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EUROPEAN COMMITTEE FOR THE CONSERVATION
OF NATURE AND NATURAL RESOURCES

"European Diploma" Working Party

KUŞCENNETI NATIONAL PARK

Report of the on-the-spot appraisal
10 - 12 June 1975

by
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1. INSTRUCTIONS

The author of this report was asked to make an appraisal of the Kuşcenneti National Park in the light of the criteria laid down for the award of the European Diploma by the Committee of Ministers of the Council of Europe (Resolution (73) 4).

He was asked to pay special attention to the birds' feeding range (lake and surroundings) and to ascertain what guarantees of protection there are to ensure that the feeding grounds are preserved.

2. EXECUTION OF INSTRUCTIONS

The author and Mr Peter Baum, representing the Secretariat of the Council of Europe, arrived in Istanbul by air on Monday, 9 June 1975, and were welcomed by Mr D Ozbaykal, (Forestry Directorate, Ministry of Agriculture and Forests, Ankara). Thereafter, the representative of the Turkish Government, with a car and driver at his disposal, conducted and accompanied us with great courtesy.

After spending the night in a forester's lodge in Belgrade Forest, we had the pleasure to be joined by Prof. C Kosswig, who initiated the protection of Kuşcenneti and has an intimate knowledge of the site. We drove to Lake Manyas and arrived in the afternoon of Tuesday, 10 June. Through the kindness of the staff, we were able to stay in the modest keepers' building. We began our first tour of the site the same day, accompanied by Mr Tansu Gürpinar, a biologist conducting scientific research at Kuşcenneti, and Mr Cenghiz Sogancioglu, a technical assistant at the park. These two very knowledgeable people were also in our party on the following days, and supplied all the information we required.

First, on Wednesday, 11 June, we toured and studied the outer zones of the territory and the colonies of pelicans, cormorants, herons, spoonbills and ibis. Then we were introduced to the governor of the province and to local government representatives and officials of the forestry administration; a small lecture followed, at which Mr Ozbaykal summarised various administrative aspects and plans for future improvements relating to Kuşcenneti and its surroundings. We were able to obtain all the relevant information. At an official luncheon at Bandirma we met other local government representatives. The afternoon was spent in a tour of the improvements already made at Kuşcenneti and in observing the birds flying to and fro between the colony and their feeding-grounds. A working meeting on the present and future problems of the national park continued late into the evening.

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On Thursday, 12 June we crossed the lake in a motor-boat in order to study the southern marshes, which are of great importance for the birds' feeding. We identified the various types of milieu and also saw two small satellite colonies. We likewise investigated the fish population and fishing activities. After 6 hours on the water, we prepared to depart and began our drive back to Istanbul, but not before taking a general look at Lake Apolyont (Ulubat), which comes within the colony's range.

The morning of Friday, 13 June, was taken up with our final conversations with Mr Ozbaykal, who drove us to Istanbul airport.

During these few days, and thanks in part to the extremely fine weather, we made the best possible use of our time at the site and of all the facilities provided for us.

The car made available by the Turkish Government and driven in masterly fashion by its chauffeur was of great help to us, as were the boats and services of the Kuşcenneti warden, Ali Kizilay. We were able to consult all the written material and maps relating to the national park and its surroundings. Our investigation was carried out in complete independence, and our freedom of judgement was respected at all times.

I want to thank the persons mentioned above very warmly for their friendly welcome, helpfulness and the information they supplied, which made it possible for us to accomplish what we had set out to do. We were particularly appreciative of the pleasant company and efficient organisation of Mr D Ozbaykal, who took great pains to facilitate our movements, inspections and talks.

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3. SPECIFIC POINTS STUDIED

3.1 Introduction

I already knew Kuşcenneti, having made two brief stops there, on 14 July 1963 and 28 May 1972, in the course of ornithological study visits to Turkey. I was accordingly familiar with the general situation and in a position to assess the results of protection thus far. The publications relating to the site were known to me.

My first observation is that the descriptive document supplied by the Turkish Government in support of its application for the European Diploma corresponds perfectly to the facts, both in general and in every detail. To provide an even fuller description of the ornitho-ecological aspects, I append the material collected during the mission.

3.2 Justification of European importance

3.2.1 On average, the bird colonies nesting at Kuşcenneti total at least 1,500 pairs and nests, belonging to 9 main species. The first point to make, is that 4 of these are mentioned as being threatened with extinction in Europe in the CIPO report prepared by the Council of Europe (European Committee for the Conservation of Nature and Natural Resources) in 1973. They are the following:

a.	Dalmatian pelican	Pelecanus crispus. The continental population (excluding Russia) is estimated at 600-800 pairs (Rumania, Bulgaria, Albania, Greece). Numbers in Anatolia are uncertain. Kuşcenneti colony: 60 nesting pairs in 1975, increasing. The species is very seriously threatened owing to the reduction of its habitats and its vulnerability to shooting and disturbances.
b.	Pygmy cormorant	Phalacrocorax pygmaeus. Continental population less than 5,000 pairs (Rumania, Bulgaria, Albania, Yugoslavia, Greece). Manyas-Kuşcenneti colony: about 70 nesting pairs in 1975. Distribution restricted, and species threatened by the same causes.

