Proposals for Nature Conservation in Northern Greece

by

L. Hoffmann, W. Bauer and G. Müller

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INTERNATIONAL UNION FOR CONSERVATION OF NATURE
AND NATURAL RESOURCES–MORGES, SWITZERLAND

The International Union for Conservation of Nature and Natural Resources (IUCN) was founded in 1948, and has its headquarters in Morges, Switzerland; it is an independent international body whose membership comprises states, irrespective of their political and social systems, government departments and private institutions as well as international organizations. It represents those who are concerned at man's modification of the natural environment through the rapidity of urban and industrial development and the excessive exploitation of the earth's natural resources, upon which rest the foundations of his survival. IUCN'S main purpose is to promote or support action which will ensure the perpetuation of wild nature and natural resources on a world-wide basis, not only for their intrinsic cultural or scientific values but also for the long-term economic and social welfare of mankind.

This objective can be achieved through active conservation programmes for the wise use of natural resources in areas where the flora and fauna are of particular importance and where the landscape is especially beautiful or striking, or of historical, cultural or scientific significance. IUCN believes that its aims can be achieved most effectively by international effort in co-operation with other international agencies such as UNESCO and FAO.

The World Wildlife Fund (WWF) is an international charitable foundation for saving the world's wildlife and wild places. It was established in 1961 under Swiss law, with headquarters at present in the vicinity of and eventually to be shared jointly with those of IUCN. Its aim is to support the conservation of nature in all its forms (landscape, soil, water, flora and fauna) by raising funds and allocating them to projects, by publicity and by education of the general public and young people in particular. For all these activities it takes scientific and technical advice from IUCN.

Although WWF may occasionally conduct its own field operations, it tries as much as possible to work through competent specialists or local organizations.

Among WWF projects financial support for IUCN and for the International Council for Bird Preservation (ICBP) have highest priority, in order to enable these bodies to build up the vital scientific and technical basis for world conservation and specific projects. Other projects cover a very wide range from education, ecological studies and surveys, to the establishment and management of areas as national parks and reserves and emergency programmes for the safeguarding of animal and plant species threatened with extinction.

WWF fund-raising and publicity activities are mainly carried out by National Appeals in a number of countries, and its international governing body is made up of prominent personalities in many fields.

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A Report

prepared by the Authors as representatives of

THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES

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FOREWORD

Greece's archaeological and artistic riches are famous throughout the world. They are a source of pride for the Greek people and also a source of economic strength and income, through the large number of tourists they attract.

The same is true of the holiday resorts on the long Greek coastline, which through the combination of blue sea, almost perpetual sunshine and enchanting landscapes attract ever increasing numbers of visitors.

It is, however, still largely unknown and unrecognized that Greece's wildlife resources are equally exceptional. A few Greek and foreign naturalists have studied them for decades and built up an impressive documentation. But their investigations have also shown that wildlife in Greece is endangered and that too little has been done for its conservation and for its development for the benefit of the Greek people.

It was, therefore, a very welcome opportunity for three international organizations intimately concerned with wildlife resources, the IUCN, WWF and IWRB, when His Excellency Alexandros Mathaiou, Minister for Northern Greece, invited them to send a delegation to discuss relevant problems with particular reference to wetlands and their management. The invitation was gladly accepted and, following their visit, the three delegates, Dr Lucas Hoffmann of Switzerland and Messrs W. Bauer and G. Müller, both of the German Federal Republic, prepared and submitted a report to the Minister in May 1970.

By a letter of 4 October 1970, Minister Mathaiou authorized and encouraged IUCN to publish the report. A number of small additions and improvements were suggested and the present publication is the outcome. It is much to be hoped that this study of conservation in northern Greece and Minister Mathaiou's farsighted initiative in launching it, will constitute the first step towards a much wider programme of cooperation between the Greek government and international organizations in this field.

With this publication, IUCN begins a new series designated by the title of Occasional Papers. The category will include various general scientific studies and reports not associated with the IUCN conferences or technical meetings or major continuing programmes normally covered by IUCN new series Publications, Supplementary Papers or Monographs.

C O N T E N T S

1. Introduction

1.1 History

Since the end of the 19th century a growing number of far-sighted men have become concerned about the future of Nature. They have noticed that the increase of human population and industrialization is endangering many types of natural habitats and landscapes, as well as plant and animal species. Their concern has been mainly on ethical, aesthetic and scientific grounds and the most effective answers to the problems involved have been the creation of various types of protected areas, such as national parks and nature reserves, supported by legal protection of rare species.

Within the last twenty years the scope of conservation has greatly expanded, due mainly to four new developments:

1) It has been recognized that the natural resources on which we live are limited and that our future depends on their rational use. Unbalanced use during the last few decades has led to serious losses of vital renewable resources and to their degradation by pollution.

2) It has also been recognized that natural systems are in precarious balance. Every major change made by man is liable to produce not only the results aimed at, but also changes in the balance of the system which may outweigh the expected benefit. Thus, for example, felling trees or draining wetlands may bring immediate profits, but by causing erosion, accelerated run-off of water, and changes in underground water tables and in climate, may also engender losses which are of a much greater importance to the community.

3) Increased crowding and stress in urban conglomerations has resulted in a new need for city dwellers to spend their leisure in a quiet countryside, pursuing the various activities which depend on pleasant landscapes and rich wildlife. Space and facilities for this will therefore have increasingly to be provided, especially in the neighbourhood of large cities.

4) Tourism based on wildlife and inspiring landscapes is increasing rapidly. For example, in the United States of America the National Parks had over 150 million visitors in 1968. Wildlife tourism is the largest source of income for Kenya, exceeding that from coffee and other crops.

Thus the main emphasis in conservation has shifted from ethical to economic aspects, but the former is also gaining continuously in importance. The public has become increasingly aware of conservation needs during the last two decades and most countries have significantly strengthened scientific, legal and administrative efforts directed to conservation of nature and natural resources. European Conservation Year 1970 has given a new and powerful stimulus to both public awareness and practical achievements.

