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Groundwater dependent ecosystem pictorial conceptual model ‘spring ecosystems of the Surat and southern Bowen Basins – type 2’

Version 1.5

Type 2 Semi-permanent brackish, palustrine wetlands with minor wetland soils and minor vegetation cover, mainly connected to regional groundwater systems

Type 2 wetlands occur in palustrine landscape settings, located within topographic lows or gently sloping landscapes. The wetlands occur on highly weathered regolith profiles, often sodic soils and receive groundwater inflows predominantly from regional groundwater systems. The wetland water budget is dominated by diffuse groundwater discharge. These wetlands are not permanently connected to the groundwater system.

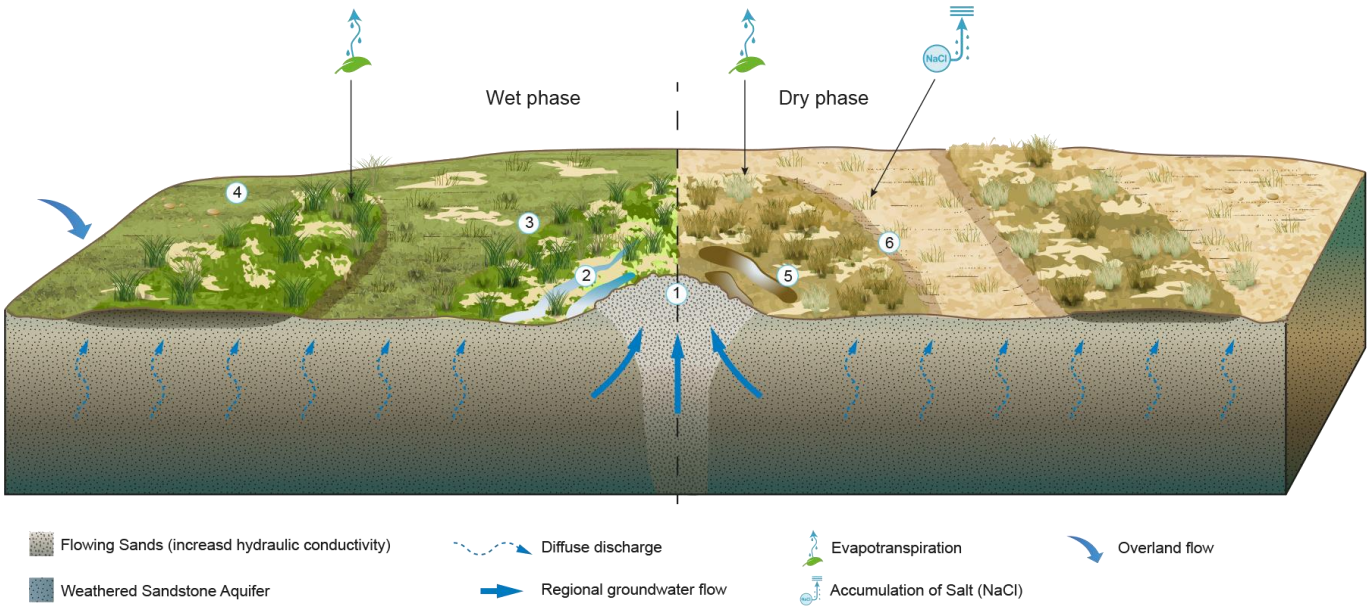
Type 2 wetlands are relatively small wetlands and are dominated by terrestrial vegetation, with little to no free water. The semi-permanent connection to the groundwater system has not enabled the development of distinct wetland soils. It is likely that during extended dry periods, there is no physical discharge from these wetlands. The wetlands are often associated with a broader saline discharge zone that is actively eroding and is characterised by ‘flowing sands’ that create small non-vegetated mounds.

Examples of type 2 spring wetlands (Abyss complex)

Queensland Government

Six focal zones in the wetland vegetation have been identified that represent variability across the wet and dry phases of the wetlands, driven by the groundwater regime:

1. The main area of groundwater discharge, characterised by minor ‘flowing sands’ and limited vegetation.
2. The wetland transition zone and adjacent wet areas. This area contains some free-standing water (< 5 cm deep), a range of forbs including *Bacopa minima* and sedges such as *Fimbristylis* spp. indicative of less permanent saturation. The area has a low density of vegetation cover and is dominated by terrestrial species such as *Chloris gayana*, *Cynodon dactylon* and the invasive wetland species *Paspalum distichum*.
3. Non-wetland and broader diffuse groundwater discharge area. Dominated by terrestrial grass species such as *Chloris gayana* and *Cynodon dactylon* intermixed with a substantial amount of bare ground.
4. Scalded areas during the wet phase. Bare scalded ground (caused by diffuse discharge of saline groundwater) covered by a thin crust of dry eroded sands. This area is intermixed with a sparse cover of terrestrial grasses including *Chloris gayana*, *Sporobolus mitchellii* and *Aristida* spp. This area is interspersed with remnant ‘A horizon’ stacks – upper parts of the soil profile which have not been eroded - slightly elevated above the scalded area, such that some leaching of the soil occurs, removing salts.
5. Wetland transition area during the dry phase. No open water, dominated by unconsolidated sands.
6. Non-wetland and broader diffuse groundwater discharge area during the dry phase. Reduced ground coverage with more exposed sodic soils than other areas.



Citation

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