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c.	Spoonbill	Platalea leucorodia. Continental population between 1,000 and 1,500 pairs, very widely dispersed (Spain, Netherlands, Austria, Hungary, Yugoslavia, Rumania, Albania, Greece). Manyas-Kuşcenneti colonies approaching 400 nesting pairs in 1975. Very specialised feeding-grounds seriously threatened (drainage, pollution).
d.	Glossy ibis	Plegadis falcinellus. Continental population 2,000-2,500 pairs, subject to great fluctuations (Rumania, and small, partially temporary colonies in Italy, Yugoslavia, Hungary, Albania, Greece). Manyas-Kuşcenneti colonies: at least 700 nesting pairs in 1975. Highly localised species, threatened by disappearance of specialised feeding biotopes.

It is very likely that, for these 4 species, the Kuşcenneti colony is linked with those of Eastern Europe and forms a vital contribution to the replenishment of their numbers. This supporting role is equally probable for the other species (great cormorant, ardeidae) which, although less critically threatened, are also dependent upon specific types of wetland environments whose areas have everywhere been reduced or which have disappeared completely.

From the viewpoint of conservation, therefore, Kuşcenneti should be regarded as an element of prime importance in the network of these species' breeding-grounds in the eastern Mediterranean, and in Europe in particular.

3.2.2 This reservoir of specialised avifauna is able to flourish permanently owing to the exceptional quality of the natural environment: Lake Manyas and, to a lesser degree, Lake Apolyont.

Here we have a virtually intact aquatic ecosystem, showing none of the deterioration which has affected most eutropic environments elsewhere. It offers a rare example of healthy natural balance and great wealth, to which Kuşcenneti hears visible witness. I consider the careful preservation of this system to be of capital importance for scientific research into wetland environments and their resources. The guarantees implied in the award of the European Diploma, which should ensure the future of Kuşcenneti, are clearly capable of achieving this end, which is of significance far beyond the confines of Europe.

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3.2.3 Kuşcenneti and Lake Manyas are also of great value for birds of passage and winterning birds from Eastern Europe. The region lies on a much-frequented route, as confirmed by the more or less regular counts we have seen (see also Appendix III).

3.2.4 In addition to its natural history value, the educational potential of Kuşcenneti is incontestable. In view of the large numbers of visitors (in great majority Turkish), the facilities already available and the planned improvements, we are convinced that it offers ideal conditions for teaching the public about nature and its protection.

The development of an awareness of these subjects among the people is an urgent matter in Turkey, as in all other Mediterranean countries, moreover. It is important to inculcate a new attitude of respect towards nature and birds, and thereby decide the authorities to intensify conservation measures. Owing to Turkey's strategic position on the great eastern bird migration route (of storks and birds of prey, inter alia) and also to the wealth, in terms of landscapes, fauna and flora, of which this country can boast, we consider the educational objective to be of European importance.

3.3 Effectiveness of present protection measures (Regulations, page 15; 1.5.4 (a))

3.3.1 Existing laws and regulations empower the government to exercise control throughout the region over all juman activities likely to be prejudicial to the national park and its environments. Needless to say, their enforcement depends upon the authorities' firm resolve to remove any potential threats and also upon the constant vigilance of the park officials.

3.3.2 We considered that adequate staff and resources were available for supervision. Ali Kizilay, the warden, a fervent protector and connaisseur of birds, has been very attached to Kuşcenneti for many years; his efficiency and devotion inspire complete confidence. Mr Baum was given a list of staff.

The park supervisors have no power to impose penalties and may only inform the police and judicial authorities of any offences.

Points of illicit entry from the lake must be watched specially from the water, but intrusions (usually due to ignorance) appear to be rare and, moreover, are speedily made known by flights of birds. So far there have been no reports of mischievous acts or robbery by egg-collectors.

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3.3.3 Fishing and hunting are prohibited in the park and its peripheral protection zone (300 m on water and 500 m on land); according to our sources, only one instance of an offence has been reported and the offender punished (confiscation of firearm).

No camping is authorised. Visitors are conducted along a path leading to the observation tower, which is iself under constant supervision; they may not enter the bird colonies, which are thus spared all disturbance.

3.3.4 Farming and grazing are forbidden in the park. There is no urban development near it or around the lake, the closest industry is in the neighbourhood of Bandirma, around 14 km north of the park (see under 4.2.3). Permission from the state is necessary before any building can be undertaken, and it may be hoped that the government will be very strict in this matter, in order to prevent undesirable developments. Also, the present road system touches neither park nor lake. However, care must be taken to see that no accidental pollution occurs in the Sigirci and other streams emptying into Lake Manyas. The flight of aircraft over Kuşcenneti is virtually forbidden. Lastly, target shooting by military aircraft is kept in bounds to the south of the lake, some 10 km from the park; even there it does not interfere with the birds.

