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3.6 Wetlands

Historically, wetlands were often seen to be synonymous with wastelands and smelly bogs, marshlands, fens and swamps. As a result, many wetlands were drained, filled in or otherwise destroyed, often in support of "development". But over time, these destroyed wetlands began to manifest themselves in a cascade of environmental perturbations, most notably biodiversity loss and water quality impairments.

It was only in the mid-1970s that there was formal recognition of the intrinsically high value of wetlands when nations subscribed to RAMSAR, the International Convention on Wetlands, which is an intergovernmental convention that collaborates with its members in the listing and consequent protecting of key wetlands or RAMSAR sites.[1] The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world." Established in 1971 in the Iranian town of Ramsar, the Convention presently has 168 contracting country parties, listing 2161 sites of global importance amounting to more than 200 million hectares of protected wetland.[1]

Today wetlands are acknowledged for their value and role in delivering environmental goods and services. Fortunately, KZN is endowed with some excellent wetlands and thanks to several past scientists and champions of wetlands, several are well protected and valued.

What is a wetland?

Wetlands are formally defined by the South African *National Water Act* and the *ICM Act* as "*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 in normal normal circumstances supports a vegetation typically adapted to life in saturated soil.*"

Aerial view of wetlands around St Lucia.

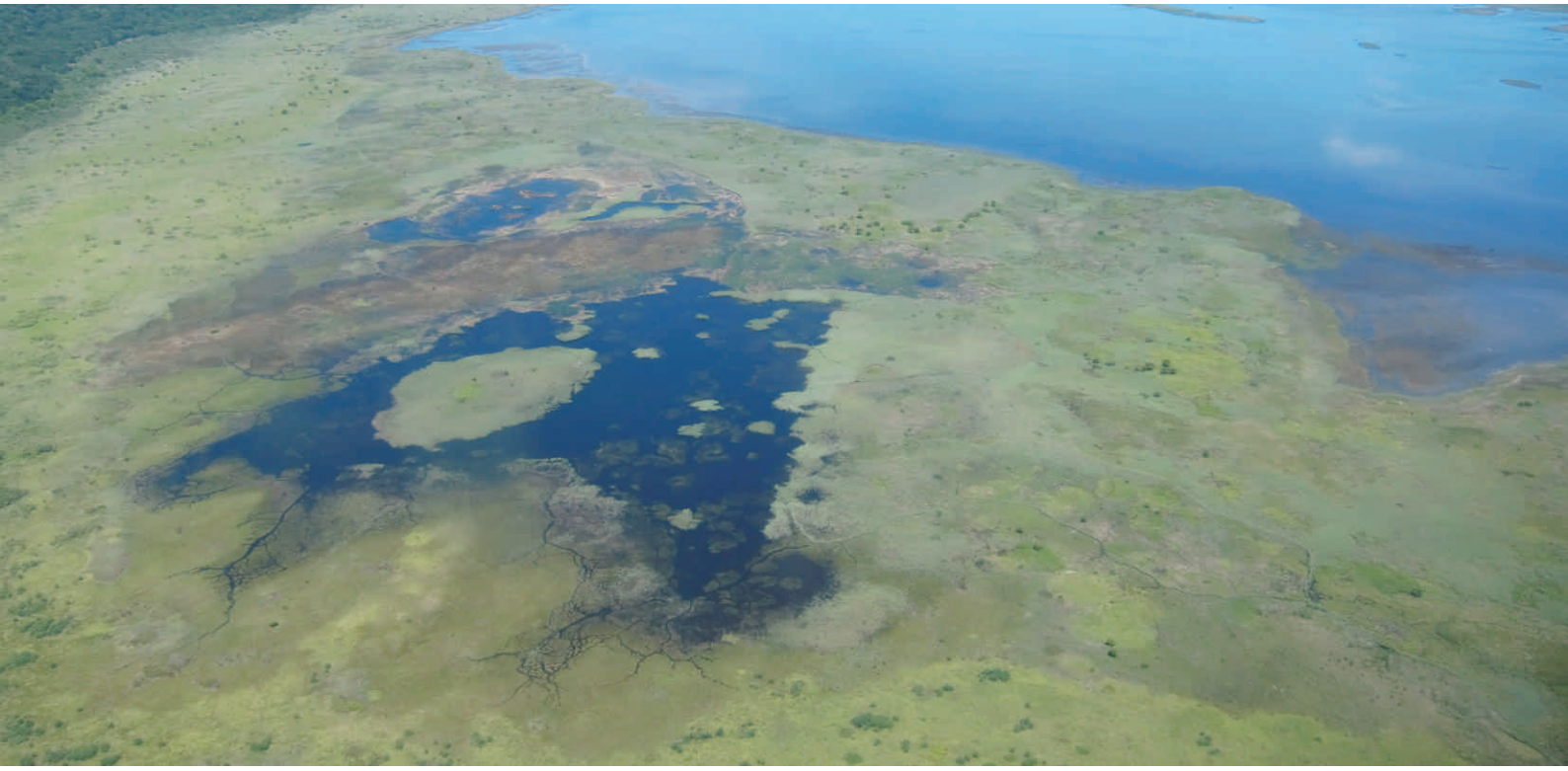

Photo: Fiona MacKay

Typically wetlands thus include riparian river banks, springs, marshes, bogs, floodplains, vleis, seeps and lakes. RAMSAR broadly defines wetlands to include; intertidal coastal areas such as estuaries, mangroves, deltas, tidal flats, salt marshes, intertidal coral reefs and tidal nearshore marine areas. Human-made sites can be included in some cases, such as mariculture ponds, reservoirs and port developments. However for the purpose of describing true wetlands, the *National Water Act* and *ICM Act* definition is adhered to in South Africa.

