



Abstract

# Distribution of an Endemic Endangered Cyprinid *Anaocypris hispanica* in Extremadura Region (Southwestern Spain) <sup>†</sup>

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**Abstract:** The Iberian minnowcarp *Anaocypris hispanica* is one of the most endangered Iberian cyprinids, endemic to Gadiana and Bembezar river basins. Autochthonous fish populations are decreasing mainly due to habitat degradation, water quality decrease, and allochthonous species proliferation, especially in Gadiana's main rivers, so a monitoring program was started in temporary rivers in 2010. This temporary river monitoring program became more important in the following years, as several *Anaocypris* locations, some supposed to be extinguished, were found. Monitoring was carried out from 2010 to 2021 combining electrofishing and hand nets. Hand nets were extremely efficient in summer, when the species concentrates in summer ponds during the drought period. *Anaocypris* was found in twenty-three rivers, twenty one in Gadiana river basin and two in Bembezar river basin. Three of these rivers—Alcazaba, Lobo, and Pedruégano—are new locations for science. Although *Anaocypris* has a large distribution area, with localizations scattered all over Extremadura, populations are highly fragmented and, in some cases, reduced to one summer pond or summer refugee. The best populations are in Guadamez, Guadalemar, and Sotillo river basins, with higher fish densities and good habitat conditions. Other rivers have also high *A. hispanica* densities but are in danger because of pollution, habitat degradation, drought, water abstraction in summer ponds, and the continuous spread of allochthonous fishes. During the study period, two river populations have probably disappeared, Arroyoculebras due to pollution and habitat degradation and Alcorneo due to severe summer drought. This information has been used as a basis for the *Anaocypris hispanica* conservation plan in Extremadura. Conservation measures such as establishing appropriate conservation areas, under Natura 2000 network, summer ponds strict protection, habitat restoration, and allochthonous fish control, not only in the rivers with *A. hispanica* but in its whole drainage area, as well as captive breeding of the most sensible populations, are conservation measures that should be taken in the short term to reduce population extinction risks.

**Keywords:** *Anaocypris*; conservation; cyprinid; endangered; Iberian Peninsula



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