3.3.5 To sum up, the present system is satisfactory and the Kuşcenneti national park enjoys an enviable degree of security. No serious threat in the immediate future can be foreseen.

3.4 Scientific studies
(cf Regulations 1.5.4 (b))

Every year, a biologist takes a census of the bird colonies at Kuşcenneti (see Appendix II) and makes a study of general trends. This is done by Mr Tansu Gürpinar, whose ornithological knowledge we have tested in the field; he is fully competent. He also explores and makes checks on the feeding-grounds and satellite colonies around Lake Manyas. It would be desirable for him to be able to teach other naturalists to do this work. The region is well suited to student training courses.

Because of the ecological interrelationships, it would be most desirable to institute a study of the Lake Manyas fish, amphibians and, above all, invertebrates. The scientific programme should also provide for regular analyses of water and plankton as a means of securing hydrobiological supervision, or at least the data on which to base it.

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3.5 Improvement and maintenance of the natural environment (Regulations 1.5.4 (c))

3.5.1 In hand:

- Enclosure by stout fencing on land, and by markers in the lake showing the boundary of the prohibited area;
- Building of inconspicuous observation-points in trees for the study of colonies;
- Building of platforms on truncated willows (approximately 3-4 m in diameter, 2-3 m above water-level). This has made possible the introduction and multiplication of nesting pelicans. Remarkably successful;
- Placing of artificial nests (platforms) in willows to encourage ibis to nest. Also a success;
- Clearing of flooded glades, in places, to procure favourable feeding surfaces for young spoonbills as soon as they leave their nests;
- Planting of willows to renew the ageing woods;
- Regulation of an excessive and nest-robbing jackdaw population by trapping; in 1969 alone, some 1,200 jackdaws were caught.

All these carefully thought-out measures confirm the desire to preserve the best ecological conditions for the birds nesting at Kuşcenneti. They are carried out year by year, mainly outside the nesting season.

3.5.2 Planned improvements

- Continuation of present programme;
- Clearing and deepening of flooded areas at the foot of trees, to correct rapid silting up and restore more favourable conditions (particularly within view of the tower and near the shoreline);
- Clearing of shores to improve feeding grounds in the vicinity of the bird colonies.

3.6 Visitors (cf Regulations 1.5.4 (d))

3.6.1 Present state of facilities

The access road from the village of Sigirciatik (1 km from the park) or from the Bandirma-Balikesir road, is in perfect condition. It stops at the parking lot outside the entrance to the park, which is closed to all cars.

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Visitors pay a small entrance fee. A well-marked path leads them:

a. to the keepers' house, where a small museum presents the birds of the region, nests, photographs and other curiosities;

b. to the observation tower, built in 1972, 15 m high. It accommodates a fair number of people, who may use the binoculars provided to observe (through narrow shuttered openings) the heron and spoonbill nests and the movements of the bird colony. The tower is a model of its type and is completely hidden by foliage. The area open to the public, thus, is very restricted, and no one ventures further into the colony (ie on the water); supervision, moreover, is vigilant. The great majority of visitors are content with this, as I was able to see for myself one crowded Sunday in 1972. The park attracts a relatively large number of visitors for a site so remote from any town; many tourists from all countries, more or less interested in bird-watching, mingle with Turkish visitors.

3.6.2 Planned improvements

Work on an information centre, which will move the reception facilities and car park closer to the village, should begin in 1975, so that the largest numbers of people, and the noise, will be further from the park.

One hopes that the architecture of this building will harmonise with its surroundings; it will provide information about nature and its protection, a nuseum, audio-visual material if possible, and toilets. It might be possible to enclose a space containing a few birds for close observation (without making it into a zoo!) and some high platforms for storks' nests.

This will plainly be of great educational value, and the centre ought to be made a model one.

3.7 Ownership
(cf Regulations 1.5.4 (e))

The land in the Kuşcenneti national park is state property, thus eliminating conflicts with private interests.

3.8 Management
(cf Regulations 1.5.4 (f))

The Kuşcenneti national park is managed by the National Parks Division of the Ministry of Forests. It is directly attached to the Regional Forest Directorate at Balikesir, through the office at Bandirma. We were able to assure ourselves of the relevant officials' interest in the park.

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4. BIRD FEEDING RANGE

The concentration of some 3 to 4,000 nesting birds in compact colonies on an area of about 125 acres at Kuşcenneti can be explained only by the variety and excellence of the biotopes available to feed such a large population.

The future prosperity of these colonies, which are the park's raison d'être, is therefore completely dependent upon the conservation and biological health of vast surrounding areas.

In verifying this, we observed the flights to and fro of adults feeding their nestlings, their manner of looking for food and the places in which they found it; we also had good direct views of the areas of greatest importance in this respect, on the south shore of Lake Manyas. We also obtained some first-hand information from MM Kosswig and Gürpinar. Lastly, there are the personal observations I had made previously at Lake Apolyont (1972).

