

Lower Timiș River (Banat, Romania) - Special area for conservation (Natura 2000 site) for *Gobio albipinnatus* Lukasch, 1933

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Abstract. Present paper aims to bring arguments in favour of Natura 2000 site proposing - Lower Timiș River, for *Gobio albipinnatus* species conservation. These arguments rely on the author's original actual data, about *Gobio albipinnatus* population and its fish community - specific criteria (well preserved fish populations; stable fish populations; healthy fish populations; typical natural habitats; low human impact; favorable geographical position).

Key Words: Romania, Banat, Timiș, Natura 2000, *Gobio albipinnatus* Lukasch, 1933, specific criteria.

Zusammenfassung. Die vorliegende Arbeit setzt sich zum Ziel Argumente zugunsten eines Vorschlags bzw. der Unterstützung der Ausweisung eines Natura 2000 - Gebietes am unteren Timiș zu finden, die auf den Kenntnissen des Verfassers beruhen und sich auf artspezifische Kriterien (gut geschützte, stabile, gesunde Fischpopulationen, typische natürliche Habitate mit geringem menschlichem Einfluss, günstige geografische Bedingungen) für die Art *Gobio albipinnatus* und die anderen, in den Fischgemeinschaften des betreffenden Gebietes vorkommenden Arten stützen.

Schlüsselwörter: Rumänien, Banat, Timiș, Natura 2000, *Gobio albipinnatus* Lukasch, 1933, artspezifische Kriterien.

Rezumat. Prezenta lucrare își propune să aducă argumente în favoarea desemnării sitului Natura 2000 - Timișul Inferior - pentru conservarea speciei *Gobio albipinnatus*. Argumentația se bazează pe date originale, actuale ale autorului despre populația de *Gobio albipinnatus* și despre comunitatea de pești din care aceasta face parte - criterii specifice: populații de pești bine conservate; populații de pești stabile; populații de pești sănătoase; habitate naturale tipice; impact antropic scăzut; poziție geografică favorabilă).

Cuvinte cheie: România, Banat, Timiș, Natura 2000, *Gobio albipinnatus* Lukasch, 1933, criterii specifice.

Introduction. The principal goals of the European Community in the environment protection field are the conservation, the protection and the improvement of the environment quality, in the condition of the rational use of natural resources. The biodiversity conservation constituted an important objective of the EU in the last quarter of (the 20th) century.

To elaborate its environmental policies the EC structures take into consideration the scientific and technical available information, the environmental conditions characteristic to different regions of the Community and the need for a balanced development of all its component regions, the result benefits and the involved costs.

The action frame at the European Community level, the preservation of the biodiversity, was established basing on the Habitats Directive (92/43/EEC) and Birds Directive (79/409/EEC).

Both European Directives aim at the protection and maintaining of the biodiversity in the European Union through the creation of a protected area network (Natura 2000 network), in which the habitats and species that are characteristic for the European biogeographic regions are preserved.

At this moment, Romania contributes to the European Natural heritage with around: 47% of the territory covered by natural and semi-natural ecosystems; 780 types

of habitats; 3700 superior plant species; 33085 invertebrate species and 717 vertebrate species (Bănăduc 2001).

Romania is the country with the highest biogeographic diversity of all the present European Union countries and the country which joined the European Union in 2007, with five biogeographic regions: continental, alpine, pannonic, pontic and steppic.

There are few ways through which the Natura 2000 initiative may improve its nature protection in our country: extension of the natural area surface; the creation and implementation of correct management plans for these protected areas; institutional capacity building; raising awareness.

One important element of the implementation of these two Directives is the establishment of a Natura 2000 site network in Romania, too (Bănăduc 2006).

The author have already done some scientific works regarding this fish species of European conservative interest for the potential Natura 2000 sites frame designation and/or management (Bănăduc 2001; Bănăduc 2006; Bănăduc 2007abc; Curtean-Bănăduc & Florescu 2007; Bănăduc 2008).

This paper data goal was to sustain arguments for the proposal for a Natura 2000 site based on *Gobio albipinnatus* Lukasch, 1933 fish species, for Biogeographic Seminars for Romania, the discussions regarding this fish related aspects not being finished, yet. The paper is based on the author's original data. The original data meet the European Union scientific criteria for Natura 2000 site selection.

