

ASSESSING THE CONSERVATION STATUS OF FISH SPECIES FROM THE GILORT RIVER PROTECTED AREA

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Abstract

The paper aimed to present the state of conservation of the fish species of community interest (*Eudontomyzon mariae*, *Gobio albipinnatus*, *Barbus meridionalis*, *Sabanejewia aurata*) in the protected area. For evaluating the conservation status of fish species have been carried out land evaluation in May - October 2014 with a frequency of 3-4 observations per month. Following the site assessments in the Natura 2000 Gilort River area, it was observed that the conservation status of the species *Eudontomyzon mariae* population is medium to low, highlighting a reduction in population (21 specimens); the conservation status of the species *Gobio albipinnatus* population is medium to low, highlighting a reduction in population (16 specimens); the conservation status of the species *Barbus meridionalis* population is good, the population being stable (744 specimens); the conservation status of the species *Sabanejewia aurata* population is medium to low, highlighting a reduction in population (240 specimens).

Key words: assessment, conservation, Natural Protected Area

INTRODUCTION

The *Gilort River protected area* is a site of community importance and belongs of the Natura 2000 European network.

The purpose of Gilort River protected area is to protect and conserve species of important national and Community level (*Lutra lutra*, *Bombina variegata*, *Eudontomyzon mariae*, *Gobio albipinnatus*, *Barbus meridionalis*, *Sabanejewia aurata*).

The reason for designating area Gilort River as protected was due to existence on its territory of the species of relevant community interest for conservation in the biogeographic region they belong.

The Gilort River protected area lies in Gorj, in sub-Carpathians Getici, in the Ciolanei Basin and is bordered by the localities: Pociovalistea and Bumbesti-Pițic at north, natural protected area Prigoria-Bengesti and localities Mirosloveni, Albeni, Bolbocesti and Barzeiu de Gilort at east, locality Doseni at south and localities Albeni, Bengesti, Ciocadia and Balcesti at west. The natural protected area develops longitudinally from north to south, with a length of 21.75 km Gilort River (Figure 1).

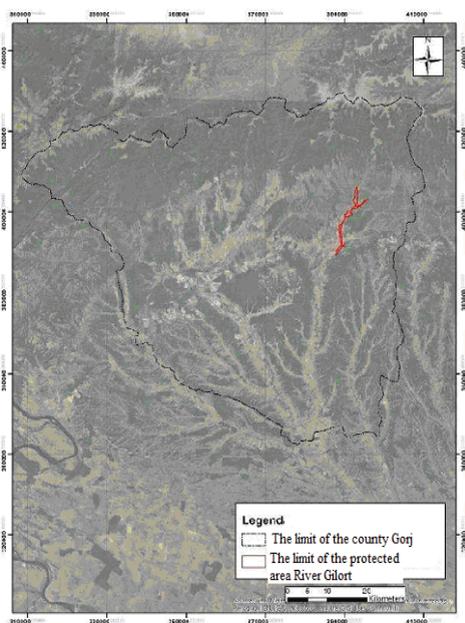


Figure 1. Localization of the Gilort River natural protected area

The *Gilort River protected area* is located within the territorial administrative units of Bengesti, Albeni, Novaci, Bumbesti-Pitic si Targu Carbunesti in the Gorj County, including an area of 873 ha (Figure 2).

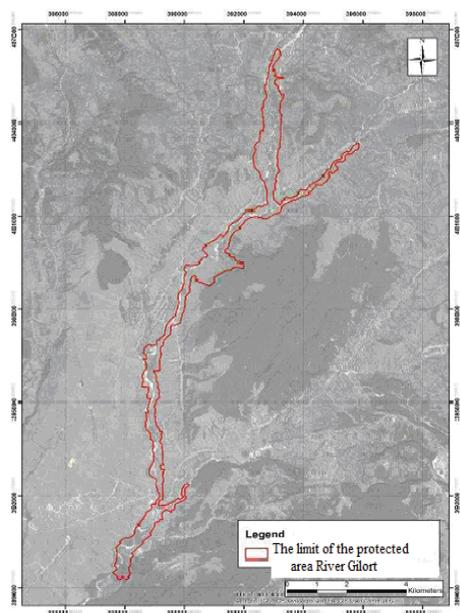


Figure 2. Limits of the Gilort River natural protected area

The landscape is characterized by the presence of hills and riverbed topography created by the action of rivers. From the geographical point of view, the Gilort River protected area is located at the 45.076561 north latitude and 23.612975 eastern longitude. The average altitude is 300 m. The access to the Gilort River protected area is by National Road 67, in the north, north-east or the west of the protected area.

