



<u>Project: "Land of Eagles and Castles: Pilot Sustainable Tourism Model for</u> <u>the Albanian Adriatic Coastline"</u>

Preliminary Report for Key Biodiversity Area of Narta Lagoon



Association for Protection and Preservation of Natural Environment in Albania

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<u>Project: "Land of Eagles and Castles: Pilot Sustainable Tourism Model for</u> <u>the Albanian Adriatic Coastline"</u>

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Abstract

This preliminary report for the Key Biodiversity Area (KBA) of Narta Lagoon is prepared on the frame of the project "Land of Eagles and Castles: Pilot Sustainable Tourism Model for the Albanian Adriatic Coastline". This project is granted by the "Ecosystem Partnership Fund and Implemented" (CEPF) and implemented by the "Association for the Protection and Preservation of Natural Environment in Albania" (PPNEA) in collaboration with project partner "Bulgarian Society for Protection of Birds" (BSPB). "The Critical Ecosystem Partnership Fund is a joint initiative of l'Agence Française de Development, Conservation International, the European Union, the Global Environment Facility, the Government of Japan, the MacArthur Foundation and the World Bank. A fundamental goal is to ensure civil society is engaged in biodiversity conservation". The project duration is 36 months and the ending date is 30 July 2016. More information on the project is available on this link: http://ppnea.org/land of eagles and castles.html. The aim of this report is to provide a general description and context for the KBA, as a base for designing and implementing the further project activates in this area. This report has been prepared based on desk research alone.

Abbreviations

CM-Council of Ministers

DCM-Decision of Council of Ministers

DFS-Directorate of Forest Services

FMO-Fisheries Management Organization

ICAA-International Center for Albanian Archeology

IFSV - Institute for Food Safety and Veterinary

KBA - Key Biodiversity Area

NCTM-National Council for Territory Management

NCW-National Council of Waters

NCNB-National Council of Nature and Biodiversity

MoE-Ministry of Environment

MoEFWA-Ministry of Environment Forest and Water Administration

MARDWA-Ministry of Agriculture, Rural Development and Water Administration

MAFCP-Ministry of Agriculture, Food and Customer Protection

MEDTE-Ministry of Economic Development, Trade and Enterprise

MTI-Ministry of Transport and Infrastructure

MPWTT-Ministry of Public Works, Transport and Telecommunication

MES-Ministry of Education and Sport

MUDT-Ministry of Urban Development and Tourism

MTCYS-Ministry of Tourism, Culture, Youth and Sports

REA-Regional Environmental Agencies

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1. Description of the area

1.1. Placement and boundaries of the area

Country:	Albania
Region:	Vlore
Communes:	Novosela Commune and Qender Commune

The KBA of Narta Lagoon corresponds to the Protected Landscape Vjose-Narte (IUCN category IV) which was proclaimed based on the Decision of Council of Ministers (DCM) no. 680, date 22.10.2004 covering a surface of 19738 ha. The altitude of the protected area varies from 0 to 246 m above the sea level. In the north the area is laid until the Vjosa river and the village of "Mifol", in east the boundary line connects the villiages of "Mishikarta", "Cecai", "Cipllaku", "Kisha", "Mutreva" and the hills of "Babice e vogel" village, in the south the boundery line connects the villages of "Narta" and "Zverneci" in west by the Adriatic sea. The nearest city is Vlora. The most important habitats of the Vjosë-Nartë protected area are wetlands, agriculture lands, forests and urban zones. Wetland areas cover 37% of the surface, agriculture land about 33% and forests only 6% of the area, the rest is occupied from urban area and other land use categories.

1.2. Narta Lagoon

Narta lagoon represents the central part of the area. Narta is a shallow lagoon covering a total surface of 2900 ha, surrounded by hills in the southern and eastern part, agriculture land in the northern part and two small lagoons in the south-west. Narta lagoon, having a surface of 2900ha, is divided from the sea by a littoral cordon mostly covered by pine forests. The eastern part of the lagoon is transformed in Saline, which covers a total surface of 1500 ha. The lagoon is connected to the sea through two artificial channels: the south and the north channels. The south channel is long 200 m, wide 6 to 48m and deep 0.2-1.8 m whereas the north channel is 800 m long and 0.3-0.5 m deep. The average depth of the lagoon is 1.2m. The maximum depth is 2.08 m, whereas the minimum depth is 1.08 m. The salinity of the lagoon water is up to 78,0‰. During winter time the salinity decreases to 36‰ and is similar to the Adriatic Sea. The waters of the lagoon are lightly alkaline (pH 8.4-8.8). The amount of dissolved oxygen varies between 5-10 mg/l.

1.3. Pishë-Poro

Pishë-Poro until year 2004 had the status of Natural Managed Reserve. Now it represents a landscape with developed sand dunes reaching a height of 6-8 m, and covered by Psammophyte hygrophytes and halophyte vegetation.

1.4. Kallënga

Kallënga is a shallow lagoon covering a surface of 450 ha. It is connected with seawaters through an artificial channel, which has been opened around 10 years ago. It is used for net fishing and there is also build a barrier to catch the fish passing from the sea to lagoon and vice-versa.

1.5. Hills of Panaja

The Hills of Panaja are placed on the south-eastern part of the Protected Landscape Area. The highest elevation is 246 m and is found between the villages of "Trevellezer" and "Llakatund". In the past, Mediterranean matchia vegetation and oak forests covered the area whereas now olives cover it.

1.6. Salines

Salines are found in the northern part of Narta Lagoon. They were constructed in the beginning of 50s. The current surface is over 1500 ha. It is composed by many small shallow damns containing intake gates and small islands which make the place very interesting for water nesting birds.

1.7. The field of Akrinea

It is found in the north of Narta Lagoon and salines. In the past this used to be a wetland area which was turned into agricultural land after artificial drainage. Until the beginning of 90s the area had a functional irrigation and drainage system which is currently almost destroyed and the land is abandoned ore used as pasture.



Figure 1: Boundaries of Protected landscape Vjose-Narte



Figure 2: Map of Protected Areas in Albania. KBA of Narta Lagoon signed with a red square

1.8. Zonation of the territory of Vjose-Narte Protected Landscape

The territory of the Protected landscape Vjose-Narte, is divided in four different zones (look at the map bellow):

- 1. Central Zone
- 2. Traditional Use Zone
- 3. Sustainable Development Zone
- 4. Development Zone



Figure 3: Zonation of the Protected Landscape Vjose-Narte

Table 1: Description of different subzones of Narta-Lagoon

1.Central Zone		
(A1 & A2)		
Purpose	The purpose of the Central Zone is to provide an undisturbed natural habitat. This zone includes natural habitats, semi-natural habitats, river coast habitats, coastal forests, lagoons and sandy dunes. The area covers the Vjosa Delta, Pishe-Poro forest, Kallenga lagoon, a part of Narta lagoon (Shamoduri) and two Natural Monuments: Zverneci island and Limopua lagoon.	
Management options	 A1.Particular protected subzone The minimum of disturbance. Permitted activities do not affect the preservation of natural resources. A2. Protected subzone It represents a good example of preserved habitats in their natural state. It can be used for leisure activities with the minimum impact in natural environment (i.e Zhuka beach) 	
Compatible activities	 A1. Particular protected subzone The entrance here is well controlled by the management authorities. Compatible activities include walks in nature, flora and fauna monitoring, legal fishing, scientific monitoring, fires management, transposition of urban wastes and touristic trails maintenance. A2. Protected subzone Same permitted activities. The difference from A1 subzone: here some touristic structures are permitted. The entrance for educational or natural recreation purposes are controlled by management authorities. 	
Incompatible activities	These activities include: hunting, fauna and flora disturbance, non-authorized management of habitats, non-authorized cars entrance, wastes disposal and deposits, discharge of untreated contaminated waters, industrial structure construction, establishment of new inhabited zones, chemical use, introduction of invasive species.	
2. Traditional Use Zone (B1 & B2)		
Purpose	It enables the resident inhabitants or seasonal ones in the Protected Landscape area to practice their traditional livelihood activities. It permits public subject to respect boundaries of resident field and economic activity. This area covers agriculture land (Dellinje, Zhuke), Salines and the eastern part	

	of Narta lagoon.		
Management options	B1 Agriculture land use zone		
	It encourages the development of agro-touristic activities,		
	family tourism, and other sustainable livelihood activities.		
	B2 Industrial zone		
	It permits the activity of extracting salt.		
Compatible activities	B1 Agriculture land use zone		
	Grazing, agriculture and traditional fishing in accordance with		
	the Management plan. The entrance is free.		
	B2 Industrial use zone		
	Salt producing. The entrance is controlled by the Management		
	authorities.		
Incompatible activities	Activities that contradict the aim of the zone. It includes		
	hunting, fauna and flora disturbance, non-authorized		
	management of habitat, wastes throwing and deposits,		
	discharge of untreated contaminated waters, industrial structure		
	construction, introduction of invasive species.		
3.Sustainable development			
zone (C)			
Goal	It enables the existence of sustainable economic activities. It		
	covers Bilbili, Akernia, Novosela, Srofotina fields also Panaja		
	and Narta, and the hilly area of Kerkova and Bastrova.		
Compatible activities	It permits actual economic activities in accordance with		
	environmental rules		
Incompatible activities	These activities include: hunting, fauna and flora disturbance,		
	non-authorized management of habitat, wastes throwing and		
	deposits, discharge of untreated contaminated waters, industrial		
	structure construction, introduction of invasive species.		
4.Development zone (D)			
Goal	It enables the development of new sustainable economic		
	activities		
Compatible activities	It permits actual economic activities in accordance with		
	environmental rules and other activities are not encouraged,		
	except for the tourism industry.		
Incompatible activities	Activities that contradict the purpose of this zone include:		
	hunting, fauna and flora disturbance, non-authorized		
	management of habitat, wastes throwing and deposits,		
	discharge of untreated contaminated waters, industrial structure		
	construction, introduction of invasive species.		