In Greece the first National Parks were established in 1938, at Mount Olympos and Mount Parnassos, and several other protected areas have been created in subsequent years. However, it does not seem that the potential of Greek wildlife and national parks has yet been recognized and the management of both has remained entirely inadequate. Thirty years were to pass until the present Greek government took the first effective step towards conservation by enacting a new hunting law which pays due attention to endangered species and their habitats (law of the 4th September 1968, Art. 1, §§ 2 and 7; Art. 9, 11 and 12). A further essential step has been taken by the Minister of Northern Greece through decree No. 59 944 of the 19th July 1969, establishing a team of scientists to undertake the study of natural areas, especially

wetlands, with the aim of managing these areas, together with their bird life. This led to Greek membership of the International Wildfowl Research Bureau (IWRB), which the Ministry of Northern Greece joined in 1969. In March 1970, Greece also became a Member State of the International Union for Conservation of Nature and Natural Resources (IUCN). Finally, the declaration of Vice Prime Minister Pattakos on Greece in the European Conservation Year 1970 goes right to the heart of modern conservation problems: this declaration was widely publicized in the press in March 1970.

1.2 The Mission

By a letter dated 10 January 1970, one of us (L. Hoffmann) was invited by His Excellency Minister MATHAIOU, Minister of Northern Greece, "to visit us as soon as you can as representative of your Station, of the World Wildlife Fund, of the International Union for Nature Conservation and the International Wildfowl Research Bureau, to discuss mainly the details on our water bodies and their management." The invitation was later extended to Ing. W. Bauer and Ing. G. Müller, both among the most knowledgeable experts on Greek wildlife, especially birds. Mr Bauer is the author of the volume on birds in the Catalogus Faunae Graeciae and Mr Müller published a draft management plan for the Evros Delta in IUCN Publications new series No. 12 (1968).

Our visit took place from 8 to 14 March 1970. Three and a half days were spent on excursions to the Delta of the Evros and to Lake Mikra Prespa, and two and a half days in the city of Thessaloniki. Greek conservation problems, chiefly those of wetlands, were discussed with His Excellency Alexandros MATHAIOU, Minister of Northern Greece; Mr N. GORDONAS, Secretary General of the Ministry; Mr G. PAPOULIAS, Director of Foreign Affairs at the Ministry; Mr S. GAINTATZIS, Nomarchis (= prefect of the district) of Thessaloniki; Mr C.G. FLORIDIS, Mayor of Thessaloniki; Mr J. SAPATAKAKIS, Nomarchis of Evros, Alexandroupolis; Mr J. PALLIS, Nomarchis of Pella, Edessa;

Mr N. BOURAZANIS, Mayor of Edessa; Mr C. BRAVOS, Nomarchis of Florina; and with many others. Two public lectures were given by Dr Hoffmann and Mr Bauer in Thessaloniki, as well as a press conference and a radio interview. An exhibition on wetlands and their animal life, in which many references were made to international bodies concerned with conservation, was opened in the presence of the Mission at Thessaloniki on 12 March. Another general exhibition on conservation held at Florina was also visited.

Extended talks were held with Mr GERASIMOU, divisional Director General in the Ministry of Northern Greece, who heads the very able team of scientists established at the Ministry, the members of which at the time of our visit were Mr SIMOTAS and Mr KOLANGIS. We also had talks with Mrs JANOULOPOULO and Mr DERMATOPOULOS, and the problems pertaining to the mission and to conservation in Northern Greece were in fact thoroughly discussed with all the persons named, who proved to be most helpful colleagues.

We were impressed by the knowledge, the enthusiasm and the high quality of work of the team at the Ministry. We were also struck by the rapidly increasing public awareness, as shown by the interest taken by officials and by the number of people attending the lectures and visiting the exhibitions.

We would like to express our warmest thanks to the Minister of Northern Greece and to his collaborators, as well as to all the other officials and private persons in the country for the most generous hospitality they extended to us.

The Report which follows sets out our thoughts on Greek conservation problems and some possible ways of making progress with them, together with proposals for continued cooperation between the Ministry for Northern Greece and the international bodies which we represented. Special attention is paid to wetlands.

2. Organization of Nature Conservation and Management in Greece

Greece's wildlife and landscapes have an extraordinarily high economic, scientific and social potential. Although development has, in recent decades, often involved damage to habitats, and to animal and plant life, these are still richer in variety than in most other European countries. This wealth is today largely unknown and unexploited.

Before large-scale use of these resources can be safely promoted, several conditions must be fulfilled:

1) an inventory of the most interesting habitats with their plant and animal life must be made;
2) urgent conservation measures for endangered resources must be taken;
3) research into the integrated use of natural habitats and their resources must be conducted;
4) the public must be made fully aware of new forms of land use;
5) legal and administrative measures in favour of integrated development must be introduced; and
6) several special conservation areas must be identified, developed and managed as a result of (3).

It must be emphasized that an immediate large-scale development without consideration for these conditions would not only be economically hazardous but in all probability lead to the irreversible destruction of very important resources.

We agree with our Greek colleagues that attention should be paid first to the northern Greek wetlands because they are more endangered than any other type of habitat and because they have a particularly high potential for integrated multi-purpose use. We must, however, point out that Greek forests, mountain ranges and islands are also of equally high interest and that ultimately they must be included in a nation-wide conservation programme. The more urgent requirements, apart from wetlands, are the protection of the most beautiful forests, of the birds of prey and of the larger wild mammals. Among the latter, brown bear *Ursus arctos*, pardel lynx *Lynx pardina*, wolf *Canis*

lupus, jackal Canis aureus, red deer Cervus elaphus and chamois Rupicapra rupicapra require particular attention in Northern Greece.

2.1 Research and Information

This is the necessary groundwork which has already been initiated and must be urgently developed with vigour. Our first recommendation is therefore for the establishment of a "Research Centre for Conservation and Management of Nature" within the Ministry of Northern Greece. The excellent ad hoc working group under Prof. GERASIMOU should be built up into such a Centre. It should be given the necessary financial, legal and administrative means to conduct research in close cooperation with the Universities of Thessaloniki and Athens, to ensure that the public is adequately informed through all the communications media, to put forward proposals for development and to assist local authorities and other bodies in the carrying out of such development. In the first stage, it would be concerned mainly with wetland problems.

Since, under present legislation (Law N. 420, leaflet 27, Vol. A, 31.1.1970), the management of wetlands is the responsibility of the Department of Fisheries at the Ministry of Agriculture, a special relationship between the Centre and this Ministry will have to be worked out.

