

## HABITAT FRAGMENTATION FEATURES PROTECTED SPECIES OF FISH IN THE PROTECTED AREA ROSCI0129 NORTH WEST GORJULUI

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**ABSTRACT:** The paper proposes a presentation of protected fish species, habitat fragmentation that causes thereof in the protected area ROSCI0129 North West Gorj.

**KEY WORDS :** species, habitat fragmentation, natural area.

### 1. INTRODUCTION

Habitat fragmentation describes the emergence of discontinuities, producing a population fragmentation and degradation of ecosystems. Habitat fragmentation can be caused by natural processes, which slowly changes the appearance of the physical environment, or by human activity, that leads more quickly to changing environment.

### 2. DESCRIPTION PROTECTED SPECIES OF FISH THE ARIA NATURAL PROTECTED ROSCI0129 NORTH WEST GORJULUI

North West Gorj was declared Site of Community Importance in 2007, by Minister of Environment and Sustainable Development nr. 1964/13.12.2007 regarding the declaration of sites of Community importance as part of the ecological network European Natura 2000 in Romania, published in the Official Gazette of Romania, Part I no. 98 bis / 07.02.2008 with sign ROSCI0129.

Fish species protected site ROSCI0129 North West Gorj are following:

#### **Gobio uranoscopus (Pig sand)**

It is a species of the elongated body, thick cylindrical side uncompressed, thickness

slightly less than the height. Convex dorsal profile is weak, It is horizontal and the ventral. The muzzle is pointed, the eyes look more up. Mustaches are long and bonding lips each have an extension strong enough that resembles a second pair of mustaches. It has a gray-green or brown coloring in red in the dorsal beating, and scales back have black edges. Reproduction takes place in May in June, eggs being deposited on rocks in shallow areas, but with velocity of 1 m / s. Although some rapids meet more individuals, never forms flocks true.

The food consists of small invertebrates bioderm and reofile. He lives in mountain rivers and hill, being localized in shoals and rapids where the water has a speed of 70-115 cm / s and the bottom is stony. (Figure 1)



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Fig.1. Gobio uranoscopus

In the site of North West Gorj, the species was identified on watercourses: Porcu, Șușița Green Șușița Seacă Hărăbor, Sâmbotin, cartridges, Tismana, Jaleș, Bistrita,

Plescioara, Motru Sec and stream Racilor. Species, *Gobio uranoscopus* was recorded with lower-than-Moioaga, except in rivers and streams driving Sec Racilor where the two species were recorded with equal values (Figure 2).

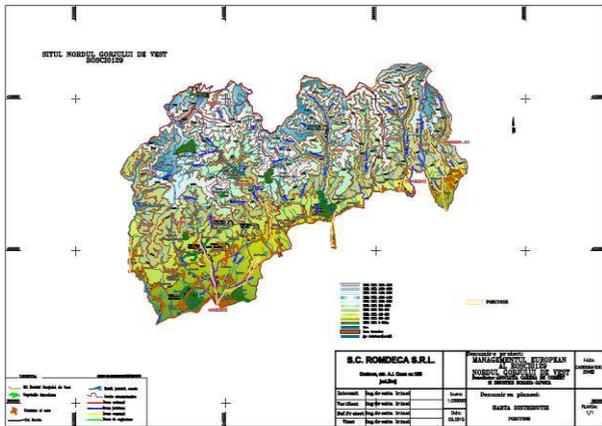


Fig.2. Distribution map -*Gobio uranoscopus*

### **Barbus meridionalis (Eggplant barbell or Moioaga)**

It is a species with elongated body and stiff, with small scales, depriving them last radiated serrated dorsal fin. The back is gray harrier, silvery sides and belly. It is dotted with black spots and rivers and streams live exclusively from mountains and the top of the hill region. Reproduce during the spring-summer. Reproductive era begins in May and ends in August. The eggs are deposited yellow, between 1000-1500, in the rocky shores and sandy substrate. Who prefers a quick course water and rocky bottom. His life takes both rivers stony, Quick and cold and muddy in some streams in May. Show preference for portions especially with a strong current and rocky bottom, by meeting often with pig to see this especially in the downstream area of his habitat. (Figure 3).