2. Institutions and Administration of the Protected Landscape Vjose -Narte

Institutions involved in the administration of the Protected Landscape Vjose-Narte are different and include: central government, local government, nongovernmental organizations and other local stakeholders. In this chapter are described the rights and duties of each institution.

2.1. Central Government

2.1.1. Council of Ministers

The Council of Ministers (CM) is the highest executive institution in Albania chaired by the prime minister. Under the CM there were three consular and decision maker bodies: The National Council for Territory Management (NCTM), National Council of Waters (NCW) and the National Council of Nature and Biodiversity (NCNB). However, after the elections of June 23, 2013 in Albania the government has changed. The new government gathered on 7 September 2013 is reorganized, however the detailed organization of the government is not yet published and the websites of the ministries are not yet updated.

2.1.2. The National Council for Territory Management

NCTM is the highest decision maker body, which approves and makes changes on the studies and urban plans for the development of tourism, National Parks, airports, ports and infrastructure in regional and national level. NCTM branches are present in every Region (Qarku)¹ and District in Albania.

2.1.3. National Council of Waters

NCW is the highest coordinating and decision-making body on water administration at central level. At local level are operating six Regional Councils of Waters, which are composed by representatives from local government institutions, regional government institutions, and water, use organizations. As executive bodies of this council act the six Water Basin Agencies.

2.1.4. Ministry of Environment

Ministry of Environment (MoE) is responsible for completing the legal framework needed for the management of protected areas and has to specify the standards for designing the management and monitoring plans for these areas. After the elections of 23 June 2013 and the creation of the new government on 7 of September 2013 the ex Ministry of Environment Forest and Water Administration (MoEFWA) has been named the Ministry of Environment and has been significantly reframed², however the re-organization patterns are not yet published.

¹ Administrative division in Albania, Region (Qarku) includes several Districts.

² The reference here stands on the word of prime minister when presented the new government

2.1.5. Ministry of Agriculture, Rural Development and Water Administration (MARDWA)

The ex Ministry of Agriculture Food and Consumer Protection (MAFCP), was responsible for the sustainable management of agricultural land, irrigation and drainage system, and measures against flooding. With the new government of 7 September 2013, this Ministry is significantly reframed and the new organization is not yet published.

2.1.6. Ministry of Economic Development, Trade and Enterprise (MEDTE)

The ex Ministry of Economy Trade and Energy (METE) through its Directorate of Licenses and Management of Contracts has been responsible for implementing the legislation on the allocation of licenses and concessions to the private subjects for the development of different activities inside the protected landscape area. With the new government of 7 September 2013, this Ministry is significantly reframed and the new organization is not yet published.

2.1.7. Ministry of Transport and Infrastructure (MTI)

The ex Ministry of Public Works, Transport and Telecommunication (MPWTT), was responsible for the realization of public works and providing services such as: supplying potable water, controlling the urban development, treating the black waters, treating and management of wastes etc. This ministry is significantly reframed and named MTI after the elections of 23 June 2013, and the new organization is not yet published.

2.1.8. Ministry of Education and Sport (MES)

The ex Ministry of Education and Science was responsible for designing and implementing the programs of education. Universities carry out fundamental and applied research for different environmental aspects. The scientific institutions are involved in the monitoring and programs of Environment. The closest university to the Protected Landscape Vjose-Narte is the University of Vlora. This ministry is reframed after the elections of 23 June 2013, and the new organization is not yet published.

2.1.9. Ministry of Urban Development and Tourism (MUDT)

The ex Ministry of Tourism, Culture, Youth and Sports (MTCYS) before the elections of 23 June 2013 has designed and coordinated the policies in the field of tourism, through the public and private investments, and monitored this development. This ministry is significantly reframed after the elections of 23 June 2013, and the new organization is not yet published.

2.2. Local Government

2.2.1. Regional Environmental Agencies (REA)

The REAs are present in each prefecture of the country. The main role of REA consists on strengthening law enforcement, and implementing procedures that are related with environmental licenses as well as collecting and processing environmental data on district and county level.

2.2.2. Directorate of Forest Services (DFS)

The DFS Vlore used to be under the administration of the ex MoEFWA and is responsible for the administration, protection and management of forests and pastures within the territory of the district of Vlora including those that are part of protected areas such as the Protected Landscape Vjose-Narte. DFS takes part in and designs programs for the development of Forests and Pasture's section, collects data on the development of public and private forests, moreover it reports to the institutions responsible for maintaining and managing documents for the design and implementation of breeding plans and forest inventory. It approves and issues licenses for the use of forests and pastures, as is the case of grazing permits given by this department within the park's territory. With the new government, this institution is expected to be significantly organized.

2.2.3. Councils of Water Basins

These are local institutions responsible for the management of water resources in the respective basins. For every river basin or group of basins, there is a basin water council. Such a council is operating also in Vlora. They used to be dependent from the technical secretariat of the National Water Council, part of ex MoEFWA.

2.2.4. Regional Government Institution of Vlora (Qarku Vlore)

The area of this project is part of the Region of Vlora. The regional level is the most appropriate one to explore the possibilities of cooperation between municipalities and communes of the project area, in relation to environmental management and rural development.

2.2.5. Prefecture of Vlora

The prefecture, legally confirms all decisions taken by the communes (in this case those of Novosele and Qender). Its impact on the management of Protected Landscape Vjose-Narte, is of the outmost importance, especially in relation to issues such as illegal construction, fires, floods, or by pressuring other institutions on increasing their vigilance and control, therefore reducing illegal activities inside the park's territory.

2.2.6. Commune Councils

The commune councils are the representative parties of the communes, which are elected every three years. The mayor stands as its executive body and is elected directly by local residents by secret ballot (local elections). Municipal councils have the right to delegate a part of their powers to the mayor. The functions of this governing level are among others, those relating to water supply, sanitation, sewerage, drainage and irrigation, construction, rehabilitation and maintenance of local roads, public transport, waste management, planning urban land and housing management. The commune councils play an important role in the procedures of approval of local management plans. According to the Law on the Organization and Functioning of Local Government (2000), the local level has been given the opportunity to expand its rights and powers. Based on the above-mentioned law, each local government unit shall have full discretion to exercise initiatives in the interest of the local community, pertaining to those issues, which are not exclusive legitimate rights of any other government body. Below we cite the legal

rights of local government, which may serve within the framework of a multi-lateral cooperation, to manage their territories that simultaneously are a part of the Park.

2.2.7. Rights of Local Government

Local governments may establish administrative structures; perform their functions and exercise their powers; create economic units and other institutions under their supervision; they have the right to establish committees, boards, commissions; to exercise special functions and perform administrative territorial division within their jurisdiction.

2.2.7.1. Property rights

Local governments may exercise property rights, including the right to buy, sell or lease the property owned by them.

2.2.7.2. The right to fiscal autonomy

Local governments may receive income from expenses made in accordance to their functions (this is especially important in the use of "entry fee" or any other local tax in favor of local development). Economic rights, municipalities and communes have the right to undertake any initiative in the interest of their residents and of economic development, if these activities do not oppose government policies.

2.2.7.3. Right of cooperation

To perform specific functions for the benefit of their residents, two or more municipalities or municipality may exercise any power given by the law through effectuation of bilateral agreements or contracts. In addition, they can delegate specific powers to one or more third contracting parties. Rights as a legal person, local governments are considered as a legal person and can exercise all rights stipulated in the Civil Code of the Republic of Albania

2.3. Users and Non-Governmental Organizations

2.3.1. Hunting Association

This association is responsible for managing the hunting activities in the area. The main interest of this association is the protection and rehabilitation of the habitats in order to provide favorable living conditions for the fauna. On this frame, the hunters are interested to put strict rules against illegal hunting.

2.3.2. Non Governmental Organizations

In the area of Protected Landscape Vjose-Narte, so far are identified six nongovernmental organizations (NGOs). These NGOs are listed below: Association "Narta Lagoon" Association "Adriatic" Association "Kristo Papajani", "Mother Nature" Association of Fishermen Association of Hunters Association of Waters NGOs play an important role on raising environmental awareness in the area.

3. Characteristics of physical environment

3.1. Climate

The area is part of the central Mediterranean climate zone. The winter is generally soft with high rainfall, while summer is hot and dry. The annual average sunshine is 1540 kwh/m². The highest sunshine intensity is registered in July (216.5kwh/m²), while the minimum values are registered in December (52.1 kwh/m²). The annual average temperature is around 15.8 ^o C. The hottest months are July and August with an average monthly temperature of 30.3 ^o C, whereas the coldest month is July (4.8^o C). The monthly average humidity varies from 62% to 69%, while the annual average is 66%. During summer time the only directions of winds is north-western and the average velocity is 4.4m/s and 5.2m/s. Winter is dominated by the eastern wind with an average velocity of 3.5m/s.

3.2. Geology, geomorphology and land

Narta lagoon was formed in a sea bay, which is closed by solid sediments transported by Vjosa River.