The Centre should be commissioned with the following tasks in particular:-

a) Inventories of the most important wetlands, their plant and animal life.
b) Selection of the most interesting wetlands for management as conservation areas.
c) Ecological study of these areas in order to develop the best pattern of multi-purpose use.
d) Co-operation with every type of organization concerned with management of wetland areas in ensuring that conservation principles are introduced into such management.

e) Co-operation with international and foreign organizations in coordinating scientific activities.

f) Monitoring of pollution and the hydrological balance in wetland areas and elaborating measures to prevent pollution and deterioration of the hydrological balance.

g) Information and education of the public through all the recognized media.

h) Drawing up proposals for any necessary legal and administrative measures.

The following are the relevant considerations to be borne in mind in carrying out sections (a) to (g) of the above programme:-

a) A large part of the work has already been done, mainly by foreign naturalists visiting Greece. The documentation is now scattered. It should be collected and analysed by the Centre.

b) First proposals for areas which seem worthy of selection are made in section 3 of this report.

c) Tourism would in all likelihood bring the most important economic returns in many wetlands. This could simply involve watching wildlife, especially birds, from car or boat, on horseback or on foot, and could be encouraged by the construction of attractive observation hides. It could also include sport hunting and sport fisheries. Other forms of land use in the same areas could include commercial fisheries, fish and shellfish culture, pasture, reed cutting and trapping of fur-bearing animals. The integration of all these activities must be carefully studied, in order to avoid conflicts, such as those between hunting and watching.

d) Development projects often aim at one single type of exploitation, neglecting all other potentials and destroying the resources for them. The agencies concerned should learn the advantages of balanced multi-purpose land use, which may often bring lower immediate yields but better long term prospects for ecological, economic and social stability.

e) This would include cooperation in the making of wetland inventories within the framework of the IUCN/IWRB Project MAR, with the wildfowl census coordinated by IWRB, with other investigations on rare and endangered animals and plants organized by IUCN, with the ringing of migratory birds under the auspices of IWRB and Euring, and with the international investigations on white stork populations organized by the Vogelwarte Radolfzell, Germany.

f) Regular measurement of pollution, water levels and subsoil water tables, if possible with automatic recorders, provide the necessary data for early detection of deterioration. Remedies can then often be found at a modest cost and before it is too late, and their effectiveness can be tested by similar monitoring methods.

g) The excellent public relations work carried out to date by the ad hoc Ministerial group, especially through the exhibition mounted at Thessaloniki in March 1970, is a promising start in this field. Special efforts now need to be made to cater for children by providing school classes with teaching materials. Among the first to be trained must be the school teachers themselves. The Greeks of today are proud of their country but have a rather poor knowledge of its nature. The first requirement is that people should learn to recognize plant and animal species. Cheap field guides for identification of plants and animals as well as introductions to ecology in the local context would seem to be essential not only for school children and students, but also for the adult public. University courses in ecology should be introduced. Finally, the general public should be regularly approached through television, radio, films, the press, exhibitions and public lectures.

Education and information on the actual conservation areas, through explanatory posters, guided tours, lectures and exhibitions,

will be particularly important if new ideas are to win acceptance by the public.

The Mayor of the town of Thessaloniki has plans for a Zoological and Botanical Garden and a Natural History Museum. These plans should be worked out in close cooperation with the Centre, and the most modern audio-visual techniques should be used to bring visitors into contact with Nature and show them the benefits which Greece derives from Nature and the need for conservation.

In the framework of educational activities, foreign publications will have to be translated and adapted to Greek conditions. Mr DERMATOPOULOS seems to be particularly qualified for this kind of work. The Centre should also have its own library of world-wide publications in order to take full advantage of the work done abroad and transmit to Greek naturalists the experience gained from this work.

Dissemination of information and all these educational activities are of the highest importance, because there is very little prospect of enforcing legal and administrative measures for conservation as long as the public does not accept the message and is not convinced of the usefulness of the proposed development of such measures.

2.2 Law and Administration

If the new forms of land use propagated by the Centre within the programme outlined in section 2.1 are to be put into practice by the Ministry of Northern Greece, this Ministry will need powers to control land use in addition to powers over hunting and for the protection of species. Probably the first step should be the enactment of a conservation law for the whole of Greece, which is still lacking today.

2.2.1 Thus in relation to land use, the Ministry of Northern Greece should be given, along with the necessary budgetary provisions, powers to:-

a) incorporate government-owned land in conservation areas;

b) purchase or lease private land for incorporation into conservation areas or, in extreme cases, expropriate land for this purpose;

c) impose conditions on private land use in conservation areas, with or without compensation.

2.2.2 In relation to hunting and the protection of species, several Orders of birds should be entirely protected against hunting and capture during the whole year. These include the Gaviiformes, Podicipediformes, Procellariformes, Pelecaniformes, Ciconiiformes, Phoenicopteriformes, Gruiformes, Charadriiformes and Falconiformes. Most of the species of these Orders which occur in Greece have become rare in the country and, in some cases, throughout Europe. Several, such as Pelecanus crispus or Larus audouini, are even menaced by extinction. Only few of them occasionally cause limited damage (e.g. cormorants and herons) and most are unpalatable or useless as food for humans. Protection should include prohibition on the export of eggs and skins, since both tend to command high prices from collectors and illegal attempts to export them can be expected, and need to be guarded against.

The hunting season should close well before the present date of 10 March, preferably by 15 January, as in many other European countries. This would ensure that waterfowl wintering in Greece would not be subject to additional pressures during the peak period of hard weather, when they tend to suffer maximum natural losses. Populations on spring migration, when many species are already paired, would also be safeguarded. In compensation, autumn hunting could be opened earlier than 10 September, so that the total length of the hunting season sould remain virtually unchanged, lasting five and a half months from 1 August to 15 January.

Another improvement in the legal position which ought to be made would be achieved by Greece's adherence to International Conventions

on conservation matters. Up till now, according to our information, Greece has only ratified the International Convention for Prevention of Pollution of the Sea, 1954 and the amendments to this Convention made in 1962. Greece signed the (1950) International Convention for the Protection of Birds on 28 November 1953, but has not yet proceeded to ratification. We strongly recommend that this and other ratifications should be made without delay. In the particular case of the Convention for the Protection of Birds, it would no longer involve any difficulties if the recommendation made above for an earlier closing of the hunting season is accepted.

Other Conventions already drafted include the one prepared by IWRB on Wetlands of International Importance, especially as Waterfowl Habitat, and the one by IUCN on Export, Import and Transit of Certain Species of Wild Animals and Plants. We recommend that the Greek Government should participate in working out the final texts of these Conventions and sign and ratify them as soon as they are ready.

