

Summary of *WET-Health*

WET-Health is a tool designed to assess the health or integrity of a wetland. Wetland health is defined as a measure of the deviation of wetland structure and function from the wetland's natural reference condition. This technique attempts to assess hydrological, geomorphological and vegetation health in three separate modules. **Hydrology** is defined in this context as the distribution and movement of water through a wetland and its soils. This module focuses on changes in water inputs as a result of changes in catchment activities and characteristics that affect water supply and its timing, as well as on modifications within the wetland that alter the water distribution and retention patterns within the wetland. **Geomorphology** is defined in this context as the distribution and retention patterns of sediment within the wetland. This module focuses on evaluating current geomorphic health through the presence of indicators of excessive sediment inputs and/or losses for clastic (minerogenic) and organic sediment (peat). **Vegetation** is defined in this context as the vegetation structural and compositional state. This module evaluates changes in vegetation composition and structure as a consequence of current and historic onsite transformation and/or disturbance. The system uses: An impact-based approach for those activities that do not produce clearly visible responses in wetland structure and function. The impact of irrigation or afforestation in the catchment, for example, produces invisible impacts on water inputs. This is the main approach used in the hydrological assessment. An indicator-based approach for activities that produce clearly visible responses in wetland structure and function such as the presence of erosion gullies or alien plant species. This approach is mainly used in the assessment of geomorphological and vegetation health. Each of these modules follows a broadly similar approach. Prior to assessment, the wetland is divided into hydrogeomorphic (HGM) units and their associated catchments. These are analysed separately for hydrological, geomorphological and vegetation health based on extent, intensity and magnitude of impact. This is translated into a health score. The approach is as follows: The extent of impact is measured as the proportion of a wetland and/or its catchment that is affected by an activity. Extent is expressed as a percentage. The intensity of impact is estimated by evaluating the degree of alteration that results from a given activity. The magnitude of impact for individual activities is the product of extent and intensity. The magnitude of individual activities in each HGM unit are combined in a structured and transparent way to calculate the overall impact of all activities that affect hydrological, geomorphological or vegetation health. Present State health categories, on an impact score scale of 1-6 (or health category A-F), are as follows: natural, largely natural, moderately modified, largely modified, extensively modified, and critically modified. Using a combination of threat and/or vulnerability, an assessment is also made in each module on the likely Trajectory of Change within the wetland. The five categories of likely change are: large improvement, slight improvement, remains the same, slight decline and rapid decline. Overall health of the wetland is then presented for each module by jointly representing the Present State and likely Trajectory of Change. This approach not only provides an indication of hydrological, geomorphological and vegetation health, but also highlights the key causes of wetland degradation. This *WET-Health* technique is therefore designed to both direct and monitor the effects of management interventions on wetland habitats. This tool should be very useful to Working for Wetlands in planning and monitoring and evaluating the success of individual projects. In developing this methodology and attempting to make it more widely relevant, we have been mindful of DWAF's Ecostatus approach for water resources. This tool should thus be useful to institutions and parties beyond Working for Wetlands. The greatest value of the tool may lie in the structured way in which users are required to examine and therefore learn about the wetland/s they are required to manage.