3.3. Hydrology

Narta KBA is generally poor on underground waters. These waters which are generally accumulated in small shallow sandy deposits are also characterized by a low quality. The depth of underground waters varies from 1-10 m. The river of Vjosa and the river of Shushica serve as the main drainage "channel" for the area. The whole area is surrounded by a dense network of drainage and irrigation systems, which are mostly destroyed and not functional, thus only a small part of agricultural land is under irrigation. There are three water-pumping stations, that in many cases do not function properly thus the agricultural land area is frequently flooded during the high intensity raining days.

Water exchange between the lagoon and the sea takes place due to the periodic changes on water levels (tide phenomenon). Narta lagoon is essentially micro tidal; the tidal range does not exceed 0.5m. The main hydrological constraints in the lagoon are:

- Limited freshwater draining into the lagoon (during winter season)
- Limited exchange of water with the sea
- Pollution coming from livelihood activates

The main reason for the pollution of the lagoon water was the construction of salt enterprise in 1970. This decreased the lagoon surface with around 1/3 of it. The wastes of the enterprise and also the urban pollution from the around villages caused a great distraction of the flora and fauna of the lagoon. In summer, the shallow water becomes very warm, up to 30 degrees in places. This brings a big boom in bacteria lifecycle and as a consequence the processes of eutrophcation

and the oxygen absence. Narta lagoon is one of the Albanian lagoons that are undergoing a very rapid degradation due to very limited marine and fresh water input.

3. Ecological characteristics

3.1. Habitats and Flora

The natural ecosystem of Narta is characterized by a rich diversity of habitats including here (i) the lagoon, (ii) the delta of Vjosa River, (iii) the salt marshes, (iv) the sand dunes, (v) the pine forests and (vi) the island of Zvërneci. The vegetation species diversity is high (look at Annex 3). The relation between these various types of habitats is of great ecological importance. Specific habitat factors in this relatively narrow transitional zone between sea and land include: (i) gradients from marine to terrestrial conditions, (ii) transition from salt to fresh water, (iii) in the vast variety of habitats many of the plant and animal species that occur are specialists, uniquely found in the coastal zone. The area is very important as many of the threatened plant species in the Red Book of Albania occur there (look at annex 1). The Natural ecosystem of Narta can be seen as an essential part of Europe's natural heritage.

3.1.1. Wetlands

The wetlands in the area are divided in; temporary and permanent wetlands. The temporary wetlands are low water dispersions that get dried every year. The structure of vegetation is very much depended on the intensity of flooding, salinity and grazing. The salt concentration along winter is lower because of high rain intensity. The permanent wetlands are represented by the Narta Lagoon and by the Lagoon of Kallenga. The bottom of these Lagoons is covered by *Zostera noltii* and *Ruppia cirrhosae*. These plant communities cover important surfaces in the bottoms of the Narta Lagoon. The greatest threat to the "*Aquatic bed* "is provided by industrial installations for salt production in the surroundings. The marshy area was transformed in salt production fields by reclamation.

3.1.2. Salty wetlands

This habitat is widely distributed in the natural ecosystems of Vjose-Narte. These habitats are composed from a big number of plant communities with different tolerance to salinity. Some of the most common species are *Salicornia spp., Arthrocnemum spp., Salsola soda,* and *Limonium spp.* With the decrease of salt concentration, the variety of species increases with: *Arthrocnemum fruticosum, A. perenne, A. glaucum, salicornia europea, Salsola soda, Juncus acutus, Juncus maritimus, Inula crithmoides, Limonium vulgare, Artemisia coerulescens, Halimione portucaloides etc.*

3.1.3. Sweet water reserves

The vegetation of these habitats is very similar to the vegetation of drainage and irrigation channels. In these parts more dominants are *Phragmites australis*, *Typha angustifolia*, *Typha*

latifolia, Scirpus maritimus dhe Scirpus lacustris. They represent an important habitat for many species of wild animals which find drinkable water there.

3.1.4. Alluvial forests

The vegetation of this habitat is divided in two floors. The first floor is mainly composed from canes and other species connected to waters. The quantity and the density of the second floor are depended from the level of flooding. In the first floor, vegetation is represented from the class of *Phragmitetalia*, where the most dominant association is *Phragmites australis*. This association is found along the irrigation and drainage channels, and in some parts of Vjosa River where the flow is gentle. In some places is also developed the *Lemna minor* and other species such as: *Typha angustifolia* (the most common), *Lythrum salicaria, Polygonum hydropiper, Polygonum lapathifolium, Sium latifolium, Gratiola officinalis, Cladium mariscus, Alisma plantago-aquatica, Sparganum erectum* etc.

The second floor includes the river coast forests, which are represented by the classes of *Alno-Populetea* and *Salicetea purpurea*. The most common species of this class are *Populus alba*, *Populus nigra*, *Salix alba*, *Salix purpurea*, *Salix amplexicaulis*, *Salix elaeagnos subsp. angustifolia*, *Alnus glutinosa*, *Alnus incana*, *Platanus orientalis*, *Ulmus minor*, *Ulmus glabra*, *Fraxinus angustifolia*, etc. The grassland vegetation is generally poor, the most common species are *Equisetum telmateia*, *Equisetum ramosissima*, *Prunella vulgaris* etc.

3.1.5. Sandy dunes

Extensive dunes occur on exposed coastline of Narta area from Vjosa delta until the old beach of Vlora. This region in particular has some of the largest dunes of Albania, with one of the largest expanses at "Zverneci hills". Their altitude varies from 1-2 m to 4-5 m.

The sandy belt along the coastline is completely bare of vegetation to a length sometimes extending up to 30 m. The lack of vegetation corresponds to an active life of different animals. The Phanerogamy vegetation appears after this in mudded belt, in a sandy belt already washed away by the considerable amounts of salt as a result of rain waters. Pioneer species, *Cakile maritima, Xanthium strumarium subsp. italicum, Salsola kali*, at the beginning isolated become more frequent when leaving the coastline. The vegetation of this sandy belt belongs to the pioneer association *Cakilo-Xanthietum italici*. Gradually going away from the coastline and as the height of sandy dunes increases; the physiognomy of vegetation given by the species *Ammophila arenaria subsp arundinaceae*, *Elymus farctus*, *Echinophora spinosa* etc. On sand dunes, these species are important dune building plants. *Ammophila arenaria subsp. arundinaceae* represents the characteristic species of the association *Ammophiletum*. The degradation of sandy dunes and formation of dispersions is accompanied by different vegetation, dominated by *Sporobolus punges*, characteristic specie of the association *Sporoboletum*. *Ammophiletum*

association constitutes the last most evolved phase of the vegetation of sandy dunes or the borderline between dune vegetation and the Mediterranean pine forests.

These forests occupy a considerable part of the Narta area, extending parallel with dune systems of this area. These forests serve to stabilize the sandy dunes and protect the agricultural lands. The physiognomy of this formation is imparted by the species *Pinus maritima*, *P.pinea*, *P. pinaster* (tall ligneous about 5-7 m high cover about 70-80% of total area).

The shrub layer is represented by typical Mediterranean species such as *Pistacia lentiscus, Erica manipuliflora, Myrtus communis* etc, characteristic species of the *Class Quercetea ilicis*.(cover 40-50 % of total area, shrub < 2 m). At the forest of "Soda" the shrub layer is totally absent. The reason is related to the very high density of woody layer. Special interest in this formation presents the endemic species such as *Orchis albanica Goelz & Reinhard* as well as a hybrid form *Orchis x paparisti*. Between these plant communities (sandy dunes vegetation and Mediterranean Pine forests), there are two afforested belts. In one belt has been introduced *Acacia saligna* (a large part of it was unfortunately burned), and at the second belt (about 200 m) in Zverneci beach was planted *Agave americana*.

3.1.6. Salt marshes

This vegetation is distributed widely in the Natural ecosystem of Narta. Salt marshes and their associated plant communities are found extensively around the coastline of Narta Lagoon, in southern part of Vjosa River, in both sides of inlet channels that connect Lagoon with the sea.

Large areas of salt marshes vegetation are also in dispersed behind sand dunes and low alluvial plain (Panaja).

Salt marshes and their complex and often highly productive mosaic habitats support large populations of migrating and wintering waterfowl, which is the most obvious manifestation of their conservation interest.

Salt marshes are component of sequences of plant communities tolerant to different degrees of submergence by the tide.

Species, which occur in these zones, such as Salicornia spp., *Arthrocnemum spp., Salsola soda, Limonium* spp., are often present in mono specific stands. However, as the number of tides covering the marshes is reduced as its height increases, the species composition becomes increasingly complex and more variable.

The distribution of the plant communities here does not follow a linear scheme such as in that of sandy dunes vegetation. Due to further erosion and the last decrease of the depressions, it happens an increase of the salt degree. The plant communities of the class *Thero-Salicornietea* and *Juncetea maritimi* covered a large surface in these stations.

These communities, where the predominant species are *Arthrocnemum fruticosum*, *A. perenne*, *A. glaucum*, *salicornia europea*, *Salsola soda*, *Juncus acutus*, *Juncus maritimus*, *Inula crithmoides*, *Limonium vulgare*, *Artemisia coerulescens*, *Halimione portucaloides*, are distributed widely in the salt marshes of the Narta area.

The cover of the vegetation in these stations is generally high (70-80 % of the total surface). On sand flats (behind Pine forests) occur in large areas flats association *Schoeno- Erianthetum* dominated by *Erianthus ravennae*, *Schoenus nigricans* etc. (vegetation cover 50-60 %).

