IUCN Conservation Outlook Assessment 2017 **(archived)**
Finalised on 10 November 2017

Please note: this is an archived Conservation Outlook Assessment for Natural and Cultural Heritage of the Ohrid region. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Natural and Cultural Heritage of the Ohrid region

SITE INFORMATION

Country:
North Macedonia
Inscribed in: 1979
Criteria:
(i) (iii) (iv) (vii)

Site description:

Situated on the shores of Lake Ohrid, the town of Ohrid is one of the oldest human settlements in Europe. Built mainly between the 7th and 19th centuries, it has the oldest Slav monastery (St Pantelejmon) and more than 800 Byzantine-style icons dating from the 11th to the end of the 14th century. After those of the Tretiakov Gallery in Moscow, this is considered to be the most important collection of icons in the world © UNESCO

SUMMARY

2017 Conservation Outlook

Significant concern

The natural values of the site have been under pressure from from various factors. Urban and beach developments have evidently modified the natural shore of the Lake Ohrid and urban constructions have been ongoing within the boundaries of Galičica National Park. Tourism is particularly evident during the summer months and creates additional pressures on the property which lacks appropriate visitor management and control measures. The property struggles with effective waste management, including solid waste and wastewater. The wastewater treatment plant has recently been renovated, but major deficiencies in the system due to the plant's low carrying capacity cause leakages of wastewater directly into the lake. Central wastewater collector is not connected to all the settlements in the Ohrid region. Bukovo landfill, located in the property, does not meet the EU standards and poses high risk of contamination of the environment. Generally, only about 30 per cent of population is included in the public service of communal waste collection, thus there are many illegal dumping sites in the property, affecting the health of the ecosystems.
The hydrological balance of the lake water has been disturbed by uncontrolled discharge of the water to Crn Drim river. In the long-term, this could severely affect the lake's ecosystem which has already been under pressure from invasive species. Some native species are considered endangered due to the spread of invasive species. Commercial fishing was re-started in 2012 after a seven-year moratorium, but with the pressure of illegal fishing, especially in Albania, it is to be seen whether fishing is a sustainable option for native species. There is ongoing eutrophication of the lake, especially near the mouths of the inflowing rivers.
The integrity of the property suffers from two thirds of the lake being within the boundaries of the World Heritage Site and one third (Albania) outside of it. Transboundary extension would enable strengthening of protection and help with establishment of a common management approach. The establishment of a buffer zone would also help ensuring the integrity, especially as only about 70

per cent of Galičica National Park is within the property, and Prespa Lake, that forms a common ecosystem with Ohrid Lake, is also excluded. Their inclusion in the buffer zone would strengthen the protection of the site as well.

The existing management institutions suffer from lack of staff and insufficient budget and therefore have little capacity to ensure effective protection of the site's natural values. There are many development projects planned within the property (e.g. Galičica ski centre, Ljubaništa 1 and 2 tourism development projects, a set of beach developments, roads, railway), showing the lack of understanding of the meaning of World Heritage protection and appreciation for natural and cultural values this site possesses. There are good prospects that the protection of the site will be strengthened once the World Heritage Management Plan is refined, adopted and implemented.

Current state and trend of VALUES

High Concern
Trend: Deteriorating

Uncontrolled coastal development along the lake shore negatively affects the lake, its biodiversity, and the landscape.
Invasive species and increasing pollution by organic and inorganic sewage is threating vulnerable aquatic fauna and flora.
Sedimentation near the river mouths causes eutrophication of this oligotrophic lake, changing the lake's flora and fauna.
Aquatic ecosystems have also experienced negative impact due to toxic substances. Both endemic salmonid fish species of the Ohrid Lake have been subject of restocking in the past and a moratorium of fishing created favorable conditions for both species. Nevertheless, fishing has re-started in 2012 and is regulated, while recent studies imply that illegal fishing pertains particularly in Albania, affecting the population of the Ohrid Trout (Salmo letnica). Hydrological issues, i.e. deliberately induced decrease of water level, affect the overall lake ecosystem.
Due to increasing poaching of waterbirds on the Albanian side, as well as several other factors such as alteration of the lake shore, reduction of reed beds, tourism development, there is a negative trend for population of wintering waterbirds (IUCN and ICOMOS, 2012).

Overall THREATS

High Threat

The main threats arise from several factors affecting the site. Coastal development, both with license and illegally constructed buildings, brought along higher human pressure to the property. This goes in line with increased amount of wastewater and solid waste, both of which are inadequately collected and treated. Thus wastewater treatment plant and communal waste management are another significant problem. Hydrological balance of the lake has been interrupted by mismanagement, which might affect the health of the ecosystem in the long-term. Invasive species seem to pose a serious problem and endanger native species. In terms of potential threats on World Heritage values, there are several planned projects which might affect the state of the property and its values. Galičica ski centre with planned artificial snow making might affect the hydrological balance of the Galičica mountain and potentially the lake itself, tourism development infrastructure and beach development would modify the coast and bring along more tourism pressure and potential pollution.

