

11. Kosi Bay

Geographical Coordinates 27°01'S 32°48'E

Area 8,000ha

Location The estuary is 105km east-north-east of the town of Ingwavuma, on the north-east coast of the province of Natal, east Republic of South Africa, on the border with Mozambique.

Date of Ramsar Designation 28 June 1991.

Other International Designations None.

National Designations Nature Reserve (Kosi Bay, 10,982ha).

Principal Features The system is composed of four interconnected lakes (Makhawulani, Mpungwini, Nhlange and aManzimnyama), a broad channel leading to an estuary and three extensive areas of swamp. Principal habitats include swamp forest, *Phragmites* beds, mangrove forest (32ha), dune systems with associated woodland, and coastal grassland. The system is supplied mainly with fresh water, by the three permanent rivers Sihadhla, Naswamanzi and Sifazanene, and drained by the 3km long Mtando channel, which connects Kosi Bay Estuary with the Indian Ocean. The mouth of the channel varies greatly, but averages 20-50m wide and 3m deep. The lakes Makhawulani, Mpungwini and Nhlange are influenced by tides, resulting in the exposure of about 70% of Lake Nhlange's bed during neap tides. There is a strong salinity gradient from sea water at the mouth of the estuary to fresh water at Lake aManzimnyama, 16km upstream. The submergent vegetation is dominated by *Ceratophyllum demersum* and *Potamogeton pectinatus*. The site supports a diverse benthic invertebrate fauna (30 species), dominated by *Musculus virgiliae* and *Callianassa kraussi*, and a rich fish fauna, including 8 South African Red Data Book species. Notable mammals include *Hippopotamus amphibius* (80%), which occur mainly in Lake aManzimnyama. *Gypohierax angolensis*, *Gorsachius leuconotus* and *Dromas ardeola* are amongst notable birds, while Lepidoptera include *Parnara micans* (endemic to the Kosi area) and *Charaxis protoctlea azota*. The site is also of considerable botanical importance, supporting the South Africa Red Data Book taxa *Ficus tremula*, *Diospyros rotundifolia*, *Encephalartos ferox*, *Lumnitzera racemosa*, *Raphia australis*, *Ancylanthus monteiroi*, *Bridelia c. cathartica*, *Ceriops tagal*, *Cordyla africana*, *Craibia zimmermannii*, *Dialium schlechteri*, *Entada pursaetha*, *Dracaena usambavensis*, *Morus mesozygia*, *Nymphaea lotus*, *Pseudobersama mossambicensis*, *Sophora inhambanensis*, *Suregada zanzibariensis* and *Tapura fischeri*. (1a,2a,2b,2c,2d)

Conservation Issues State owned and managed mainly by the KwaZulu Bureau of Natural Resources. DDT is present in the sediments of Lake Mpungwini and Makhawulani, and has been found in relatively high concentrations in fish tissues. The DDT is thought to be derived from the application of pesticides by the KwaZulu Department of Health, in an attempt to control malaria. Large areas of swamp forest have been destroyed by non-sustainable slash and burn cultivation practices, causing erosion and increased siltation rates. The main land uses in and around the wetland system are subsistence farming and fishing. A series of traditional fish kraals is maintained across the mouth of the estuary, but this is thought to be causing increasing sand deposition and narrowing of the estuary mouth. The invasive plant *Pereskia aculeata* is spreading rapidly at the site, but is now being actively controlled. Potential threats include agricultural intensification involving the use of pesticides and fertilisers, and the construction of a harbour at Kosi Bay. Low levels of heavy metals were measured throughout the estuary in 1976. A total of 25% of the gross revenue from visitors to the site is given to the local Tribal Authority.