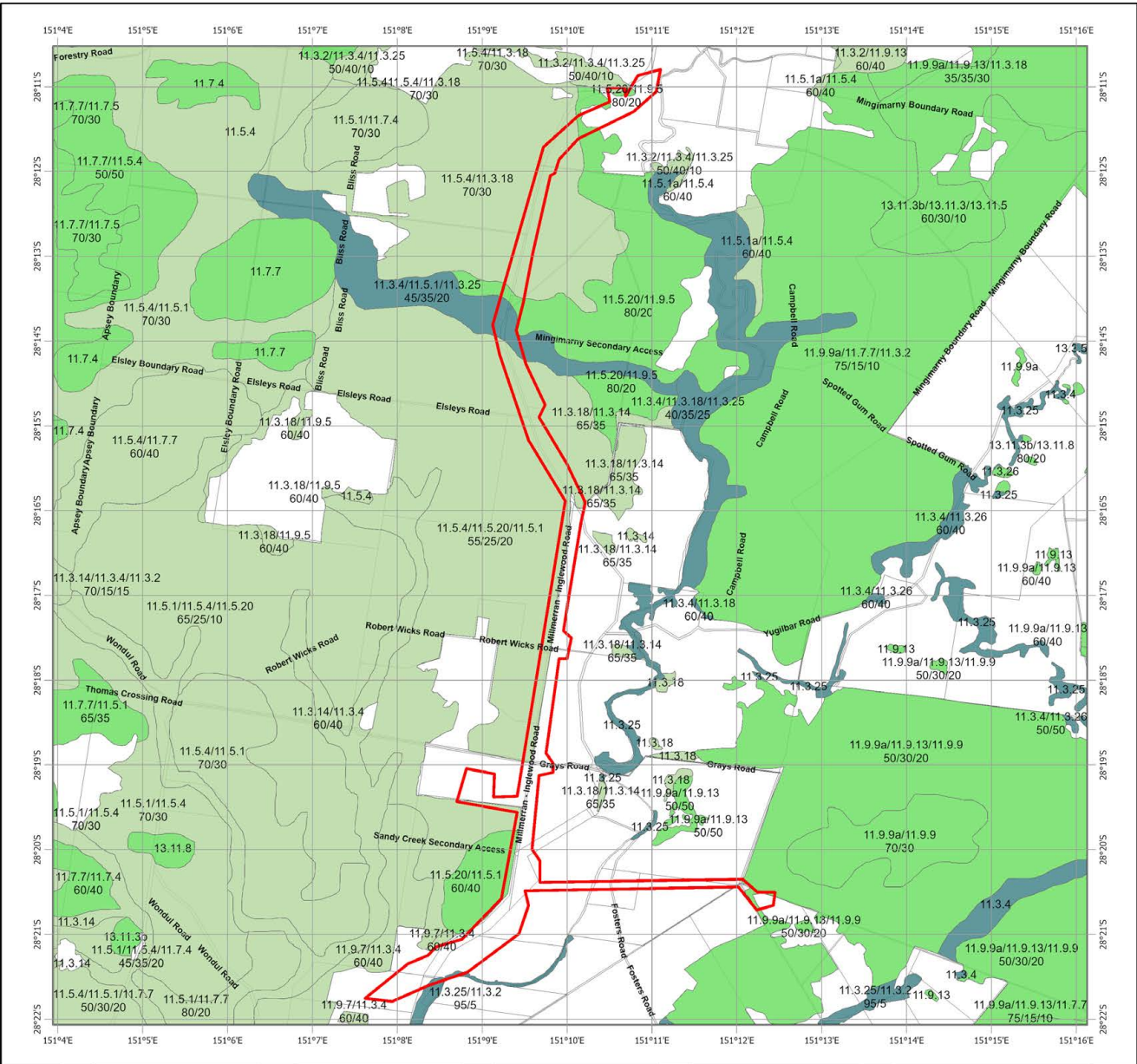
Map 2 - Remnant 2021 regional ecosystems



Map 3 - Pre-clearing regional ecosystems



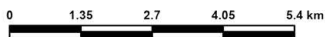
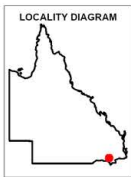
Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

**Broad Vegetation Groups
BVG5M Description (BVG1M codes)**

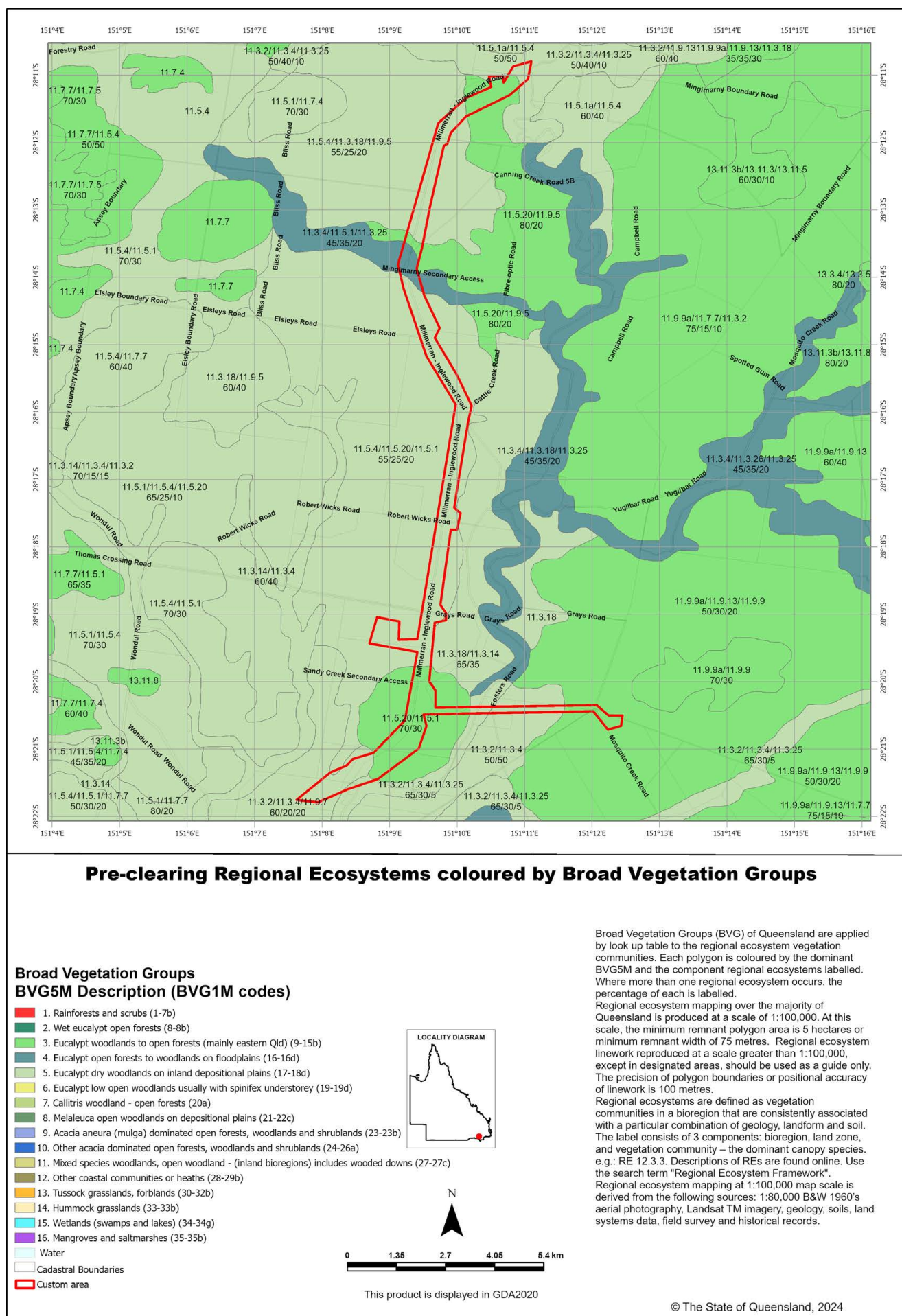
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries
- Custom area



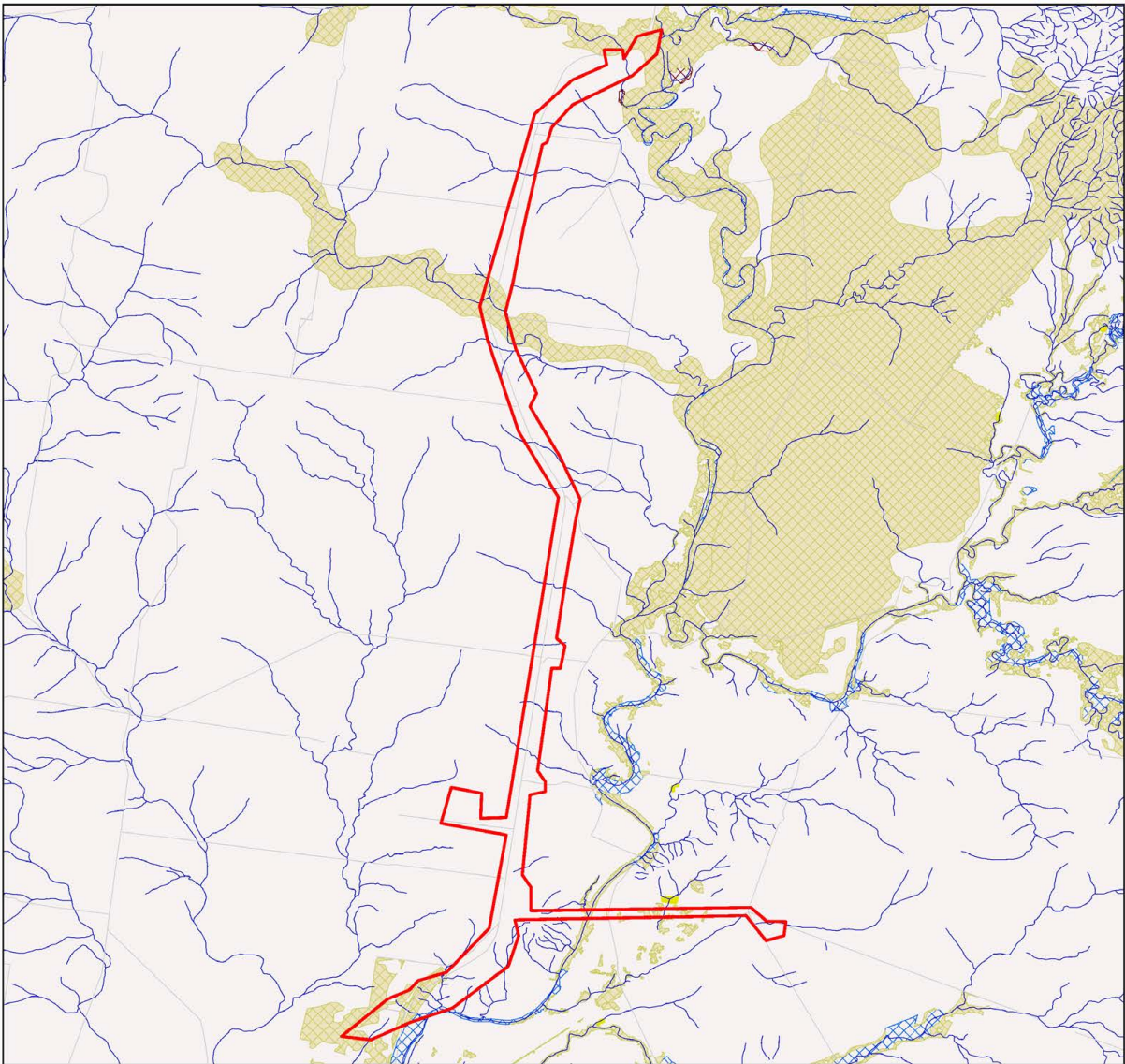
This product is displayed in GDA2020

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records. Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.

Map 5 - Pre-clearing regional ecosystems by BVG (5M)

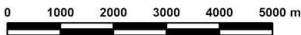
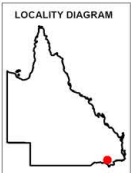


Map 6 - Wetlands and waterways



Wetlands and Waterways

- Towns
 - Roads
 - Springs
 - Rivers/Creeks
 - Directory of Important Wetlands
 - Ramsar Sites - QLD
- Wetland Type**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
- Queensland
- Custom area



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Links and Other Information Sources

The Department of Environment, Science and Innovation's Website -

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/> provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation>

The methodology for mapping regional ecosystems can be downloaded from:

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

Benchmarks can be obtained from: <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/spatial-catalogue)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

<https://qldglobe.information.qld.gov.au/>

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science.

<https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086>

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F., Richter, D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane.

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/>

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

[Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/information/spatial-catalogue)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or Area of Interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "Central co-ordinates" option, the resulting assessment area encompasses an area extending from 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: biodiversity.planning@des.qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Custom input, with area 1166.63 ha

Local Government(s)
Goondiwindi Regional
Toowoomba Regional
Bioregion(s)
Brigalow Belt
Subregion(s)
Inglewood Sandstones
Catchment(s)
Border Rivers

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Brigalow Belt v2.1	Queensland Murray-Darling and Bulloo Basins v2.1	Queensland Murray-Darling and Bulloo Basins v.2.1

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	5.63	0.48
Of concern	37.79	3.24
No concern at present	456.80	39.16

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of Environment, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State	411.28	35.25
State Habitat for EVNT taxa	89.10	7.64

Table 5: Non-riverine wetlands intersecting the AOI
(No Records)

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

Name	Permanency
CANNING CREEK	Non-perennial
CATTLE CREEK	Non-perennial

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of Environment, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	922.82	79.10
Low	243.81	20.90

Table 8: Summary table, aquatic conservation significance (non-riverine)

(No Records)

Biodiversity Planning Assessments

Introduction

The Department of Environment, Science and Innovation (DESI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DESI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

<http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State Habitat for EVNT taxa	89.10	7.64
State	411.28	35.25

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in

protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Local or Other Values	Refer to diagnostic data for additional information	356.54	30.56
Regional	Remnant contains at least 1 Vulnerable or Near Threatened species (A)	5.95	0.51
Regional	Remnant contains at least one Of Concern RE (B1)	6.15	0.53
State	Nat. Threatened Ecol. Community (B1)	19.71	1.69
State	Nat. Threatened Ecol. Community (B1) & Remnant contains at least one Of Concern RE (B1)	6.62	0.57
State	Nat. Threatened Ecol. Community (B1) & Remnant contains at least one Of Concern RE (B1) & Remnant contains a RE that is one of the largest of its type in the bioregion (D1)	7.79	0.67
State	Remnant contains at least 1 Endangered or 2 Vulnerable or Near Threatened species (A)	87.15	7.47
State	Remnant contains at least 1 Endangered or 2 Vulnerable or Near Threatened species (A) & Nat. Threatened Ecol. Community (B1)	1.96	0.17
State	Remnant contains at least 1 Vulnerable or Near Threatened species (A) & Nat. Threatened Ecol. Community (B1)	8.52	0.73

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	89.10	7.64	14.48	1.24	379.19	32.50	17.62	1.51
B1: Ecosystem Value (Bioregion)	44.60	3.82	41.17	3.53	414.62	35.54	0.00	0.00
B2: Ecosystem Value (Subregion)	0.00	0.00	44.19	3.79	456.20	39.10	0.00	0.00
C: Tract Size	490.93	42.08	0.00	0.00	0.00	0.00	9.46	0.81
D1: Relative RE Size (Bioregion)	7.79	0.67	0.00	0.00	397.59	34.08	95.02	8.14
D2: Relative RE Size (Subregion)	7.79	0.67	438.17	37.56	24.33	2.09	30.10	2.58
F: Ecosystem Diversity	48.02	4.12	446.74	38.29	0.00	0.00	5.63	0.48
G: Context and Connection	40.58	3.48	439.54	37.68	14.64	1.25	5.63	0.48

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Regional	Remnant forms part of a bioregional corridor (J)	3.83	0.33
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	489.82	41.99
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I) & Remnant forms part of a bioregional corridor (J)	1.11	0.10
State	Remnant forms part of a bioregional corridor (J)	5.63	0.48

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al.* 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to assess overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.00	0.00	0.00	0.00	146.25	12.54	0.00	12.54
Ia: Centres of Endemism	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	421.56	36.13	0.00	0.00	0.00	0.00	0.00	0.00
Ic: Disjunct Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Id: Limits of Geographic Ranges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ie: High Species Richness	490.93	42.08	0.00	0.00	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.00	0.00	7.79	0.67	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors

include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:

- Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
- Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
- Maintaining large scale seasonal/migratory species processes and movement of fauna;
- Maximising connectivity between large tracts/patches of remnant vegetation;
- Identifying key areas for rehabilitation and offsets; and

- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial

- Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
- Follow major watershed/catchment and/or coastal boundaries;
- Incorporate major altitudinal/geological/climatic gradients;
- Include and maximise connectivity between large tracts/patches of remnant vegetation;
- Include and maximise connectivity between remnant vegetation in good condition; and

- Riparian

- Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
	489.82	41.99
Regional	4.94	0.42
State	5.63	0.48

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values"

report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
brbs_fa_69	Yelarbon and Bringalily State Forest Tracts.	State	le (species richness): VH
brbs_l_16	Core areas	State	lb (refugia): VH
brbs_l_18a			
brbs_l_18b			
brbs_fl_37	Devine State Forest Tract	Regional	le (species richness): H li (hollow density): H

Expert panel decision descriptions:

Decision Number	Description
brbs_fa_69	Open eucalypt woodlands on either shallow soils (in areas of higher elevation) or sandy plains dominate. Diversity of terrestrial vertebrate taxa is very high with approximately 350 recorded. Among the threatened taxa known are Dunmall's snake <i>Furina dunmalli</i> , Major Mitchell's cockatoo <i>Lophochroa leadbeateri</i> , regent honeyeater <i>Anthochaera phrygia</i> , painted honeyeater <i>Grantiella picta</i> , spotted-tailed quoll <i>Dasyurus m. maculatus</i> and greater glider <i>Petauroides volans</i> . Priority taxa include both endemics such as brigalow scaly-foot <i>Paradelma orientalis</i> , and declining taxa, e.g. brown tree creeper <i>Climacteris picumnus</i> , speckled warbler <i>Chthonicola sagittata</i> and hooded robin <i>Melanodryas cucullata</i> .
brbs_l_16	Tracts are defined as patches of continuous remnant vegetation. The size of any tract is a major indicator of ecological significance and is strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts. These areas can be considered core nodes/refugia in which a large proportion of the bioregions biodiversity is represented. A modified tract size analysis (Criterion C) (EHP 2014) was used to identify and delineate discrete tracts of remnant vegetation at a bioregion scale. For the purpose of the assessment, a core area was identified as a relatively contiguous area of remnant vegetation (disregarding small perforations, or linear breaks) and which was generally greater than 5km in width (based upon the minimum width of the terrestrial corridor network). Tracts of greater than 10,000ha were included. Refer to brbn_l_83 for the northern BRB implementation of this decision.
brbs_l_18a	
brbs_l_18b	
brbs_fl_37	Bordering the New England tableland, temperate eucalypt woodlands occupy the majority of the State Forest, tending to drier communities at the eastern margins. Approximately 140 species of flora are considered to occur within the State Forest, with the eastern most portion considered to contain high flora diversity. Several threatened taxa have been recorded including <i>Eucalyptus curtisii</i> , <i>Bertya opposens</i> , <i>Pomaderris coomingalensis</i> and <i>Daviesia quoquoversus</i> . Broadleaf and Mugga ironbark communities at the eastern extent also exhibit high densities of hollows important for fauna.

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in Queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning processes

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland Info:

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	922.82	79.10
Low	243.81	20.90

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	832.96	71.40	2.16	0.19	112.47	9.64	219.04	18.78
2. Naturalness catchment	112.47	9.64	1,029.39	88.24	24.78	2.12	0.00	0.00
3. Diversity and richness	331.51	28.42	808.18	69.28	24.78	2.12	2.16	0.19
4. Threatened species and ecosystems	808.18	69.28	112.47	9.64	0.00	0.00	245.98	21.08
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	331.51	28.42	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	922.82	79.10	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
bd_r_ec_31	Upland riverine reaches with flows sustained by groundwater seeps	Border Rivers	7.2.1	4

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
bd_r_ec_31	Groundwater connectivity with riverine ecosystems were viewed as important by the expert panel as inflow of groundwater (especially where granite geology exists), sustains rivers and creeks during drier periods. Water exchange can happen through fractured rock aquifers, but more typically coincides with sandy bottomed riverbeds. Flows are not necessarily perennial during drought.

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

(No Records)

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Naturalness catchment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Diversity and richness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, HerbreCs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Acanthophis antarcticus</i>	common death adder	V		Moderate			FA
<i>Furina dunmali</i>	Dunmall's snake	V	V	Moderate			FA
<i>Geophaps scripta scripta</i>	squatter pigeon (southern subspecies)	V	V				FA
<i>Jalmenus eubulus</i>	pale imperial hairstreak	V		Moderate			FA
<i>Nyctophilus corbeni</i>	eastern long-eared bat	V	V	Moderate			FA
<i>Phascolarctos cinereus</i>	koala	E	E	Low			FA
<i>Stagonopleura guttata</i>	diamond firetail	V					FA

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DESI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

*JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.

**I - wetland indicator species; D - wetland dependent species.

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
<i>Climacteris picumnus</i>	Brown Treecreeper	FA
<i>Climacteris picumnus</i>	brown treecreeper	FA
<i>Cyclorana verrucosa</i>	Rough-collared Frog	FA
<i>Enteropogon paucispiceus</i>		FL
<i>Melanodryas cucullata</i>	Hooded Robin	FA
<i>Microeca fascians</i>	jacky winter	FA
<i>Paradelma orientalis</i>	Brigalow Scaly-foot	FA
<i>Pomatostomus temporalis</i>	grey-crowned babbler	FA
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	FA
<i>Pyrrholaemus sagittatus</i>	speckled warbler	FA
<i>Sclerolaena tetracuspis</i>	brigalow burr	FL
<i>Varanus varius</i>	Lace Monitor	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

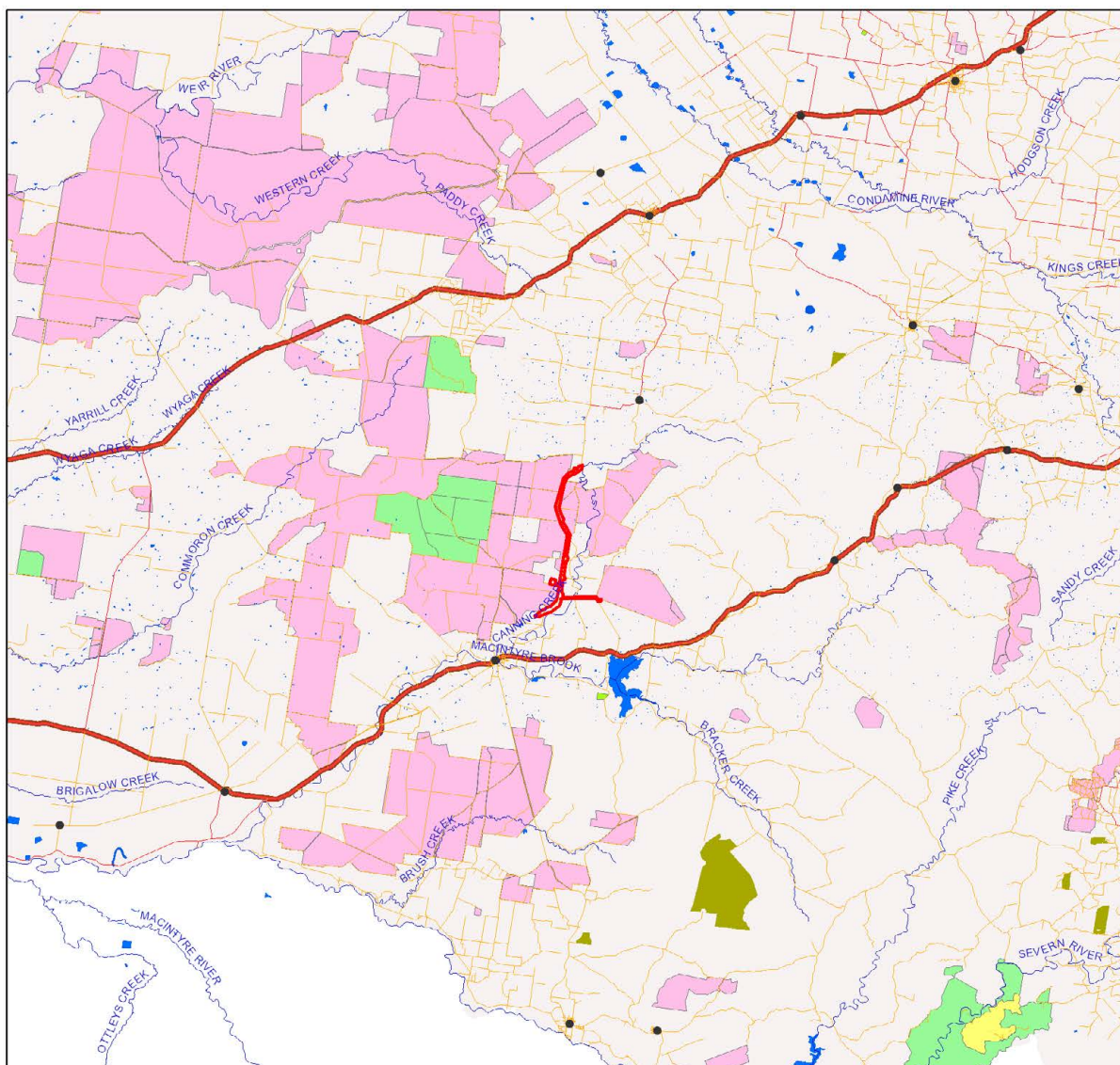
Species	Common name	Identified flora/fauna
<i>Juncus aridicola</i>	tussock rush	FL
<i>Melaleuca bracteata</i>		FL
<i>Melaleuca densispicata</i>		FL
<i>Melaleuca viminalis</i>		FL

Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

Species	Common name	Identified flora/fauna
<i>Cyclorana verrucosa</i>	rough collared frog	FA
<i>Juncus aridicola</i>	tussock rush	FL
<i>Melaleuca bracteata</i>		FL
<i>Melaleuca densispicata</i>		FL

NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

Map 1 - Locality Map



- LOCALITY DIAGRAM
-

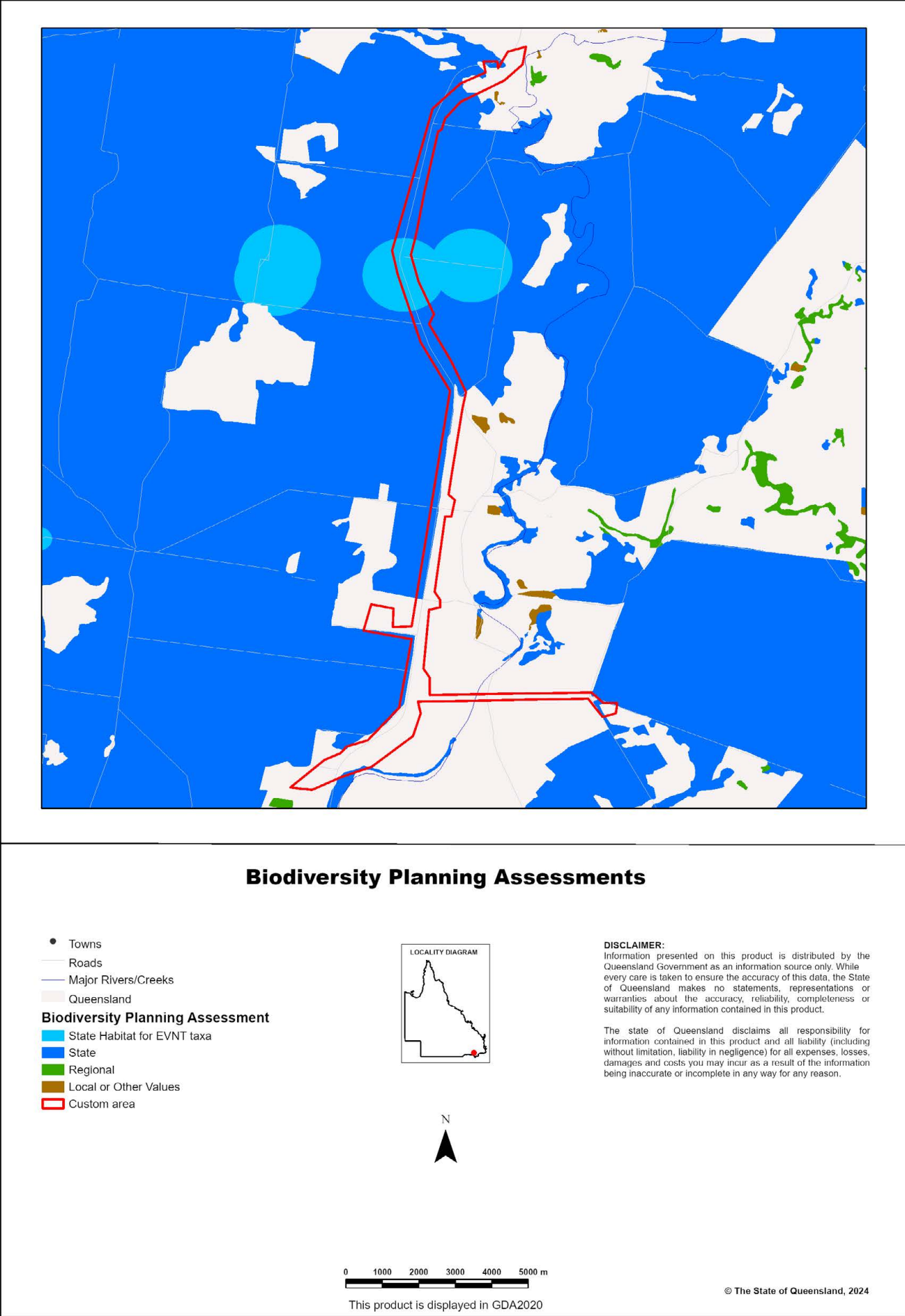


0 8000 16000 24000 32000 40000 m

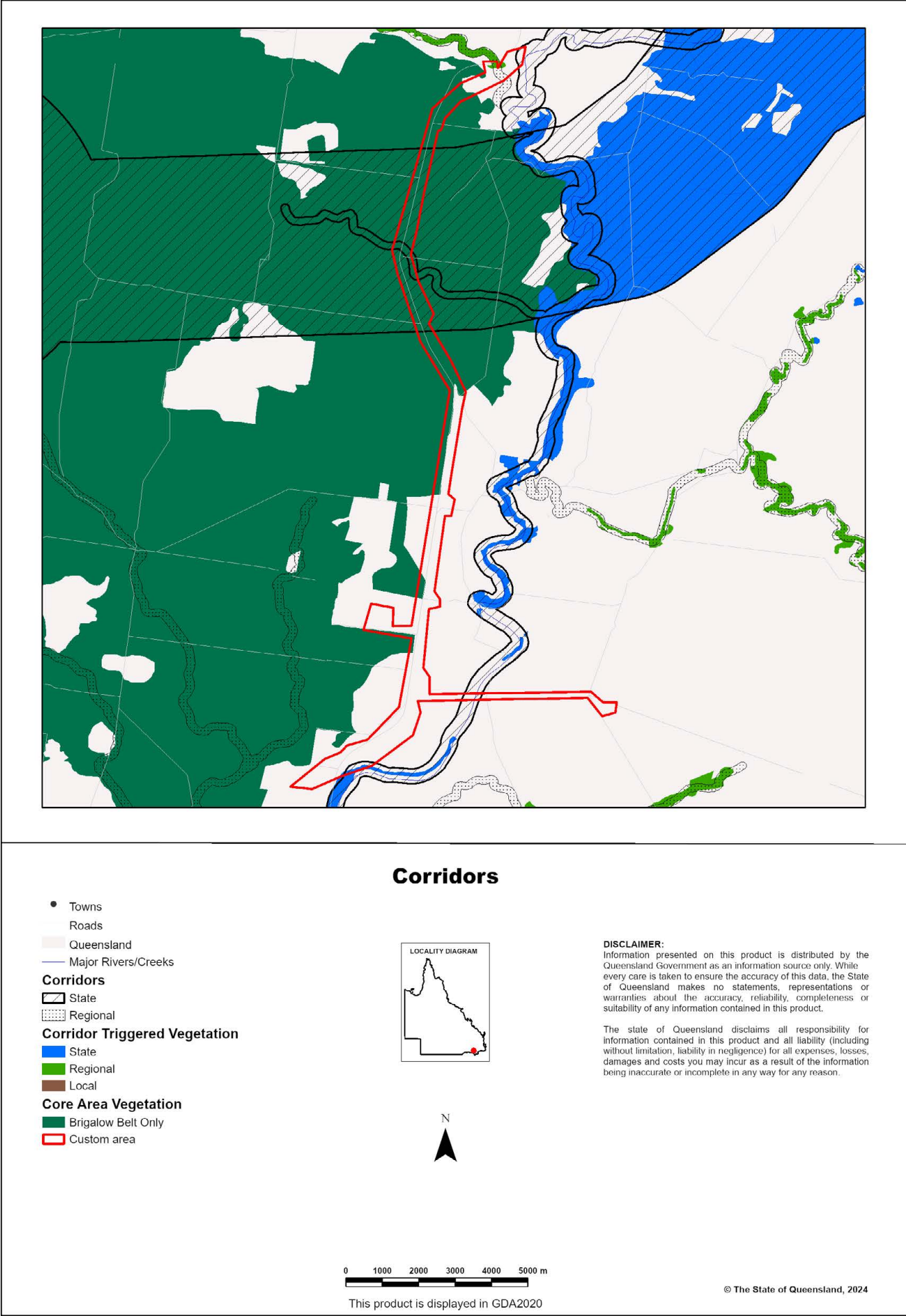
© The State of Queensland, 2024

This product is displayed in GDA2020

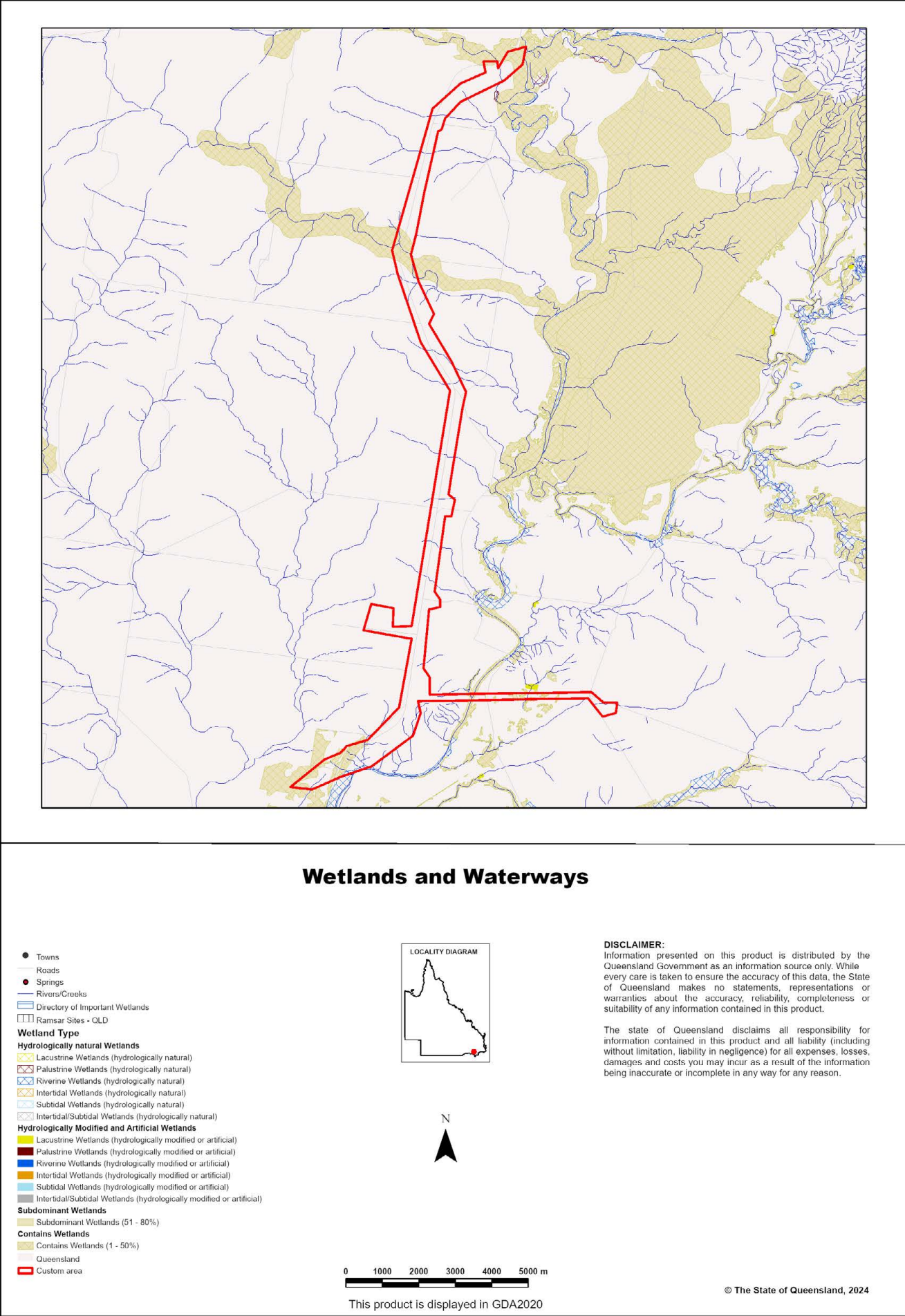
Map 2 - Biodiversity Planning Assessment (BPA)



