

Master Thesis

Relationship between pollution of river water and occurrence of otters in central Poland

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Abstract

In earlier times, otters (*Lutra lutra*) were very common in most of Eurasia, but in the last decennia the numbers went down drastically. This was most noticeable in Belgium, The Netherlands, France, Italy, West Germany, Switzerland, and Austria, where one finds otters only in small restricted areas.

It's not entirely clear what the reasons for this reduction in numbers is, but it did occur in the same period as the pollution in the rivers greatly increased due to PCBs, pesticides, heavy metals, in particular Hg.

The disappearance of otters is probably caused by the pollution of the rivers and the destruction of their natural habitat.

Recently an effort was undertaken to restore the otter population and to clean up their preferred habitats (Jongh 1998, Reuther 1998).

Between 1993 and 1998 the increase in the otter population was measured by Romanowski (2000). By observing 54 defined locations in 21 waterways, he noticed an increase in the number of locations with otter populations from 14% to 62% in the period.

The present study seeks to explain the increase in otter population as measured by Romanowski by correlating it with the known pollution levels in the same waterways during that same period.

17 different kinds of water pollution was taken into consideration. Statistical analysis showed that the otters returned first to the cleanest waterways and locations. The pollutants that had the most impact were chlorides, dissolved solids, and nitrates.

It could be shown that the otters first appeared where there was already a recovery of the fish population to feed on, that is the least polluted locations, and that the otters then proceeded to migrate into neighboring areas, even if these were still generally polluted. This conforms to the Fretwell selection model (1972).