There occur, also (on sand and mud flats), but in small areas the associations *Holoschoenetum romani* (dominated by *Scirpus holoschoenus*), *Schoeno-Plantaginetum crassifoliae*, (dominated by *Plantago crassifolia*, *Schoenus nigricans*, etc.) (Vegetation cover 30-40 %) and *Vitici Tamaricetum dalmaticae* (dominated by *Tamarix dalmatica*).

3.1.7. The Hydro - hydrophilic vegetation

This vegetation type is spread mainly along the flow of Vjosa River, on the banks of the different channels, etc.

The main species of this class are *Phragmites australis*, *Typha angustifolia*, *T. latifolia*, *Scirpus lacustris*, *S.maritimus* and *Salix spp*. The communities dominated by *Phragmites australis* are distinguished by a wider ecological amplitude in the direction of the salt scale. Their distribution is fragmental and often without any visible role in the general plant physiognomy of the natural ecosystem of Narta. The plant communities mentioned above are dominated by the following species: *Phragmitetum communis*, *Typhetum angustifoliae and latifoliae*, *Scirpetum lacustris*, *Bolboschoenetum maritimi*, *Salicetum albae – fragilis albanicum*. These plant communities belong to the class *Phragmitetea* and *Salicetea purpureae* (vegetation cover about 70 –80 %). They often have the monophytic tendencies and without any visible role in the general plant physiognomy of the natural ecosystem of Narta

3.1.8. The Zverneci islet

Zverneci islet in the south of the lagoon is covered with evergreen forest of *Cupressus* sempervirens. The woody layer is dominated by *Cupressus* sempervirens (90-95%) and in a low scale by the species of *Qurcus ilex*, *Quercus pubescens* and *Pinus spp*. The vegetation cover is very dense. The shrub layer is dominated by the species of *Myrtus communis*, *Pistacia lentiscus*, *Laurus nobilis*, *Rubus spp.*, *Phillyrea angustifolia*, *Olea olaster*, etc. The herb layer is rarer and the most frequent species are: *Chrysopogon gryllus*, *Asparagus acutifolius*, *Dactylis glomerata*, *Desmazieria rigida* etc. Under this zone, dominated by *Cupressus sempervirens* (from 1 –2 m till 20 m above sea-level) the cliffs (soft rock) support a plant community dominated by halophylic species much as: *Suaeda maritima*, *limonium oleifolium*. *Limonium vulgare*, *Arthrocnemum glaucum*, *Halimione portulacoides*, *Elymus pycnanthus*, characteristic species of the association *Suaedetum maritimae*.

3.2. Habitats and Fauna

The Vlora bay and the transitional wetlands around are known for a high fauna diversity. This is again caused by the variety of different environments, the sea, saline and brackish habitats, sandy dunes, the freshwater and alluvial habitats. About 198 endangered species are reported to be

present in these habitats. This number is equal to nearly half of all the endangered animal species of Albania.

3.2.1. Invertebrates

In the Narta lagoon about there are present about 32 mollusks, most widespread are the gastropods *Hydrobia acuta, Ventrosia ventrosa, Pusillina mariginata, Pirenella conica, Cyclope neritea* and the bivalves *Cerastoderma glaucum* and *Scrobicularia cottardi*. About 60 mollusk species have been reported for the coastal habitats of Vjosa delta and Narta wetlands; among them 27 are gastropods (snails), 29 bivalves(mussels) and 4 cephalopods (octopus, squids and cuttlefish).

Out of these 42 species, originate from the marine habitats, 12 from freshwater and 6 from the terrestrial sites.

Harvesting of bivalves in the lagoon has strongly increased during the past 15 years, especially for the species of *Tellina, Donax, Solen* from the coastal habitats and *Tapes decussates* within the lagoon. This has certainly changed the mollusk composition and impacted other benthic populations. Recently, the presence of the invasive Blue crab *Callinectes sapidus* has been recorded in Narta and Orikumi lagoon.

More than 150 species of winged insects (*Pterygota*) have been observed in different aquatic and terrestrial habitats in the Vjose-Narta area, they belong to *Lepidoptera* (63 species), *Coleoptera* (43), *Odonata* (8) and *Orthoptera* (7). Some of these may be harmful to both agricultural crops and natural vegetation. The biological equilibrium becomes occasionally displaced by the development of massive blooms, even of endangered species with multi annual dynamics, like the night butterflies *Thaumetopoea pityocampa*, *Hyphantria cunea* and *Malcosoma neustria*. About 9 species of amphibians and 26 species of reptiles have been reported to be present in

Narta zone.

3.2.2. Fishes

The river Vjosa and its delta as well as the lagoon of Narta are important for the fish diversity in the region and crucial for fishing and aquaculture. About 39 fish species have been recorded in the area (look at annex 5). The lagoon is used for fishing mainly by local people from the surrounding villages of Narta and Zverneci.

ibit 2. Main fish species - Marta fagoon			
Latin name	English name	Albanian name	
Mugil cephalus	Flathead grey mullet	Gushtak; Qefull vere; Cumerr	
Chelon labrosus	Thicklip grey mullet	Vijoshi; Vruta	
Liza saliens	Leaping mullet	Vesh verdhi; Gasturi	
Dicentrarchus labrax	European sea bass	Levrek	
Anguilla anguilla	European eel	Ngjale	

Table 2: Main fish species - Narta lagoon

Sparus aurata	Gilthead sea bream	Koce
Solea vulgaris	Common sole	Gjuhez kanali; Shojze
Atherina hepsetus	Mediterrenean sand smelt	Aterina
Atherina boyeri	Big-scale sand smelt	Aterina symadhe
Syngngathus sp	Pipefish	Gjilpereza

3.2.3. Amphibians and Reptiles

In Narta there are present 9 species of amphibians and 26 species of reptiles (look at annex 6 and 7). The most common amphibians are: *Rana balcanica and Rana lessone* are commonly present in wetlands in Albania. In the village of Mifoli, green frogs are collected, processed and exported since 30 years. About 23000 tonnes of frogs have been harvested during the last 10 years. Among the reptiles the most frequent are: *Natrix natrix, Elaphe quatrolineata, Malpolon monspensulanum, Testudo hermanni* etc.

3.2.4. Birds

The area of Narta is listed as the second most important site for water birds in Albania after the Karavasta area. About 80 species have been recorded (look at annex 4). More than 90% of them prefer the less disturbed central part of the lagoon. Ducks (*Anas* sp.) and coot (*Fulica atra*) are the most abundant with 47% equal to 18000 individuals and 35% with 13500 individuals, respectively. The lagoon is known as the main wintering site in Albania for many birds.

Scientific name	Common name	Albanian name	Remarks
Anas acuta	Pintail	Rosa bishtgjele	
Bucephala clangula	Golden eye	Rosa me kater sy	
Charadrius	Kentish	Vrapuesi gushebardhe	
alexandrinus			
Larus audouinii	Audouini' s gull	Pulebardha e Odoinit	Globally endangered
Numenius tenuirostris	Slender-billed curlew	Kojliku sqepholle	Globally endangered
Pelecanus crispus	Dalmatian pelican	Pelikani kacurrel	Globally endangered
Phoenicopterus	Flamingo	Flamingo i kuq	
rubber			
Pluvialis squatarola	Golden plover	Gjeleza pikaloshe	
Tadorna tadorna	Shelduck	Laroshja, Shota	

Table 3:	Wintering	birds in	Narta	Lagoon
I able et	· · · · · · · · · · · · · · · · · · ·		T JOST COS	Lagoon

3.2.5. Mammals

From the total number of 74 mammal species registered in Albania, about 32 species are reported to be present in the Vjosa-Narte area.

Table 4: Mammals in Vjose-Narte area

Taxa/Order	Nr. of species
Insectivora	5
Chiroptera	8
Rodentia	9
Lagomorpha	1
Carniovora/Fissipedia	6
Artidactyla	0
Catacea/Odontoceti	3
Pinnipedia	0
Total	32

4. Socio-economical characteristics

The Key Biodiversity Area of Narta Lagoon has a population of approximately 24 000 inhabitants distributed in 18 inhabited centers. The number of families is approximately 5 550, with an average of 4-5 members per family. The communes of Qender and Novosele have territories within the boundaries of the KBA of Narta Lagoon. Around 60% of the inhabitants belong to Orthodox religion, while the rest are Muslims. The employment in the area follows the same patterns like in all regions of Albania. After the change of system in 1991, the agricultural farms and agricultural cooperatives dissolved and all other factories have been destroyed. For many years the main employment sector has been emigration. Emigration caused draining of vital working force which impacted significantly the traditional livelihood activities.

However along the last three years because of the Greek crisis many emigrants have turned back and started to invest in small business.

4.1. Agriculture and Livestock

The open fields have been traditionally used for Agriculture. Agriculture occupies about 70% of the area population. Cereals, fruits and vegetables are cultivated. The drainage system was built according to a Chinese model between 355 and 40 years ago. It is now poorly maintained and not properly functioning. The majority of land in the Commune of Novosela belongs to agricultural land categories VI, VII and III. Whereas for the Commune of Qender the agricultural land categories V, VIII and IV dominate. The best agricultural land quality is represented from the categories I to III, the rest of categories are average to poor. A part of the agricultural land has been transformed into greenhouses for the cultivation of tomato and cucumber.

Fruit production is one of the most important income generating activities for the area. The area is very suitable for agricultural production as the soil and climatic conditions are very

favourable. In the commune of Qender fruit production constitutes 21% of the total agricultural production, whereas in the commune of Novosela only 8.4%. Along the last years, interest has been shown for the cultivation of vineyards, for the purpose of wine and brandy (Raki³) production. The area of Narta is also known for a good quality wine production.

