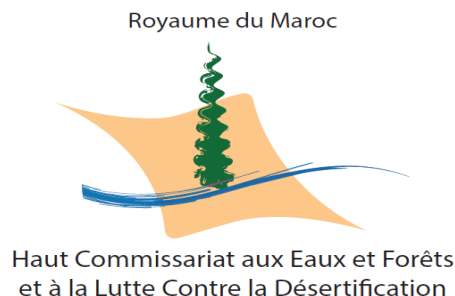


Protecting Stenje Wetland – The Heart of Prespa Lake

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The Prespa Lake comprises of two freshwater lakes in southeast Europe, shared by Albania, Greece, and North Macedonia. Of the total surface area, 176.3 km² (68.07 sq mi) belongs to North Macedonia, 46.3 km² (17.88 sq mi) to Albania and 36.4 km² (14.05 sq mi) to Greece. They are the highest tectonic lakes in the Balkans, standing at an elevation of 853 m (2,798 ft).

The Great Prespa Lake is divided between Albania, Greece and North Macedonia. The Small Prespa Lake is shared only between Greece (138 km² (53.28 sq mi) drainage area; 42.5 km² (16.41 sq mi) surface area) and Albania (51 km² (19.69 sq mi) drainage area; 4.3 km² (1.66 sq mi) surface area).

The area contains three National Parks located in Albania (Prespa National Park), Greece, and North Macedonia respectively. The largest town in the Prespa Lakes region is Resen in North Macedonia. In 2014, the Ohrid-Prespa Transboundary Reserve between Albania and North Macedonia was added to UNESCO's World Network of Biosphere Reserves.



Geology of Prespa Lake

- On the Macedonian part of the Great Prespa Lake, the main tributaries with which water is fed are the rivers Istocka, Pretorska, Brajcinska and Golema Reka, which passes through the city of Resen. The waters of Lake Prespa run through Lake Ohrid Lake, as a result of the fact that Lake Prespa is 158 meters higher than the Ohrid Lake.
- There are two islands in the Great Prespa Lake: Golem Grad (Big City) or St. Peter and St Paul, or Mal Grad (Small City). Golem Grad is considered a strict natural reserve due to its specific geomorphological characteristics, its characteristic flora and fauna and its historical past. The island Golem Grad is 750 meters long and 450 meters wide, with the highest part 50 meters above the lake.
- Island St. Paul is smaller - 300 meters long and 150 meters wide with 25-30 m highest peak of the lake. Archaeological excavations are conducted every year in the Golem Grad, there are archeological finds from the early Christian period and a basilica from the Slavic period. The island is uninhabited.



Climatic and hydrographic characteristics

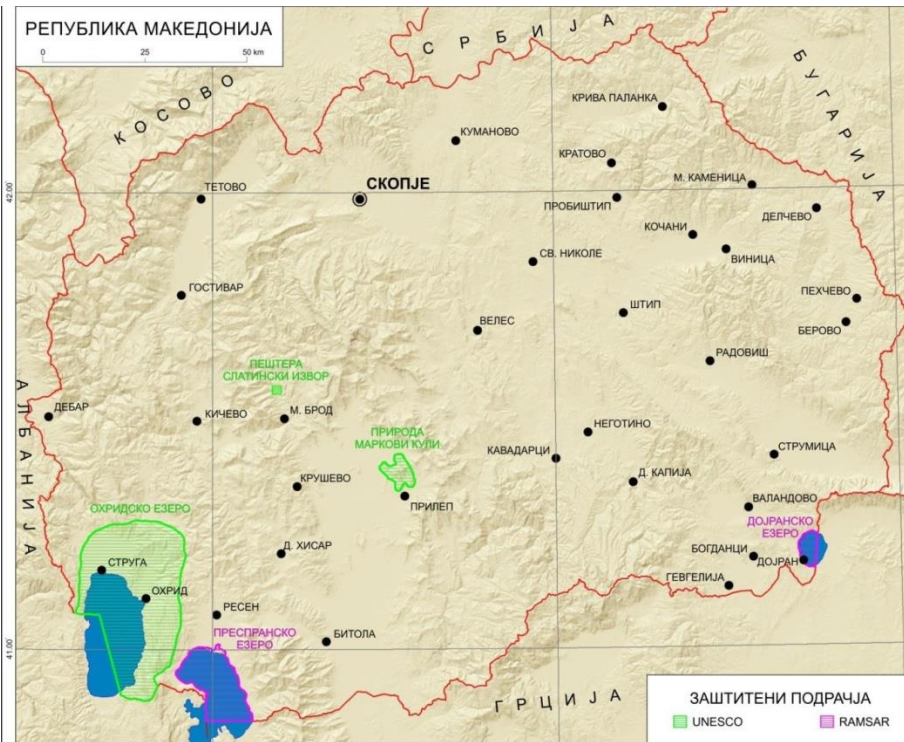
- The geographical position, altitude, high mountains, the presence of naturally accumulated water in the lake, etc., makes the climate in the valley specific. The northern part of the valley has a continental climate with cold winters, and the south is influenced by the breakthrough of the Mediterranean climate with mild winters. The lake is / was the catalyst of the climate in the valley. The hydrography of the valley is made by: groundwater, springs, natural watercourses, man-made water bodies and the natural accumulation of the lake.