4.1 Structure and value of food biotopes

4.1.1 Briefly, the ecological requirements of the 9 main species nesting at Kuşcenneti are as follows:

- Dalmatian pelican Pelecanus crispus: fish-eater but not diver, so working the upper stratum of water and catching mainly the small fish present there in large numbers. Unlike the white pelican, it fishes alone and can be encountered in isolation all over the lake, but most frequently near the shores and flooded areas. Relatively wide-ranging (more than 50 km^2 ?).

- Cormorant Phalacrocorax carbo: diving fish-eater, capable of pursuing fish to the bottom of the lake, works alone or in groups over all open water including sea, but prefers coastal areas and rivermouths. Relatively wide-ranging (50 km maximum).

- Pygmy cormorant Phalacrocorax pygmaeus: diving fish-eater, works alone, preferably in shallow and swampy areas and even among bulrushes. Heavily dependent upon flooded marshes; catches marsh fish chiefly. Range uncertain, probably rather restricted.

- Heron Ardea cinerea: stalking fish-eater, solitary, working the surface along the shoreline, at shallow depths (up to 30-40 cm), but also along watercourses and ditches; hunts rodents in fields and meadows as well. Diet consists mainly of fish, followed by amphibians, very small mammals, and insects. Wide range (up to 30 km).

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- Little egret Egretta garzetta: wading and stalking fish-eater, working more or less alone in very shallow open water or along boggy shores. Catches small fish, amphibians, insects and larvae. Less extensive range.

- Squacco heron Ardeola ralloides: wading and stalking fish-eater, works alone on the edges of very shallow water, often in the margins of marsh vegetation and under cover; also along watercourses and ditches. Catches small fish, amphibians, insects and larvae. Restricted range.

- Night heron Nycticorax nycticorax: stalker, working alone and preferably at dusk or later, at the edge of very shallow water and under cover of trees, also along streams and ditches. Catches small fish, amphibians, insects and larvae. Relatively wide-ranging (20 km).

- Spoonbill Platalea leucorodia: wader, working mainly in groups in very shallow open water (heavily dependent). Catches small fish, amphibians, molluscs, insects and larvae. Relatively wide-ranging (over 20 km).

- Glossy ibis Plegadis falcinellus: the most "limicoline" of all, working very shallow open flooded areas, especially muddy (heavily dependent), and usually in flocks. Catches mainly invertebrates (molluscs, crustaceans, worms, leeches, insects and larvae), also small batrachians (tadpoles) and reptiles, but few fish. Highly specialised in very small aquatic prey. Relatively wide-ranging.

4.1.2 Hence, although the feeding habits are quite distinct, shallow flooded areas (from 0 to 50 cm), open or sparsely planted, are of crucial importance to the majority of the birds at Kuşcenneti. They are even indispensable for spoonbills and ibises - threatened species - which refuse to mate if they cannot find a suitable depth of water (drought in 1972).

The important factor is the seasonal variation in the water-level, depending upon the rains. It is usually at its highest in late winter and spring, falling from April on and rapidly during the summer - when the shoreline recedes about 200 m - and rising again when the autumn rains begin. Flooding of the shoreline coincides with the mating season and undoubtedly has a decisive effect on the establishment of birds at Kuşcenneti: numbers are high when the water-level is also high, and low when the level falls. Preservation of this natural rhythm is essential.

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Livestock grazing on the shore areas, which traditionally begins as soon as the water recedes and the earth is uncovered, appears as a factor of prime importance in maintaining these food biotopes: by regularly clearing these areas of the reeds and bulrushes which would otherwise spread over vast areas, grazing maintains ideal feeding conditions.

It must also be pointed out that such extremely shallow open water produces very great numbers of invertebrates, and partly determines the abundance of fish in Lake Manyas, as well as of birds. Invertebrates are very important as food for young fry. At high water, moreover, Kuşcenneti is noted as a fish refuge and spawning centre.

This is also true of Lake Apolyont, of course.

4.1.3 First priority must accordingly be given to the preservation of the flooded shorelines. Any deterioration in the ecological chain would be damaging for fish as well as birds, and would mean a loss to the Kuşcenneti national park.

4.2 Distribution of food biotopes

4.2.1 Lake Manyas:

In principle, the entire basin of Lake Manyas is used by the Kuşcenneti birds: the open water by pelicans and cormorants, the flooded areas by all species, and the shores by herons, spoonbills and ibis.

From observation, the best feeding-grounds are located:

a. On the south shore, in all level swampy areas that can be covered by water, particularly on either side of the Kocaçay delta some 10-15 km from Kuşcenneti.

   It is also in this area that we saw hundreds of (non-nesting) white pelicans; a few satellite colonies (mainly herons) are also located here. This region is of crucial importance to the future of Kuşcenneti.

b. On the east shore, from Kuşcenneti to well beyond Sigircıatik. This area is contiguous with the preceding.

c. There are other favourable shore areas in the north and west; they are smaller and we did not have time to visit them.

