

## HOW FAR IS THE CURRENT STATUS OF THE TRANSBOUNDARY SHKODRA/SCADAR LAKE FROM THE IRBM REQUIREMENTS

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An important aim of the DRIMON project<sup>1</sup> ([www.drimon.no](http://www.drimon.no)) is to contribute towards an increased knowledge base and dialogue between stakeholders for the transboundary management of water resources in two Balkan lakes – the Macro Prespa and the Shkodra. In this paper we are trying to find out what is the gap between the current status of the lake, policy and Integrated River Basin Management requirements.

Lake Shkodra is the largest lake on the Balkan Peninsula in terms of water surface. The drainage area of the lake is about 5,500 km<sup>2</sup> (4,470 km<sup>2</sup> in Montenegro and 1,030 km<sup>2</sup> in Albania). The lake area varies between 353 km<sup>2</sup> in dry periods and 500 km<sup>2</sup> in wet periods (at maximum level, 335 km<sup>2</sup> is in Montenegro and 165 km<sup>2</sup> in Albania). The lake volume varies between 1.7 km<sup>3</sup> in dry periods to 4.0 km<sup>3</sup> during wet periods. The distance between the mouth of the Crnojevic River (northwestern lake edge) and the lake's outlet (Buna-Bojana River) is 44 km (maximum length); its greatest width is 13 km.

In this paper we are considering the fishery component as “field” where policy, practices and trends of human impacts are perfectly reflected. Lake Shkodra's biodiversity has developed in a unique physical environment where geology, geomorphology, hydrology and climate provide a wide variety of habitats. Total biodiversity is high (species-area relationship = 0.875) and the region is considered to be a biogenetic reserve of European importance. In reality, currently it faces with real threats and challenges.

From a zoogeographic perspective, the Shkodra Lake region is located in a zone where two major zoogeographic areas meet: the Palaearctic region (Europe, Asia, the Mediterranean and North Africa) and the Palaetropic region (Africa). Their linkage and influences can be seen among bird fauna, with incidences of African species (e.g. African cuckoo, African black heron, flamingo) and winter migratory species of West Siberia (ducks, geese). During the last glacial period Lake Shkodra represented a refuge for several species occurring at that time. As a result, today some relict and endemic animal and plant species are met in the area. After the ice age, species such as the turtledove, the Dauric swallow, Syrian woodpecker and Spanish sparrow have come to the region as they expanded their distribution area.

Increases in both agriculture, industry and tourism development is regarded as positive by locals, as these sectors provide employment and more income to the region. However, development in these sectors is also accompanied by various negative impacts on the catchment's environment, including:

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- increased demand for irrigation water and water for tourism industry, which may contribute to the observed fluctuations of the water level of the lake;
- inappropriate use of land resources especially close to the lake shores for construction of hotels and restaurants, and conversion of shore areas into beaches;
- pollution from untreated sewage and waste water, seepage from solid waste sites;
- cultivation of land close to rivers and lake shores with no vegetation zones to reduce particle, nutrient and pesticide runoff;
- pollution from farm machinery and pesticide spray equipment that are rinsed directly in river or lake waters;
- deforestation in the catchment's areas etc.

Following the integrated analyses and based on statistical approaches (use of STATA 10) we are providing a picture of the water quality and environment re affected by regional trends and status of overall economy.

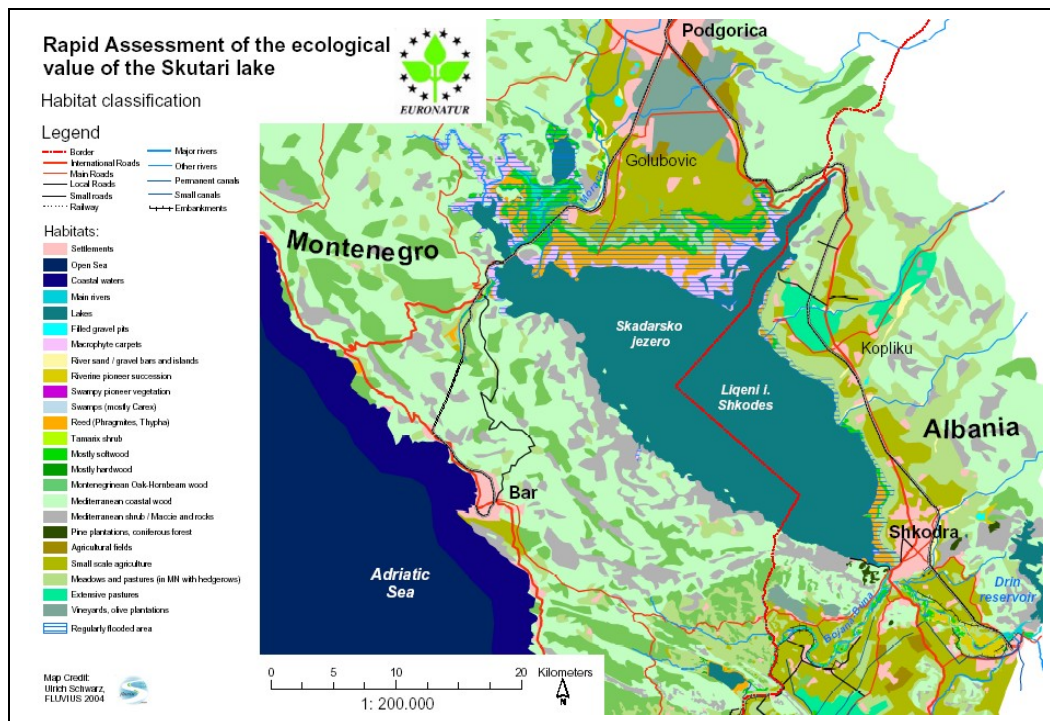


Fig. 1. Transboundary Shkoder/Scadar Lake habitats. (Source. Euronatur)

The specific case study will be focused on Fishery and policy; how can be promoted the sustainable fishery when transboundary practices and policy are conflicting that?

Lake Shkoder is generally characterised by a high biodiversity and especially a high variety of fish fauna, making this an important lake for the Balkan. The high biodiversity that characterises the lake is the result of the existence of a good communication with the sea, and of an extensive network of rivers and streams, communicating with the lake. Its ichthyofauna includes highland coldwater fish species, warm freshwater fish species and

several marine species. From ichthyologic studies carried out by both states it appears that the lake has 60 fish species belonging to 17 families (see Annex XIII. The relatively high number of endemic species (15 species according to Maric, 1995) makes the lake significant on regional level (i.e. North Mediterranean). For a relatively warm lake, the number of fish species is considered great. About 10 species are commercially exploited (e.g. carp, bleak and eel). Two fish families are especially important: cyprinids (most abundant in species) and salmonid fish (which are much rarer in the lake due to their specific requirements).

In order to achieve transboundary co-operation it is an advantage to have a set of commonly agreed principles. The EU Water Framework Directive should be useful in this context, and designating the Shkodra area as a pilot basin for implementation of the directive in the two countries is an idea that the DRIMON Partners wish to pursue.

**Key words:** Lake Shkodra/Scadar, Sustainable fishery, Water Framework Directive, Biodiversity, water basin