Natural values

- Prespa Lake was declared a natural monument in 1977, and since 1995 it has been listed among the most important sites in Europe. The Prespa valley is located between the two National Parks Pelister and Galicica, in fact, it is an integral part of one and the other National Park. Galicica National Park is proclaimed National Park in 1958, in order to protect its natural beauty and diverse flora and fauna.
- The park is located on the mountain massif between the Great Prespa Lake in the east and Ohrid Lake in the west and covers 22,750 ha from the Galicica Mountain with a rich wealth of relic and endemic flora species, a classical site of 20 species of higher plants, of which 12 are local endemic, and there are 26 endemic fauna species. The Macedonian National Park Galicica and the Albanian National Park Prespa are divided by the international border between N. Macedonia and Albania.
- At 12,500 ha, the National Park Pelister is located east of the Great Prespa Lake on the Baba Mountain. The Natural Reserve Ezerani covers the northern coast of Lake Prespa at 855 m above sea level. The protected area covers 2080 hectares. In 1995, it was designated a Ramsar site, and in 1996 it was declared a strictly protected reserve. Almost all bird species living in Prespa Lake build nests, feed and seek shelters here. There are about 200 species of birds, of which 104 species are aquatic. 62 bird species are listed on protected species in accordance with the Bern Convention, while three of them are on the European Red List of World Endangered Species. The scope of the economic complex for the commercial complex is located at an altitude of 870-890 m and is located outside the protected areas.

Ramsar sites

The National Ramsar Committee was established in 1994, according to the requirements of the Ramsar Convention, comprising 7 members, representatives from ministries, scientific institutions and the non-governmental sector, and has so far held over 50 sessions. In accordance with the obligations of the Convention for the Protection of Wetlands with International Importance for the Protection of Waterfowl (Ramsar, 1971) from the Republic of Macedonia, the Ramsar List includes two protected areas: the Prespa Lake (1995) and Dojran Lake (2007).



World Heritage Areas and Ramsar Areas in Northern Macedonia

UNESCO World Heritage List

- UNESCO in 2014 inaugurated the Ohrid-Prespa Transboundary Biosphere Reserve marking that its' landscape is a balanced combination of water bodies, and surrounding mountains bordered by flat areas on its external boundaries. With an area of 446,244 hectares and a population of about 455,000, it includes part of Lake Ohrid and its surroundings in Republic of North Macedonia, which are inscribed on the World Heritage List, as well as part of Lake Ohrid in Albania. It accommodates inhabitants living in 23 villages/municipalities in Albania and 6 municipalities in Republic of North Macedonia.
- The entire area of the Transboundary Biosphere Reserve is rich in biodiversity with worldwide rare and endangered species. Due to the historical genesis of the two lakes, numerous endemic species which are unique are present only in these aquatic and surrounding terrestrial ecosystems. National Parks were created in the 1950s with the aim to preserve these values. The Galicica and Pelister National Parks as well as the Prespa National Park are good examples of the conservation function of a Biosphere Reserve, with about 14,000 ha., core zone of the reserve, been kept free from human use.
- The precious core areas of the Ohrid-Prespa TBR are surrounded by a 140,429.27 ha. buffer zone in which the use of natural resources will enhance the conservation goals of the core zone. In the so-called transition zone surrounding the buffer zones, the use of natural resources will be subject to sustainability. Developing a sustainable use of natural resources to the benefit of the local population is the central challenging goal of the entire TBR. As the target region has been populated by humans for over 7,000 years, the old knowledge on the sustainable use of the existing resources will have to be rediscovered and combined with modern tools and measures to improve the livelihood of the inhabitants.

