

Conservation Status of Albanian Coastal Wetlands and their Colonial Waterbird Populations (Pelecaniformes and Ciconiiformes)

DIDIER VANGELUWE¹, MARIE-ODILE BEUDELS¹ AND FOTAQ LAMANI²

¹Institut Royal des Sciences Naturelles de Belgique,
1040 Bruxelles, Belgium

²Museum Goulandris, Athens, Greece

Abstract.—The Albanian coastal region is among the least known areas in the entire Mediterranean basin. The network of protected sites includes national parks and hunting reserves. Nature conservation legislation is currently being revised. The eight largest coastal wetlands were evaluated during November 1992 and May 1993. Pelecaniform and Ciconiiform populations were intensively surveyed. Observations were compared with historical data.

Key Words.—Albania, Ciconiiformes, coastal wetlands, conservation, Pelecaniformes.

Colonial Waterbirds 19 (Special Publication 1):81-90, 1996

NATURE CONSERVATION IN ALBANIA

In Albania, nature conservation is currently under the authority of the Ministry of Agriculture and the Ministry of Health. Throughout the Ministry of Agriculture, the Directory of Forestry Service is responsible for protected areas, hunting regulations and forest management. The newly formed Environmental Protection and Preservation Committee is maintained within the Ministry of Health. The tasks of the Committee are to promote, organize and coordinate environmental policies and actions in Albania. The Institute for Forestry and Pasturelands Research and the Natural Sciences Faculty of the State University of Tirana collaborate directly to develop environmental policies.

Revision of environmental laws has been made, although official implementation is pending. At present, former legislation regarding forest protection (1963, 1966) and hunting regulations (1959) are still in use. Nature protection laws are largely oriented towards the conservation of rare animals and plants. Effective protected areas are of two types. First, national parks are designed for their exceptional environmental character. They are under full protection. Second, hunting reserves are managed for seasonal hunting exploitation. Until 1990, access was restricted to only a few privileged hunters.

Since 1990, the Albanian shore of the Mediterranean Sea has drawn the attention of many conservationists and entrepreneurs

because of its unexploited nature. However, the intent of each group is vastly different.

Within the framework of two environmental programs of the Commission of European Communities (DG XI, "Preparation of a rescue plan for *Numenius tenuirostris*," and "Establishment of a register of Monk seal (*Monachus monachus*) within the European Community"), we conducted surveys in Albania with special emphasis on coastal ecosystem conservation.

METHODS

The nearly 400-km coastline was prospected by boat and by car from 5 to 11 November 1992 and from 4 to 12 May 1993. Eight major coastal wetlands were surveyed totaling approximately 27,000 ha (Fig. 1.). Velipoja and Viluni were visited only in November 1992; Lake of Butrinti was visited only in May 1993.

The sites were prospected with local competent authorities by foot and using boats (Fushe-Kushe Patok, Karavasta lagoon, Gjiri i Vlores). In 1992 and 1993, every coastal site was prospected during one full day, except for Patok lagoon which had been visited two days consecutively in November 1992. For each site, key habitats were identified, migrating Charadriiformes were counted and Pelecaniformes and Ciconiiformes populations were surveyed. In May 1993, special effort was achieved to localize and to census Pelecaniformes and Ciconiiformes breeding colonies. The conservation status of the areas was directly evaluated in the field and with the assistance of the authority concerned in Tirana.

Previous data (Lamani 1966a, 1966b, 1987; Zeko and Lamani 1966; Lamani unpubl. data) collected by the Natural Sciences Faculty of the State University of Tirana were added for comparison.

ALBANIAN COASTAL WETLANDS

In the following sections, we describe each of the major wetlands visited, the pro-