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d. It is most likely that all the surrounding watercourses and ditches, flooded fields and rice-fields are also used, but it is hard to judge their place in the overall system.

4.2.2 Lake Apolyont:

The western extremity of this lake (also called Ulubat Gölü) lies about 35 km to the east of Kuşcenneti.

The outlet is at this point and there are some swampy areas, but the largest ones are at the mouth of the Mustafa Kemalpaşa on the south side of the lake, about 43 km from Kuşcenneti. The delta, covering some 4 km^2, offers extensive open wetlands or flooded areas, with tamarisk, willows and bulrushes. Animals are grazed there and some crops grown when the water-level falls. According to Porter (1968), the delta is a nesting-ground for Limicolae (Hoplopterus spinosus, Himantopus himantopus, Charadrius dubius) and Laridae (Sterna hirundo, St albifrons). It is also a feeding ground for herons, egrets and spoonbills, as well as for pelicans and cormorants from Kuşcenneti (cf Appendix V).

The other shores of this lake are valuable to birds, but less so. There do not seem to be any nesting colonies as at Lake Manyas.

From observed movements of the Kuşcenneti birds, chiefly pelicans, cormorants and spoonbills, their use of these areas has been definitely established. The preservation of the biotopes of Lake Apolyont should accordingly be ensured, and steps taken to prevent any changes that might damage them.

4.1.3 Gulf of Bandirma:

The Kuşcenneti cormorants also go to feed on the shores of the Sea of Marmara, judging by observed movements and by salt-water fish found in the Kuşcenneti colony. This represents a direct flight of at least 15 km (cf Appendix V).

In this connection, the industrial development of Bandirma may be a cause for anxiety. Factories producing boric and sulfuric acids there present a substantial risk of chemical pollution for both water and fauna in the gulf - pollution which might affect the Kuşcenneti birds (mercury, parachlorbenzenes, etc). It would therefore be very desirable to keep a careful watch over effluents and waste products.

4.2.4 Lakes Arapciftilgi and Dalyan:

These two lakes, situated on either side of the outlet of Lake Apolyont where it flows into the Sea of Marmara east of Bandirma, have been briefly described by Porter (1968). Their bird life is interesting, but we did not visit them.

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In view of their distance from Kuşcenneti (40 km), they might be eithin the range of the park colonies, but we have no proof that they are. However, like Lake Apolyont, they are probably visited by the Manyas birds when the young disperse after leaving the nest, and I mention them for this reason.

4.3 Protection of food biotopes

Thus far, the feeding-grounds of the Kuşcenneti birds do not appear to have been affected by human activity. The prosperity of the colonies is conclusive proof of this.

However, Porter (1968) mentions agricultural infiltrations on the southern side of Lake Manyas, leading to the disappearance of nesting-sites of Limicolae (spur-winged plover, ringed plovers); he also speaks of disturbance of satellite colonies by fishing. It is to be feared that farmers will be tempted to cultivate extensively land hitherto used only for seasonal grazing.

As has been seen, it is these very areas, under water during the winter and spring, that provide the major food resources for the colonies' birds and also contribute to the abundance of fish.

Absolute priority must be given to the protection of these biotopes if the value of the national park and the entire biological complex of Lake Manyas are to be preserved.

With vigilant supervision and form application of the laws to prevent deterioration, it should not be difficult to maintain the status quo.

Grazing and fishing, as practised in the past, are, we would point out, fully integrated into the ecosystem. Once the water has receded, grazing is actually beneficial. The expansion of crop-growing, and the quality of the water supply to the lake, are what need to be watched.

Here I would offer a few suggestions, relating to Lake Manyas in particular:

- the government might acquire land along the shore, so that its use could be supervised;
- satellite colonies should be protected;
- any plans to alter the natural level of the lake or interfere with its fluctuations should be abandoned;

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- a watch should be kept on the use of pesticides and chemical fertilisers throughout the area drained by the lake;

- risks of pollution of Lake Manyas through its affluents should be supervised (accidents, even at a considerable distance, may cause serious pollution, particularly by hydrocarbons - tank leakage, accidents to fuel lorries, etc - and it would be wise to work out a plan for quick action to deal with such occurrences).

These suggestions hold for Lake Apolyont as well, especially its western end.

Perhaps some arrangement more flexible than a national park should be envisaged for the protection of the outlying ecosystem, so as to preserve the traditional activities in the area. This might take the form of a special regulation founded on existing laws, to which the local communities should subscribe.

Regular scientific research, as suggested above (cf 3.4), has a decisive role to play in this context, for it can detect any deterioration in the environment. Birds (and fish) are excellent indicators of ecological health.

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5. CONCLUSIONS

5.1 The Kuşcenneti national park is of European importance, from the fourfold viewpoint of the protection of threatened species of birds, the preservation of a rich and unspoiled aquatic ecosystem, scientific research and educational potential (cf 3.2).

