

KARAVASTA LAGOON

Karavasta (40°55'N, 19°30') is the largest offshore wetland site of Albania. The overall wetland complex, composed by four lagoons (c. 5,000 ha), sand dunes and a river mouth, has a surface of 10,000 ha. It is situated between the Shkumbini River in the North and the Canal of Myzeqe in the South. In the eastern part the complex is surrounded by Divjaka hills. The Karavasta lagoon is the largest water surface of this wetland complex. The lagoon is divided from the sea by Divjaka pine forest. In the eastern part, agricultural land borders the lagoon. Karavasta lagoon is composed by the inner lagoon and a smaller outer lagoon. Both of them have a surface of 4,200 ha (10.6 km long and 4.38 km large), a mean and maximal depth of 0.7 m and 1.3 m respectively. Three channels link the lagoon with Adriatic Sea. Their water exchange depends on the water level differences between the lagoon and the sea during the high and low tide as well as wind strength.

The mean air temperature is about 16.1°C. July and august are the hottest months (24.4 °C) and January is the coldest one (8.2°C). The annual precipitation is low, 962 mm/year. July is the driest month with 24.7 mm of precipitation while November is the most humid with 143.5 mm. Water temperature is correlated with the air temperature. Maximal and mini mal values are 30°C and 6°C respectively. Water salinity changes along the seasons. In winter is 18-28 ‰ i.e. lower than the salinity of the Adriatic Sea, while during summer the salinity increases till 48-60 ‰ . The organic matter forms 7-18% of the sediments weight. The pH varies between 7,75 - 8,89.

Karavasta is one of the two Ramsar sites of Albania. The wetland shelters large quantities of wintering water birds (circa 51,000 individuals each year) and it is also a major nesting site for species of conservation concern. At least six species of birds occurring in Karavasta represent figures of international importance. It is worth mentioning the presence of Globally Threatened Species such as the Dalmatian Pelican, Great Spotted Eagle, White-tailed Eagle etc.

Inside the Karavasta area occur three categories of Protected Areas: (i) Karavasta lagoon – Strict Nature Reserve, (ii) Divjaka National Park, (iii) Kulari-Managed Nature Reserve.

(i) Karavasta Strict Nature Reserve (a lagoon of circa 4,200 ha) is the largest water body of Karavasta complex. It is divided from the sea in the west by Divjaka pine forest. In the eastern part, agricultural land borders the lagoon. Three channels link the lagoon to the sea. Their water exchange depends on the water level differences between the lagoon and the sea during the high and low tide as well as wind strength.

(ii) Divjaka National Park (1,250 ha) – It is situated in the northern part of the complex and separates the northern part of the lagoon from the sea. It is mainly a pine forest with *Pinus halepensis* and *Pinus pinea* being the dominant species. Other forestry species that are present include: *Fraxinus angustifolius*, *Quercus* spp., *Ulmus* spp., *Alnus glutinosa*, *Populus alba*, etc.

Kulari (850 ha) has the same characteristics of the vegetation in Divjaka National Park. The dominant plant species remain *Pinus halepensis* and *Pinus pinea*. Karavasta complex includes different natural habitats:

1. The sand dunes separating the complex from the sea. They are occupied by species such as: *Ammophila arenaria*, *Eryngium maritimum*, *Juncus* spp., *Carex* spp., etc.
2. The lagoons (5,000 ha) are dominated by *Rupia cirrhosa*, *Zoostera noltii*, etc.
3. The forest (c. 1,200 ha), situated in the northern part of the complex, separates the northern part of the lagoon from the sea. The dominant species are *Pinus halepensis* and *Pinus pinea*. Other species present are *Fraxinus angustifolius*, *Quercus* spp., *Ulmus* spp., *Alnus glutinosa*, *Populus alba*, etc.
4. The shrubs forms a second canopy below the trees canopy. The most common species are *Rosa* spp., *Ligustrum vulgare*, *Myrtus communis*, *Erica napuliflora*, *Cornus sanguinea*, *Juniperus oxicedrus*, etc. In the North of Terbufi Channel a large area is covered by *Tamarix parviflora*.
5. There is large opened areas cover by psamophytic and halophytic vegetation that occur all over the complex. The dominant species in this area are: *Limonium vulgare*, *Halimnion portulacoides*, *Juncus maritimus*, *Suaeda maritima*, *Arthrocnemum glaucum* and *A. fruticosum*.

The diversity of natural and human created habitats induces a large number of terrestrial and aquatic species. Mammals such as: *Lepus europaeus*, *Meles meles*, *Capreolus capreolus*, *Canis aureus* and *Vulpes vulpes* are present in the forest.

Reptiles and amphibians are quite common. Some of the species are *Hyla arborea*, *Bufo bufo*, *Bufo viridis*, *Rana ridibunda*, *Rana dalmatina*, *Rana shqipericana*, *Natrix natrix*, *N. tessellata*, *Elaphe quatuorlineata*, *Coluber jugularis*, *Vipera ammodytes*, *Testudo hermanni*, etc. Within fish species the most common is *Aphanius fasciatus*.

Other species are *Atherina boyeri*, *Mugil* spp., *Syngnathus* spp., *Dicentrarchus labrax* and *Sparus* spp. The commonest of the molluscs are *Cardium edule*, *Ensis ensis* and *Mytilus galloprovincialis*.

The main economic activities of the area are (i) agriculture, (ii) fishery and (iii) tourism. In 1996 the human population of Karavasta area was around 10,000 inhabitants (circa 6,500 in the town of Divjaka) and the majority was concentrated in agricultural activities. Agriculture is developed according to self-sustainable models. Main products are watermelon, tomatoes, maize, wheat etc.

The total number of fishermen is estimated at about 300-400 persons. Fishing occurs mainly in Karavasta lagoon and the coastal waters. In Karavasta lagoon, fishing is controlled by a fishing enterprise employing 60-70 persons. The annual fish production for the period of 1992-1995 was 106 tons/an. There are no statistics from the fishing captures in the last years.

Nowadays, hotels, beach bungalows and villas have been constructed in Divjaka beach with a capacity of 1,600 places. Construction of numerous bars and restaurants is still taking place in the area. The area is visited mainly by local summer tourists, whose number during weekends of August rises up to 8,000 visitors per day.

Karavasta has been subject of several minor environmental projects carried out by environmental NGOs based in Tirana and Divjaka. Those projects have been concentrated either on conservation of species or enhancement of tourist capacities of the area. During 1995-96 Karavasta was subject of a PHARE program that aimed the

production of a Management Plan for Karavasta. Some field actions were also foreseen but not implemented.

Karavasta is subject of different factors that would damage its biodiversity and ecotouristic values if no urgent management actions were undertaken. Such factors include:

- Eutrophication of the Karavasta lagoon,
- Urban pollution,
- Poaching and illegal logging,
- Illegal constructions,
- Increased levels of human disturbance,
- Weak participation of local communities in decision-making