3. The Economic Return from Conservation Areas

At the beginning of the century most nature reserves were established in order to reduce to a minimum conflicts between man and nature in the reserved areas. Their economic exploitation was proscribed. This philosophy has been greatly modified. There are still sanctuaries where the human presence must be avoided for scientific reasons or for the sake of vulnerable species, but most reserves may be defined today as areas where the natural resources, and in particular the whole variety of wildlife, are managed and developed in a way to bring most benefit to man. This benefit may be economic, scientific or social. Research into the integrated use of resources leads to management plans which indicate any restrictive measures necessary to ensure the perpetuation of resources and at the same time indicate what development measures will bring about optimum multi-purpose use. The discussion which now follows aims at drawing

attention to some of the conservation needs and economic possibilities of wetland conservation areas.

3.1 Agriculture

Many of the Greek wetlands have been drained in the past and have become areas of intensive agriculture, where cereals, cotton and other crops are produced in quantity. It is hardly necessary to add that such drainage destroys most of the wildlife resources of a wetland area. We were not in the position to make a study of the economic advisability of further drainage in Greece, but we were told that production of most of the crops grown on drained wetlands already exceeds Greek requirements, while disposal of the production by export is meeting with increasing difficulties. We suggest that a thorough study should be initiated on these problems.

Such a study should not only evaluate the possible direct economic return from drained areas, as compared with the cost of drainage, but should also consider the potential return from the kind of development recommended in this report and include it in the balance-sheet between reclamation costs and benefits. It should furthermore take into consideration the possible future trends. For example, experience in western Europe and in the USA indicates that traditional agriculture is likely to encounter increasing difficulties, while the use of land for recreation and 'tertiary' production is increasing. Finally, the side effects of drainage on the hydrological balance in the surrounding region must be taken into account, as well as the cost of engineering works for drainage, irrigation and maintenance. Such costs are almost always several times higher than first estimates.

There are, however, forms of agriculture which may well form part of an integrated land use of undrained wetlands. Pasture for cattle or other livestock is the most important. In the absence of large wild herbivores, grazing activity by domestic stock is actually

essential in many wetlands to maintain favourable conditions for certain kinds of native wildlife, especially for some species of birds. However, control has to be kept over the number of grazing animals and over their seasonal distribution, in order to avoid deterioration by overgrazing. Reed-cutting is also a rewarding agricultural activity in many wetlands. The cutting season has to be chosen in a way to avoid damage to wildlife and a portion of the reed-beds must always be kept uncut for the benefit of nesting birds.

3.2 Forestry, Fishery, Hunting and Trapping of Fur-bearing Animals

All these activities may play an important part in integrated land use in wetland conservation areas.

Tree-felling will have to be kept under close control, in order to maintain woodland areas in good condition for regeneration and as wildlife habitat. Enough high trees and thickets will have to be maintained to provide nest-sites for the mixed breeding colonies of herons and cormorants and for the eyries of birds of prey.

Fisheries are major assets of wetland areas. Here also coordination must be achieved between fishing activities and conservation needs, notably those applying to birds. Shellfish farming can be developed in parts of the Greek wetlands, provided that similar precautions are taken.

Hunting is particularly important in wetland areas. It must, however, be kept in balance with the game population and restrictions must be applied in many places in order to avoid overshooting and a resulting decline of stocks. Such measures may include prohibiting shooting in parts of a conservation area, setting an upper limit on the bag allowed per day per hunter, and shortening the shooting season. In the case of sedentary game, the sustainable yield for hunters can be assessed by research in the area itself. The great majority of wetland game species, however, are migratory birds, coming

from a huge area extending from Scandinavia to Siberia, and evaluation of the sustainable yield is therefore difficult. We do know that hunting has increased in most European countries, along with human populations and transport facilities: it can be safely stated, therefore, that the level of over-shooting has now been reached or surpassed and is leading to a general decline of wildfowl populations in many places, especially in eastern Europe and in the Mediterranean countries. For this reason the effective control of hunting and disturbance within a conservation area will almost certainly attract more migratory game and improve long term prospects for tourism as well as for hunting. As a very rough guide, overshooting problems are liable to occur when more than 25% of a wintering population are shot. This percentage does, of course, not apply to peak numbers, but to average numbers over the whole of the shooting season. In the delta of the River Evros, for instance, a yearly bag of 20,000 wildfowl should not be exceeded, if a decline in the stock is to be avoided. This figure may of course have to be adjusted upwards or downwards in the light of future investigations. Meanwhile, these considerations should certainly be kept in mind when decisions are taken on the continuation or abolition of the "Hunting Festival" in the Evros area. We suggest that a thorough investigation of the sustainable level of shooting on the Evros should be initiated by the proposed Research Centre, in cooperation with international bodies. The publicity folder published for the 1970 "Festival" showed neither awareness of these problems nor knowledge of Greek birds and was severely criticized by hunters and conservationists alike in many European countries.

Fur-bearing animals are another asset of wetland areas. There are, however, no valuable native fur-bearers in Greek wetlands and therefore exotic species would have to be introduced. This question is discussed below in section 3.4.

3.3 Tourism

Probably the most important prospects for the development of Greek conservation areas are in connection with tourism. Growing numbers of Western European and American tourists coming to the Mediterranean are no longer satisfied by what is provided by the usual seaside resort today. They are looking for additional activities and interests during their holidays. Greece has already recognized this by making an increasing part of its archaeological wealth accessible to tourists. But wilderness is more and more of an attraction and challenge for tourists all over the world and Greece in this respect has a unique potential to offer, which is certainly at least equal to the archaeological one, but has hitherto been almost completely neglected. Greece received 1.3 million tourists in 1969. If it wants to attract to the country an increasing share of the tourists now going to Italy (30 million in 1969, bringing 1,800 million dollars into that country) or to Spain (22 million in 1969), the development of conservation areas will be a major need.

If conservation areas are to receive large numbers of tourists, their development must include:

a) road access;
b) accommodation facilities on the periphery;
c) wardens to guide visitors and to prevent them from damaging wildlife; and
d) equipment and regulations for visitor traffic inside the area.

The road network for access to a conservation area must alway be carefully planned in the framework of a management plan. It must interfere as little as possible with the landscape and wilderness aspects and leave ecological conditions unchanged. It must also avoid the places which are the habitat and refuge of more vulnerable species. On the other hand the roads and trails must offer reliable opportunities for high quality viewing of landscape and wildlife.