5.2 The Kuşcenneti national park meets the criteria for the award of the European Diploma (cf 3.3). It is being managed, supervised and studied satisfactorily and the growth of its bird population since its inception bears witness to the efficiency of its protection (cf Appendix II).

5.3 As the future of this natural sanctuary depends upon the maintenance of ecological conditions favourable to the feeding requirements of birds in the areas they frequent outside the limits of the park itself, it is of primary importance that the Turkish Government undertake to protect and supervise the nearby wetlands around Lake Manyas and Lake Apolyont (cf 4.3).

5.4 Of the suggestions put forward in this report, I would call special attention to the following:

- maintenance of the present hydrological system, and of the areas subject to flooding (4.1.2);
- maintenance of grazing on the feeding-grounds (4.1.2);
- protection of the Kemalpaşa delta on the western side of Lake Apolyont (4.2.2);
- supervision of the spreading of pesticides and of other pollution threats to the Manyas basin (4.3);
- control of industrial pollution at Bandirma (4.2.3);
- possible acquisition of land on the south shore of Lake Manyas (4.3);
- study of Lake Manyas invertebrates and hydrobiology (3.4);
- training and research courses for ecology students (3.4);
- improvement of reception facilities at Kuşcenneti for educational purposes and architecture in harmony with the surroundings for the proposed information centre (3.6.2).

Geneva, 30 June 1975

Paul Géroudet D Sc h c,
Ornithologist,
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the World Wildlife Fund

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A P P E N D I X I

LIST OF BIRD SPECIES OBSERVED AT LAKE MANYAS FROM 10-13 JUNE 1975

K = in the Kuşcenneti National Park

* = breeding confirmed by P G (at Kuşcenneti)

Underlined species = listed among birds in need of special protection in Europe - CIPO-CE Report, 1973

Systematic order according to Vaurie: The Birds of the Palearctic Fauna (1965)

(Podicipitidae:)

K* Podiceps cristatus - GREAT CRESTED GREBE - Grèbe huppé

(Pelecanidae:)

K* Pelecanus crispus - DALMATIAN PELICAN - Pélican frisé

Pelecanus onocrotalus - WHITE PELICAN - Pélican blanc

(Phalacrocoracidae:)

K* Phalacrocorax carbo - GREAT COMORANT - Grand cormoran

K* Phalacrocorax pygmaeus - PYGMY CORMORANT - Cormoran pygmée

(Ardeidae:)

K* Ardea cinerea - GREY HERON - Héron cendré

K Ardea purpurea - PURPLE HERON - Héron pourpre

K* Egretta garzetta - LITTLE EGRET - Aigrette garzette

K* Ardeola ralloides - SQUACCO HERON - Héron crabier

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K* Nycticorax nycticorax - NIGHT HERON - Héron bihoreau

K Ixobrychus minutus - LITTLE BITTERN - Blongios nain

(Ciconiidae:)

Ciconia ciconia - WHITE STORK - Cigogne blanche

(Plataleidae:)

K* Platalea leucorodia - SPOONBILL - Spatule blanche

(Threskiornithidae:)

K* Plegadis falcinellus- GLOSSY IBIS - Ibis falcinelle

(Anatidae:)

K Anas platyrhynchos - MALLARD - Canard colvert

K Aythya nyroca - FERRUGINOUS DUCK (White-eyed Pochard) - Fuligule nyroca

(Falconidae:)

K Falco subbuteo - HOBBY - Faucon hobereau

Falco naumanni/tinnunculus - LESSER KESTREL/KESTREL - Faucon crécellerette/crécerelle

(Rallidae:)

Porzana pusilla - BAILLON'S CRAKE - Marouette de Baillon

K* Gallinula chloropus - MOORHEN - Poule d'eau

(Scolopacidae:)

Himantopus himantopus - STILT - Echasse blanche

(Laridae:)

K Larus argentatus - HERRING FULL - Goéland argenté

K Sterna hirundo - COMMON TERN - Sterne pierregarin

(Columbidae:)

K Streptopelia turtur - TURTLE DOVE - Tourterelle des bois

Streptopelia decaocto - COLLARED DOVE - Tourterelle turque

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(Cuculidae:)

K Cuculus canorus - CUCKOO - Coucou gris

(Strigidae:)

K Otus scops - SCOPS OWL - Hibou petit-duc

K* Asia otus - LONG-EARED OWL - Hibou moyen-duc

(Alcedinidae:)

K Alcedo atthis - KINGFISHER - Martin-pêcheur

(Coraciidae:)

K Coracias garrulus - ROLLER - Rollier d'Europe

(Upupidae:)

K Upupa epops - HOOPOE - Huppe fasciée

(Alaudidae:)

Melanocorypha calandra - CALANDRA LARK - Alouette calandre

(Hirundinidae:)

Hirundo rustica - BARN SWALLOW - Hirondelle rustique

(Motacillidae:)