Flora and fauna

- According to the localities of its existence and development of the flora and fauna in the Prespa Valley, we can divide it into: lake, coastal, wetland, valley up to 1000 meters, mountainous and high mountainous.
- Wetland plants are represented almost along the entire length of the northern coast of the Great PE, ie Perovo-Ezereni wetland, Stenje Blato, the northern coast of the Small PE and south of the villages of Trnovo and Drenovo, in the narrow and shallow part of the Small PE. Nowadays, due to the withdrawal of the coastline about 3.5 km in the south, there are no wetlands. The former wetland space is inhabited by so far unknown plant species for this part of the valley.
- The fauna of Prespa Lake is less explored in relation to Ohrid Lake. However, it has been established that it is typically oligotrophic with quite a number of relict and endemic organisms. Only 11 native fish species are known from the lake, but 9 of these are endemic: *Alburnoides prespensis*, *Alburnus belvica*, *Barbus prespensis*, *Chondrostoma prespense*, *Cobitis meridionalis*, *Pelagus prespensis*, *Rutilus prespensis*, *Salmo peristericus* and *Squalius prespensis*. It is poorer with fish than Ohrid Lake. The most common is the belvica-nivichka, white sweet fish longest to 10-15 cm. It has the most in the deep and clear waters in the vicinity of the village of Nivici, after which it received the name Nivica. Salted, strung in strings and dried in the sun, on the market it is called cironka.



The carp is the most high-quality and representative fish in the Prespa Lake. Unfortunately, in 1974, with the use of the wrong aerosol mosquito pesticide, the carp in large quantities was poisoned. It was regenerating for a long time, it was not present in large quantities and individual sizes.

The eel is still present. Until the construction of the dams for HPP Globocica and Spilje, it came from the Sargasso Sea in the Ohrid Lake, and from there through the underground expanses and in the Prespa Lake. And now, those eels that are delivered by plane or other transport in the Ohrid lake, come to the Great Prespa Lake.

In recent years catastrophic condition of the Great Prespa Lake with: reduced water level by 9 meters and volume by 50%, the withdrawn 3.5 km coastline, dried wetlands, small inflow of pure, fresh and oxygen-rich water, large presence and the concentration of sulphates and pesticides, the shallow water, the penetration of the sun's rays to the bottom, the dislocation and the increase in the amount and the space with the presence of various types of algae, the reduced purity of the water, was worrying and hopeless for Prespa valley.

The birdlife is rich in Prespa Lake. Endemic birds are present, as are migratory birds staying in the spring-summer period and migratory birds who are shortly staying in the nearby marsh as a stopping station for rest and nutrition.

Attractive in the waters of Prespa Lake is the white pelican, which catches fish along with the black ravens. In the shallow waters, there are many species of heron, mink, gulls and other birds.

The birdlife, diverse and present in the wetlands, the coast and Ezereni valley, was a special beauty, wealth and pleasure: cormorant, nor, wild duck, pelican, black ravens, various types of sparrows and singing birds, white gull, various species of herons, stork, petite swallow, wild swallow, crows, hummingbirds, sparrows, and others.

Now, most of these bird species are no longer in the area of the northern coast, for example, the stork, the petite swallow, the crow and others.

The plant world is quite rich, both in the lake itself and in the surrounding marshes. On the island of Golem Grad, *Juniperus Foeditissima* is encountered as an endemic plant.