Special itineraries can be reserved for guided group-transport on horseback, by horse-drawn carriage, by boat or by 'bus. Group-transport makes it easier to keep visitors to a specific track and is therefore to be preferred in areas which have vulnerable wildlife species. In wetland areas tracks with ditches on both sides can bring pedestrians close to the wildlife without disturbing it, screens and hides can often be great attractions by enabling people to watch wildlife at really close quarters. Where less vulnerable types of habitat or species are involved, visitors can be left free to explore nature on their own.

Once the conditions referred to above have been fulfilled, and only then, should the conservation areas be publicized. Nature should then become an important feature of all publicity for tourism in Greece.

The excellent official guidebook for 1969 of the Greek office for Tourism makes almost no reference to the country's magnificent natural heritage and its unique variety. Throughout the 218 pages we are only informed that "deer and rare wildfowl" were introduced (!) to Spetsai and that there is "a popular hunting area for wildfowl" near Alexandroupolis. Who, on the basis of such information, could possibly imagine the unique wealth of Greek wildlife, the best in Europe this side of the iron curtain!? The extensive presentation of bathing beaches and bathing "beauties", such as are to be found in travel posters and leaflets everywhere, could well be reduced and space left for illustrations and descriptions of Greece's most beautiful natural scenery and varied wildlife.

In contrast, the official guidebook for Rumania (1970) shows on its cover, together with views of Mamaia and Bucharest, a landscape in the Carpathian mountains and a breeding colony of white pelicans in the delta of the Danube, which was visited by 400,000 tourists last year. Greece can boast of features of quite the same quality: the

mountain areas of Grammos and Smolikas or the last pelicans at Mikra Prespa!

For the planned conservation areas, guidebooks in foreign languages should be published. These should include:

a) a general description of the area, its geographical location and means of access;
b) lodging, road and other facilities in and around the area;
c) an explanation of the area's special interest and of the need for its conservation;
d) a description of the most interesting plants and animals and suggestions as to how to see them; and
e) an account of the conservation measures which have been taken to ensure their future.

3.4 The Introduction of Exotic Species

In order to derive more economic benefit from conservation areas it may sometimes seem desirable to introduce foreign, non-native species, such as fur-bearing animals, fish, shellfish, game species or trees.

The introduction of exotic species need not necessarily be prohibited out of hand, but it should only be done with the utmost care and after thorough experimentation. The history of introductions has much more to say about damage than it can tell us of successes; the cost of eliminating undesirable or harmful exotics generally far exceeds the benefits from their introduction. Occasionally, however, introductions have truly enriched an area without significant damage to its native species.

Introductions should only be tried if there are powerful reasons in favour of them. They should be preceded by small-scale experiments in isolated areas from which the introduced species cannot spread. Such experiments have to continue over a very considerable period to be really valuable. An introduction always produces a breakdown in the

balance of the ecosystem and the achievement of a new balance often takes a long time. Beneficial changes in the early years after an introduction may be transitory and turn into significant losses in later years.

The experiments which have been undertaken with introduced coypu, swans and red-crested pochard at Lake Agras are most interesting. The coypu, especially, seems to have favoured productivity of many indigenous species and lends itself to economic exploitation. Nevertheless, the experiments should be continued for several more years before conclusions are drawn. Coypus have had detrimental effects on native wildlife in many places and the same might happen in the longer term in Greece. The price of their fur has dropped dramatically on world markets, so that although they are still economically interesting in Greece, this may soon change.

4. Proposals for Wetland Conservation Areas in Northern Greece

4.1 General Models

Many different types of conservation areas have been developed by a considerable number of different countries. There is no generally accepted international standard either for the different categories of area or for their nomenclature. However, five main types of conservation area can be recognized, of which most of the official categories are variations or combinations.

Type A: Strict nature reserves which are managed entirely to maintain and develop their plant and animal life, for use in research and to show them to the public. There are no human inhabitants except park personnel and there is no economic activity beyond that indicated. Many National Parks in the USA and in tropical Africa are examples of this type, as in Europe are the Swiss National Park and the Nature Reserves in the Coto Doñana in Spain and in the Camargue in France. Most strict nature reserves in Europe are, however, of smaller size

than those mentioned, because of the density of human population and the intrusion of other economic activities.

Type B: Nature reserves where various measures are taken in order to afford the best possible protection to landscape and wildlife without, however, excluding human habitation and various kinds of economic activity. Road-building, access, agriculture, forestry, house-building, hunting and so forth are kept under the degree of control laid down in the management plan for the area. In many countries, especially in Europe, the larger areas of this type are called National Parks.

Type C: Hunting reserves where shooting is either prohibited or under special control. These are generally established where game is overexploited, in order to ensure perpetuation and restocking of game species.

Type D: Forest reserves where wood-cutting is either prohibited or under special control.

Type E: Geological features, single trees or other small objects or places of special interest, which have been accorded special protection. These are often called Nature Monuments.

The large wetland and general conservation areas in Greece will probably have to be modelled on type B, while some of the smaller areas might be planned to fit in with types A or C.

4.2 Large Combined or Multi-habitat Conservation Areas (Parks)

Two of the major Greek wetlands lend themselves particularly well for inclusion in larger conservation units which would also contain woodland and mountain areas. These might be called National Parks (type B above).

4.2.1 The Evros Park:

This should include the whole Greek part of the lower Evros Valley, from Mandra to the sea, together with the adjoining mountain

areas (see Map 2a). Its northern boundary should follow a line from Mandra over Mikron Dereion and along the Bulgarian border to the boundary of the Nomos (District) of Rhodope, following this boundary over Mount Kallidea and then straight south through Aisimi, Avas and Avdia, reaching the sea south of the last-named village. This would enclose a large still relatively unspoiled wild area of the highest value, which could only be rivalled, in southern Europe, by the delta areas of the Danube, the Guadalquivir and the Rhône rivers, where similar conservation areas have already been established. The proposed Research Centre for Conservation and Management of Nature should work out a management plan for this park (see section 5).

4.2.2 The Prespa Park:

This should contain Lake Mikra Prespa, the Greek sector of Lake Megali Prespa, and the surrounding mountains (see Map 1). Its boundary would be formed on the north by the Yugoslav frontier, on east and south by a line over Mts. Varnous, Pisoderi, Antartikou, Katochori and Kristallopegi, and on the west by the Albanian border. It would have a total surface of about 400 sq. km and harbour a unique combination of rare water and mountain birds, mammals and reptiles, in a largely unspoiled wilderness. A paper on the vertebrate animals of Mikra Prespa, which also contains recommendations for protective measures, has been published (BROSSELIN & MOLINIER, 1968). For this area, also, a management plan should be worked out by the Centre, while further detailed research and management could be based at the agricultural college and zoo at Florina.