Abiotic environment

From the geological point of view, the protected area is located on the fluvial and fluvial-lacustrine deposits formed in the Quaternary and Holocene Lower and Upper, Pleistocene Quaternary and Neogene Miocene Ages.

In terms of relief, the Gilort River protected area is located in the Sub-Carpathians of Gorj, positioned in the central of Gorj County.

The hydrology protected area is characterized by the presence of Gilort River with the tributaries: Ciocadia (on the right) and Yellow Creek and Calnicul (on the left). The basin which includes the area is the Jiu Basin which is characterized by a reception area of 10080 km² and an oblong shape which is taken over by the river Gilort River, the most important

left tributary of the river Jiu. It collects water from the southern slope of the mountain Parang, with an area of springs located at 1,800 m altitude (Figure 3).

From the climate perspective Gilort River protected area is located in the temperate continental climate, specific of hills and plateaus climate, with variability from north to south.

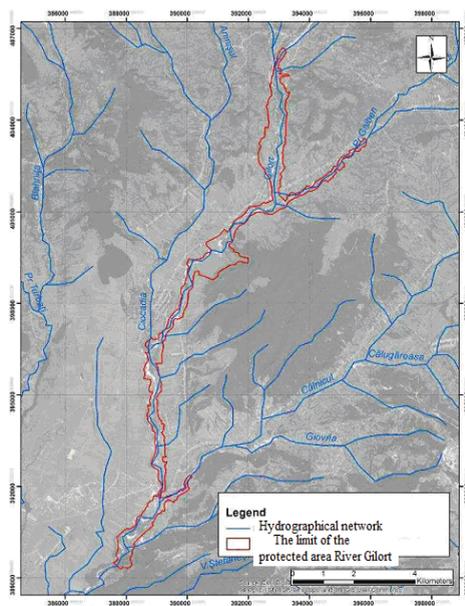


Figure 3. The hydrographic network of the Gilort River natural protected area

Analyzing the edaphic potential, the soils present in the analyzed area are included in four major classes of soils. The soil distribution within the protected area has a high variability, comprising 6 types of soils. The specific vegetation formation is influenced, among others, by the characteristics of soils. This, in turn, influences the fauna that inhabit different habitats developed as it is the case of species of amphibians and mammals.

Biotic environment

The ecosystems within the Gilort River protected area are differentiated in 5 main categories: forest ecosystems, grassland ecosystems, agricultural ecosystems, aquatic ecosystems and urban ecosystems.

Characteristic for *Lutra Lutra* species and for fish species is the aquatic ecosystem. Within the protected area was identified the habitat of community interest 91E0* *alluvial forests cu Alnus glutinosa and Fraxinus excelsior (Alno-Padion)*.

The fauna is represented by species of national and community interest: mammals (*Lutra lutra*), amphibians (*Bombina variegata*) and fishes (*Eudontomyzon mariae*, *Gobio albipinnatus*, *Barbus meridionalis*, *Sabanejewia aurata*) (Management plan of the Natura 2000 site ROSCI0362 - River Gilort, 2014)

MATERIALS AND METHODS

For evaluating the conservation status of fish species have been carried out land evaluation in May - October 2014 with a frequency of 3-4 observations per month. The equipment used to achieve the objective were fish landing, metric tape, electronic scales, camera, portable magnifier, binocular magnifying glass, caliper, identification key. The biological material

extracted in order to investigate was released after they have completed the investigation phase. (**- IUCN Red List of Threatened Species. IUCN 2006).