Wetlands have been considered the third most important life support system on earth. They can function as vast sponge-like reservoirs, filtering natural water thereby moderating both quality and quantity of water. They attenuate floods, reduce erosion, trap sediments, recycle nutrients, oxygenate the water and recharge groundwater.

Wetland goods and services

Besides their hydrological attributes there are other direct goods and services based on their rich biodiversity. Wetlands provide reeds, grasses and mangrove for housing; they harbour organisms with medicinal potential and can serve as tourism destinations based on their exceptional avifauna, frog and plant species and other unique wildlife.[2; 3] Wetlands, including wetlands located far inland, are especially important for coastal environments. The regulation of water quality and flow to downstream estuaries, the trapping of silt to prevent smothering of downstream ecosystems and the bio-degradation of pollutants are but some examples.

Protection of KZN's wetlands

In the 1980s, the then Natal Town and Regional Planning Commission (NTRPC) undertook a detailed survey and assessment of the province's wetlands.[4] A total of ten major river catchments were investigated, yielding 24 priority wetlands totalling 1 114 km^2. Many were not protected and many were located on private lands. Subsequently a wetlands policy was developed which aimed at wetlands protection and restoration, providing incentives for protection and encouraging sustainable use of wetlands resources.[5]

This initiative was followed by greater national government action and engagement with RAMSAR.[3] South Africa has some 740 identifiable wetlands, totalling about 12 000 km^2, although only 18% are under some form of protection. It has been estimated that more than 50% of the countries' wetlands have already been destroyed and lost. In KZN an estimated 8 101 km^2 are now classed as wetland, equal to 8.6% of the Province's land area, yet only 477 km^2 is under protection (less than 6%). Nevertheless, there has been a credible attempt to protect at least some of the most important wetlands.

Since the NTRPC survey several wetlands now enjoy protection and Ramsar status. South Africa currently has 21 declared Ramsar sites amounting to some 551 km^2 of protected wetland. Eight of these are located in KZN accounting for 86 % of South Africa's declared wetlands area.

Ramsar Wetlands of KZN

There are three key RAMSAR sites within the KZN coastal zone: Kosi Bay, Lake Sibaya and the Lake St Lucia System. Kosi Bay (10 982 ha) is located on the far northern coast of KZN. This system comprises of four deep interconnected estuarine lakes (*Section 3.3*), which are subject to tidal influence, and three extensive swamp forests. Fresh water permeates from groundwater but is also derived from three small riverine catchments. The area offers rich biodiversity and generates considerable local food security. This system falls within the iSimangaliso Wetland Park, a world heritage site, which offers it formal protection.[1]

Lake Sibaya (7 750 ha) is the largest natural freshwater lake in South Africa (*Section 3.4*), separated from the ocean by forested dunes, and includes areas of swamp forest and wet grassland. A large variety of endangered or endemic species of reptiles, fish, birds, mammals and plants occur in the area, including relics from geological past connection to the sea. The lake's crystal clear water is uniquely sustained by a small local catchment feeding groundwater and is not fed by rivers. It provides fresh water to local communities. This system falls within the iSimangaliso Wetland Park, a world heritage site, which offers it formal protection.[1]

The St Lucia System (155 500 ha) is Africa's largest estuary with a unique assemblage of coastal wetlands and habitat types. It receives water from at least six rivers including the Mfolozi and Mkuze, albeit variably because of droughts and agricultural water abstraction. It is also rich with avifauna and an abundance of flamingos, pelicans, crocodile and hippopotamus, making it an important tourist destination. This system is formally protected as it falls within the iSimangaliso Wetland Park .[1]

Photo: Bruce Mann

A wetland on the eastern shores of Lake St Lucia.

Non-protected wetlands

While these large important wetlands are formally protected by RAMSAR, it is important to note that there are a magnitude of smaller wetlands along the KZN coast that play a critical ecological role, most of which are afforded little or no protection. The value of these systems is often forgotten as there are drained for farmlands and filled for development.

KZN is endowed with numerous large and small wetlands, some protected and declared, others not. Wetlands help to protect coastal ecosystems while delivering valuable environmental goods and services to diverse communities. Fortunately, the largest are formally protected as RAMSAR sites. Their continued survival will depend on enlightened administrators as well as greater public interest and awareness of the value of vleis, swamps, marshes and other forms of wetlands. ■