



FORESTRY SOUTH AFRICA

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RESTORING WETLANDS ONE GABION AT A TIME



MTO | group

FORESTRY EXPLAINED: OUR CONSERVATION LEGACY

Repairing Tsitsikamma's wetlands

Restoring water security and ecosystem function

The plantations around Tsitsikamma are some of the oldest in the country, established during a period of mass tree planting (afforestation) by the South African government between 1917 and 1939. These commercial plantations were established to meet future timber demands without uncontrolled harvesting of the indigenous forest.

Many of these plantations were established on wetlands, which had to be drained to ensure that the trees would grow. As a result, large trenches were dug through the wetlands disrupting their function and ultimately causing them to dry out.

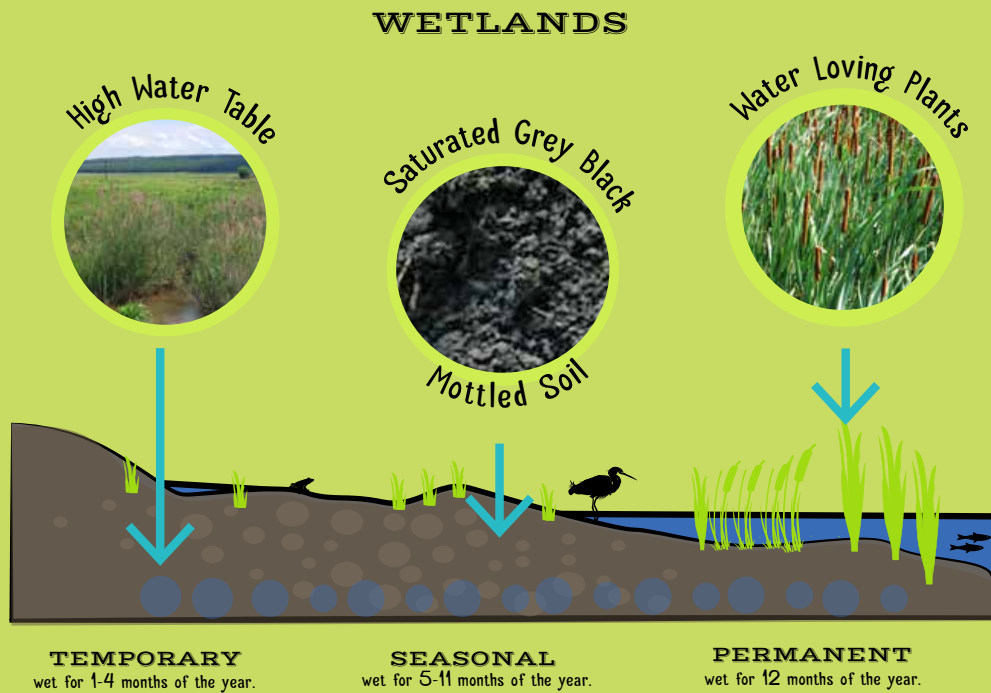
Draining of wetlands was common agricultural practice up to the 1970's when the vital ecosystem role these systems provide was finally brought to the world stage, thanks to the 1975 RAMSAR Wetland Convention. Sadly, by then about half of the 2.4% of South Africa's surface area classified as wetlands was already lost or seriously degraded.

