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Ecological surveillance in a regional landscape subject to salinisation and climate change

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In 1997 the Western Australian Department of Environment and Conservation (DEC) recognised the benefits of collecting a long-term dataset relating to the biodiversity of wetlands in the wheatbelt; a region where salinisation and reduced rainfall are likely to have ongoing effects on wetland biodiversity. The program focuses on three components of the biodiversity; vegetation, waterbirds and aquatic invertebrates and data are collected from 25 wetlands on a biennial cycle in order to monitor biodiversity trends in the region and provide both raw and processed data for the analysis of regional and individual wetland management issues and objectives.

The surveillance data are discussed in the context of the intended uses of the developing dataset;

1) to report on the condition of wheatbelt wetlands. Using regular pamphlet and report style presentations to provide supporting data for managers and policy makers.

2) to support decision making for wetland management. For example in supporting decisions about focus wetlands within conservation areas, and in monitoring the results of management actions

3) to provide data to researchers. The surveillance dataset has been included in analyses by several authors to answer specific questions at the regional (National Trial of Wetland Indicators; Sim *et al*. 2007) and local scale (e.g., depth modelling for optimal waterbird richness; Robertson & Massenbauer 2005).

Surveillance programs are an expensive proposition to establish. However, the availability of monitoring data, that can be used off the shelf or added to other datasets to answer questions quickly, significantly increases the capacity of managers to make informed decisions and frequently reduces the data collection costs of new programs.

(1) Sim, L., Nowicki, A. et al. (2007) Trialling a framework and indicators for wetland extent, distribution and condition in Western Australia. Dept Environment and Conservation, Perth Western Australia

(2) Robertson, D. & Massenbauer, T. (2005). Applying hydrological thresholds to wetland management for waterbirds, using bathymetric surveys and GIS. Paper presented at the MODSIM, Melbourne