

Groundwater dependent ecosystem pictorial conceptual model 'low-lying coastal swamps'

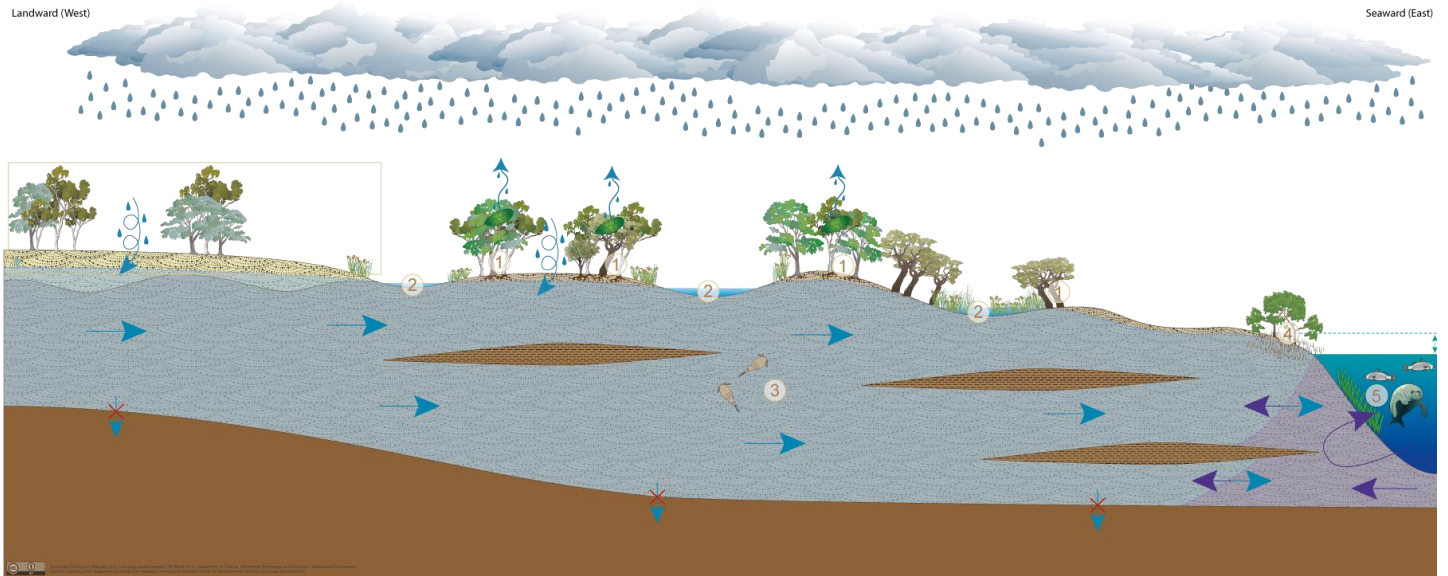
Version 1.5

Low-lying coastal swamps

Low-lying coastal swamps occur sporadically along the Queensland coast in areas where alluvia was deposited during periods of higher sea level by fluvial processes in current river channels, floodplains, estuarine, delta and other near-shore environments. These low-lying coastal swamp environments include adjacent alluvia and are characterised as being near-permanently saturated by groundwater. These low-lying coastal swamp environments can contain one or more unconfined, unconsolidated sedimentary aquifers, where groundwater is stored and transmitted through inter-granular voids between gravel and sand particles.

Aquifers associated with low-lying coastal swamp environments may provide a wide range of ecosystems with water required to support their fauna and flora communities, ecological processes and delivery of ecosystem services.















- Palustrine (e.g. swamps) and lacustrine (e.g. lakes) wetlands and riverine (e.g. streams and rivers) water bodies located in low-lying coastal swamp environments may depend on the surface expression of groundwater from these unconsolidated sedimentary aquifers.
- Terrestrial vegetation located in low-lying coastal swamp environments may depend on the subsurface presence of groundwater in these unconsolidated sedimentary aquifers where groundwater is typically accessed through the capillary zone above the water table.
- Unconsolidated sedimentary aquifers in low-lying coastal swamp environments may also support subterranean ecosystems within the aquifer itself, sometimes is indicated by the presence of stygofauna.
- Estuarine and near-shore marine ecosystems located adjacent to low-lying coastal swamp environments may depend on the discharge of groundwater from these unconsolidated sedimentary aquifers.



Geology legend

	Alluvia Unconsolidated sand and clay		Estuarine deposits
	Clay Low permeability		Basement of the model

Groundwater hydrology legend

	Alluvia (saturated with groundwater)		Groundwater table
	Alluvia (unsaturated)		Direction of groundwater movement
	Estuarine deposits (saturated with groundwater)		Negligible groundwater movement
	Estuarine deposits (saturated with marine water)		Direction of marine water movement
	Estuarine deposits (unsaturated)		Groundwater and marine water interface The position of the interface will vary temporally
	Clay (unsaturated)		Tidal range
	Basement of the model (unsaturated)		Infiltration and percolation Rain infiltrates through the soil to recharge the aquifer below

Flora legend



Acacia spp.



Cladium spp.



Corymbia spp.



Eleocharis spp.



Eucalyptus spp.



Melaleuca spp.



Mangrove



Seagrass



Evapotranspiration
Process whereby plants draw water up through their roots and move it out through their leaf pores

Fauna legend



Stygofauna
Aquatic fauna that live in groundwater



Fish



Dugong dugon

Groundwater dependent ecosystem legend



1 Terrestrial GDEs
Regional ecosystems and riverine wetlands may depend on the subsurface presence of groundwater within the capillary zone for some or all of their water requirements.



2 Surface expression GDEs
Lacustrine wetlands, palustrine wetlands and riverine water bodies may depend on the surface expression of groundwater for some or all of their water requirements.



3 Subterranean GDEs
Aquifer and cave subterranean wetlands may depend on the subterranean presence or expression of groundwater for some or all of their water requirements.



4 Surface expression GDEs (estuarine systems)
Estuarine wetlands may depend on the surface expression of groundwater for some or all of their water requirements. This sub-type of GDE is not currently mapped in the Queensland GDE mapping.



5 Surface expression GDEs (near-shore marine systems)
Near-shore marine wetlands may depend on the surface expression of groundwater for some or all of their water requirements. This sub-type of GDE is not currently mapped in the Queensland GDE Mapping.

Citation

Queensland Government (2017) *Groundwater dependent ecosystem pictorial conceptual model 'low-lying coastal swamps': version 1.5*, Queensland Government, Brisbane.