

THREATENED FISHES OF THE WORLD: *Cottus aturi* Freyhof, Kottelat and Nolte, 2005 (Cottidae)

Carla Sousa-Santos^{1*}, Joana Isabel Robalo¹, Ana Pereira¹, Ignacio Doadrio²

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

² Museo Nacional de Ciencias Naturales, CSIC, José Gutiérrez Abascal 2, 28006 Madrid, Spain

* Corresponding author, E-mail: carla.santos@ispa.pt

ARTICLE INFO

Received: 12 March 2014

Received in revised form: 5 May 2014

Accepted: 5 May 2014

Available online: 7 May 2014

Keywords:

Cottus aturi

Endemic species

Conservation

ABSTRACT

Cottus aturi is an endemic cottid fish from three small Pyrenean river basins and is critically endangered mainly due to water quality degradation related to reduced flow and eutrophication.

COMMON NAME

Burtaina (Spanish), Chabot (French) – Figure 1.

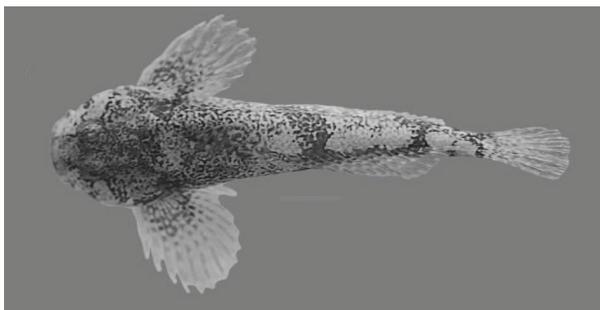


Fig 1. *Cottus aturi* (Photo credit: Ignacio Doadrio)

CONSERVATION STATUS

Critically Endangered according to IUCN guidelines (Doadrio et al., 2011) and *Least Concern* according to Freyhof and Kottelat (2008) due to lack of data.

IDENTIFICATION

This small cottid (up to 100-150 mm TL) has a very broad

head, dark brown marbled body or with narrow vermiculations, and low and anteriorly truncate first dorsal fin (Freyhof et al., 2005; Keith et al., 2011). It differs from the highly similar *Cottus hispaniolensis* by the following characters: pelvic fins hyaline or with faint brown marks; low and anteriorly truncate first dorsal fin; last dorsal-fin ray connected to body by a membrane along 1/3-2/3 of its length; last anal-fin ray not connected to body by a membrane; and fewer lateral line pores (23-32+1) (Freyhof et al., 2005; Keith et al., 2011). It also differs from other *Cottus* species occurring in the Atlantic drainages by the following characters: caudal peduncle stout (length 14-18% SL, depth 8-10% SL and 1.5-2.1 times in its length); no prickling in adults, few prickles under pectoral fin in juveniles; eye diameter 20-25% of HL; interorbital distance 1.1-1.4 times in eye diameter; no membrane between last pelvic-fin ray and body; and membranes between pelvic-fin rays wider distally (Freyhof et al., 2005).

DISTRIBUTION

This species is endemic to the Adour (43°30'44.92"N, 1°29'34.49"W), Nivelle (43°22'55.71"N, 1°39'35.59"W) and Bidasoa (43°21'12.75"N, 1°47'20.18"W) river basins, located in the northwest part of the Pyrenean mountain range.

ABUNDANCE

It has an estimated area of occupancy of less than 2,000 km² and an extent of occurrence of less than 20,000 km² (Freyhof and Kottelat, 2008). A regressive trend was identified in its populations after intensive monitoring conducted during 2009 and 2010 (Doadrio et al., 2011).

HABITAT AND ECOLOGY

C. aturi typically occurs in the headwaters of streams with stone substrate and clear, cool and moderate to swift waters (Freyhof and Kottelat, 2008; Doadrio et al., 2011).

REPRODUCTION

No data is available.

THREATS

Flow regulations meet electrical power demands, often resulting in low water levels followed by instantaneous high flow regimes. Water quality degradation is related to reduced flow and nutrient enrichment is associated with live-stock production (Doadrio et al., 2011).

CONSERVATION

Active conservation measures are needed since population densities are very low and the species does not appear in captures within its distribution area in some years (Doadrio et al., 2011). Population genetic studies are still lacking.

CONSERVATION RECOMMENDATIONS

Implementation of water management that mimics the natural hydrographic regime, establishment of minimum ecological flows, and treatment of livestock production discharges.

ACKNOWLEDGMENTS

This study was funded by project CGL2010-15231-BOS (MNCN-CSIC) and by FCT – Portuguese Foundation for Science and Technology (partially FEDER funded), under the multiannual financing programme UI&D 331/94 and the project PTDC/AAC-CLI/103110/2008. C. Sousa-Santos was supported by a Post-doctoral grant from FCT (SFRH/BPD/29774/2006).

Sažetak

UGROŽENE VRSTE RIBA U SVIJETU: *Cottus aturi* Freyhof, Kottelat i Nolte, 2005 (Cottidae)

Cottus aturi je endemska vrsta ribe iz porodice Cottidae iz tri mala pirenejska riječna sliva i kritično je ugrožena najviše zbog degradirane kvalitete vode povezane sa smanjenim protokom i eutrofikacijom.

Ključne riječi: *Cottus aturi*, endemska vrsta, zaštitna

REFERENCES

- Doadrio, I., Perea, S., Garzón-Heydt, P., González, J. L. (2011): Ictiofauna continental española – bases para su seguimiento. Gobierno de España, Ministerio de Medio Ambiente y Meio Rural y Marino, Madrid. 610 p.
- Freyhof, J., Kottelat, M. (2008): IUCN Red List of Threatened Species: *Cottus aturi*. [Cited in 2014 February 17]. Available from: <http://www.iucnredlist.org>
- Freyhof, J., Kottelat, M., Nolte, A. (2005): Taxonomic diversity of European Cottus with description of eight new species (Teleostei: Cottidae). *Ichthyological Exploration of Freshwaters*, 16, 2, 107-172.
- Keith, P., Persat, H., Feunteun, É., Allardi, J. (2011): Les poissons d'eau douce de France. Biotope, Mčze; Muséum national d'histoire naturelle, Paris. 552 p.