Overall PROTECTION and MANAGEMENT

Some Concern

The main institutions responsible for nature conservation in the site are the Public Institution of Galičica National Park and the Hydrobiological Institute in Ohrid. However, both institutions are extremely underfinanced and thus lack adequate resources for appropriate protection and monitoring of natural assets in the property. Fishing is allowed in the lake and it is yet to be seen whether that is a sustainable option. Logging for firewood is heavily exploited in Galičica National Park, as the main source of income for the national park.
Cooperation of authorities in management of combined natural and cultural elements in the property has been improving, although only on strategic level so far. 21 members of the newly established Commission for Management of the Natural and Cultural Heritage of the Ohrid Region is supposed to have the first meeting in June 2017. Draft Management Plan for the property, tackling both natural and cultural heritage, was prepared in 2010 and revised in 2015. However, the Management Plan supports diverse development projects in the property and reads more like a regional development plan than a World Heritage Site management plan.

Legal framework is in place, but its enforcement seems to be weak, e.g. uncontrolled urban coastal development continues to be a problem. Management effectiveness of the property is concerning due to lack of financial and human resources, as well as relatively poor enforcement of the regulations. Planned major tourism development projects (such as beach development projects, Ljubaništa 1 and 2, Galičica ski centre) show lack of vision about the protection and promotion of World Heritage values, as well as sustainable development for Ohrid region. There is no visitor management plan for the property.

FULL ASSESSMENT

Description of values

Values

World Heritage values

► A unique lake of tectonic origin supporting high diversity of endemic and relict freshwater species

Criterion:(vii)

The Ohrid Lake is classified as a mountainous clear water lake of tectonic origin. It is a deep and ancient lake that has existed continuously for approximately two to three million years, enabling uninterrupted biological activity which resulted with numerous endemic and relict freshwater species of flora and fauna. Overall, the lake's oligotrophic waters contain over 200 endemic species (World Heritage Committee, 2015). The lake's fish fauna includes 17 native species, of which 10 are endemic (two of which belongs to Salmonidae family). The benthic fauna of Lake Ohrid is characterized by a high degree of richness and diversity of archaic, endemic and relic forms that originate from Tertiary period. The rounded sponge Ochridospongia rotunda is a famous endemorelict form that is found only in Lake Ohrid. The highest diversity and the highest percentage of endemism are present in class Gastropoda; about 86% of the 50 known species of gastropods are endemic. Other classes with high degree of endemism include Tricladida (80.5%), Oligochaeta (47.2%), Hirunidea (52.4%), Ostracoda (71.4%), Amphipoda (60%), and Isopoda (75%). Endemism is present also in the microalgae species. About 90 species of the 550 species of diatoms are rare, Tertiary relict, or endemic species. 146 endemic species have been identified. Endemism among these species is 90% of snails, 88% of parasitic infusoria, 71% of flat worms, 66% of small crustaceans and 60% of fish (MEPSO, 2012). Ten of the lake's 17 fish species are endemic. They include the salmonid

Ohrid Trout (Salmo letnica) (VU – Vulnerable according to the IUCN Red List of Threatened Species) and Belvica (Acantolingua ohridana) (VU) (MEPSO, 2012).

► Important wintering site of Palaearctic waterbirds

Criterion:(vii)

The Lake Ohrid region harbours a rich birdlife (World Heritage Committee, 2015) and is considered to be an important wintering site for Palaearctic waterbirds (Fremuth et al., 2000). In total, 89 species of waterbirds have been recorded on the lake and its surroundings (Velevski et al., 2010). The highest number of individual wintering waterbirds on the lake (in FYR of Macedonia) was observed in 1989, with about 79,000 individuals (Wetlands International, 2006). The avifauna of the lake includes, among others, Coot (Fulica atra), Great Cormorant (Phalacrocorax carbo sinensis), Small Cormorant (Phalacrocorax pygmaeus), Mute Swan (Cygnus olor), Black-necked Grebe (Podiceps nigricollis), Little Grebe (Tachybaptus ruficollis), Red-crested Pochard (Netta rufina), Common Pochard (Aythya ferina), White-eyed Duck (Aythya ferruginea), Tufted Duck (Aythya fuligula) and Corncrake (Crex crex) (MEPSO, 2012).

Other important biodiversity values

► Faunal species richness, including endemism

Mount Galičica has one of the highest faunal species abundance and presence of endemism both at national and European levels. In an area of less than 25,000 ha, there are more than 3,200 species of fauna (including birds). 72 species are considered locally endemic, while 103 taxons are considered endemic at national or Balkan level (Nacionalen Park Galičica, 2010). With regards to mammals, 27 species inhabit the park, 23 of which are listed Annex II and/or Annex IV of the EU Habitats Directive. 12 mammal species are categorized as Near Threatened or Vulnerable according to the IUCN Red List of Species. From the 27 mammal species, 17 belong to the bat group (Rhinolophidae, Vespertilionidae, and Mollossidae). Six species are Balkan endemics, including Balkan Mole (Talpa stnakovici), Balkan Chamois (Rupicapra rupicapra balcanica), Balkan Lynx (Lynx lynx martinoi), Balkan

Snow Vole (Dinaromys bogdanovi), Felten's Vole (Microtus felteni), and Macedonian Mouse (Mus macedonicus). Brown Bear (Ursus arctos), Wolf (Canis lupus), Wild Cat (Felis silvestris) and Otter (Lutra lutra) are all present in the National Park Galičica (Nacionalen Park Galičica, 2010).