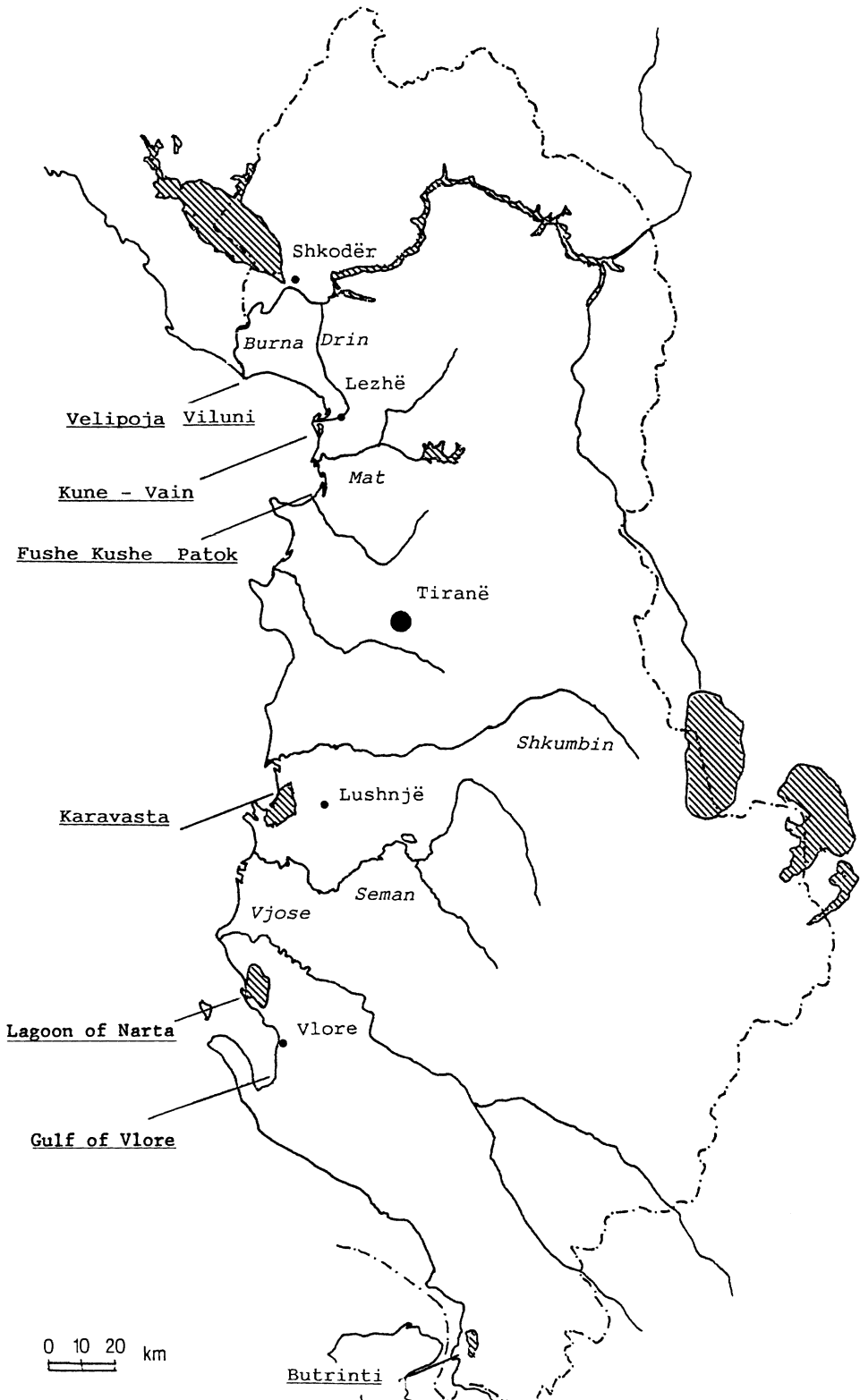


Figure 1. Location of Albania's coastal wetlands surveyed in November 1992 and May 1993.

tective status of the region, the types of habitats, the colonial waterbirds using the area, and any environmental threats to the area. The habitats are described by the CORINE-Biotope typology of Devillers *et al.* (1991).

CORINE (i.e., Community-wide coordination of information on the Environment) is a program of the Commission of the European Communities for gathering, coordinating and ensuring the consistency of information on the state of the environment and natural resources in the Community. The Biotopes project is a part of the CORINE program designed to allow sites of community importance for nature conservation to be selected using criteria which are consistent in all member states. The CORINE Biotopes typological list "Habitats of the European Community" (Devillers *et al.* 1991) was developed within the context of the Biotopes project, as a tool for the description of sites of importance for nature conservation in Europe. It was, however, envisioned that it could have wider applications in the field of conservation biology.

