Lower Limestone Coast Water Allocation Plan Risk Assessment

In May 2018, the Minister for Environment and Water put a hold on any further reductions to allocations in the Lower Limestone Coast Prescribed Wells Area and requested that the South East Natural Resources Management Board (the Board) initiate a review of the science underpinning the reductions in the 2013 Lower Limestone Coast Water Allocation Plan (the Plan).

The Board engaged the Goyder Institute for Water Research as an independent body to conduct the science review and established a Stakeholder Advisory Group to provide advice and input into the review. The advisory group included irrigation, forestry, Conservation Council, SA Water, Local Government and SE Aboriginal Focus Group representatives.

The science review found that a substantial body of scientific work underpins water allocation planning in the Lower Limestone Coast and also made some recommendations to inform future assessments of the risk to water resources in the Lower Limestone Coast.

A new assessment of the risk to water resources in the Lower Limestone Coast was undertaken in 2019.

The methodology for the risk assessment was based on the Department for Environment and Water's Risk Assessment Framework, with input from the Stakeholder Advisory Group. The Stakeholder Advisory Group recommended that the risk assessment be conducted by a panel of internal and external experts to ensure the process was based on scientific evidence and not biased towards particular interests. The Stakeholder Advisory Group were involved in the development of the consequence criteria used by the Expert Panel throughout the risk assessment and in providing advice regarding resource condition limits. The Stakeholder Advisory Group members were also invited to observe the discussions of the Expert Panel; this invitation was taken up by some of the Group members.

The 2019 risk assessment:

- was completed before 1 July 2019, as per Principles 132-135 of the Plan,
- assessed risks for all 61 management areas of the Lower Limestone Coast Prescribed Wells Area (LLC PWA),
- included multiple risk statements determined by the Stakeholder Advisory Group,
- was undertaken using an Expert Panel process, on the advice of the Stakeholder Advisory Group, and
- included updated data and information on the condition of the water resource.

The 2019 risk assessment process identified three management areas that are at high risk (Coles, MacDonnell and Joanna), five management areas that were previously rated as high risk and are now rated as low or medium risk (Short, Zone 3A, Frances, Hynam East and Zone 5A) and 53 management areas that remain at low or medium risk.

The results of the 2019 risk assessment process are summarised in the following table (over-page).

Lower Limestone Coast Water Allocation Plan Risk Assessment		
Management Area	Risk Rating 2019	Expert Panel Key Findings
Coles	High	Large portions of the plantation forest estate remain and there is the potential for unused forestry allocations to be taken up. Catastrophic consequences to Groundwater Dependent Ecosystem (GDE) values in Coles (including nationally critically endangered Seasonal Herbaceous Wetlands and associated threatened species present at Arcoona wetlands) were possible.
Short	Medium	Major consequences to GDE values (including regionally significant ecosystems associated with the Southern Bakers Range Watercourse (Oschar and SEWCDB Swamp)) were possible.
Zone 3A	Medium	While GDE values include nationally critically endangered aquatic ecosystems (Seasonal Herbaceous Wetlands) and associated threatened species, they are located a considerable distance from the intensive groundwater use areas and on the 'flats' where the aquifer is highly transmissive and there is no clear evidence for impacts from groundwater extraction on groundwater levels.
Frances	Medium	Moderate consequences to stock and domestic users, in relation to economic costs of deepening wells to maintain access to groundwater, were possible. While groundwater levels are expected to continue their declining trend over the next 10 years, the declines are not expected to present a threat to wetland GDEs (none identified in this area), connected water resources, or the east to west hydraulic gradient in the area.
Hynam East	Low	Although groundwater levels may decline over the next 10 years, they are not expected to present a threat to wetland GDEs (none identified in this area), connected water resources, or the east to west hydraulic gradient in the area.
Zone 5A	Low	Although groundwater levels may decline over the next 10 years, they are not expected to present a threat to wetland GDEs (none identified in this area), connected water resources, or the east to west hydraulic gradient in the area.
MacDonnell	High	Catastrophic consequences to GDE values in MacDonnell (including shallow Karst rising spring features of national significance) were possible as a result of increased fluctuations in groundwater levels attributed to summer pumping for irrigation and high levels of allocation and use.
Joanna	High	Catastrophic consequences to GDE values in Joanna (including international and national values associated with Mosquito Creek (source catchment for Ramsar listed Bool Lagoon), nationally critically endangered Seasonal Herbaceous Wetlands, and national values associated with Deadmans Swamp) were possible.
All other LLW PWA management areas	Low or Medium	Where there are no Groundwater Dependent Ecosystems, declining trends in groundwater level are within acceptable limits.