

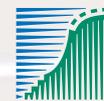
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Waterbirds around the world

A global overview of the conservation,
management and research of the
world's waterbird flyways

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Subsistence use of waterbirds at Lake Chilwa, Malawi

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ABSTRACT

Lake Chilwa in southern Malawi is an important habitat for waterbirds. About 160 species have been recorded, including many migrants. Around 1.5 million birds occur in the wetland, including 12 species in numbers exceeding 1% of their flyway populations. The Lake Chilwa catchment area has a human density of 162 person/km², one of the highest in Malawi. Most of the people are subsistence farmers and fishermen, but they also harvest waterbirds for local consumption and trade. At least 460 trappers use traditional traps and snares to catch waterbirds, and bird-catching takes place every year with a peak period in the rainy season. A Lake Chilwa Management Plan was developed in 2000 with the objective of enabling local communities to manage the natural resources on a sustainable basis for their own benefit. Bird Hunting Committees and a Bird Hunters Association were formed, but have not been legally established. The Danish Hunters Association began a project in 2003 to improve the Bird Hunters Association, and works with various government agencies and NGOs to regulate hunting, advise communities on sustainable management of waterbirds, and carry out research and monitoring.

INTRODUCTION

Lake Chilwa in southern Malawi is an important wetland for waterbirds, providing breeding, resting and feeding areas for large numbers of birds in the West Asian-East African Flyway. About 160 species have been recorded at the lake, including 41 migratory species. Based on counts in 2000, it was estimated that the wetland supports around 1.5 million resident and migratory waterbirds. The numbers of 12 species exceed 1% of their flyway populations, including Glossy Ibis *Plegadis falcinellus*, Fulvous Whistling-Duck *Dendrocygna bicolor*, Black Crake *Amaurornis flavirostris*, Allen's Gallinule *Porphyrio alleni*, Lesser Moorhen *Gallinula angulata* and Grey-headed Gull *Larus cirrocephalus*.

The Lake Chilwa catchment area has a human density of about 162 persons/km². This is one of the highest densities in the country, which has an average of 104 persons/km². The population of the catchment is largely in rural areas and is directly dependent on natural resources such as land, water, trees, birds, fish, rodents and others for survival. Waterbirds are a major source of protein and are hunted in very large numbers at Lake Chilwa. This paper reviews information on the utilization of waterbirds at Lake Chilwa and discusses the management efforts that are being undertaken.

STUDY AREA

Lake Chilwa is a tropical lake in southern Malawi. It is located to the north of Phalombe plain between the Zomba and Mulanje mountains at latitude 15°00'-15°30'S and longitude 35°30'-36°10'E. The water level of the lake is at an altitude of 627 m

above sea level. The lake has no outlet, and varies considerably in size depending on precipitation in the catchment, with a small increase in water level resulting in a tremendous increase in surface area. The entire wetland area is roughly 40 km across from east to east and 60 km from north to south, and has a total area of about 2 400 km². In "normal" years, open water can cover about 1 500 km²; one-third of this is swamp and marshes, and one-third is floodplain. The entire catchment area is 8 349 km², of which 5 669 km² are in Malawi and the rest in Mozambique. The lake and its surrounding swamps, marshes and floodplain contain water most of the time, but during the last 100 years, several recessions have occurred including three incidents of complete drying out. The maximum depth of the lake is less than 5 m, and due to this shallowness, wind action keeps the water column completely mixed throughout the year. Plant biomass production of as much as 20-30 tonnes per hectare per year has been recorded from the predominant lake habitat of *Typha* and *Phragmites* reeds.

METHODS

Information has been obtained from various reports that were compiled in preparation for the listing of Lake Chilwa as a Ramsar site (e.g. Wilson & van Zegeren 1998). While most of the reports on the birds of the Lake Chilwa area are concerned mainly with ecology, scattered information is available on the subsistence use of waterbirds, and this information has been brought together in the present study. A management plan (Environmental Affairs Department 2000) gives detailed information on various natural resources of the wetland, and the project documents of the Danish Hunters Association (DHA) in Malawi give information on methods of bird hunting and sustainable utilization in the area.

RESULTS AND DISCUSSION

Subsistence use of waterbirds

Most of the people in the Lake Chilwa catchment are small-holder subsistence farmers and fishermen. They grow maize, rice, groundnuts, cassava and tobacco. Productivity is totally dependent on adequate rainfall to recharge the lake annually and to maintain the water balance in the wetlands. The fishery is the most important natural resource in and around the lake, and yields about 25 000 tonnes per year. This is dependent on the water level in previous years. When the lake re-floods after drying out, the fishery recovers within two to three years.

Many species of birds breed during the months of January to July at various sites around the lake (Wilson 1999). Most birds favour the river mouths for breeding, as these areas are largely inaccessible to the local people and offer protection to the breeding birds because of the dense marsh vegetation.

