Figure WTL7: Wetland water quantity and quality summary sheet

Purpose:

(a) To provide input into assessments of the sensitivity of the subject wetland to changes in upstream water quantity and quality.

(b) To provide input into assessments of the significance of the wetland in maintaining water quantity in its downstream catchment.

(c) To provide input into assessments of the significance of the wetland in maintaining and improving water quality in its downstream catchment.

Owner/occupier:

Wetland name:

Location:

Area of wetland (hectares):

Record hydrological information for wetland and catchment	
Landscape setting	
Geomorphology of wetland	
Geology of catchment surface	
Dominant water source	
Other significant water sources	
Location of water source (e.g., seepage from terrace, aquifer discharge, natural dam, coastal beach barrier, oxbow cut-off, rainfall ponding, etc)	
Flow direction	
Periodicity of flow	
Dominant wetland vegetation	
Fertility (vegetation indicators)	
Presence of peat soils	
Groundwater level records	
Rainfall records	
Stream flow records	
Catchment vegetation: past/present/likely future	
Instream features of the stream draining the wetland:	
Bed material (e.g., cobble, fine gravel, sand, silt)	
Signs of algal or macrophyte growth	
Quality of water in relation to fish habitat, use for livestock, domestic or public supply	
Assess hydrological relationship of wetland to downstream catchment	
Flood attenuation	
Groundwater recharge	
Sediment retention	
Nutrient transformation	
Contaminant retention	

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Estimate sensitivity of wetland to change	
Interception of inflows/drainage of the wetland	
Stock access to the wetland	
Impact of plant or animal pests on the wetland	
Abstraction of water from the wetland's catchment	
Changed wetland water quality	

Part D: Assessing hydrological significance

The hydrological significance of a wetland includes both its water flows and its associated role in maintaining or improving downstream water quality.

In evaluating hydrological significance, field information gathered from each site will be integrated with existing catchment data to provide an assessment from two perspectives:

(a) The significance of the current hydrological regime to the wetland itself.

(b) The significance, hydrologically, of the wetland to water quantity and quality within the catchment.

In addition to the location and size of the wetland, notes will generally be made of the surface geology of the catchment, the nature of the main and any other sources of water. Some factors likely to indicate the degree of any vulnerability to changes will also be recorded.

Among these will be an estimate of any direct or indirect hydrological effects of changes in the vegetation cover of the contributing catchment. Particular note will be taken of alterations to the hydrological regime such as occur when water is intercepted before reaching the wetland or is drained from the wetland or the immediate vicinity.

The field record will include a general description of the past, present and likely future vegetation of the wetland itself, noting in this connection any effects of grazing animals. The notes will include an estimate from a water quantity and quality perspective of the effects of any changes to the wetland vegetation.

In making the hydrological significance assessment, attention will typically be paid to effects on the present ecology of the wetland and on the quantity and quality of water in hydraulically linked water bodies. Particular note will be taken of the significance of the wetland to instream values and any other purposes for which a linked water body is managed.

D.1.1 Significance of water quantity to the wetland

(a) Wetland hydrology is of high significance if the wetland has moderate or higher ecological significance and the present hydrological regime cannot be altered without being likely to impact permanently on the ecology of the wetland.

(b) Wetland hydrology is of moderate significance if the wetland has moderate or higher ecological significance and minor alterations to the present hydrological regime are unlikely to impact permanently on the ecology of the wetland.

(c) Wetland hydrology is not significant if no foreseeable alterations to the current hydrological regime would impact permanently on the ecology of the wetland, whatever its ecological significance.

D.1.2 Significance of wetland water quantity and quality within the catchment

(a) A wetland is significant within its catchment if any alteration to the present hydrological regime would be likely to have a significant adverse effect. Examples of significant adverse effects include:

  (i) Reducing the flow from a wetland that contributes most of the low flow to a stream or other water body.

  (ii) Reducing the flow from a moderate sized wetland (greater than two hectares) that contributes significant low flow to a stream or other water body.

  (iii) Reducing water storage and/or flood attenuation over a wide area (high significance) or a localised area (moderate significance).

  (iv) Reducing groundwater recharge from a wetland greater than two hectares.

  (v) Reducing the effectiveness of water quality improving processes such as sediment filtration and retention, nutrient transformation and contaminant retention.

(b) A wetland is not significant with regard to water quantity or quality in the downstream catchment if altering the present outflow regime would have little or no significant adverse effects. Examples of adverse effects that would not be significant in this respect include:

(i) Reducing the flow from a wetland that makes a negligible contribution to any other water body.

(ii) Reducing water storage and/or flood attenuation within the boundaries of the property or properties on which the wetland is located.

(iii) Reducing groundwater recharge from a wetland of two hectares or less.

(iv) Increasing the outflow from a wetland while maintaining or improving the water quality of that outflow.

Part E: Recording wetland management factors

E.1.1 Historical information

The form reproduced below as Figure WTL8 provides a standardised field record of information relevant to the past, present and future progression of the site, including its relationship to ongoing management of the adjoining land. This provides a perspective beyond the wetland itself and may often provide an insight into its future outlook. This information is only relevant to determining a wetland's significance insofar as there is any need to consider its future viability.

Figure WTL8: Wetland management factors

Purpose:

(a) To provide historical background and guidance on the likely future management of the wetland and its surroundings.

(b) Where either of these factors is relevant, to assist assessment of the wetland's future viability.

Owner/occupier:

Wetland name:

Location:

Area of wetland (hectares):

Record historical information for wetland and catchment	
Historical drainage/diversion of water	
Historical abstraction of water	
Historical vegetation clearance within the wetland	
Historical vegetation clearance outside the wetland	
Historical changes in water clarity	
Historical changes in nutrient status	
History of plant and animal pest invasion	
Historical protection measures:	
- Fencing from stock	
- Grazing restrictions/types/intensity of grazing	
- Plant and animal pest management	
Historical introduction of native plants and/or fauna	
Historical introduction of exotic plants and/or fauna	

Record current environmental factors	
Current adjoining land use(s)	
Current pastoral management role if any:	
- summer grazing/type/intensity/duration	
- grazing at other periods/type/intensity/when	
- emergency grazing/type/intensity/duration/when	
- emergency water storage	
- stock shelter	
- other	
Current stock access: stock excluded /restricted*/unrestricted	
Established plant and animal pests	
Incipient plant and animal pests	

*Note type of restrictions

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Record projected future management	
Projected adjoining land use(s)	
Projected pastoral management role if any:	
- summer grazing/type/intensity/duration	
- grazing at other periods/type/intensity/when	
- emergency grazing/type/intensity/duration/what circumstances	
- emergency water storage	
- stock shelter	
- other	
Projected stock access: stock excluded/restricted*/unrestricted	
Projected plant and animal pest problems	
Projected introduction of plants and/or fish or wildlife	
Projected voluntary restoration to more natural state	

*Note type of restrictions

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