

Forests and wetlands

Wetlands store carbon **10-20** times faster than terrestrial ecosystems.

There are **2,000**ha of wetlands on our land.

“Half of the world’s wetlands have disappeared since 1900. Development and conversion continue to pose major threats to wetlands, despite their value and importance.” WWF



Wetlands are ecosystems rich in biodiversity that deliver tangible economic value...

What are wetlands?

Wetlands are aquatic systems that can be permanently, intermittently or even rarely saturated. Because wetlands occur between these extremes, they are often viewed as transitional ecosystems that share characteristics of both wetland and non-wetland habitats. See illustration overleaf.

How do you know when an area is a wetland?

- Wetlands are areas where the water table is usually at, or near the land surface, either permanently or seasonally
- The substrate is predominantly undrained waterlogged soil
- The area is covered by water-loving species such as egg reed or is a papyrus marsh or sedge-dominated seep
- Temporarily wet areas, dominated by grass species, are only classed as wetlands if there is a high proportion of wetland soils showing signs of waterlogging.

What is the environmental status of wetlands?

Alarmingly, the world’s wetlands are under siege. The Millennium Ecosystem Assessment¹ found that damage to and loss of wetlands is more rapid than that of other ecosystems. As a result, species dependent on both freshwater and coastal wetlands are declining faster than those reliant on other ecosystem types.

Where are wetlands found?

Wetlands are found where the topography (land formation) or geology obstructs or slows down the movement of water through the catchment (eg very flat land formations), or where groundwater is discharged to the surface, causing the surface soil layers in the area to be temporarily, seasonally or permanently wet.

Many wetlands occur in areas where surface water collects and/or where groundwater discharges to the surface (commonly referred to as seeps, springs or fountains), making the area wet for extended periods of time. Other wetlands, such as estuaries and sometimes even coral reefs, occur along our coasts.

The abundance of water creates an environment where hydrophytic (water-loving) plants, that are adapted to wet conditions, tend to grow in abundance. These plants in turn affect the soil and hydrology by further slowing down the movement of water and by producing organic matter that may accumulate in the soil.

“Our focus is on rehabilitating and conserving our wetlands. We particularly look at improving the water functioning features of these wetlands to provide a sustainable flow of good, clean water and a sound habitat for biodiversity.”

Dr David Everard

Divisional Environmental Manager, Sappi Forests

Our undertaking to **remove all commercial timber** from **riparian** and **buffer** zones surrounding **wetlands** is **nearing completion.**

Globally, **wetlands deliver** services valued at **US\$4.9 trillion.**

Our wetlands are managed to provide a **sustainable flow** of **clean water** and a **sound habitat** for **biodiversity.**

Why are wetlands important?

Wetlands are among the world’s most productive environments. On a global scale, they provide us with services worth trillions of US dollars every year — entirely free of charge — making a vital contribution to human health and wellbeing. Some studies² have indicated that ecosystems provide at least US\$33 trillion’s worth of services annually, of which about US\$4.9 trillion is attributed to wetlands. The many benefits of wetlands include:

- **Flood control and storm protection** By slowing down rainwater runoff and spring snowmelt, wetlands help prevent sudden, damaging floods downstream.
- **Replenishment of groundwater** Many wetlands are directly connected to groundwater and play a vital role in regulating the quantity and quality of groundwater.
- **Ecosystem and species richness** While wetlands cover a relatively small area of the earth’s surface, many of them are extremely rich in biodiversity.
- **High rates of carbon storage combat climate change** Wetlands annually store carbon at rates that can be 10-20 times faster than terrestrial ecosystems.

Direct and indirect wetland benefits

Ecosystem services supplied by wetlands	Indirect benefits	Hydro-geochemical benefits	Flood attenuation	
			Streamflow regulation	
			Water quality enhancement benefits	Sediment trapping
				Phosphate assimilation
				Nitrate assimilation
				Toxicant assimilation
		Erosion control		
	Carbon storage			
	Direct benefits	Biodiversity maintenance		
		Provision of water for human use		
		Provision of harvestable resources		
		Provision of cultivated foods		
		Cultural significance		
Tourism and recreation				
Education and research				

How does Sappi manage wetlands?

In the late 1990s, we embarked on an extensive project to remove all commercial timber from riparian and buffer zones surrounding wetlands.