Livestock is also an important activity in the area. In Qender commune, livestock activity generates 34% of the income and in Novosela commune; it brings 57% of the income. Every family owns on average one cow, two sheep and several hens. Some farmers have started to create small livestock breeding farms for meat, milk, egg and honey production. The livestock products are used both for self consumption and for market. The agricultural activity suffers from the lack of a suitable market. There are also faint possibilities towards agricultural credits.

Agro-industry is also weakly developed in the area, even though there is diversity of agriculture and livestock products. There are some factories processing; milk, olives, medicinal plants, fruits, meat, leather, wool, etc. In Novosela village since 30 years now is operating a plant for processing and trading frogs. This plant generates seasonal employment.

4.2. Fisheries

Fishing activity in the lagoon is organised in several groups of licensed fishermen. Illegal fishing is significantly present in the area. Main fish species present in the lagoon are sea bass, sea bream, eel, and gray mullet. The production is destined mostly for the local market and a small amount is exported in Italy. Various types of fishing nets are used in the lagoon starting from a diameter 28mm. Along the 1975-1990 the fish harvesting rate was at 55kg/ha (1590 kv/year) with a maximum of 70 kg/ha. Around 30% of the annual production is composed from Carcinus aestuarii. Along the last years the quantity of fishing has decreased. The number legal fishermen have dropped while the one of illegal fishermen has increased. The main fish species are: Mugil cephalus, Chelon labrosus, Liza saliens, Atherina hepsetus, Angulia anguila, Sparus aurata and Atherina hepsetus. The quantity of fish is dominated by mullets which have a low value in the market. High value fish species like European sea bass (Dicentrarchus labrax) and Gilthead sea bream (Sparus aurata) constitute 25% of the total fish quantity. Fishing employs around 100 persons. Fishing area includes the lagoon of Narta, the old discharge of river Vjosa, the lagoon of Kallenga, the river of Vjosa and the littoral coast. The major quantity of fish is sold in the market and a small part of it goes for self consumption. The fish density has dropped in this area because of anthropogenic activities causing eutrophcation. Also illegal fishing using illegal methods (such small dimension net) has had an impact on fish population of the Lagoon.

4.3. Tourism

The area offers good opportunities for ecotourism. In this area and around it there are different historical sites like: *Zverneci island (Narta lagoon)* where is situated the Saint Mary Monastery (13th-14th century AC); In *Narta village* there is an archaeological site with the ancient

³ Albanian traditional drink made from fruits (mainly grapes and plums)

settlement of Aulona (not excavated yet); In the vicinity of the Narta lagoon (south of it) is laid the city of Vlora with its historical part, including museums and monuments among which "The Independence Museum" and the monument of the proclamation of independence; mosque of Murad build by the Albanian architect Mimar Sinau in 1542; Kanina castle, Mediaeval fortress.

In this area passes ancient Via Egnatia, linking the South of Illyrian coast with the east, passed through the ancient city of Aulona, today the city of Vlora. The city was also known as Triport and its remnants date back to the 5th century BC, as do the ancient ruins of the city of Spinarica. Triporti antique ruins are situated in the west of Narta lagoon, near the Zverneci village. Treporti has been an important harbour which connected the town with other antique places, such as Aulona, Oriku and Amantia. According to 12th century documents, Spinarica was a Mediterranean town of the Adriatic Sea. It was near the Narta lagoon, in the delta of Vjosa River. Spinarica was an important business centre especially for cheese, animals, wool and iron.

In the island of Zverneci is located the most attractive touristic object of the region: the Monastery of Zverneci that dates back on the 14th century. The monastery is known for its mural pictures and wooden sculpts, which show flowers and different animals. Now this church is restored and is used as a cult place.

Each year, in the second week of April, a Carnival celebration takes place in the area. The festivities include concerts, an ethno-gastronomic fair, games, visits and public awareness events. Objectives of these activities are the promotion of the historical and cultural values of the area and the support for the protection and conservation in view of further development of the region. The festivities are organized by the Vlora City District Council, in co-operation with active organizations and local authorities and supported by local NGO's, the Chamber of Commerce and the religious community.

5. Main environmental problems

Environmental problems are present in the area. The two channels that connect the Lagoon with the sea fill with send and there is need to periodically clean them. However this problem can be solved through dredging heavy machines in the site. Illegal fishing and hunting constitute another problem in the area. Illegal fishing methods such as explosive or pesticides are used sometimes in the Lagoon. The extraction of water from salt production activities causes also disturbance for the habitat. There is illegal logging in Pisho Poro Mediterranean pine forests. Forest fires are also a warring problem.

Forest, agricultural and abandoned lands are grazed by a large number of cattle, cheep and goat herds. Another problem sewage discharge in the lagoon, dune erosion and sand extraction for construction and unplanned urban development.

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Annexes

-	Threatened degree according to
Species	IUCN
Agrimonia eupatoria L.	E
Anacamptis pyramydalis (L.)	E
Ammophila arenaria (L.)	Е
Baldellia ranunculoides (L.)	V
Butomus umbellatus L.	V
Cladium mariscus (L.)	V
Desmazeria marina (L.)	Е
Elymus farctus P.B.	E
Ephedra distachya L.	(E)
Hydrocotile vulgaris L.	E
Hypericum perforatum L.	E
Laurus nobilis L.	E
Marsilea quadrifolia L.	V
Nymphaea alba L.	V
Nuphar lutea (L).	V
Nymphoides peltata	V
Orchis albanica	Е
Orchis x paparisti	Е
Orchis coriophora L.	Е
Origanum vulgare L.	Е
Pancratium maritimum L.	Е
Quercus robur L.	Ex?
Serapias lingua L	E
Spiranthes spiralis .	Е
Stachys maritima L.	Е

Annex 1: Threatened species according to IUCN categories

Annex 2: Vegetation Structure

Vegetation Structure					
RUPPIETEA	THERO-SALICONIETEA	PHRAGMITETEA			
Ruppietalia	Thero-Salicornietalia	Phragmitetalia			

Ruppion maritimae Thero-Salicornion		Phragmition
Ruppietum cirrhosae Arthrocnemetum glauci		Bolboschoenetum maritimi
	Artemisietum	Cladietum marisci
	Limonio-Halocnemetum	
ZOSTERETEA	strobilacei	Phragmitetum
Zosteretalia	Parapholidi-Spergularietum	Scirpetum lacustris
Zosterion	Salicornietum europaeae	Typhetum angustifoliae
Zosteretum noltii	Salicornietum fruticosae	Typhetum latifoliae
	Salicornietum radicans	
		TAMARICI-PLATANETEA
CAKILETEA	Salsoletum sodae.	ORIENTALIS
Cakiletalia		
maritimae		Planetalia orientalis
Salsolion kali	JUNCETEA MARITIMI	Tamaricion parviflorae
Cakilo-Xanthietum		
italici Juncetalia maritimi		Vitici-tamaricetum dalmaticae
AMMOPHILETEA	Juncion maritimi	
Ammophiletalia	Juncetum acuti	SALICETEA PURPUREAE
Ammophilion	Juncetum maritimi	Salicetalia purpurea
Ammophiletum	Juncetum maritimi – acuti	Salicion albae
		Salicetum albae-fragilis
Sporoboletum	Plantaginion crassifoliae	albanicum
	Holoschoenetum romani	
	Schoeno-Erianthetum	

Annex 3: Vegetation species in the KBA of Narta Lagoon

Ν		Ν		Ν	
0	Species	0	Species	0	Species
					Trifolium resupinatum
	Endemic species.	22	Gratiola officinalis L.	56	<i>L</i> .
					Trifolium subterraneum
1	Orchis albanica	23	Hedera helix L.	57	L.
			Hypericum perforatum		
2	Orchis x paparisti	24	L.	58	Tussilago farfara L.
	Rare species.	25	Lamium purpureum L.	59	Ulmus campestris L.
1	Ephedra distachya L.	26	Laurus nobilis L.	60	Urtica dioica L.
2	Marsilea quadrifolia L.	27	Lolium multiflorum	61	Verbena officinalis L.
3	Narcissus poeticus L	28	Lolium perenne L.	62	Vitex agnus-castus L.
4	Nymphaea alba L.	29	Melissa officinalis L.	63	Vitis sylvestris