Velipoja

Status: District of Shkodër; Hunting Reserve of Velipoja: 690 ha.

Habitats: Freshwater marshes dominated by flooded *Phragmites* beds (CORINE 53.111) border the left bank of Buna River and estuary. Riparian forests, among them, southern black alder (*Alnus glutinosa*) galleries (CORINE 44.51), grow on elevated grounds (isles and alluvial banks). The complex is separated from a large vegetated sand beach (CORINE 16.12) by pine (*Pinus* spp.) plantations (CORINE 83.3112).

Colonial waterbird occurrence: At a minimum, Great Cormorants (*Phalacrocorax carbo*), Pygmy Cormorants (*Phalacrocorax pygmeus*) (in significant numbers), Grey Herons (*Ardea cinerea*) and Little Egrets (*Egretta garzetta*) are known from surveys during previous decades to breed here. The only suitable nesting site visited (in November 1992) was Ada Island alluvial forest where 30 old nests from the current year (probably Little Egret) were located. Other alluvial wood-

lands, situated in the marshes and along the Buna River are much more suitable. However, it was impossible to confirm previous data from this area. The area is important for Dalmatian Pelicans (*Pelecanus crispus*) as a feeding and migration site, probably for birds originating from Montenegro populations (17 adults on 15 July 1982; Lamani, pers. obs.).

Threats: Until 1990, the Reserve was strictly protected. The site was fenced and access restricted to a few privileged hunters. Today, entrance is free. As a consequence, natural resources are being overexploited through overgrazing, timber harvesting (in heron colonies), fishing, and hunting. The resulting degradation and disturbance are important.

Viluni Lagoon

Status: District of Shkodër; Unprotected: approximately 300 ha.

Habitats: The lagoon was a sea inlet (CORINE 12) currently transformed into an estuary (CORINE 13.3) through a channel to the Buna River. Unvegetated sand beach (CORINE 16.11) bordered by white dunes with predominant marram grass (*Ammophila arenaria*) (CORINE 16.2122) separate the low depth brackish lagoon (CORINE 23) from the sea. Saltmarsh scrubs (CORINE 16.62), mud and sand flats (CORINE 14) fringe the lagoon. Pine plantations (CORINE 83.3112) occur along the coast on the northern edge of the site.

Colonial waterbird occurrence: This area is not known to contain colonial waterbird colonies. Lagoons, sand, and mud flats exist in suitable feeding areas for Pelecaniformes and Ciconiiformes, at least during the non-breeding period. In November 1992, 45 Pygmy Cormorants, 60 Little Egrets, and 8 Great Egrets (*Casmerodius albus*) were observed fishing.

Threats: A small-scale fishery occurs at the site. Nets obstruct the northern part of the sea arm close to the channel. Plans exist to extend these activities. A local source indicated that poaching is a common practice.

Kune and Vain

Status: District of Lezhë; Hunting Reserve of Kune and Vain: 1,850 ha (water: 1,700 ha, woodland: 200 ha).

Habitats: A 30-100 m vegetated sand beach (CORINE 16.12) with some shifting dune (CORINE 16.21) edged the entire site. The Drin stream estuary and two narrow channels, each linking a lagoon to the sea, interrupt the beach. Kune lagoon is brackish (CORINE 23). Fringing vegetation is scarce, consisting of small, surface saltmarsh scrubs (CORINE 16.62) and reed beds (CORINE 53.1). Low islands are either covered by halophytic communities or unvegetated. The northwest sand bar separating the lagoon from the sea extends to form 30-ha marshes with dense *Tamarix* thickets (CORINE 44.8133). Today, this biotope is degraded and the majority of trees are dead.

The Vain area is separated from Kune by the Drin stream channel. Two lagoons comprise this area. Ceka is the most important lagoon. Salinity is lower than in Kune lagoon, due to topography of the channel. More than half of the water surface is covered by flooded *Phragmites* beds (CORINE 53.111). Banks are locally covered by sedge communities (CORINE 53.2). Forests are restricted to a narrow band between the beach and the lagoon. Natural communities, heavily degraded, consist of black alder galleries (CORINE 44.51) with *Populus alba*, *Salix alba*, and *Quercus* spp. and cover ca. 30 ha. Pine plantations (CORINE 83.3112) tend to replace these formations over time. From the northern part of Kune lagoon to the foothills of Mont Rrenc extends a vast marsh complex with reed beds (CORINE 53.11), clubrush (*Scirpus* spp.) beds (CORINE 53.17) and large *Carex* spp. beds (CORINE 53.21). Scattered open eutrophic waters (CORINE 22.13) and unvegetated muds (CORINE 22.2) also occur.

