

CARING FOR OUR WETLANDS

an answer to climate change



It is vital to pay attention
to wetlands in South Africa and
understand how they can form part of our
response to mitigating and adapting to climate change.

This fact sheet explains why.



Did you know?

- ▶ About 115 000 wetlands, covering 4,21 million hectares, or 3,5% of the country's surface area, have been mapped to date in South Africa.
- ▶ These wetlands are part of our natural infrastructure for gathering, managing and delivering water for human use. Many wetlands are able to improve water quality, reduce flood impacts, control erosion and sustain river flows.
- ▶ Wetlands directly support human health and livelihoods, through the provision of food, fibre, water and natural products to many communities. They also have significant worth as warehouses of biodiversity and as sites for tourism, subsistence farming, grazing, education, recreation and spiritual activities.
- ▶ Despite these values, it is estimated that up to 60% of the wetlands in some catchments have been damaged or destroyed due to human impact.
- ▶ Peatlands are wetlands containing a special type of soil, called peat, which is found only in wetlands. Permanently saturated conditions in some wetlands inhibit the decomposition of dead plant and animal matter. Instead of decomposing, some of this material accumulates over time and becomes peat, which is the first step in the formation of coal.
- ▶ Although at least 30% of the world's wetlands are peatlands, most are concentrated in the northern hemisphere. Southern hemisphere peatlands are generally small, shallow and sparsely distributed.
- ▶ Peatlands are rare in South Africa. It is estimated that they cover 29 500 hectares, or 1% of the country's total wetland area, and contain about 280 million cubic metres of peat. It is estimated that peat accumulates at a rate of about 0,5mm per year in South Africa, compared to the global average of 1-2mm per year.
- ▶ Peat enhances normal wetland functions, making peatlands particularly efficient at carbon and water storage and highly effective as filters. Peatlands are also used for subsistence farming, grazing, harvesting of plant material and water collection.

What is the link between wetlands and climate change?

- ▶ Peatlands play a complex but important role in climate regulation, by influencing the global balance of three main greenhouse gases – carbon dioxide, methane and nitrous oxide.
- ▶ In their natural state, peatlands remove carbon dioxide from the atmosphere via peat accumulation. Although peatlands also emit methane, the long-term negative effect of methane emissions is smaller than the positive effect of carbon dioxide removal.
- ▶ After oceanic deposits, peatlands are the world's most important carbon stores. While covering only 3% of the world's land area, they contain 30% of all global soil carbon, nearly as much as the entire atmosphere.
- ▶ If left undisturbed, peatlands can store this carbon for thousands of years and as a result are called 'carbon sinks'.
- ▶ When peatlands are disturbed and peat is exposed to the air, the decomposition process resumes and stored carbon is released back into the atmosphere. Degraded peatlands can thus become significant sources of carbon dioxide.
- ▶ Draining and burning of peatlands releases about 3 billion tons of carbon into the atmosphere every year. This is equivalent to more than 10% of global fossil fuel emissions.
- ▶ A 2008 assessment identified 7 100 hectares, or 25%, of South Africa's remaining peatlands as being degraded, which resulted in about 300 000 tons of carbon dioxide being released into the atmosphere in 2008 alone.





What will happen if wetlands are affected by climate change?

- ▶ Many wetlands in South Africa are likely to be affected in some ways by changes in temperature and rainfall brought about by climate change.

Some wetlands with a limited capacity to adapt to rapid change may be especially vulnerable to climate change. Damage to these ecosystems could be irreversible.

Coastal wetlands including salt-marshes and mangroves are likely to be negatively affected by sea-level rise.

Certain invasive species may expand their ranges.

Higher water temperatures and extreme events like floods and droughts are projected to decrease water quality and increase erosion in many of our wetlands.

- ▶ Wetlands are already important for reducing the impacts of extreme weather events like floods and droughts. Changes in rainfall intensity and variability due to climate change are expected to increase flooding and drought in many areas. Wetlands can play a more important role than ever before in mitigating such extreme events, but they can only do this if they are in a healthy state.
- ▶ It is estimated that a further 194 million tons of carbon dioxide could still be released into the atmosphere if the remaining healthy peatlands in South Africa were to be degraded. Experts estimate that many of our other permanently saturated wetlands also contain soil carbon, although not in sufficient concentrations to qualify as peat. This stored carbon could amount to a further 2 200 million tons of carbon dioxide that could be released into the atmosphere if these wetlands become degraded.
- ▶ The recently completed Millennium Ecosystem Assessment, the most thorough examination of the health of the planet's ecosystems, points out that the continued loss of wetlands will further reduce human health and well-being, especially for the poor. Although we all benefit from wetlands in some way, wetland-derived goods and services are especially important for the poorest and most vulnerable sectors of our population.
- ▶ Freshwater is already a scarce resource in South Africa. The ecosystems that sustain the water resource, and which are in turn reliant on it, are inseparable from it. This means that further impacts to our already threatened wetlands will have corresponding effects on water quantity, quality and availability for human use.

What can be done for wetlands?

- ▶ Keep our remaining wetlands healthy and resilient.
- ▶ Target the main activities that are responsible for ongoing wetland loss and degradation.
- ▶ Focus on actions that support both the health of wetlands and the health of people, since there is a direct link between the two.
- ▶ Rehabilitate degraded wetlands, since healthier wetlands are more resilient than degraded ones. Rehabilitation and good management of our wetlands can generate multiple benefits including poverty alleviation, combating of land degradation, maintaining biodiversity and mitigating climate change.

Because of the large emissions from degraded peatlands, rewetting and rehabilitating them is one of the most cost-effective ways of reducing greenhouse gas emissions. Recognising this, although peatlands make up a fraction of South Africa's wetlands, 40% of all current and previous rehabilitation projects undertaken by the Working for Wetlands Programme have targeted peatlands or their catchments.

- ▶ Develop a better understanding of the impact of climate change on wetlands and the species that depend on them, so that suitable actions can be designed to mitigate and adapt to the changes.



Caring for our wetlands

Partners in conserving our wetlands



DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES (DAFF)

The Department of Agriculture, Forestry and Fisheries aims to lead and support sustainable agriculture and forestry and fisheries development.

DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA)

The Department of Environmental Affairs aims to lead sustainable development of our environment for a better life for all.

DEPARTMENT OF WATER AFFAIRS (DWA)

The Department of Water Affairs contributes to the development of a country that uses water productively and in a sustainable manner for social and economic activities; in a manner that promotes growth, development and prosperity of all people to achieve social justice and equity:

EXPANDED PUBLIC WORKS PROGRAMME (EPWP)

The EPWP is one of the South African Government's short-to-medium term programmes aimed at the provision of additional work opportunities coupled with training.

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE (SANBI)

SANBI's mandated responsibilities include relating to the full diversity of South Africa's fauna and flora, built on the internationally respected programmes in conservation, research, education and visitor services developed by its forerunner, the National Botanical Institute.

WATER RESEARCH COMMISSION (WRC)

The Water Research Commission generates new knowledge and promotes South Africa's water research.

WORKING FOR WETLANDS

The Working for Wetlands programme strives to maintain healthy wetlands that benefit the people of South Africa and the environment that sustains us by championing the protection, rehabilitation, and sustainable use of the country's wetlands through cooperative governance and partnerships.



Sources

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