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Fig.3. *Barbus meridionalis* (Eggplant barbell or Moioaga)

The site Gorj North West barbel eggplant or Moioaga, It was the most abundant species, compared to the other species studied, It is seen on the rivers: Porcu, Șușița Green, Tismana, Bistrita, Bilta and Motru Sec. (Figure 4)

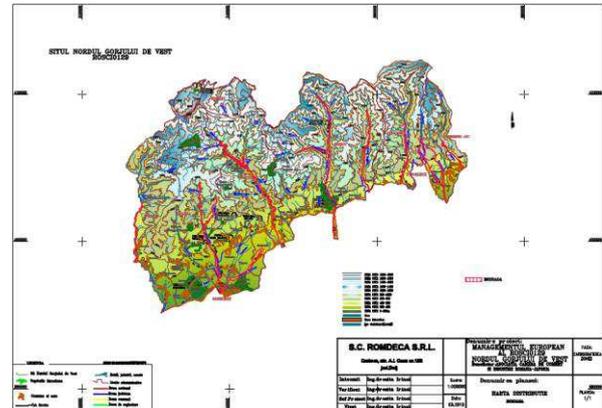


Fig.4. Distribution map -*Barbus meridionalis* (*Mreana vânătă sau Moioaga*)

### **Cottus gobio (Zglăvoaga)**

Species with elongated body and thick, profile slightly convex between the tip of the snout and eyes, then nearly horizontally. Eyes located in the previous half of the body, bulging, look up. The upper half of the eye is often covered by an eyelid pigmented, easily confused with skin. The dorsal part of the body is brown-brown, sometimes spotted marbled reddish beating. Rarely is dark gray. The ventral side is light yellow or white. The rear half of the body stripes 3/4 cross dark, sometimes almost black. These stripes are obvious copies lighter, the dark is difficult to distinguish. (Figure 5).





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Fig.5. *Cottus gobio* (Zglăvoaga)

The site Gorj North West, zglăvocul was recorded with the lowest effective, compared to other species, being found on rivers: Porcu, Șușița Green, Tismana, Bistrita and Motru Sec. (Figure 6)

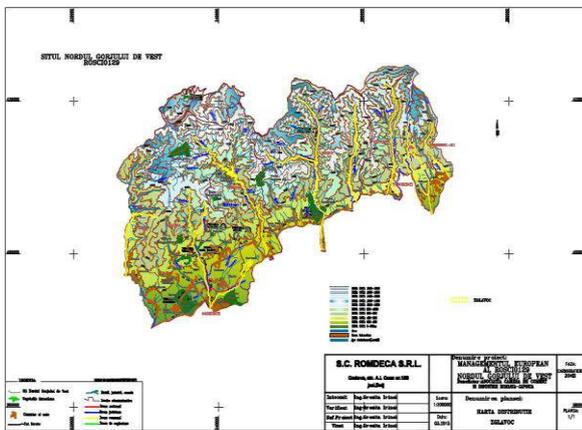


Fig.6. Distribution map *Cottus gobio* (Zglăvoaga)

### 3. CAUSES FRAGMENTATION HABITAT IN THE AREA NATURAL PROTECTED ROSCI0129 GORJULUI NORTH WEST

a) Following the flood peak moments in the evolution of the water flow of a river,

characterized by spectacular growth of extremely fast (of hours) water level and flow default, up to a maximum, followed by a rapid decrease in water, accumulation of sediment formed (gravel, boulders, sand etc).

This buildup of sediment thresholds lead to the formation of natural water courses, „rapids” fragmenting habitats characteristic ichthyofauna, Gorj protected area ROSCI0129 North West. (Figure 7)



foto Iosif Cristian

Figure 7. Natural threshold Tismana River

b) Another cause habitat fragmentation characteristic of the protected area ichthyofauna ROSCI0129 North West Gorj, represented by human activities such as construction of hydraulic works:

- concrete weirs; (Figure 8)

