



## FACT SHEET

# A landowner's guide to managing WETLANDS



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## What is a wetland?

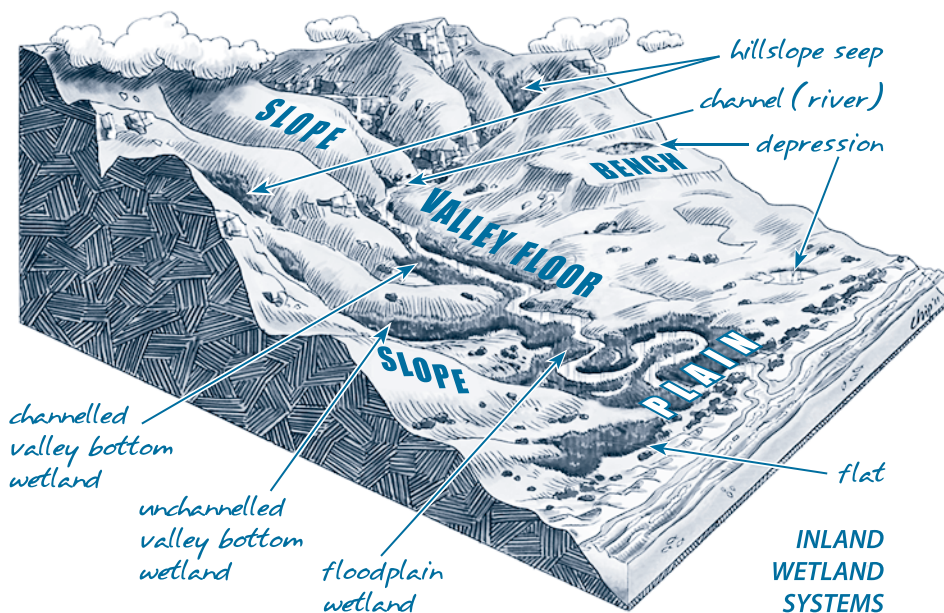
As defined in the National Water Act (Act 36 of 1998) wetlands are land which is transitional between terrestrial and aquatic systems where the water table is at or near the surface, or the land is periodically covered with shallow water or would support vegetation typically adapted to life in saturated soils. This includes springs, swamps, pans, lakes, estuaries and floodplains.

A wetland is any part of the landscape where water collects for long and often enough to influence the soil, plants and animals that occur there.

The National Biodiversity Assessment of 2012 found that wetlands are the most critically endangered ecosystem in South Africa. Over 50% of wetlands in South Africa have either been severely degraded or completely lost.

## The value of wetlands

Wetlands were referred to as wastelands in the past, but far from being wastelands, wetlands are amongst the most productive ecosystems in the world. Wetlands play an important part in river catchments both directly and indirectly by contributing to flood attenuation, drought relief, water storage and soil protection, amongst others. These hardworking systems are complex and dynamic, and provide a range of benefits. The importance of wetlands and water is increased by the alternating wet and dry phases of our country's semi-arid climate. The cost of electricity is becoming increasingly expensive and water, which is relatively cheap in comparison, will surely follow. Rationing of this valuable resource will become the norm. Typically, wetlands are not isolated. A catchment with extensive loss of wetlands could be subject to sedimentation in river mouths, fields and dams, extreme flood damage, or degradation of the remaining wetlands, for example, hyacinth infestations due to polluted inflows.



## Benefits of wetlands

'Eco' is the abbreviation for ecological. Ecological Infrastructure is a descriptive name for a set of healthy functioning eco-systems (for example, in a catchment) which deliver valuable services (also known as Ecosystem Services).

Wetland eco-services include the supply of fresh water, flood attenuation, buffers, erosion control, sustained stream flow, food security, fish nurseries, groundwater recharge, as well as spiritual, tourism and recreational benefits.

Wetlands can be natural filters of water through trapping pollutants, such as excess nutrients, disease-causing bacteria, pesticides and sediment. Wetlands have this ability due to special characteristics of the wetland plants and soils. Organic matter in wetland soils can trap certain pollutants, while man-made pollutants may be broken down by wetland micro-organisms. Rapidly

growing plants, such as *Typha capensis* (Papkui), have the ability to absorb nutrients.

Another eco-service provided by wetlands in the catchments of the Western Cape is flood attenuation. Most wetland plants are good at controlling erosion by reducing stream energy and stabilizing soil, allowing for better recovery of these systems after a damaging flood event.

One example would be palmiet (*Prionium Serratum*), which is a specially adapted plant commonly found in the Southern and Western Cape river systems. It is characterized by fibrous, net-like root systems and woody stems which are very effective at trapping sediment and reducing the velocity of waters in flood. This unique plant is also referred to as the superglue of the Western Cape rivers. However, palmiet is not only associated with rivers, but can also form extensive Valley Bottom wetland systems, which are often underlined by peat.