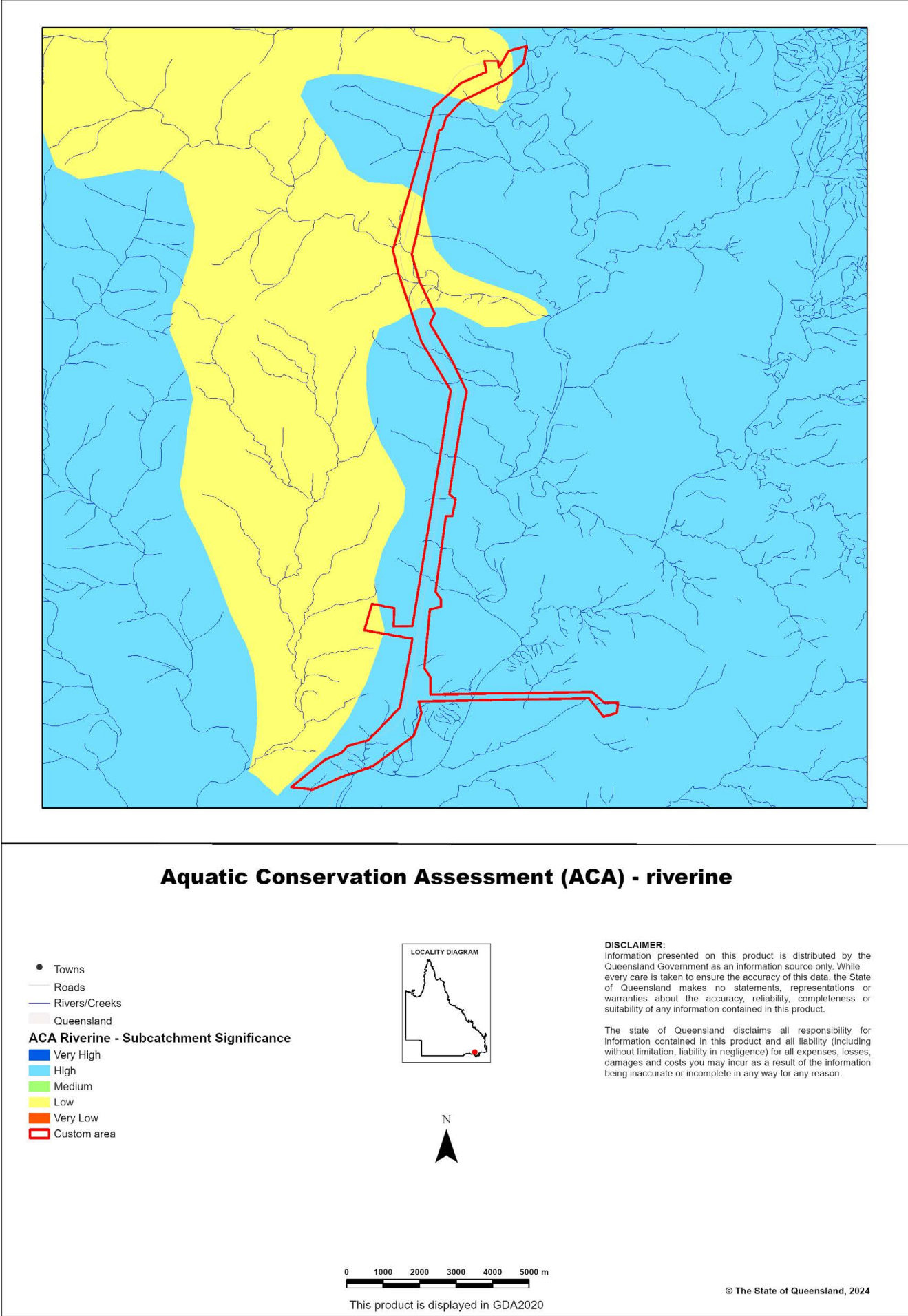
Map 3 - Corridors



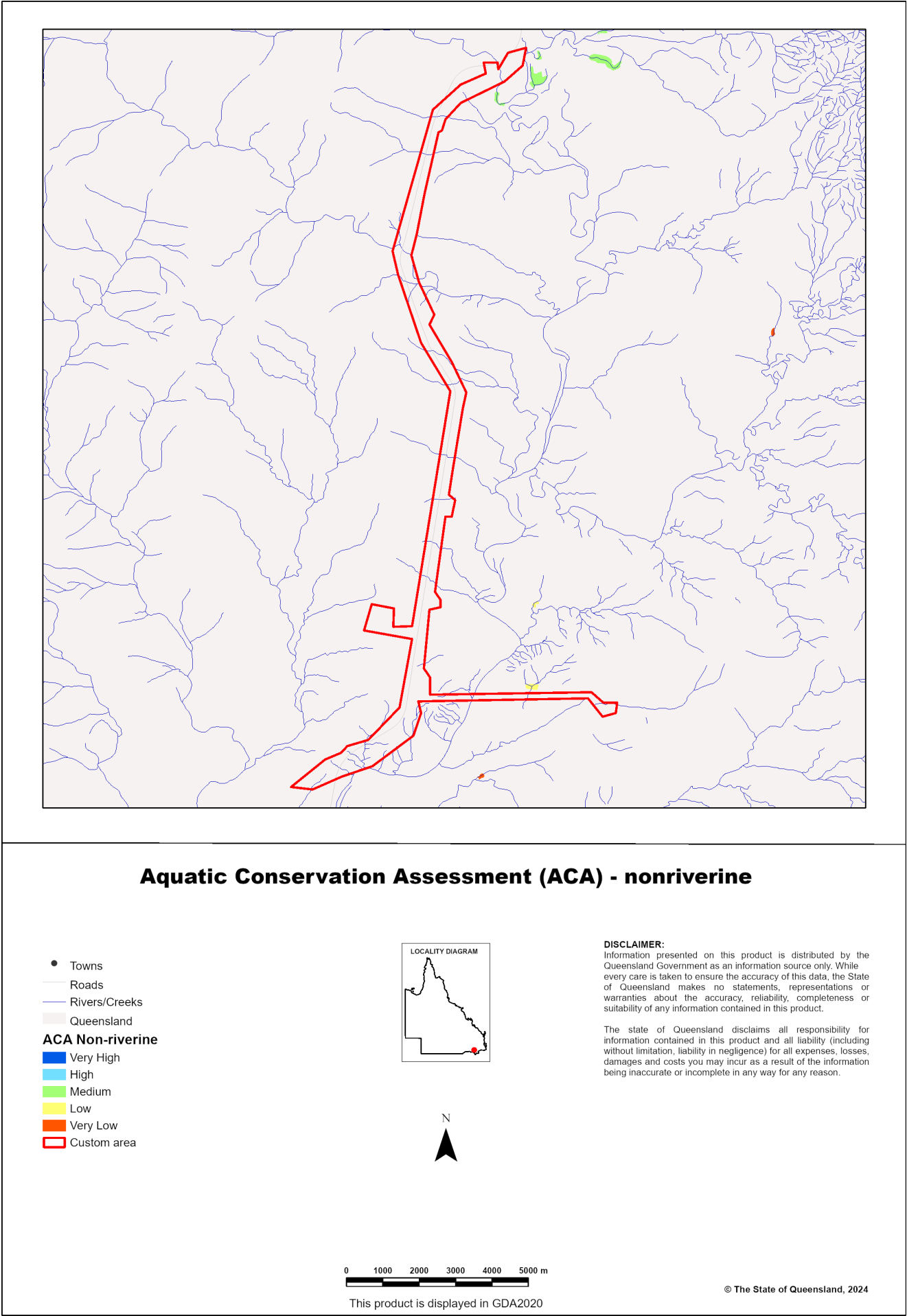
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



References

Clayton, P.D., Fielder, D.F., Howell, S. and Hill, C.J. (2006) *Aquatic biodiversity assessment and mapping method (AquaBAMM): a conservation values assessment tool for wetlands with trial application in the Burnett River catchment*. Published by the Environmental Protection Agency, Brisbane. ISBN 1-90928-07-3. Available at

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca/>

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Morton, S. R., Short, J. and Barker, R. D. with an Appendix by G.F. Griffin and G. Pearce (1995). *Refugia for Biological Diversity in Arid and Semi-arid Australia*. Biodiversity Series, Paper No. 4, Biodiversity Unit, Environment Australia.

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einiasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v2.3 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.6
Threatened Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:

<http://dds.information.qld.gov.au/DDS>

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DESI	- Department of Environment, Science and Innovation
EPBC	- <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and a field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@des.qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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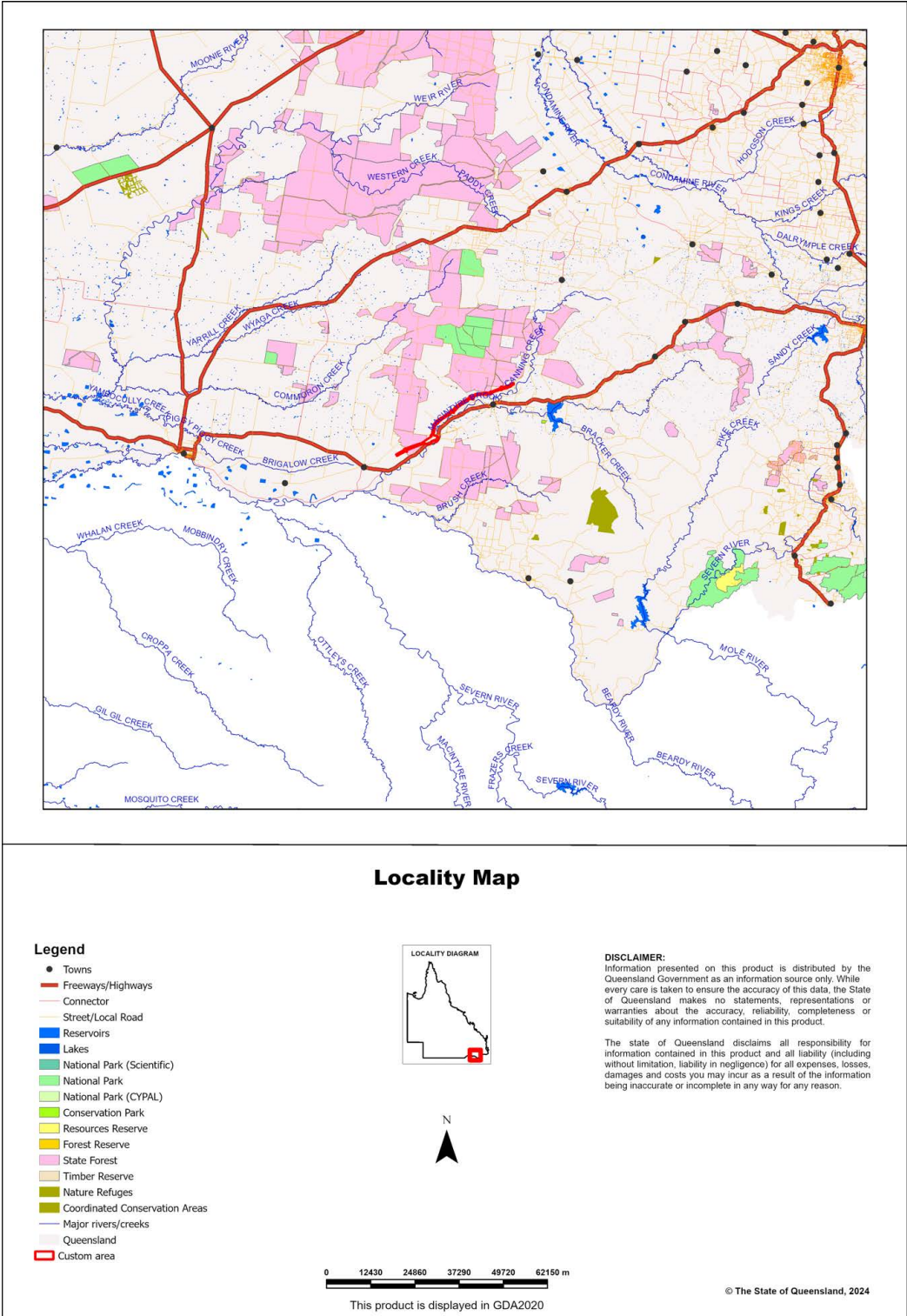
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI: Custom input, with area 2179.51 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Goondiwindi Regional	Border Rivers	Brigalow Belt	Inglewood Sandstones
		Brigalow Belt	Moonie R. - Commonon Creek Floodout



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
- *Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004* ;
- *Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008*;
- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	0 ha	0.0%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	435.2 ha	20.0%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	50.86 ha	2.3%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	0 ha	0.0%
8e Regulated Vegetation - intersecting a watercourse	15.2 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	4.6 ha	0.2%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways**4. Strategic Environmental Areas (SEA)**

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species**7a. Threatened (endangered or vulnerable) wildlife**

Not applicable

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>	Keys boronia	V	None
<i>Calyptorhynchus lathami</i>	Glossy black cockatoo	V	None
<i>Casuarius casuarius johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Euastacus bindal</i>	Mount Elliot crayfish	CR	None
<i>Euastacus binzayedii</i>		CR	None
<i>Euastacus eungella</i>		E	None
<i>Euastacus hystricosus</i>		E	None
<i>Euastacus jagara</i>	Jagara hairy crayfish	CR	None
<i>Euastacus maidae</i>		CR	None
<i>Euastacus monteithorum</i>		E	None
<i>Euastacus robertsi</i>		E	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Melaleuca irbyana</i>	swamp tea-tree	E	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>	bopple nut	V	None
<i>Petrogale penicillata</i>	brush-tailed rock-wallaby	V	None
<i>Petrogale coenensis</i>	Cape York rock-wallaby	V	None
<i>Petrogale purpureicollis</i>	purple-necked rock-wallaby	V	None
<i>Petrogale sharmani</i>	Sharmans rock-wallaby	V	None
<i>Petrogale xanthopus celeris</i>	yellow-footed rock-wallaby (Qld subspecies)	V	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

(No results)

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

**Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL). Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)*

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.14/11.3.2/11.3.25	O-subdom	rem_oc
11.3.14/11.3.4	O-subdom	rem_oc
11.3.2/11.3.4	O-dom	rem_oc
11.3.25/11.3.2	O-subdom	rem_oc
11.3.4	O-dom	rem_oc
11.4.3	E-dom	rem_end
11.5.1/11.3.2/11.5.20	O-subdom	rem_oc
11.9.7/11.3.4	O-dom	rem_oc

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.3.2/11.3.4/11.3.25	O-dom	hvr_oc
11.3.2/11.3.4/11.9.7	O-dom	hvr_oc

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Not applicable

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Regulated vegetation map category	Map number
B	9141

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets**9a. Legally secured offset areas - offset register areas**

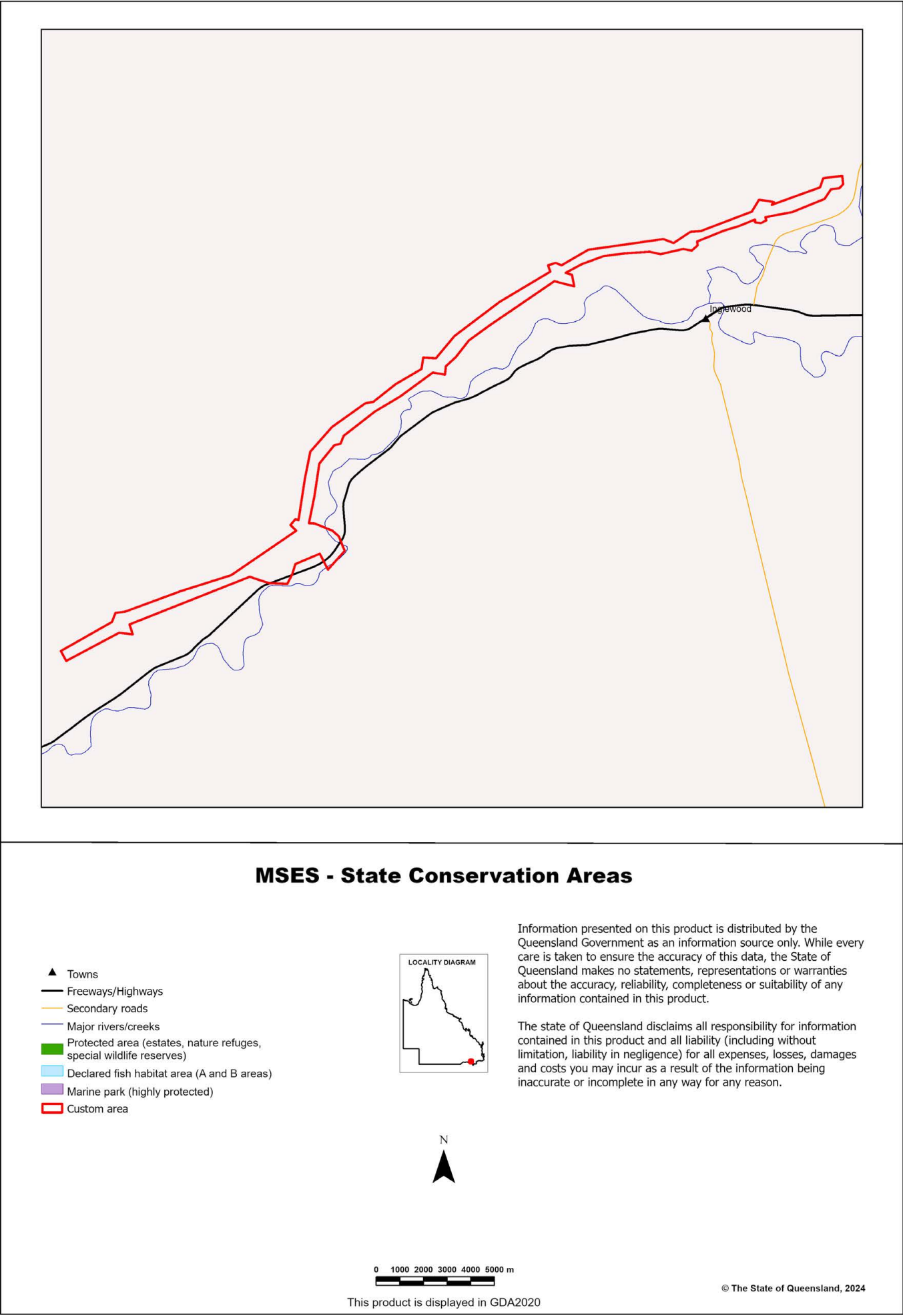
(No results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

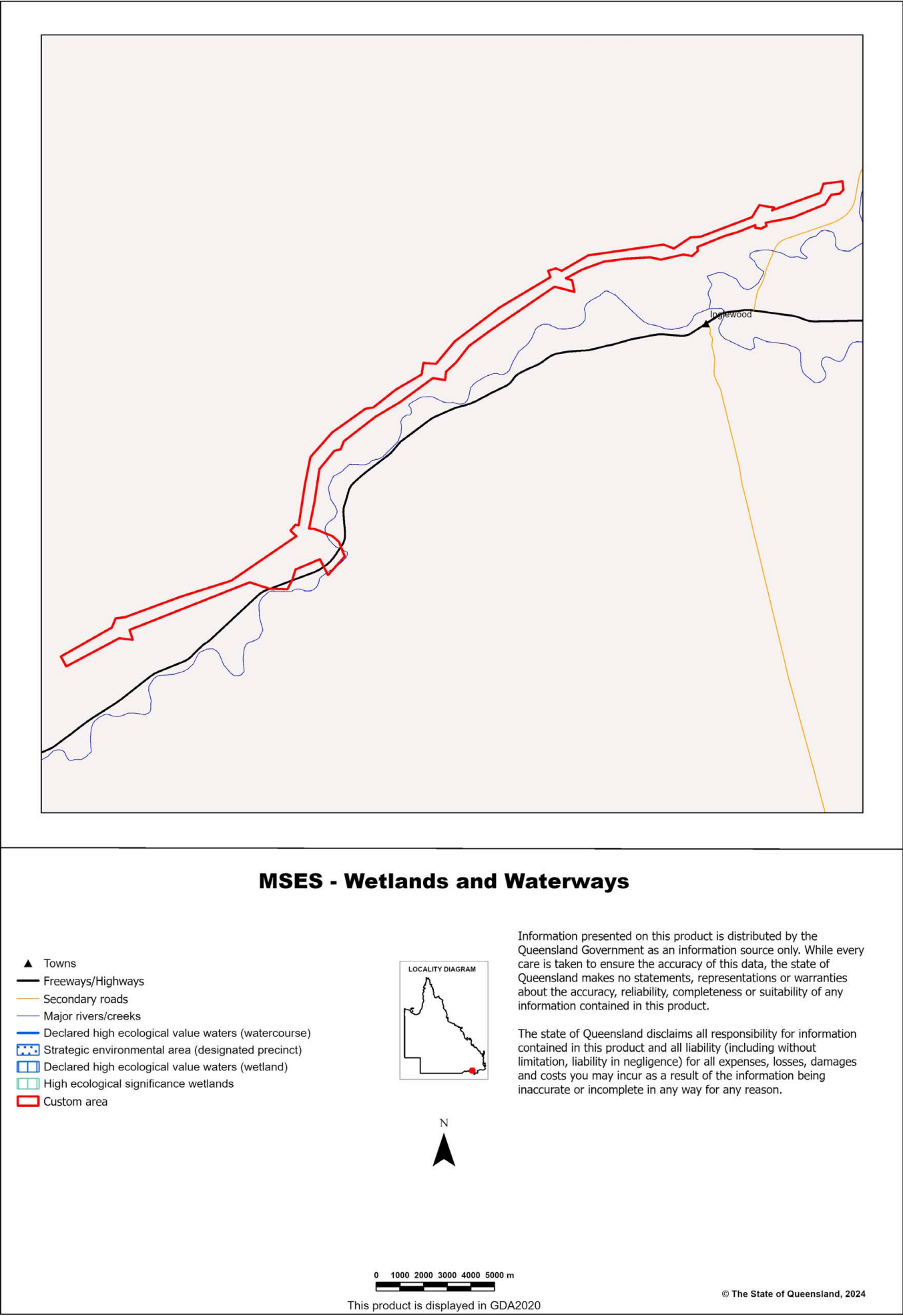
(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

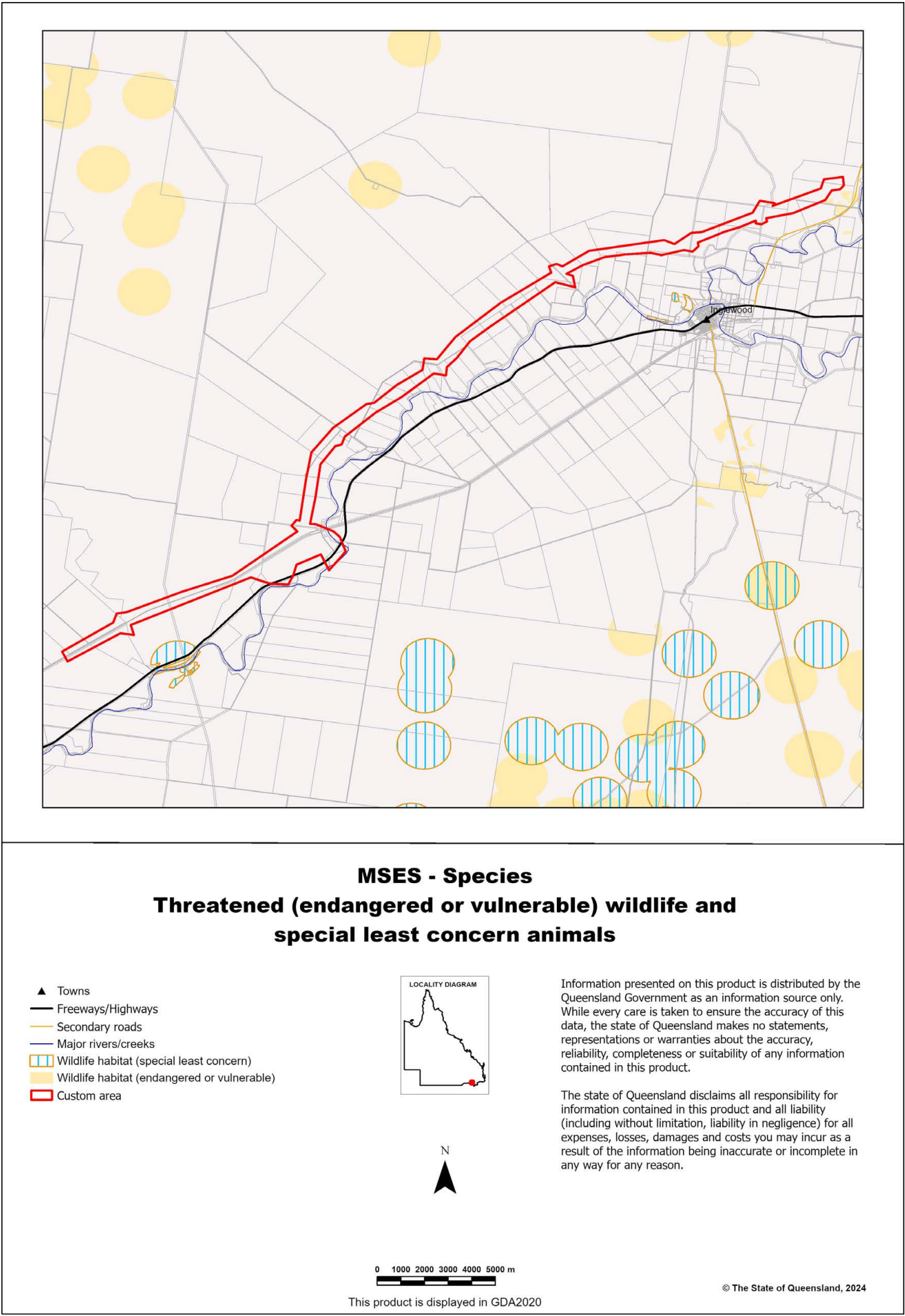
Map 1 - MSES - State Conservation Areas



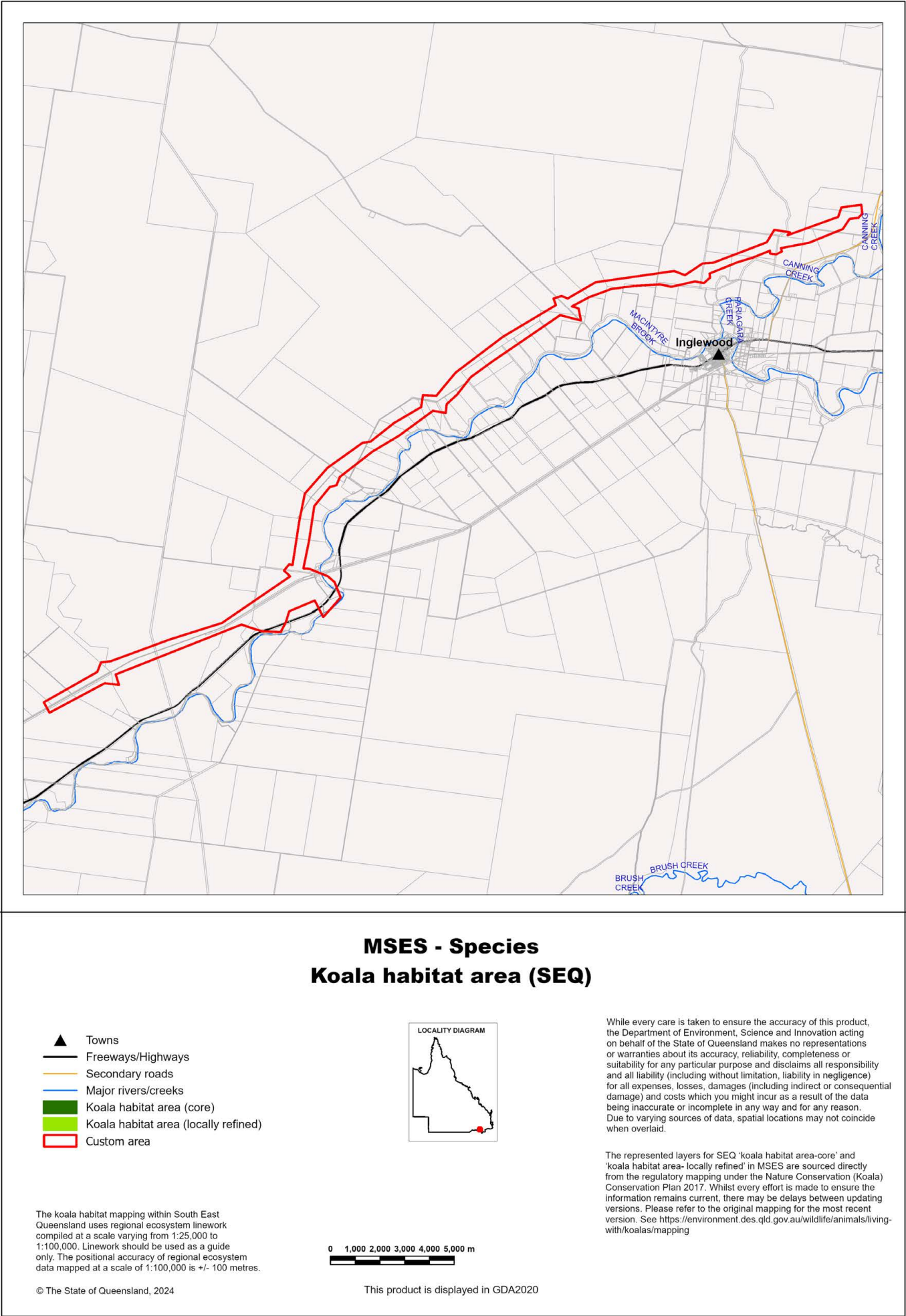
Map 2 - MSES - Wetlands and Waterways



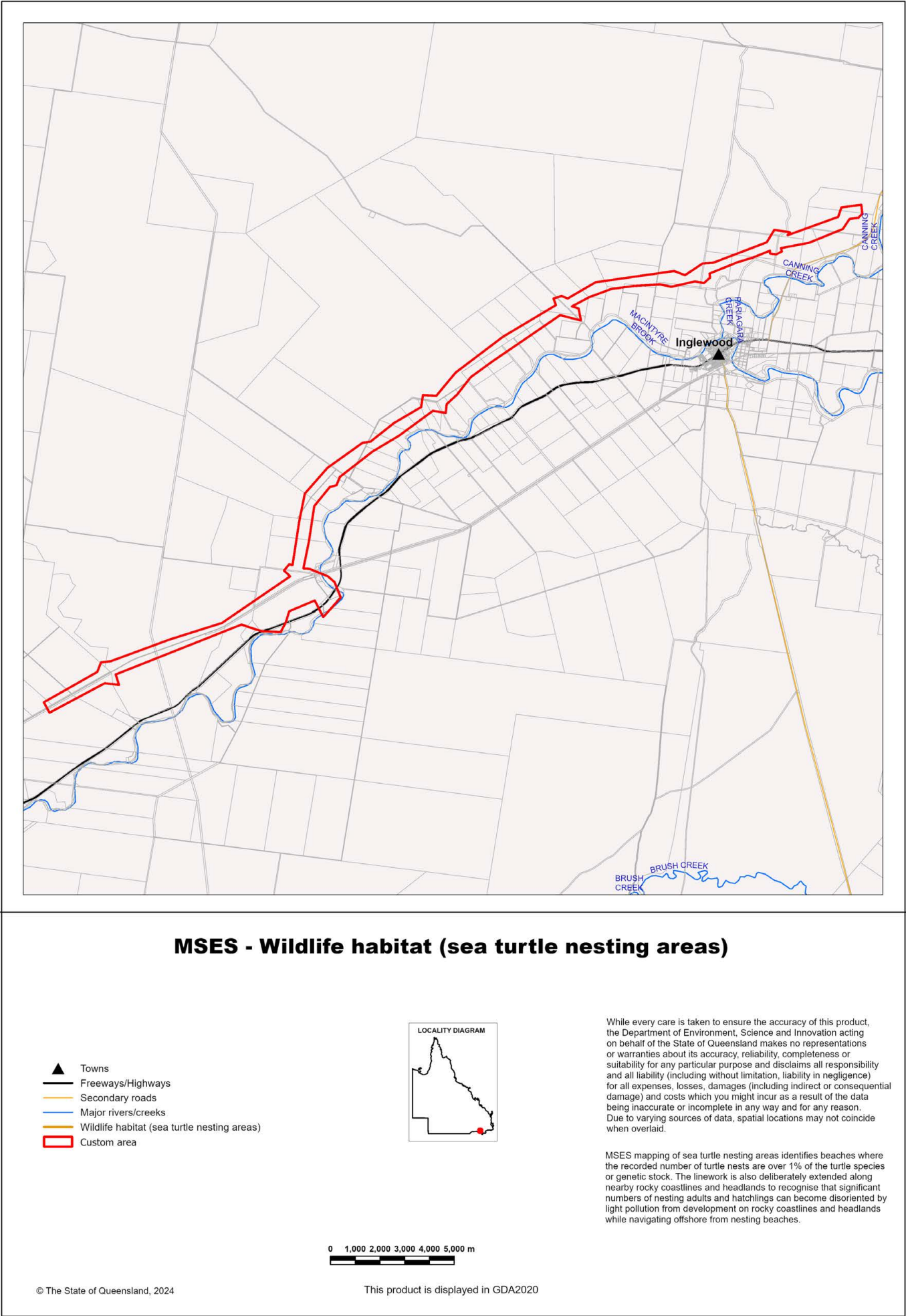
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



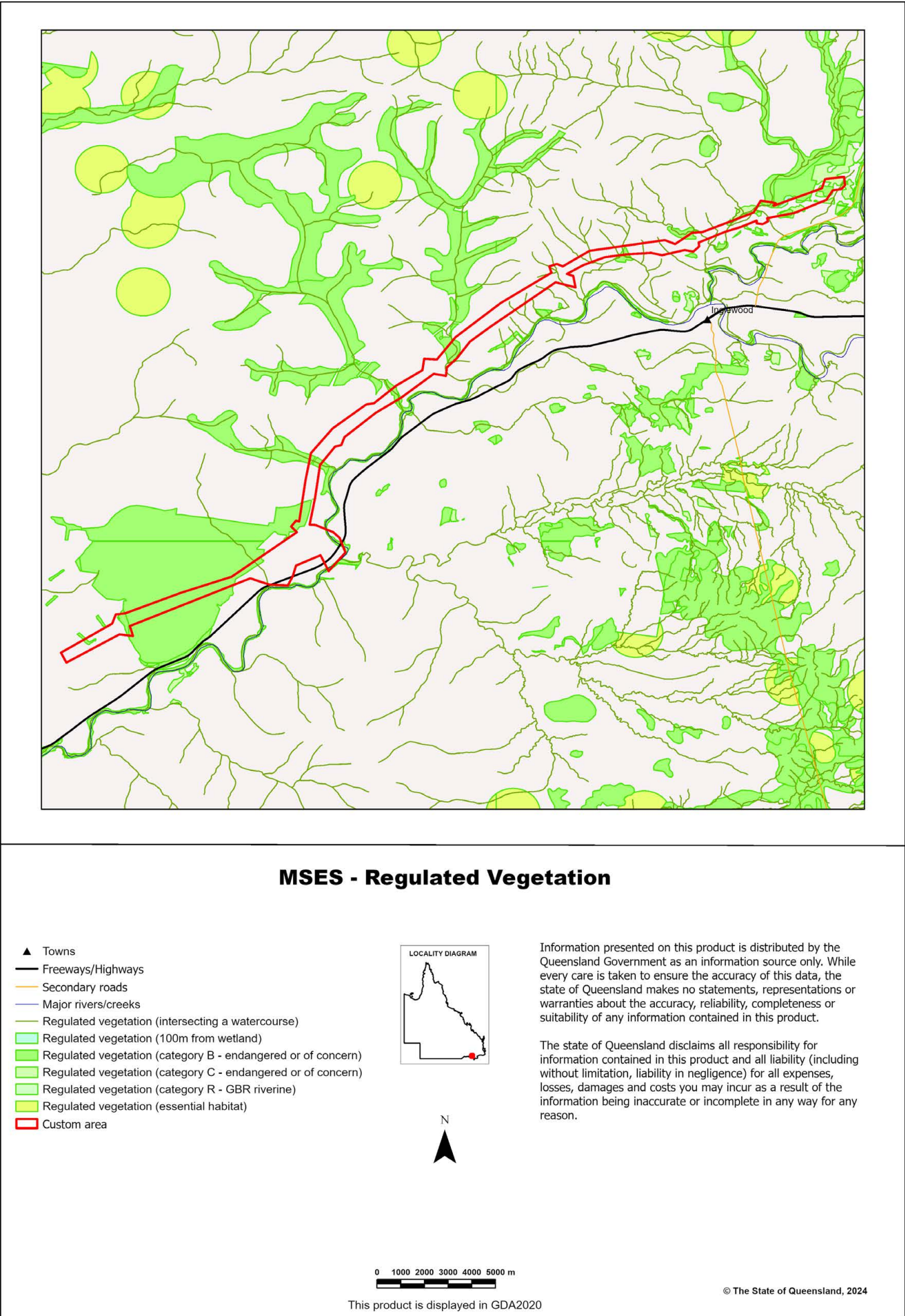
Map 3b - MSES - Species - Koala habitat area (SEQ)



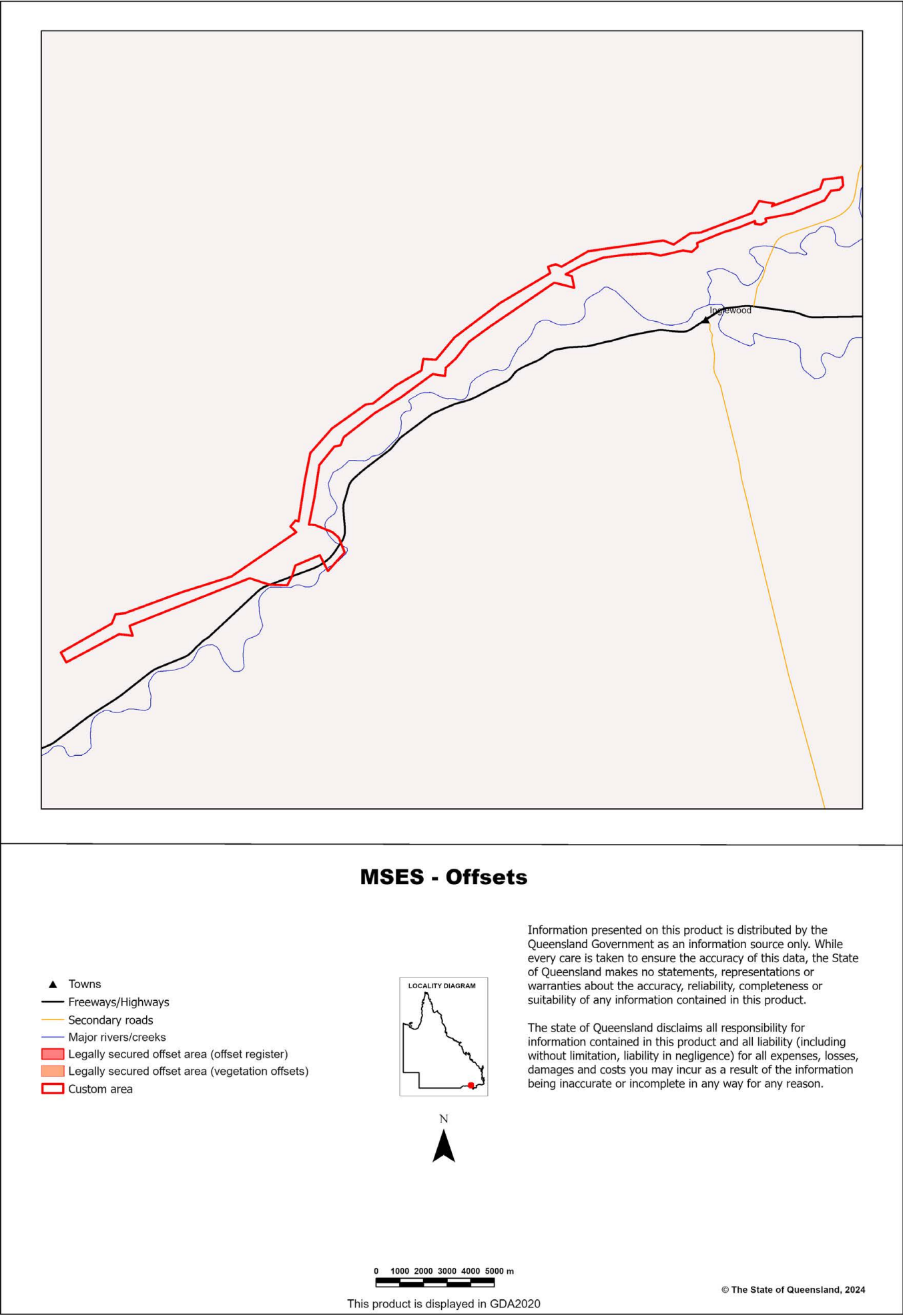
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

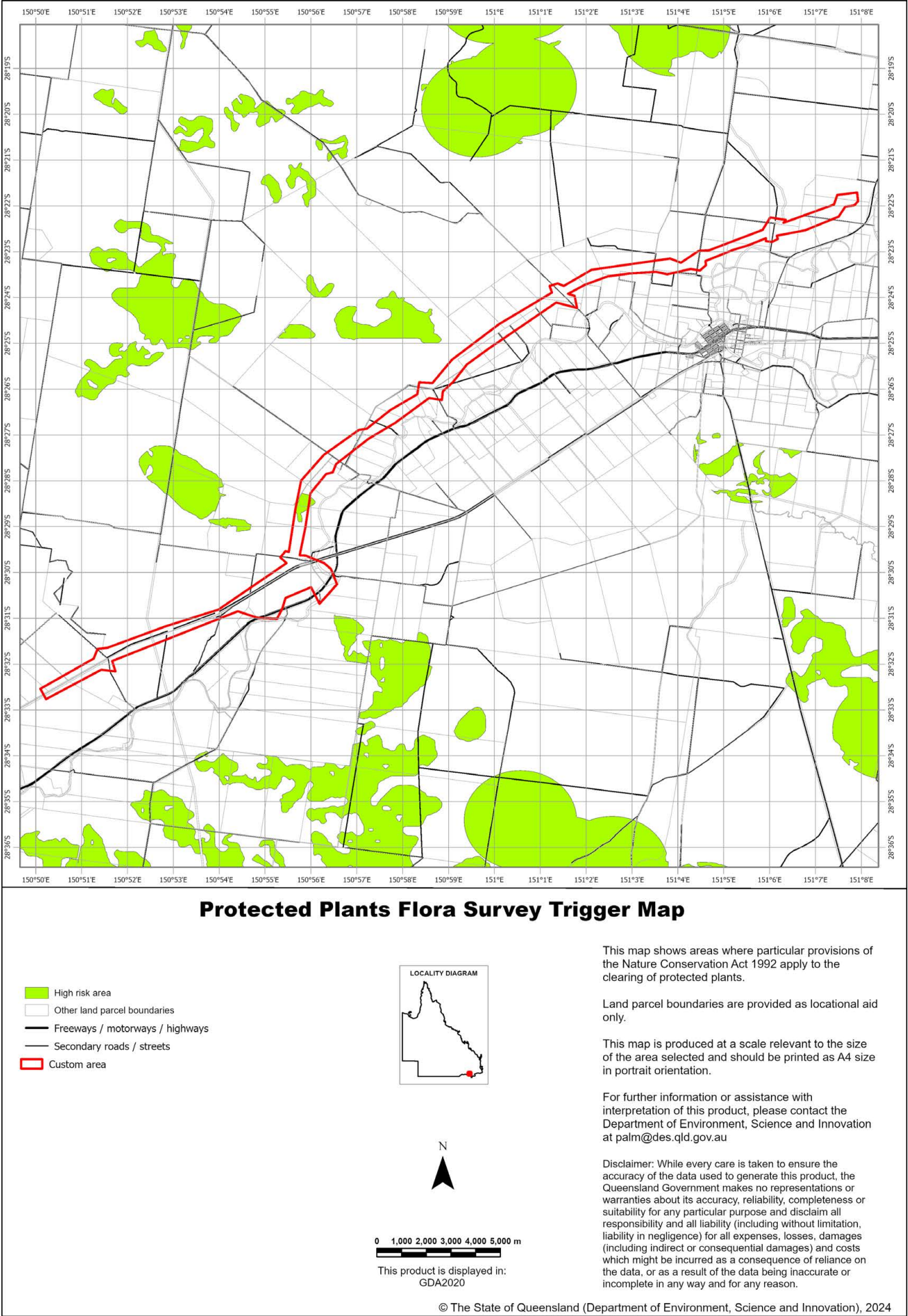
Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DESI	- Department of Environment, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999



Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see [section 89](#) of the Act.

Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.

WetlandMaps Report



For selected area of interest Custom input

Current as at 5/06/2024

Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest(AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

Disclaimer

The State of Queensland, as represented by this department, gives no warranty in relation to the data (including without limitation, accuracy, reliability, completeness or fitness for a particular purpose) hosted on this website.

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Summary Information

Below is an overview of the area of interest.

Custom input
with area of 2179.51 ha

Local Government(s)
Goondiwindi Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Inglewood Sandstones
Brigalow Belt	Moonie R. - Commoron Creek Floodout

Catchment(s)
Macintyre & Weir Rivers
Macintyre Brook

Drainage sub-basin
Border Rivers

NRM Regions

The area of interest is in the following NRM region:

Southern Queensland Landscapes

Water Resource Plan Boundaries

The area of interest is in the following Water Resource Plan:

Border Rivers and Moonie

Great Artesian Basin and Other Regional Aquifers

Learn more about how Wetlands are mapped in Queensland

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include::**

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude::**

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria
- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Links and support

Other sites that deliver wetland related information include:

Wetland *Summary* tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

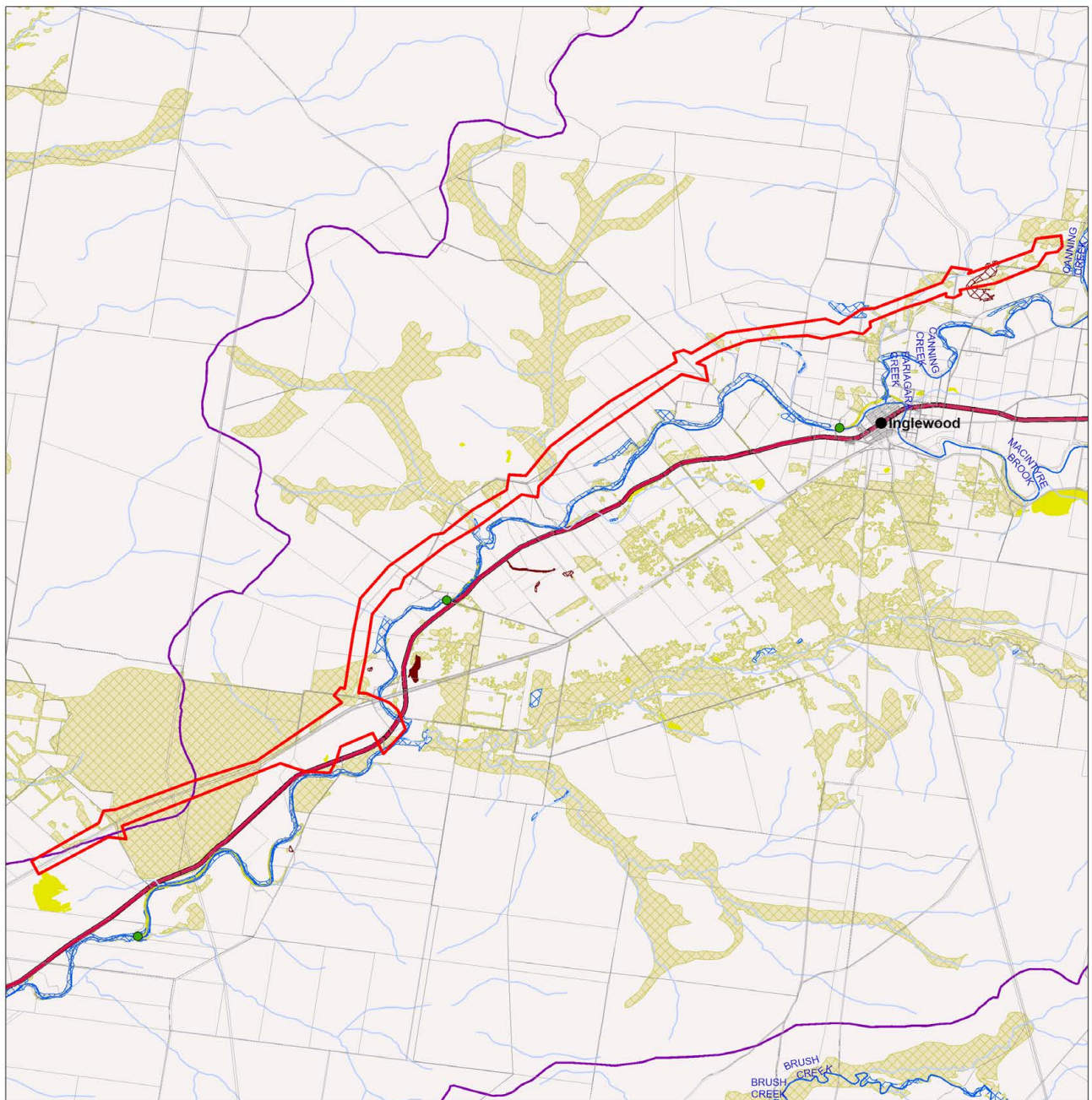
Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

Regional Ecosystem Mapping information: <https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

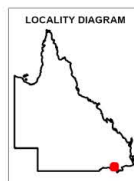
Aquatic Conservation Assessments: [Aquatic Conservation Assessments \(ACA\) and AquaBAMM \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Dependant Ecosystems information: <https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Queensland Wetland Map

- ▲ Springs
- Dams and weirs
- Towns
- Freeways/Highways
- Roads
- Cadastral Boundaries
- Sub-basin
- Riverine System Drainage Lines**
- Major
- Minor
- Wetland Mapping**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
- Palustrine Wetlands (hydrologically natural)
- Riverine Wetlands (hydrologically natural)
- Intertidal Wetlands (hydrologically natural)
- Subtidal Wetlands (hydrologically natural)
- Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
- Palustrine Wetlands (hydrologically modified or artificial)
- Riverine Wetlands (hydrologically modified or artificial)
- Intertidal Wetlands (hydrologically modified or artificial)
- Subtidal Wetlands (hydrologically modified or artificial)
- Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
- Custom area



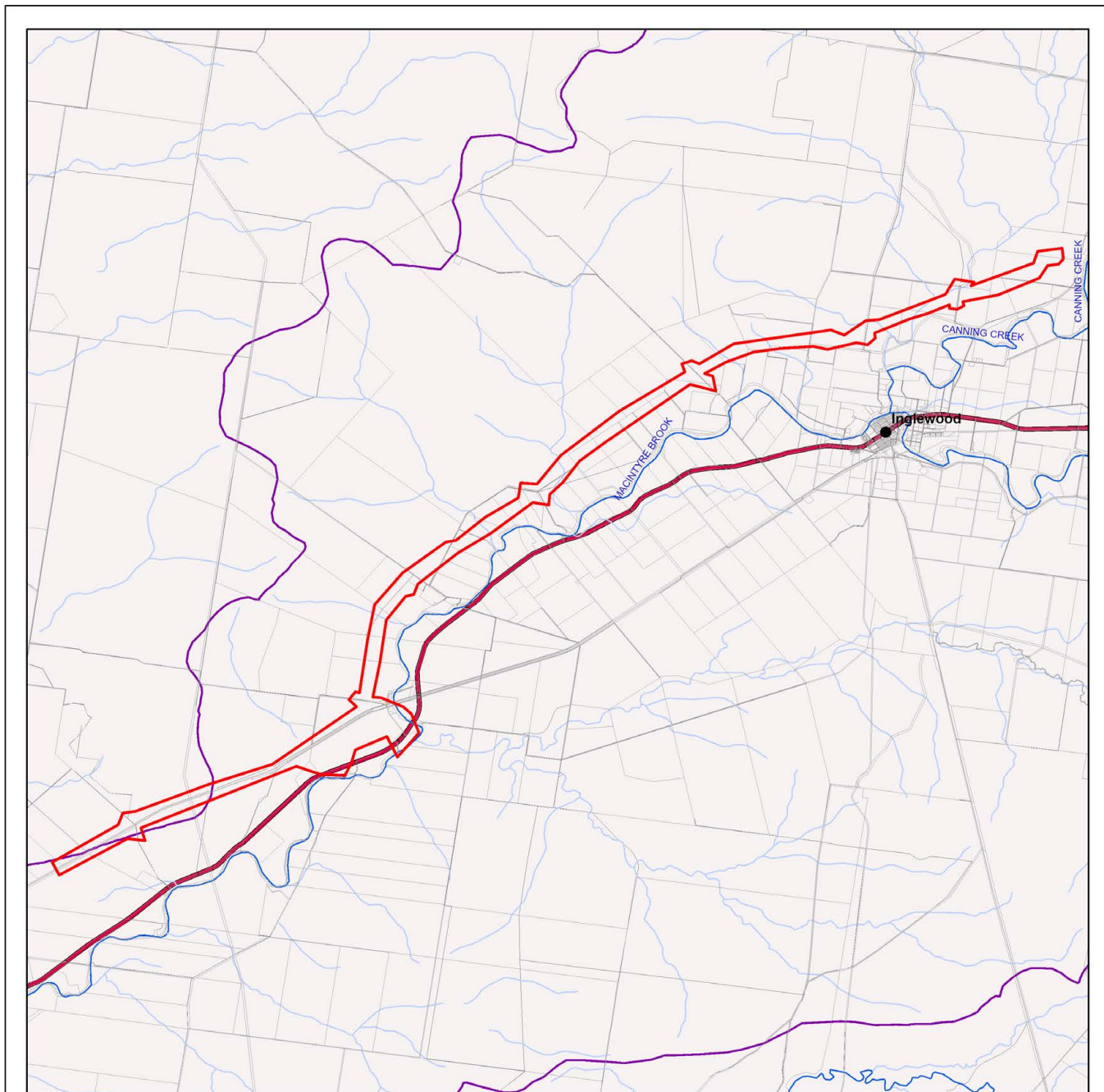
0 1,000 2,000 3,000 4,000 5,000 m

This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

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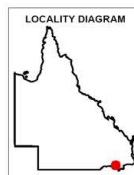


Queensland Wetlands of Importance Map

- Towns
- ▭ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▭ Sub-basin
- ▭ Directory of Important Wetlands
- ▭ Ramsar Wetlands

Riverine System Drainage Lines

- ▬ Major
- ▬ Minor
- ▭ Custom area



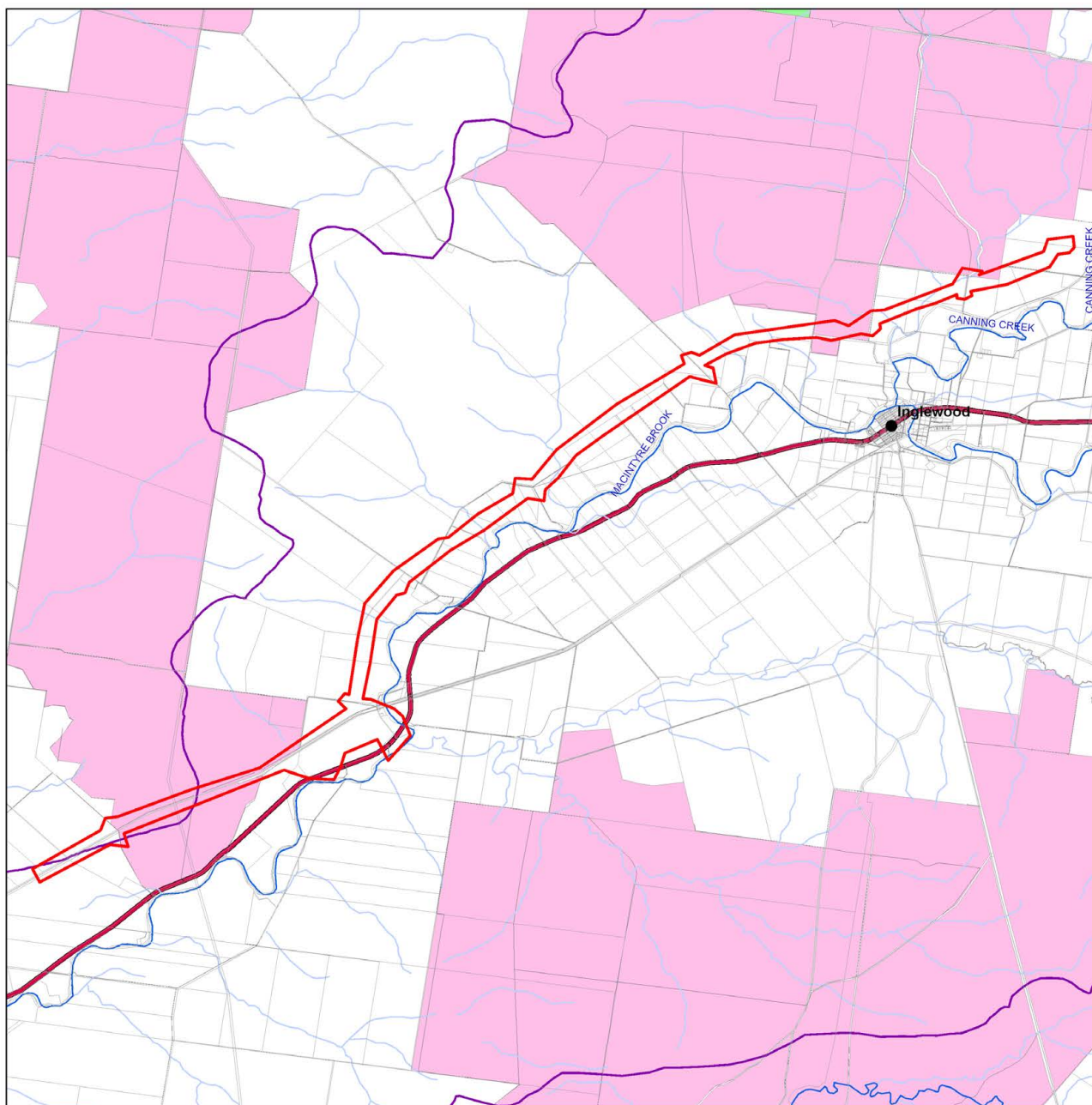
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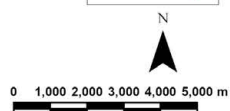
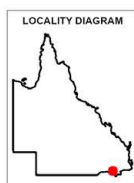
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Queensland Protected Area Map

- Towns
- ▬ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▬ Sub-basin
- Riverine System Drainage Lines**
 - ▬ Major
 - ▬ Minor
- Marine Parks**
 - ▬ General Use Zone
 - ▬ Habitat Protection Zone
 - ▬ Estuarine Conservation Zone
 - ▬ Conservation Park Zone
 - ▬ Buffer Zone
 - ▬ Scientific Research Zone
 - ▬ Marine National Park Zone
 - ▬ Preservation Zone
- Protected Areas**
 - ▬ National Park
 - ▬ National Park (Scientific)
 - ▬ National Park (CYPAL)
 - ▬ Conservation Park
 - ▬ Resources Reserve
 - ▬ Forest Reserve
 - ▬ State Forest
 - ▬ Timber Reserve
 - ▬ Custom area



This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

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Wetland habitat types in the AOI. Total area: 537.73 ha

Wetland Class	Habitat type	Area (ha)
CPA	NOA	383.66
CPA	NOA/NOA	108.33
PAL	PC04a	21.99
RIV	NOA/NOA	21.74
LAC	NOA	1.69
RIV	NOA	0.33

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps

Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps
Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps

Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the input coordinates.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website <https://www.resources.qld.gov.au/>

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Custom input, with area 2179.51 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Goondiwindi Regional	Border Rivers	Brigalow Belt	Inglewood Sandstones
		Brigalow Belt	Moonie R. - Commoron Creek Floodout

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	23.61	1.08
Of concern	145.97	6.70
No concern at present	669.53	30.72
Total remnant vegetation	839.11	38.50

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated into a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website <https://www.resources.qld.gov.au/>.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.3.14	Eucalyptus spp., Angophora spp., Callitris spp. woodland on alluvial plains	No concern at present	47.90	2.20
11.3.2	Eucalyptus populnea woodland on alluvial plains	Of concern	69.63	3.19
11.3.25	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Of concern	28.20	1.29
11.3.4	Eucalyptus tereticornis and/or Eucalyptus spp. woodland on alluvial plains	Of concern	26.80	1.23
11.4.3	Acacia harpophylla and/or Casuarina cristata shrubby open forest on Cainozoic clay plains	Endangered	23.61	1.08
11.5.1	Eucalyptus crebra and/or E. populnea, Callitris glaucophylla, Angophora leiocarpa, Allocasuarina luehmannii woodland on Cainozoic sand plains and/or remnant surfaces	No concern at present	310.55	14.25
11.5.20	Eucalyptus moluccana and/or E. microcarpa and/or E. woollsiana +/- E. crebra woodland on Cainozoic sand plains	No concern at present	54.92	2.52
11.5.4	Eucalyptus chloroclada, Callitris glaucophylla, C. endlicheri, Angophora leiocarpa woodland on Cainozoic sand plains and/or remnant surfaces	No concern at present	135.42	6.21
11.7.4	Eucalyptus decorticans and/or Eucalyptus spp., Corymbia spp., Acacia spp., Lysicarpus angustifolius woodland on Cainozoic lateritic duricrust	No concern at present	26.63	1.22
11.7.5	Shrubland on natural scalds on deeply weathered coarse-grained sedimentary rocks	No concern at present	10.65	0.49
11.7.7	Eucalyptus fibrosa subsp. nubilis +/- Corymbia spp. +/- Eucalyptus spp. woodland on Cainozoic lateritic duricrust	No concern at present	83.48	3.83
11.9.7	Eucalyptus populnea, Eremophila mitchellii shrubby woodland on fine-grained sedimentary rocks	Of concern	21.34	0.98
non-remnant	None	None	1,340.40	61.50

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.3.14	Pre-clearing 106000 ha; Remnant 2021 81000 ha	18a	Not a Wetland	Low
11.3.2	Pre-clearing 1905000 ha; Remnant 2021 499000 ha	17a	Contains Palustrine	Low
11.3.25	Pre-clearing 813000 ha; Remnant 2021 531000 ha	16a	Riverine	Low
11.3.4	Pre-clearing 684000 ha; Remnant 2021 178000 ha	16c	Not a Wetland	Low
11.4.3	Pre-clearing 1647000 ha; Remnant 2021 83000 ha	25a	Contains Palustrine	Low
11.5.1	Pre-clearing 775000 ha; Remnant 2021 477000 ha	18b	Not a Wetland	Low
11.5.20	Pre-clearing 232000 ha; Remnant 2021 152000 ha	13d	Not a Wetland	Low
11.5.4	Pre-clearing 142000 ha; Remnant 2021 108000 ha	18b	Not a Wetland	Low
11.7.4	Pre-clearing 352000 ha; Remnant 2021 228000 ha	12a	Not a Wetland	Low
11.7.5	Pre-clearing 74000 ha; Remnant 2021 63000 ha	29b	Not a Wetland	Medium
11.7.7	Pre-clearing 200000 ha; Remnant 2021 171000 ha	12a	Not a Wetland	Low
11.9.7	Pre-clearing 506000 ha; Remnant 2021 103000 ha	17a	Not a Wetland	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.3.14	11.3.14: Potential habitat for NCA listed species: <i>Acacia handonis</i> , <i>Fimbristylis vagans</i> .
11.3.2	11.3.2: Habitat for threatened flora species <i>Homopholis belsonii</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.3.25	11.3.25: Shown to be associated with a high fauna species richness in the Taroom area (Venz et al. 2002). Within parts of the Fitzroy catchment, this RE is known habitat for the threatened freshwater turtle <i>Rheodytes leukops</i> . Known to be important habitat for other riparian freshwater turtle species. This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.3.4	11.3.4: Potential habitat for NCA listed species: <i>Acacia pedleyi</i> , <i>Callicarpa thozetii</i> , <i>Cycas megacarpa</i> , <i>Cycas ophiolitica</i> , <i>Digitaria porrecta</i> , <i>Eriocaulon carsonii</i> subsp. <i>orientale</i> , <i>Livistona nitida</i> , <i>Rhaponticum australe</i> , <i>Samadera bidwillii</i> , <i>Sannantha brachypoda</i> . This ecosystem is also known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
11.4.3	11.4.3: Specific habitat for threatened flora species including <i>Xerothamnella herbacea</i> (Endangered) and <i>Eucalyptus argophloia</i> (Vulnerable) and <i>Jalmenus eubulus</i> , pale imperial hairstreak butterfly (Eastwood et al. 2008). Larger gilgai may provide ephemeral wetland habitat. 11.4.3a: Provides important wetland habitat. 11.4.3b: Larger gilgai may provide ephemeral wetland habitat.
11.5.1	11.5.1: Habitat for threatened plant species including <i>Acacia handonis</i> and <i>Acacia argyrotricha</i> .
11.5.20	11.5.20: Potential habitat for NCA listed species: <i>Acacia handonis</i> , <i>Macrozamia machinii</i> , <i>Macrozamia platyrhachis</i> .
11.5.4	11.5.4: Potential habitat for NCA listed species: <i>Macrozamia machinii</i> .
11.7.4	11.7.4: Potential habitat for NCA listed species: <i>Acacia calantha</i> , <i>Acacia handonis</i> , <i>Acacia islana</i> , <i>Acacia rubricola</i> , <i>Acacia wardellii</i> , <i>Bertya pedicellata</i> , <i>Calytrix gurlumundensis</i> , <i>Denhamia parvifolia</i> , <i>Eucalyptus beaniana</i> , <i>Eucalyptus curtisii</i> , <i>Eucalyptus pachycalyx</i> subsp. <i>waajensis</i> , <i>Grevillea hockingsii</i> , <i>Macrozamia crassifolia</i> , <i>Macrozamia machinii</i> , <i>Melaleuca formosa</i> , <i>Micromyrtus carinata</i> , <i>Ochrosperma obovatum</i> , <i>Phebalium distans</i> , <i>Philotheca sporadica</i> , <i>Pomaderris coomingalensis</i> , <i>Solanum elaeagnifolium</i> , <i>Solanum lythrocarpum</i> , <i>Zieria inexpectata</i> .
11.7.5	11.7.5: Habitat of threatened plant species including <i>Eucalyptus broviniensis</i> , <i>Micromyrtus carinata</i> , <i>Micromyrtus patula</i> , <i>Acacia curranii</i> , <i>Calytrix gurlumundensis</i> and <i>Homoranthus decumbens</i> .
11.7.7	11.7.7: Potential habitat for NCA listed species: <i>Acacia handonis</i> , <i>Acacia lauta</i> , <i>Acacia wardellii</i> , <i>Boronia grimshawii</i> , <i>Commersonia ingewoodensis</i> , <i>Eucalyptus curtisii</i> , <i>Eucalyptus virens</i> , <i>Leucopogon</i> sp. (Coolmunda D.Halford Q1635), <i>Macrozamia conferta</i> , <i>Macrozamia machinii</i> , <i>Micromyrtus carinata</i> , <i>Ochrosperma obovatum</i> , <i>Philotheca sporadica</i> , <i>Pomaderris coomingalensis</i> , <i>Rutidosia glandulosa</i> , <i>Zieria inexpectata</i> .
11.9.7	None

Regional Ecosystem	Special Values
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: <https://publications.qld.gov.au/dataset/redd/resource/>

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	1,340.40	61.50
12a	Dry woodlands to open woodlands dominated by ironbarks such as <i>Eucalyptus decorticans</i> (gum-topped ironbark), <i>E. fibrosa</i> subsp. <i>nubila</i> (blue-leaved ironbark), or <i>E. crebra</i> (narrow-leaved red ironbark) and/or bloodwoods such as <i>Corymbia trachyphloia</i> (yellow bloodwood), <i>C. leichhardtii</i> (rustyjacket), <i>C. watsoniana</i> (Watson's yellow bloodwood), <i>C. lamprophylla</i> , <i>C. peltata</i> (yellowjacket). Occasionally <i>E. thozetiana</i> (mountain yapunyah), <i>E. cloeziana</i> (Gympie messmate) or <i>E. mediocris</i> are dominant. Mostly on sub-coastal/inland hills with shallow soils.	110.11	5.05
13d	Woodlands dominated by <i>Eucalyptus moluccana</i> (gum-topped box) (or <i>E. microcarpa</i> (inland grey box)) on a range of substrates.	54.92	2.52
16a	Open forest and woodlands dominated by <i>Eucalyptus camaldulensis</i> (river red gum) (or <i>E. tereticornis</i> (blue gum)) and/or <i>E. coolabah</i> (coolabah) (or <i>E. microtheca</i> (coolabah)) fringing drainage lines. Associated species may include <i>Melaleuca</i> spp., <i>Corymbia tessellaris</i> (carbeen), <i>Angophora</i> spp., <i>Casuarina cunninghamiana</i> (riveroak). Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	28.20	1.29
16c	Woodlands and open woodlands dominated by <i>Eucalyptus coolabah</i> (coolabah) or <i>E. microtheca</i> (coolabah) or <i>E. largiflorens</i> (black box) or <i>E. tereticornis</i> (blue gum) or <i>E. chlorophylla</i> on floodplains. Does not include alluvial areas dominated by herb and grasslands or alluvial plains that are not flooded.	26.80	1.23
17a	Woodlands dominated by <i>Eucalyptus populnea</i> (poplar box) (or <i>E. brownii</i> (Reid River box)) on alluvium, sand plains and footslopes of hills and ranges.	90.97	4.17

BVG (1 Million)	Description	Area (Ha)	% of AOI
18a	Dry woodlands to open woodlands, dominated by bloodwoods (<i>Corymbia dallachiana</i> , <i>C. terminalis</i> (long-fruited bloodwood), <i>C. plena</i> , or <i>C. leichhardtii</i> (rustyjacket)) or ironbarks (<i>Eucalyptus quadricostata</i> (Pentland ironbark), <i>E. crebra</i> (narrow-leaved red ironbark) or <i>E. exilipes</i> (fine-leaved ironbark)), often with <i>E. acmenoides</i> (narrow-leaved white stringybark), <i>Angophora leiocarpa</i> (rusty gum) and <i>Callitris glaucophylla</i> (white cypress pine) in the Brigalow Belt, on sandy plateaus and plains.	47.90	2.20
18b	Woodlands dominated <i>Eucalyptus crebra</i> (sens. lat.) (narrow-leaved red ironbark) frequently with <i>Corymbia</i> spp. or <i>Callitris</i> spp. on flat to undulating plains.	445.96	20.46
25a	Open forests to woodlands dominated by <i>Acacia harpophylla</i> (brigalow) sometimes with <i>Casuarina cristata</i> (belah) on heavy clay soils. Includes areas co-dominated with <i>A. cambagei</i> (gidgee) and/or emergent eucalypts.	23.61	1.08
29b	Open shrublands to open heaths on elevated rocky locations.	10.65	0.49

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: <http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

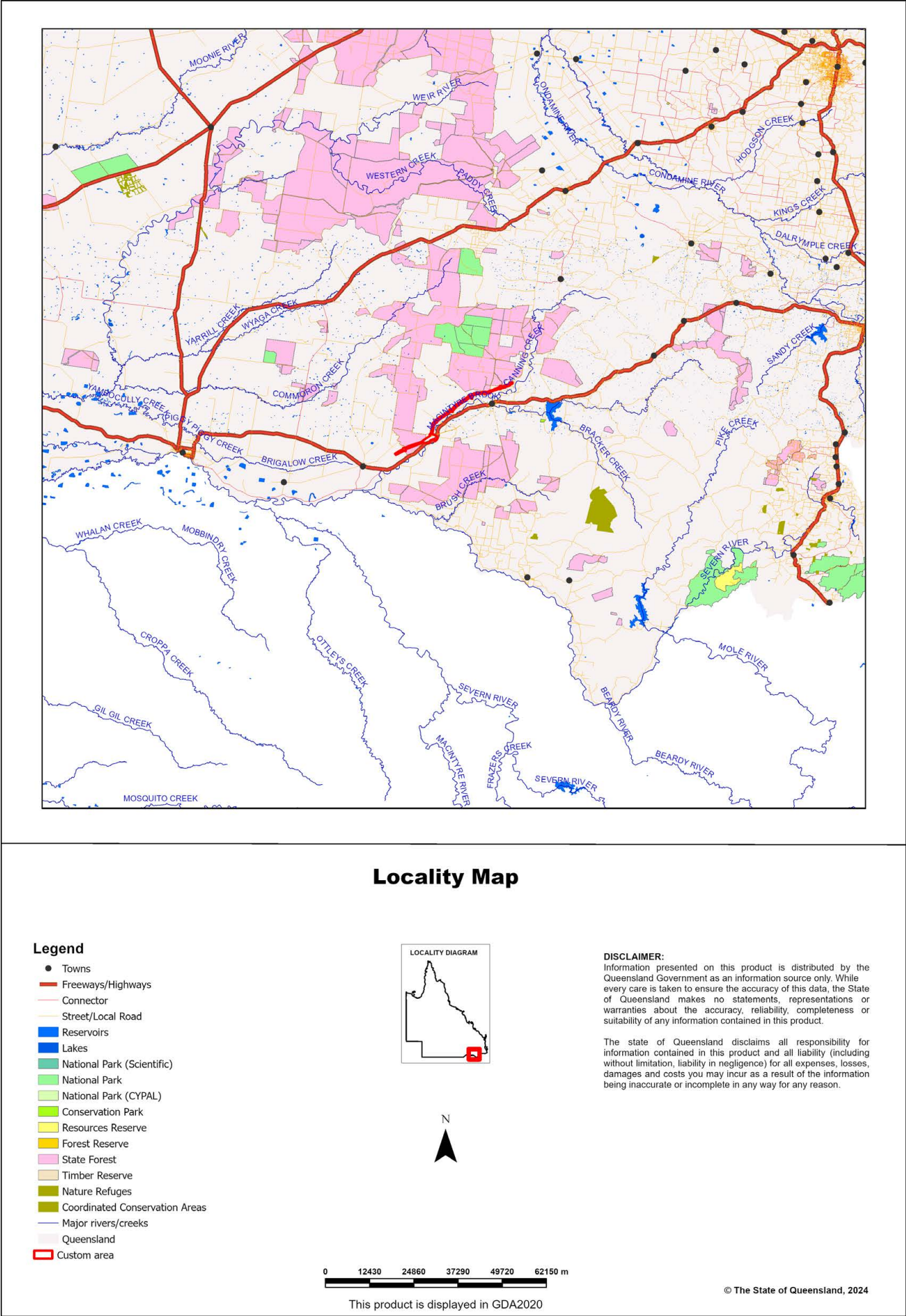
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

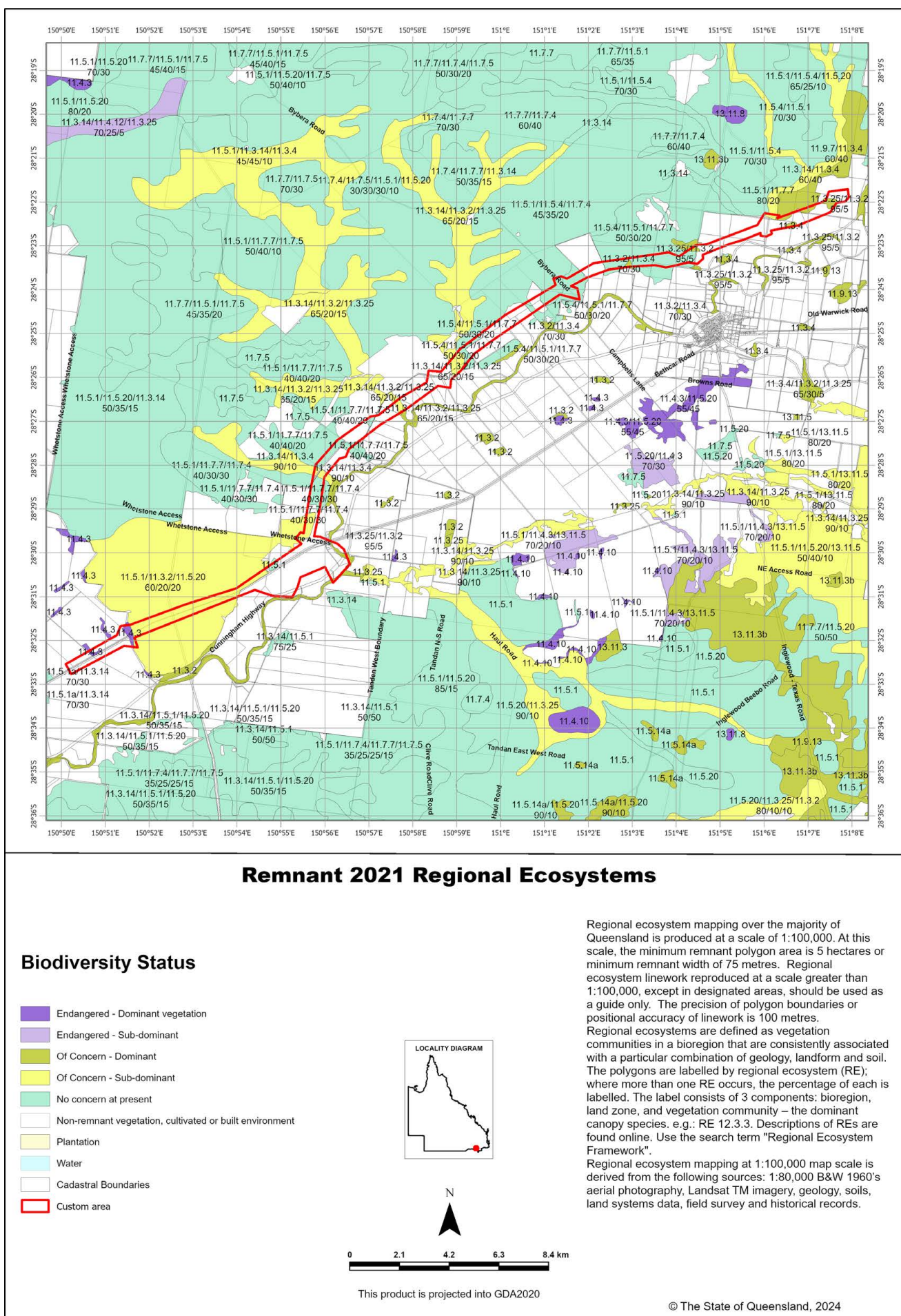
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.3.14	Available	Available
11.3.2	Available	Available
11.3.25	Available	Available
11.3.4	Available	Available
11.4.3	Available	Available
11.5.1	Available	Available
11.5.20	Available	Available
11.5.4	Available	Available
11.7.4	Available	Available
11.7.5	Available	Available
11.7.7	Available	Available
11.9.7	Available	Available
non-remnant	Not currently available	Not currently available