► Diversity of habitats

A high diversity of habitats is found in the World Heritage property, extending from the Ohrid Lake at 650 m a.s.l up to the highest mountain tops of Galičica (Peak Magaro 2254 m a.s.l.), and consisting of aquatic habitats, freshwater springs, wetlands, reed belts, broad leave forests and alpine pastures on karstic soils, rocks, cliffs and caves (Nacionalen Park Galičica, 2010). At Galičica National Park level, there are more than 35 habitat types, and out of rare or endangered habitats in Europe, the park accommodates 10 forest types, 2 shrubby types, 4 grass types and 2 hasmophytic types of vegetation. European importance is also present in 2 aquatic habitat types and 3 habitat types associated with underground geomorphological forms.

► Rare and endemic flora

Mount Galičica contains 1,597 taxons of vascular plants, 143 species of lichens, 435 species of fungi and 117 species of algae, 39 of which are regarded as endemic (Citrus, 2015). It is considered to be one of the floral "hotspots" at European level. 19 taxa of higher plants have the status of Rare (R) species according to the IUCN's Red List of Threatened Plants and they are found in all parts of the mountain, from its lowest parts, all the way to its subalpine strip. These include the following: Ramonda serbica Pančić, Alkanna noneiformis Griseb., Acer heldreichii Orph. ex Boiss., Ajuga piskoi Degen & Bald., Cynoglottis barrelieri (All.) Vur. & Tan subsp. serpentinicola (Rech. f.) Vur. & Tan, Astragalus baldaccii Degen, Centaurea soskae Hayek ex Košanin, Erodium guicciardii Heldr. ex Boiss., Eryngium serbicum Pančić, Fritillaria gussichiae (Degen & Dörfl.) Rix, Jurinea taygetea Halácsy, Malus florentina (Zuccagni) C.K.Schneid, Melampyrum heracleoticum Boiss. & Orph., Oxytropis purpurea (Baldacci) Markgraf, Pinus heldreichii H. Christ var. leucodermis (Ant.) Markgraf ex Fitschen, Pinus peuce Griseb., Rindera graeca (A. DC.) Boiss. & Heldr., Solenanthus scardicus Bornm. и Viola eximia Form (Nacionalen Park Galičica, 2010). Floral research conducted on Mount Galičica throughout a longer period of time showed that the mountain, i.e.

Galičica National Park, is the only habitat to many plant taxons, belonging to various floral elements from various parts of the Balkan Peninsula and from Europe. These have, so far, not been found in other parts of the former Yugoslav Republic of Macedonia, and their presence on Mount Galičica speaks of the ecological capacity of this mountain as well. Such is the case with the following taxons: Alyssum subvirescens Form., Astragalus gremlii Burnat, Celtis glabrata Steven ex Planchon, Cephalaria setulifera Boiss. & Heldr., Coronilla vaginalis Lam., Crepis vesicaria L., Cytisus procumbens (W.K.) Spr., Damasonium bourgaei Cass., Euphorbia characias L. subsp. wulfenii (Hoppe ex W. Koch) A.R. Smith var. sibthorpii (Boiss.) E.S.Boiss, Gnaphalium hoppeanum Koch., Haplophyllum patavinum (L.) Don f., Hesperis rechingeri Dvoŕàk, Jurinea taygetea Halácsy, Lilium chalcedonicum L., Marubium anisodon C. Koch, Prunus prostrata Labill., Sedum laconicum Boiss., Sibbaldia parviflora Willd., Silene chromodonta Boiss. et Reuter var. vandasii Neum, Thymus perinicus (Hal.) Stoj., Stef. & Kit., and Trifolium sebastiani (Nacionalen Park Galičica, 2010).

Assessment information

Threats

Current Threats

High Threat

The main threats arise from several factors affecting the site. Coastal development, both with license and illegally constructed buildings, brought along higher human pressure to the property. This goes in line with increased amount of wastewater and solid waste, both of which are inadequately collected and treated. Thus wastewater treatment plant and communal waste management are another significant problem. Hydrological balance of the lake has been interrupted by mismanagement, which might affect the health of the ecosystem in the long-term. Invasive species seem to pose a serious problem and endanger native species.

► Other

Very High Threat
Inside site, localised(<5%)

During the construction of the Bay of Bones museum in Gradište toxic impregnation was used for wooden beams. These pollutants are highly toxic for fish and affect the fish spawning in a localised area.

► Invasive Non-Native/ Alien Species

High Threat
Inside site, throughout(>50%)
Outside site

Invasive fish species such as Rainbow Trout (Oncorhynchus mykiss), Silver Carp (Hypophthalmichthys molitrix), Stone Moroko (Pseudorasbora parva), and Bitterling (Rhodeus amarus) are competitors of the native fish population (GIZ, 2016). The Rainbow Trout is of particular concern, since it might displace the native, and also endemic, Ohrid Trout. Several endemic species are considered endangered due to the presence of invasive species (UNESCO, ICOMOS and IUCN, 2017). Also, invasive species are one of the reasons for the observed changes in the population of endemic species, especially relating to the move of the endemics away from the mouths of the rivers deeper into the lake (UNESCO, ICOMOS and IUCN, 2017).