Colonial waterbird occurrence: Until recently, the Kune and Vain area had significant numbers of nesting cormorants and herons. Eight species (see Table 1) breed together in a dense 10-ha colony situated on the sandy spit separating Kune lagoon from the Adriatic

Sea. Habitat consists of wet *Tamarix* woodland surrounded by freshwater ponds and marshes. Birds disperse to feed in Shengjin marshes, Kune, Bilanci, Ceka lagoons, and in wet meadows extending along the Drin to Lezhë.

Detailed studies on this site were carried out from 1951 until 1964 (Lamani 1966a, 1966b; Zeko and Lamani 1966). The evolution of this colony has been dramatic. In 1991 and 1993, no nests were located in *Tamarix*. In 1991, separate colonies were observed on solitary poplars and in a dense 20-year-old pine plantation (Crockford and Sutherland, pers. comm.). In 1993, nests were only found in a fragment (5 ha) of wet, alluvial woodland and on isolated, secular *Populus alba*. This year, despite intensive searching, only Grey Herons were found to be breeders. A flock of 60 Little Egrets in trees among Grey Herons nests suggested possible nesting. Observation of Great Cormorants (2 adults), Pygmy Cormorants (35-45 adults), Squacco Herons (*Ardeola ralloides*) (15-20 adults), Eurasian Spoonbills (*Platalea leucorodia*) (15 adults) and Glossy Ibis (*Plegadis falcinellus*) (7 adults) are too few to expect significant breeding population.

During the non-breeding season, the lagoons concentrate numerous waterbirds. In autumn 1992, 1,100 Great Cormorants, 650 Pygmy Cormorants, 35 Little Egrets, 25 Great Egrets, 140 Grey Herons were recorded. Dalmatian Pelicans are known to be regular in September-October (about 100 birds), but also in summer; 3 adults were seen in May 1966.

Threats: Wood exploitation in alluvial forests is dramatic. Clearly, the situation worsened between November 1992 and May 1993. The threat of this habitat's disappearance is imminent if no action is quickly taken to stop the destruction. Since 1966, the quality of the *Tamarix* thickets decreased due to salinization of the marshes from the digging of a channel linking the site with Kune lagoon. Today, this habitat is totally degraded and filled with dead trees. Such an ecological upset is extremely detrimental to Pelecaniformes and Ciconiiformes populations and

Table 1. Number of pairs¹ of waterbirds estimated to be nesting in the Kune colony.

	1951-53	1960-64	1966	1981	1984	1991 ²	1993
Great Cormorant <i>Phalacrocorax carbo</i>	400-500	150-200	80-100	?	15-20	?	0
Pygmy Cormorant <i>Phalacrocorax pygmaeus</i>	600-750	150-200	120-150	?	?	?	0
Grey Heron <i>Ardea cinerea</i>	200-250	225-300	100-150	50-60	22	33	21
Little Egret <i>Egretta garzetta</i>	400-500	450-600	200-250	60-70	40	353	0-20
Squacco Heron <i>Ardeola ralloides</i>	200-250	150-200	150-200	20-25	20	35	0-5
Black-crowned Night-Heron <i>Nycticorax nycticorax</i>	0	75-100	50-75	15-20	?	35	0
Eurasian Spoonbill <i>Platalea leucorodia</i>	100-125	75-100	?	?	?	?	0
Glossy Ibis <i>Plegadis falcinellus</i>	100-125	225-300	?	?	?	?	0

¹In the majority of cases, "?" indicates no or very few pairs.

²Numbers from 1991 were provided by N. Crookford and W. Sutherland (pers. comm.).

is most probably the main reason for the disappearance of any breeding concentration.

Hunting is increasing and management is currently absent. Hunting seasons and bags are not respected, and protected species are commonly shot. These activities are principally attributed to foreign hunters.