The local people rely heavily on waterbirds as a source of protein, and usually go bird hunting when fish catches are low,

particularly during periods of drought. Bird hunting at Lake Chilwa typically involves the use of traditional methods such as birdlime, snares or string, tangling nets, fish traps and drop-nets baited with millet or rice. These are very cheap methods of catching birds, and do not require high investment.

There are at least 460 bird trappers in the Lake Chilwa catchment (Wilson 1999). An estimated 1.2 million birds are trapped every year, with an economic value of US\$ 215 000. Species trapped in large numbers include Common Moorhen *Gallinula chloropus*, Lesser Moorhen, Allen's Gallinule, Blake Crake, Fulvous Whistling-Duck, White-faced Whistling-Duck *Dendrocygna viduata* and Hottentot Teal *Anas hottentota* (Wilson & van Zegeren 1998, Wilson 1999). There are also a number of licensed hunters. Trapping and shooting of birds take place every year with a peak period in the rainy season. In unusual years when the water level in the lake is low, bird catching increases by 300-500%.

Birds are harvested for local consumption and trade. During the months of December, January and February, many households experience food shortages, and birds are a major source of protein during this period. Many roasted birds can be found on sale in recreation areas such as bars in nearby towns.

Management of Lake Chilwa

There is no formal management of the wetland and its waterbirds. The Department of National Parks and Wildlife, which is responsible for management of wildlife in the country, has had little presence in the area as it concentrates most of its activities in national parks and wildlife reserves. However, Lake Chilwa was listed as a Ramsar site under the Ramsar Convention on Wetlands on 1 November 1997. Surveys have shown that the wetland fulfils several of the Ramsar criteria for the designation of wetlands of international importance: it regularly supports 20 000 waterbirds; it regularly supports substantial numbers of individuals from particular groups of waterbirds indicative of wetland values, productivity and diversity; and it regularly supports at least 1% of the individuals in a population of one species or subspecies of waterbirds.

The wetland was listed as a Ramsar site to ensure that there would be wise and sustainable use of all natural resources. Despite the limited presence of the Department of National Parks and Wildlife, the Ramsar listing attracted international attention to the wetland. The Danish Development Agency (DANIDA), for example, supported the development of the Lake Chilwa Wetland and Catchment Project.

A Lake Chilwa Management Plan was developed in 2001. Based on enabling policies such as the Wildlife Policy of 2000, Community Based Natural Resource Management (CBNRM) programmes were developed. The Lake Chilwa Bird Hunters Association (BHA), known locally as the "Mwayi wa Mbalame", was formed in September 2001 by eighteen bird hunters' clubs in and around the Lake Chilwa basin to promote

CBNRM activities for birds and thereby promote sustainable utilization. Twenty-nine bird sanctuaries, where trapping and shooting of birds are not allowed, have been established to provide secure breeding areas and roosting sites for birds (Wilson 2001). However, the Bird Hunters Association has yet to be legally established.

The Danish Hunters Association (DHA) has recently begun to work with the bird hunters' clubs in the Lake Chilwa area. The DHA proposes to use its experience from working at similar sites in Denmark to develop restricted use in some of the 29 bird sanctuaries and to introduce a more sustainable management of the waterbird harvest (DHA & Malawi CBNRM NGOs 2003). A DHA project entitled "Capacity Development of Bird Hunters Association of the Lake Chilwa" was initiated in 2003, and is being carried out in collaboration with various government agencies and NGOs to regulate hunting, advise communities on sustainable management of waterbirds, and carry out research and monitoring. The immediate objective of the project is "to build the capacity of the Lake Chilwa Bird Hunters Association to better organize themselves to sustainably manage the long term utilization of sedentary and migratory birds" (DHA & WESM 2003). With the listing of Lake Chilwa as a Ramsar site and the presence of the Danish Hunters Association at the lake, it is now hoped that sustainable hunting and management of waterbirds can be achieved.

REFERENCES

- Danish Hunters Association & Malawi CBNRM NGOs** 2003. Capacity Development of NGO CBNRM Network. DANIDA, Malawi.
- Danish Hunters Association & Wildlife and Environmental Society of Malawi** 2003. Capacity Development of Bird Hunters Association. DANIDA, Malawi.
- Environmental Affairs Department** 2000. Lake Chilwa Wetland state of the environment. Ministry of Natural Resources and Environmental Affairs, Lilongwe, Malawi.
- Wilson, J.G.M.** 1999. The waterfowl of Lake Chilwa and their utilization by local communities and conservation measures as required by the Ramsar Convention. State of the Environment Study No. 20, Lake Chilwa Wetland Project, Zomba, Malawi.
- Wilson, J.G.M.** 2001. The development of community management of waterfowl on Lake Chilwa Wetland. Lake Chilwa Wetland and Catchment Management Project. Ministry of Natural Resources and Environmental Affairs, Lilongwe, Malawi.
- Wilson, J.G.M. & van Zegeren, K.** 1998. The Birds of Lake Chilwa. In: K. van Zegeren & M.P. Munyenyembe (eds) The Lake Chilwa Environment – A Report of the 1996 Ramsar site study. Department of Biology, Chancellor College, Zomba, Malawi.