► Fishing / Harvesting Aquatic Resources

Low Threat
Inside site, throughout(>50%)
Outside site

There was a 7-year moratorium on fishing starting in 2004, as to allow recovery of the commercially harvested fish population (e.g. Ohrid Trout (Salmo letnica)). Fishing is currently legally allowed in the property and concession was provided to a private company, with fishing quota determined by regulations in 2012. Further monitoring and control measures are required to determine if the fishing practices can be considered as sustainable. Also, illegal fishing is occurring on the Albanian side of the Lake Ohrid, affecting the overall fish population of the lake (UNESCO, ICOMOS and IUCN, 2017).

► Housing/ Urban Areas

High Threat
Inside site, widespread(15-50%)

More construction along the shore of the lake means more disturbance of littoral habitats and by this a deterioration of the calm wintering sites for winter water birds. In summer more leisure activities can be observed along the shore line with potentials of negative impact of the shallow parts of the Ohrid Lake.

► Tourism/ visitors/ recreation

High Threat
Inside site, widespread(15-50%)

Organic pollution is endangering the endemic fauna and flora of the lake, which still is characterized as oligotrophic clear water lake (GIZ, 2016). Visitor pressure occurs especially during the summer months and is mainly related to the use of the lake (swimming), and Galičica National Park (hiking), in addition to visiting cultural sites. There is no visitor monitoring system as to allow estimation of visitor numbers, nor there is an active visitor management plan for the property.

► Dams/ Water Management or Use

High Threat
Inside site, throughout(>50%)

Changing water flow patterns from their natural range of variation either deliberately by human action or as a result of other activities (prolonged dry periods) is evident in the property. Of special concern is mismanagement of lake water discharge into Crn Drim river by the national power plants company (ELEM), which resulted with low water level of the lake (UNESCO, ICOMOS and IUCN, 2017). In the long-term, such situation may have critical impacts on the lake ecosystem.

► Household Sewage/ Urban Waste Water, Solid Waste

High Threat
Inside site, widespread(15-50%)

The main wastewater collector was modernized recently, however, there are

problems with it. Not all the settlements in the property are connected to it, thus is operates for about 75-80% of the villages (GIZ, 2016), the pumps of the collector system are not always operating well, its principal tubes are damaged because of low carrying capacity, and surplus sewage water is poured into the lake (UNESCO, ICOMOS and IUCN, 2017). Organic and inorganic wastewater, as well as solid waste, are polluting the lake. Generally, there is a problem with solid waste collection and treatment which is currently not functioning well. Out of two main landfills in the property, Bukovo was characterized as high-level risk landfill, and v. Višni as medium-level risk, according to its general impact. Furthermore, there are many illegal dumping sites in the property.

► Fire/ Fire Suppression

Low Threat
Inside site, scattered(5-15%)

Forest fires occur from time to time in Galičica National Park and alter the forested habitats. The last devastating fire broke out in 2007, destroying much of the Common Juniper (Juniperus communis) stands. The park is experiencing change in the land use which affects more often occurrence of forest fire, i.e. less grazing and more accumulation of biomass in the juniper range (Nacionalen Park Galičica, 2010).

Potential Threats

High Threat

In terms of potential threats on World Heritage values, there are several planned projects which might affect the state of the property and its values. Galičica ski centre with planned artificial snow making might affect the hydrological balance of the Galičica mountain and potentially the lake itself, tourism development infrastructure and beach development would modify the coast and bring along more tourism pressure and potential pollution. On the other hand, large infrastructure project, A2 highway, and railway line Struga-border with Albania, would have minimal impacts on the World Heritage values if implemented properly.

► Tourism/ Recreation Areas

High Threat

Inside site, widespread(15-50%)

Several tourism development projects are planned within the property. One of them relates to Ljubaništa 1 and Ljubaništa 2 hotel and housing complexes close to Sveti Naum. This could severely affect the water quality and the habitat quality of the areas as fish spawning ground. It is intended to place 20% of the Ljubaništa 1 complex in the lake area itself, while the remaining part is planned to be within Galičica National Park (which would require changes in the management zoning of the park) (Citrus, 2015). There are also several planned beach development projects, including beach development in the Ohrid Municipality; Lagadin Beach, Daljan Beach, beach near the Scout Camp (120 m long), beach on the stretch from Studenčišta marsh to the Park Hotel (700 m long), and beach located in Debarca Municipality (State Party of FYR of Macedonia, 2017).

► Shipping Lanes

Low Threat
Inside site, widespread(15-50%)

Noise, disturbance of aquatic fauna and pollution associated with motorboats are factors deteriorating the habitat quality of the lake. Nevertheless, exposure to this kind of threat is limited to summer season only.