Overgrazing is also increasing. Cows, sheep, and goats are free to graze everywhere, destroying the natural vegetation. Fishing occurs principally on Kune lagoon (nets) and along the Drin (square dipping-net, fishing lines). Some birds, such as cormorants, are considered to be competitors and are thus persecuted. The intensification of all of these practices is highly probable. Also, the water quality of the Drin is being heavily degraded by the effluents of the phosphate factory in Lezhë.

Fushe- Kushe Patok

Status: District of Krujë; Hunting Reserve: 1,200 ha (4,200 ha before land reclamation).

Habitats: Wide, unvegetated sand beaches (CORINE 16.11) edge two brackish shallow lagoons (CORINE 23). Southern main lagoon banks and islands are covered by salt-marsh scrubs (CORINE 16.62). Low tide exposes several ha of mudflats (CORINE 14). On the left bank, the Fushe-Kushe forest extends for approximately 50 ha. It is a riparian forest with *Alnus glutinosa* and *Populus alba* (with elements of CORINE 44.51-44.6) with some dryland species (*Pinus halepensis*). To the south, Droja and Gjapsh estuaries formerly formed vast marshes. This site is currently drained and the streams are converted into canals. Only large reed beds persist (CORINE 53.11). The northern lagoon is partially sedimented. Water depth is low and mudflats numerous. Main vegetation consists of reed and clubrush beds (CORINE 53.11-53.17). The Mat stream estuary extends to the north. The vast alluvial forest that once occurred there has apparently been totally cut. Small depressions occur which are covered by abundant sedge communities (CORINE 53.2). The disappearance of riparian forests caused erosion leading to the formation of an important alluvial spit. It extends

throughout the Patok Bay from the south bank of the estuary straight south, creating a new lagoon. At low tide, an alluvial spit extends approximately 1,000 m long by 500 m wide. An isolated sandy island appeared in the spit during its formation.

Colonial waterbird occurrence: Breeding occurrence of Pelecaniformes and Ciconiiformes is virtually non-existent in Patok (see Threats). Until recently, a small colony (20-30 nest) of Dalmatian Pelicans was established on the island in the bay. The species is regularly observed in the bay, particularly in the autumn. Five were recorded in July 1991 (Crockford and Sutherland, pers. comm.) and 1 in November 1992. In May 1993, 4 Great Cormorants, 1 Pygmy Cormorant, 25 Little Egrets and 20 Grey Herons were observed, but no breeding evidence was recorded.

Feeding and resting habitat availability make the site attractive as a stopover or wintering place. In November 1992, the following numbers were observed: Great Cormorants: 950, Dalmatian Pelican: 1, Little Egrets: 20, Great White Egrets: 3, Grey Herons: 50, Spoonbills: 2 adults. Five endangered Slender-billed Curlew (*Numenius tenuirostris*) were observed in November 1992 on the alluvial spit.

Threats: Local habitat is highly degraded. Recent land reclamation destroyed 3/4 of the reserve surface and overgrazing occurs on a large scale. Wood exploitation completely destroyed the Mat estuary alluvial forest and reduced the Fushe- Kushe forest to a few dozen hectares. Thus, the establishment of any cormorant - heron colony is hindered. The increase of hunting and lack of respect for regulations is dramatic. Fishing activities, also increasing, are being developed through a joint-venture with Italians. Dynamite fishing is used. Disturbances by sunbathing tourists on the sand bar seem high and could be a likely cause of the disappearance of the Dalmatian Pelican colony.

Divjaka-Karavasta Complex

Status: District of Lushnjë; The National Park of Divjaka (1,000 ha of woodland) includes a hunting reserve. The Karavasta la-

goon complex (4,200 ha of water) is almost totally unprotected.

Habitats: Divjaka woodland extends from Shkumbin estuary to the southern limit of the sand spit separating Karavasta lagoons. It consists of pine forest (CORINE 42.12) comprising *Pinus halepensis*, *P. pinea*, *P. pinaster* and *Erica* spp. It is edged by unvegetated beach (CORINE 16.11) with dune juniper thickets (CORINE 16.27).