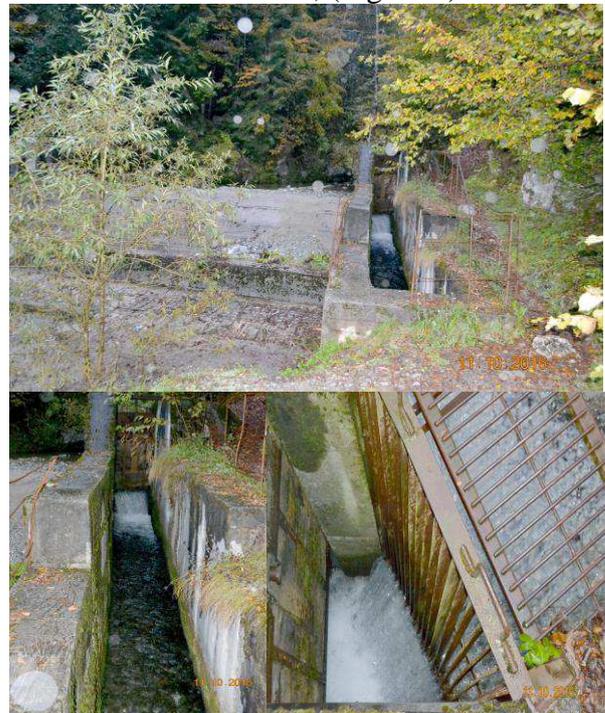


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Fig.8. Concrete weir on the River Green Șușița

- dams; (Fig. 9)



foto Iosif Cristian

Fig.9. Boiling Bistrita River Dam, Gorj

- water catchments; (Figure 10)



foto <https://www.tismana+gorj&imgrc>

Fig.10. River water catchment Tismana

- water pumping stations; (Figure 11)

#### 4. CONCLUSION

1. In the protected area ROSCI0129 North West Gorj, there are fish species protected by OUG 57/2007
2. Habitat fragmentation leads to diminishing population of fish species.
3. Habitat fragmentation can be natural and anthropogenic, the latter having strong consequences on fish species, potentially leading to their extinction.
4. Construction of buildings ameliorative with hydro opinion Natura 2000 Site Administration Gorj North West.
5. Keeping close to the natural conditions or natural in certain sectors river.
6. Waste management by avoiding throwing household waste near water courses.
7. Prohibiting poaching and use of such species as bait.



foto:<https://www.google.ro/statii+de+pompare+apa+gorj&imgdii>

Fig,11. Capture and pumping station Izvarnei

- water supply networks,. (Figure 12)



foto Iosif Cristian

Fig.12. Valley water supply network  
Sohodolului,Gorj

8. Mitigating the impacts of dams and existing thresholds, the fish species by building fish ladders functional or bay-pass channel at each dam. It is important that the water depth inside the fish ladder to be at least 20 centimeters.
- Protected species can not pass over an obstacle of 18-20 centimeters high, therefore it is proposed that within the fish ladder rungs to be placed so as to not form an obstacle to the full width scale, more than 18 centimeters;
9. Ban the building of new obstacles, 18-20 centimeters higher in fish species migration path - rapids, water reservoirs. Avoid building new barriers to migration of fish species.
- Where such an objective requires that the basic necessities, it is mandatory to be fitted in the phase of construction with bay-pass channels and / or functional fish scale, to

ensure species migration upstream and downstream. These works will be endorsed mandatory early-phase project by the Custodian Basin Administration and protected natural area;

10. Prohibiting the mineral aggregates or any interventions in the riverbed of rivers site. When a river is conducted in such works suspensions in water clogs the gills of fish meal, leading to death by suffocation. May be exempted from the rule, the interventions approved by the administration and custodian basin area, they may target facilities or other flood protection works of local or national interest;

11. Prohibition works to river courses, like cuttings banks, diversion of river beds and the like. Should not be building houses or other personal interest in the immediate objectives rivers / streams. When such works are necessary, benefiting opinion Administration and Custodian basin area, will be made taking into account the period of prohibition, pre-development and migration of fish species for which the area was designated a site of Community importance. Subsequently, immediately after completion of such works, it must restore portions of the river / creek upstream and downstream of undeveloped work through rehabilitation.

12. It will prohibit cutting trees on the banks of rivers / river - except for invasive species, for example acacia. It is necessary planting trees - alder, willow, poplar and others near rivers / streams to provide shading - minimum 50% gloss water

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