



WORKING FOR WETLANDS IN SANPARKS

Why conserving wetlands?

"Available freshwater per capita is decreasing. In the 20th century, while the world's population tripled, freshwater withdrawals increased over six times. In some arid regions, as much as 95% of the available water is already being used!" *Ramsar Convention on Wetlands 2003*

"Wetlands, globally, are worth more than R30 trillion a year" *Nature scientific journal*.

"The estimated global loss of wetlands is more than 50%"

Where does this leave South Africa?

In 1996 it was estimated that more than half of South Africa's wetlands had already disappeared. Studies in various catchments have estimated wetland losses at between 35 to 60%.

What is a wetland?

Most people think wetlands are muddy places, infested with diseases and mosquitoes and disregard them. However, conservationists would point out that wetlands are among the most productive ecosystems, supporting enormous quantities of unique plants and animals.

The Ramsar convention gave the following definition for wetlands:" Wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres."

According to the South African Water Act a wetland is "land which is transitional between terrestrial and aquatic systems, where the water table is usually at or near the surface or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil".

This definition allows us to conclude that there are three indicators, which allow us to decide whether a piece of land is a wetland, or not:

- A **high water table**
- **Hydromorphic soils**
- **Hydrophytic plants** living in these soils

Without water there would be no life on earth. Plants, animals and people need water to survive and grow. South Africa does not have an abundance of water, and the water in many streams is polluted.

Where to find wetlands

Water, which falls as rain or snow in **catchments**, and which is not lost to the atmosphere through **evaporation** or **transpiration**, moves through these catchments to the sea. Wetlands are found where the landform (topography) or geology slows down or obstructs the movement of water through the catchment (e.g. where the landform is very flat) causing the surface soil layers in the wetland area to be temporarily, seasonally or permanently wet.

Different types of wetlands

Seeps:



Marsh: A wetland that is seasonable or permanently flooded with soils which remains semi-permanently or permanently saturated and which is usually dominated by tall (usually > 1.5m) emergent herbaceous vegetation.



Pans:



Pans



Valley Bottoms



Floodplain

Functions of wetlands

Wetlands are able to reduce the severity of droughts and floods by regulating streamflow. Wetlands also purify water and provide habitat for many different plants and animals. Besides these **indirect benefits** to society, wetlands provide many **direct benefits** in the form of resources such as fibre for making crafts. Until very recently the benefits of wetlands to society were often not recognized, and many wetlands have been destroyed or poorly managed.

Indirect Benefits

- Flood reduction and streamflow regulation
- Groundwater recharge and discharge
- Water purification
- Erosion control by wetland vegetation
- Biodiversity
- Chemical cycling

Direct Benefits

Livestock grazing
 Fibre for construction and handcraft production
 Valuable fisheries
 Hunting waterfowl and other wildlife
 Valuable land for cultivation
 A valuable source of water
 Economically efficient wastewater treatment
 Aesthetics (beauty) and nature appreciation

Wetland destruction

The **worst damage** anyone can inflict on a wetland is to drain it for the production of pastures and crops. Other insults to wetlands include overgrazing, excess cattle trampling and the wrong burning regime. Mismanagement of a wetland usually results in erosion, especially in the form of head-cuts (this is a type of erosion that eats uphill towards the flow of water, leaving a huge gully behind it). Channels and head-cuts essentially drain the wetland, dry it out and ultimately destroy it. They also increase the amount of sediment in the water thereby decreasing water quality. Another major wetland problem in South Africa is erosion along riverbanks. The cause of this erosion is most often a result of poor land management – removal of streambank vegetation, invasion of alien plant species, excess cattle trampling, overgrazing, and flooding because of land disturbances in the upper catchment.

Wetlands in SANParks

As a conservation body, SANParks is committed to conserve and where necessary restore and rehabilitate the wetlands within the Parks to ensure optimum functioning of the wetlands. Where areas outside the Park's boundary have an impact on wetlands within the Parks, these areas will also be considered for rehabilitation.

The Parks have a holistic catchment approach to ultimately deal with all wetlands impacting within their Parks.

The Department of Environmental Affairs and Tourism (DEAT), is funding a wetland rehabilitation programme through the South African National Biodiversity Institute. The programme is part of the government's Expanded Public Works Programme (EPWP), and is specifically aimed to provide job opportunities for previously disadvantaged people. Part of the criteria to access this funding is that at least 25% of the workers have to be women, 25% youth and 1% disabled. Training and skills development are also a priority and each worker receives a minimum of 24 training days per annum.