Maps

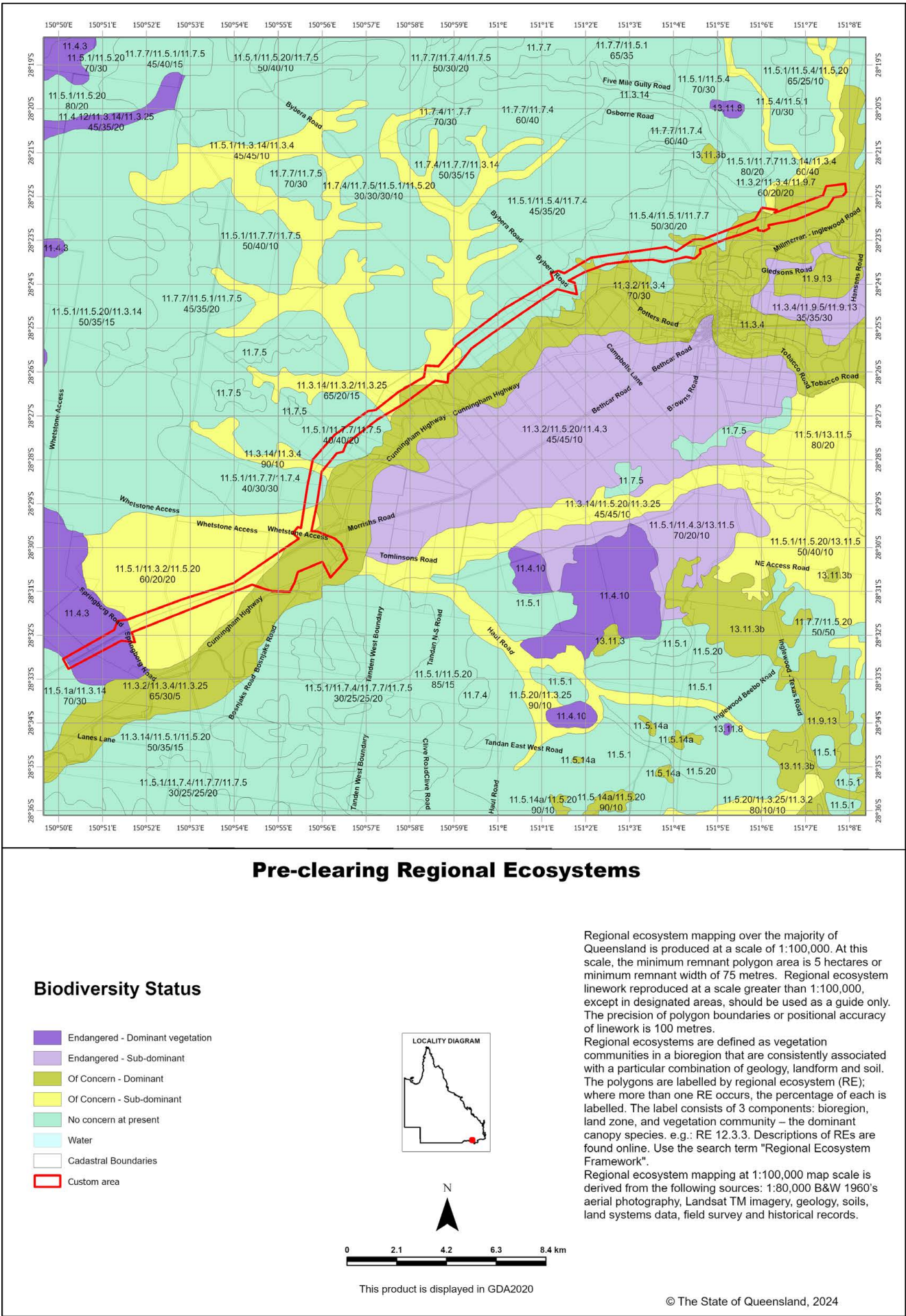
Map 1 - Location



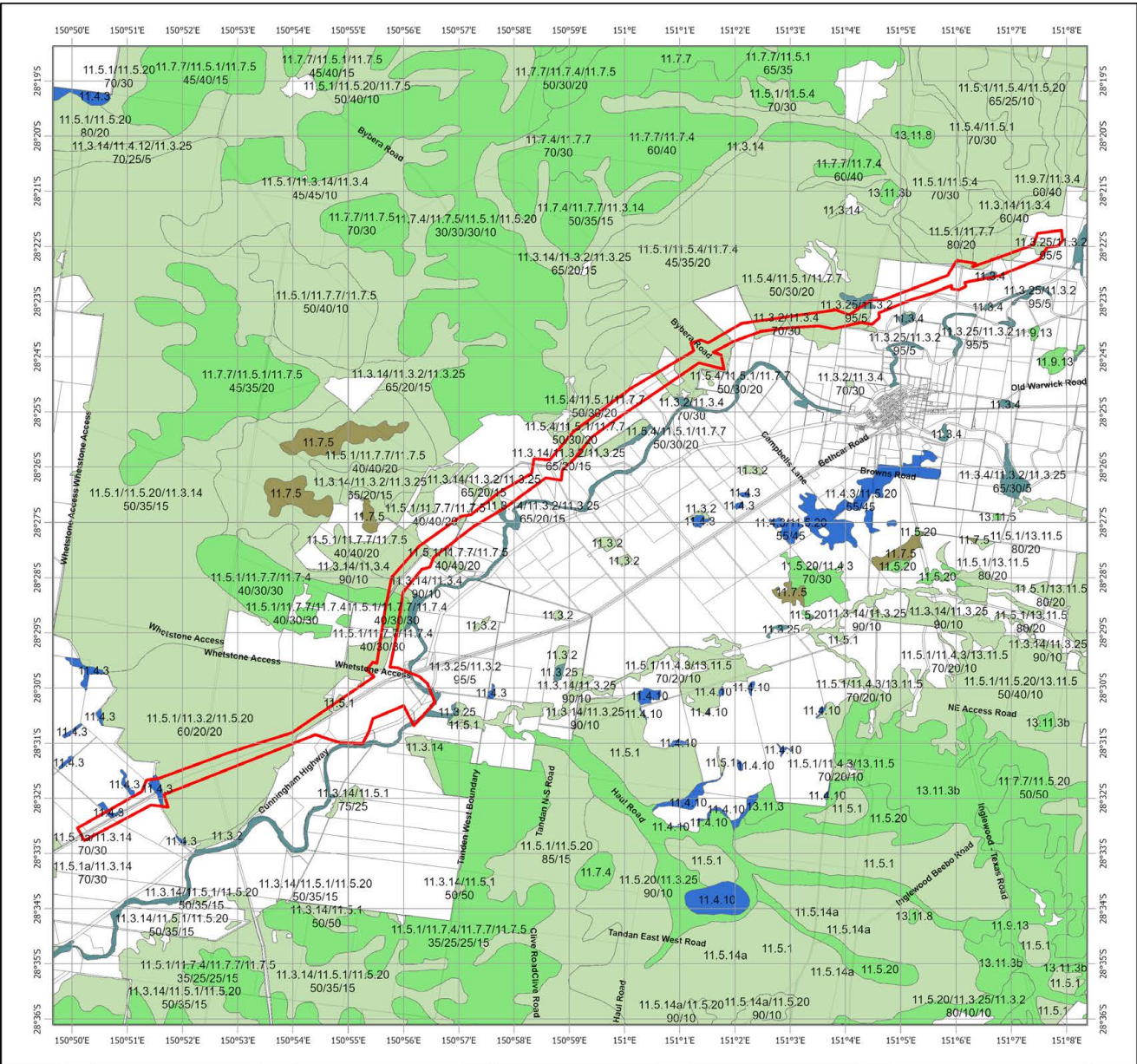
Map 2 - Remnant 2021 regional ecosystems



Map 3 - Pre-clearing regional ecosystems



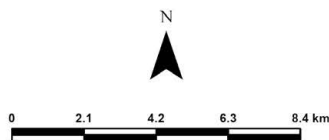
Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

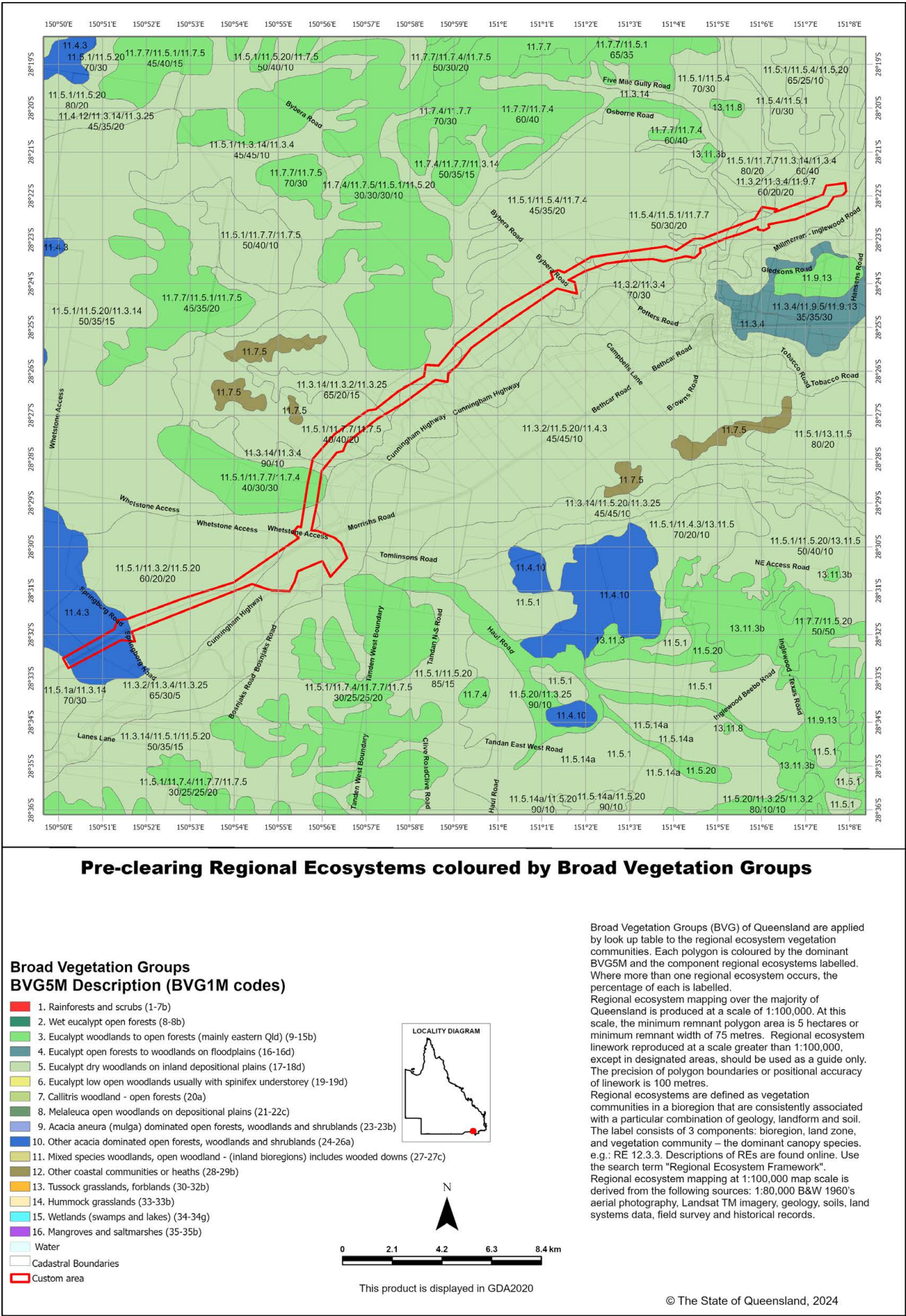
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries
- Custom area



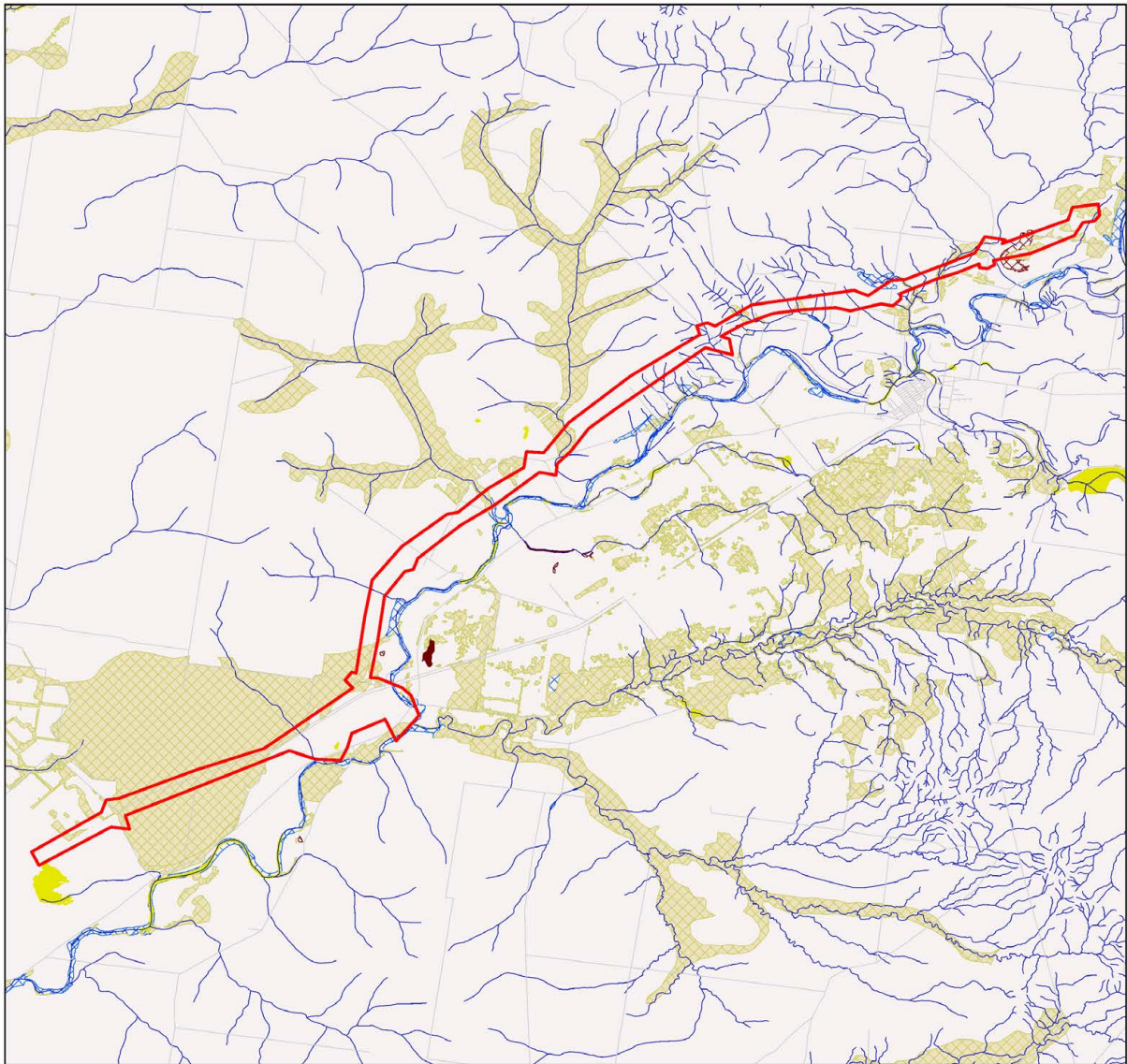
This product is displayed in GDA2020

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species, e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records. Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.

Map 5 - Pre-clearing regional ecosystems by BVG (5M)

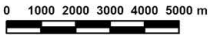
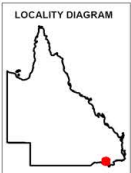


Map 6 - Wetlands and waterways



Wetlands and Waterways

- Towns
 - Roads
 - Springs
 - Rivers/Creeks
 - Directory of Important Wetlands
 - Ramsar Sites - QLD
- Wetland Type**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
- Queensland
- Custom area



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Links and Other Information Sources

The Department of Environment, Science and Innovation's Website -

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/> provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation>

The methodology for mapping regional ecosystems can be downloaded from:

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

Benchmarks can be obtained from: <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/spatial-catalogue)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

<https://qldglobe.information.qld.gov.au/>

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science.

<https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086>

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F., Richter, D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane.

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/>

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

[Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/information/spatial-catalogue)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or Area of Interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "Central co-ordinates" option, the resulting assessment area encompasses an area extending from 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: biodiversity.planning@des.qld.gov.au

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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Custom input, with area 2179.51 ha

Local Government(s)
Goondiwindi Regional
Bioregion(s)
Brigalow Belt
Brigalow Belt
Subregion(s)
Inglewood Sandstones
Moonie R. - Commoron Creek Floodout
Catchment(s)
Border Rivers

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Brigalow Belt v2.1	Queensland Murray-Darling and Bulloo Basins v2.1	Queensland Murray-Darling and Bulloo Basins v.2.1

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	23.61	1.08
Of concern	145.97	6.70
No concern at present	669.53	30.72

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of Environment, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
Local or Other Values	7.00	0.32
Regional	32.91	1.51
State	799.36	36.68

Table 5: Non-riverine wetlands intersecting the AOI

Non-riverine wetland types intersecting the area of interest	#
Number of Lacustrine wetlands	3

Total number of non-riverine wetlands	3
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NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

Name	Permanency
MACINTYRE BROOK	Non-perennial
PARIAGARA CREEK	Non-perennial

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of Environment, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	2,178.83	99.97
Low	0.68	0.03

Table 8: Summary table, aquatic conservation significance (non-riverine)

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
Low	19.21	0.88

Biodiversity Planning Assessments

Introduction

The Department of Environment, Science and Innovation (DESI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DESI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

<http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State	799.36	36.68
Regional	32.91	1.51
Local or Other Values	7.00	0.32

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Local or Other Values	Refer to diagnostic data for additional information	91.10	4.18
Regional	Remnant contains at least one Of Concern RE (B1)	49.11	2.25
Regional	Remnant is part of a Tract that is one of the largest in the bioregion (C) & Remnant has Ecosystem diversity in the top quartile (F)	318.76	14.63
Regional	Remnant is part of a Tract that is one of the largest in the bioregion (C) & Remnant has high connectivity or buffers an endangered RE or Significant Wetland (G)	5.94	0.27
State	Nat. Threatened Ecol. Community (B1)	270.76	12.42
State	Nat. Threatened Ecol. Community (B1) & Remnant contains at least one Of Concern RE (B1)	27.92	1.28
State	Nat. Threatened Ecol. Community (B1) & Remnant is part of a Tract that is one of the largest in the bioregion (C) & Remnant has Ecosystem diversity in the top quartile (F)	36.99	1.70
State	Nat. Threatened Ecol. Community (B1) & Remnant is part of a Tract that is one of the largest in the bioregion (C) & Remnant has high connectivity or buffers an endangered RE or Sig. Wetland (G)	15.07	0.69
State	Remnant contains at least 1 Endangered RE (B1) & Nat. Threatened Ecol. Community (B1)	23.61	1.08

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	0.00	0.00	0.00	0.00	21.87	1.00	817.40	37.50
B1: Ecosystem Value (Bioregion)	374.35	17.18	49.11	2.25	415.81	19.08	0.00	0.00
B2: Ecosystem Value (Subregion)	23.61	1.08	54.96	2.52	760.70	34.90	0.00	0.00
C: Tract Size	773.29	35.48	0.00	0.00	0.00	0.00	65.98	3.03
D1: Relative RE Size (Bioregion)	0.00	0.00	0.00	0.00	0.00	0.00	839.27	38.51
D2: Relative RE Size (Subregion)	42.39	1.94	0.00	0.00	329.94	15.14	466.94	21.42
F: Ecosystem Diversity	395.75	18.16	407.87	18.71	23.56	1.08	12.09	0.55
G: Context and Connection	83.15	3.82	42.86	1.97	659.63	30.27	53.63	2.46

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
	No information	38.99	1.79
Local	Refer to Expert Panel data for additional information	1.15	0.05
Regional	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	11.03	0.51
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	459.39	21.08
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I) & Remnant forms part of a bioregional corridor (J)	304.06	13.95
State	Remnant forms part of a bioregional corridor (J)	24.65	1.13

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al.* 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.
- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to access overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.00	0.00	0.00	0.00	1.61	0.07	0.00	0.07
Ia: Centres of Endemism	0.00	0.00	46.23	2.12	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	129.85	5.96	23.61	1.08	0.00	0.00	0.00	0.00
Ic: Disjunct Populations	0.00	0.00	46.23	2.12	0.00	0.00	0.00	0.00
Id: Limits of Geographic Ranges	0.00	0.00	46.23	2.12	0.00	0.00	0.00	0.00
Ie: High Species Richness	758.14	34.78	0.00	0.00	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the

New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria la through to lj cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:
 - Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
 - Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
 - Maintaining large scale seasonal/migratory species processes and movement of fauna;
 - Maximising connectivity between large tracts/patches of remnant vegetation;
 - Identifying key areas for rehabilitation and offsets; and
- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial
 - Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
 - Follow major watershed/catchment and/or coastal boundaries;
 - Incorporate major altitudinal/geological/climatic gradients;
 - Include and maximise connectivity between large tracts/patches of remnant vegetation;
 - Include and maximise connectivity between remnant vegetation in good condition; and
- Riparian
 - Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
	510.56	23.43
State	328.71	15.08

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation

is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
brbs_fa_69	Yelarbon and Bringalily State Forest Tracts.	State	1e (species richness): VH
brbs_l_17a			
brbs_l_15	Relictual subregions (less than 30% remnant vegetation) - remnant vegetation	Regional	1b (refugia): H
brbs_fl_16	Wondul Range and Inglewood Sandstone subregion remnants	Regional	1a (endemic richness): H; 1b (refugia): VH; 1c (disjunct populations): H; 1d (range limits): H
brbs_l_18a			
brbs_l_16	Core areas	State	1b (refugia): VH

Expert panel decision descriptions:

Decision Number	Description
brbs_fa_69	Open eucalypt woodlands on either shallow soils (in areas of higher elevation) or sandy plains dominate. Diversity of terrestrial vertebrate taxa is very high with approximately 350 recorded. Among the threatened taxa known are Dunmall's snake <i>Furina dunmali</i> , Major Mitchell's cockatoo <i>Lophochroa leadbeateri</i> , regent honeyeater <i>Anthochaera phrygia</i> , painted honeyeater <i>Grantiella picta</i> , spotted-tailed quoll <i>Dasyurus m. maculatus</i> and greater glider <i>Petauroides volans</i> . Priority taxa include both endemics such as brigalow scaly-foot <i>Paradelma orientalis</i> , and declining taxa, e.g. brown treecreeper <i>Climacteris picumnus</i> , speckled warbler <i>Chthonicola sagittata</i> and hooded robin <i>Melanodryas cucullata</i> .
brbs_l_17a	
brbs_l_15	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Relictual subregions (less than 30% remnant vegetation remaining) for the Brigalow Belt include; Upper Belyando Flood out (11.8), Isaac - Comet Downs (11.11), Callide Creek Downs (11.19), Dawson River Downs (11.21), Taroom Downs (11.25), Dulacca Downs (11.28), Weribone High (11.29), Tara Downs (11.30), Eastern Darling Downs (11.31), Moonie R. - Commoroon Creek Floodout (11.33), Moonie - Barwon Interfluvium (11.34), Warrambool - Moonie (11.35), Macintyre - Weir Fan (11.36), Narrandool (11.38). Remnant vegetation provides a refuge from clearing in fragmented subregions and should be retained to maintain biodiversity. Refer to brbn_l_89 for the northern BRB implementation of this decision.

Decision Number	Description
brbs_fl_16	Part of a large tract of remnant vegetation (11.7.5 and adjacent polygons of 11.9.5) containing perched heaths on sandstone with high species richness of Ericaceae (11) and concentrations of endemic or isolated taxa such as <i>Aristida forsteri</i> (endangered and endemic to Wondul Range), <i>Macrozamia machinii</i> , as well as disjunct populations of species or species considered close to or at their distributional range limits (<i>Caustis pentandra</i> , <i>Conospermum taxifolium</i> , <i>Styphelia viridis</i> subsp. <i>breviflora</i> , <i>Gonocarpus elatus</i> and <i>Micromyrtus striata</i> which is at the northern limit of its range). <i>Commersonia ingelewoodensis</i> an endangered and locally endemic species also occurs directly to the east.
brbs_l_18a	
brbs_l_16	Tracts are defined as patches of continuous remnant vegetation. The size of any tract is a major indicator of ecological significance and is strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts. These areas can be considered core nodes/refugia in which a large proportion of the bioregions biodiversity is represented. A modified tract size analysis (Criterion C) (EHP 2014) was used to identify and delineate discrete tracts of remnant vegetation at a bioregion scale. For the purpose of the assessment, a core area was identified as a relatively contiguous area of remnant vegetation (disregarding small perforations, or linear breaks) and which was generally greater than 5km in width (based upon the minimum width of the terrestrial corridor network). Tracts of greater than 10,000ha were included. Refer to brbn_l_83 for the northern BRB implementation of this decision.

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in Queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning processes

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland Info:

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	2,178.83	99.97
Low	0.68	0.03

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	1,027.72	47.15	0.00	0.00	0.00	0.00	1,151.79	52.85
2. Naturalness catchment	0.00	0.00	34.52	1.58	2,144.99	98.42	0.00	0.00
3. Diversity and richness	213.97	9.82	1,186.32	54.43	664.50	30.49	114.73	5.26
4. Threatened species and ecosystems	1,964.87	90.15	213.97	9.82	0.00	0.00	0.68	0.03
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	1,151.79	52.85	0.00	0.00
6. Special features	0.00	0.00	1,151.79	52.85	0.00	0.00	0.00	0.00
7. Connectivity	2,178.83	99.97	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
bd_r_ec_31	Upland riverine reaches with flows sustained by groundwater seeps	Border Rivers	7.2.1	4
bd_r_ec_45	Riverine drought refugia (High relative value)	Border Rivers	6.1.1,6.2.1,6.3.1,6.3.4	3,3,3,3

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
bd_r_ec_31	Groundwater connectivity with riverine ecosystems were viewed as important by the expert panel as inflow of groundwater (especially where granite geology exists), sustains rivers and creeks during drier periods. Water exchange can happen through fractured rock aquifers, but more typically coincides with sandy bottomed riverbeds. Flows are not necessarily perennial during drought.
bd_r_ec_45	Drought refugia are an important feature in a semi-arid landscape. Values include <i>Tandanus</i> (Ell tailed catfish). Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). This decision was implemented using persistent waterhole mapping help by DES. The percentage length of persistent waterholes per riverine spatial unit was calculated using Geofab v2.1 watercourses and DES persistent waterhole mapping. The Jenks Natural Breaks classification algorithm was used to categorise spatial units into four classes (i.e. Very High, High, Medium, Low). Spatial units in the Medium class were used for this decision. Spatial units in the Very High and High class were used for Riverine drought refugia (Very High relative value) decision (i.e. bd_r_ec_06).

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
Low	19.21	0.88

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	19.21	0.88
2. Naturalness catchment	0.00	0.00	17.52	0.80	0.00	0.00	1.69	0.08
3. Diversity and richness	0.00	0.00	1.69	0.08	17.52	0.80	0.00	0.00
4. Threatened species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	19.21	0.88
5. Priority species and ecosystems	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, HerbreCs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Acanthophis antarcticus</i>	common death adder	V		Moderate			FA
<i>Dasyurus maculatus maculatus</i>	spotted-tailed quoll (southern subspecies)	E	E	High			FA
<i>Phascolarctos cinereus</i>	koala	E	E	Low			FA

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DESI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

*JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.

**I - wetland indicator species; D - wetland dependent species.

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
<i>Climacteris picumnus</i>	Brown Treecreeper	FA
<i>Cyclorana verrucosa</i>	Rough-collared Frog	FA
<i>Eucalyptus apothalassica</i>		FL
<i>Macquaria ambigua</i>	Yellowbelly	FA
<i>Microeca fascians</i>	jacky winter	FA
<i>Pomatostomus temporalis</i>	grey-crowned babbler	FA
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Identified flora/fauna
<i>Biziura lobata</i>	musk duck	FA
<i>Chelodina expansa</i>	broad-shelled river turtle	FA
<i>Nymphaea gigantea</i>		FL
<i>Ornithorhynchus anatinus</i>	platypus	FA
<i>Plegadis falcinellus</i>	glossy ibis	FA
<i>Tandanus tandanus</i>	freshwater catfish	FA
<i>Tringa nebularia</i>	common greenshank	FA

Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

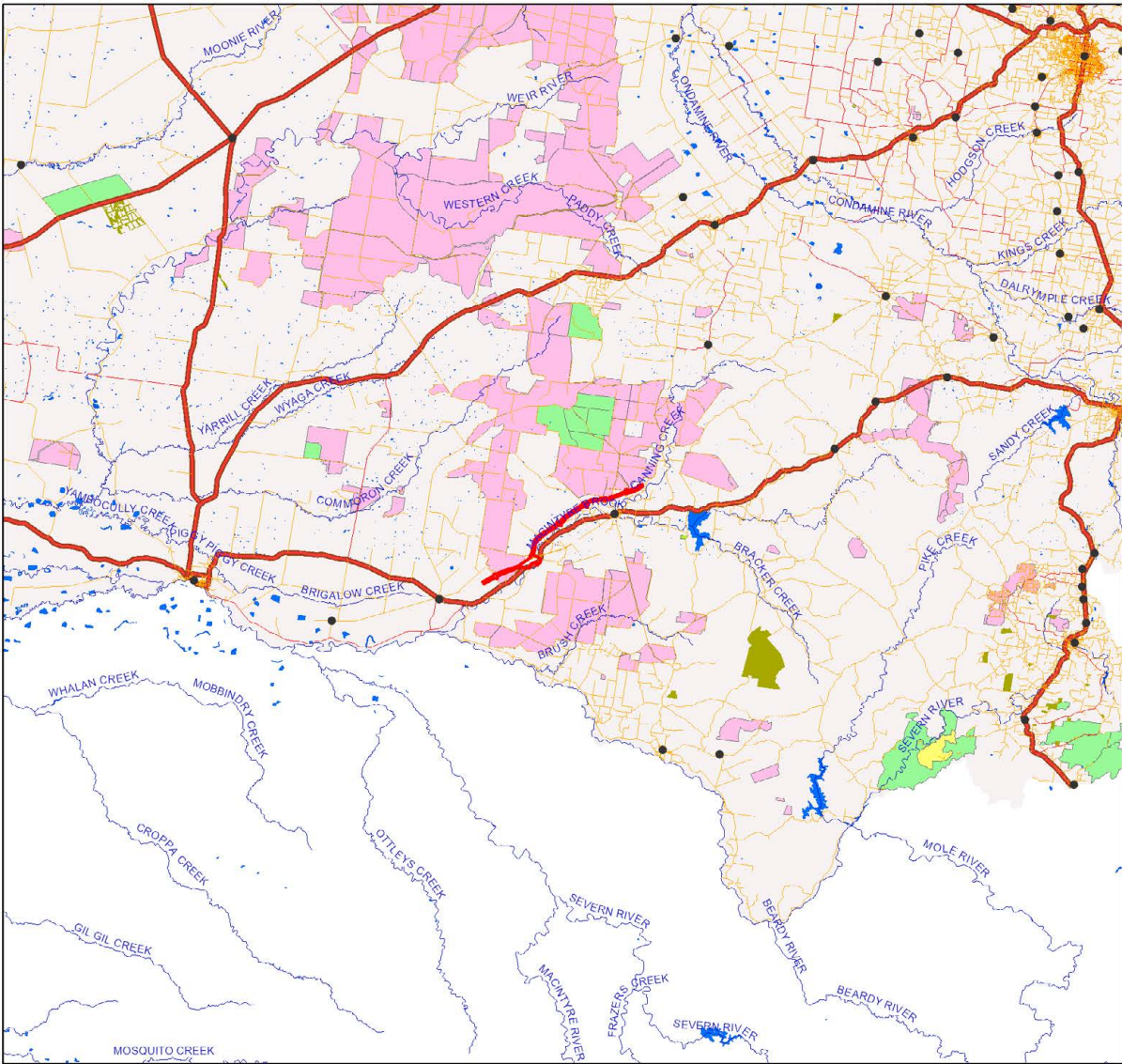
Species	Common name	Identified flora/fauna
<i>Biziura lobata</i>	musk duck	FA
<i>Chelodina expansa</i>	broad-shelled river turtle	FA
<i>Cyclorana verrucosa</i>	rough collared frog	FA
<i>Nymphaea gigantea</i>		FL
<i>Ornithorhynchus anatinus</i>	platypus	FA

Species	Common name	Identified flora/fauna
<i>Plegadis falcinellus</i>	glossy ibis	FA
<i>Tringa nebularia</i>	common greenshank	FA

NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

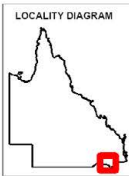
Maps

Map 1 - Locality Map



Locality Map

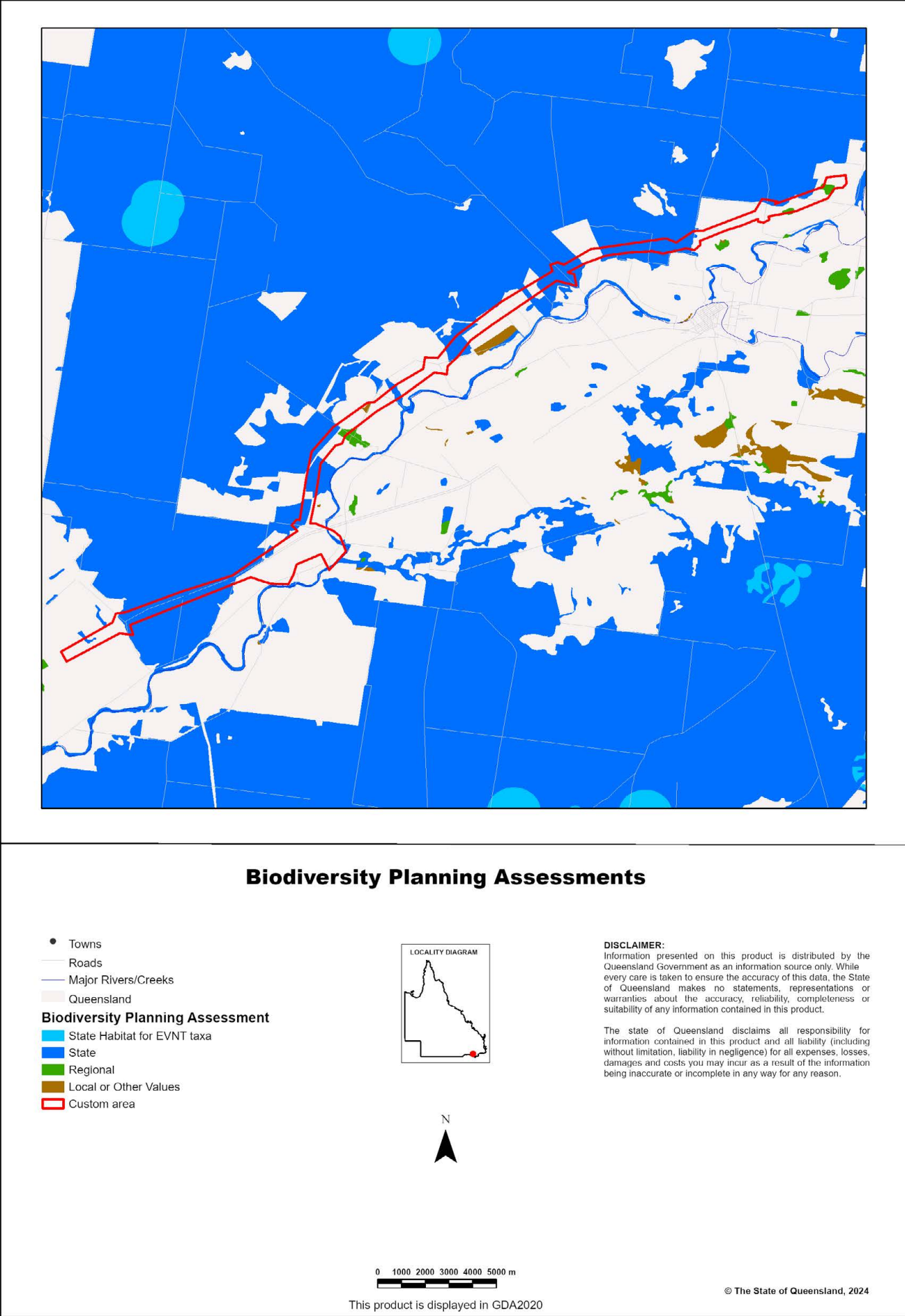
- Legend
- Towns
 - Freeways/Highways
 - Connector
 - Street/Local Road
 - Reservoirs
 - Lakes
 - National Park (Scientific)
 - National Park
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Nature Refuges
 - Coordinated Conservation Areas
 - Major rivers/creeks
 - Queensland
 - Custom area