ALL PHOTOS COURTESY OF MTO FORESTRY

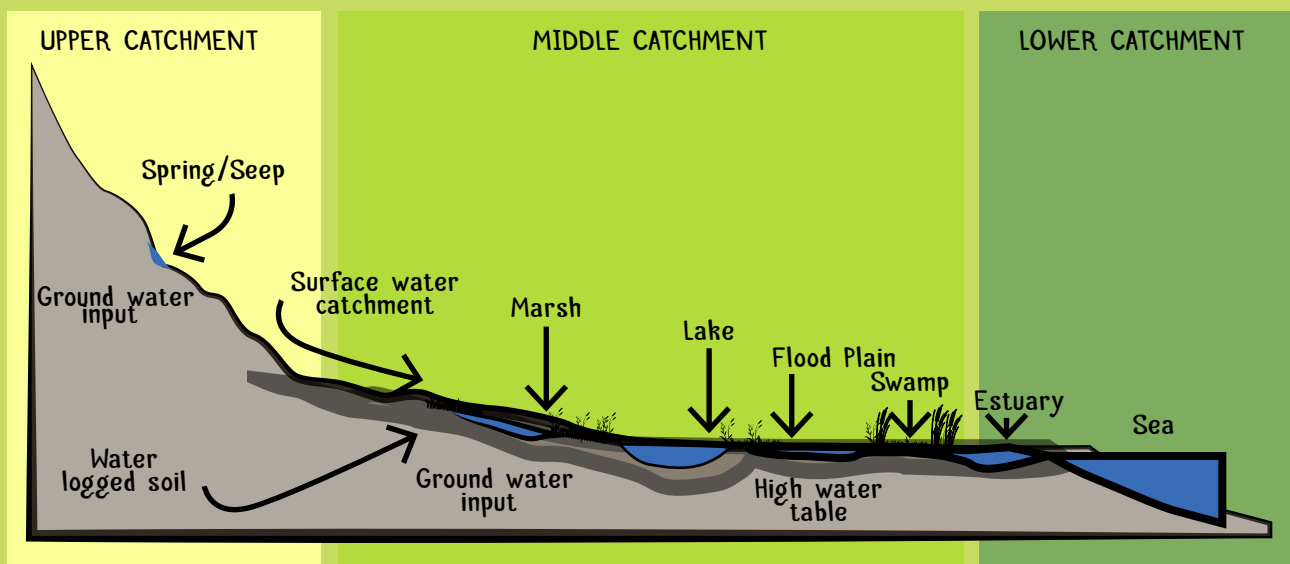


What are wetlands?

Wetlands, according to the National Water Act, are defined as “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 water saturated soils”.



Wetlands vary in their characteristics and environmental role, depending on the nature of the landscape in which they occur. Different types require different management and protection actions as they exhibit different levels of vulnerability.



Why should we care?

WATER SECURITY

As a water scarce country, South Africa needs to do all it can to safeguard this precious resource. Wetlands play a major role in this.

Refer to: What are wetlands on the Forestry Explained water page.

ECOSYSTEM FUNCTION

Wetlands are considered to be of national importance due to the following functions they perform:

- Water purification and storage
- Recharging of underground aquifers
- Streamflow regulation

These services help ensure:

- Water security
- Erosion control
- Reduction of flood risks
- High biodiversity value

Many people, especially rural communities, are also directly dependent on wetlands for the goods and services they provide:

- Drinking, cooking and washing water
- Grazing and agricultural lands
- Food source
- Materials for thatching and weaving
- Recreational use



Undoing the damage

Fast forward to 2005, when MTO Forestry took over the management lease of 28,000 hectares of state-owned Tsitsikamma plantations (Lottering and Witelsbos), from SAFCOL.

Working in conjunction with the Government's Extended Public Works programme - the 'Working for Wetlands project' - MTO Forestry has launched a two-pronged attack to try and undo some of the damage caused by the initial afforestation during the first half of the last century.

- 1) **REMOVAL OF ALIEN SPECIES:** This includes plantation trees planted within the wetland and its buffer zone, along with any other alien invasive species that are encroaching on wetland areas and the rivers.
- 2) **ADDRESSING HISTORICAL DAMAGE:** Plugging drains and reducing the impacts of erosion and incorrectly placed roads.

To date, R11.3 million has been spent over 10 years on restoring the wetlands on MTO Forestry land and the community land that borders it. This figure doesn't include the costs of:

- Overseeing the project
- Logistical support required
- Infrastructure required for the project to succeed
- Training of contractors and their workforce, which included:
 - Basic safety
 - Health and safety rep training
 - First Aid
 - Basic fire fighting
 - Chainsaw courses
 - Herbicide application course
 - Plant identification course
 - Environmental awareness course

All of have been provided by MTO Forestry.

