

Citation: Jiménez, J. (1987) The Otter And Its Conservation In The Valencian Region (E. Spain) *IUCN Otter Spec. Group Bull.* 2: 37 - 41

THE OTTER AND ITS CONSERVATION IN THE VALENCIAN REGION (E. SPAIN)

Juan JÍMENEZ

Servicio de Protección de los Recursos Naturales, Conselleria de Agricultura y Pesca, C/ Amadeo de Saboya, 2, 46010 Valencia, Spain.

The Region

This covers an area of 23,305 km² close to the Mediterranean Sea, mostly with a dry climate; mean annual temperature 15°C and annual rainfall around 500 mm. The population is 3,100,000, mainly concentrated in the littoral plains (well over 100/km²) where much of the intensive agriculture and industry is situated. The population is sparse (normally below 20/km²) and decreasing in inland areas which are dominated by mountains and forests.

The Rivers

The region has some 1,500 km of permanent flowing waters but with very irregular flow subject to severe summer droughts and occasional autumn floods. Total natural flow reaches approximately 100 m³/sec.

During an intensive survey in 1984 it was estimated that 724 km (47.63%) of rivers were affected by medium and heavy pollution, principally of urban origin. Water extraction for irrigation is intensive, with less than 20 m³/sec reaching the sea and 560 km (36.8%) of rivers are almost dry because of this. Construction of reservoirs (numbering 25 with a total capacity of 2,053 km³) for water regulation and hydro-electric power has affected 271 km (17.8%) of rivers, either seriously reducing flow or drastically changing the natural pattern downstream. Important bankside alteration was detected in 21.8% of 151 riverine stations, while 6.65% were considered channelized. Pollution, water extraction and bankside alteration affected mainly the lower reaches, while reservoir regulation impacts the middle ones.

Most of the Valencian rivers belong to the Jucar hydrological basin, with 3,966 km³ natural resources and 2,916 km³ demands. By the beginning of the next century demands are estimated to grow to 4,806 km³ when imported resources from other basins will be needed and, obviously, the above mentioned impacts will get worse.

The Otter

From various sources it may be estimated that during the 1960s the otter was present in 350 km of rivers. During the field survey of 1984 otter signs were found at only 6.4% of 172 sites visited. The intensive survey of 1986 showed that *Lutra lutra* was using 140 km of Valencian rivers, i.e. 40% of the 1960's distribution.

The decline has taken place mostly in the middle reaches (the species has been absent from the lower reaches since earlier times), where pollution and population have not increased substantially but dams have been built. In several rivers, otter distribution stops consistently at the reservoir. The reasons for its absence downstream are not yet clear but low fish production and continuous and sudden changes in flow are factors to be studied.

The Research

During 1986 the Regional Wildlife Service conducted an otter project with the following aims:

- to define precisely the length of rivers used by the species and its pattern of use;
- to study the environmental features and impacts that may affect the otter;
- to propose concrete measures for habitat/species conservation.

Rivers were studied by surveying sites 2-3km apart for signs of otters. A minimum of 200 m was searched at positive sites and a site was considered negative if no signs had been found after searching 600 m. The survey was terminated once at least 3 consecutive sites had proved negative except in the case of tributaries and reaches considered suitable for recolonization. At each site, density of signs, measurements of footprints and number of potential holts were noted.

Each basin is sub-divided into stretches with similar features where natural conditions (principally cover, flow and prey) are studied and impacts precisely enumerated.

The situation of the otter in each basin and in every stretch is defined according to sign density, the discovering of holts, footprints of young animals and possibilities of communication with other populations.

Results



Figure 1: Study Area in Valencia

The otter population in basin A (see [figure 1](#)) is defined as "good" with high spraint density (mean 21.9/200 m). Signs were found even in stretches with very poor natural conditions and 79.5 km were occupied (91% of the river length studied). Communication with downstream populations was unrestricted.

Population B is defined as "endangered", with low spraint density (4.4/200 m), a lack of signs even in habitat considered as suitable and with 44.2 km occupied, i.e. 34% of the total length studied. Distribution is limited upstream by farm pollution and downstream by water extraction and regulation.

Population C is defined as "vulnerable", also with low spraint density (4.3/200 in), a lack of signs in apparently suitable habitat and with 77.5 km occupied (53% of the river length studied). Communication with upstream population is hampered by urban pollution and is limited downstream by a reservoir.

General conservation measures given include species protection, habitat conservation/restoration, contacts with other authorities/users and education together with proposed studies and continuous monitoring.

For the stretches, 72 concrete conservation measures are given, mostly related to bankside cover (12), pollution (9), water extraction/regulation (9) and conservation of prey populations (7). Otter havens (length 5.5-17 km) are designed to protect the best stretches, totalling 26.9% of the total length used by the species. A minimum flow of 1 m³/sec should be maintained in the river.

Conservation:

The first result of the study has been the raising of the fine for killing an otter from approximately 150\$ to 3,000\$, as the species is now regarded as the most endangered mammal of the Valencian fauna and in urgent need of protection.

Concerning habitat conservation/restoration, the authorities who deal with rivers are, on the one hand the Wildlife Service (bankside cover and fauna) and, on the other hand, the Water Authority (bank maintenance water, and river bed). The bankside to a depth of 5m is for public use and the Wildlife Service is urged by law to maintain cover. In the next 4 years it is planned to

Improve bank cover along 54 km, mainly on otter rivers, as a pilot experiment in the application of this regulation which, until now, has not been applied.

In addition, negotiations with the Water Authority have begun to consider the length of rivers occupied by otters and especially the designed otter havens as prime conservation stretches where habitat protection should have priority, over other activities. This, together with budgets for restoration, will be included in the Hydrological Plan that is now being developed to serve as a guide to water/river users in the next decade. This plan also includes the consideration of a "minimum ecological flow" for each river that must be respected and that is of critical importance for otter survival in Mediterranean basins, where limited natural resources meet increasing water demands.