Palmiet (*Prionium Serratum*)

**PEAT** is soil that is rich in organic matter. Peatlands are very rare in South Africa and cover only 1% of the total wetland area. Peat forms at a very slow rate. For example a peat basin of seven meters deep could take at least 6 000 years to form. It is also thought that 1m<sup>3</sup> of peat has the ability to store up to 800 litres of water. Due to peat's high carbon (organic) content it acts as a natural purifier of water.

Peat plays an important yet complex role in mitigating climate change; in addition to plants removing carbon dioxide from the atmosphere through photosynthesis, peat wetlands store large amounts of organic matter. Once degraded, the functioning of these wetlands can be destroyed and methane released.



## THREATS to wetlands

- Invasive alien plants
- Erosion
- Developments within and around wetlands
- Pollution and excess nutrients
- Too frequent burning of wetlands
- Draining of wetlands
- Cultivation within wetlands
- Over grazing/ trampling
- Lack of buffer zones next to wetlands



*Floods and droughts are predicted to intensify in the future, which will make it increasingly important to maintain healthy wetlands as one of the mechanisms by which landowners and other catchment users are able to cope with these extremes.*



*Bushpig and warthog did not historically occur in the Western Cape, and therefore Western Cape wetlands should not be used for domestic pigs, which typically cause a high level of disturbance to the wetland soil.*



*Some wetlands are more vulnerable to erosion than others especially those in high energy river systems. Once peat has dried out it can be subject to sudden and significant erosion.*

## Basic principles of wetland rehabilitation

- 1 Address the cause of the damage e.g. over grazing or drainage ditches.
- 2 Attempt to re-establish the natural water flow patterns within the wetland.
- 3 Consider revegetation of buffer zones and wetland areas.
- 4 Remove invasive alien vegetation.
- 5 Follow up as necessary and monitor progress.

**Due to the sometimes complex nature of wetlands, careful planning should be done before any wetland rehabilitation is undertaken. It is important to have a good understanding of the particular wetland on your property.**

Please consult the following resources for more detailed planning assistance:

[www.wrc.org.za](http://www.wrc.org.za)

WET-Tool Management series

<http://www.capeaction.org.za/index.php/resources/landscape-initiatives?view=document&id=205>

Guidelines for Wetlands Management

<http://www.cepf.net/Documents/rooibosguidelines.pdf>

Guidelines for the sustainable production of rooibos

[www2.dwaf.gov.za/webapp/ResourceCentre/Documents/Reports/WetlandZoneDelineationSep05.pdf](http://www2.dwaf.gov.za/webapp/ResourceCentre/Documents/Reports/WetlandZoneDelineationSep05.pdf)

Wetland delineation guidance

[www.wetlands.za.net/](http://www.wetlands.za.net/)

Wetland Portal of South Africa, which hosts information, discussions and event notifications

[www.wetland.org.za](http://www.wetland.org.za)

Various management guidelines

## Legislative-based guidelines

Activities in and around wetlands are restricted in terms of the Conservation of Agricultural Resources Act (regulation 7), the National Water Act (section 21 and 22) and the National Environmental Management Act of 2010 (section 24 and EIA regulations).

The following guidelines apply:

- 1 Identify and delineate wetlands during winter months. Some wetlands are not easily identified during the dry summer months.
- 2 Keep natural buffer areas of 32m around wetlands free of invasive alien plants and irrigated crops.
- 3 If the wetland is a Critical Biodiversity Area (CBA) or Freshwater Ecosystem Priority Area (FEPA), a risk assessment should be conducted prior to activity or a 100m buffer area should be maintained.
- 4 Where relevant, activities in wetlands should be managed within a river management/ maintenance plan.
- 5 All modifications to water flow in or through a wetland require official permission. Disturbed wetlands can often be successfully restored by returning the flow to its original state through closing of drainage ditches and trenches.
- 6 Do not restrict, block or alter (including over-abstraction) the water supply to a wetland.
- 7 Do not over abstract or divert surface or groundwater feeding into a wetland, which may cause it to dry up. High yielding boreholes should not be sunk in or near wetlands.
- 8 Dam construction within wetlands transforms the wetland into a permanent water body, resulting in the loss of the important wetland habitat, particularly if it is a seasonally wet system. Dams should thus be constructed outside of wetlands and stream channels.
- 9 Avoid pollution sources like waste disposal sites, domestic effluent, etc, near wetlands.
- 10 Regularly clear wetlands of invasive alien plants, taking care not to disturb the soil. I.e. do not use heavy machinery.
- 11 Certain wetlands (especially grassy floodplains) can be grazed, provided that no over grazing occurs, and that it is done in the correct season (December to April).
- 12 The intensity of grazing within wetlands by large livestock should be subject to setback lines and other best management principles. If it is a priority wetland (CBA or FEPA) grazing should not be allowed within a 32m buffer area, or a setback line determined through a risk assessment process.
- 13 Most wetlands in the Western Cape are likely to have evolved with periodic fires, and are likely to have burnt along with the surrounding non-wetland areas. Careful consideration should be taken on appropriate frequency and timing of burning wetland areas, with particular caution when burning wetlands with organic soils at dry times, as underground fires can develop which are very difficult to put out fire frequency should be guided by a management plan.

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