Risks posed by Tourist Development

Zone Stenje

Tourist Development Zone Stenje is located within the boundaries of the National Park Galicica, between Stenje wetland and the shore of Prespa Lake, that is, between the village cemetery with the church "St. Atanas" and the village of Stenje. According to spatial data the area covers an area of 7.92 ha. This zone is mostly located about 850 m asl. Part of the planning scope of the TDZ "Stenje", with an area of 5 ha, belongs to the Protected Belt of the "Stenje wetland" Zone of Strict Protection. Although the scope of the TDZ "Stenje" does not enter the Zone of strict protection - part "Stenje wetland", the impact on the biodiversity of the wetland - reed groups *Phragmites australis* (EUNIS C3.21) can be expected with the construction of TDZ "Stenje". The type and intensity of these influences will largely depend on the type of buildings and the type and intensity of human activities in the urbanized area.



Protection efforts

- The Prespa region is the richest with birds. So far, there are about 293 species out of a total of 323 registered. On the east side of the National Park "Galichica" near Stenje, in Stenje wetland, expert teams of this institution and the Hydrobiological institute, observe the endemic species of flora and fauna.
- The rare species of birds that are endangered in Europe are protected in Prespa, according to Oliver Avramoski, a biologist at the NP "Galichica". The construction of the observatory in Stenje wetland is of great importance for the region from several aspects: physical protection of Stenje wetland is also ensured, as well as assistance for ecological education of the numerous visitors who will visit this place. NP Galicica believes that this region hides bird species that have not been seen so far.
- The first observatory of NP Galicica is also welcomed to the experts from the Hydrobiological Institute, especially for the implementation of the trilateral monitoring project, which simultaneously, synchronized, is implemented on the three sides, N. Macedonia, Albania and Greece.
- Stenje wetland has the status of a strictly protected area for 30 years, but man has also made negative interventions here. Remnants of waste materials that are still there are blunt proof of that.

Eco-boat for better water quality

- As part of a project for the restoration of the eco-system of Prespa Lake, patrols an eco-boat, which has sophisticated equipment for monitoring the water quality, the lake bottom, wildlife and other parameters that help determine the ecological status and changes in the lake. And also a monitoring station in the village of Stenje was built as part of the restoration project, which performs regular monthly monitoring of the water quality in the lake. The monitoring station is equipped with the most modern laboratory for testing physical, chemical parameters, water flow, water temperature, concentration of dissolved oxygen, water transparency. During summer, analyzes are made twice a month, and once throughout rest of the year. An elevated living world is registered in summertime. The water is generally variable mesotrophic, ie the lake is moderately supplied with nutrients, which are a condition for life in the lake, according to Monika Radevska, a chemical engineer at the monitoring station.



Bird observatories at Stenje
Wetland

<https://www.youtube.com/watch?v=9Z40DCzqvHM>

Although the project “Restoring the Ecosystem of Lake Prespa”, implemented by UNDP, in partnership with the Municipality of Resen and the Ministry of Environment and Physical Planning, with funding provided by the Swiss Development Cooperation, intended to support the sustainable development of this vulnerable region brought many benefits for the local people and environment, there is still a lot to be done.

The European Conference of Scientists in the field of wetland ecosystems (SWVS), which was held from April 30 to May 4, 2018 in Ohrid, gathered about 50 experts from the field. In addition to their annual meeting, the scientists unanimously adopted the Declaration on the Protection of Ohrid Lake in which they concluded that Ohrid Lake and its associated Prespa Lake have exceptional value due to the richness of biodiversity and incomparable continuity of development over at least 1.6 million years leading to the creation of a unique environment that allows research on climate and evolution, as well as the creation of many endemic species.



This is enough of reasons why we must not allow for the wetlands - thousands of years old natural water filter with thousands of birds, endemic species, keeper of microclimate – the heart of the lake, to be destroyed by poor management and over construction. We should bear in mind that by reducing the pressures on the ecosystem, it will significantly improve the health and resilience of the lake and its' biodiversity thus improving quality of life in general.



Thank You for Your Attention