Present Projects

Presently, we have managed to secure R6.799.614,00 over the next three years. This funding, is approved for the following parks:

Project	Activities
Agulhas	Plugging of drainage farrows
Golden Gate	Stabilisation of dongas through gabion construction
Kruger National Park	Removal of redundant dam walls, restoration of natural water ways by installation of culverts

AGULHAS NATIONAL PARK – WETLAND PROJECT



Earth plugs in Agulhas National Park

GOLDEN GATE NATIONAL PARK – WETLAND PROJECT



Donga erosion within the Golden Gate National Park. The soils are dispersive and therefore highly erodable



Gabion structures in the Oribi loop within the Golden Gate National Park



Work is labour intensive and safety aspects are a high priority

KRUGER NATIONAL PARK



Inserting 11 sets of culverts across tourist route in the Kruger National Park to enhance water flow in Luvuvhu river flood-plain



**More than 8000 m³ of dam wall are removed and transported to old gravel pits.
Stangene dam, Kruger National Park**

Future Projects

Most of the National Parks have wetlands within their boundaries and although these wetlands are relatively pristine and conserved through the conservation policies of SANParks, external (floods), as well as other factors such as the construction of infrastructures (roads, dams) are impacting on some of the wetlands in the parks.

A process will be put in place whereby a wetland inventory will be done, simultaneously, evaluating the condition of the wetland. This will feed into a strategy that will prioritise wetlands within the different Parks that needs rehabilitation activities.

This baseline information will be used to access other donor organizations and will assist the Parks to manage their wetlands according to international standards, as the much appreciated allocation from DEAT is not sufficient to address all the wetland conservation needs within SANParks.

Still lot's to do! Remains of 2000 flood's



RAMSAR Wetlands sites

The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 141 Contracting Parties to the Convention, with 1387 wetland sites, totalling 122.7 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance.

Presently the Wilderness Lakes area within the Southern Cape is the only declared RAMSAR site within SANParks. Another wetlands area that is in the process of possible declaration is the Mabyeni pan in the Far Northern Region of the Kruger National Park.



Boardwalk at Lakes in the Wilderness National Park. This wetland is the only declared RAMSAR site within SANParks

Management framework

The programme is still in its beginning days and therefore lots still need to be done to ensure proper strategic planning to prioritise wetland rehabilitation sites within our Parks.

The Invasive Species Control Unit within SANParks, in close liaison with the Conservation Services of the Park, is managing the programme.

Contact details

For any enquiries please contact the Unit Coordinator of the Invasive Species Control Unit of SANParks, Ms Olga Jacobs, at 012 426 5000 or at e-mail address olgaj@sanparks.org.

For more detail about general functioning of wetlands, the following web site can be consulted: www.wetland@org.za

Glossery of terms

Catchment: All the land is from mountaintop to seashore, which is drained by a single river and its tributaries.

Groundwater table: The upper limit of the groundwater.

Hydric soil: Soil that in its undrained condition is saturated or flooded long enough during the growing season to develop anaerobic conditions favouring growth and regeneration of hydrophytic vegetation (i.e. wetland soil).

Hydrology: The study of water, particularly the factors affecting its movement on land.

Hydrophyte: Any plant that grows in water or in soil that is at least periodically anaerobic as a result of saturation; plants typically found in wet habitats.

Indirect (wetland) benefits: Have worth, quality or importance to humans but do not require active use of wetlands by individuals in order for the benefits to be realized. Instead, the wider public benefits indirectly from the services that wetlands provide.

Permanently wet soil: Soil, which is flooded or waterlogged to the soil surface throughout the year, in most years.

Sedges: Grass-like plants belonging to the family Cyperaceae, sometimes referred to as nutgrasses. Papyrus is a member of this family.

Temporarily wet soil: The soil close to the soil surface (i.e. within 40 cm) is occasionally wet for period >2 weeks during the wet season in most years. However, it is seldom flooded or saturated at the surface for longer than a month.

Transpiration: The transfer of water from plants into the atmosphere as water vapour.

Aerobic: Having molecular oxygen (O₂) present.

Anaerobic: Not having molecular oxygen (O₂) present



Wetlands are habitat for a variety of animals



Flood damage is partly caused because of wetland degeneration in the catchment areas