The lagoon complex is separated into two brackish lagoons (CORINE 23.2). The Karavasta lagoon covers 3,900 ha. The northern quarter and the entire shores are shallow (0.5-1 m). These zones include numerous low islands covered by halophytic communities. The surroundings seem to have been totally drained and converted into crops. The Godull lagoon is smaller and more connected with the sea; it is separated only by a sand spit and dunes (CORINE 16.2122). Some sandy islands occur which are also covered with halophytic communities.

The Shkumbin and Seman stream estuaries were not surveyed. Their habitats are probably also heavily degraded, including any associated alluvial forest.

Colonial waterbird occurrence: The Karavasta complex is of international importance for Dalmatian Pelicans. The site is the only breeding place for pelicans in Albania. Colonies were located on low islands in an inner and outer lagoon and also on an islet near the Shkumbin stream mouth. Today, colonies can be found only in the inner lagoon; however, complete censuses are lacking. Partial surveys yielded 58 nests in March 1969, 81 nests in March 1984 (inner and outer lagoon), 11 nests in 1985 (Barbieri *et al.*, 1986), 52 nests in June 1991 (inner lagoon; Crockford and Sutherland, pers. comm.), 40-50 nests in April 1992 (inner lagoon; Crivelli, Station Biologique de la Tour du Valat, pers. comm.), 54 nests in May 1993 (inner lagoon). Pelicans are present in Karavasta all year round. In June 1991, almost 250 pelicans (with some White Pelicans, *Pelecanus onocrotalus*) were recorded on the lagoons (Crockford and Sutherland, pers. comm.). In November 1992, 34 Dalmatian Pelicans were present.

Cormorants and herons were known to breed in the alluvial forest situated in the Shkumbin estuary. Their present status in this area is unknown. In the lagoons, a few cormorants and herons were nevertheless observed in May 1993: 5 Great Cormorants, 10 Little Egrets, and most interesting, 28 Eurasian Spoonbills. This area seems to be significant for this species; 300 were observed here in March 1984. In autumn, concentrations of Pelecaniformes and Ciconiiformes were observed on the inner lagoon including 1,800 Great Cormorants, 400 Pygmy Cormorants, 250 Little Egrets, 220 Great Egrets, 60 Grey Herons and one Eurasian Spoonbill.

Threats: Plans for building a new recreation complex on the Divjaka Beach seem incompatible with the status and the value of the area. The Karavasta lagoons and the Dalmatian Pelican colonies would be directly threatened by habitat degradation and human disturbances.

Habitat destruction is critical. Wetlands situated in the surrounding area of the inner lagoon are almost completely drained and reclaimed. It appears that this situation also holds true for Seman and Shkumbin estuaries, marshes and alluvial forests. New plans for land reclamation have been proposed for the site (Atkinson 1990).

Since 1990, access to the area has been only partially limited and hunting has increased without control. Hunting seasons and bag limits are not respected and protected species are commonly shot. Hunting rights are routinely bought by foreigners, mostly from the European Community. The resulting actions are highly detrimental to Dalmatian Pelicans: Habitat deterioration, disturbances to colonies, stealing of downy young, and shooting of adults.

Fishing is also increasing (creation of a joint-venture with an Italian society), with the same consequences as those for hunting including overexploitation of resources, degradation of the habitat, disturbance and destruction of bird populations. Considered a competitor, the Dalmatian Pelican is again severely affected. Eggs are destroyed and young are killed in the nest. Chemical pollution also threatens the site through effluents

emitted from factories situated along the Se-man and Shkumbin streams.

Lagoon of Narta

Status: District of Vlorë; Unprotected: 4,000 ha.

Habitats: This site consists of a 0.80 m deep hypersaline lagoon, partly used as salt-pans (CORINE 89.12). In the absence of a freshwater tributary combined with the narrowness of the sea channel, the lake surface decreases by 30% during the summer. Large mudflats are exposed and they support local saltmarsh scrubs (CORINE 15.61). Surrounding habitats consist of olive groves (CORINE 83.11), pine plantations (CORINE 83.312) and scattered poplar plantations (CORINE 83.321). The sea edge is hilly. Sand beaches and white dunes (CORINE 16.212) grade into rocky shores.

Colonial waterbird occurrence: No waterbird breeding colonies are known to occur around the Lagoon of Narta. The lagoon is an important feeding and passage site for Dalmatian Pelicans. Other colonial waterbirds recorded during migration include Little Egrets and Eurasian Spoonbills.