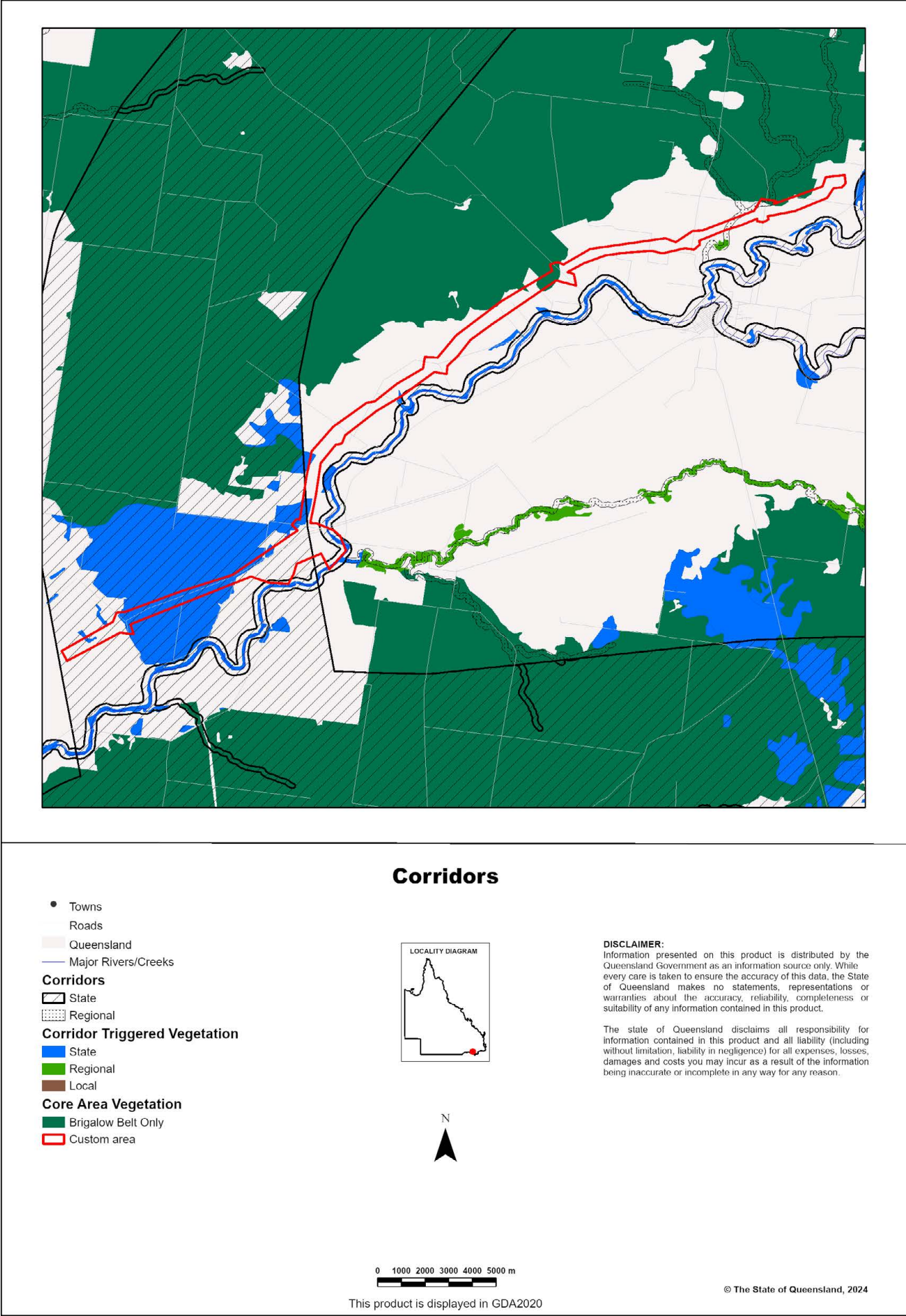
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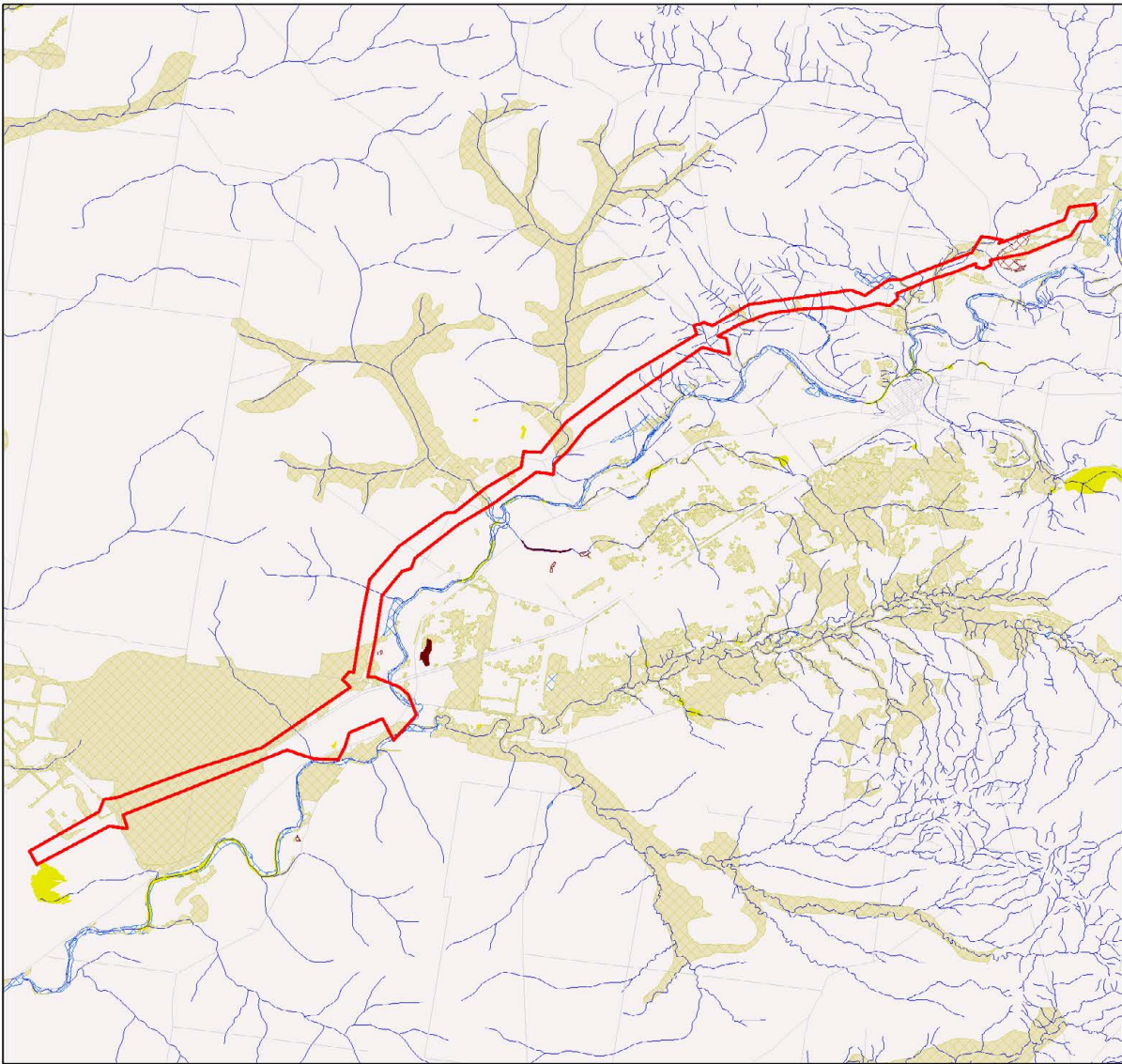
Map 2 - Biodiversity Planning Assessment (BPA)



Map 3 - Corridors

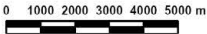
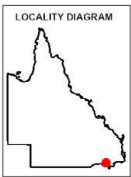


Map 4 - Wetlands and waterways



Wetlands and Waterways

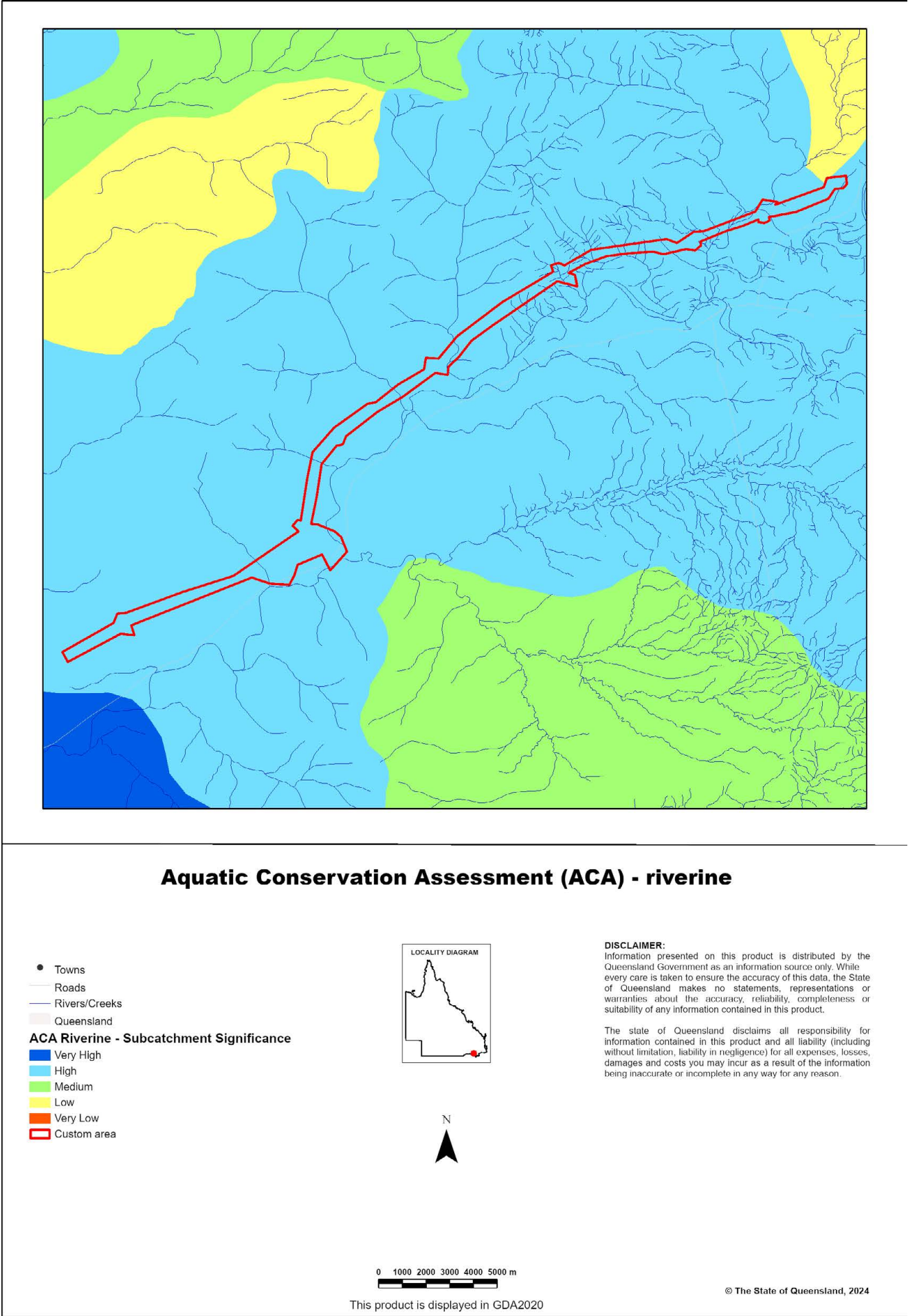
- Towns
 - Roads
 - Springs
 - Rivers/Creeks
 - Directory of Important Wetlands
 - Ramsar Sites - QLD
- Wetland Type**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
 - Queensland
 - Custom area



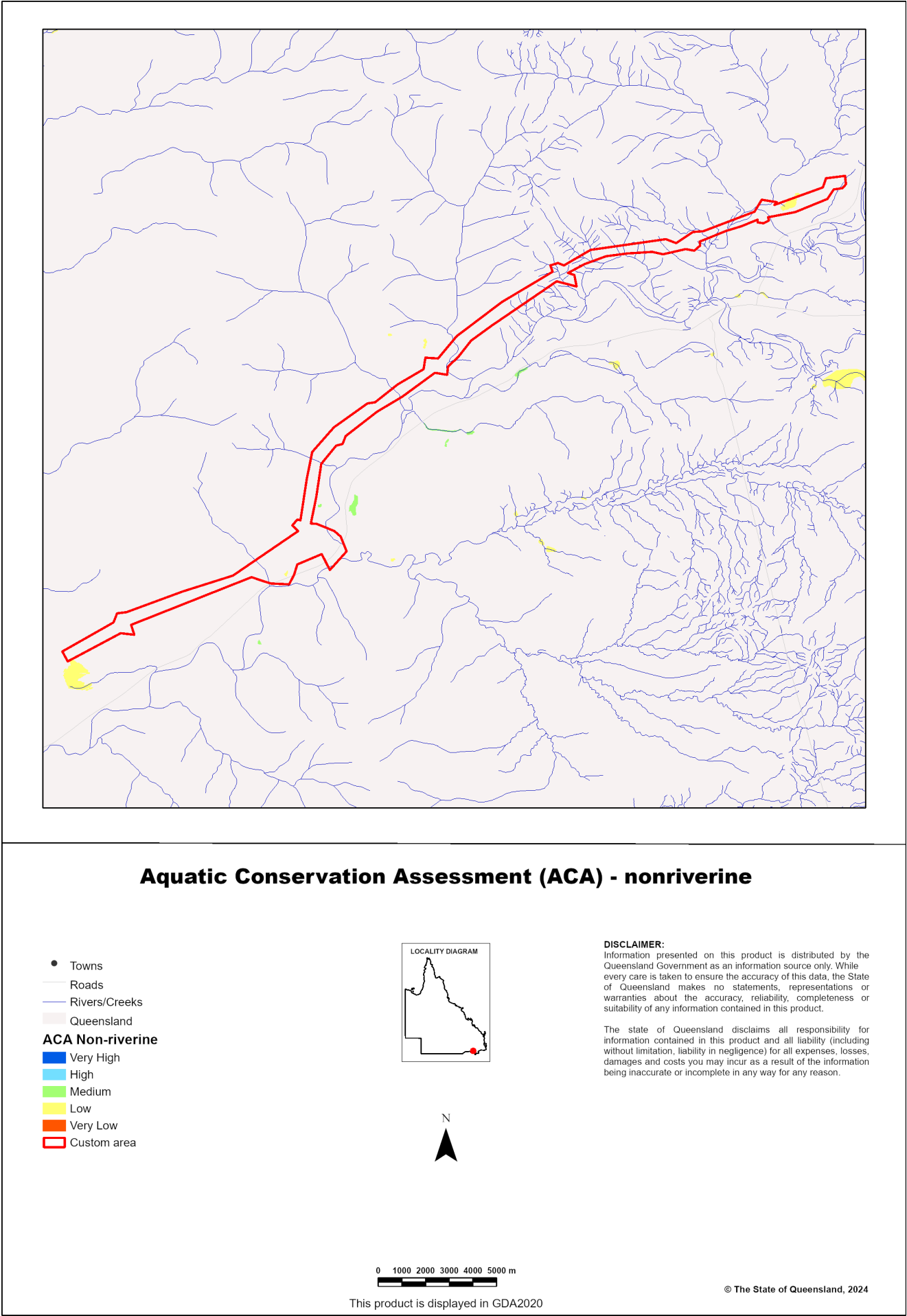
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Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



References

Clayton, P.D., Fielder, D.F., Howell, S. and Hill, C.J. (2006) *Aquatic biodiversity assessment and mapping method (AquaBAMM): a conservation values assessment tool for wetlands with trial application in the Burnett River catchment*. Published by the Environmental Protection Agency, Brisbane. ISBN 1-90928-07-3. Available at

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca/>

Environment and Heritage Protection 2014, *Biodiversity Assessment and Mapping Methodology*. Version 2.2. Department of Environment and Heritage Protection, Brisbane.

Morton, S. R., Short, J. and Barker, R. D. with an Appendix by G.F. Griffin and G. Pearce (1995). *Refugia for Biological Diversity in Arid and Semi-arid Australia*. Biodiversity Series, Paper No. 4, Biodiversity Unit, Environment Australia.

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

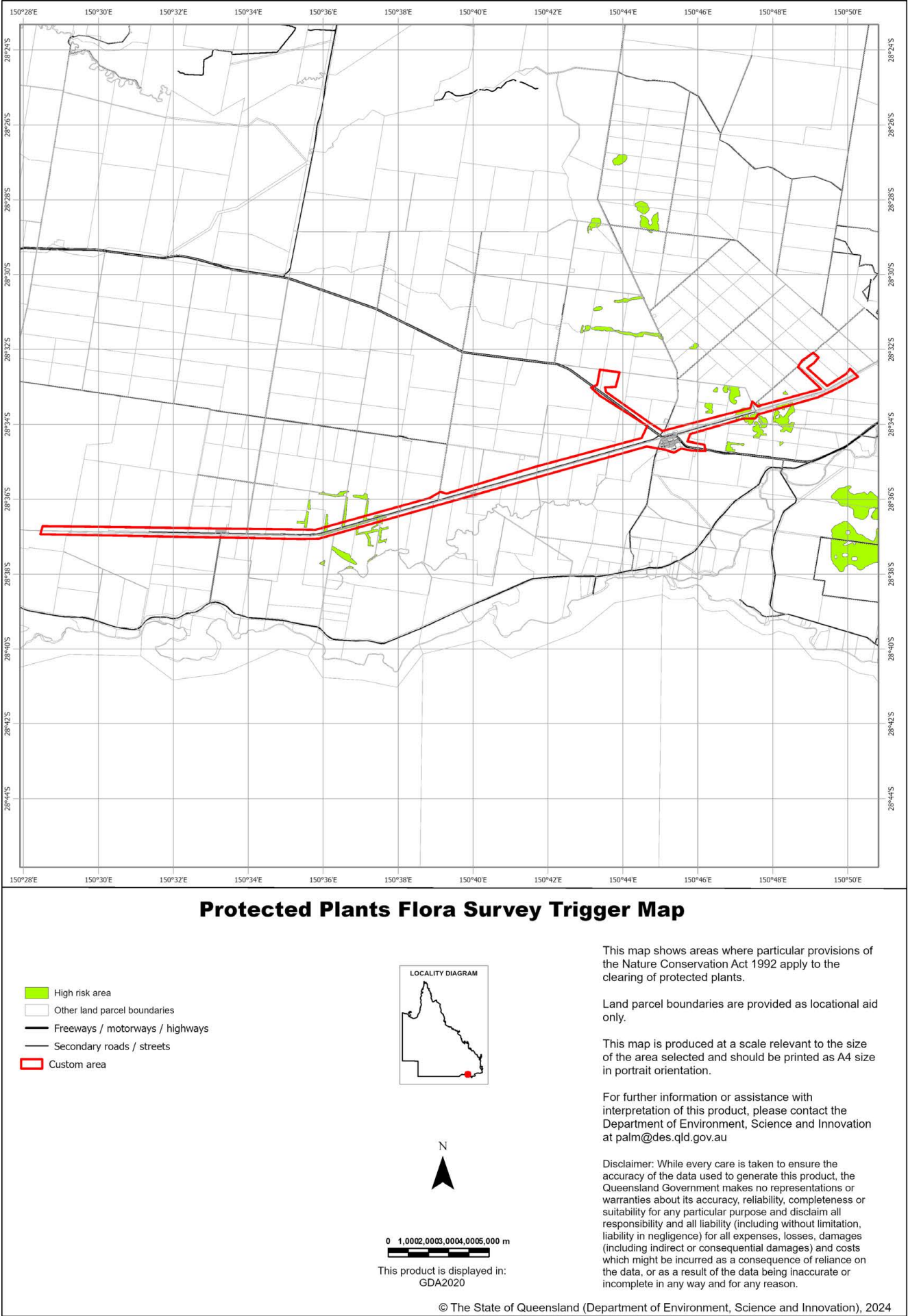
Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einiasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v2.3 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.6
Threatened Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:

<http://dds.information.qld.gov.au/DDS>

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DESI	- Department of Environment, Science and Innovation
EPBC	- <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see [section 89](#) of the Act.

Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and a field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@des.qld.gov.au

Disclaimer

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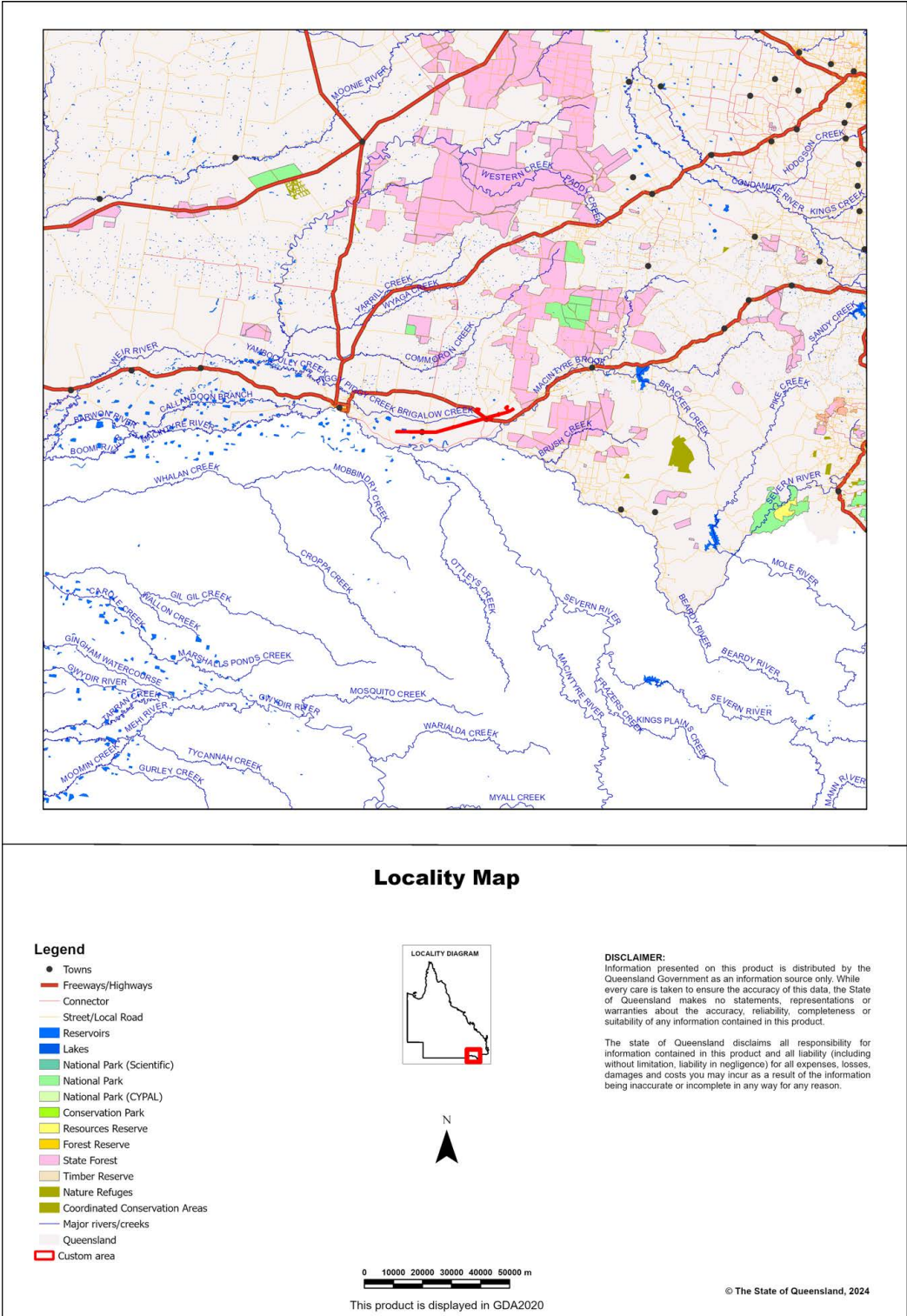
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI: Custom input, with area 2005.25 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Goondiwindi Regional	Border Rivers	Brigalow Belt	Moonie R. - Commoron Creek Floodout



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
- *Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004* ;
- *Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008*;
- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	182.46 ha	9.1%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	277.72 ha	13.8%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	15.36 ha	0.8%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	147.71 ha	7.4%
8e Regulated Vegetation - intersecting a watercourse	1.5 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	55.23 ha	2.8%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways**4. Strategic Environmental Areas (SEA)**

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species**7a. Threatened (endangered or vulnerable) wildlife**

Values are present

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>	Keys boronia	V	None
<i>Calyptrorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarius casuarius johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Euastacus bindal</i>	Mount Elliot crayfish	CR	None
<i>Euastacus binzayedii</i>		CR	None
<i>Euastacus eungella</i>		E	None
<i>Euastacus hystricosus</i>		E	None
<i>Euastacus jagara</i>	Jagara hairy crayfish	CR	None
<i>Euastacus maidae</i>		CR	None
<i>Euastacus monteithorum</i>		E	None
<i>Euastacus robertsi</i>		E	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Melaleuca irbyana</i>	swamp tea-tree	E	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>	bopple nut	V	None
<i>Petrogale penicillata</i>	brush-tailed rock-wallaby	V	None
<i>Petrogale coenensis</i>	Cape York rock-wallaby	V	None
<i>Petrogale purpureicollis</i>	purple-necked rock-wallaby	V	None
<i>Petrogale sharmani</i>	Sharmans rock-wallaby	V	None
<i>Petrogale xanthopus celeris</i>	yellow-footed rock-wallaby (Qld subspecies)	V	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

Scientific name	Common name	NCA status	EPBC status	Migratory status
<i>Climacteris picumnus victoriae</i>	brown treecreeper (south-eastern)	V	None	None
<i>Phascolarctos cinereus</i>	koala	E	E	None
<i>Westringia parvifolia</i>		V	V	None
<i>Xerothamnella herbacea</i>		E	E	None

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

*Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL). Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.4.3	E-dom	rem_end
11.5.14	O-dom	rem_oc

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.4.3	E-dom	hvr_end

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Regulated vegetation map category	Map number
B	9040

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets**9a. Legally secured offset areas - offset register areas**

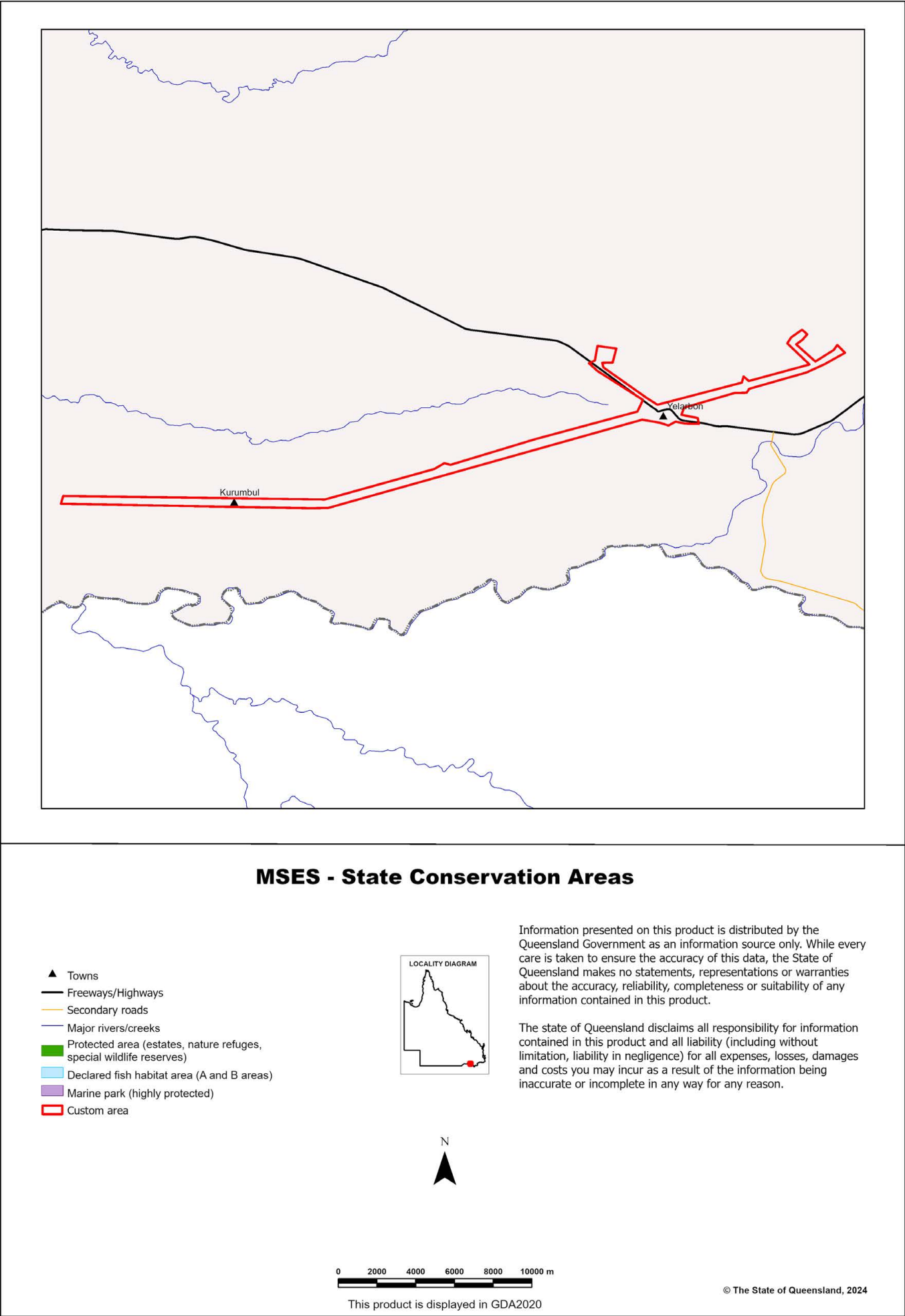
(No results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

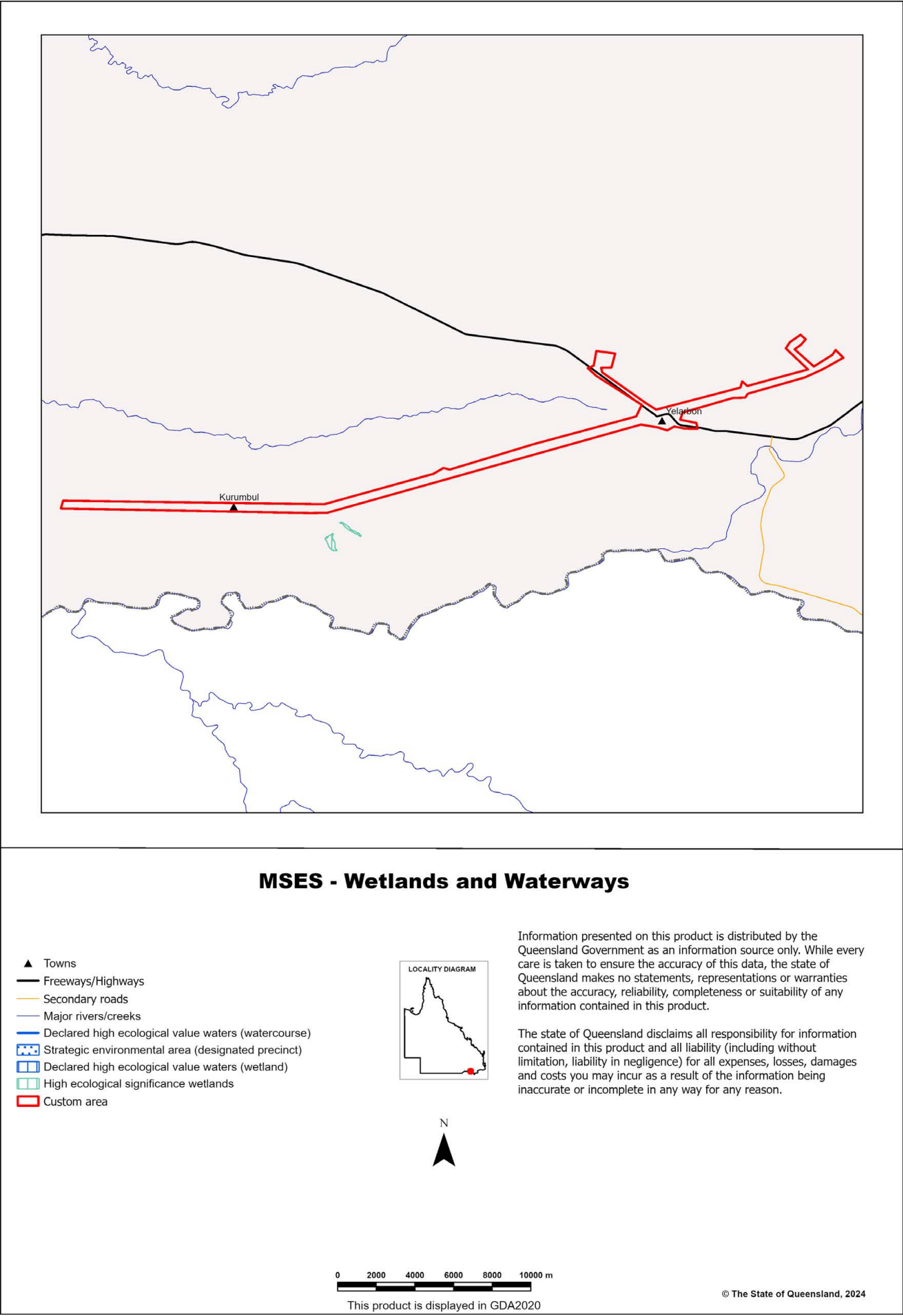
(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

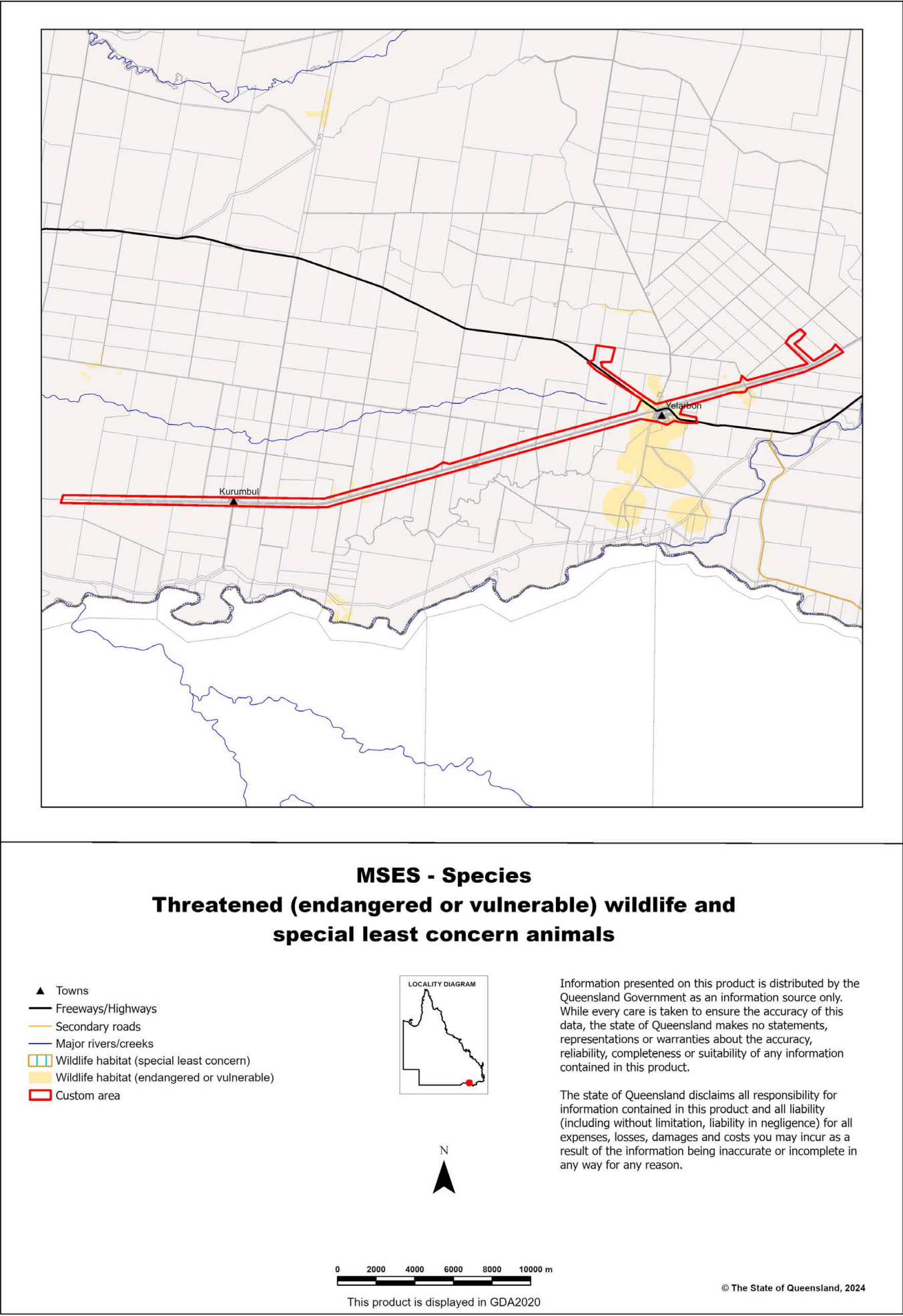
Map 1 - MSES - State Conservation Areas



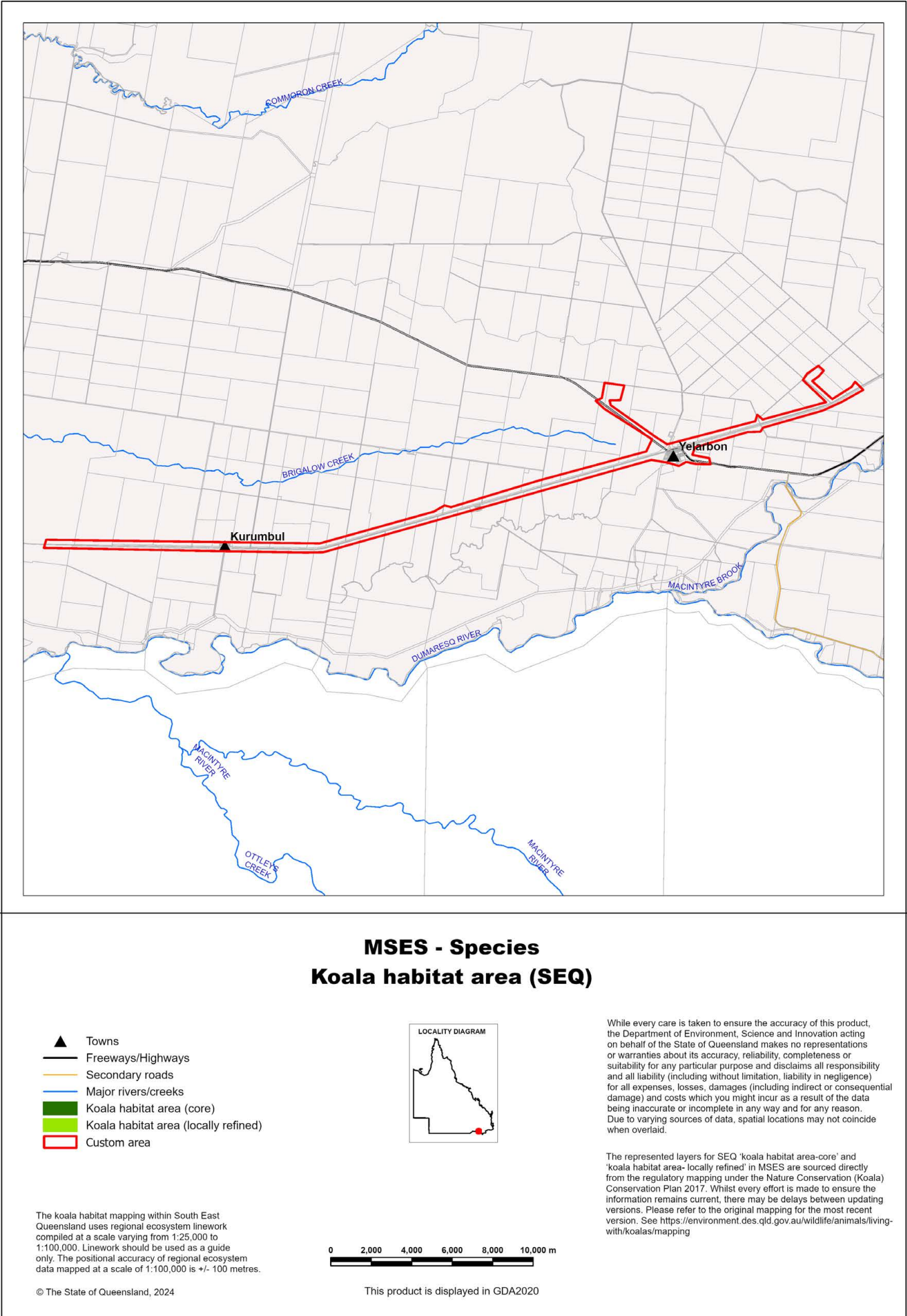
Map 2 - MSES - Wetlands and Waterways



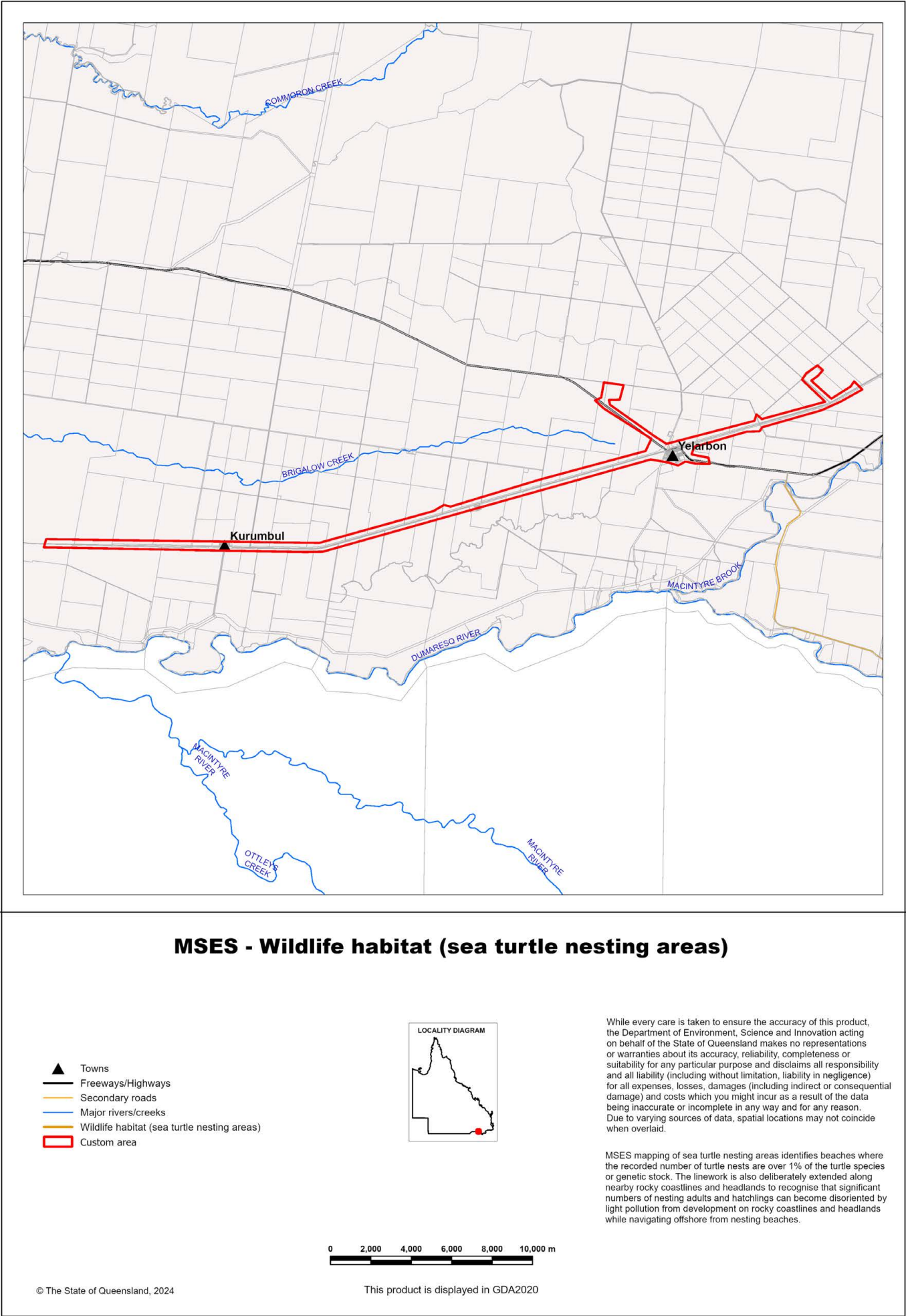
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