► Tourism/ Recreation Areas, Other

Very High Threat
Inside site, scattered(5-15%)

The intention to create a ski centre with the necessary infrastructure could affect directly the biodiversity values of the Galičica National Park and devaluate the habitat quality of the area as a refuge for wildlife and rare endemic plant species. The snow cover throughout the last years has not been sufficient to allow skiing on Galičica in winter. Therefore it is planned that the active skiing season will be extended with artificial snowing. This would affect directly the valuable flora of the area and change the vegetation. Extended skiing seasons are leading to erosion of the vegetation and to irreversible deterioration. Furthermore, creation of artificial snow might affect the hydrological balance of the mountain, and potentially the Ohrid Lake itself due to karstic geomorphology of the terrain (Citrus, 2015). As to allow the ski centre to be constructed, management zoning of the park

would need to be modified, i.e., 496.15 ha would be excluded from the current zone of active management and re-zoned to the zone of sustainable use (Citrus, 2015).

► Roads/ Railroads

High Threat
Inside site, widespread(15-50%)
Outside site

The planned A3 road along the foothills of the Galičica mountain would have a number of impacts in the property. The road would cause the destruction of habitats in the Galičica National Park, e.g. 84 ha of Macedonian Oak (Quercetum trojanae macedonicum), Balkan endemic species listed in Annex I of the EU Habitats Directive, would be lost irreversibly. It would cause further fragmentation and interruption of ecological corridors (Crno Brdo and Zli Dol), and might devaluate the beauty of the composition of the lake and the mountain. These areas close to the lake shore contribute to the landscape diversity of the entire area and the beauty of the landscape. The road is incompatible with the zoning of the park and would require changes in the regulations in order to be constructed (Citrus, 2015).

► Roads/ Railroads

Low Threat
Inside site, scattered(5-15%)

The railway line Struga-border with Albania is part of the pan-European corridor VIII. There are possible impacts on the quality of the lake water in case of incidents and substance run-offs during the construction and operation phases (Public Enterprise for Railway Infrastructure “Macedonian Railways”, 2010). With relevant precautionary measures, such incidents should be avoided.

► Roads/ Railroads

Low Threat
Inside site, scattered(5-15%)

A2 highway is planned in the northern part of the property, from Trebenište to Struga, as part of the pan-European corridor VIII. It passes through agricultural lands and would have minimal impact to the lake if all

precautionary measure are taken and pollution of Sateska river channel avoided (Public Enterprise for State Roads, 2015).

Protection and management

Assessing Protection and Management

► Relationships with local people

Some Concern

According to the Ohrid SOS (2017), public consultations on relevant processes affecting the World Heritage property are largely ineffective. Participatory management of the property should be enhanced through functioning of the recently established Commission for Management of the Natural and Cultural Heritage of the Ohrid Region, as per the Law on Managing the World Cultural and Natural Heritage of the Ohrid Region (Official Gazette of RM No. 75/10). The Commission acts as an advisory body for management of the property and is composed of 21 members, including members of three relevant municipalities and two NGO representatives. In terms of transboundary cooperation, the representativs of the local communities have a seat on the bilateral Ohrid Watershed Committee.

► Legal framework and enforcement

Mostly Effective

The property has several layers of legal protection. The protection of cultural heritage is regulated by the Law on Cultural Heritage Protection (Official Gazette of RM No. 20/04, 115/07), by-laws and the Law declaring the old city core of Ohrid as a cultural heritage of particular importance (Official Gazette of RM No. 47/11). The protection of natural heritage is regulated by the Law on Nature Protection (Official Gazette of RM No. 67/2004, 14/2006 and 84/2007). The following legal instruments are also applicable: the Law on Protection of Lake Ohrid, Lake Prespa and Lake Dojran (Official Gazette of RM No. 45/77) under which Lake Ohrid was proclaimed as a protected area (‘monument of nature’), the Law on Managing the World Cultural and Natural Heritage of the Ohrid Region (Official Gazette of RM No. 75/10), and the Law on Waters (Official Gazette of RM No. 87/08, 06/09, 161/09, 83/10, 51/11,

44/12, 23/13, 163/13, 180/14). The Law on Managing the World Cultural and Natural Heritage of the Ohrid Region is supposed to enable better integration of management of natural and cultural components.

► Enforcement

Some Concern

Enforcement of land use plans seems to be weak. For example, according to the Law on Waters, no construction of permanent buildings is allowed in the coastal belt of the lake in a width larger than 50 metres from the elevation of the highest water level of Lake Ohrid. Nevertheless, there has been intensive coastal development along the shore of the lake, and many houses were constructed illegally.

► Integration into regional and national planning systems

Mostly Effective

According to the draft Management Plan for the World Heritage property 2016-2025, the integration of regional and national planning seems to be appropriate.

► Management system

Some Concern

The property is managed by several institutions: the Ministry of Culture, the Ministry of Environment, the Institute for Protection of Monuments of Culture and Museums in Ohrid, the Natural History Museum Dr Nikola Nezlobinski, Galičica National Park, and the Institute for Hydrobiology in Ohrid. Integrative management of natural and cultural components is supposed to be assured through the functioning of the Commission for Management of the Natural and Cultural Heritage of the Ohrid Region, whose members were appointed in May 2017.