Threats: The site is unprotected. Salt exploitation may create original biotopes, but control of industrial development is necessary. A fish farming project has been established (Gjijknuri and Peja 1992). Free access to the area, as well as the proximity of Vlorë, increases pollution and disturbance.

Land reclamation, deforestation, and plantations of olive trees have replaced nearly all the natural habitats in the area surrounding the lake. Overgrazing occurs everywhere. Hunting is also increasing through pressure from foreigners. Hunting blinds are situated around and in the middle of the lagoon.

Gulf of Vlore

Status: District of Vlore; Unprotected, except for Karaburun Peninsula and Sazan Island (military sites): approximately 12,000 ha.

Habitats: The Gulf of Vlore is an important marine gulf formed by the Karaburun

Peninsula and Sazan Island. Water depth peaks in the gulf at more than 100 m. The coast of Sazan Island, the Karaburun Peninsula and the southeast gulf corner consists of cliffs (CORINE 18.1) and rocky shores (CORINE 18.2). Sand beach occupies the northern and southern shores. They are bordered in the north by pine plantations (CORINE 83.3112) and in the south by a shallow freshwater pond fringed by reed beds (CORINE 53.11). The city of Vlorë is situated on the northeastern shore.

Colonial waterbird occurrence: Mediterranean Shags (*Phalacrocorax aristotelis desmarestii*) are known to breed on sea cliffs of Sazan Island and the Karaburun Peninsula. The breeding of other waterbirds is not known to occur in the area. The gulf is well situated in a migration flyway but suitability is low for Ciconiiformes (few resting places). Important fish stock increase the potential for cormorants. In November 1992, hundreds of Great Cormorants were observed fishing in the southern part of the gulf. At the same time, some Great Egrets and Grey Herons were recorded on the shore.

The cliffs and rocky shores of Sazan island and Karaburun peninsula are known to be inhabited by monk seals (*Monachus monachus*).

Threats: Two important factors, the Orikum Navy Base and the city of Vlorë, influence the physiognomy of the gulf. Pollution (a chloridric acid factory is established on the northeast shore), urban expansion, deforestation, maritime traffic, fishing (dynamite fishing occurs), hunting, and tourist pressures have reduced the natural aspect of the area and its suitability for colonial waterbirds.

Lake of Butrinti

Status: District of Sarandë; Hunting Reserve of Butrinti: approximately 1,900 ha.

Habitats: The Lake of Butrinti is very deep and was formerly independent of the sea. It once was fed with freshwater from the Bistrica stream and a complex of marshes. At the end of the 1950s, the stream was diverted directly to the sea and the marshes were

drained. The lake is currently connected to the sea through a 100-m wide artificial channel, dug into the Vurg plain. With a salinity reaching max. 36 ppt (Gjicknuri and Peja, 1992) it is used as a breeding site for blue mussels (*Mytilus galloprovincialis*). The lake is bordered by rocky shores, except in the northern part where approximately 50 ha of reed beds (CORINE 53.11) occur. The surroundings are planted with orchards and olive groves. The channel is bordered by saltmarsh scrubs (CORINE 15.61) and clu-brush beds (CORINE 53.17). Near the estuary, there are numerous sand flats and low islands covered with halophytic vegetation.

Colonial waterbird occurrence: The Butrinti area is currently one of the only breeding places of White Storks (*Ciconia ciconia*) in Albania. Breeding colonies of other waterbirds in the region disappeared following deforestation and land reclamation.

In autumn and winter, cormorants were known to concentrate on the lake (100 Pygmy Cormorants in February 1964). Salt marshes and wet meadows are used as resting and feeding places for Ciconiiformes in autumn. Later, they hold wintering Great Egrets, Little Egrets and Grey Herons. Sporadic numbers of Dalmatian Pelicans have also been recorded at the site. One Slender-billed Curlew was observed in winter (February 1993 Lamanii, pers. observ.) in the area.

Threats: Salt marshes and wet meadows are always threatened by land reclamation. Hunting pressure is increasing.