Now nearing completion, the successful rehabilitation has resulted in:

- The water table rising significantly
- Stream flows returning (even in dry periods)
- Indigenous wetland faunal species re-colonising wetlands
- Indigenous wetland wildlife thriving.

We were involved in the development of **Wet-Health**, one of the first comprehensive **wetland health assessment tools** to be developed for assessing South African Wetlands. The toolkit enables us to:

- Evaluate wetland condition
- Identify causes of wetland degradation
- Prioritise rehabilitation initiatives
- Measure the effectiveness of rehabilitation efforts
- Evaluate possible impacts of land-use changes on wetland functioning.

With the aid of the toolkit we prioritise the importance of our wetlands, assess their catchment areas and refine management plans to ensure they are in a healthy sustainable condition and provide all the vital functions a good wetland should, including a sustainable flow of good, clean water and a sound habitat for biodiversity.

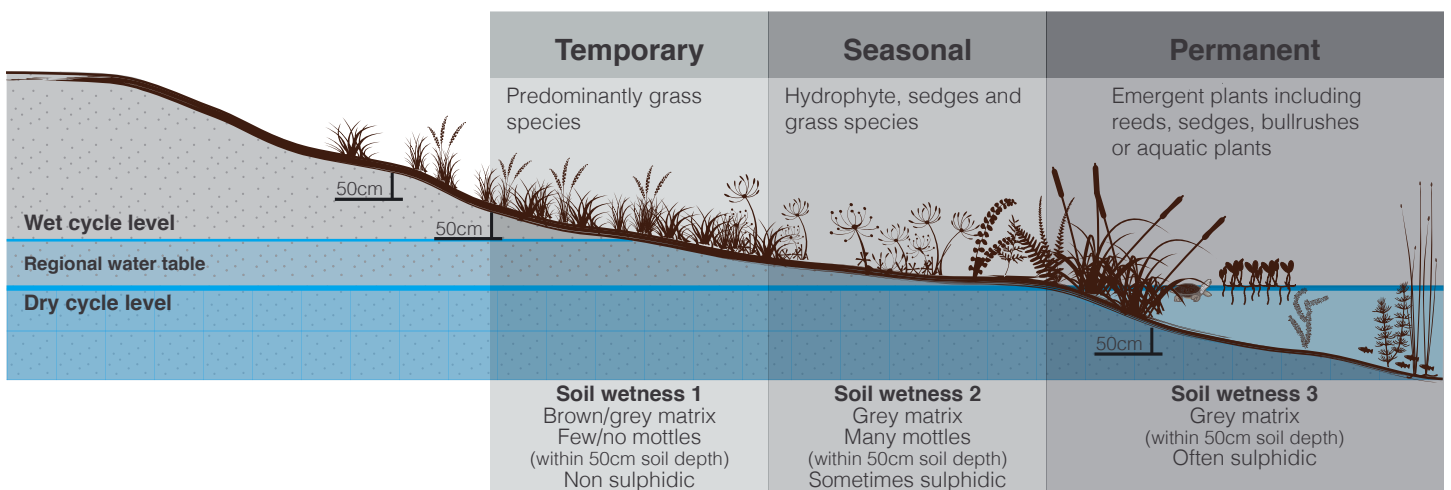
How many wetlands are there on Sappi’s land?

Excluding rivers and streams that are sometimes classified as wetlands, currently, **approximately 2,000ha of our landholdings are classified as inland wetlands.**

These inland wetlands consist of a variety of wetland types including freshwater marshes, peatlands, springs, swamp forests and floodplains. Our wetlands yield all the benefits that make these areas so important – from inhibiting flooding and filtering water, to storing carbon and thus helping to mitigate climate change.

1 <http://www.ramsar.org/>
2 <http://www.maweb.org/documents/document.358.aspx.pdf>