Draft Management Plan for the World Heritage property was prepared in 2010, and further revised in 2015. Nevertheless, UNESCO, ICOMOS and IUCN (2017) noted some concerning issues with the Management Plan that should be tackled during the process of Strategic Environmental Assessment and

before official adoption and implementation of the Plan.

Although this is not a transboundary property, transboundary cooperation has been ongoing between the authorities in FYR of Macedonia and Albania, including the following developments:
signed Agreement between the Council of Ministers of the two countries for the Protection and Sustainable Development of Lake Ohrid and its Watershed (Skopje, 2004), established Bilateral Lake Ohrid Watershed Committee (2005); signed Agreement on the Protection and Sustainable Development of the Prespa Park Area (European Commission, 2014), inclusion of Galičica National Park in the Transboundary Prespa Park in 2000 and 2010, development of Trilateral Strategy and Action Plan for the Prespa Lake Basin (2012-2016), designation of Ohrid-Prespa Transboundary Biosphere Reserve within the UNESCO Man and the Biosphere Programme (2014), and establishment of the Fund for Nature of Prespa-Ohrid (2017).

► Management effectiveness

Some Concern

In terms of management of Galičica National Park (larger part of which is included in the property), UNESCO, ICOMOS and IUCN (2017) noted there are serious problems with management effectiveness of the park due to lack of financial and human resources.

► Implementation of Committee decisions and recommendations

Some Concern

The State Party has been responding to the World Heritage Committee decisions (World Heritage Committee, 2014, World Heritage Committee, 2016). As requested by the World Heritage Committee, the Management Plan for the property was drafted, the reactive monitoring mission invited and organized in 2017, .the Commission for Management of the Natural and Cultural Heritage of the Ohrid Region established, cooperation with Albanian authorities continued within the Upstream Process towards preparation of a transboundary extension. In contrast, several Committee decisions have not been implemented; including an overall Strategic Environmental Assessment and Heritage Impact Assessment assessing the potential cumulative impacts of all planned infrastructure plans and other major projects on the property’s

OUV and a comprehensive action plan for the lakeshore.

▶ Boundaries

Some Concern

The boundary of the property in the south, follow the national border between Albania and former Yugoslav Republic of Macedonia crossing the lake. Considering the lake forms one ecosystem, it would be essential to include the Albanian part of the lake in the World Heritage property and ensure its integrative protection in the World Heritage property and ensure its integrative protection in the long-term.
The site has no buffer zone, which threatens the integrity of the site. Also, the original boundary to the east followed the ridge of mountain Galičcica cutting the national park and the mountainous ecosystem into two parts.

▶ Sustainable finance

Serious Concern

The participating municipalities and the central Government are supposed to bear the financial burden of the operational costs. Investments into the socio-economic sector in order to promote sustainable land use, are lacking. The nature conservation institution in the region, the Galiccica national park is largely lacking financial
support from the Government and depends on the extraction of natural resources from the park,
i.e. logging and sale of wood for firewood (Nacionalen Park Galičica, 2010

▶ Staff training and development

Data Deficient

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▶ Sustainable use

Some Concern

The fisheries sector is controlled through concessions since 2012, with regulated wuota for fish catch. There is no information of the commercial fishing is sustainable, not about the extent of illegal fishing in the FYR of Macedonia, illegal and uncontrolled fishing in Albania affects the population

of the Ohrid trout. Also, there seems to be excessive cutting of wood in Galičica National Park.

► Education and interpretation programs

Some Concern

The National Park Galičcica has opened a visitor centre near the town of Ohrid. Financing of environmental education and interpretation programmes is largely missing (Nacionalen Park Galičica, 2010).

► Tourism and interpretation

Serious Concern

Tourism development at the Ohrid Lake has already a visible tendency to overstretch the thresholds of sustainability. Both the lake and cultural heritage attract visitors who mainly visit the region within a couple of months during the summer season. The lake is the warmest then. Some visitors (mainly foreigners) also visit Galičica National Park, but there is no visitor counting system and no estimates available on the number of tourists. Visitor management plan for the World Heritage property does not exist.
General vision for the region, considering all the planned infrastructure projects, appears to be focused on the development of mass tourism.

► Monitoring

Some Concern

The aquatic ecosystems are monitored by the Hydrobiological Institute in Ohrid, whereas the terrestrial ecosystems of Galičica National Park are monitored by the administration of the park. There are financial restrictions in enabling regular monitoring of biodiversity of both the Lak Ohrid and the national park.

► Research

Some Concern

In spite of the fact that Ohrid has an old university, ecology related research is underrepresented.