Ichtyofauna sampling study was made by the method of fishing with trammel, 10 stations representative of the perimeter area, with the sampling period of 12 hours, 18-20 hours gill nets are installed between the nights and raised between the hours 6-8 following morning, the sampling under way in the European Union. Trammel used had a length of 30 m, each being composed of 12 gillnet mesh panels 2.5 m in length, having a mesh panels 6, 6, 8, 10, 12, 16, 20, 24, 30, 35 45, 55 mm (**- Habitats Directive 92/43/EEC. Council Directive 92/43/EEC on the conservation of natural habitats and of wild Fauna and Flora).

The assess of the state of conservation of the fish species of community interest (*Eudontomyzon mariae*, *Gobio albipinnatus*, *Barbus meridionalis*, *Sabanejewia aurata*) in the protected area, was carried out as specified in Table 1.

Table 1. Specifications for evaluating the conservation status of fish species of community interest (**- Guidelines for Application of IUCN Red List at Regional Levels)

Parameters	Conservation status			
	Favorable	Unfavorable inappropriate	Unfavorable totally inadequate	Unknown
Aria distribution	- distribution area stable or increasing; - reduction area distribution with less than 10%	- reduction distribution area with 11-20%	- reduction distribution area with more than 20%	- insufficient data
Population	A ≥33 ex./year	A = 25-20 ex./year (a decrease of 10- 40%)	A < 13 ex./year (a decrease of more than 40%)	- insufficient data
Habitat of the species	- the habitat of the species is stable or increasing; - reduction habitat with less than 5%	- reduction habitat with 6% - 15%	-reduction habitat with more than 15%	- insufficient data
Future prospects (maximum 30 years)	1 = perspectives Good - viability and prosperity of species are provided	2 = perspectives Weak – it is probably that species meet difficulties if conditions of environment are not modified.	3 = perspectives Bad – species under the influence of severe threats its viability is not assured	- insufficient data
Evaluating the conservation status	All "green" or three "green" and one "unknown"	One or More "orange" but neither "red"	One or more "red"	

Eudontomyzon mariae lives in the mountain rivers in the trout, grayling and barbel areas, and less downstream.

Gobio albipinnatus is locates in places where the water is deeper, with low current (typically at a speed of 28-45 cm/s). Avoids places with stagnant water or faster and muddy bottom.

Barbus meridionalis lives exclusively in rivers and streams exclusively from mountains and upper hilly region; He lives both in rocky rivers, fast and cold, and even in some more muddy, which warm in summer, but only in the mountains. *Sabanejewia aurata* lives in freshwater flowing from mountains to plains. It prefers sandy gravel substrate but lives

exclusively in sandy portions, (Tatole, V., Iftime, A., Stan, M., Iorgu, E.I., Iorgu, I., Otel, V., 2009).

RESULTS AND DISCUSSIONS

At national level, the state of conservation of the fish species *Eudontomyzon mariae*, *Gobio albipinnatus*, *Sabanejewia aurata* și *Barbus meridionalis* is unfavorable-inadequate.

Evaluating the conservation status of species Eudontomyzon mariae in the Gilort River natural protected area

Following the site assessments in the Natura 2000 Gilort River area, it was observed that the conservation status of the species population is medium to low, highlighting a reduction in population (21 specimens).

The conservation level of the species *Eudontomyzon mariae* at Natura 2000 site Gilort River is unfavorable-inadequate.

The distribution of species *Eudontomyzon mariae* and favorable areas for protection of the species are shown in Figures 4 and 5.

Evaluating the conservation status of species Gobio albipinnatus in the Gilort River natural protected area

Following the site assessments in the Natura 2000 Gilort River area, it was observed that the conservation status of the species population is medium to low, highlighting a reduction in population (16 specimens).

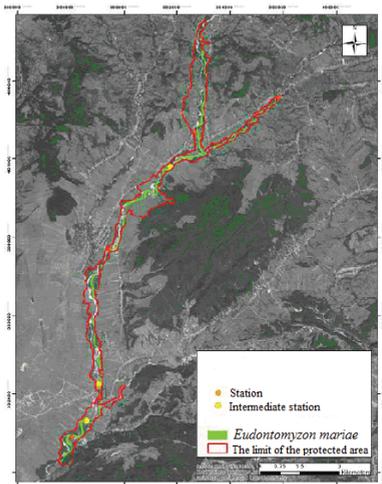


Figure 4 Distribution of species *Eudontomyzon mariae* in the Gilort River natural protected area (GIS software)