Cross section of wetland habitats



Wetlands on Sappi land

District	Plantation	Name	Size ha	Description
Bulwer	Comrie	Comrie wetland	105	A large wetland, approximately 35ha in extent adjacent to the 70ha Ngodweni Dam. Common Reedbuck and a family of Cape Clawless Otters are often seen.
Bulwer	Epsom	Epsom wetland I	29	Contains patches of indigenous forest and provides sanctuary for the nearby forest's fauna and flora.
Bulwer	Epsom	Epsom wetland II	32	Since being cleared, the river below the wetland has flowed continuously, even in times of drought. This wetland is important for water conservation, and the conservation of wetland fauna and flora.
Bulwer	Mossbank	Mossbank wetland	96	The upper section of this site consists of a large 40ha wetland previously planted to commercial trees. This wetland has now been rehabilitated, resulting in the water table lifting and improved water flow in the stream which meanders through an attractive valley system of some 16ha in extent towards the Mossbank Dam.
Camelot North	Elandshoogte	Taljaardsvlei	27	Taljaardsvlei is known for its rich diversity of orchid species; approximately 20 species of orchid have been recorded to date, including species not commonly found elsewhere in the region. One botanical gem found here is <i>Helichrysum Ecklonis</i> (Ecklon's Everlasting), a perennial herb that grows on grassy slopes; this is the most northerly distribution of this species in the country. It is rare in Mpumalanga and has only been found in a few localities in the Fort Nottingham area of KwaZulu-Natal and the former Transkei.
Camelot North	Helvetia	Swartkoppies spruit	158	Located along the Swartkoppiespruit, a tributary of the Elands River, the catchment area into which it falls was highlighted as irreplaceable in the Mpumalanga Aquatic Conservation Plan. The site also falls within a macro-ecological corridor identified as part of the Mpumalanga Biodiversity Conservation Plan. Waterbuck and Oribi have been recorded in the vicinity.
Inkwazi	Hall & Sons	Gladdespruit	100	A large floodplain, dominated by a grassland tree fern habitat and bracken fern in places. The critically endangered Incomati Rock Catlet has been recorded here.
Karkloof	Shafton	Nyaka-Nyaka vlei	25	The vlei begins below a large dam and supports a small, slow-flowing meandering channel. The stream is supplemented by a few small tributaries and widens out into a small floodplain wetland supporting a diversity of sedge and phragmites (large perennial grasses). It also contains a regularly used nest site of the African Marsh Harrier.
Karkloof	Shafton	Shafton-Kusane wetland	72	Situated on the northern section of Block A on Shafton plantation, this reclaimed wetland ecosystem supports a variety of wetland plants which provide habitat for a variety of bird and other animal species.
Karkloof	Shafton	Lion's River wetland	130	The site comprises a large floodplain either side of the Lions River as it flows towards Midmar Dam. During 1999, Sappi Forests, Rennies Wetland Project and Umgeni Water initiated a joint project to rehabilitate the site. Although still showing signs of disturbance, it is recovering well and has drastically improved from its previous state.

Wetlands on Sappi land

District	Plantation	Name	Size ha	Description
Karkloof	Winterton	Woodcote wetland and streams	109	The catchment areas are primarily grassland; a variety of shrub species including: <i>Leucosidea sericea</i> , known in English and Afrikaans as Ouhout; <i>Buddleia spp</i> (Butterfly Bush); and <i>Halleria lucida</i> (Tree Fuschia); occur along some watercourses that have been protected from fire. Tree ferns occur along streams. Reedbuck are often seen here.
Lothair	Lothair	Metula vlei	310	A continuation of the wetland on the Spring Grove property, bordering our land. The vlei is short grassland interspersed with marsh habitat in low lying areas.
Lothair	Mpulusi	Mpulusi grassland wetland	677	A large grassland of which 60ha falls on our property. Blesbok, Zebra, Wildebeest and Ostrich and a small Oribi population are present.
Umvoti	Hodgsons	Thornvale swamp	6	Wetland system dominated by the common phragmites reeds.
Umvoti	Clan	Satellite wetland complex	200	This large wetland system includes Satellite Dam, a bird sanctuary, and a number of linked wetland areas that are recovering following extraction of timber from the floodplain areas. The area is home to over 100 bird species and is a significant breeding ground for species such as Spurwing and Egyptian Geese, and Crowned and Fish Eagles.
Zululand	Lenjane	Lenjane wetland	238	Large wetland system that underwent successful rehabilitation in 2000-2001.
Zululand	Mooiplaas	Nomasila wetland	132	Wetland area supporting a number of bird species. Divided by saddles into two separate wetland systems.
Zululand	Zululand South	Tekweni wetland	12	Large wetland area previously planted with commercial trees. Provides habitat for numerous wetland bird species.



African Spoonbil



Common Moorhen



Talhaardsvlei



Shafton wetland