

## THREATENED FISHES OF THE WORLD: *Achondrostoma salmantinum* Doadrio and Elvira, 2007 (Cyprinidae)

Carla Sousa-Santos\*<sup>1</sup>, Joana Isabel Robalo<sup>1</sup>, Ana Pereira<sup>1</sup>, Ignacio Doadrio<sup>2</sup>

<sup>1</sup> Eco-Ethology Research Unit, ISPA University Institute, Rua Jardim do Tabaco 34, 1149-041 Lisbon, Portugal

<sup>2</sup> Museo Nacional de Ciencias Naturales, CSIC, José Gutiérrez Abascal 2, 28006 Madrid, Spain

\* Corresponding author, E-mail: [carla.santos@ispa.pt](mailto:carla.santos@ispa.pt)

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### ABSTRACT

*Achondrostoma salmantinum* is a small, endemic cyprinid fish from the Iberian Peninsula. It occurs in some tributaries of the Douro river basin in the Salamanca province (western Spain) and is currently endangered due to receding water levels resulting from extensive agriculture, construction of dams and weirs and water transfers.

### COMMON NAME

Sarda (Spanish) – Figure 1.



**Fig 1.** *Achondrostoma salmantinum* (Photo credit: Ignacio Doadrio)

### CONSERVATION STATUS

Endangered according to the IUCN guidelines (Doadrio, 2011; Freyhof, 2011).

### IDENTIFICATION

The small species (up to 110 mm TL) is morphologically similar to *Achondrostoma arcasii* and *Achondrostoma oligolepis*

but has the following diagnostic characters: narrow caudal peduncle, long postorbital and head lengths, seven branched rays in the dorsal and anal fins, small number of scales (44-53 in the lateral line, 9-10 above the lateral line and 4-6 below the lateral line), small number of gill rakers (15-22) and usually 5-5 pharyngeal teeth (Doadrio and Elvira, 2007). Its dorsum is olive-brown with dense black dots, the underside is light brown and the flanks show golden flashes and one row of dark spots along the lateral line (Doadrio and Elvira, 2007). This species presents sexual dimorphism with males having longer pectoral, pelvic and anal fins than females (Doadrio and Elvira, 2007). According to the genetic distances found for the cytochrome *b* gene, *A. salmantinum* is an ancient endemism that most likely diverged from other *Achondrostoma* species at least 7.5 My ago in the upper Miocene (Carmona et al., 2000).

### DISTRIBUTION

This species is restricted to the Huebra, Águeda, Yeltes, Turones and Uces tributaries of the Douro river basin in western Spain (Doadrio and Elvira, 2007; Doadrio et al., 2011). Recent data points to the extinction of the species in the Turones River due to an intense drought (Doadrio et al., 2011).

## ABUNDANCE

The species may be locally abundant within its range, however, the populations of *A. salmantinum* are facing an accentuated decreasing trend, being extirpated from some locations due to a complete drought of the river courses (Doadrio et al., 2011). The estimated extent of occurrence is of less than 5,000 km<sup>2</sup> and the area of occupancy of less than 500 km<sup>2</sup> (Freyhof, 2011).

## HABITAT AND ECOLOGY

This species typically inhabits seasonal streams with clear waters and sandy bottoms, and prefers slow-flowing reaches with abundant aquatic macrophytes (Elvira et al., 1990; Velasco et al., 1990, 1997). It occurs in sympatry with other native cyprinids, namely *Pseudochondrostoma duriense*, *Barbus bocagei* and *Squalius carolitertii* (Doadrio and Elvira, 2007).

## REPRODUCTION

*A. salmantinum* is a lithophilic spawner. Natural hybrids with *Pseudochondrostoma duriense* (a native sympatric species) have been reported in several localities (Elvira et al. 1990; Velasco et al., 1997).

## THREATS

Factors negatively impacting this species include receding water levels due to extensive agriculture, construction of dams and weirs and water transfers, introduction of exotic species, pollution and habitat destruction (Doadrio et al., 2011; Freyhof, 2011).

## CONSERVATION

While it may be the dominant species in terms of numbers of individuals in some stretches, its habitat has been reduced during the past decades by receding water levels due to extensive agriculture, damming and water transfers (Doadrio and Elvira, 2007).

## CONSERVATION RECOMMENDATIONS

Habitat restoration measures aiming to increase water availability should be conducted in parallel with *ex-situ* conservation for restocking.

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## Sažetak

### UGROŽENE VRSTE RIBA U SVIJETU: *Achondrostoma salmantinum* Doadrio i Elvira, 2007 (Cyprinidae)

*Achondrostoma salmantinum* je mala endemska ciprinidna riba s Iberijskog poluotoka. Pojavljuje se u nekim pritocima sliva rijeke Douro u pokrajini Salamanci (zapadnoj Španjolskoj) i trenutno je ugrožena zbog opadanja vodostaja koji je rezultat ekstenzivne poljoprivrede, izgradnje brana i pregrada te vodenih transfera.

**Ključne riječi:** *Achondrostoma salmantinum*, endemska vrsta, konzervacija

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