4.3 Medium-sized Nature Reserves

These reserves would generally be of type B, but they will contain some sectors falling within types A and C.

4.3.1 Delta of the Evros:

This is the richest part of the proposed Evros Park. For details see section 5 below.

4.3.2 Lake Vistonis:

The gallery forest on the eastern shore of Lake Vistonis, the adjoining part of the lake and the lagoons between Phanarion and the mouth of the Philourion, including Lake Mitrikou, should be made into a nature reserve. They contain important breeding places of herons and terns and some of the largest concentrations of wintering wildfowl in the Mediterranean region. In the winter of 1969/70 more than 200,000 head of wildfowl were counted in the area.

4.3.3 Lake Langada:

The whole of the shore of Lake Langada, the mouth of the River Bojdana and what is left of the woodland between Lake Langada and Lake Volvi should be made into a nature reserve. Special attention needs to be paid in this area to water pollution. Lake Langada has still an interesting waterfowl population, but it is also an important recreation area for Thessaloniki and its chief source of supply for drinking water.

4.3.4 Delta of the River Aliakmon:

The upper parts of this delta have been drained, but a salt lagoon area which is still left has a specially high carrying capacity for wintering and migratory wildfowl and waders. These concentrations, within easy reach of Thessaloniki, might well become very important and a nature reserve should be established for their protection. Hunting must be forbidden in the area, since it has now become too small for the perpetuation of wintering populations if they are disturbed. The hunting of waterfowl flighting out of the area every evening could, however, still be allowed.

4.3.5 Lake Agras:

This small and highly productive artificial lake is already a hunting reserve and should be kept as such. It provides excellent opportunities to watch large numbers of birds from the road. The very interesting research programme on the introduction of coypu, swans and red-crested pochard referred to in section 3.4 is centred here and should be continued.

4.4 Small Special Reserves

Several small localities in or outside the conservation areas discussed in the previous sub-sections need special protection because they contain important colonies of breeding birds which it is necessary to protect from disturbance during the nesting season or because they are frequented by migratory or wintering populations of species which are vulnerable and could not withstand hunting. The A, B or C types of conservation area may be appropriate for these reserves.

4.4.1 Several such localities are to be found within the proposed Evros Delta Nature Reserve referred to in section 4.3.1 and are discussed further in section 5 below.

4.4.2 The mouth of the River Philourion (within the proposed Lake Vistonis Nature Reserve referred to in section 4.3.3.).

4.4.3 The mouth of the River Nestos (west of the village of Keramoti).

4.4.4 The mouth of the River Loudias.

These three river mouths harbour the entire European nesting population of the Mediterranean black-headed gull outside the Soviet Union. This species has a very limited distribution and therefore requires special protection. Access to the breeding islands and their neighbourhood (where other rare species also nest) should be forbidden.

Near the Nestos river mouth access to the shorebelt of the lagoon south of Pigae should also be prohibited during the nesting season, since it sustains the largest breeding population of the spur-winged plover Hoplopterus spinosus in Europe. In the same area the Kotzia Orman wood deserves mention as the last remnant of the formerly extensive groundwater forest around the mouth of the river. It may still serve as a nesting place for birds of prey, and thus play a part in maintaining the ecological balance of the whole delta, and it also has interesting botanical and entomological features.

4.4.5 Nesting places at Lake Mikra Prespa (within the Prespa Park, referred to in section 4.2.2).

The nesting colonies of herons, cormorants and pelicans near Lemos and south of Granias must be protected against any alteration of the vegetational cover and access should be prohibited between 15 March and 1 July annually. This would not interfere with fishing activities on Mikra Prespa.

4.4.6 The Lake of Kastoria.

This lake, even if it cannot compare in ornithological importance with the others that have been mentioned, still has an interesting bird-life. The narrow reed- and willow-belt of its northern and eastern shore deserves protection as a breeding place for Ardeidae and Anatidae.

We have intentionally kept our recommendations in this section as short as possible. We feel that the more detailed planning should take place within the framework of the kind of cooperation advocated in section 6 below.

At a later stage the conservation areas to be created in Northern Greece must also include mountain and woodland areas. At first sight the areas which seem to have the greatest potentialities include the central part of Mount Rhodope, Mount Kerkini, Mount Olympos, Mount Smolikas and, above all, the still very undisturbed and wild Mount Grammos.

5. The Evros Park (draft management proposal)

The following are some of the considerations which could serve as a basis for drafting a management plan. We start from the assumption that the aim of the park is to maintain the wildlife resources of the area and to develop these for multi-purpose use, with special emphasis on tourism.

5.1 Wildlife Resources

Among the northern Greek river deltas, the Evros is the only one still possessing important undisturbed animal and plant life. This finds its complement in the equally undisturbed wildlife of the neighbouring mountains.

In the first place, in respect of its birds, the area is one of the richest European wetlands, rivalled only by the deltas of the Danube, Rhône and Guadalquivir.

There are 380 bird species on the Greek list: 300 have been recorded within the limits of the proposed park. Among these are 27 out of the 38 European duck and goose species and 33 out of the 38 bird of prey species occurring in western and southern Europe. Among the rare breeding birds the greylag goose Anser anser, cormorant Phalacrocorax carbo, black stork Ciconia nigra, crane Grus grus, bearded vulture Gypaetus barbatus, black vulture Aegypius monachus, imperial eagle Aquila heliaca, peregrine falcon Falco peregrinus, eagle owl Bubo bubo and spur-winged plover Hoplopterus spinosus merit special mention. Fifteen out of the entire surviving European population of between 50 and 70 pairs of the white-tailed eagle Haliaetus albicilla nest in the proposed park area. The general density of breeding pairs of birds of prey is unequalled elsewhere in Europe. Some interesting breeding species have unfortunately been wiped out in recent years: the Dalmatian pelican Pelecanus crispus, spoonbill Platalea leucorodia, and the great and little bustards Otis tarda and O. tetrax.