Material and Method. Different samplings methods were used for fish capture: angling, different types of nets and electric fishing.

According to the European Natura 2000 initiative the following site selection criteria were used: well preserved fish (of Community interest - oCi) populations; stable fish (oCi) populations; healthy fish (oCi) populations; typical natural habitats (oCi); lowest (as possible) human impact presence; favorable geographical position (possibility of species spreading in more than one hydrographic watersheds); best option for species/habitat (oCi) in relation with the needed future Natura 2000 areas management.

This paper is based on the original scientific data, not older than six years. It has to be stated that no complete data are available for definitely and comprehensively statute and border the local populations. Further populational field studies are needed.

This paper focused mainly on the *Gobio albipinnatus*, Annex II fish species. This species can be regarded as an 'umbrella species'. Secondary, the other fish species of the local ichthyocenosis are considered.

This species is in a slightly regress now in Romania, that is why the sampled fish were released immediately after their identification in the same place where they were captured, due to obviously conservative reasons.

Results and Discussion

Species fact sheet. Scientific name: *Romanogobio albipinnatus* (Lukasch, 1933) / *Gobio albipinnatus* Lukasch, 1933. Order: Cypriniformes / Suborder: Cyprinoidei / Family: Cyprinidae. Vernacular name: whitefin gudgeon (English) / porcușor de șes / porcușor de nisip (Romanian). Terra typica: Kahul Lake (actual territory of Moldavia Republic) (Bănărescu 1964).

Ecology: living in rivers with sandy and/or muddy riverbeds. It prefers deep water with slow velocity (lower than 50 cm/s). In general, it is solitary, sometimes it can be found in small fish schools (Bănărescu 1964). Its trophic resource consists mainly in benthic macroinvertebrates (Bănăduc 2003).

Conservation status: In Romania the whitefin gudgeon has a relatively wide range but its range evolution is in regress. Its position is considered having a low vulnerability. *Gobio albipinnatus* species is protected by the Law 13 of 1993 (by which Romania became a part to the Bern Convention), European Directive 92/43/EEC transposed by Governmental Emergency Order (GEO) 57/2007 (with the last amendments) regarding the protected natural areas and the habitats and wild flora and fauna conservation.

The studied area and also the proposed Natura 2000 site are on the lower Timiș River, in Timiș County, belonging to the Continental and Panonic biogeographic regions (Figure 1).