CONCLUSIONS

Albania is topographically divided into two distinct zones, the mountainous zone, peaking over 2,000 m, and the coastal plain (20-60 km wide) traversed by numerous rivers. Out of a total of 250,000 ha of coastal plain, 220,000 ha have already been reclaimed. Sixty thousand of these 220,000 ha consisted of swamps and floodlands. Major drainage programs worsened this picture during the last decades, particularly since 1940. These programs included the digging of a network of canals, the regulation and the canalization of the main streams (Atkinson 1990). The eight major coastal wetlands

visited represent the remaining fragments of what was, until recently, a vast wetlands complex.

The surveys conducted confirm the biodiversity value of these sites. Preserved coastal and halophytic biotopes represent suitable habitats for breeding, migrating and/or wintering threatened waterbirds species, specifically among the Pelecaniformes and Ciconiiformes: Dalmatian Pelican, Pygmy Cormorant, Mediterranean Shag, Little Egret, Great Egret, Eurasian Spoonbill, and Glossy Ibis. Therefore, Albanian coastal wetlands are important migrating and wintering sites for tens of thousands of ducks (among them White-headed Ducks *Oxyura leucocephala*), Common Coots (*Fulica atra*) and waders (among them Slender-billed Curlews).

Our surveys draw attention to the fact that serious risks for overexploitation of Albania's natural resources exist. If current trends continue, presently preserved areas will be completely degraded. Direct threats identified in the eight sites visited may be summarized as follows: (1) disturbance: due to the lack of access control at these sites; (2) overfishing: by, or with the support of, foreign companies; (3) overgrazing: caused mainly by inappropriate pastoral management and free access; (4) overhunting: by foreign hunters; (5) deforestation: wood harvesting, principally for domestic use; (6) chemical pollution: from industrial effluents; (7) land reclamation: due to new agricultural projects extending into some of the protected areas. All these threats, except for land reclamation, were observed to increase dramatically between November 1992 and May 1993.

Albanian authorities are aware of the country's environmental situation and its evolution. The creation of the Environmental Protection and Preservation Committee is a direct response to the realization of current threats. Elaboration and application of new environmental policies must be urgently encouraged in and outside of Albania.

ACKNOWLEDGMENTS

Numerous people in Albania: I. Agaraj, the Family Biçoku, P. Carcani, G. Gjela, M. Haxhiu, Z. Lita, N. Peja,

F. Radhima, F. Shaska, K. Selimi, I. Vesho, E. Visari, Pavli and elsewhere: R. Beudels, D. Bıçoku, A. Crivelli, N. Crockford, P. Devillers, M. Erwin, Mrs. Goulandris, J. P. Ledant, E. Nowak, B. Sutherland, L. Wendling and the Services of DG XI of the European Communities, helped us to realize this study. Our gratitude goes to all these people, and several others, who informed and supported us in various ways.

LITERATURE CITED

- Atkinson, R. 1990. Albania. Pages 1-35 *in* Environmental status report 1990. International Union for Conservation of Nature and Natural Resources, Cambridge, UK.
- Barbieri, F., G. Bogliani and C. Prigogini. 1986. Note sull'ornitofauna dell'Albania. *Rivista Italiana di Ornitologia* 56:53-66.
- Devillers, P., J. Devillers-Terschuren and J. P. Ledant. 1991. CORINE biotopes manual of habitats of the European Community. Office for Official Publications of the European Communities, Luxembourg.
- Gjijnuri, L. and N. Peja. 1992. Albanian lagoons: their importance and economic development. Pages 130-133 *in* Managing Mediterranean wetlands and their birds (C. Finlayson, G. Hollis and T. Davis, Eds.). International Waterfowl and Wetlands Research Bureau Special Publication No. 20, Slimbridge, UK.
- Lamani, F. 1966a. Te dhena ornitologjike nga rezervati i Kunes. *Buletin i Shkencave Natyrore* 3:83-104.
- Lamani, F. 1966b. Te dhena ornitologjike nga rezervati i Kunes. *Buletin i Shkencave Natyrore* 4:25-38.
- Lamani, F. 1987. Données sur la distribution et la zoogéographie des Pelecaniformes et des Ciconiiformes en Albanie. *Biologia Gallo-Hellenica* 13:111-118.
- Zeko, I. and F. Lamani. 1966. Te dhena ornitologjike nga rezervati i Kunes. *Buletin i Shkencave Natyrore* 2:3-14.