Overall assessment of protection and management

Some Concern

The main institutions responsible for nature conservation in the site are the Public Institution of Galičica National Park and the Hydrobiological Institute in Ohrid. However, both institutions are extremely underfinanced and thus lack adequate resources for appropriate protection and monitoring of natural assets in the property. Fishing is allowed in the lake and it is yet to be seen whether that is a sustainable option. Logging for firewood is heavily exploited in Galičica National Park, as the main source of income for the national park.
Cooperation of authorities in management of combined natural and cultural elements in the property has been improving, although only on strategic level so far. 21 members of the newly established Commission for Management of the Natural and Cultural Heritage of the Ohrid Region is supposed to have the first meeting in June 2017. Draft Management Plan for the property, tackling both natural and cultural heritage, was prepared in 2010 and revised in 2015. However, the Management Plan supports diverse development projects in the property and reads more like a regional development plan than a World Heritage Site management plan.
Legal framework is in place, but its enforcement seems to be weak, e.g. uncontrolled urban coastal development continues to be a problem.
Management effectiveness of the property is concerning due to lack of financial and human resources, as well as relatively poor enforcement of the regulations. Planned major tourism development projects (such as beach development projects, Ljubaništa 1 and 2, Galičica ski centre) show lack of vision about the protection and promotion of World Heritage values, as well as sustainable development for Ohrid region. There is no visitor management plan for the property.

▶ Assessment of the effectiveness of protection and management in addressing threats outside the site

Some Concern

Boundary of the property currently does not meet the integrity requirements. Primarily, the transboundary extension is necessary as a first step towards common management and protection of the Lake Ohrid. Buffer zone is completely missing and would be necessary to ensure better protection of

the site.

► **Best practice examples**

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State and trend of values

Assessing the current state and trend of values

World Heritage values

► **A unique lake of tectonic origin supporting high diversity of endemic and relict freshwater species**

High Concern
Trend:Deteriorating

There are different factors that have been affecting the lake and its biodiversity.
Uncontrolled constructions along the lake shore have modified the landscape which now appear as almost unbroken suburbs connected with the town of Ohrid stretching along the eastern shore.

Considering that the property has serious problems with communal waste (Ministry of Environment and Physical Planning and Swedish Environment Protection Agency, 2012) and wastewater collection and treatment (UNESCO, ICOMOS and IUCN, 2017), water pollution is an immediate threat linked to the coastal development. Changes in the nutrient characterisation of the lake are evident near the river mouths of Sateska, Koselska, Velgoška and Čerava. Lake Ohrid is an oligotrophic lake, but eutrophication is most evident near the rivers' mouths (UNESCO, ICOMOS and IUCN, 2017). These are also the areas where moderate to bad status of aquatic flora and invertebrate fauna was diagnosed by GIZ (2016). Benthic invertebrate species and native fish fauna seem to be in stable condition in the pelagic zone (GIZ, 2016). Jordanova et al. (2016) noted that Ohrid Trout (Salmo letnica) "stocks have been consistently decreasing over the last decades, despite annual repopulation efforts from artificially spawned juveniles." Repopulation is managed by the Hydrobiological Institute in Ohrid. Furthermore, fishing of

Ohrid Trout is currently allowed and regulated by quota.

Invasive species are threatening vulnerable native fauna and are considered as one of the reasons for some native species being endangered (UNESCO, ICOMOS and IUCN, 2017).
Aquatic ecosystem has also experienced negative impact due to toxic substances used for impregnation of beams in the Bay of Bones museum (IUCN and ICOMOS, 2012). Sedimentation is evident near Sateska river mouth in the lake decreasing the amount of oxygen and ultimately altering flora and fauna in this part of the lake (UNESCO, ICOMOS and IUCN, 2017). Hydrology of the lake has been affected by uncontrolled discharge of the lake water into Crn Drim river, decreasing the lake water level.

► Important wintering site of Palaearctic waterbirds

High Concern
Trend:Deteriorating

Wetland International (2006) reported as much as 79,000 waterbirds were recorded on the surface of Lake Ohrid in FYR of Macedonia in winter 1989. Fremuth et al. (2000) noted 24,000 waterbirds in 1997, while in 2010 and 2011 only 10,000 and 17,000 individuals were counted, respectively (taken from Velevski et al., 2010). Waterbirds are especially abundant in northern shallower parts of the lake where reed beds are still present. With growing tourism, alteration of the lake shore (beach expansion, destruction of reed), ongoing eutrophication, and poaching (in Albania), population of wintering waterbirds seem to be in decline.

Summary of the Values

► Assessment of the current state and trend of World Heritage values

High Concern

Trend: Deteriorating

Uncontrolled coastal development along the lake shore negatively affects the lake, its biodiversity, and the landscape.
Invasive species and increasing pollution by organic and inorganic sewage is threating vulnerable aquatic fauna and flora.
Sedimentation near the river mouths causes eutrophication of this

oligotrophic lake, changing the lake's flora and fauna.
Aquatic ecosystems have also experienced negative impact due to toxic substances. Both endemic salmonid fish species of the Ohrid Lake have been subject of restocking in the past and a moratorium of fishing created favorable conditions for both species. Nevertheless, fishing has re-started in 2012 and is regulated, while recent studies imply that illegal fishing pertains particularly in Albania, affecting the population of the Ohrid Trout (Salmo letnica). Hydrological issues, i.e. deliberately induced decrease of water level, affect the overall lake ecosystem.
Due to increasing poaching of waterbirds on the Albanian side, as well as several other factors such as alteration of the lake shore, reduction of reed beds, tourism development, there is a negative trend for population of wintering waterbirds (IUCN and ICOMOS, 2012).

