

Appendix two (The Essential Guide to Coarse Fishing in Spain): limited space in my guide book means that I've made this information available to my readers for free here.

There are more than 10 sub-species of nase found in Spain. Today their unique diversity is under threat from destruction of habitat, pollution and competition from invasive species. Many sub-species of Nase may even have become extinct before scientists have had the opportunity to classify them.

**Loina:** Arrigon Nase (*Chondostroma arrigonis*) also known as Júcar Nase are endemic to the middle reaches of the Río Júcar located in eastern Spain, conservation status is critically endangered. A 3-month study of the Río Júcar basin conducted in 1995 found only 10 individual fish at one location. The nature of the main threat is introduced fish species.

**Boga del duero:** Duerien Nase (*Chondostroma duriens*) is native to the Río Júcar located in eastern Spain, conservation status is vulnerable.

**Boga de río:** Iberian nase (*Chondostroma polylepis*) is native to central Spain. Found on the Miño, Duero and Tajo river basins. Also found in Portugal. A long-lived species found in rivers and sometimes lakes. Algae and invertebrates form its diet. Spawning occurs in spring in shallow water, on gravel and sometimes on timber in the river. It is threatened due to the introduction of new fish species.

**Bogardilla** (*Iberocypris palaciosi*) A short-lived chub or dace species which occurs in rivers on the low plains: with little current and at high altitudes. Threatened due to habitat destruction, pollution and the introduction of other species. Found in middle reaches of Río Guadalquivir in Andalusia.

**Madrilla:** French Nase (*Chondostroma toxostoma*) found only in the upper reaches of rivers and occasionally in mountain lakes Native to Spain and Portugal. Grows to a maximum size of 30cm. Conservation status is vulnerable.

**Loina de Turia:** or Madrilla- Turia Nase (*Chondostroma turiense*) endemic to the Turia and Mijares Rivers located in eastern Spain. Conservation status is vulnerable.

A selection of Spain's lesser-known but no less significant endemic fish species are mentioned here.

**Fartet común:** Iberina toothcarp (*Aphenius iberus*) egg-laying, carnivorous fish: that is used for mosquito control. It occurs in swamps, lagoons and water bodies with little current. This short-lived species is now threatened throughout its entire range due to the introduction of the Eastern mosquitofish (*Gambusia affinis*) that has caused habitat destruction.

**Jarabugo:** Spanish minnow (*Anaocypris hispanica*) an endemic fish species to the Iberian Peninsula. Most of its distribution is within Spain and some in Portugal's Guadiana River basin; it occupies less than 5,000 square kilometres. It has experienced a decline in population of more than 50% in ten years, and is under a new conservation program in Spain.

The fragmented population is affected by the construction of dams that decimate its habitat, and is declining due to the effects of water extraction, pollution and introduced fish species. The Jarabugo lives most of the time in small intermittent streams of the Guadiana River basin in shallow, colder water. It is a short-lived species (3 year lifespan) achieving a small size of less than 6 cm long. Reproduction takes place in April through May. It is a species with limited dispersal.

**Colmilleja:** Marsh loach (*Cobitis paludia*) found in Spain typically in Fuente del Roble, conservation status is vulnerable.

**Lamprehuela:** Lamprehuela loach (*Cobitis calderoni*) found in Portugal and Spain typically in the Arianzon Stream, conservation status is vulnerable

**Pardila:** Pardila Roach (*Rutilus lemmingii*) found in standing and slow flowing water in southeast Spain and Portugal. Reaches 20cm maximum length. Conservation status is vulnerable

**Saramugo:** València toothcarp (*Valencia hispanica*) restricted to six locations along the Mediterranean coastal area of Spain. It lives in marshes, wetlands and springs. This species has undergone a population decline of more than 80% in the past decade due to habitat destruction caused by urbanisation, agricultural pollution and the introduction of alien predator fish species. It is threatened by drought, habitat destruction, water extraction, domestic and agricultural pollution and introduction of the Eastern Mosquito Fish (*Gambusia holbrooki*)

**Doadrio:** Iberian Carp/dace (*Iberocypris palaciosi*) minnow type, endemic to Spain, found in a restricted part of the Guadalquivir River system. Maximum length is 20 cm. This is a mysterious fish, little is understood about its biology, conservation status is thought endangered.