# R E P O R T

## RADIOTELEMETRY ON THE EUROPEAN OTTER (*LUTRA LUTRA*) IN THE WARNOW RIVER SYSTEM, GERMANY

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From January 1992 until August 1995 the research project "Occurrence and prevalence of the Eurasian Otter (*Lutra lutra*) in Mecklenburg-Western Pomerania (M-WP)" was carried out in the upper region of the River Warnow system. This study was funded by the Karl-Kaus-Memorial-Fund, Hamburg and happened by order of the Ministry of Environment of Mecklenburg-Western Pomerania by the German Campaign for the Protection of Otters, Hankensbüttel.

The Warnow rises 15 km east of Schwerin, the capital of M-WP. The Warnow first runs west, then north beneath the Lake of Schwerin and then in north-eastern direction towards the Baltic Sea. Near Rostock-Warnemünde it flows into the Baltic Sea.

The study region was a 400 $km^2$ area east of Schwerin between the places of Bülow and Sternberg, which covers a river length of nearly 60 km.

The aims of this study were to gather facts about the habitat use and home-range of otters in a system of small streams, creeks and ditches, connected with lakes and ponds, which is the typical landscape in the western part of the Mecklenburgische Seenplatte (Mecklenburg Lake Area).

Between the Lake of Barnin and the town of Sternberg, where the Warnow confluents with the river Mildenitz, as well as at the Mildenitz itself, 30 bridges and weirs were checked in summer 1992, in order to determine the river segments with consistent traces of otters.

In December 1992, a stretch of 35 km was surveyed as regards otter tracks (spraints and footprints). The greatest amount of otter spraints was found between the villages of Gädebehn and Augustenhof, but the estuary of the Warnow into Lake Mickow was the area most heavily frequented by the otter.

From March 1, 1993 through July 7, 1995, 6 wooden traps and 4 wire traps as well as 2 wooden trap-boxes and one wire tubular trap were set up at varying trapsites in the vicinity of the research station in Demen/County of Parchim. The traps were located under bridges near the river or in small ditches. The traps weren`t baited.

During this time, 17 unintended captures resulted (15 minks, 1 polecat, 1 badger). Two otters were captured at December 30, 1992 and at May 8, 1993. Most of all captures succeeded in the winter half-year.

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More references to the occurrence of otters were obtained by snowtracking and search for holts.

Between August 2, 1994 and May 16, 1995, 28 respectively 24 check-points for otter tracks and spraints at the Warnow river system were controlled weekly. There was an accumulation of signs in the winter half-year between October and March. The number of signs not older than one week showed a slight increase in autumn.

Further surveys as regards current land use, within a strip of 1 km beneath the bank of the Warnow and the Lake of Barnin from the place of Bülow to Kritzow were done in summer 1994. Most of the area was conifer forest (35 %), grassland (28 %) and arable land (21 %). Settlements (5 %) and fallow land (11 %) were less frequent.

From July 1994 through July 1995, human disturbances at the Warnow and the surrounding lakes were registrated weekly at 14 check-points. Angler and their cars respectively motorcyles were the most frequent and during the whole year, the most constant source of disturbance along the waterbanks. In summer, there were increases in campers and visitors at swimming-places. The lakes closest to local communities (Lake of Barnin, Deep Lake and Village Lake in Demen) were most frequented. Anglers were found most frequently at the estuary of the Warnow into the Lake of Barnin. Most stretches of the river as well as the smaller lakes were obviously without any disturbance.

At two points, at a bridge and a crossing, the volume of traffic was recorded. No main time of disturbance by traffic was found. During the night, there was only a low volume of traffic and only a little disturbance by anglers, bathers and boats at the waterbanks could be found.

Two otters were captured and fitted with implanted radio transmitters, as well as neck-fitted transmitters. Locations were done with H-antenna and an omni-directional whip antenna. The radio contact with the male otter, which was captured in a wooden trap in a ditch in May 1993, was lost within two nights. No useful data were obtained from this otter.

The female otter, which was captured under a bridge at the end of December 1992, could be monitored nearly continuously for a period of two month. Within the first few nights after release, the otter shifted from its capture place at the river into a small ditch. Dueing the next eight weeks, the female otter used habitat in two disconnected areas. The first home-range area was a system of a bigger lake, ditches, wetlands, fallow lands, fens and elder swamps about 85 ha. The second one contents several smaller lakes, ditches and fens and elder swamps as well. Its size was about 59 ha. In both home ranges, there were several hunting-areas, where the otter mostly was fishing.

Between both home-range areas, there was a watershed. The distance between the two home range areas was 1000 - 1600 m. In 15 nights during 55 nights of observation, the otter crossed this watershed or changed between two hunting-areas.

During the day, the otter rested near the bank of a lake. Nine distinct resting sites were found; most were used for several days in a row. Resting sites, where the otter paused at night, were clustered around the waterbank.

The distribution of times of activity during the night didn´t show a clear pattern. Dependent on the weather, there was a first period of activity after sunset, and a second, longer

lasting/more continuous one during the second part of the night. At March 2, 1993, during the observation by telemetry, the radio contact broke off and did not resume again.

In 1993 and 1994 the types of biotopes within the home-range of the female otter were monitored according to the "Index of types of biotopes in Mecklenburg-Western Pomerania". Special emphasis was placed on the "§ 2 biotopes", which means special protected biotopes like wetlands, waters, hedges, woods etc.

The declaration of the territory, in which the female otter was living, as a protected area was recommended.

A survey of the density of vegetation in the habitat of the monitored otter showed that reeds offer the best visual protection Near the ground, shrubs and willow thickets also offer good protection.

The results of this study were condensed and published in a report for the German Campaign for the Protection of Otters (Aktion Fischotterschutz e.V., Hankensbüttel/Germany). In this report. technical and logistical problems of livetrapping as well as problems with telemetry are also discussed. The methodology used for population estimation and ottertracking are considered.

The report is summed up by referring to conservation measures, research strategies and habitat improvement for the otter in Mecklenburg-Western Pomerania.