Motacilla flava feldegg - YELLOW WAGTAIL - Bergeronette prinanière

(Turdidae:)

K Luscinia megarhynchos - NIGHTINGALE - Rossignol philomèle

Turdus merula - BLACKBIRD - Merle noir

(Sylviidae:)

K Cettia Cetti - CETTI'S WARBLER - Bouscarle de cetti

K Locustella luscinioides - SAVI'S WARBLER - Locustelle luscinioïde

K Acrocephalus arundinaceus - GREAT REED WARBLER - Rousserolle turdoïde

K Acrocophalus cirpaceus - REED WARBLER - Rousserolle effarvatte

K Hippolais pallida - OLIVACEOUS WARBLER - Hypolaïs pâle

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(Remizidae:)

K* Remiz pendulinus - PENDULINE TIT - Mésange rémiz

(Paridae:)

K Parus major - GREAT TIT - Mésange charbonnière

(Emberizidae:)

Emberiza calandra - CORN BUNTING - Bruant proyer

K Emberiza melanocephala - BLACK-HEADED BUNTING - Bruant Mélanocéphale

(Fringillidae:)

K Carduelis chloris - GREENFINCH - Verdier

K Carduelis carduelis - GOLDFINCH - Chardonneret

(Ploceidae:)

K* Passer domesticus - HOUSE SPARROW - Moineau domestique

K* Passer hispaniolensis - SPANISH SPARROW - Moineau espagnol

(Sturnidae:)

K* Sturnus vulgaris - STARLING - Etourneau

(Oriolidae:)

K Oriolus oriolus - GOLDEN ORIOLE - Loriot

(Corvidae:)

K Pica pica - MAGPIE - Pie

K* Corvus monedula - JACKDAW - Choucas

K Corvus corone sardonius - HOODED CROW - Corneille mantelé

Making a total of 53 species of birds, of which 44 were seen in the Kuşcenneti National Park and probably or certainly nest there.

Others, reported as nesting, were not seen during these three days but are certainly present: Bittern (Botaurus stellaris), Garganey (Anas querquedula), Grey Lag goose (Anser anser), Black kite (Milvus migrans), Marsh harrier (Circus aeruginosus), Water rail (Rallus aquaticus), Nightjar (Caprimulgus europaeus), Coot (fulica atra), etc.

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Mr Tansu Gürpinar has given me the list of birds (sensu stricto) observed in the Kuşcenneti national park, but I shall not include it, as it runs to 239 species.

Of this number he reports 44 species nesting regularly and 20 more which have nested once or more, but not regularly. The others are visitors from surrounding areas or were observed during migration or in the winter.

P.G

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A P P E N D I X II

TRENDS IN NESTING WATERFOWL POPULATIONS AT KUŞCENNETI

According to counts made by Tansu Gürpinar
between 1968 and 1975

		1968	1969	1970	1971	1972	1973	1974	1975
1.	Great crested grebe P cristatus	5	4	5	5	?	4	4	4
2.	Dalmatian pelican Pelecanus crispus	13	24	30	33	?	45	51	60
3.	Great cormorant Ph.carbo	404	383	350	321	?	260	261	286
4.	Pygmy cormorant Ph. pygmaeus	77	61	64	60	?	30	15	63
5.	Grey heron A cindrea	283	271	273	250	?	248	235	239
6.	Purple heron A purpurea	20	11	9	9	?	1	2	10
7.	Little egret E garzetta	40	43	39	45	?	196	241	+146
8.	Squacco heron Ardeola ralloides	40	41	43	44	?	50	81	+7
9.	Cattle egret Bubulcus ibis	-	-	-	-	-	-	2	-
10.	Night heron N nycticorax	81	84	90	83	?	200	203	+107
11.	Little bittern Ix minutus	30	9	9	7	?	3	6	9
12.	Bittern B stellaris	?	?	?	2	?	1	2	2
13.	Spoonbill Platalea leucorodia	313	351	390	515	?	384	360	314
14.	Glossy ibis Plegadis f	?	?	?	?	?	84	90	+150
15.	Grey lag goose A anser	4	5	6	20	?	4	6	7
16.	Mallard A platyrhynchos	20	17	11	23	?	17	12	4
17.	Garganey A querquedula	5	8	9	14	?	21	20	5
18.	Water rail Rallus aquaticus	6	4	5	5	?	+	5	+
19.	Spotted crake P porzana	+	+	+	2	?	+	+	+
20.	Corn crake crex crex	+	+	+	1	?	1	+	+
21.	Moorhen Gallinula chloropus	11	12	17	20	?	25	18	12
22.	Coot Fulica atra	7	17	16	18	?	21	11	14

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NB: No count was taken in 1972 (low water-level year).

- The numbers for the last 2 years (1974 and 1975) do not include the birds in the new colony (little egret, squacco heron, ibis).

- The figures refer to nests counted and are to be taken as minimum numbers, particularly for species living hidden (11, 12, 15 and 22).

