

Bangweulu Wetlands: floodplain conservation for biodiversity and livelihoods

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Introduction:

Bangweulu Wetlands is a large conservation area in the Bangweulu swamps of northern Zambia, protecting floodplain and swamp habitat used by the endemic black lechwe antelope and the threatened shoebill stork. A large, semi-nomadic human population utilises the fish resources of the floodplains. This study examined the dynamics of the fish and the fishery, in order to inform conservation management and tourism decisions.



Floodplain environment: Fish, wildlife and humans all adapted to the strong seasonal fluctuations in water levels



Typical habitat: Ranges from shallow grassy plain flooded for only two months to deep, permanent channels. The shallow plains act as rich nursery grounds, while deep channels are refuges in the dry season. Reeds, papyrus and floating grass mats offer the fish protection from fishing.

Fishing methods: Seven main methods involving traps in fish weirs, gillnets, hook lines and seine nets. Most fishing happens with receding water levels (April-September) when fish are forced to migrate or remain in pools. Catches vary but 7 kg/group/day is average



Fish species: Total of 45 species collected; 26 caught in fishery (all with local names). Most are typical floodplain species; form basis of floodplain fisheries elsewhere too. The most important fish species/groups in catches are :



Cichlids: common and popular for eating e.g.. *Tilapia*, *Serranochromis*

Catfish: *Clarias* species- very common and important smoked product

Mormyrids: Various medium-sized species

Cyprinids: Various small *Barbus* spp., very numerous



★ = Study site

Source: CIA WORLD FACTBOOK

Fish trade: Dried fish is traded locally for staple cassava meal, contributing to food- and protein-security in the broader region. Fish is also sold to traders who take bags of dry fish to urban areas. Annual family income from fishing is R12 000.



Conclusions:

The fishery appears to be resilient, with species showing 'boom and bust' life histories suitable to fluctuating environment. Fishery is well developed with multiple methods harvesting a wide species range, and there is a complex trade network. As long as key ecological drivers (flooding and mammal grazing) is conserved, the fish resource should remain an important livelihood factor for people. Better information to tourists about this important fishery and how it works will improve perceptions, and raising conservation awareness among fishermen is already showing results for shoebill protection efforts. The local traditional leadership can be supported in its efforts to protect the rights of locals to the fish resource, and better communication and understanding between park management and fishing groups will lead to more effective problem solving for both parties. Knowledge gained during the course of this MSc research will be used for the development of a fisheries management plan for the area.

Acknowledgements:

Supervisors: Dr Olaf LF Weyl and Dr Roger J Bills- South African Institute for Aquatic Biodiversity (SAIAB).

Staff of African Parks- Bangweulu Wetlands; Photos: Morgan Trimble; Roger Bills, Ricolette von Wielligh. Research assistants: Mulenga Elijah Mofya; Muwele Brighton Mofya. NRF/DAAD, African Parks, Rhodes University and SAIAB are thanked for generous financial and logistical support.