► **Assessment of the current state and trend of other important biodiversity values**

Low Concern

Trend: Stable

Other biodiversity values primarily relate to species abundance, endemism and diversity in Galičica National Park. Changes have been occurring throughout years due to modifications in land use; i.e., heavy decline of grazing on pastures accompanied by abandonment of mountain villages and succession. The risk of forest fires is higher and several fires have already devastated parts of the mountains. Galičica hosts diverse habitats and is important refuge of species even at European level (Nacionalen Park Galicica, 2010). The status of species in Galičica National Park seems to be stable, although certain land-use patterns affect changes in the landscape.

Additional information

Benefits

Understanding Benefits

► Water provision (importance for water quantity and quality)

Lake Ohrid is important for water quantity and quality, and it has a strong ability of self-purification. In certain areas it is surrounded by reed beds, as well as Studenčište marsh, which function as natural filters for the lake. The marsh also has the role of regulating the water levels, while the reed regulates coastal erosion.

► Outdoor recreation and tourism, Natural beauty and scenery

Ohrid region is one of the most significant tourism destinations in the country, attractive for its landscape beauty, Galičica National Park's natural values, Lake Ohrid's water quality, and cultural heritage. Recreation is primarily associated with Lake Ohrid (swimming, beach) and the national park (hiking, enjoying the park's natural values).

► History and tradition

Ohrid town is one of the oldest settlements in Europe, being built from the 7th until 19th century. Its architecture represents the most complete ensemble of ancient urban architecture in this part of Europe, while the town hosts the oldest Slav monastery and more than 800 Byzantine icons (World Heritage Committee, 2015). Archaeological remains are scattered throughout the Ohrid region. The entire region was and iscontinues to be a spiritual centre frequented by visitors.

► Fishing areas and conservation of fish stocks

Fishing of Ohrid Trout (Salmo letnica) from the Lake Ohrid is allowed and regulated by a fishing quota. Hydrobiological Institute regularly contributes to the population of the trout by replenishing the fish stocks. Nevertheless, illegal fishing seems to be occurring both in FYR of Macedonia (in lesser extent) and in Albania (in larger extent), thus the population of the trout is in constant decrease (Jordanova, 2016).

► Collection of timber, e.g. fuelwood

Timber is being extracted from Galičica National Park and is mainly sold for fuel wood. Annual extraction ranges from 7,000 to 12,000 m^3 of fuel wood

(Nacionalen Park Galicica, 2010).

► Collection of medicinal resources for local use

Collection of medicinal resources is permitted in the national park. Commonly gathered resources are Ohrid Tea (Sideritis raeseri), Common Juniper Berries (Juniperus communis), and medicinal herbs, both for individual consummation and further trade (Nacionalen Park Galicica, 2010).

Fire in Galičica National Park is one of the factors affecting collection of medicinal resources

Summary of benefits

Key benefits generate by the World Heritage site include: environmental services, benefits related to food, health and recreation values, cultural and spiritual values and extraction of materials (timber).
Lake Ohrid is important for water quantity and quality, and it has a strong ability of self-purification. In certain areas it is surrounded by reed beds, as well as Studenčište marsh, which function as natural filters for the lake. The marsh also has the role of regulating the water levels, while the reed regulates coastal erosion. Fishing of Ohrid Trout (Salmo letnica) from the Lake Ohrid is allowed and regulated by a fishing quota. Hydrobiological Institute regularly contributes to the population of the trout by replenishing the fish stocks. Nevertheless, illegal fishing seems to be occurring both in FYR of Macedonia (in lesser extent) and in Albania (in larger extent), thus the population of the trout is in constant decrease (Jordanova, 2016). Ohrid region is one of the most significant tourism destinations in the country, attractive for its landscape beauty, Galičica National Park's natural values, Lake Ohrid's water quality, and cultural heritage. Recreation is primarily associated with Lake Ohrid (swimming, beach) and the national park (hiking, enjoying the park's natural values). Commonly gathered resources are Ohrid Tea (Sideritis raeseri), Common Juniper Berries (Juniperus communis), and medicinal herbs, both for individual consummation and further trade (Nacionalen Park Galicica, 2010). Timber is being extracted from Galičica National Park and is mainly sold for fuel wood. Annual extraction ranges from 7,000 to 12,000 m^3 of fuel wood (Nacionalen Park Galicica, 2010).
Ohrid town is one of the oldest settlements in Europe, being built from the 7th until 19th century. Its architecture represents the most complete ensemble of ancient urban architecture in this part of Europe, while the town hosts the

oldest Slav monastery and more than 800 Byzantine icons (World Heritage Committee, 2015). Archaeological remains are scattered throughout the Ohrid region. The entire region was and continues to be a spiritual centre frequented by visitors.
Abundance and diversity of species, including high level of local and Balkan-related endemism gives the region a European and even global significance. Thus the site has exceptional intrinsic value.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	.		.

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	Restoration of wetland ecosystems	.	
2	Conversion of agricultural practices in the Ohrid and Prespa Basin	.	
3	Improvement of waste water treatment systems on both sides of the Ohrid lake	.	
4	Improvement of solid waste collection and treatment system		
5	Awareness raising and education campaign about appropriate waste disposal		

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