5	Nuphar lutea (L).	30	Melilotus officinalis L.	64	Vicia hirsuta (L.)
6	Nymphoides peltata	31	Mentha piperita L.	65	Xathium spinosum L.
	Baldellia ranunculoides				
7	(L.)	32	Myrtus communis L.	66	Xanthium strumarium L
8	Desmazeria marina (L.)	33	Ononis spinosa L.		
	Noteworthy species	34	Origanum vulgare L.		
1	Agrimonia eupatoria L.	35	Papaver rhoeas L.		
2	Agrostis stolonifera L	36	Pistacia lentiscus L.		
3	Ajuga reptans L.	37	Plantago major L.		
4	Alkanna tinctoria.L	38	Plantago lanceolata L.		
	Alisma plantago-				
5	aquatica L.	39	Poa pratensis L.		
6	Alnus glutinosa L.	40	Prunella vulgaris L.		
7	Althea officinalisL.	41	Prunus spinosa L.		
8	Bellis perennis L.	42	Punica granatum L.		
9	Bromus hordeacus.	43	Rosa canina L.		
10	Capsella bursa-pastoris	44	Rumex pulcher L.		
11	Centaurium umbellatum	45	Salix alba L.		
12	Cichorium intybus L	46	Sambucus ebulus L.		
13	Clematis vitalba L.	47	Sambucus nigra L.		
14	Cornus mass L.	48	Spartium junceum L		
15	Crataegus oxyacantha L.	49	Sonchus oleraceus L.		
16	Crataegus monogyna.	50	Taraxacum officinale		
			Teucrium chamaedrys		
17	Cynodon dactylon .	51	L.		
18	Dactylis glomerata L.	52	Teucrium polium L.		
19	Datura stramonium L.	53	Thymus longicaulis		
20	Ecballium elaterium (l.)	54	Trifolium pratense L.		
21	Equisetum arvense L.	55	Trifolium repens L.		
No		No		No	
•	Species	•	Species	•	Species
	EQUISETACEAE	1	Potamogeton crispus	7	Avena fatua
					Brachypodium
1	Equisetum arvense	2	Potamogeton natans	8	distachyon
	POLYPODIACEAE	3	Ruppia cirrhosa	9	Bromus hordeaceus
	Adiantum capillus-				
1	veneris	4	Zanichella palustris	10	Calamagrostis epigeus
2	Pteridium aquilinum	5	Zostera noltii	11	Crypis aculeata
	GYMNOSPERMAE		NAJADACEAE	12	Cynodon dactylon

	PINACEAE	1	Najas marina	13	Cynosurus echinatus
1	Pinus halepensis		JUNCAGINACEAE	14	Dactylis glomerata
2	Pinus pinea	1	Triglochin palustris	15	Dasypyrum villosum
3	Pinus pinaster		ALISMATACEAE	16	Desmazeria marina
			Alisma plantago-		
	CUPRESACEAE	1	aquatica	17	Desmazeria rigida
1	Cupressus sempervirens		BUTOMACEAE	18	Erianthus strictum
2	Juniperus oxycedrus	1	Butomus umbellatus	19	Elymus farctus
	ANGIOSPERMAE		IRIDACEAE	20	Elymus pycnanthus
	POSIDONIACEAE	1	Iris germanica	21	Gaudinia fragilis
1	Posidonia oceanica		POACEAE	22	Hainardia cylindrica
	ТҮРНАСЕАЕ	1	Aeluropus litoralis	23	Hordeum marinum
1	Typha angustifolia	2	Aegilops truncialis	24	Hordeum murinum
2	Typha latifolia	3	Agrostis stolonifera	25	Holcus lanatus
	SPARGANIACEAE	4	Ammophila arenaria	26	Imperata cylindrica
			Anthoxanthum		
1	Sparganium erectum	5	odoratum	27	Lagurus ovatus
	POTAMOGETONACEA				
	Ε	6	Arundo donax	28	Lolium multiflorum
NIo		No		No	
INO		110		110	
•	Species	•	Species	•	Species
2	Species Hernaria hirsuta	1	Species Papaver rhoeas	•	Species LEGUMINOSAE
2 3	Species Hernaria hirsuta Petrohagia prolifera	1	SpeciesPapaver rhoeasCRUCIFERAE	1	SpeciesLEGUMINOSAEAmorpha fruticosa
No 2 3 4	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbens	· 1 1	SpeciesPapaver rhoeasCRUCIFERAECakile maritima	1 2	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescens
INO 2 3 4	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbens	1 1	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellabursa-	1 2	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescens
10 2 3 4 5	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSaponaria officinalis	1 1 1 2	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellapastoris	· 1 2 3	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerus
INO 2 3 4 5 6	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSaponaria officinalisSilene alba	1 1 2 3	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellapastorisMaresia nana	1 2 3 4	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutum
INO 2 3 4 5 6 7	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSaponaria officinalisSilene albaSilene conica	1 1 2 3 4	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellapastorisMaresia nanaMatthiola sinuata	I 1 2 3 4 5	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceum
No 2 3 4 5 6 7 8 8	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSaponaria officinalisSilene albaSilene conicaSpergula arvensis	1 1 2 3 4 5	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellapastorisMaresia nanaMatthiola sinuataNasturtium officinale	I 1 2 3 4 5 6	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceumGalega officinalis
1 2 3 4 5 6 7 8 9	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSaponaria officinalisSilene albaSilene conicaSpergula arvensisSpergula marina	1 1 2 3 4 5 6	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellapastorisMaresia nanaMatthiola sinuataNasturtium officinaleRapistrum rugosum	1 2 3 4 5 6 7	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceumGalega officinalisLathyrus vulneraria
No 2 3 4 5 6 7 8 9 10	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSaponaria officinalisSilene albaSilene conicaSpergula arvensisSpergula marinaStellaria media	1 1 2 3 4 5 6 7	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellabursa-pastorisMaresia nanaMaresia nanaMatthiola sinuataNasturtium officinaleRapistrum rugosumSisymbrium officinale	1 2 3 4 5 6 7 8	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceumGalega officinalisLathyrus vulnerariaLotus corniculatus
1 2 3 4 5 6 7 8 9 10	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSaponaria officinalisSilene albaSilene conicaSpergula arvensisSpergula marinaStellaria mediaCERATOPHYLLACEAE	1 1 2 3 4 5 6 7	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellapastorisMaresia nanaMatthiola sinuataNasturtium officinaleRapistrum rugosumSisymbrium officinaleROSACEAE	1 2 3 4 5 6 7 8 9	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceumGalega officinalisLathyrus vulnerariaLotus corniculatusMedicago litoralis
1 2 3 4 5 6 7 8 9 10 1	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSaponaria officinalisSilene albaSilene conicaSpergula arvensisSpergula marinaStellaria mediaCERATOPHYLLACEAECeratophyllum demersum	1 1 2 3 4 5 6 7 1	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCakile maritimaDassorisMaresia nanaMaresia nanaMatthiola sinuataNasturtium officinaleRapistrum rugosumSisymbrium officinaleROSACEAEAgrimonia eupatoria	1 2 3 4 5 6 7 8 9 10	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceumGalega officinalisLathyrus vulnerariaLotus corniculatusMedicago litoralisMedicago lupulina
No 2 3 4 5 6 7 8 9 10 1	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSagina procumbensSaponaria officinalisSilene albaSilene conicaSpergula arvensisSpergula marinaStellaria mediaCERATOPHYLLACEAECeratophyllum demersumLAURACEAE	1 1 1 2 3 4 5 6 7 1 2	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellabursa-pastorisMaresia nanaMaresia nanaMatthiola sinuataNasturtium officinaleRapistrum rugosumSisymbrium officinaleROSACEAEAgrimonia eupatoriaCrataegus monogyna	1 2 3 4 5 6 7 8 9 10 11	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceumGalega officinalisLathyrus vulnerariaLotus corniculatusMedicago litoralisMedicago lupulinaMedicago marina
No 2 3 4 5 6 7 8 9 10 1 1	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSagina procumbensSalene albaSilene albaSilene conicaSpergula arvensisSpergula marinaStellaria mediaCERATOPHYLLACEAECeratophyllum demersumLAURACEAELaurus nobilis	1 1 1 2 3 4 5 6 7 1 2 3	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellabursa-pastorisMaresia nanaMatthiola sinuataNasturtium officinaleRapistrum rugosumSisymbrium officinaleROSACEAEAgrimonia eupatoriaCrataegus monogynaCydonia oblonga	1 2 3 4 5 6 7 8 9 10 11 12	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceumGalega officinalisLathyrus vulnerariaLotus corniculatusMedicago litoralisMedicago marinaMedicago marinaMedicago minima
No 2 3 4 5 6 7 8 9 10 1 1	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSagina procumbensSaponaria officinalisSilene albaSilene conicaSpergula arvensisSpergula marinaStellaria mediaCERATOPHYLLACEAECeratophyllum demersumLAURACEAELaurus nobilisRANUNCULACEAE	1 1 2 3 4 5 6 7 1 2 3 4 5 6 7 1 2 3 4	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsella maritimaCapsella bursa-pastorisMaresia nanaMaresia nanaMaresia nanaMatthiola sinuataNasturtium officinaleRapistrum rugosumSisymbrium officinaleROSACEAEAgrimonia eupatoriaCrataegus monogynaCydonia oblongaPotentilla reptans	1 2 3 4 5 6 7 8 9 10 11 12 13	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceumGalega officinalisLathyrus vulnerariaLotus corniculatusMedicago litoralisMedicago narinaMedicago marinaMedicago minimaMelilotus alba
No 2 3 4 5 6 7 8 9 10 1 1 1 1	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSagina procumbensSalene albaSilene albaSilene conicaSpergula arvensisSpergula marinaStellaria mediaCERATOPHYLLACEAECeratophyllum demersumLAURACEAELaurus nobilisRANUNCULACEAEAnemone hortensis	1 1 1 2 3 4 5 6 7 1 2 3 4 5 6 7 1 2 3 4 5	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsellabursa-pastorisMaresia nanaMatthiola sinuataNasturtium officinaleRapistrum rugosumSisymbrium officinaleROSACEAEAgrimonia eupatoriaCrataegus monogynaCydonia oblongaPotentilla reptansPrunus spinosa	1 2 3 4 5 6 7 8 9 10 11 12 13 14	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceumGalega officinalisLathyrus vulnerariaLotus corniculatusMedicago litoralisMedicago narinaMedicago marinaMedicago minimaMelilotus albaMelilotus officinalis
1 2 3 4 5 6 7 8 9 10 1 1 1 2	SpeciesHernaria hirsutaPetrohagia proliferaSagina procumbensSagina procumbensSaponaria officinalisSilene albaSilene conicaSpergula arvensisSpergula marinaStellaria mediaCERATOPHYLLACEAECeratophyllum demersumLAURACEAELaurus nobilisRANUNCULACEAEAnemone hortensisClematis vitalba	1 1 2 3 4 5 6 7 1 2 3 4 5 6 7 1 2 3 4 5 6 5 6	SpeciesPapaver rhoeasCRUCIFERAECakile maritimaCapsella maritimaCapsella bursa-pastorisMaresia nanaMaresia nanaMaresia nanaMatthiola sinuataNasturtium officinaleRapistrum rugosumSisymbrium officinaleROSACEAEAgrimonia eupatoriaCrataegus monogynaCydonia oblongaPotentilla reptansPrunus spinosaPyrocantha coccinea	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	SpeciesLEGUMINOSAEAmorpha fruticosaColutea arborescensCoronilla emerusDorycnium hirsutumDorycnium hebaceumGalega officinalisLathyrus vulnerariaLotus corniculatusMedicago litoralisMedicago narinaMedicago marinaMedicago minimaMelilotus albaMelilotus officinalisOnonis variegata

