

## IUCN OTTER SPECIALIST GROUP BULLETIN VOLUME 8 PAGES 4 - 6

Citation: Smith, L. (1993) Otters and Gillnet Fishing in Lake Malawi National Park *IUCN Otter Spec. Group Bull.* 8: 4-6

### OTTERS AND GILLNET FISHING IN LAKE MALAWI NATIONAL PARK

Lance Smith

*Lake Malawi National Park, P.O. Box 48, Monkey Bay, Malawi*

**Abstract:** At the south end of Lake Malawi, the small national park is home to spotted-necked and Cape clawless otters. The park contains five enclaved villages that depend on gillnet and longline fishing for their livelihood. The author surveyed the fishermen of Chembe village for fishing methods, gear and problems with animals. Theft of fish from nets by otters was complained of, but there were no reports of otters drowning in gillnets. The author intends to extend his survey to the other four villages in Lake Malawi National Park.

Lake Malawi is the southernmost basin in the African Great Rift Lakes system and contains the most diverse community of freshwater fishes in the world, with approximately 1000 species. Lake Malawi National Park was created in 1980 at the southern end of the lake to protect a representative sample of these fishes and their habitats. The park encompasses much of the rocky Nankumba peninsula as well as 13 islands scattered around it, and includes a 100m aquatic zone along its shorelines. This area is also home to many other animals such as birds, hippopotamus, crocodiles, monitor lizards, turtles, and two species of otters. Both the spotted-neck otter *Lutra maculicollis* and the Cape clawless otter *Aonyx capensis* occur in the park, and are common at some localities.

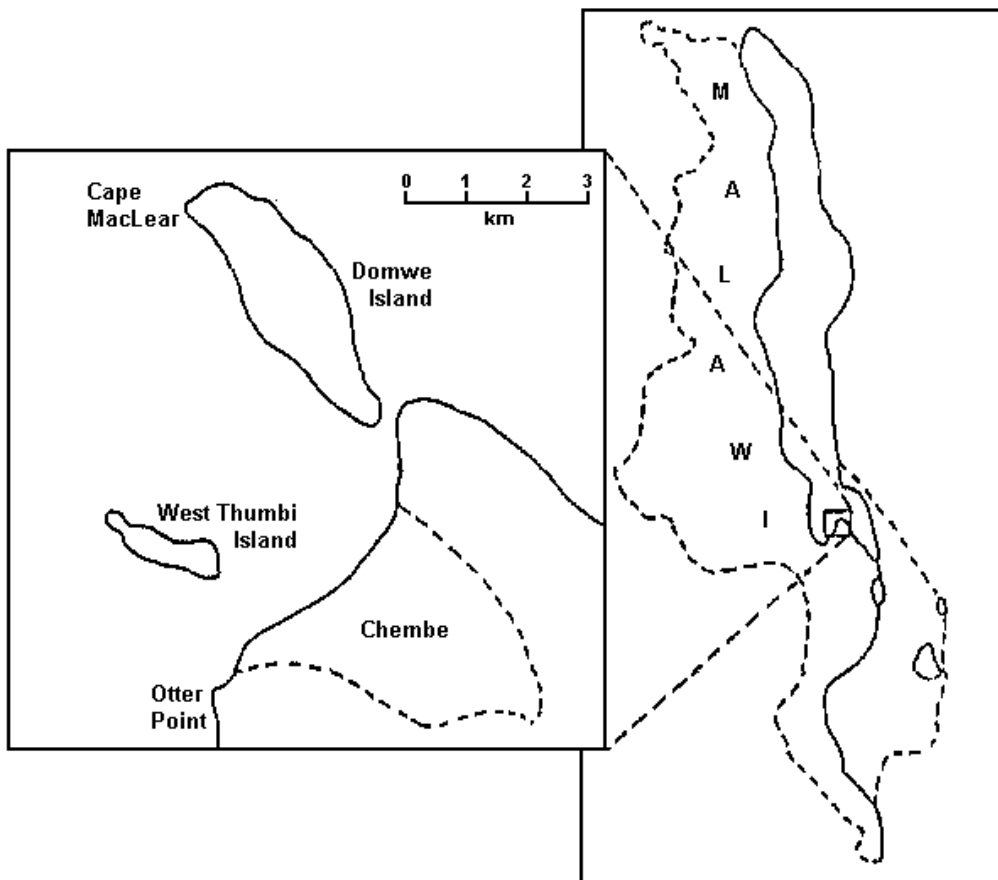


Figure 1. Location of Cape MacLear and the Chembe village enclave in Lake Malawi National Park