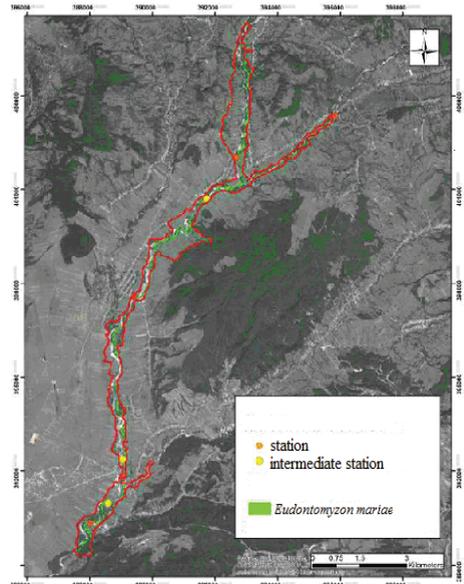


Figure 5. Favorable areas for protected species *Eudontomyzon mariae*(GIS software)

The conservation level of the species *Gobio albipinnatus* at Natura 2000 site Gilort River is unfavorable-inadequate. The distribution of species *Gobio albipinnatus* and favorable areas for protection of the species are shown in Figures 6 and 7.

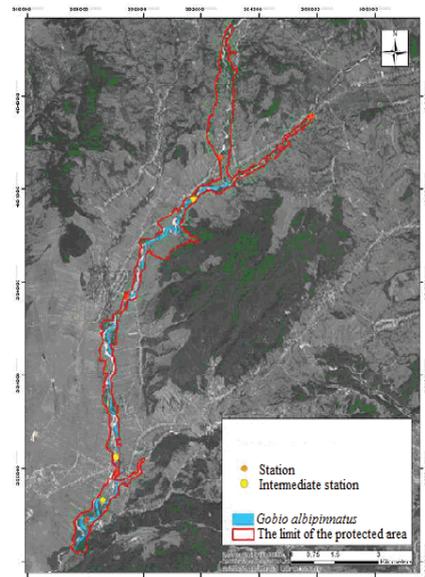


Figure 6. Distribution of species *Gobio albipinnatus* in the Gilort River natural protected area(GIS software)

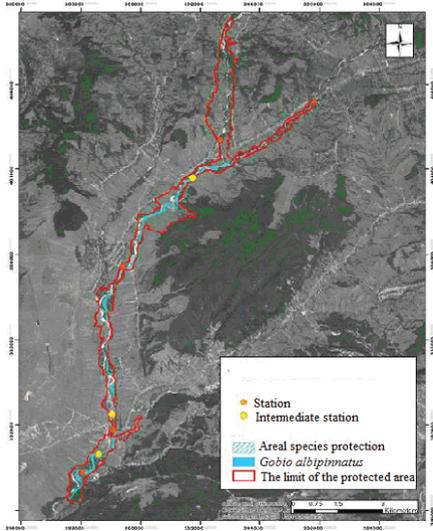


Figure 7. Favorable areas for protected species *Gobi albipinnatus* (GIS software)

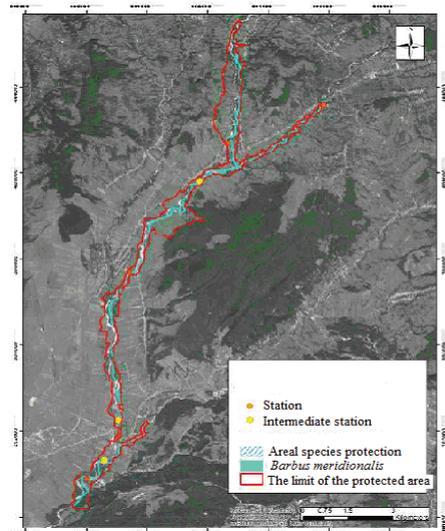


Figure 9. Favorable areas for protected species *Barbus meridionalis* (GIS software)

Evaluating the conservation status of species Barbus meridionalis in the Gilort River natural protected area

Following the site assessments in the Natura 2000 Gilort River area, it was observed that the conservation status of the species population is good, the population being stable (744 specimens).