4	Consolida regalis	8	Rosa canina	17	Spartium junceum
5	Ranunculus sardous	9	Rubus ulmifolius	18	Trifolium angustifolium
6	Ranunculus ficaria	10	Sanguisorba minor	19	Trifolium campestre
7	Ranunculus velutinus		CESALPINACEAE	20	Trifolium pratense
	PAPAVERACEAE	1	Cercis siliquastrum	21	Trifolium repens
No		No		No	
•	Species		Species	•	Species
29	Lolium perenne	7	Carex pendula	2	Asparagus tenuifolius
30	Lophochloa cristata	8	Cladium mariscus	3	Ruscus aculeatus
31	Parapholis filiformis	9	Cyperus capitatus	4	Smilax aspera
32	Parapholis incurva	10	Cyperus longus		AMARYLLIDACEAE
			Eriophorum		Pancreatium
33	Phalaris arrundinacea	11	angustifolia	1	maritimum
34	Phleum pratense	12	Schoenus nigricans	2	Narcisus poeticus
35	Phragmites australis	13	Scirpus cernuus		DIOSCOREACEAE
36	Piptatherum miliaceum	14	Scirpus holoschoenus	1	Tamus communis
37	Poa trivialis	15	Scirpus maritimus		ORCHIDACEAE
					Anacamptis
38	Polypogon monspeliensis		ARACEAE	1	pyramidalis
39	Saccarum ravennae	1	Arum italicum	2	Orchis paparisti
40	Sporobolus punges		LEMNACEAE	3	Serapias lingua
41	Tragus racemosa	1	Lemna minor	4	Spirantes spiralis
42	Vulpia ciliata		JUNCACEAE		SALICACEAE
43	Vulpia fasciculata	1	Juncus acutus	1	Populus alba
	CYPERACEAE	2	Juncus compressus	2	Populus nigra
1	Acorellus pannonicus	3	Juncus effusus	3	Salix alba
2	Carex distans	4	Juncus litoralis	4	Salix pupurea
3	Carex echinata	5	Juncus maritimus		BETULACEAE
4	Carex extensa	6	Luzula forsteri	1	Alnus glutinosa
5	Carex flacca		LILIACEAE		FAGACEAE
6	Carex muricata	1	Asphodelus aestivus	1	Quercus robur
			Arthrocnemum		
	ULMACEAE	1	fruticosum		
			Arthrocnemum		
1	Ulmus campestris	2	glaucum		
	MORACEAE	3	Arthrocnemum perenne		
1	Ficus carica	4	Atriplex hastata		
2	Morus alba	5	Atriplex tatarica		
	CANNABACEAE	6	Chenopodium album		

1	Humulus lupulus	7	Chenopodium glaucum	
			Halimione	
	URTICACEAE	8	portulacoides	
			Halocnemum	
1	Parietaria officinalis	9	strobilaceum	
			Petrosimonia	
2	Urtica dioica	10	oppositifolia	
	SANTALACEAE	11	Salicornia europea	
1	Osyris alba	12	Salsola kali	
	ARISTOLOCHIACEAE	13	Salsola soda	
1	Aristolochia clematitis	14	Saueda maritima	
2	Aristolochia rotunda	15	Saueda vera	
	POLYGONACEAE		AMARANTHACEAE	
1	Polygonum aviculare	1	Amaranthus albus	
			Amaranthus	
2	Polygonum lapathifolium	2	retroflexsus	
3	Polygonum maritimum		CARYOPHYLLACEAE	
			Cerastium	
4	Rumex conglomeratus	1	brachypetalium	

Annex 4: List of Bird Species Obsreved so far in the Protected Landscape Viose-Nai
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Latin Name	Albanian Name	Latin Name	Albanian Name
1 Tachybaptus ruficollis	Kredharaku i vogel	97 Sterna caspia	Dallendyshe deti e madhe
2 Podiceps cristatus	Kredharaku i madh	98 Sterna sandvicensis	Sterni dimerak
3 Podiceps grisegena	Kredharaku faqehirte	99 Sterna hirundo	Dallendyshe e zakonshme deti
4 Podiceps nigricollis	Kredharaku gushezi	100 Sterna albifrons	Dallendyshe deti ballebardhe
5 Calonectris diomedea	Lajmetari i madh i furtunes	101 Chlidonias hybridus	Dallendyshe deti faqebardhe
6 Puffinus yelkouan	Lajmetari i vogel i furtunes	102 Chlidonias niger	Dallendyshe deti e zeze
7 Sula bassana	Basani i cmendur	103 Chlidonias leucopterus	Dallendyshe deti krahebardhe
8 Phalacrocorax carbo	Karabullaku i detit	104 Columba livia	Pellumbi e eger i shkembit
9 Phalacrocorax pygmeus	Karabullaku i vogel	105 Columba oenas	Pellumbi i eger i pyllit
10 Pelecanus crispus	Pelikani kacurrel	106 Streptopelia decaocto	Kumuria
11 Ixobrychus minutus	Gakthi i vogel	107 Streptopelia turtur	Turtulli

12 Nycticorax nycticorax	Capka e nates	108 Otus scops	Gjoni
13 Ardeola ralloides	Capka e verdhe	109 Athene noctua	Kukuvajka
14 Egretta garzetta	Capka e bardhe e vogel	110 Strix aluco	Kukuvajka e pyjeve
15 Egretta alba	Capka e madhe e bardhe	111 Apus apus	Dejka
16 Ardea cinerea	Capka e perhime	112 Apus melba	Dejka gjoksbardhe
17 Ardea purpurea	Capke rrudhi	113 Alcedo athis	Bilbili peshkatar
18 Ciconia ciconia	Lejleku	114 Merops apiaster	Gargulli
19 Plegadis falcinellus	Kojliku i zi	115 Upupa epops	Pupeza
20 Platalea leucorodia	Capka sqepluge	116 Dendrocopos syriacus	Qukapiku i zakonshem larosh
21 Phoenicopterus ruber roseus	Lejleku krahekuq	117 Melanocorypha calandra	Drenja e madhe qafezeze
22 Cygnus olor	Mjelma me xhunge	118 Calandrella brachydactyla	Drenja e perhimte
23 Anser albifrons	Pata ballebardhe	119 Galerida cristata	Dervishi
24 Anser anser	Pata e eger	120 Lullula arborea	Drenja
25 Tadorna tadorna	Laroshja	121 Alauda arvensis	Lauresha
26 Anas penelope	Kryekuqe e madhe	122 Riparia riparia	Dallendyshe e lumit
27 Anas strepera	Rosa e perhime	123 Hirundo daurica	Dallendyshe kerbishtkuqe
28 Anas crecca	Rosa kere	124 Delichon urbica	Dallendyshe kerbishtbardhe
29 Anas platyrhynchos	Kuqla qafegjelber	125 Anthus richardi	Drenja e Ricardit
30 Anas acuta	Rosa bishtgjele	126 Anthus campestris	Drenja e fushes
31 Anas querquedula	Marsatorja	127 Anthus trivialis	Drenja e pyllit
32 Anas clypeata	Sqepluga	128 Anthus pratensis	Drenja e luadhit
33 Aythya ferina	Kryekuqe e mjeme	129 Anthus cervinus	Drenja gushekuqe
34 Aythya nyroca	Kryekuqe e vogel	130 Anthus spinoletta	Drenja e malit
35 Aythya fuligula	Rosa laramane me cafke	131 Motacilla flava	Bishtatundesi i verdhe
36 Bucephala clangula	Rosa me kater sy	132 Motacilla cinerea	Bishtatundesi i malit
37 Mergus albellus	Zhytesi i vogel laraman	133 Motacilla alba	Bishtatundesi i bardhe
38 Mergus serrator	Zhytesi i mesem me callme	134 Troglodytes troglodytes	Cerri
39 Oxyura leucocephala	Rosa kokebardhe	135 Prunella modularis	Dredhuesi gusheperhime
40 Pernis apivorus	Huta grenxangrenese	136 Cettia cetti	Bilbili i kenetave
41 Milvus migrans	Huta e zeze bishtgershere	137 Acrocephalus schoenobaenus	Bilbilthi i zhukave
42 Haliaeetus albicilla	Shqiponja e detit	138 Cisticola juncidis	Sqepholli i xunktheve
43 Circus aeruginosus	Shqipja e kenetes	139 Acrocephalus	Bilbilthi i kallamave