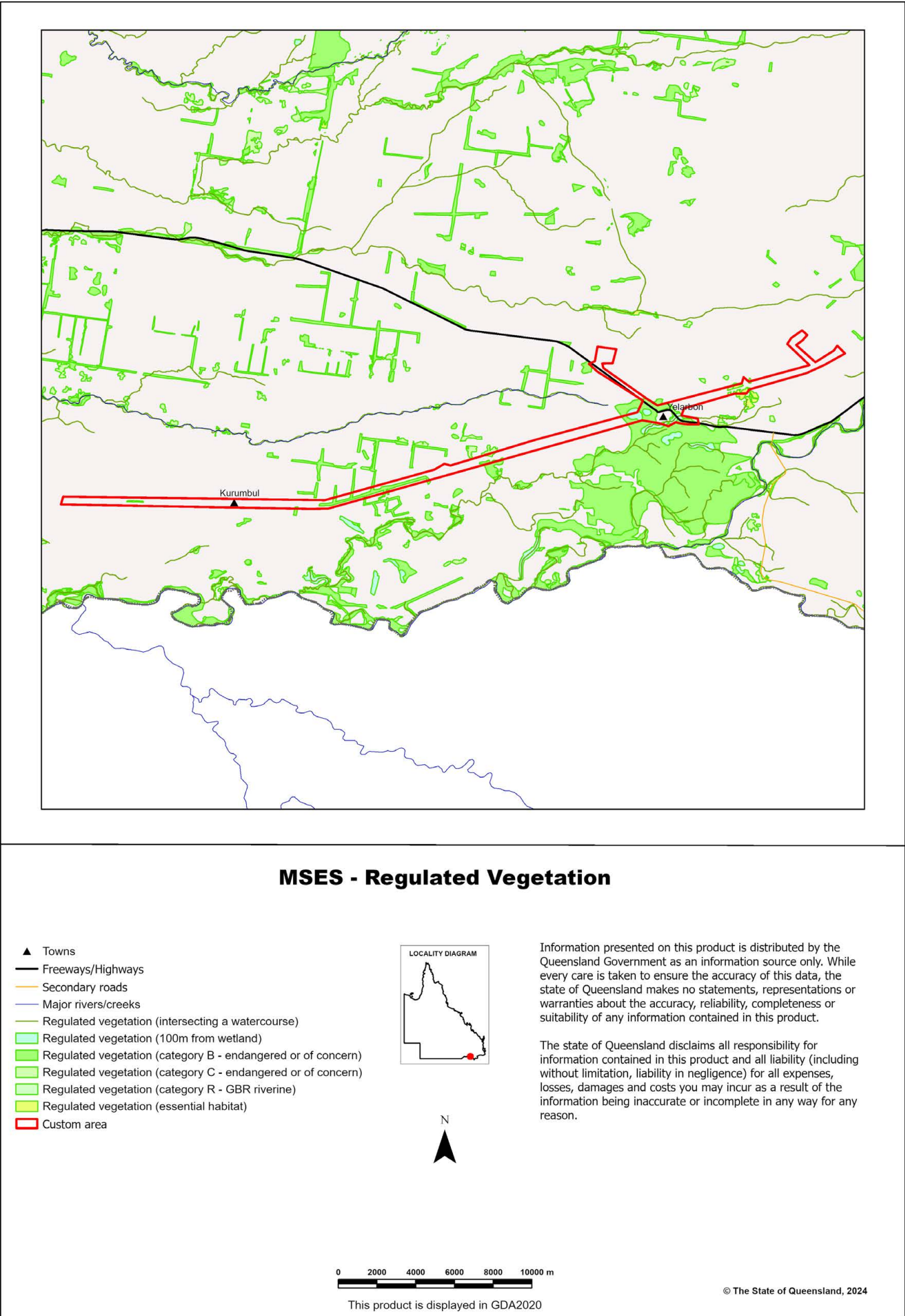
Map 3b - MSES - Species - Koala habitat area (SEQ)



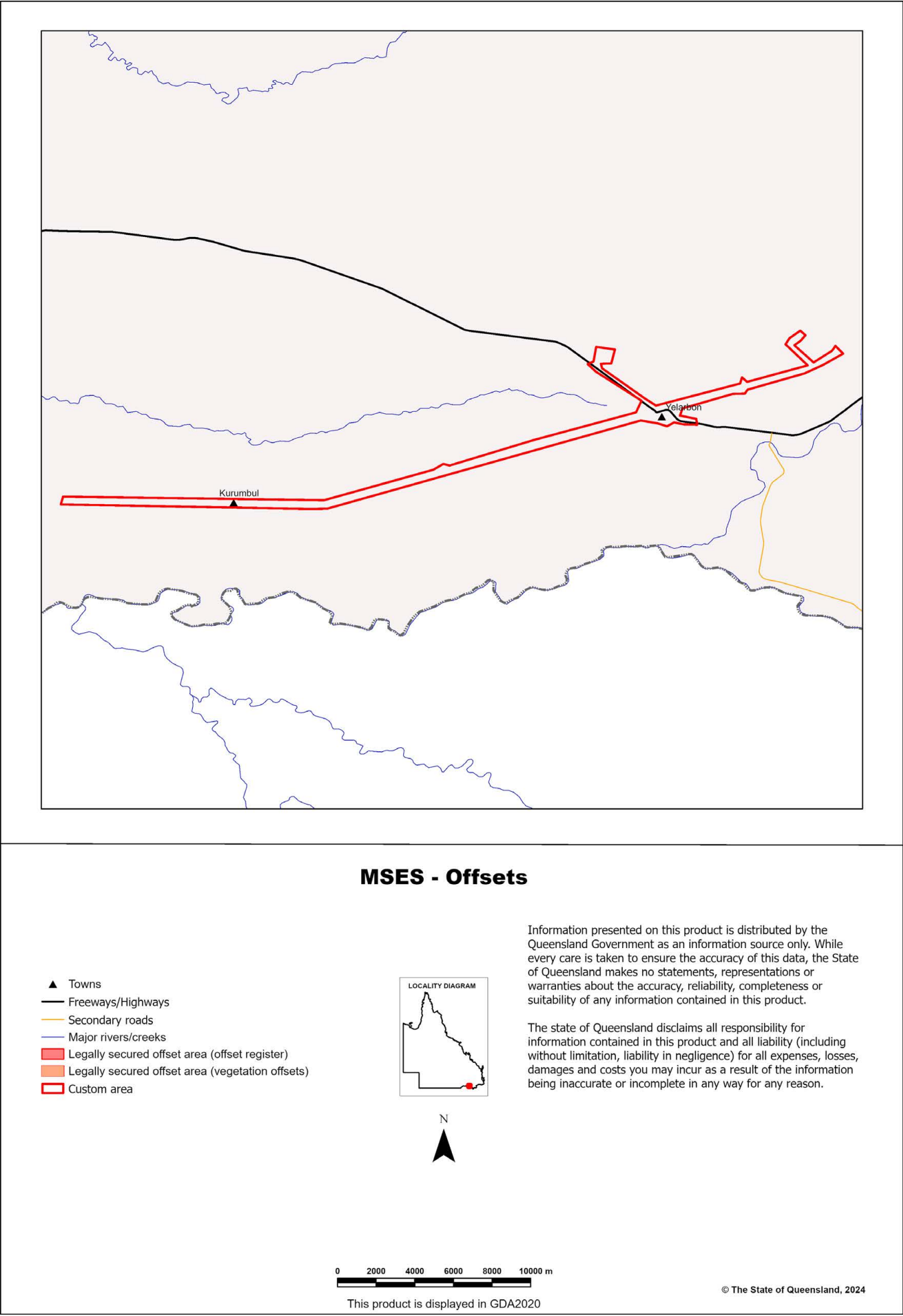
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DESI	- Department of Environment, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999

WetlandMaps Report



For selected area of interest Custom input

Current as at 5/06/2024

Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest(AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

Disclaimer

The State of Queensland, as represented by this department, gives no warranty in relation to the data (including without limitation, accuracy, reliability, completeness or fitness for a particular purpose) hosted on this website.

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Summary Information

Below is an overview of the area of interest.

Custom input
with area of 2005.25 ha

Local Government(s)
Goondiwindi Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Moonie R. - Commoron Creek Floodout

Catchment(s)
Macintyre & Weir Rivers
Macintyre Brook

Drainage sub-basin
Border Rivers

NRM Regions

The area of interest is in the following NRM region:

Southern Queensland Landscapes

Water Resource Plan Boundaries

The area of interest is in the following Water Resource Plan:

Border Rivers and Moonie

Great Artesian Basin and Other Regional Aquifers

Learn more about how Wetlands are mapped in Queensland

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include::**

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude::**

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria
- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Links and support

Other sites that deliver wetland related information include:

Wetland *Summary* tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

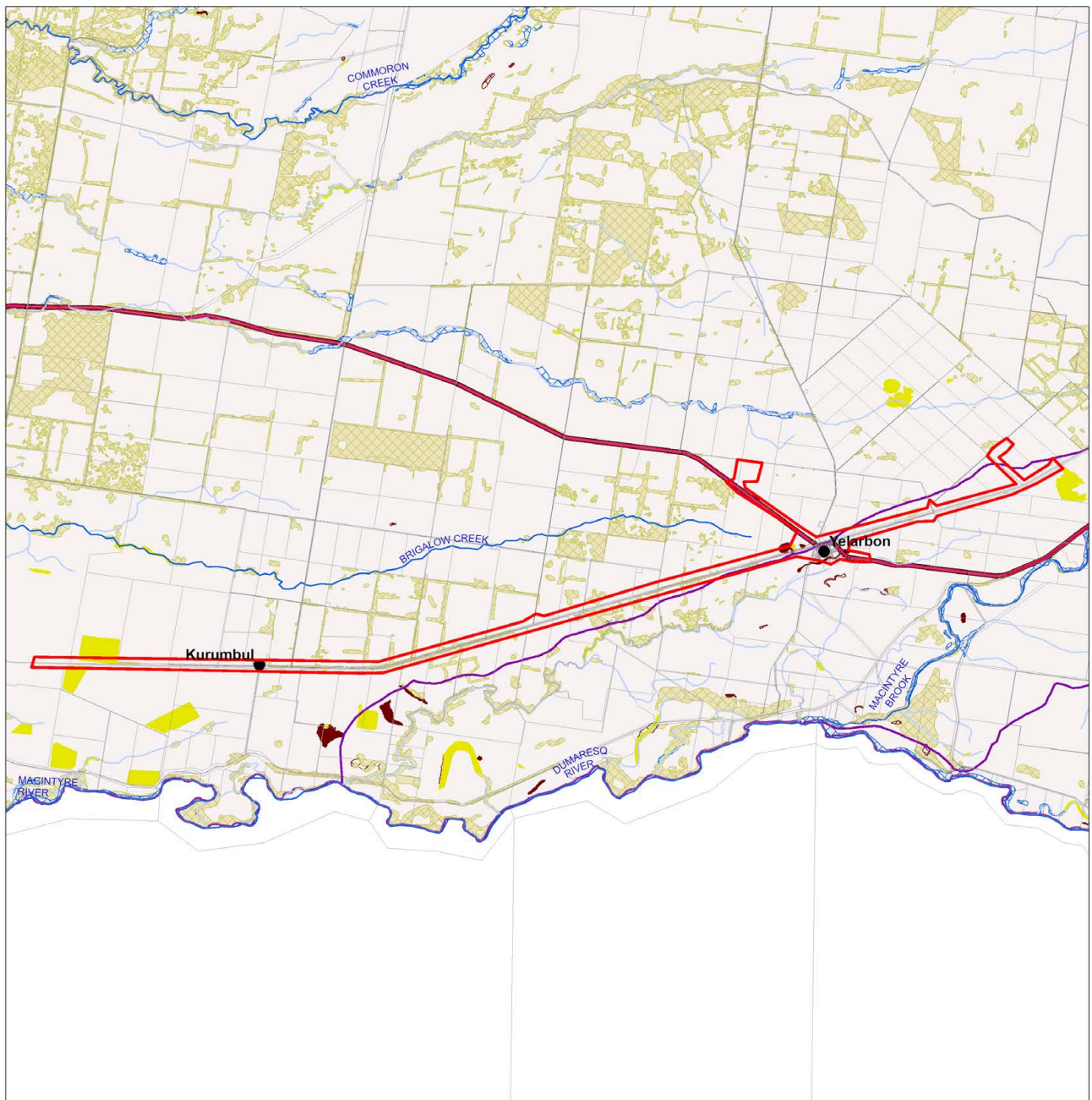
Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

Regional Ecosystem Mapping information:
<https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

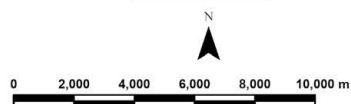
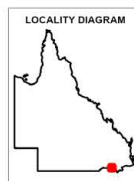
Aquatic Conservation Assessments: [Aquatic Conservation Assessments \(ACA\) and AquaBAMM \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems)

Dependant Ecosystems information:
<https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Queensland Wetland Map

- Springs
- Dams and weirs
- Towns
- Freeways/Highways
- Roads
- Cadastral Boundaries
- Sub-basin
- Riverine System Drainage Lines**
 - Major
 - Minor
- Wetland Mapping**
 - Hydrologically natural Wetlands**
 - Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
 - Hydrologically Modified and Artificial Wetlands**
 - Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
 - Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
 - Contains Wetlands (1 - 50%)
 - Custom area

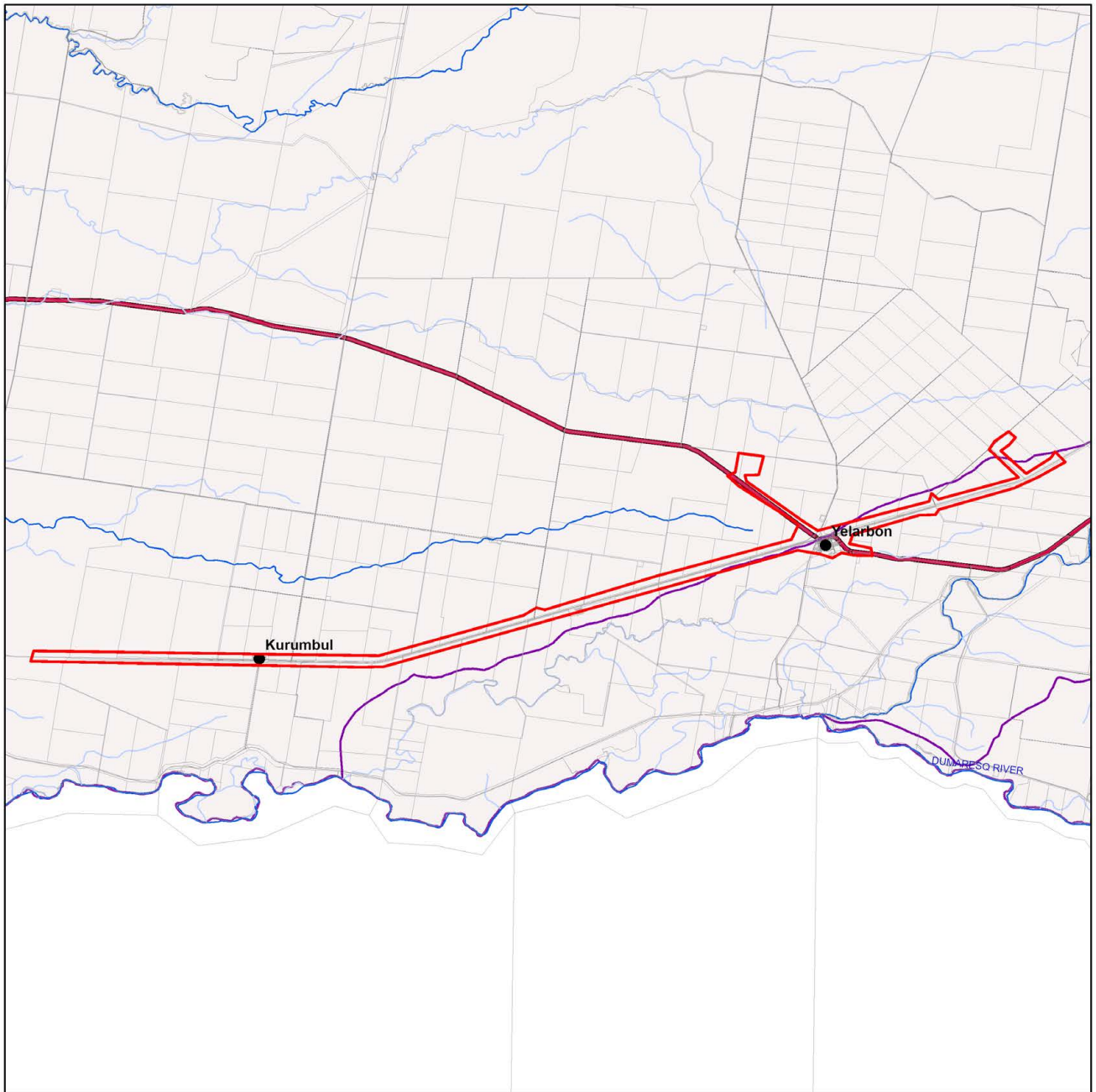


This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

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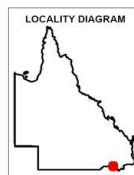


Queensland Wetlands of Importance Map

- Towns
- ▭ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▭ Sub-basin
- ▭ Directory of Important Wetlands
- ▭ Ramsar Wetlands

Riverine System Drainage Lines

- ▬ Major
- ▬ Minor
- ▭ Custom area



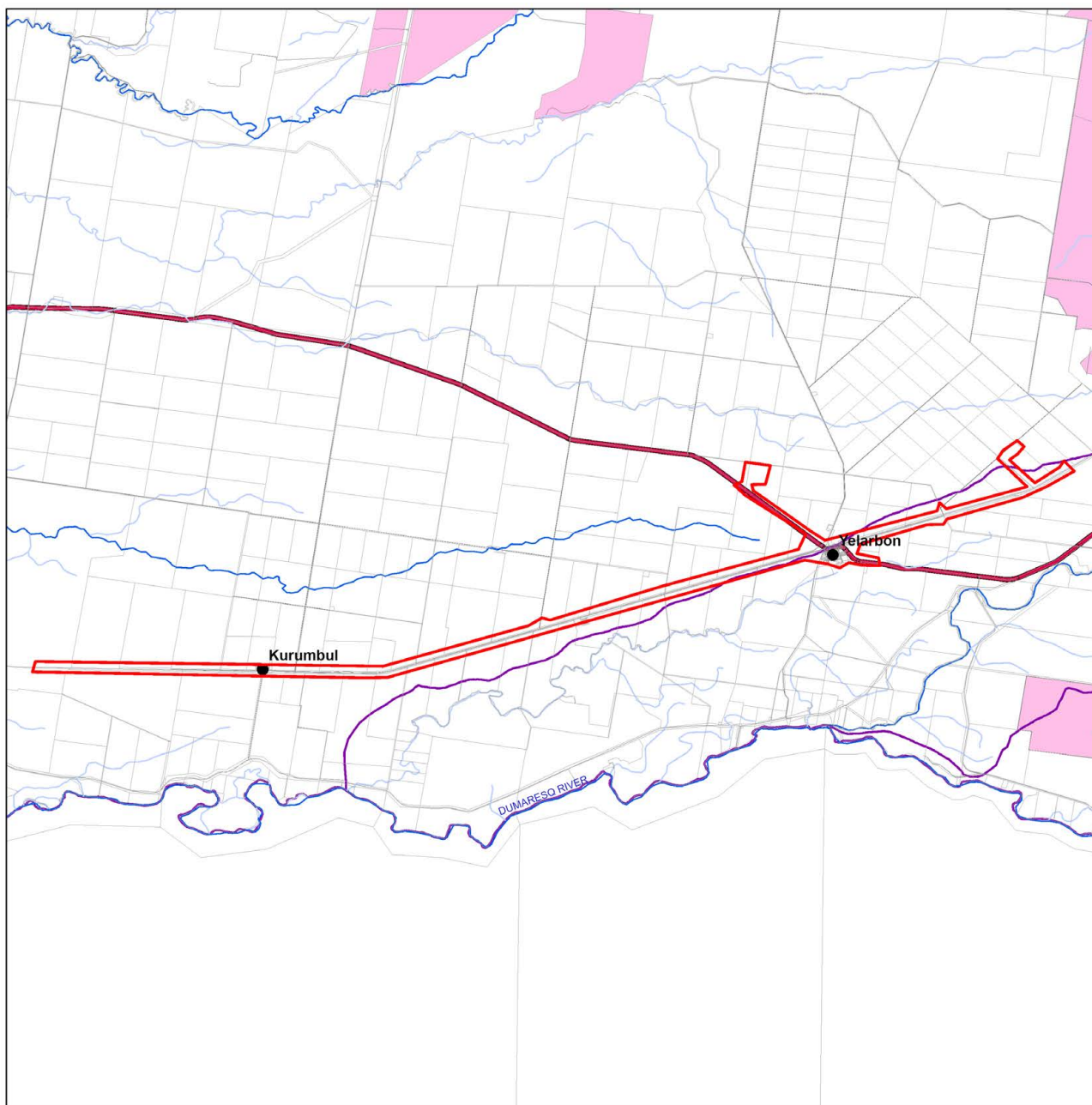
0 2,000 4,000 6,000 8,000 10,000 m

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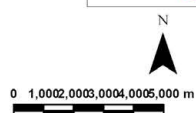
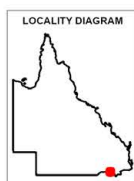
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Queensland Protected Area Map

- Towns
- ▬ Cadastral Boundaries
- ▬ Freeways/Highways
- ▬ Roads
- ▬ Sub-basin
- Riverine System Drainage Lines**
 - ▬ Major
 - ▬ Minor
- Marine Parks**
 - General Use Zone
 - Habitat Protection Zone
 - Estuarine Conservation Zone
 - Conservation Park Zone
 - Buffer Zone
 - Scientific Research Zone
 - Marine National Park Zone
 - Preservation Zone
- Protected Areas**
 - National Park
 - National Park (Scientific)
 - National Park (CYPAL)
 - Conservation Park
 - Resources Reserve
 - Forest Reserve
 - State Forest
 - Timber Reserve
 - Custom area



This product is displayed in GDA2020

This map was produced by the Queensland Wetlands Program, Department of Environment, Science and Innovation, June 2024.

For further information contact: wetlands@des.qld.gov.au

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Wetland habitat types in the AOI. Total area: 208.85 ha

Wetland Class	Habitat type	Area (ha)
CPA	NOA	159.02
LAC	NOA	29.00
PAL	PC04a	18.96
PAL	PC04c	1.86

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands

Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps
Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps

Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the input coordinates.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website <https://www.resources.qld.gov.au/>

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Custom input, with area 2005.25 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Goondiwindi Regional	Border Rivers	Brigalow Belt	Moonie R. - Commoron Creek Floodout

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	90.00	4.49
Of concern	186.57	9.30
No concern at present	43.94	2.19
Total remnant vegetation	320.51	15.98

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated into a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website <https://www.resources.qld.gov.au/>.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

*****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.*

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.3.14	Eucalyptus spp., Angophora spp., Callitris spp. woodland on alluvial plains	No concern at present	12.46	0.62
11.4.3	Acacia harpophylla and/or Casuarina cristata shrubby open forest on Cainozoic clay plains	Endangered	90.00	4.49
11.5.14	Triodia sp. open hummock grassland with emergent trees on Cainozoic sand plains and/or remnant surfaces. Highly alkaline soils	Of concern	186.57	9.30
11.5.1a	Eucalyptus crebra and/or E. populnea, Callitris glaucophylla, Angophora leiocarpa, Allocasuarina luehmannii woodland on Cainozoic sand plains and/or remnant surfaces	No concern at present	29.08	1.45
11.5.20	Eucalyptus moluccana and/or E. microcarpa and/or E. woollsiana +/- E. crebra woodland on Cainozoic sand plains	No concern at present	2.40	0.12
non-remnant	None	None	1,684.74	84.02

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.3.14	Pre-clearing 106000 ha; Remnant 2021 81000 ha	18a	Not a Wetland	Low
11.4.3	Pre-clearing 1647000 ha; Remnant 2021 83000 ha	25a	Contains Palustrine	Low

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.5.14	Pre-clearing 4000 ha; Remnant 2021 4000 ha	33b	Not a Wetland	No representation
11.5.1a	Pre-clearing 775000 ha; Remnant 2021 477000 ha	17a	Not a Wetland	Low
11.5.20	Pre-clearing 232000 ha; Remnant 2021 152000 ha	13d	Not a Wetland	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.3.14	11.3.14: Potential habitat for NCA listed species: <i>Acacia handonis</i> , <i>Fimbristylis vagans</i> .
11.4.3	11.4.3: Specific habitat for threatened flora species including <i>Xerothamnella herbacea</i> (Endangered) and <i>Eucalyptus argophloia</i> (Vulnerable) and <i>Jalmenus eubulus</i> , pale imperial hairstreak butterfly (Eastwood et al. 2008). Larger gilgai may provide ephemeral wetland habitat. 11.4.3a: Provides important wetland habitat. 11.4.3b: Larger gilgai may provide ephemeral wetland habitat.
11.5.14	11.5.14: Potential habitat for NCA listed species: <i>Acacia argyrotrema</i> .
11.5.1a	11.5.1: Habitat for threatened plant species including <i>Acacia handonis</i> and <i>Acacia argyrotrema</i> .
11.5.20	11.5.20: Potential habitat for NCA listed species: <i>Acacia handonis</i> , <i>Macrozamia machinii</i> , <i>Macrozamia platyrhachis</i> .
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: <https://publications.qld.gov.au/dataset/redd/resource/>

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	1,684.74	84.02
13d	Woodlands dominated by <i>Eucalyptus moluccana</i> (gum-topped box) (or <i>E. microcarpa</i> (inland grey box)) on a range of substrates.	2.40	0.12
17a	Woodlands dominated by <i>Eucalyptus populnea</i> (poplar box) (or <i>E. brownii</i> (Reid River box)) on alluvium, sand plains and footslopes of hills and ranges.	29.08	1.45
18a	Dry woodlands to open woodlands, dominated by bloodwoods (<i>Corymbia dallachiana</i> , <i>C. terminalis</i> (long-fruited bloodwood), <i>C. plena</i> , or <i>C. leichhardtii</i> (rustyjack)) or ironbarks (<i>Eucalyptus quadricostata</i> (Pentland ironbark), <i>E. crebra</i> (narrow-leaved red ironbark) or <i>E. exilipes</i> (fine-leaved ironbark)), often with <i>E. acmenoides</i> (narrow-leaved white stringybark), <i>Angophora leiocarpa</i> (rusty gum) and <i>Callitris glaucophylla</i> (white cypress pine) in the Brigalow Belt, on sandy plateaus and plains.	12.46	0.62
25a	Open forests to woodlands dominated by <i>Acacia harpophylla</i> (brigalow) sometimes with <i>Casuarina cristata</i> (belah) on heavy clay soils. Includes areas co-dominated with <i>A. cambagei</i> (gidgee) and/or emergent eucalypts.	90.00	4.49
33b	Hummock grasslands dominated by <i>Triodia pungens</i> or <i>T. longiceps</i> (giant grey spinifex) or <i>T. mitchellii</i> (buck spinifex) sandplains.	186.57	9.30

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: <http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

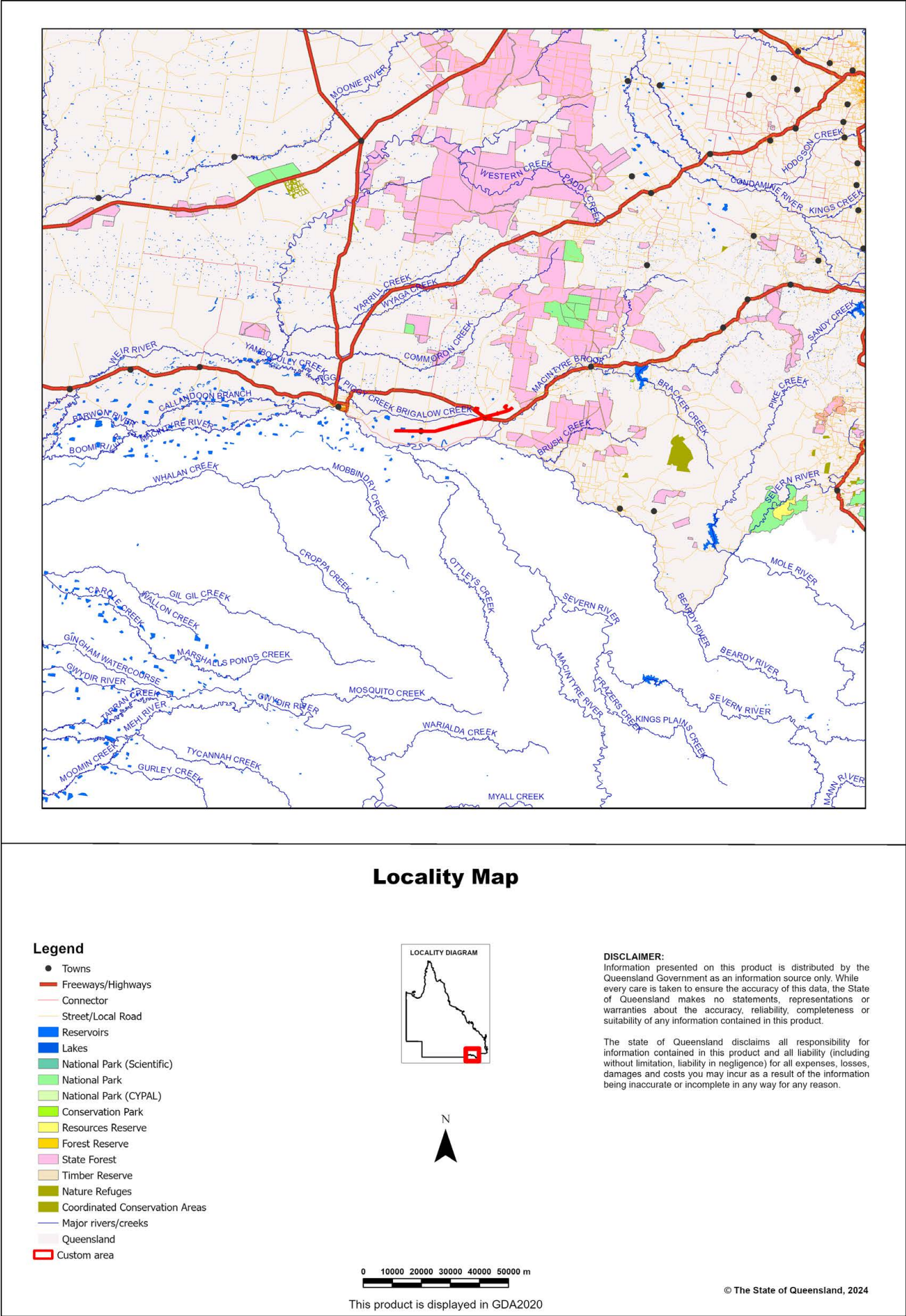
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

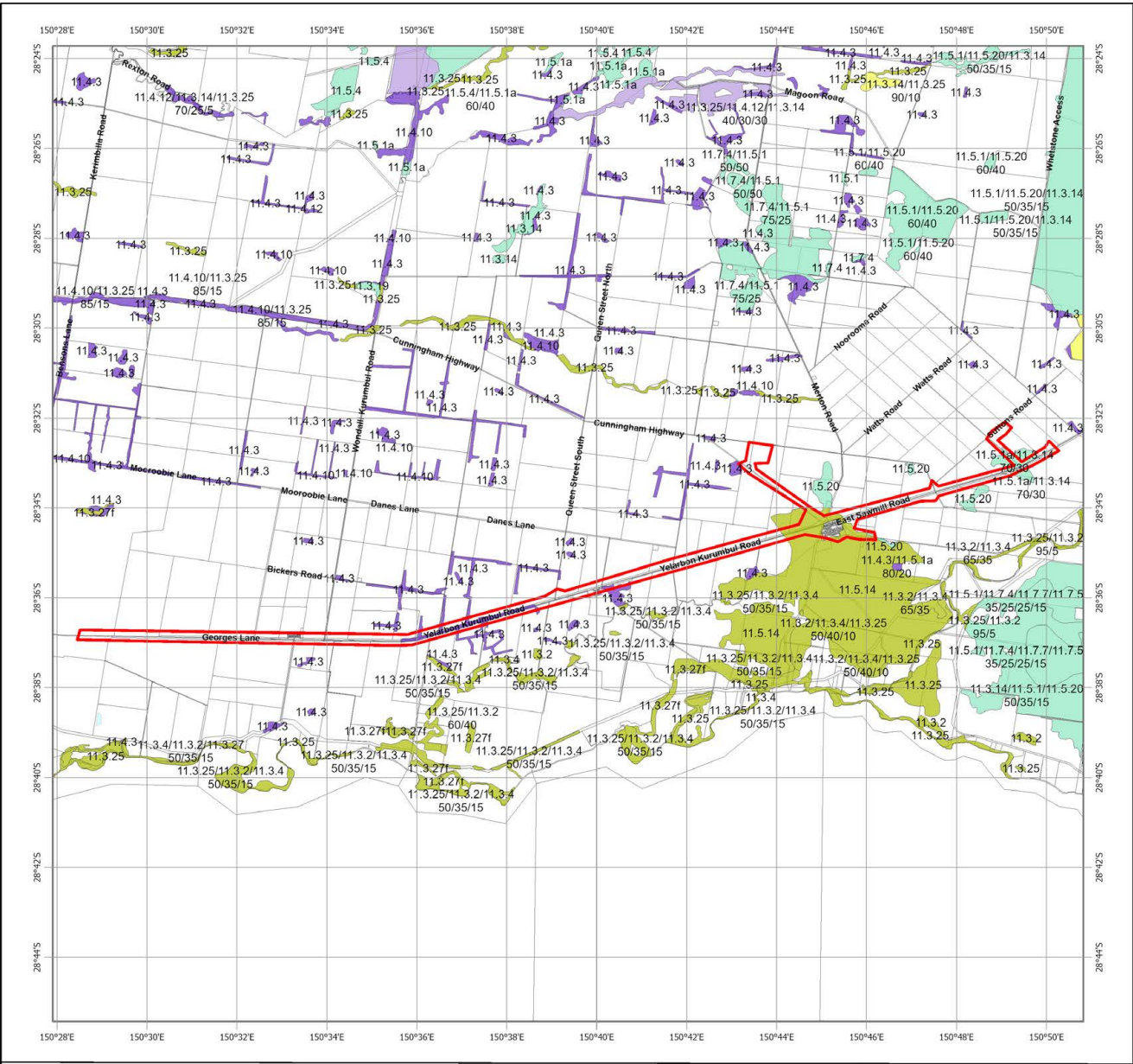
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.3.14	Available	Available
11.4.3	Available	Available
11.5.14	Not currently available	Not currently available
11.5.1a	Available	Available
11.5.20	Available	Available
non-remnant	Not currently available	Not currently available

Maps

Map 1 - Location



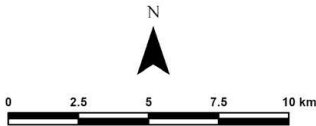
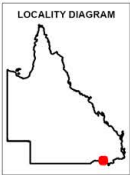
Map 2 - Remnant 2021 regional ecosystems



Remnant 2021 Regional Ecosystems

Biodiversity Status

- Endangered - Dominant vegetation
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Non-remnant vegetation, cultivated or built environment
- Plantation
- Water
- Cadastral Boundaries
- Custom area



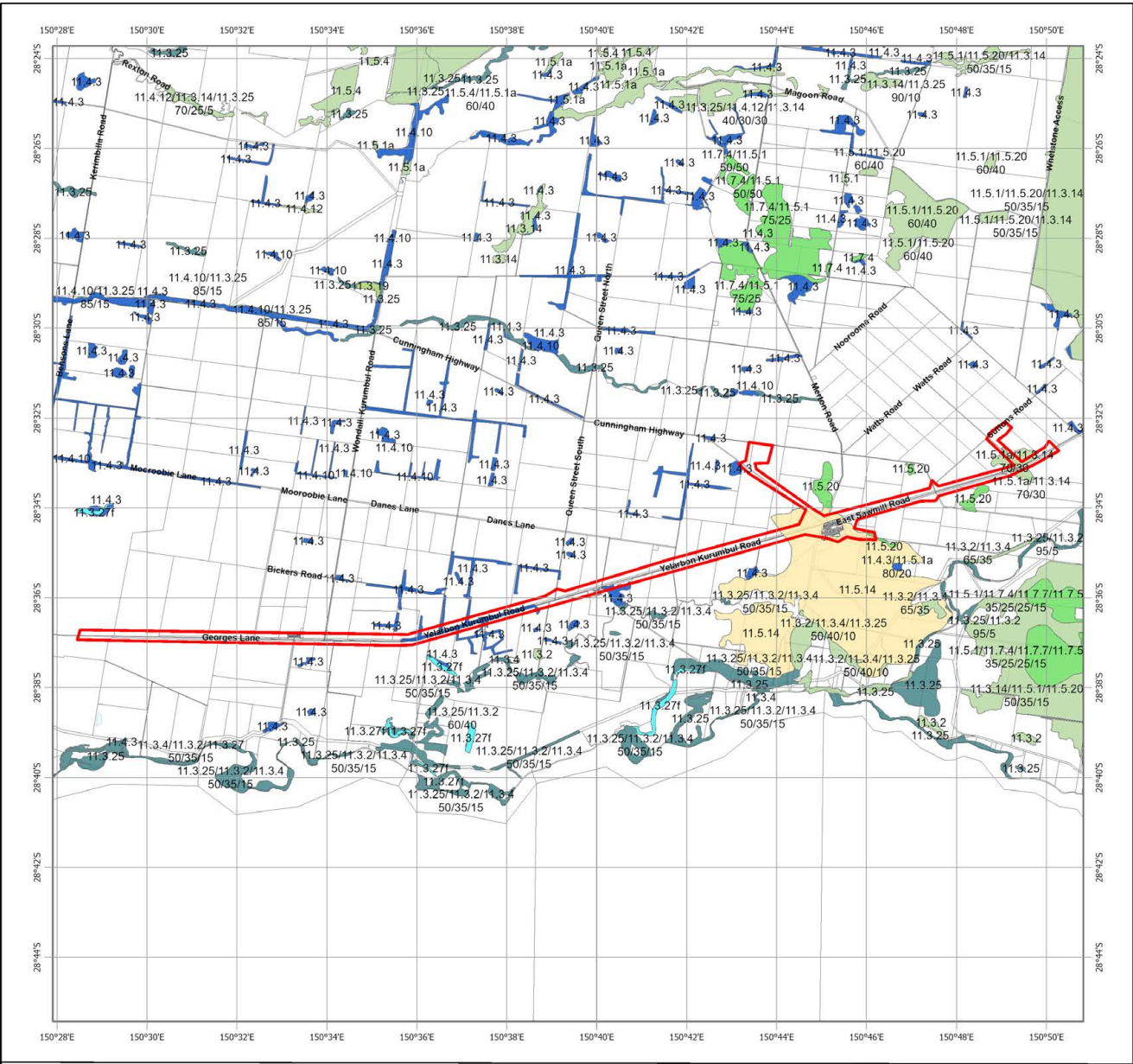
This product is projected into GDA2020

Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The polygons are labelled by regional ecosystem (RE); where more than one RE occurs, the percentage of each is labelled. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.