The conservation level of the species *Barbus meridionalis* at Natura 2000 site Gilort River is favorable.

The distribution of species *Barbus meridionalis* and favorable areas for protection of the species are shown in Figures 8 and 9.

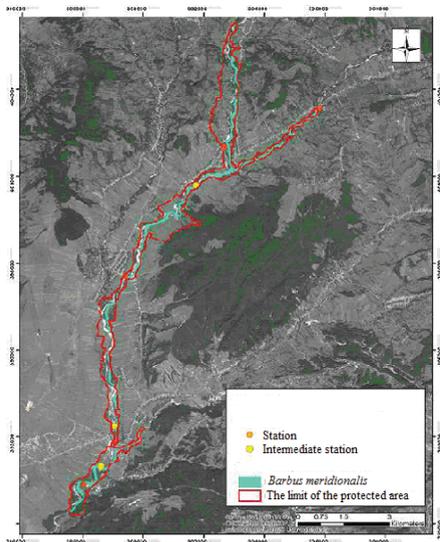


Figure 8. Distribution of species *Barbus meridionalis* in the Gilort River natural protected area (GIS software)

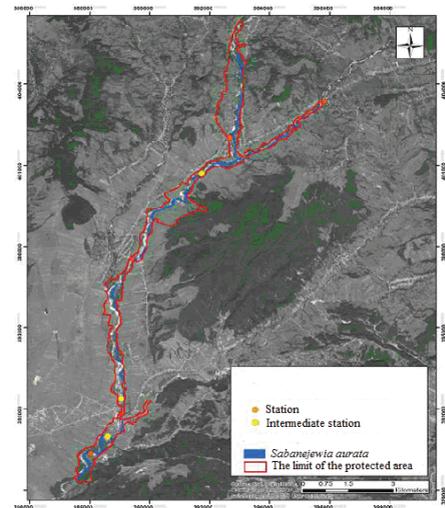


Figure 10. Distribution of species *Sabanejewia aurata* in the Gilort River natural protected area (GIS software)

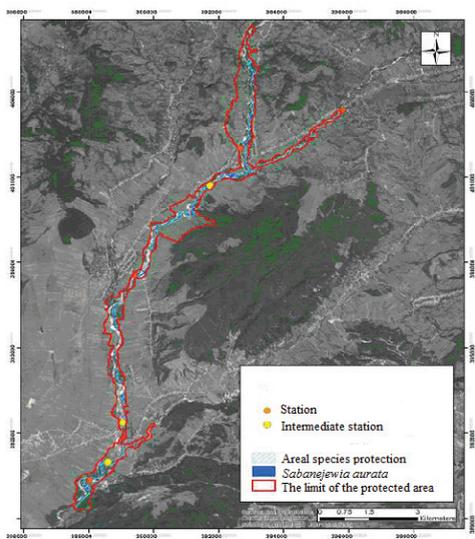


Figure 11. Favorable areas for protected species *Sabanejewia aurata* (GIS software)

Evaluating the conservation status of species Sabanejewia aurata in the Gilort River natural protected area

Following the site assessments in the Natura 2000 Gilort River area, it was observed that the conservation status of the species population is medium to low, highlighting a reduction in population (240 specimens). The distribution of species *Sabanejewia aurata* and favorable areas for protection of the species are shown in Figures 10 and 11.

The conservation level of the species *Sabanejewia aurata* at Natura 2000 site Gilort River is unfavorable-inadequate. The conservation level of the species *Sabanejewia aurata* at Natura 2000 site Gilort River is unfavorable-inadequate.

CONCLUSIONS

Following the site assessments in the Natura 2000 Gilort River area, it was observed that the conservation status of the species *Eudontomyzon mariae* population is medium to low, highlighting a reduction in population (21 specimens); the conservation status of the species *Gobio albipinnatus* population is medium to low, highlighting a reduction in population (16 specimens); the conservation status of the species *Barbus meridionalis*

population is good, the population being stable (744 specimens); the conservation status of the species *Sabanejewia aurata* population is medium to low, highlighting a reduction in population (240 specimens).

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