

## Threatened fishes of the world: *Leuciscus lucumonis* Bianco, 1983 (Cyprinidae)

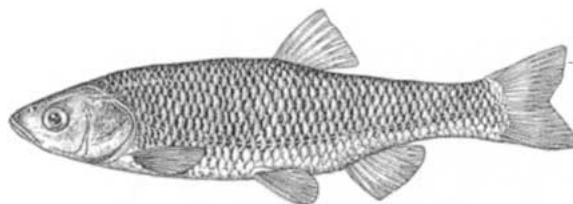
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**Common name:** Cavedano di ruscello (Italian), Brook chub (E).

**Conservation status:** This Italian endemic species has undergone a progressive decline in its original range (Bianco & Taraborelli 1984, Bianco 1991, 1995, Mearrelli et al. 1996, Bianco & Ketmaier 2001) since it was first described (Bianco 1983). *Leuciscus lucumonis* is an important biogeographic indicator of the Tuscany-Latium district (Bianco & Ketmaier 2001). At present there are only about 10–12 isolated populations. According to the 2002 IUCN Red List of Threatened Species. www.redlist.org, downloaded on 14 August 2002, the status of this species (erroneously reported as *L. lucumontis*, Bianco 1983) was listed as at 'Lower Risk', (conservation dependent). Today *L. lucumonis* can be allocated to the endangered category for threatened species as it satisfies paragraph B and point 1 of the IUCN (1996) criterion 'Severely fragmented distribution'.



**Identification and origins:** The brook chub is a moderate sized species, which rarely reaches 200 mm TL and a maximum age of 5 years. Pharyngeal tooth formula 5.2-2-5. Dorsal fin origin placed behind the anterior origin of pelvics. Meristic counts: dorsal fin 3 unbranched rays and modally 7 branched rays, anal fin 3 unbranched rays and modally 8 branched rays, lateral line scales 40–42 (rarely over 43), 16 circumpeduncular scales. Ground colour of body yellowish, a pale golden iridescent longitudinal band is discernible on the middle part of the sides. Iris light with a brownish semilunar area in the upper half. All fins are greyish with some orange during the spawning season. Caudal fin uniformly greyish, without black tinged free margin as in the common chub *Leuciscus cephalus* (L.). *L. lucumonis* seems derived from *L. cephalus* as a result of vicarious events about 0.5 MYA. (Ketmaier et al. 1998). Drawing by Mariano Caminoli from a 132 mm SL specimen from Tiber River, Zoological Department of Naples University (Cat. N.: IZA 831). **Distribution:** Main rivers of the Tuscany-Latium district: Tiber R. with about 3–4 reproducing populations; Ombrone River with 3; Arno River probably 3–4, and Serchio River probably extirpated. **Abundance:** Scarce everywhere. Some moderately structured populations occur only in clean undisturbed brooks. **Habitat and ecology:** *L. lucumonis* is a primary, warm-water adapted, obligate riverine cyprinid fish. It lives mainly in brooks, occasionally found in main river courses. It lives together with young of the congeneric *L. cephalus* and other riverine Tuscany-Latium endemic species: these brooks represent relicts biotopes of biogenetic diversity of rheophilic endemic species of the Tuscany-Latium district (Bianco & Ketmaier 2001). **Reproduction:** Apparently from April till June. There are no accurate studies on its biology. **Threats:** The brook chub is very sensitive to pollution, habitat modification and competition with aliens. Its disappearance is mainly due to the introduction of *Chondrostoma genei* (Bonaparte 1839), a species endemic to northern Italy, heavily stocked in central Italy. This species can colonize small riverine biotopes. **Conservation action:** River restoration, eradication of introduced species, protection of small brooks, reintroduction of stocks in restored habitats and habitat protection. **Conservation recommendation:** Avoid any kind of alien introductions especially stocking with 'white fishes' (a mixture of mostly unidentified cyprinid and other species of uncertain origins), which often include riverine species, which can compete with *L. lucumonis*.

Bianco, P.G. 1983. *Leuciscus lucumonis* n. sp. from Italy (Pisces, Cyprinidae). Senck. Biol. 64: 81–87.

Bianco, P.G. 1991. I pesci d'acqua dolce delle aree extra-padane d'Italia: Una catastrofe naturalistica causata dagli interventi dell'uomo. Atti II Seminario Italiano Censimenti Faunistici dei Vertebrati. Ricerche Biologia della Selvaggina, 16(Suppl.): 75–85.

Bianco, P.G. 1994. L'ittiofauna continentale dell'Appennino umbro-marchigiano, barriera semipermeabile allo scambio di componenti primarie tra gli opposti versanti dell'Italia centrale. Biogeographia 17: 427–485.

Bianco, P.G. 1995. Indagine sull'ittiofauna e i decapodi. pp. 1–40. In: Studio sull'ittiofauna, la lontra e l'ambiente acquatico delle Valli del Farma e della Merse. Provincia di Siena & Istituto Ecologia Applicata.

Bianco, P.G. & V. Ketmaier. 2001. Anthropogenic changes in the freshwater fish of Italy with reference to the central region and *Barbus graellsii*, a newly established alien species of Iberian origin. J. Fish Biol. 59(Suppl. A): 190–208.

Bianco, P.G. & T. Taraborelli. 1984. Il *Leuciscus lucumonis* Bianco, 1983 nel bacino del Tevere, e altri reperti di pesci d'acqua dolce in Italia (Pisces, Cypriniformes). Natura 75: 110–116.

IUCN. 1996. The 1994 IUCN Red List categories and criteria. IUCN, Species Survival Commission, Gland, Switzerland.

Ketmaier, V., P.G. Bianco, M. Cobolli & E. De Mattheis. 1998. Allozymic variability and biogeographic relationships in two *Leuciscus* species complexes (Cyprinidae) from southern Europe, with the rehabilitation of the genus *Telestes*. Bp. Ital. J. Zool. 65(Suppl.): 41–48.

Mearrelli, M., M. Lorenzoni, A. Carosi, G. Giovinazzo & M.L. Petesse. 1996. Carta Ittica della Regione Umbria, 5 vols, Regione Umbria, Università di Perugia, Perugia.