



THE FISH COMPOSITION AND IMPORTANCE IN THE DRINOS RIVER ECOSYSTEM

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SYNOPSIS

Key words:

Drinos River,
fish's distribution.

In the period of 21st-22nd August 2009, was conducted a field survey on River Drinos. Out of that data on the distribution of fishes was gathered.

Based on quantitative data there is good population of barbell and chub, while the gobio and pelasgus are appeared in a very limited number of individuals. The population of European eel is in good condition at the site 1 and less abundant in the site 2. From the species distribution *Alburnoides bipunctatus*, *Barbus*, *Squalius cephalus* and *Pachychilon pictum* were the most abundant species. It is worth to mention that there is a rapid increase in population of *Pachychilon pictum*, while the loach fishes (*Cobitis taenia*) is moderately present in Drinos system.

INTRODUCTION

Due to its zoogeographic location, Albania is a country highly rich in biodiversity of freshwater fish, with 213 species. Albania is well known for its rich and complex hydrographic network composed of rivers, lakes, reservoirs, coastal lagoons and seas. The area of inland waters is divided as follows: natural lakes 400 km²; artificial lakes (electricity production) 70 km²; artificial reservoirs (irrigation) 40 km²; wetlands and coastal lagoons 150 km² and rivers.

River Drinos runs in Albanian territory in a principal direction from southeast to northwest. The climatology of the catchment is the Mediterranean one with, nevertheless, significant differences within the catchment. According to the Albanian climatologically classification the upper part of the river flows in the Mediterranean hilly southeastern zone while the middle part of the river flows in the Mediterranean hilly southwestern zone and the lower part of the river flows in the central plain Mediterranean zone. The main characteristics of this climate are the balmy humid winters and the hot dry summers. There are two main factors that influence the

considerable differences in the climatology of these areas: a) the closeness to the sea and b) the elevation over the sea level.

In the recent years there are intensive interventions in infrastructure and water energy sources of Albania. So, there are very few rivers left without intervention and the concern on fishes is constantly growing. The Mediterranean freshwater consists of numerous endemic species with a restricted area of distribution (Crivelli & Maitland, 1995). Based on their distribution, especially that of cyprinids, the Mediterranean catchments may be divided into twelve ichthyological districts (Bianco et al., 2005). The district that includes Albania is one of Europe's least studied and probably least known in respect of fish distribution, taxonomy and evolutionary relationships.

There are very few data on rivers fishery of Albania (Crivelli & Shumka, 2007) and what is related to Vjosa Drinos system there are several important zoogeographical and ecological fish particularities.

MATERIAL AND METHODS

In the period of 21st-22nd August 2009, a sampling expedition of two locations (one location the bridges site and the second one 3 km in direction of Gjirokastra) of River Drinos was conducted (Figure 1). For catching fish, portable engine or battery electro-fishing gear was used. Fish were identified by comparing them with published descriptions (Kottelat & Freyhof, 2007), and using the provisional keys in ECONOMIDIS & NALBANT (1996) and ECONOMIDIS (2005). Small pieces of fin tissue were preserved in 96% ethanol for DNA analysis, while voucher specimens were labeled, preserved in 5% formaldehyde and deposited in the Laboratory of Zoology, Agriculture University of Tirana.

RESULTS AND DISCUSSION

There are several main, contemporarily independent, river and lake systems in Albania. Listed from north to south they are the Ohrid-Drin-Shkodra system (including River Buna), rivers Mat, Ishëm, Erzen, Shkumbin, Seman (with its two large tributaries, the Devoll and Osum) and Vjosë (River Aoos in Greece), the area around Butrint Lagoon (rivers Bistrice and Pavllo) and Lake Prespa (connected underground with Lake Ohrid (Economidis, 2005; Shumka et al., 2008), all of which drain eventually into the Adriatic Sea.