This is a detailed cadastral map of a rural area in South Australia, likely from the 1980s or 1990s. The map is overlaid with a grid of latitude and longitude coordinates, ranging from 150°28'E to 150°50'E and 28°44'S to 28°24'S. The map shows various land parcels, many of which are colored in shades of purple, green, and yellow, indicating different land uses or ownership. Numerous alphanumeric codes are scattered across the map, often associated with specific parcels or roads. Key roads labeled include Cunningham Highway, Mooroolbaine Road, Kildonan Road, and several local roads like Georges Lane, Yelarbon Kurumbul Road, and Kildonan Road. A red line highlights a specific route or boundary across the map, starting from the bottom left and extending towards the top right. The map also shows some water bodies, such as the Mooroolbaine River and several creeks.

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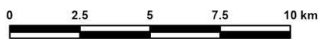
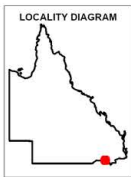
Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

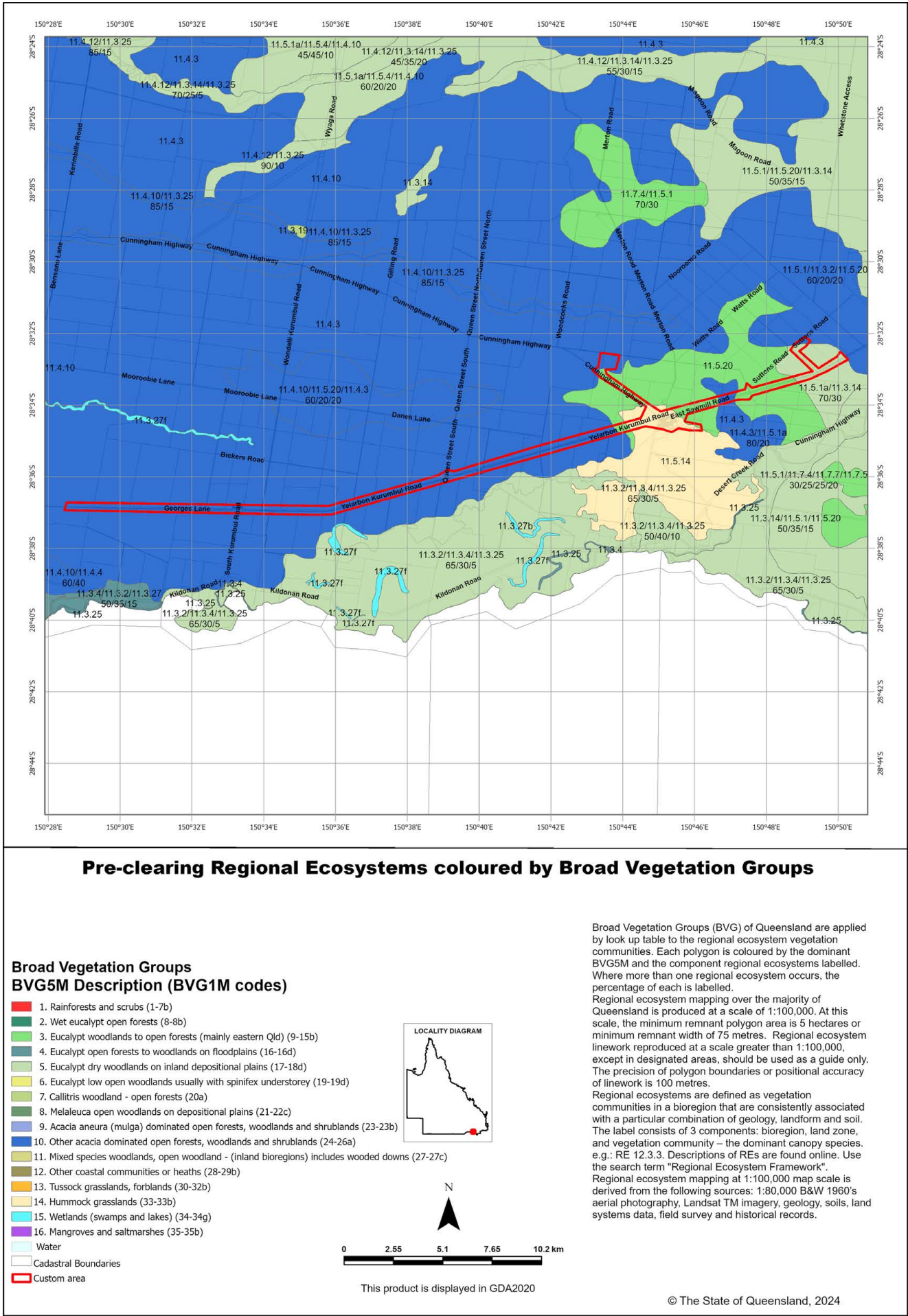
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries
- Custom area



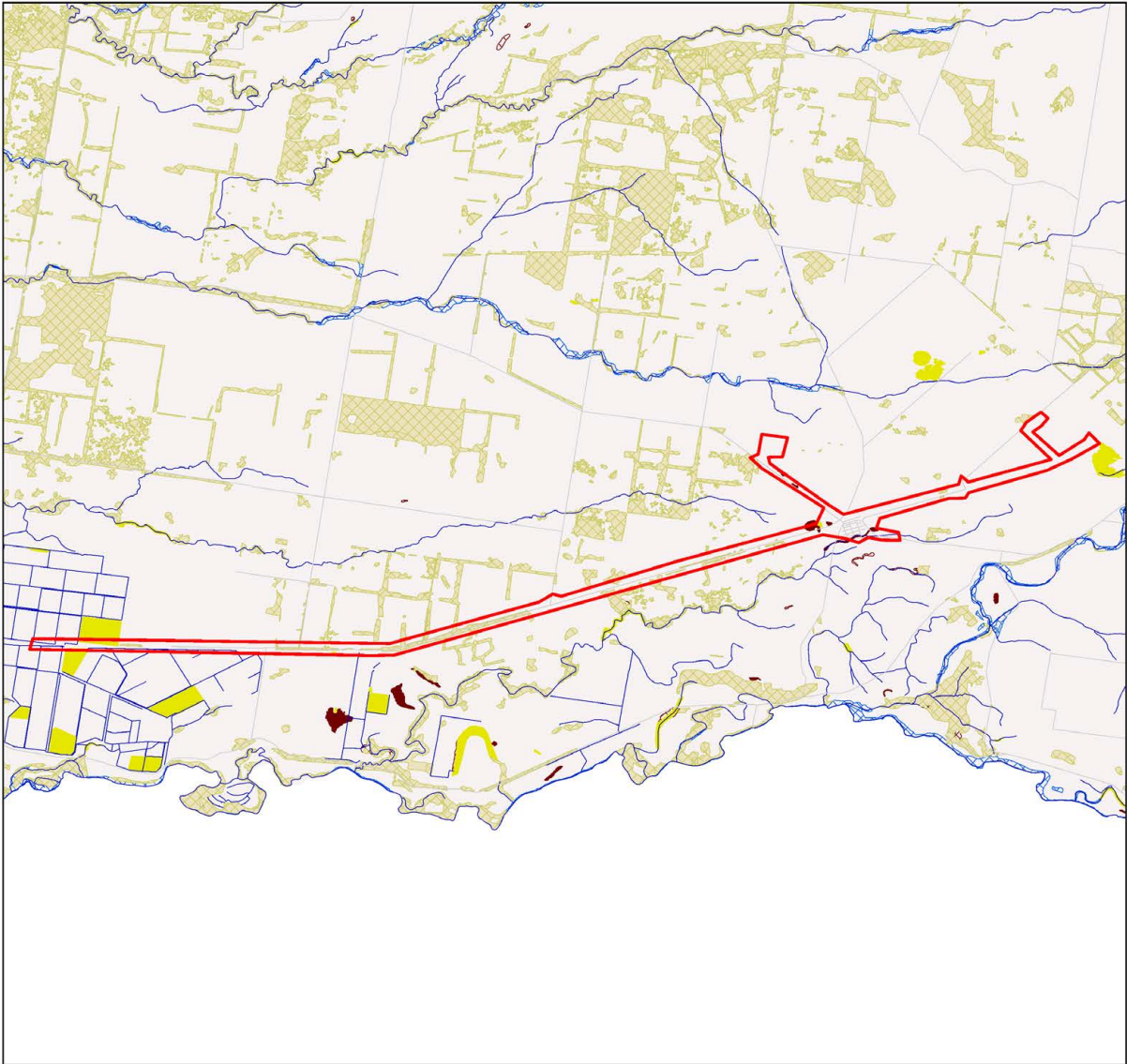
This product is displayed in GDA2020

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres. Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species, e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework". Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records. Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy. Non-remnant vegetation includes regrowth and disturbed native vegetation.

Map 5 - Pre-clearing regional ecosystems by BVG (5M)

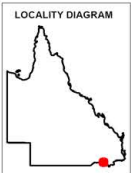


Map 6 - Wetlands and waterways



Wetlands and Waterways

- Towns
 - Roads
 - Springs
 - Rivers/Creeks
 - Directory of Important Wetlands
 - Ramsar Sites - QLD
- Wetland Type**
- Hydrologically natural Wetlands**
- Lacustrine Wetlands (hydrologically natural)
 - Palustrine Wetlands (hydrologically natural)
 - Riverine Wetlands (hydrologically natural)
 - Intertidal Wetlands (hydrologically natural)
 - Subtidal Wetlands (hydrologically natural)
 - Intertidal/Subtidal Wetlands (hydrologically natural)
- Hydrologically Modified and Artificial Wetlands**
- Lacustrine Wetlands (hydrologically modified or artificial)
 - Palustrine Wetlands (hydrologically modified or artificial)
 - Riverine Wetlands (hydrologically modified or artificial)
 - Intertidal Wetlands (hydrologically modified or artificial)
 - Subtidal Wetlands (hydrologically modified or artificial)
 - Intertidal/Subtidal Wetlands (hydrologically modified or artificial)
- Subdominant Wetlands**
- Subdominant Wetlands (51 - 80%)
- Contains Wetlands**
- Contains Wetlands (1 - 50%)
- Queensland
- Custom area



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Links and Other Information Sources

The Department of Environment, Science and Innovation's Website -

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/> provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation>

The methodology for mapping regional ecosystems can be downloaded from:

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

Benchmarks can be obtained from: <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/spatial-catalogue)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

<https://qldglobe.information.qld.gov.au/>

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https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/>

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

[Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](https://www.qld.gov.au/information/spatial-catalogue)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>



Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Biodiversity and Conservation Values

Biodiversity Planning Assessments and Aquatic Conservation Assessments

For the selected area of interest

Custom input

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or Area of Interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "Central co-ordinates" option, the resulting assessment area encompasses an area extending from 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: biodiversity.planning@des.qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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Summary Information

Tables 1 to 8 provide an overview of the AOI with respect to selected topographic and environmental values.

Table 1: Details for area of interest: Custom input, with area 2005.25 ha

Local Government(s)
Goondiwindi Regional
Bioregion(s)
Brigalow Belt
Subregion(s)
Moonie R. - Commoron Creek Floodout
Catchment(s)
Border Rivers

The following table identifies available Biodiversity Planning Assessments (BPAs) and Aquatic Conservation Assessments (ACAs) with respect to the AOI.

Table 2: Available Biodiversity Planning and Aquatic Conservation Assessments

Biodiversity Planning Assessment(s)	Aquatic Conservation Assessment(s) (riverine)	Aquatic Conservation Assessment(s) (non-riverine)
Brigalow Belt v2.1	Queensland Murray-Darling and Bulloo Basins v2.1	Queensland Murray-Darling and Bulloo Basins v.2.1

Table 3: Remnant regional ecosystems within the AOI as per the Qld Herbarium's 'biodiversity status'

Biodiversity Status	Area (Ha)	% of AOI
Endangered	90.00	4.49
Of concern	186.57	9.30
No concern at present	43.94	2.19

The following table identifies the extent and proportion of the user specified area of interest (AOI) which is mapped as being of "State", "Regional" or "Local" significance via application of the Queensland Department of Environment, Science and Innovation's *Biodiversity Assessment and Mapping Methodology* (BAMM).

Table 4: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
Local or Other Values	4.06	0.20
Regional	42.03	2.10
State	260.10	12.97
State Habitat for EVNT taxa	19.55	0.97

Table 5: Non-riverine wetlands intersecting the AOI

Non-riverine wetland types intersecting the area of interest	#
Number of Lacustrine wetlands	5
Number of Palustrine wetlands	5

Total number of non-riverine wetlands	10
---------------------------------------	----

NB. The figures presented in the table above are derived from the relevant non-riverine Aquatic Conservation Assessment(s). Later releases of wetland mapping produced via the Queensland Wetland Mapping Program may provide more recent information in regards to wetland extent.

Table 6: Named waterways intersecting the AOI

(No Records)

Refer to **Map 1** for general locality information.

The following two tables identify the extent and proportion of the user specified AOI which is mapped as being of "Very High", "High", "Medium", "Low", or "Very Low" aquatic conservation value for riverine and non-riverine wetlands via application of the Queensland Department of Environment, Science and Innovation's *Aquatic Biodiversity Assessment and Mapping Method* (AquaBAMM).

Table 7: Summary table, aquatic conservation significance (riverine)

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	1,638.37	81.70
Medium	282.04	14.07
Very High	84.84	4.23

Table 8: Summary table, aquatic conservation significance (non-riverine)

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
High	1.83	0.09
Low	27.18	1.36
Medium	20.82	1.04

Biodiversity Planning Assessments

Introduction

The Department of Environment, Science and Innovation (DESI) attributes biodiversity significance on a bioregional scale through a Biodiversity Planning Assessment (BPA). A BPA involves the integration of ecological criteria using the *Biodiversity assessment and Mapping Methodology* (BAMM) and is developed in two stages: 1) **diagnostic criteria**, and 2) **expert panel criteria**. The diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion, while the expert panel criteria allows for the refinement of the mapped information from the diagnostic output by incorporating local knowledge and expert opinion.

The BAMM methodology has application for identifying areas with various levels of significance solely for biodiversity reasons. These include threatened ecosystems or taxa, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, and buffers to wetlands or other types of habitat important for the maintenance of biodiversity or ecological processes. While natural resource values such as dryland salinity, soil erosion potential or land capability are not dealt with explicitly, they are included to some extent within the biodiversity status of regional ecosystems recognised by the DESI. Biodiversity Planning Assessments (BPAs) assign three levels of overall biodiversity significance.

- **State significance** - areas assessed as being significant for biodiversity at the bioregional or state scales. They also include areas assessed by other studies/processes as being significant at national or international scales. In addition, areas flagged as being of State significance due to the presence of endangered, vulnerable and/or near threatened taxa, are identified as "State Habitat for EVNT taxa".
- **Regional significance** - areas assessed as being significant for biodiversity at the subregional scale. These areas have lower significance for biodiversity than areas assessed as being of State significance.
- **Local significance and/or other values** - areas assessed as not being significant for biodiversity at state or regional scales. Local values are of significance at the local government scale.

For further information on released BPAs and a copy of the underlying methodology, go to:

<http://www.qld.gov.au/environment/plants-animals/biodiversity/planning/>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

The following table identifies the extent and proportion of the user specified AOI which is mapped as being of "State", "Regional" or "Local" significance via application of the BAMM.

Table 9: Summary table, biodiversity significance

Biodiversity Status	Area (Ha)	% of AOI
State Habitat for EVNT taxa	19.55	0.97
State	260.10	12.97
Regional	42.03	2.10
Local or Other Values	4.06	0.20

Refer to **Map 2** for further information.

Diagnostic Criteria

Diagnostic criteria are based on existing data which is reliable and uniformly available across a bioregion. These criteria are diagnostic in that they are used to filter the available data and provide a "first-cut" or initial determination of biodiversity significance. This initial assessment is then combined through a second group of other essential criteria.

A description of the individual diagnostic criteria is provided in the following sections.

Criteria A. Habitat for EVNT taxa: Classifies areas according to their significance based on the presence of endangered, vulnerable and/or rare (EVNT) taxa. EVNT taxa are those scheduled under the *Nature Conservation Act 1992* and/or the *Environment Protection and Biodiversity Conservation Act 1999*. It excludes highly mobile fauna taxa which are instead considered in Criterion H and brings together information on EVNT taxa using buffering of recorded

sites or habitat suitability models (HSM) where available.

Criteria B. Ecosystem value: Classifies on the basis of biodiversity status of regional ecosystems, their extent in protected areas (presence of poorly conserved regional ecosystems), the presence of significant wetlands; and areas of national importance such as the presence of Threatened Ecological Communities, World Heritage areas and Ramsar sites. Ecosystem value is applied at a bioregional (**B1**) and regional (**B2**) scale.

Criteria C. Tract size: Measures the relative size of tracts of vegetation in the landscape. The size of any tract is a major indicator of ecological significance, and is also strongly correlated with the long-term viability of biodiversity values. Larger tracts are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller tracts.

Criteria D. Relative size of regional ecosystems: Classifies the relative size of each regional ecosystem unit within its bioregion (**D1**) and its subregion (**D2**). Remnant units are compared with all other occurrences with the same regional ecosystem. Large examples of a regional ecosystem are more significant than smaller examples of the same regional ecosystem because they are more representative of the biodiversity values particular to the regional ecosystem, are more resilient to the effects of disturbance, and constitute a significant proportion of the total area of the regional ecosystem.

Criteria F. Ecosystem diversity: Is an indicator of the number of regional ecosystems occurring within an area. An area with high ecosystem diversity will have many regional ecosystems and ecotones relative to other areas within the bioregion.

Criteria G. Context and connection: Represents the extent to which a remnant unit incorporates, borders or buffers areas such as significant wetlands, endangered ecosystems; and the degree to which it is connected to other vegetation.

A summary of the biodiversity status based upon the diagnostic criteria is provided in the following table.

Table 10: Summary of biodiversity significance based upon diagnostic criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
		4.06	0.20
Local or Other Values	Refer to diagnostic data for additional information	41.54	2.07
Regional	Remnant contains at least 1 RE with <10 pc extent remaining or rare in subregion (B2)	2.40	0.12
State	Remnant contains at least 1 Endangered or 2 Vulnerable or Near Threatened species (A)	19.55	0.97
State	Remnant contains at least 1 Endangered RE (B1) & Nat. Threatened Ecol. Community (B1)	91.13	4.54
State	Remnant contains at least one Of Concern RE (B1) & Remnant contains an RE that is one of the largest of its type in the bioregion (D1)	167.06	8.33

Assessment of diagnostic criteria with respect to the AOI

The following table reflects an assessment of the individual diagnostic criteria noted above in regards to the AOI.

Table 11: Assessment of individual diagnostic criteria with respect to the AOI

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
A: Habitat for EVNT Taxa	19.55	0.97	0.00	0.00	170.36	8.50	131.76	6.57
B1: Ecosystem Value (Bioregion)	91.13	4.54	186.61	9.31	43.94	2.19	0.00	0.00

Diagnostic Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
B2: Ecosystem Value (Subregion)	93.52	4.66	41.54	2.07	186.61	9.31	0.00	0.00
C: Tract Size	189.00	9.43	0.00	0.00	0.00	0.00	132.67	6.62
D1: Relative RE Size (Bioregion)	186.61	9.31	0.00	0.00	0.00	0.00	135.06	6.74
D2: Relative RE Size (Subregion)	186.61	9.31	0.00	0.00	0.00	0.00	135.06	6.74
F: Ecosystem Diversity	0.00	0.00	0.00	0.00	43.94	2.19	277.73	13.85
G: Context and Connection	0.00	0.00	2.40	0.12	196.39	9.79	122.88	6.13

Other Essential Criteria

Other essential criteria (also known as expert panel criteria) are based on non-uniform information sources and which may rely more upon expert opinion than on quantitative data. These criteria are used to provide a "second-cut" determination of biodiversity significance, which is then combined with the diagnostic criteria for an overall assessment of relative biodiversity significance. A summary of the biodiversity status based upon the other essential criteria is provided in the following table.

Table 12: Summary of biodiversity significance based upon other essential criteria with respect to the AOI

Biodiversity significance	Description	Area (Ha)	% of AOI
Local	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	4.06	0.20
Regional	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	115.27	5.75
State	Remnant contains Special Biodiversity Values (view Expert Panel data for further information) (I)	206.40	10.29

A description of each of the other essential criteria and associated assessment in regards to the AOI is provided in the following sections.

Criteria H. Essential and general habitat for priority taxa: Priority taxa are those which are at risk or of management concern, taxa of scientific interest as relictual (ancient or primitive), endemic taxa or locally significant populations (such as a flying fox camp or heronry), highly specialised taxa whose habitat requirements are complex and distributions are not well correlated with any particular regional ecosystem, taxa important for maintaining genetic diversity (such as complex spatial patterns of genetic variation, geographic range limits, highly disjunct populations), taxa critical for management or monitoring of biodiversity (functionally important or ecological indicators), or economic and culturally important taxa.

Criteria I. Special biodiversity values: areas with special biodiversity values are important because they contain multiple taxa in a unique ecological and often highly biodiverse environment. Areas with special biodiversity values can include the following:

- Ia - centres of endemism - areas where concentrations of taxa are endemic to a bioregion or subregion are found.
- Ib - wildlife refugia (Morton *et al.* 1995), for example, islands, mound springs, caves, wetlands, gorges, mountain ranges and topographic isolates, ecological refuges, refuges from exotic animals, and refuges from clearing. The latter may include large areas that are not suitable for clearing because of land suitability/capability.
- Ic - areas with concentrations of disjunct populations.
- Id - areas with concentrations of taxa at the limits of their geographic ranges.
- Ie - areas with high species richness.

- If - areas with concentrations of relictual populations (ancient and primitive taxa).
- Ig - areas containing REs with distinct variation in species composition associated with geomorphology and other environmental variables.
- Ih - an artificial waterbody or managed/manipulated wetland considered by the panel/s to be of ecological significance.
- Ii - areas with a high density of hollow-bearing trees that provide habitat for animals.
- Ij - breeding or roosting sites used by a significant number of individuals.
- Ik - climate change refuge.

The following table identifies the value and extent area of the Other Essential Criteria H and I within the AOI.

Table 13: Relative importance of expert panel criteria (H and I) used to access overall biodiversity significance with respect to the AOI

Expert Panel	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
H: Core Habitat Priority Taxa	0.00	0.00	0.00	0.00	2.06	0.10	0.00	0.10
Ia: Centres of Endemism	186.61	9.31	0.00	0.00	0.00	0.00	0.00	0.00
Ib: Wildlife Refugia	206.40	10.29	115.27	5.75	4.06	0.20	0.00	0.20
Ic: Disjunct Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Id: Limits of Geographic Ranges	186.61	9.31	0.00	0.00	0.00	0.00	0.00	0.00
Ie: High Species Richness	186.61	9.31	0.00	0.00	0.00	0.00	0.00	0.00
If: Relictual Populations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ig: Variation in Species Composition	186.61	9.31	0.00	0.00	0.00	0.00	0.00	0.00
Ih: Artificial Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ii: Hollow Bearing Trees	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ij: Breeding or Roosting Site	0.91	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Ik: Climate Refugia	186.61	9.31	0.00	0.00	0.00	0.00	0.00	0.00

NB. Whilst biodiversity values associated with Criteria I may be present within the site (refer to tables 12 and 15), for the New England Tableland and Central Queensland Coast BPAs, area and % area figures associated with Criteria Ia through to Ij cannot be listed in the table above (due to slight variations in data formats between BPAs).

Criteria J. Corridors: areas identified under this criterion qualify either because they are existing vegetated corridors important for contiguity, or cleared areas that could serve this purpose if revegetated. Some examples of corridors include riparian habitats, transport corridors and "stepping stones".

Bioregional and subregional conservation corridors have been identified in the more developed bioregions of Queensland through the BPAs, using an intensive process involving expert panels. Map 3 displays the location of corridors as identified under the Statewide Corridor network. The Statewide Corridor network incorporates BPA derived corridors and for bioregions where no BPA has been assessed yet, corridors derived under other planning processes. *Note: as a result of updating and developing a statewide network, the alignment of corridors may differ slightly in some instances when compared to those used in individual BPAs.*

The functions of these corridors are:

- **Terrestrial** Bioregional corridors, in conjunction with large tracts of remnant vegetation, maintain ecological and evolutionary processes at a landscape scale, by:
 - Maintaining long term evolutionary/genetic processes that allow the natural change in distributions of species and connectivity between populations of species over long periods of time;
 - Maintaining landscape/ecosystems processes associated with geological, altitudinal and climatic gradients, to allow for ecological responses to climate change;
 - Maintaining large scale seasonal/migratory species processes and movement of fauna;
 - Maximising connectivity between large tracts/patches of remnant vegetation;
 - Identifying key areas for rehabilitation and offsets; and
- **Riparian** Bioregional Corridors also maintain and encourage connectivity of riparian and associated ecosystems.

The location of the corridors is determined by the following principles:

- Terrestrial
 - Complement riparian landscape corridors (i.e. minimise overlap and maximise connectivity);
 - Follow major watershed/catchment and/or coastal boundaries;
 - Incorporate major altitudinal/geological/climatic gradients;
 - Include and maximise connectivity between large tracts/patches of remnant vegetation;
 - Include and maximise connectivity between remnant vegetation in good condition; and
- Riparian
 - Located on the major river or creek systems within the bioregion in question.

The total extent of remnant vegetation triggered as being of "State", "Regional" or "Local" significance due to the presence of an overlying BPA derived terrestrial or riparian corridor within the AOI, is provided in the following table. For further information on how remnant vegetation is triggered due to the presence of an overlying BPA derived corridor, refer to the relevant landscape BPA expert panel report(s).

Table 14: Extent of triggered remnant vegetation due to the presence of BPA derived corridors with respect to the AOI

Biodiversity Significance	Area (Ha)	% of AOI
	325.73	16.24

NB: area figures associated with the extent of corridor triggered remnant vegetation are only available for those bioregions where a BPA has been undertaken.

Refer to **Map 3** for further information.

Threatening process/condition (Criteria K) - areas identified by experts under this criterion may be used to amend (upgrade or downgrade) biodiversity significance arising from the "first-cut" analysis. The condition of remnant vegetation is affected by threatening processes such as weeds, ferals, grazing and burning regime, selective timber harvesting/removal, salinity, soil erosion, and climate change.

Assessment of Criteria K with respect to the AOI is not currently included in the "Biodiversity and Conservation Values" report, as it has not been applied to the majority of Queensland due to data/information limitations and availability.

Special Area Decisions

Expert panel derived "Special Area Decisions" are used to assign values to Other Essential Criteria. The specific decisions which relate to the AOI in question are listed in the table below.

Table 15: Expert panel decisions for assigning levels of biodiversity significance with respect to the AOI

Decision Number	Description	Panel Recommended Significance	Criteria Values
brbs_l_09	Relictual subregions - stock-routes and associated reserves	State	lb (refugia): VH
brbs_l_15	Relictual subregions (less than 30% remnant vegetation) - remnant vegetation	Regional	lb (refugia): H
brbs_l_48	Locally significant natural palustrine & lacustrine wetlands	Local	lb (refugia): M
brbs_fl_38	Yelarbon Desert	State	la (endemic richness): VH; ld (range limits): VH; le (species richness): H; lg (ecosystem variation): VH
brbs_l_08	Relictual subregions - largest remaining examples of each regional ecosystem in a subregion.	State	lb (refugia): VH
brbs_l_43	Permanent groundwater dependant ecosystems	State	lb (refugia): VH; le (species richness): VH; lk (climate refugia): VH
brbs_l_49	Gilgai Remnants	State	lb (refugia): VH; lj (aggregation site):VH

Expert panel decision descriptions:

Decision Number	Description
brbs_l_09	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Relictual subregions (less than 30% remnant vegetation remaining) for the Brigalow Belt include; Upper Belyando Flood out (11.8), Isaac - Comet Downs (11.11), Callide Creek Downs (11.19), Dawson River Downs (11.21), Taroom Downs (11.25), Dulacca Downs (11.28), Weribone High (11.29), Tara Downs (11.30), Eastern Darling Downs (11.31), Moonie R. - Commoron Creek Floodout (11.33), Moonie - Barwon Interfluv (11.34), Warrambool - Moonie (11.35), Macintyre - Weir Fan (11.36), Narrandool (11.38). Stock-routes and associated camping and water reserves provide critical connectivity in a fragmented landscape. They also offer opportunities to restore habitat and connectivity in highly cleared landscapes. Refer to brbn_l_88 for the northern BRB implementation of this decision.
brbs_l_15	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. The following subregions have less than 30% remnant vegetation in the southern Brigalow Belt: Relictual subregions (less than 30% remnant vegetation remaining) for the Brigalow Belt include; Upper Belyando Flood out (11.8), Isaac - Comet Downs (11.11), Callide Creek Downs (11.19), Dawson River Downs (11.21), Taroom Downs (11.25), Dulacca Downs (11.28), Weribone High (11.29), Tara Downs (11.30), Eastern Darling Downs (11.31), Moonie R. - Commoron Creek Floodout (11.33), Moonie - Barwon Interfluv (11.34), Warrambool - Moonie (11.35), Macintyre - Weir Fan (11.36), Narrandool (11.38). Remnant vegetation provides a refuge from clearing in fragmented subregions and should be retained to maintain biodiversity. Refer to brbn_l_89 for the northern BRB implementation of this decision.
brbs_l_48	The panel considered that relatively natural palustrine and lacustrine wetlands and waterbodies within the Brigalow Belt bioregion act as important refugia, especially during periods of drought. Whilst State significant wetlands are captured under Criterion B1, and regionally significant wetlands under the decision brbn_l_47, the panel agreed that all remaining relatively natural wetland complexes of less than 5ha in size be classed as being of at least local significance. Refer to brbn_l_93 for the northern BRB implementation of this decision.

Decision Number	Description
brbs_fl_38	The Yelarbon Desert represents a unique landsystem, the soils of which have been strongly influenced by the upwelling of salt rich ground water (Biggs et al. 2010). Drainage patterns and soil pH have strongly influenced vegetation communities and as a result, a large number of salt tolerant species are present such as <i>Dysphania carinata</i>, <i>Einadia nutans</i>, <i>Enchylaena tomentosa</i>, succulents (<i>Portulaca bicolor</i>, <i>Rhagodia spinescens</i>, <i>Salsola australis</i>, <i>Sarcozona praecox</i> and <i>Tribulus terrestris</i>), chenopods, sedges and rushes. Although under-sampled, the dominant vegetation community of spinifex grassland with scattered trees and shrubs supports a unique and relatively diverse range of flora (more than 150 species have been recorded). The particular ecosystem of the special area (11.5.14) is considered the largest and most representative example of this ecosystem type within the Brigalow Belt bioregion. Examples of Brigalow Belt endemics present include <i>Myriophyllum gracile</i> var. <i>laeve</i> and <i>Westringia parvifolia</i> and <i>Triodia vella</i>. A substantial number of species are also considered to be at or close to their range limit (eastern limit: <i>Angianthus brachypappus</i>, <i>Centipeda thespidioides</i>, <i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>, <i>Eremophila glabra</i>, <i>Maireana brevifolia</i>, <i>Maireana pentagona</i>, <i>Peplidium foecundum</i>, <i>Podolepis muelleri</i>, <i>Sclerolaena bicornis</i>, <i>Sclerolaena diacantha</i>, <i>Sclerolaena stelligera</i>, <i>Senecio glossanthus</i>, <i>Sida cunninghamii</i>, <i>Trianthema</i> sp. (Coorabulka R.W.Purdie 1404), and <i>Triodia scariosa</i>; southern limit: <i>Bothriochloa decipiens</i> var. <i>cloncurrrens</i>, and; northern limit: <i>Brachyscome watanabei</i>, <i>Lepidium hypenanthion</i> and <i>Lepidium monoplacoides</i>). In addition to the floristic values noted above, after heavy rains lower parts and drainage lines of the area become inundated and attract numerous species and numbers of waterbirds.
brbs_l_08	A summary of research on landscape thresholds for remnant vegetation is provided by James & Saunders (2001). The evidence suggests that once remnant vegetation falls below 30%, there are significant declines in biodiversity. Relictual subregions (less than 30% remnant vegetation remaining) for the Brigalow Belt include the Upper Belyando Flood out (11.8), Isaac - Comet Downs (11.11), Callide Creek Downs (11.19), Dawson River Downs (11.21), Taroom Downs (11.25), Dulacca Downs (11.28), Weribone High (11.29), Tara Downs (11.30), Eastern Darling Downs (11.31), Moonie R. - Commoroon Creek Floodout (11.33), Moonie - Barwon Interfluve (11.34), Warrambool - Moonie (11.35), Macintyre - Weir Fan (11.36), Narrandool (11.38). The largest remaining examples of each regional ecosystem in a subregion represent important refuges from clearing in these fragmented landscapes. Refer to brbn_l_87 for the northern BRB implementation of this decision.
brbs_l_43	This decision relates to all ecosystems that have a permanent / near permanent groundwater connection. The major threats to these ecosystems are coal seam gas extraction and water extraction industries. Groundwater dependant ecosystems provide an array of ecological benefits including provision of: - Habitat for flora and fauna, including rare and unique organisms; - Providing corridors for fauna; - Mitigating the effects of floods; - Reducing soil erosion; - Reducing sediment and nutrient loss; - Degrading pollutants and contaminants. Given the expected increase in frequency of droughts and higher temperatures due to climate change, such areas may act as important drought refugia. (Some of the information sourced from WetlandInfo, https://wetlandinfo.des.qld.gov.au/wetlands/).
brbs_l_49	The gilgai wetland systems in the Brigalow Belt tend to be dominated by acacia and casuarina (mostly brigalow <i>Acacia harpophylla</i> and belah <i>Casuarina cristata</i>). <i>Melaleuca</i>, <i>Corymbia</i> and <i>Eucalyptus</i> species are also common along with <i>Astrelba</i> or <i>Dichanthium</i> spp. grassland. Gilgai systems are widespread and some are in good condition while others are largely cleared. The range of threatened wildlife present may use inundated gilgai as a water source at some stage of their life or are closely associated with the cracking clay soil habitat and wetlands. Gilgai reptiles include the death adder <i>Acanthophis antarcticus</i>, De Vis's banded snake <i>Denisonia devisi</i> and ornamental snake <i>D. maculata</i>. Amphibians that use gilgai include salmon striped frog <i>Limnodynastes salmini</i>, scarlet-sided pobblebonk <i>L. terraereginae</i> and striped burrowing frog <i>Cyclorana alboguttata</i>. Other fauna which may use gilgai habitat at various times include bridled nailtail wallaby <i>Onychogalea fraenata</i>, black-striped wallaby <i>Macropus dorsalis</i> and the glossy black cockatoo <i>Calyptorhynchus lathami</i>. Refer to brbn_l_75 for the northern BRB implementation of this decision.

Aquatic Conservation Assessments

Introduction

The Aquatic Biodiversity Assessment and Mapping Method or AquaBAMM (Clayton *et al.* 2006), was developed to assess conservation values of wetlands in Queensland, and may also have application in broader geographical contexts. It is a comprehensive method that uses available data, including data resulting from expert opinion, to identify relative wetland conservation/ecological values within a specified study area (usually a catchment). The product of applying this method is an Aquatic Conservation Assessment (ACA) for the study area.

An ACA using AquaBAMM is non-social, non-economic and identifies the conservation/ecological values of wetlands at a user-defined scale. It provides a robust and objective conservation assessment using criteria, indicators and measures that are founded upon a large body of national and international literature. The criteria, each of which may have variable numbers of indicators and measures, are naturalness (aquatic), naturalness (catchment), diversity and richness, threatened species and ecosystems, priority species and ecosystems, special features, connectivity and representativeness. An ACA using AquaBAMM is a powerful decision support tool that is easily updated and simply interrogated through a geographic information system (GIS).

Where they have been conducted, ACAs can provide a source of baseline wetland conservation/ecological information to support natural resource management and planning processes. They are useful as an independent product or as an important foundation upon which a variety of additional environmental and socio-economic elements can be added and considered (i.e. an early input to broader 'triple-bottom-line' decision-making processes). An ACA can have application in:

- determining priorities for protection, regulation or rehabilitation of wetlands and other aquatic ecosystems
- on-ground investment in wetlands and other aquatic ecosystems
- contributing to impact assessment of large-scale development (e.g. dams)
- water resource and strategic regional planning processes

For a detailed explanation of the methodology please refer to the summary and expert panel reports relevant to the ACA utilised in this assessment. These reports can be accessed at Wetland Info:

<http://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca>

The GIS results can be downloaded from the Queensland Spatial Catalogue at:

<https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Explanation of Criteria

Under the AquaBAMM, eight criteria are assessed to derive an overall conservation value. Similar to the Biodiversity Assessment and Mapping Methodology, the criteria may be primarily diagnostic (quantitative) or primarily expert opinion (qualitative) in nature. The following sections provide a brief description of each of the 8 criteria.

Criteria 1. Naturalness - Aquatic: This attribute reflects the extent to which a wetland's (riverine, non-riverine, estuarine) aquatic state of naturalness is affected through relevant influencing indicators which include: presence of exotic flora and fauna; presence of aquatic communities; degree of habitat modification and degree of hydrological modification.

Criteria 2. Naturalness - Catchment: The naturalness of the terrestrial systems of a catchment can have an influence on many wetland characteristics including: natural ecological processes e.g. nutrient cycling, riparian vegetation, water chemistry, and flow. The indicators utilised to assess this criterion include: presence of exotic flora and/or fauna; riparian, catchment and flow modification.

Criteria 3. Naturalness - Diversity and Richness: This criterion is common to many ecological assessment methods and can include both physical and biological features. It includes such indicators as species richness, riparian ecosystem richness and geomorphological diversity.