Each year 200,000 wildfowl spend part of the winter in this area; they include the red-breasted goose Branta ruficollis, which is generally considered to be a declining and endangered species, and of which the proposed park is, together with the delta of the Danube and the area to the south of it, the only regular wintering place outside the Soviet Union (Ornithological data by BAUER and BROSIUS 1965; BAUER and MUELLER 1969).

The mammalian fauna is equally rich. In the mountainous sectors the wolf Canis lupus and jackal Canis aureus are residents, while the brown bear Ursus arctos and pardel lynx Lynx pardina (L. pardellus) occur at least occasionally. The natural balance, even among the larger mammals, is therefore still largely undisturbed.

The reptiles and amphibians of the area are doubtless worth special study. The reptile-eating short-toed eagle Circaetus gallicus here reaches its highest nesting density in Europe, which is a good indication of a large reptile population.

Finally, the number of fishes is indicated by the important commercial catches of sheath-fish Silurus glanis, eels Anguilla anguilla and carp Cyprinus carpio. The sturgeons Huso huso and Acipenser sturio also occur.

5.2 Boundaries and Zones

The limits of the park, which would cover 1,850 sq. km, have already been indicated in section 4.2.1 (see also Map 2a). In addition to the general regulations for safeguarding the park, special protection should be given to the lower part of the valley from Poros down to the sea, between the high water embankment and the Turkish border, and also to the area of the Evros and "Little Maritza" river mouths, a total of 55 sq. km (see Map 2b). Within this latter zone, strict protection for the habitat and against any intrusion during the nesting season should be given to the cormorant and heron colonies and

their immediate surroundings, while hunting should be banned from the lower reaches of the "Little Maritza" and the lagoons and islands to seaward (Maps 2b and 2c).

5.3 Economic Use and Conservation

5.3.1 In the Park as a Whole

The road building policy should be guided by the twin aims of maintaining the scenic beauty and wildlife of the area and of making them accessible to tourists. This will determine the routes, construction methods and the place and method of extracting building materials. No industrial construction should be permitted inside the park and the building of private houses should be restricted to villages and their immediate neighbourhood. Structures for the reception of tourists (hotels, restaurants, camping and parking places) should be established at sites chosen in such a way that they do not damage scenic beauty or disturb wildlife. At the same time, they must offer attractive landscapes and wildlife to the tourist.

Agriculture in the park area can be allowed to continue as at present. New agricultural development, however, should be submitted to control and only permitted if it is compatible with the aims of the park. Forestry practices should be designed to maintain the value of the woodland for scenic beauty and as wildlife habitat. They should be based on indigenous species of trees and comprise systematic rehabilitation of the more degraded woodlands. The cutting or felling of trees which contain nests of birds of prey and of storks should be strictly forbidden and the immediate neighbourhood of such nesting trees should also be excluded from tree-cutting.

In most of the park area hunting can be allowed to continue, but a complete ban on killing of birds of prey and the larger carnivores (brown bear, pardel lynx, wolf and jackal) should be introduced.

Exceptions to this ban should only be granted if particularly heavy damage is actually proved. In cases of less severe proven damage the park administration should pay compensation.

5.3.2 In the Specially Protected Part of the Lower Evros Valley

In this sector ploughing or cultivation should be limited to the areas where it is practised at present. New drainage works should be prohibited, but land use involving the reintroduction of water from the river or from the sea to areas situated on the other side of the embankments or dykes should be favoured. Thus the experimental work and effort put into fish production in the southern part of the polder and elsewhere, should be extended. Land which has become arid as a result of the building of dykes could certainly be made more productive for wildlife and livestock if sluices to let water from the river through the dyke were constructed.

What remains of the gallery forest, together with any isolated trees, should be protected from cutting. Reed burning should be forbidden and reed cutting controlled in such a way that it is done at a season when it does not disturb nesting birds and that the essential habitats for wildlife remain undamaged. Wardens will have to watch particularly carefully to see that no nests are destroyed or disturbed. Close-up photography of nests, especially of birds of prey, should be forbidden. It is important that no domestic pigs should be allowed to be taken onto the islands of the river between the beginning of March and the end of June annually.

Pending the introduction of an earlier closing of the hunting season for the whole of Greece as recommended in section 2.2.2 above, special measures should be taken to close hunting on the lower Evros at the end of January. Daily bag limits should also be fixed for wildfowl shooting in this area.

5.3.3 In the Special Sanctuaries around the Breeding Places

Access should be prohibited at least between the beginning of March and the end of June annually. Hunting in the sanctuary areas should never be allowed.

5.3.4 In the Hunting Reserves

Between the beginning of December and 15 March annually no hunting should be allowed and boat traffic on the river should be confined to professional fishermen.

5.4 Research

A Field Station of the proposed Research Centre for Conservation and Management should be established in the area, either as part of the administration or in close cooperation with it. It should have its own research programme and coordinate the activities of visiting naturalists.

Its own programme should concentrate on census work and monitoring in order to provide objective criteria by which any changes in the park can be measured. The Centre should be entitled to propose any changes in zoning, in the regulations governing economic activities, in visitors' access and in hunting, that are shown to be necessary as a result of its research work.

5.5 Tourism

In addition to the roads, buildings and other facilities for the reception of tourists referred to in section 5.3.1, various other special measures should be taken to assist tourism. Thus a reasonable number of roads, tracks, dykes and waterways should be developed to serve as tourist itineraries for private cars, group transport, pedestrians, horse-riders and boats. Guided tours should be provided on these itineraries. Screens and hides should be established at selected places to allow a close approach to wildlife. Sport hunting

and fishing could be organized in certain carefully chosen and well-marked zones of the park, well away from the tourist itineraries. Attractively printed and illustrated guide-books and pamphlets should be provided for tourists.

5.6 Administr tion and Wardening

The size of the staff necessary for the administration, wardening, guide duties and research in the park will depend on how its development progresses and more especially on the number of visiting tourists. Two well-informed experts on the delta and its wildlife live in Alexandroupolis and have upto the present time on their own initiative acted as custodians of the Evros delta. They could well form the nucleus of the future park staff. They are Mr C. GUTTNER, an experienced amateur ornithologist, with a good knowledge of how to prepare specimens for scientific collections and exhibitions, who would be prepared to take a full-time job in government service for the park; and Mr J. PANAYOTOU, a photographer and vice-president of the hunting society of Alexandroupolis, who could look after hunting matters and the necessary public relations. Both these gentlemen could work as wardens and guides in the initial phase of the park project.