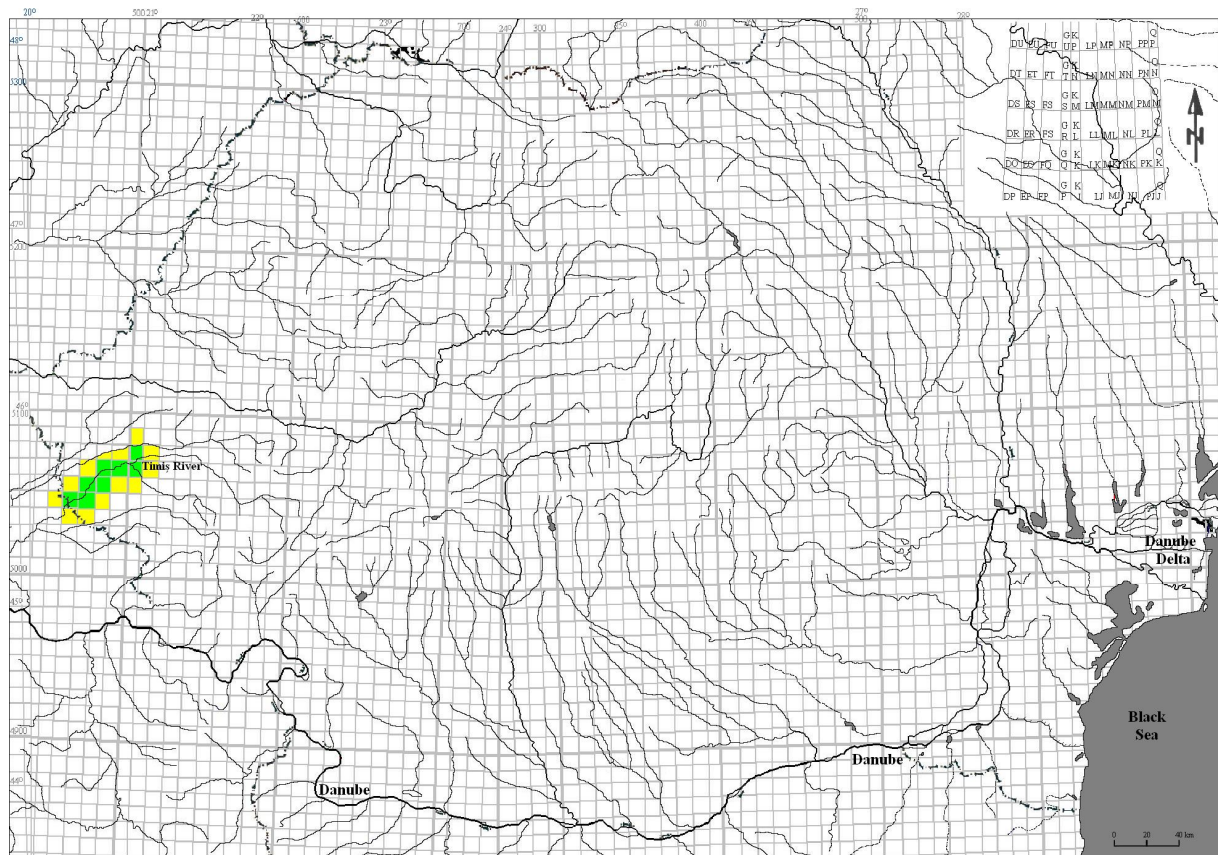


Figure 1. Natura 2000 (SCI) proposed site (■); buffer zone (■) for *Gobio albipinnatus* on the Lower Timiș River (Lehrer & Lehrer 1990 - modified by the author).

Lower Timiș River proposed site. The main arguments for the proposal of this (Lower Timiș River) site (including the Timiș River tributaries at least in their confluence sectors) are the following: an active genetic differentiation/speciation area for *Gobio* genus species; high number of *Gobio albipinnatus* individuals; historic records continuity of this species in the last 100 years; healthy fish *Gobio albipinnatus* individuals; typical natural habitats/good habitats under quantitative and qualitative aspects - enough space and diverse microhabitats in mosaic (longitudinal and transversal) shape; the anthropogenic impact presence is actually within the limits of this species; river sector with a favorable geographical position with possibility, for this species spreading, upstream and downstream of Timiș River Watershed (27830 km² in the Romanian national territory) and with easy connection to the Danube River main corridor; the possibility of this site extension over the national border (in Serbia) can bring the possibility of a future triple management control (European, Romanian, Serbian) on the proposed Natura 2000 site.

Gobio albipinnatus can act here as an umbrella species for the high local ichthyofauna diversity (over 40 fish species): *Acipenser ruthenus* - vulnerable species (Law 13/1993; GEO 57/2007); *Aspius aspius* (Law 13/1993; European Directive 92/43/EEC, Natura 2000; GEO 57/2007); *Leucaspis delineatus* (Law 13/1993); *Alburnoides bipunctatus* (Law 13/1993); *Abramis ballerus* (Law 13/1993); *Abramis sapa* (Law 13/1993); *Pelecus cultratus* (Law 13/1993; European Directive 92/43/EEC, Natura 2000; GEO 57/2007); *Rhodeus sericeus amarus* (Law 13/1993; European Directive 92/43/EEC, Natura 2000; GEO 57/2007); *Gobio kessleri* - vulnerable species (Law 13/1993; European Directive 92/43/EEC, Natura 2000; GEO 57/2007); *Misgurnus fossilis* (Law

13/1993; European Directive 92/43/EEC, Natura 2000; GEO 57/2007); *Cobitis taenia* (Law 13/1993; European Directive 92/43/EEC, Natura 2000; GEO 57/2007); *Sabanejewia aurata* (Law 13/1993; European Directive 92/43/EEC, Natura 2000; GEO 57/2007); *Gymnocephalus baloni* - vulnerable species (Law 13/1993; European Directive 92/43/EEC, Natura 2000; GEO 57/2007); *Gymnocephalus schraetser* - vulnerable species (Law 13/1993; European Directive 92/43/EEC, Natura 2000; GEO 57/2007); *Zingel zingel* - vulnerable species (Law 13/1993; European Directive 92/43/EEC, Natura 2000; GEO 57/2007); *Zingel streber* - endangered species (Law 13/1993; European Directive 92/43/EEC, Natura 2000).

