

Otters on road to recovery in Andalusia

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Improved environmental conditions have enabled the otter (*Lutra lutra*) to spread in Andalusia over the past 20 years. However, the recovery of populations of this mammal has been "relatively" slow, and in some areas the impact of human activities still prevents the species from gaining a foothold.

"The high level of 'humanisation' of the landscape still acts as a strong impediment to the expansion of the otter, to such an extent that it is preventing the species from fully recovering its original distribution area", Miguel Clavero, lead author of the study and a researcher at the Forestry Technology Centre of Catalonia and the Doñana Biological Station (CSIC), tells SINC.

The study, which has been published in the *Journal of Biogeography*, shows that the otter (*Lutra lutra*) is "rare" in the most humanised areas, and tends to be permanently present along the "least affected" river courses. "Otters prefer to occupy lowland rivers, where food is most abundant, but these are precisely the areas that are most affected by human activities", explains Clavero.

The scientists studied 1,038 sub-basins in Andalusia, which were sampled during the three national otter surveys carried out in 1985, 1995 and 2005 and coordinated by the Spanish Society for the Conservation and Study of Mammals (SECEM).

The results show that otters have undergone a "marked" recovery over the past 20 years. The presence of this species in the rivers of Andalusia

has increased by around 70%, and its spread has been "widespread" throughout most of the Iberian Peninsula.

The researcher says that the increase in the otter's distribution area in Andalusia is above all due to it having colonised river courses with "moderate" human impact.

At the start of the 1980s, otter populations occupied regions with natural conditions, but after this it started to occupy systems that were more affected by human action. "Nowadays, the mammal is still seen infrequently in the most humanised environments", the scientist says.

Less pollution, more otters

"The widespread, large-scale improvement in [environmental conditions](#) has contributed to the recent otter expansion in Andalusia", points out the biologist, who adds that this improvement has been related to the reduction of organochlorine compounds, such as DDT (which was used as an insecticide in the 20th Century) in the environment.

The researchers say these compounds were the principal causes of the "drastic" decline in the species in the 1970s and 1980s. Otter populations that survived this period "are now acting as sources for colonisation of nearby areas".

However, the speed of this expansion is at "only" a little more than one kilometre per year. "This result is surprising, above all because of the species' capacity to rapidly colonise large areas of territory", stresses Clavero.

The improved quality of water-based ecosystems, above all in terms of pollution, could directly help the otter, as well as the increase in the abundance of fish, its principal prey.

Another factor is the widespread availability of a new trophic resource, the red swamp crayfish (*Procambarus clarkii*), which was introduced in the mid-1970s, and which is now very abundant in low and medium altitude rivers and wetlands in Andalusia.

The scientists suggest that the future management of otter populations should focus on conserving and improving their aquatic habitats. "These measures would encourage greater distribution of the species and be of greater benefit to the aquatic environments than carrying out specific actions for this [species](#)", the Spanish authors explain.

More information: Clavero, Miguel; Hermoso, Virgilio; Brotons, Lluís; Delibes, Miguel. "Natural, human and spatial constraints to expanding populations of otters in the Iberian Peninsula" *Journal of Biogeography* 37(12): 2345-2357, Dec 2010.

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