		scirpaceus	
44 Circus cyaneus	Shqipja e fushes	140 Acrocephalus	Bilbilthi fushor i
		arundinaceus	kallamave
45 Accipiter nisus	Gjeraqina e	141 Hippolais	Perqeshesi i madh i
46.0.1	shkurtes	olivetorum	ullinjve
46 Buteo buteo	Huta	142 Hippolais pallida	Perqeshesi i vogel i
A7 Buteo lagonus	Huta me kalca	1/13 Sulvia hortensis	Bilbilthi kengetar
47 Duieo iugopus	Charles and a second	143 Sylvia noriensis	
48 Aquila clanga	e rosave	144 Sylvia atricapilia	Bildiithi kokezi
49 Falco naumanni	Skifteri kthetraverdhe	145 Sylvia communis	Bilbilthi i perhime
50 Falco tinnunculus	Skifteri kthetrazi	146 Sylvia	Bilbilthi kokezi
		melanocephala	gushebardhe
51 Falco vespertinus	Skifteri kembekuq	147 Sylvia conspicillata	Bilbilthi me syze
52 Falco columbarius	Skifteri i vogel	148 Phylloscopus	Fishkellyesi i vogel
	01:0 :: 1	collybita	
53 Falco subbuteo	Skifteri i drureve	149 Phylloscopus	Fishkellyesi gusheverdhe
54 Falco peregrinus	Krahethati	150 Regulus regulus	Mbretethi
55 Pardir pardir	Thallaza a fushas	150 Regulas regulas	Gushakugi
55 Feruix peruix	Chlorente	151 Erunacus rubecula	Dusliekuqi
56 Coturnix coturnix	Shkurta	152 Luscinia megarhynchos	B110111
57 Rallus aquaticus	Gjeli i ujit	153 Phoenicurus	Bishtkuqi zeshkan
	5 5	ochruros	
58 Porzana pusilla	Porzana e vogel	154 Saxicola rubetra	Ceku vetullbardhe
59 Gallinula chloropus	Puleza e ujit	155 Saxicola torquata	Ceku kokezi
60 Fulica atra	Bajza	156 Oenanthe oenanthe	Bishtbardha e gurit
61 Haematopus ostralegus	Laraska e detit	157 Oenanthe	Bishtbardha vetullzeze
		hispanica	
62 Vanellus vanellus	Gicvilja	158 Muscicapa striata	Mizakapesi i perhime
63 Himantopus	Kaloresi	159 Turdus merula	Mellenja
himantopus	0 1:		
64 <i>Recurvirostra avosetta</i>	Sqepbiza	160 Turdus pilaris	Tusha e madhe e fushes
65 Burhinus oedicnemus	Gjelaci symadh	161 Turdus philomelos	Tusha kengetare
66 Glareola pratincola	Dallendyshe deti	162 Parus ater	Trishtili i zi
67 Charadrius dubius	Vraponjesi i vogel	163 Parus caeruleus	Trishtili i kalter
68 Charadrius hiaticula	Vraponjesi i madh	164 Parus major	Trishtili i madh
69 Charadrius	Vraponjesi	165 Certia	Rrotulluesi gishtshkurter
alexandrinus	gushebardhe	brachydactyla	
70 Pluvialis apricaria	Gjelaci pikalosh ngjyre ari	166 Remiz pendulinus	Kolovatesi
71 Pluvialis squatarola	Gjeleza pikaloshe	167 Oriolus oriolus	Bengu
72 Arenaria interpres	Gjeleza laramane	168 Lanius collurio	Larashi kurrizkuq
73 Calidris alba	Gieleza me tri	169 Lanius senator	Larashi kokekuq

	gishta		
74 Calidris minuta	Gjelaci i vogel	170 Pica pica	Laraska bishtgjate
75 Calidris temminckii	Gjelaci xhuxh	171 Corvus monedula	Gala
76 Calidris ferruginea	Gjeleza gushekuqe	172 Corvus frugilegus	Korbi sqepbardhe
77 Calidris alpina	Gjeleza gushezeze	173 Corvus corone cornix	Sorra
78 Philomachus pugnax	Luftetari	174 Corvus corax	Korbi
79 Gallinago gallinago	Shapka e ujit	175 Sturnus vulgaris	Cerloi i zi pikalosh
80 Limosa limosa	Gjeleza e madhe bishtzeze	176 Passer domesticus	Harabeli
81 Numenius arquata	Kojliku i madh	177 Passer hispaniolensis	Harabeli gjokszi
82 Tringa erythropus	Qyrylyku i murrme	178 Passer montanus	Harabeli i fushes
83 Tringa totanus	Qyrylyku kembeqirize	179 Fringilla coelebs	Zboraks
84 Tringa stagnatilis	Qyrylyku sqepholle	180 Fringilla montifringilla	Zboraksi i malit
85 Tringa nebularia	Qyrylyku i madh	181 Serinus serinus	Zog bari sqepshkurter
86 Tringa ochropus	Qyrylyku kembeperhime	182 Carduelis chloris	Verduni
87 Tringa glareola	Qyrylyku i zallit	183 Carduelis carduelis	Gardalina
88 Actitis hypoleucos	Qyrylyku i vogel	184 Carduelis spinus	Cerla dimerake
89 Larus melanocephalus	Pulebardha kokezeze	185 Carduelis cannabina	Kerpngrenesi
90 Larus ridibundus	Pulebardha e zakonshme	186 Coccothraustes coccothraustes	Sqeptrashi
91 Larus genei	Pulebardha roze	187 Emberiza citrinella	Cerla verdhashe
92 Larus audouinii	Pulebardha e kepit	188 Emberiza cirlus	Cerla gushegjelber
93 Larus canus	Pulebardha e perhime	189 Emberiza cia	Cerla e malit
94 Larus fuscus	Pulebardha mesatare shpinezeze	190 Emberiza schoeniclus	Cerla e kallamishteve
95 Larus cachinnans	Pulebardha kembeverdhe	191 Emberiza melanocephala	Cerla kokezeze
96 Gelochelidon nilotica	Dallendyshe deti kembezeze	192 Miliaria calandra	Cerla e zakonshme

No.	Familly and Species	No.	Familly and Species
1	Fam <i>Mugilidae</i>	8	Fam. Saleidae
1	Mugil cephalus L 1758	1	Solea vulgaris (Quinsel 1806)
2	Liza ramada (Risso 1826)	2	Solea impar (Benneth 1831)

3	Liza salines (Risso 1810)	3	Solea lasearis (Risso 1810)
2	Fam. Sparidae	9	Fam. Pleuronectidae
1	Sparus aurata (L. 1758)	1	Plathichthys flesus luscus (L. 1758)
2	Lithoganathus mormyrus (L. 1758)	10	Fam. Poecilidae
	Diplodus vulgaris (Geoffroy,		
3	Hilaire1817)	1	Lebistes reticulatus
4	Diplodus sargus sargus (L. 1758)	11	Fam. Cyprinodontidae
5	Diplodus annularis (L.1758)	1	Aphanuis fusciatus
6	Oblada melanura (L. 1758)	2	Aphanius iberus
3	Fam. Moronidae	3	Aphanius dispar
1	Dicentrarchus labrax (L. 1758)	12	Fam. <i>Mugilidae</i>
2	Dicentrarchus puntactus (Bloch 1792)	1	Liza aurata (Risso 1810)
4	Fam. Anguillidae	13	Fam. Carangidae
1	Anguilla anguilla (L.1758)	1	Lichia amia (L. 1758)
5	Fam. Gobidae	2	Seriola dumerili (Risso 1810)
1	Gobius bucchichi (Steindachner 1879)	3	Trachurus trachurus (L. 1758)
2	Gobius niger (1758)	14	Fam. Sparidae
	Zosterisessor ophiocephalus (Pallas		Sarpa sarpa (L. 1758)
3	1811)	1	
6	Fam. Atherinidae	2	Bobs bobs (L. 1758)
1	Atherine hepsetus (L.1758)	15	Fam Scienidae
2	Atherine boyeri (Riss 1810)	1	Sciena umbra (L. 1758)
7	Fam. Scophthalmidae	16	Fam. Mullidae
1	Scophthalus rombus (L. 1758)	1	Mullus barbatus (L. 1758)
2	Psetta maxima maxima (L. 1758)		

Annex 6: Amphibians observed in Protected Landscape of Narta Lagoon

No	Amphibians
1	Triturus cristatus
3	Triturus vulgaris
4	Bambina variegata
5	Bufo bufo
6	Bufo viridis
7	Hyla arborea
8	Rana dalmatina
9	Rana balcanica
10	Rana lessonae

No	Reptile	No	Reptile
1	Caretta caretta	15	Coluber caspius
2	Dermochelys coriacea	16	Coluber gemonensis
4	Emys orbicularis	17	Coluber najadum
4	Mauremys caspica	18	Coronella austriaca
5	Testudo hermanni	19	Elaphe longissima
6	Anguis fragilis	20	Elaphe quatorlineata
7	Pseudopus apodus	21	Elaphe situla
8	Algyroides		Malpolon monspessulanus
	nigropunctatus	22	
9	Lacerta trilineata	23	Natrix natrix
10	Lacerta viridis	24	Natrix tessellata
11	Podarcis muralis	25	Telescopus fallax
12	Podarcis taurica	26	Vipera ammodytes
13	Ablepharus kitaibelii	25	Telescopus fallax
14	Typhlops vermicularis	26	Vipera ammodytes

Annex 7: Reptiles observed in the KBA Narta