Criteria 4. Threatened Species and Ecosystems: This criterion evaluates ecological rarity characteristics of a wetland. This includes both species rarity and rarity of communities / assemblages. The communities and assemblages are best represented by regional ecosystems. Species rarity is determined by NCA and EPBC status with Endangered, Vulnerable or Near-threatened species being included in the evaluation. Ecosystem rarity is determined by regional ecosystem biodiversity status i.e. Endangered, Of Concern, or Not of Concern.

Criteria 5. Priority Species and Ecosystems: Priority flora and fauna species lists are expert panel derived. These are aquatic, semi-aquatic and riparian species which exhibit at least 1 particular trait in order to be eligible for consideration. For flora species the traits included:

- It forms significant macrophyte beds (in shallow or deep water).
- It is an important food source.
- It is important/critical habitat.
- It is implicated in spawning or reproduction for other fauna and/or flora species.
- It is at its distributional limit or is a disjunct population.
- It provides stream bank or bed stabilisation or has soil binding properties.
- It is a small population and subject to threatening processes.

Fauna species are included if they meet at least one of the following traits:

- It is endemic to the study area (>75 per cent of its distribution is in the study area/catchment).
- It has experienced, or is suspected of experiencing, a serious population decline.
- It has experienced a significant reduction in its distribution and has a naturally restricted distribution in the study area/catchment.
- It is currently a small population and threatened by loss of habitat.
- It is a significant disjunct population.
- It is a migratory species (other than birds).
- A significant proportion of the breeding population (>one per cent for waterbirds, >75 per cent other species) occurs in the waterbody (see Ramsar criterion 6 for waterbirds).
- Limit of species range.

See the individual expert panel reports for the priority species traits specific to an ACA.

Criteria 6. Special Features: Special features are areas identified by flora, fauna and ecology expert panels which exhibit characteristics beyond those identified in other criteria and which the expert panels consider to be of the highest ecological importance. Special feature traits can relate to, but are not solely restricted to geomorphic features, unique ecological processes, presence of unique or distinct habitat, presence of unique or special hydrological regimes e.g. spring-fed streams. Special features are rated on a 1 - 4 scale (4 being the highest).

Criteria 7. Connectivity: This criterion is based on the concept that appropriately connected aquatic ecosystems are healthy and resilient, with maximum potential biodiversity and delivery of ecosystem services.

Criteria 8. Representativeness: This criterion applies primarily to non-riverine assessments, evaluates the rarity and uniqueness of a wetland type in relation to specific geographic areas. Rarity is determined by the degree of wetland protection within "protected Areas" estate or within an area subject to the *Fisheries Act 1994*, *Coastal Protection and Management Act 1995*, or *Marine Parks Act 2004*. Wetland uniqueness evaluates the relative abundance and size of a wetland or wetland management group within geographic areas such as catchment and subcatchment.

Riverine Wetlands

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water. AquaBAMM, when applied to riverine wetlands uses a discrete spatial unit termed subsections. A subsection can be considered as an area which encompasses discrete homogeneous stream sections in terms of their natural attributes (i.e. physical, chemical, biological and utilitarian values) and natural resources. Thus in an ACA, an aquatic conservation significance score is calculated for each subsection and applies to all streams within a subsection, rather than individual streams as such.

Please note, the area figures provided in Tables 16 and 17, are derived using the extent of riverine subsections within the AOI. Refer to **Map 5** for further information. A summary of the conservation significance of riverine wetlands within the AOI is provided in the following table.

Table 16: Overall level/s of riverine aquatic conservation significance

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
High	1,638.37	81.70
Medium	282.04	14.07

Aquatic conservation significance (riverine wetlands)	Area (Ha)	% of AOI
Very High	84.84	4.23

The individual aquatic conservation criteria ratings for riverine wetlands within the AOI are listed below.

Table 17: Level/s of riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	361.57	18.03	0.00	0.00	1,128.81	56.29	514.87	25.68
2. Naturalness catchment	0.00	0.00	0.00	0.00	537.76	26.82	1,467.49	73.18
3. Diversity and richness	79.54	3.97	91.34	4.56	1,552.33	77.41	282.04	14.07
4. Threatened species and ecosystems	91.34	4.56	785.10	39.15	1,128.81	56.29	0.00	0.00
5. Priority species and ecosystems	0.00	0.00	1,467.49	73.18	458.23	22.85	0.00	0.00
6. Special features	84.84	4.23	91.34	4.56	0.00	0.00	0.00	0.00
7. Connectivity	1,723.21	85.93	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to riverine wetlands within the AOI.

Table 18: Expert panel decisions for assigning overall levels of riverine aquatic conservation significance

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
bd_r_ec_06	Riverine drought refugia (Very High relative value)	Border Rivers	6.1.1,6.2.1,6.3.1,6.3.4	4,4,4,4
bd_r_ec_24	Semi-permanent waterholes (riverine)	Border Rivers	6.1.1,6.2.1,6.3.1,6.3.4	3,3,3,3
bd_r_ec_31	Upland riverine reaches with flows sustained by groundwater seeps	Border Rivers	7.2.1	4
bd_r_ec_45	Riverine drought refugia (High relative value)	Border Rivers	6.1.1,6.2.1,6.3.1,6.3.4	3,3,3,3

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
bd_r_ec_06	Drought refugia are an important feature in a semi-arid landscape. Values include Tandanus (Ell tailed catfish). Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). This decision was implemented using persistent waterhole mapping help by DES. The percentage length of persistent waterholes per riverine spatial unit was calculated using Geofab v2.1 watercourses and DES persistent waterhole mapping. The Jenks Natural Breaks classification algorithm was used to categorise spatial units into four classes (i.e. Very High, High, Medium, Low). Spatial units in the Very High (4) and High (3) classes were used for this decision. Spatial units in the Medium class were used for Riverine drought refugia (High relative value) decision (i.e. bd_r_ec_45).
bd_r_ec_24	Drought refugia are an important feature in a semi-arid landscape. Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). Other values include Tandanus (Ell tailed catfish). This decision was implemented using Water Observations from Space published by Geoscience Australia.
bd_r_ec_31	Groundwater connectivity with riverine ecosystems were viewed as important by the expert panel as inflow of groundwater (especially where granite geology exists), sustains rivers and creeks during drier periods. Water exchange can happen through fractured rock aquifers, but more typically coincides with sandy bottomed riverbeds. Flows are not necessarily perennial during drought.
bd_r_ec_45	Drought refugia are an important feature in a semi-arid landscape. Values include Tandanus (Ell tailed catfish). Fish populations depend on refugial waterholes to survive drought (resistance) and are where surviving fish repopulate the rivers by recruitment and dispersal once flow returns (resilience). This decision was implemented using persistent waterhole mapping help by DES. The percentage length of persistent waterholes per riverine spatial unit was calculated using Geofab v2.1 watercourses and DES persistent waterhole mapping. The Jenks Natural Breaks classification algorithm was used to categorise spatial units into four classes (i.e. Very High, High, Medium, Low). Spatial units in the Medium class were used for this decision. Spatial units in the Very High and High class were used for Riverine drought refugia (Very High relative value) decision (i.e. bd_r_ec_06).

Non-riverine Wetlands

Non-riverine wetlands include both lacustrine and palustrine wetlands, however, do not currently incorporate estuarine, marine or subterranean wetland types. A summary of the conservation significance of non-riverine wetlands within the AOI is provided in the following table. Refer to **Map 6** for further information.

Table 19: Overall level/s of non-riverine aquatic conservation significance

Aquatic conservation significance (non-riverine wetlands)	Area (Ha)	% of AOI
High	1.83	0.09
Low	27.18	1.36
Medium	20.82	1.04

The following table provides an assessment of non-riverine wetlands within the AOI and associated aquatic conservation criteria values.

Table 20: Level/s of non-riverine aquatic conservation significance based on selected criteria

Criteria	Very High Rating - Area (Ha)	Very High Rating - % of AOI	High Rating - Area (Ha)	High Rating - % of AOI	Medium Rating - Area (Ha)	Medium Rating - % of AOI	Low Rating - Area (Ha)	Low Rating - % of AOI
1. Naturalness aquatic	0.00	0.00	0.00	0.00	0.00	0.00	49.83	2.48
2. Naturalness catchment	0.00	0.00	12.25	0.61	7.39	0.37	30.19	1.51
3. Diversity and richness	41.45	2.07	7.40	0.37	0.98	0.05	0.00	0.00
4. Threatened species and ecosystems	15.26	0.76	7.39	0.37	0.00	0.00	27.18	1.36
5. Priority species and ecosystems	15.26	0.76	0.00	0.00	7.39	0.37	0.00	0.00
6. Special features	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. Connectivity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8. Representativeness	9.21	0.46	8.56	0.43	4.88	0.24	0.00	0.00

The table below lists and describes the relevant expert panel decisions used to assign conservation significance values to non-riverine wetlands within the AOI.

Table 21: Expert panel decisions for assigning overall levels of non-riverine aquatic conservation significance.

Decision number	Special feature	Catchment	Criteria/Indicator/Measure	Conservation rating (1-4)
(No Records)				

4 is the highest rating/value

Expert panel decision descriptions:

Decision Number	Description
(No Records)	

Threatened and Priority Species

Introduction

This chapter contains a list of threatened and priority flora and/or fauna species that have been recorded on, or within 4km of the Assessment Area.

The information presented in this chapter with respect to species presence is derived from compiled databases developed primarily for the purpose of BPAs and ACAs. Data is collated from a number of sources and is updated periodically.

It is important to note that the list of species provided in this report, may differ when compared to other reports generated from other sources such as the State government's WildNet, HerbreCs or the federal government's EPBC database for a number of reasons.

Records for threatened and priority species are filtered and checked based on a number of rules including:

- Taxonomic nomenclature - current scientific names and status,
- Location - cross-check co-ordinates with location description,
- Taxon by location - requires good knowledge of the taxon and history of the record,
- Duplicate records - identify and remove,
- Expert panels - check records and provide new records,
- Flora cultivated records excluded,
- Use precise records less than or equal to 2000m,
- Use recent records greater than or equal to 1975 animals, greater than or equal to 1950 plants.

Threatened Species

Threatened species are those species classified as "Endangered" or "Vulnerable" under the *Environment Protection and Biodiversity Conservation Act 1999* or "Endangered", "Vulnerable" or "Near threatened" under the *Nature Conservation Act 1992*.

The following threatened species have been recorded on, or within approximately 4km of the AOI.

Table 22: Threatened species recorded on, or within 4km of the AOI

Species	Common name	NCA status	EPBC status	Back on Track rank	Migratory species*	Wetland species**	Identified flora/fauna
<i>Aphelocephala leucopsis</i>	southern whiteface	V					FA
<i>Climacteris picumnus victoriae</i>	brown treecreeper (south-eastern)	V					FA
<i>Lepidium monoplocoide s</i>	winged peppergrass	C	E				FL
<i>Phascolarctos cinereus</i>	koala	E	E	Low			FA
<i>Stagonopleura guttata</i>	diamond firetail	V					FA
<i>Westringia parvifolia</i>		V	V				FL
<i>Xerothamnella herbacea</i>		E	E				FL

NB. Please note that the threatened species listed in this section are based upon the most recently compiled DESI internal state-wide threatened species dataset. This dataset may contain additional records that were not originally available for inclusion in the relevant individual BPAs and ACAs.

*JAMBA - Japan-Australia Migratory Bird Agreement; CAMBA - China-Australia Migratory Bird Agreement; ROKAMBA - Republic of Korea-Australia Migratory Bird Agreement; CMS - Convention on the Conservation of Migratory Species.

**I - wetland indicator species; D - wetland dependent species.

BPA Priority Species

A list of BPA priority species that have been recorded on, or within approximately 4km of the AOI is contained in the following table.

Table 23: Priority species recorded on, or within 4km of the AOI

Species	Common name	Identified flora/fauna
<i>Climacteris picumnus</i>	Brown Treecreeper	FA
<i>Cyclorana verrucosa</i>	Rough-collared Frog	FA
<i>Eleocharis blakeana</i>		FL
<i>Macquaria ambigua</i>	Yellowbelly	FA
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	FA

NB. Please note that the list of priority species is based on those species identified in the BPAs, however records for these species may be more recent than the originals used. Furthermore, the BPA priority species databases are updated from time to time. At each update, the taxonomic details for all species are amended as necessary to reflect current taxonomic name and/or status changes.

ACA Priority Species

A list of ACA priority species used in riverine and non-riverine ACAs that have been recorded on, or within approximately 4km of the AOI are contained in the following tables.

Table 24: Priority species recorded on, or within 4 km of the AOI - riverine

Species	Common name	Identified flora/fauna
<i>Acrocephalus australis</i>	Australian reed-warbler	FA
<i>Ambassis agassizii</i>	Agassiz's glassfish	FA
<i>Damasonium minus</i>	starfruit	FL
<i>Eleocharis blakeana</i>		FL
<i>Melaleuca densispicata</i>		FL
<i>Melaleuca trichostachya</i>		FL
<i>Paspalum distichum</i>	water couch	FL
<i>Plegadis falcinellus</i>	glossy ibis	FA

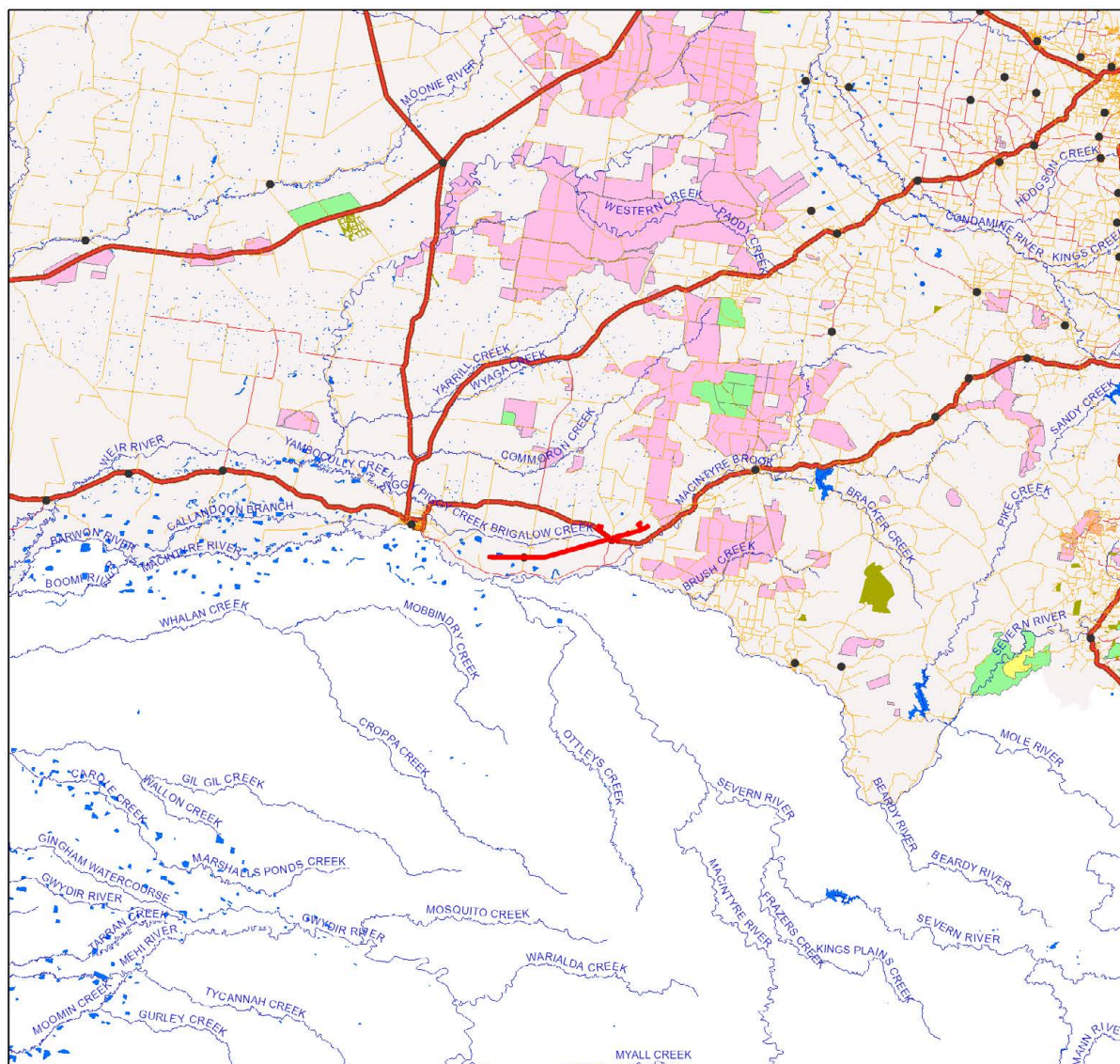
Table 25: Priority species recorded on, or within 4 km of the AOI - non-riverine

Species	Common name	Identified flora/fauna
<i>Acrocephalus australis</i>	Australian reed-warbler	FA

Species	Common name	Identified flora/fauna
<i>Ambassis agassizii</i>	Agassiz's glassfish	FA
<i>Cyclorana cultripes</i>	grassland collared frog	FA
<i>Cyclorana platycephala</i>	water holding frog	FA
<i>Cyclorana verrucosa</i>	rough collared frog	FA
<i>Damasonium minus</i>	starfruit	FL
<i>Eleocharis blakeana</i>		FL
<i>Eleocharis plana</i>	ribbed spikerush	FL
<i>Limnodynastes salmini</i>	salmon striped frog	FA
<i>Marsilea hirsuta</i>	hairy nardoo	FL
<i>Melaleuca densispicata</i>		FL
<i>Notaden bennettii</i>	holy cross frog	FA
<i>Paspalum distichum</i>	water couch	FL
<i>Plegadis falcinellus</i>	glossy ibis	FA

NB. Please note that the priority species records used in the above two tables are comprised of those adopted for the released individual ACAs. The ACA riverine and non-riverine priority species databases are updated from time to time to reflect new release of ACAs. At each update, the taxonomic details for all ACAs records are amended as necessary to reflect current taxonomic name and/or status changes.

Map 1 - Locality Map



- LOCALITY DIAGRAM
-

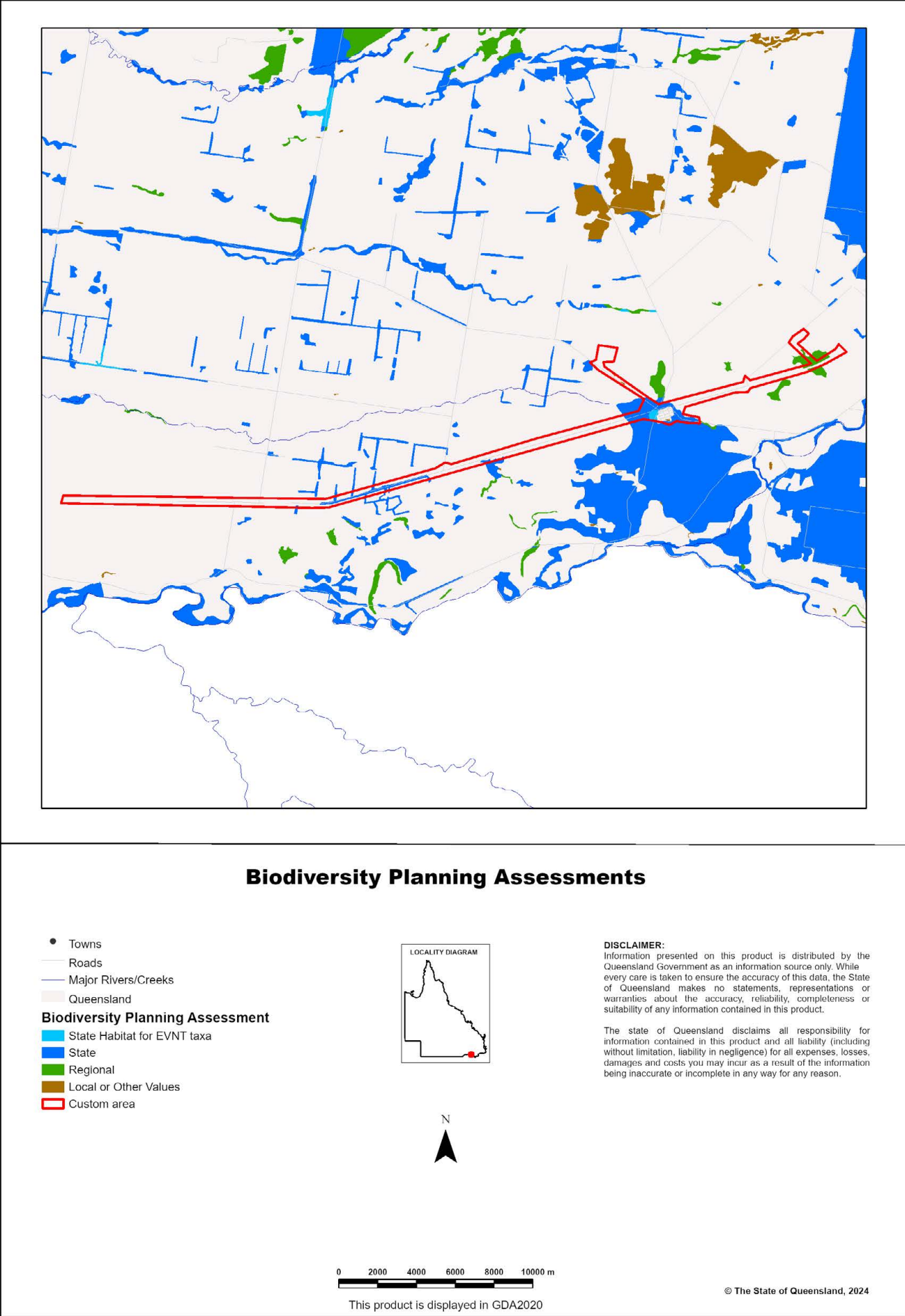


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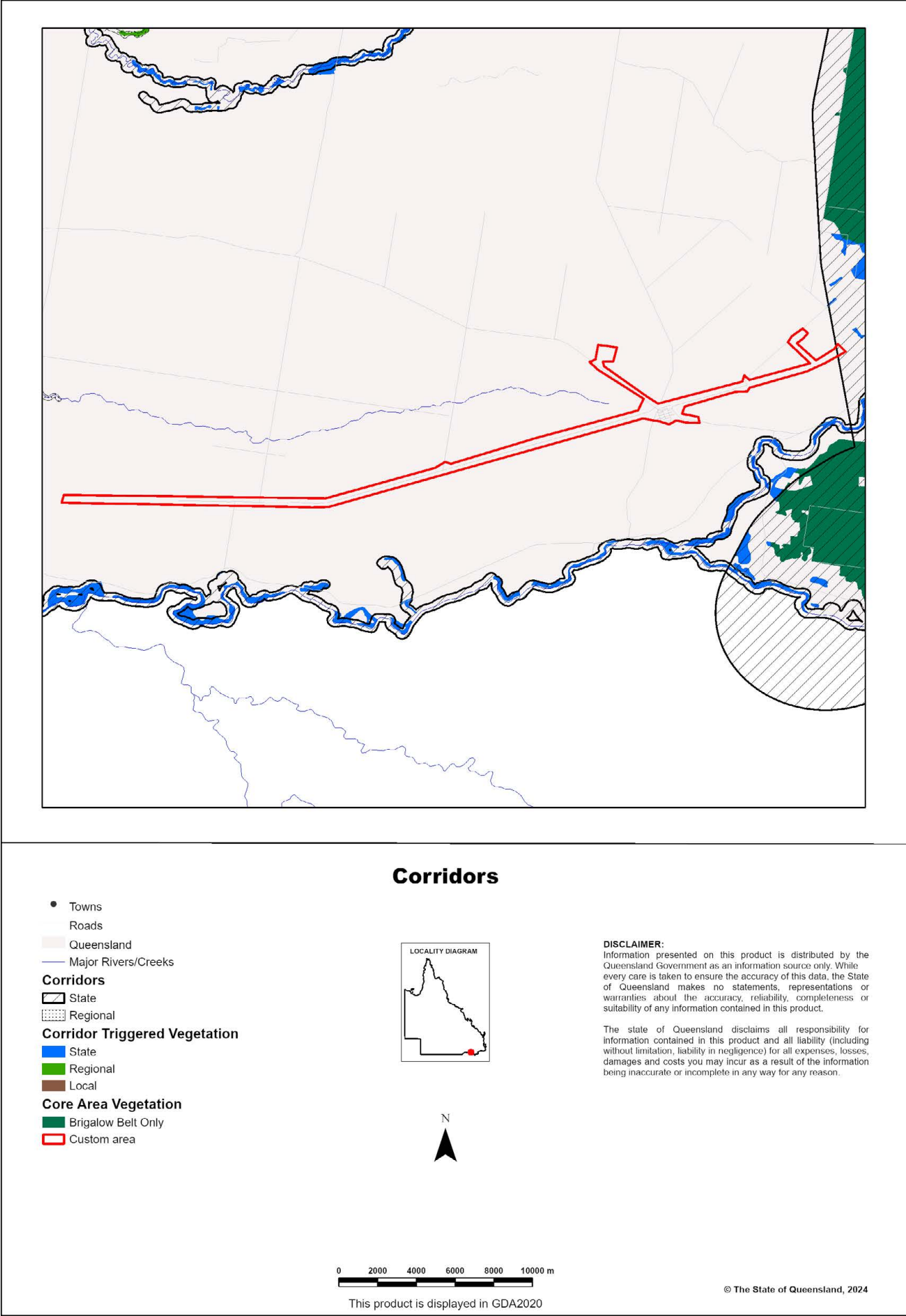
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This product is displayed in GDA2020

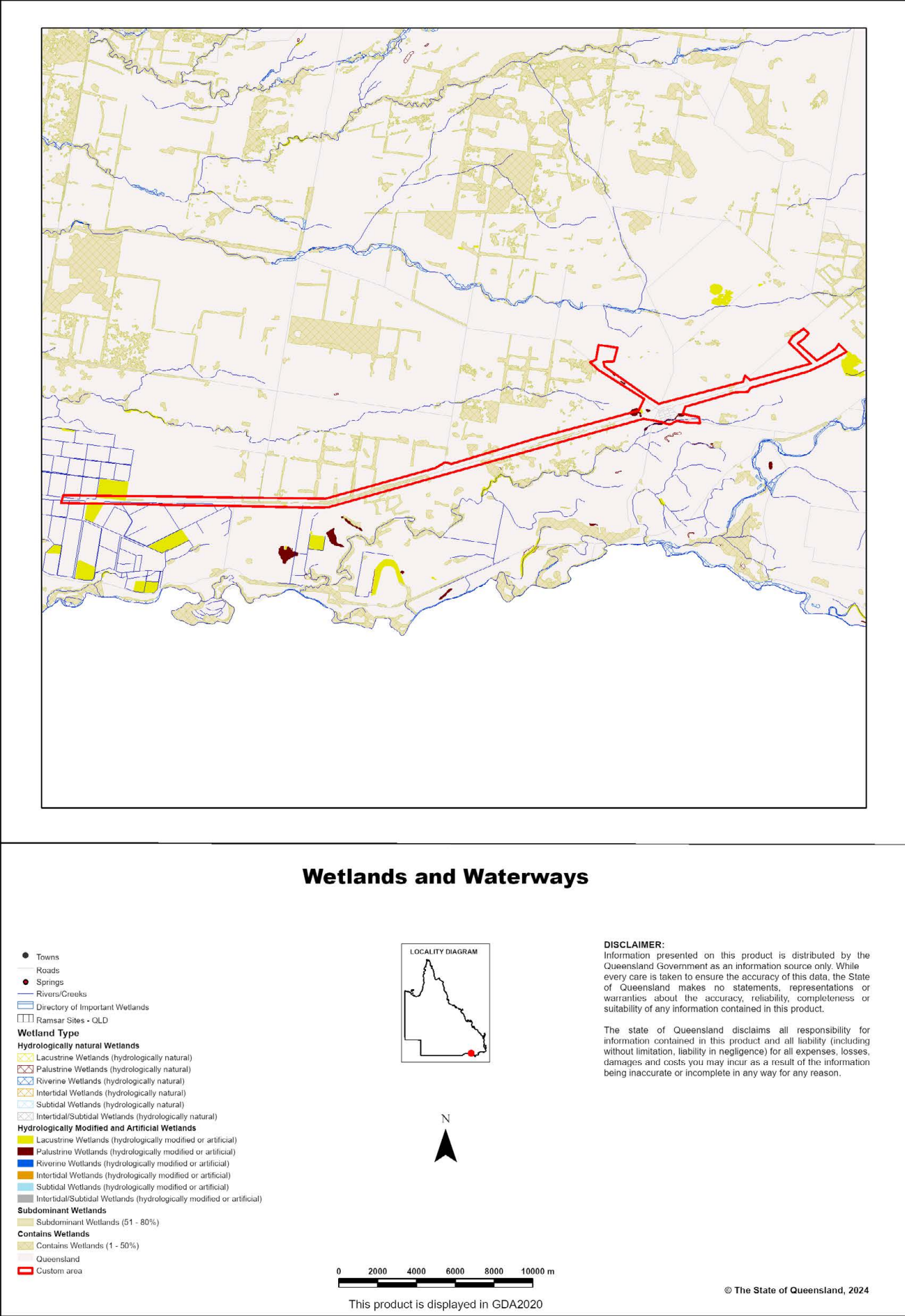
Map 2 - Biodiversity Planning Assessment (BPA)



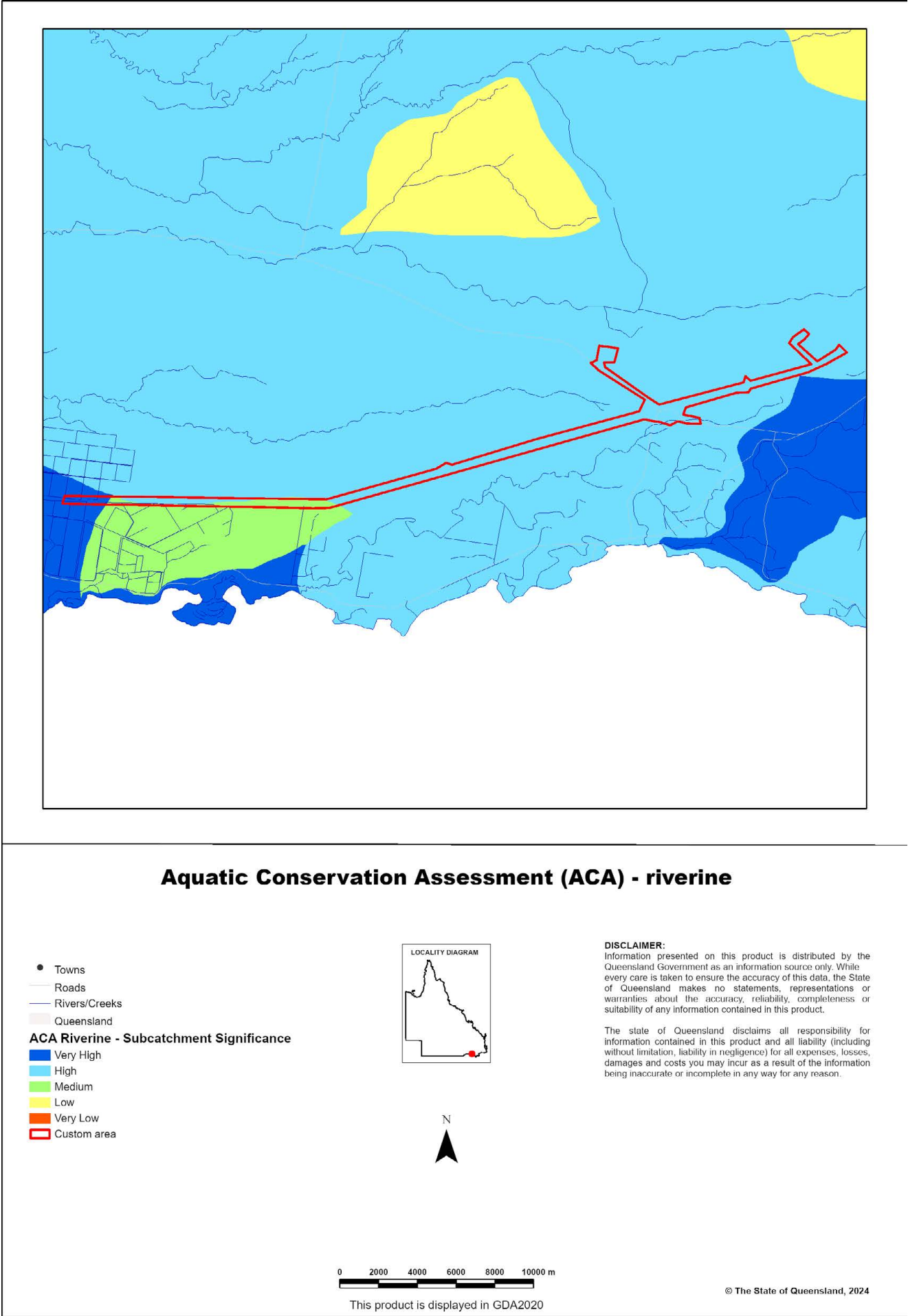
Map 3 - Corridors



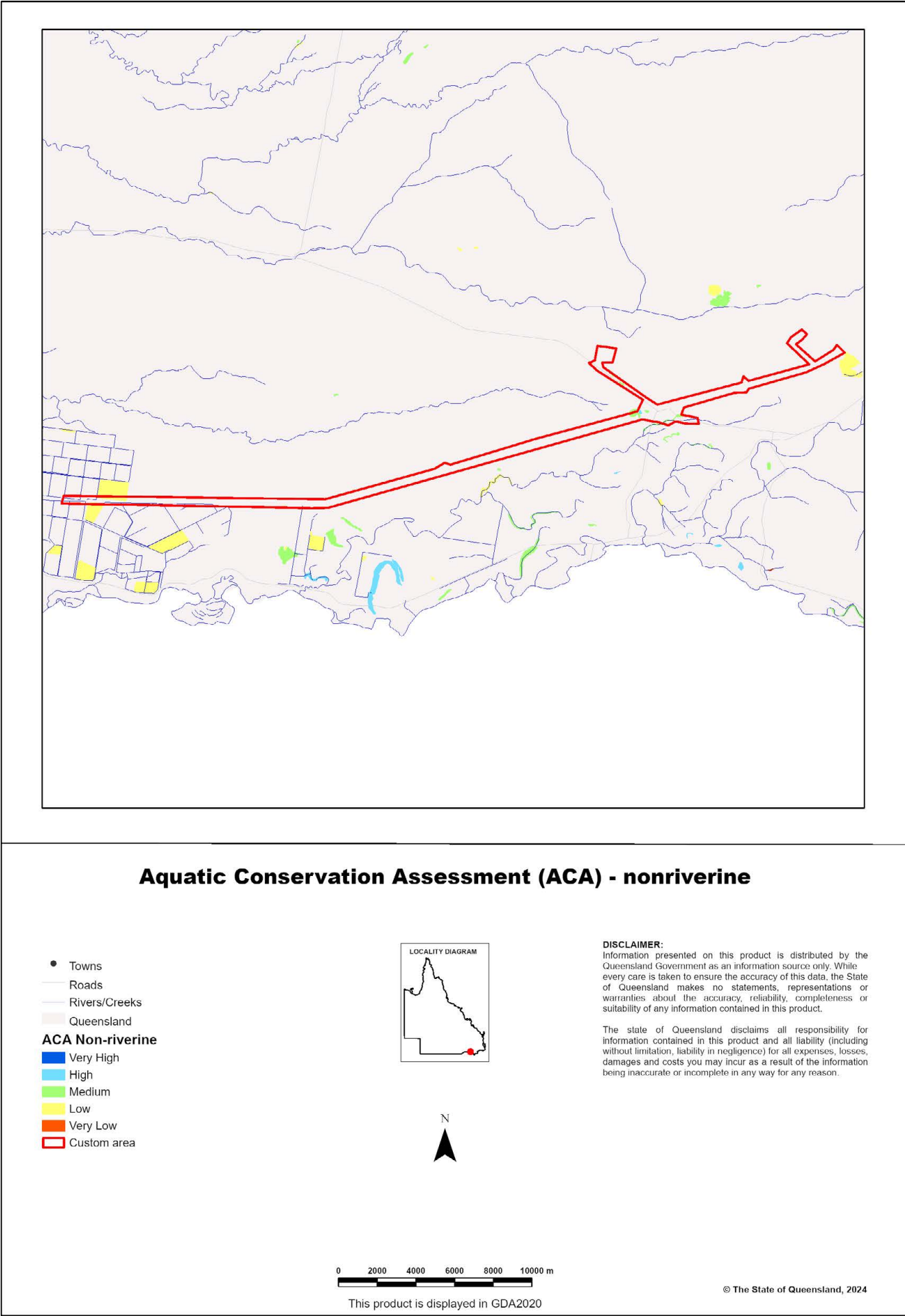
Map 4 - Wetlands and waterways



Map 5 - Aquatic Conservation Assessment (ACA) - riverine



Map 6 - Aquatic Conservation Assessment (ACA) - non-riverine



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Appendices

Appendix 1 - Source Data

Theme	Datasets
Aquatic Conservation Assessments Non-riverine*	Combination of the following datasets: Cape York Peninsula Non-riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Non-riverine v1.3 Lake Eyre and Bulloo Basins v1.1 QMDBB Non-riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Non-riverine ACA v1.1 Southern Gulf Catchments Non-riverine ACA v1.1
Aquatic Conservation Assessments Riverine*	Combination of the following datasets: Cape York Peninsula Riverine v1.1 Eastern Gulf of Carpentaria v1.1 Great Barrier Reef Catchment Riverine v1.1 Lake Eyre and Bulloo Basins v1.1 QMDBB Riverine ACA v2.1 Southeast Queensland ACA v1.1 WBB Riverine ACA v1.1 Southern Gulf Catchments Riverine ACA v1.1
Biodiversity Planning Assessments*	Combination of the following datasets: Brigalow Belt BPA v2.1 Cape York Peninsula BPA v1.1 Central Queensland Coast BPA v1.3 Channel Country BPA v1.1 Desert Uplands BPA v1.3 Einiasleigh Uplands BPA v1.1 Gulf Plains BPA v1.1 Mitchell Grass Downs BPA v1.1 Mulga Lands BPA v1.4 New England Tableland v2.3 Northwest Highlands v1.1 Southeast Queensland v4.1 Wet Tropics v1.1
Statewide BPA Corridors*	Statewide corridors v1.6
Threatened Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
BPA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.
ACA Priority Species	An internal DESI database compiled from Wildnet, Herbrecks, Corveg, the QLD Museum, as well as other incidental sources.

These datasets are available at:

<http://dds.information.qld.gov.au/DDS>

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
ACA	- Aquatic Conservation Assessment
AQUABAMM	- Aquatic Biodiversity Assessment and Mapping Methodology
BAMM	- Biodiversity Assessment and Mapping Methodology
BoT	- Back on Track
BPA	- Biodiversity Planning Assessment
CAMBA	- China-Australia Migratory Bird Agreement
DESI	- Department of Environment, Science and Innovation
EPBC	- <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVNT	- Endangered, Vulnerable, Near Threatened
GDA2020	- Geocentric Datum of Australia 2020
GIS	- Geographic Information System
JAMBA	- Japan-Australia Migratory Bird Agreement
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
ROKAMBA	- Republic of Korea-Australia Migratory Bird Agreement



Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see [section 89](#) of the Act.

Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.