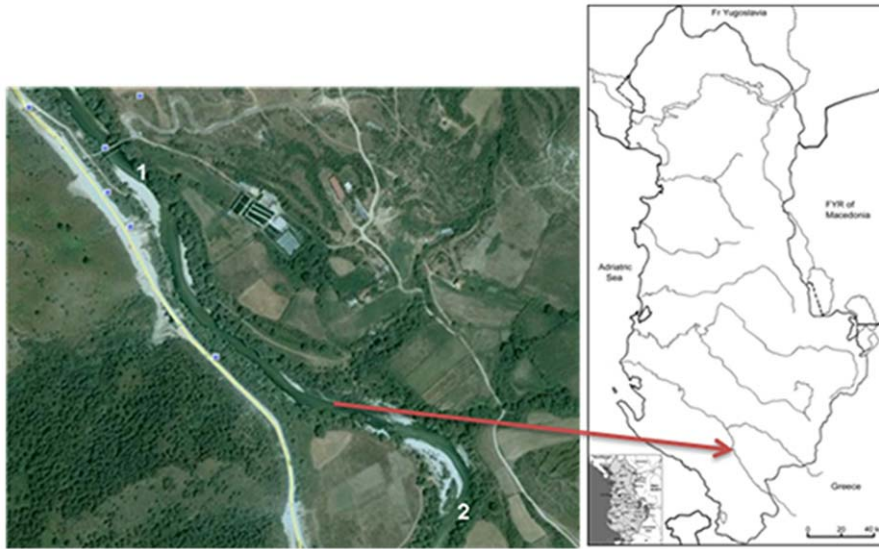


Figure 1: Site location of the sampling area in Drinos River.

(According to: Google Earth Ph.G. Albania)

There are also other short rivers flowing directly into the Adriatic Sea. Only a very small area in the northernmost part of Albania (in the mountains Bjeshkët e Namuna), belongs to the Danube basin.

During our field survey we identified the following fish composition:

THE QUALITATIVE COMPOSITION:

Fam. Cyprinidae

Alburnoides bipunctatus (Bloch, 1878)

Pelagius sp.

Barbus prespensis (Karaman, 1924)

Squalius cephalus (Linnaeus, 1758)

Chodrostoma nasus

Pachychilon pictum (Heckel & Kner, 1858)

Fam. Cobitidae

Cobitis taenia (Linnaeus, 1758)

Fam. Anguillidae

Anguilla anguilla (Linnaeus, 1758)

Based on quantitative data there is good population of barbell and chub, while the gobio and pelagius are appeared in a very limited number of individuals. The

population of European eel is in good condition at the site 1 and less abundant in the site 2. Based on the population size and density we recommend application of the Integrated River Basin Management (IRBM) plan in order to secure the species life and continuity. From the species distribution *Alburnoides bipunctatus*, *Barbus*, *Squalius cephalus* and *Pachychilon pictum* (Fig.2) were the most abundant species (Table 1). It is worth to mention that there is a rapid increase in population of *Pachychilon pictum*, while the loach fishes (*Cobitis taenia*) is moderately present in Drinos system.

Table 1: List of identified fish species in Drinos River.

No	Scientific name	Individuals per 100 m ² in Site 1 (Bridges)	Individuals per 100 m ² in Site 2
1	<i>Alburnoides bipunctatus</i> (Bloch, 1878)	36	12
2	<i>Pelagius</i> sp.	3	-
3	<i>Barbus</i> sp. (Karaman, 1924)	39	32
4	<i>Squalius cephalus</i> (Linnaeus, 1758)	44	35
5	<i>Chondrostoma nasus</i>		
6	<i>Pachychilon pictum</i> (Heckel & Kner, 1858)	49	33
7	<i>Cobitis taenia</i> (Linnaeus, 1758)	7	2
8	<i>Anguilla anguilla</i> (Linnaeus, 1758)	6	3



Figure 2: *Pachychilon pictum* and *Squalius cephalus* (Drinos River).

(Photo: Shumka, S.)

CONCLUSIONS

Based on quantitative data there is good population of barbell and chub, while the gobio and pelagius are appeared in a very moderated number of individuals. The population of European eel is in good condition at the site 1 and less abundant

in the site 2. Based on the population size and density we recommend application of the IRBM plan in order to secure the species life and continuity.

The feeding and habitat sites of the fishes are less affected, while the surrounding zone is sufficient for the population support, based on our survey.

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