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Abstract Template

Managing and Adapting to Secondary Salinity and Altered Hydrology in a Ramsar Listed Lake Suite- Lake Warden Wetland System Case Study

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Abstract paragraph:

Sections of the Lake Warden Wetland System were listed as a wetland of international importance under the Ramsar treaty on 7 January 1990. The system, which consists of 8 major lakes and more than 90 satellite lakes, are fed by a catchment of around 212 000 ha. Of this catchment, more than 80% has been cleared for agriculture and less than 15% remnant vegetation remains. In November 1996, the Lake Warden catchment was included under the State Salinity Action Plan as a Recovery Catchment to manage the threat of secondary salinity. Over a period of a decade, several research initiatives identified and confirmed altered hydrology, including secondary salinity, as the biggest threat to the ecological character of the Lake Warden Wetland System. As a result, several engineering and management objectives were assessed, recommended and implemented. These include revegetation of priority areas identified within the catchment, drainage works to reduce excessive high water levels and the removal of various anthropogenic hydrological flow constraints within the catchment. This led to the successful achievement of management objectives with regard to target water levels within the system, and as a subsequent result, vegetation and bird assemblages and abundance appears to be recovering. With lake levels returning to normal, salinity concentrations have increased, leading to changes in aquatic invertebrate and waterbird and shorebird assemblages. Managers need to test and set, within the uncertainty of climate change,

salinity and hydrological management objectives for the effective management of the Lake Warden Wetland System as bird refugia into the future. This presentation deals with:

- a review of the historic monitoring data, the accuracy of previous hydrological monitoring and the trade-offs of future objectives as a result of our current modelling
- completed and proposed engineering works to reinstate previous (natural) hydrological patterns,
- the management of the system as several hydrological units; and
- identifying surrogate indicators for system health.

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