Conclusions. These data are based on the available scientific data, not older than six years. The lower Timiș River, proposed site of Community interest in relation with at least one species - *Gobio albipinnatus* and its local ichtiocenosis, show the need of inclusion in Natura 2000 network of this valuable site.

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References

- Curtean-Bănăduc A., Florescu F., 2007 Romanian Natura 2000 NGO Coalition Contribution for the SCIs Designation. ISBN 978-973-632-402-4, pp. 147 - 182.
- Bănăduc D., 2008 Natura 2000 sites proposals regarding the European Community interest Cyclostomata fish species conservation (Romania). In: Acta Oecologica Carpatica. Curtean-Bănăduc A. (ed), pp. 83-88.
- Bănăduc D., 2007a Fish of Natura 2000 network interest in Romania. In: Romanian NATURA 2000 NGO Coalition Contribution for the SCIs Designation, Curtean-Bănăduc A., Florescu F. (eds), Editura Alma Mater, Sibiu, ISBN 978-973-632-402-4, pp.147-182.
- Bănăduc D., 2007b [*Alosa pontica*; *A. tanaica*; *Aspius aspius*; *Barbus meridionalis*; *Cobitis tenia*; *Gobio albipinnatus*; *G. kessleri*; *G. uranoscopus*; *Misgurnus fossilis*]. In: [Habitat and species guide]. Combroux I., Thiry E., Toia T. (eds), Editura Balcanic, Timișoara, ISBN 978-973-85742-6-7, pp. 57-78. [In Romanian]
- Bănăduc D., 2007c Important area for fish - Natura 2000 (SCI) for *Gobio albipinnatus* Lukasch, 1933 species in the Danube Delta (Romania). Acta Oecologica 14:127-135.
- Bănăduc D., 2006 Preinventory for a draft list of Natura 2000 (SCI) sites for fish species. Edited by Bureau Waardenburg and Ameco Holand, 62 pp.
- Bănăduc D. 2003 [Contributions at the Morphology and Biology of the Species of the *Gobio* (Gobioninae, Cyprinidae, Pisces) Genus in Romania. (PhD Thesis)] Institutul de Biologie al Academiei Române, Bucharest, 225 pp. [In Romanian]
- Bănăduc D., 2001 Fresh water and migratory fish species of Community interest, present in Romania. In: [Natura 2000 in Romania. Aquatic Species and Habitats Conservation]. Curtean-Bănăduc A. (ed.), Editura Alma Mater, Sibiu, ISBN 973-632-243-2, pp. 72-81. [In Romanian]
- Bănărescu M. P., 1964 [Pisces-Osteichthyes]. Fauna R. P. R., vol. XIII, Edit. Acad. R.S.R., Bucharest, 959 pp. [In Romanian]
- GEO 57/2007, Official Monitor of Romania no 442 of 29 of June 2007, modif by GEO 154/2008, Official Monitor of Romania no 787 of 25 of November 2008.
- Lehrer A. Z., Lehrer M. M., 1990 [The Romanian Fauna and Flora Cartography]. Editura Ceres, București. [In Romanian]
- Law 13/1993, Official Monitor of Romania no 62 of 25th of March 1993.
- The European Parliament and the Council Directive 79/409/EEC of 2 April 1979, on the conservation of wild birds, Official Journal of the European Communities, L 103, 25/04/1979.

The European Parliament and the Council Directive 92/43/EEC of 21 May 1992, on the conservation of natural habitats and of wild fauna and flora, Official Journal of the European Communities, L 206, 22.07.1992.

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