Although the park is small (87 km<sup>2</sup>), it contains five enclave villages with a combined population of nearly 10 000 people. These villages are almost completely dependent on fishing for their livelihood, hence the area is subject to intensive fishing pressure. The 100 m aquatic zone is closed to fishing, but certain fishing gears are regularly used very near or inside this zone. Open-water seine nets ("chirimila") are sometimes pulled towards shore by fishermen standing on the rocks, while gillnets and longlines are often set perpendicular to the shore with one end in the aquatic zone.

I began a research project in 1992 on the fishery of Chembe village (Fig.1), the largest of the enclave villages with a population of 4700 people. Since favoured fishing areas and prime otter habitat seem to overlap, especially at Domwe Island, West Thumbi Island, and Otter Point, I decided to look at the effects of this fishery on the otters. The only gear which appears to pose a threat are the gillnets as otters can become entangled in them and drown. Thus the objects of this study are to determine which otter species occur in the area, the incidence of otter mortality in gillnets, and which areas may require further protection

## **METHODS**

Chembe fishermen were surveyed and observations were made to find out where otters are common and which species occur in the area. The number of gillnet fishermen in Chembe village, the total length of all gillnets combined, and preferred gillnetting areas were also determined. A sample of gillnet fishermen was interviewed about problems they have with otters and the incidental catch of otters and other animals in their nets. Currently, gillnet catches are being examined to check for drowned otters and otter-damaged fish, and gillnetting techniques in otter inhabited areas are being observed.

## **PRELIMINARY RESULTS AND 1993 PROGRAMME**

Otters were frequently seen from January to August 1992, around Domwe Is., West Is., and Otter Point by myself and other park staff, and fishermen reported seeing otters very often around the two islands. From September to November 1992, a volunteer and I searched for otters in the Otter Point area during the first or last hours of daylight approximately 50 times. In total 24 sightings of 1-4 individuals were made, and 5 otters were positively identified as spotted-necked otters by their neck markings. Of these, 4 individuals were seen playing together on a rock. All other otters were seen either swimming or diving in the lake but their small size (1 m) suggests that most or all of these were also this species, and of course it is possible that the same individuals were seen repeatedly.

While the majority of otters sighted thus far in the Cape Maclear area appear to be spotted-necked otters, one otter seen in nearby Monkey Bay in June 1992, was positively identified as a Cape clawless otter. Although this was a juvenile about as big as an adult spotted-necked otter, it was easy to identify as it was chased into my office by dogs, where it promptly curled up in a corner for a nap! It was rudely awakened and returned to the lake unharmed. The habitat in Monkey Bay is similar to that around Chembe village with rocky shorelines bordering a beach, so this species may occur throughout the park.

The survey of Chembe fishing gear revealed 18 gillnet fishermen operating a total of 7,5 km of net with mesh sizes varying from 65 to 125 mm. Individual gillnets are from 200 to 700 m in length and 1,7 to 5,0 m deep. Preferred gillnetting areas are Domwe and West Thumbi Islands, with Otter Point and Chembe beach being of secondary importance.. About 75 % of all gillnetting takes place around Domwe Is.

In September 1992, 16 of those gillnet fishermen were interviewed about problems they have with animals. All complained vigorously about otters eating fish caught in the nets, and crabs, turtles and crocodiles were also mentioned as problem animals. However, none of the fishermen reported ever catching an otter in the nets nor had any of them ever heard of this happening. They did say that turtles and crocodiles are caught occasionally in their nets, and on 4/1/93 a juvenile crocodile was brought to me which had become entangled in a gillnet and drowned. Gillnet fishermen may be reluctant to mention that otters are caught in their nets since otters are usually seen in the park where gillnet fishing is prohibited.

In January 1993, I started examining gillnet catches and observing gillnet fishing techniques as part of my ongoing village fishery study. I look for drowned otters, note otter damage to fish and nets, ask fishermen about otters, and observe the setting and retrieval of gillnets. I plan on collecting those data on a weekly basis until October 1993. In July, I will extend the otter study to the other four enclave villages where the numbers of gillnets will be counted and gillnet fishermen interviewed about otters as was done in Chembe.