- Owing to the satellite colonies at 4 or 5 points along the lake shore, the total numbers for Lake Manyas are higher.

  Tansu Gürpinar gave me his estimates for the main species:

Great cormorant	± 300 pairs
Pygmy cormorant	± 70 pairs
Grey heron	+ 600 pairs
Purple heron	+ 30 pairs
Little egret	± 500 pairs
Squacco heron	- 200 pairs
Night heron	± 500 pairs
Spoonbill	± 450 pairs
Glossy ibis	± 700 pairs

  These indications underline even more the importance of Lake Manyas as a bird sanctuary.

- The rise in numbers of the Dalmatian pelican (solely at Kuşcenneti) is particularly significant.

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APPENDIX III

WATERFOWL WINTERING AT LAKE MANYAS

I am indebted to Mr Tansu Gürpinar for the following figures, which refer to average numbers of waterfowl present on Lake Manyas (Kuş Gölü) at the January count, carried out as part of the palearctic survey conducted by the IWRB (International Wildlife Research Bureau). They refer to the principal species only:

Great crested grebe Podiceps cristatus	150-200
Little grebe Podiceps ruficollis	400-500
Grey lag goose Anser anser	1,700-2,000
White-fronted goose Anser albifrons	3,000-5,000
Mallard Anas platyrhynchos	7,000-8,000
Gadwall A Strepera	300-400
Wigeon A penelope	3,000-3,500
Teal A crecca	12,000-14,000
Garganey A querquedula	2,000-2,500
Pintail A acuta	1,000-1,200
Shoveler A clypeata	2,000-2,500
Red-crested pochard Netta rufina	1,000-1,200
Pochard Aythya ferina	1,500-2,000
Coot Fulica atra	8,000-10,000
Moorhen Gallinula chloropus	400-500

Hence, Lake Manyas is an important wintering-ground, chiefly for surface ducks and geese.

In September and October Mr T Gürpinar also mentions 3,000-4,000 white pelicans Pelecanus onocrotalus, which spend some time on the lake before resuming their flight to their winter quarters in Africa or Asia. It is probable that these birds come for the most part from the Danube delta. In September, between 200 and 300 migrating white storks Ciconia ciconia are seen daily.

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A P P E N D I X IV

LAKE MANYAS FISH

According to information supplied by Prof. C Kosswig and T Bürpinar (orally), a non-exhaustive list follows, from which at least 4 species are probably missing. Those fished commercially are marked ++.

Clupeida:

(±) Ringa baligi (Turkish herring) Caspialosa maeotica

Esocidae:

++ Pike Esox lucius

Cyprinidae:

Roach Leuciscus (Rutilus) rutilus

(±) Chub Squalus (Leuciscus) cephalus

Rudd Scardinius erythrophthalmus

Barbel Barbus sp

Danube bleak Chalcalburnus chalcoides

White bream Blicca björkna

Zährte (No English name) Abramis (Vimba) vimba

Bitterling Rhodeus sericeus

++ Carp Cyprinus carpio

Cobitidae:

Çamur baligi (Turkish loach) Noemacheilus angorae

Spiny loach Cobitis taenia

Siluridae:

++ Sheatfish Silurus glanis

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Gobidae:

Küçükkaya baligi (no English name) Pomatoschistus (Bubyr) caucasicus

Tatlisukayasi baligi (no English name) Gobius fluviatilis (lacteus)

NB:

Only 3 (5) species are fished commercially, for local consumption. Hence, only a minute portion of the fish reserves is exploited (3,000 tons per annum?, should be checked).

Prof. Kosswig told me that the pike population has been greatly reduced, owing to the destruction of spawning-grounds by grazing in the flooded areas. As a result, there is an excess of small fishes of no interest to fishermen, and the role played by fish-eating predators (pelicans, cormorants and herons) is particularly important in keeping their numbers down.

Fishermen work chiefly with ordinary nets and bow-nets. Fishing is governed by the Water Products Act.

One crustacean should also be mentioned, the Galician crayfish (Potamobius(Astacus) leptodactylus), which grows to a very large size here. The annual catch is about 50 tons; the tails are deep-frozen and sent by air to France.

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MAPS AND DRAWINGS

a. KUŞCENNETI NATIONAL PARK

Present state (June 1975)
Indication of wooded areas and nesting species is approximate.

b. LAKE MANYAS

Nearby villages have been marked to show the low population density of the area.

c. KUŞCENNETI BIRDS' FEEDING RANGE

Dotted areas: feeding-grounds
Lines: lines of flight (double line for most heavily-travelled, single for secondary (?) directions, broken for hypothetical course).

NB:

The water of Lake Manyas flows out of the lake to the SE, but winds around to join the outlet of Lake Apolyont. The latter's basin is far more extensive, owing to the large area drained by the Mustafa Kemalpaşa river.

Lake Manyas (and Kuşcenneti) are in the vilayet of Balikeşir, whereas Lake Apolyont is in the vilayet of Bursa.

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