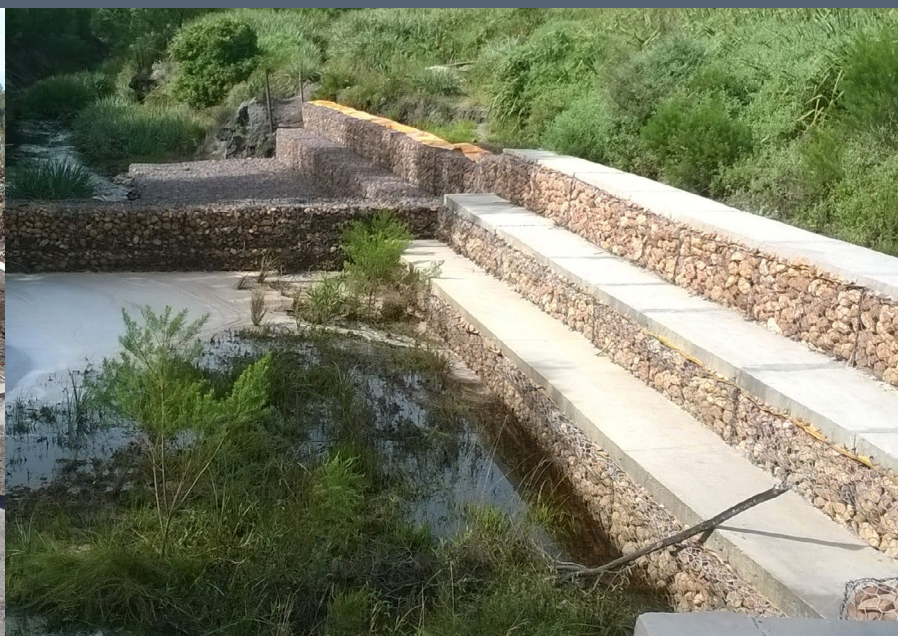
The Tsitsikamma Project

This wetland is in a basin formed by the confluence of two major tributaries of the Tsitsikamma River. On one side there is a steep rocky hill, the other a large flood plain and palmiet wetlands. If undisturbed the wetlands would have dissipated the force of any water coming down from the hills, spreading it out across the flood plain. Sadly, decades of disturbance have altered the flow of water, creating a narrow channel where a donga has formed. In turn this has created a 'head-cut' (gully that migrates upstream) that slowly enlarges the channel, pushing it upstream and draining more of the wetland.

In order to address this, the MTO Forestry crews constructed gabions (cages filled with rocks), weirs (low dams built across a river to raise the level of the water upstream or regulate its flow) and Eco-logs (to plug the drainage channels). By simply preventing drainage and slowing water flow, wetland function began to improve.

The problem was, as Working for Wetlands coordinator Japie Buckle points out, *"degradation of wetlands in the lower sections of a catchment is just a symptom of a much bigger problem in the upper catchment."*

With that in mind, MTO Forestry started looking beyond their boundaries at other wetlands in the region. The project was expanded in 2010 to a tributary of the Tsitsikamma river on Fingo tribal land, belonging to the Mfengu community. For the past seven years efforts have been concentrated on rehabilitating this system too.





The story so far

To date, MTO Forestry and working for wetlands have constructed, cleared and revegetated:

- **19 GABION STRUCTURES** - covering 1818 m³
- **8 CONCRETE STRUCTURES** - covering 349 m³
- **75 ECO LOGS** - constructed and plugging drains
- **145.5 HECTARES** - cleared of invasive species
- **2,882 m²** - revegetated riparian and wetland banks



FINAL THOUGHT

“As we are all acutely aware, water is a precious resource. We all have a role to play to protect water and wetlands. Responsible forestry and addressing the mistakes of the past are a priority.”

Lawrence Polkinghorne
MTO Group CEO