5.7 Conservation in the Turkish Sector of the Delta

Since the technical meeting of IUCN's Commission on Ecology, held at Ankara in 1967, the National Park Service of the Turkish Government has announced its programme for establishing conservation areas on the lower Evros (Meriç). The closest possible coordination between the Greek and Turkish programmes in this extremely important area should certainly be the aim of the two governments and all the scientists concerned.

6. International Cooperation

Many amateur and professional naturalists have visited Northern Greece within recent years. They have taken an increasing interest in Greek natural history and are very willing to assist any efforts made to further nature study and nature conservation in Greece. The international organizations which we represent are prepared to guide these efforts.

6.1 Forms of Cooperation

The forms of foreign assistance which could usefully be given to the conservation of nature in Greece fall essentially into the following categories:-

6.1.1 Work carried out in Greece by foreign experts: this should always be done in close cooperation with the Greek organization concerned, which in most cases would be the proposed "Research Centre for Conservation and Management of Nature". The Ministry of Northern Greece should designate a Greek counterpart or joint expert, to work with each foreign expert coming to Greece, who would not only cooperate closely with the foreign expert during his stay, but also, after his departure, would be in the position to continue any work they have initiated together which is found to be producing useful results.

6.1.2 Visits of Greek experts, mainly members of the proposed Centre, to foreign institutes in order to obtain any further experience needed for the promotion of research and conservation action in Greece.

6.1.3 Preparation by foreign experts of supplementary audio-visual material for use in the promotion of conservation action in Greece.

6.1.4 Financial assistance for Greek conservation projects.

6.2 Fields of Cooperation

Cooperation could extend to the following fields:-

6.2.1 Research: the participation of experts from other countries in inventory and census work in Greece should include placing their past published and unpublished observations at the disposal of the Centre and collecting new information in the field. They could also initiate ecological studies with a view to the conservation of specific areas or species. Research in the past has been mainly directed to birds, but it could be extended in the future to mammals, reptiles, fish, invertebrates (especially aquatic fauna) and vegetation.

6.2.2 Management and Legislation: draft management plans have already been established for the Evros (see section 5 above) and for the Prespa area (BROSSELIN & MOLINIER 1969) and further cooperation by visiting naturalists with the proposed Centre in the elaboration of management plans should be promoted. Thus a specialist on the planning and management of parks and reserves could be sent to Greece, and his terms of reference could include advice on specialized facilities for wildlife tourists, such as nature trails, screens and hides.

Foreign experience could also be made available to assist with drafting of legislation. The texts of the relevant laws of other countries could be provided for study.

6.2.3 Education and Public Relations: foreign experts should help with augmenting the literature in Greece on the subject of plants and animals. A first step has already been taken towards preparing a Greek edition of the useful and inexpensive "Field Guide to European Birds" (Peterson et al). The authors have renounced their royalties on the first 2,000 copies, the colour plates have been made available at the low price of 7 dr. per copy and the translation has been carried out free of charge. It remains now to find a Greek publisher for the actual printing. Similarly, the German and American authors of the Catalogue of Greek Birds, which was written in German, are also ready to provide a Greek translation free of cost and royalties. Such

foreign assistance with other scientific or popular literature on nature could also certainly be counted upon.

Another type of assistance which could be given concerns the preparation of other audio-visual documentation, such as photographs, films and posters. A certain amount of photographic and film material is already available from TERRASSE (France) on the Lake Prespa area and from BROSIUS (Germany) on the Evros. Both may possibly be used by Anglia Television to make a television film on 'Nature in Northern Greece'. Copies of this film could be given to the Ministry of Northern Greece for educational purposes in Greece itself, while others could be used for public relations purposes in foreign countries.

Foreign films, photographs, books, posters, etc. have already been given or leased to the Ministry for use in Greece and more could still be done in this respect.

Foreign naturalists could also help with the preparation of guide-books on the proposed conservation areas or on Northern Greece as a whole. They could assist in publicizing widely the Greek conservation effort, not only in specialized journals (natural history, conservation, hunting etc.) but also in popular and tourist periodicals. They could provide contacts with travel agencies and other tourist organizations in various countries.

A further exchange of views between Greek and foreign experts could usefully take place in connection with the museum, zoo and aquarium project at Thessaloniki. Contacts could be provided with the best European institutions of the same kind, which the Greek promoters could well visit.

6.2.4 Financial Contributions: grants for pilot projects on conservation in Greece could be obtained from the World Wildlife Fund. Other forms of possible financial assistance would take the form of grants made by universities or research institutions to cover visits of

their research workers to Greece or invitations to Greek naturalists to visit foreign institutions. A grant has already been promised by the Dutch Government's research institute RIVON to cover a year or two's visit to northern Greece by two Dutch research students.

6.3 Formalization of Contacts

For reasons of efficiency, foreign cooperation should be coordinated through one channel. It is suggested that IUCN, WWF and IWRB nominate a joint coordinator and working group to take care of this coordination. They could be commissioned by the Ministry of Northern Greece and by the international organizations to undertake the following principal tasks:-

a) to select the foreign naturalists who would be used for international cooperation assignments and to determine their individual programmes; the Ministry would then nominate their Greek counterparts;
b) to recommend to the Ministry particular foreign visitors for work in conservation areas and for permission to enter areas under military control;
c) to negotiate grants from foreign and international institutions for the support of visits in both the above-mentioned categories;
d) to submit pilot projects to international institutions and especially to the World Wildlife Fund for the purposes of sponsorship and support;
e) to coordinate the preparation of educational and public relations documentation and make the necessary contacts for its dissemination; and
f) to transmit "black lists" of any so-called naturalists, who are found to have caused damage to Nature or wildlife, so that they may be kept away from the conservation areas.

6.4 Actions already under way

The work of the Dutch naturalists mentioned in section 6.2.1 is

already planned to begin in 1970. Shorter visits are also due to be made by Mr MATTERN (Germany) to the coastal region of Igoumenitsa, by Mr MUELLER (Germany) to parts of Northern Greece, by Mr TERRASSE (France) to the Prespa area and by Mr CARP, Administrator of the IWRB, to Thessaloniki, Evros and Prespa.

Work on the publication of the Greek edition of a Field Guide to the Birds of Europe is also advanced and this could be ready for printing before the end of 1970. Other activities recommended in this Report should be progressively initiated from 1970 onwards.

6.5 Intergovernmental Organizations

Most of the recommendations put forward in this Report are in the category of pilot projects. If they develop satisfactorily, larger scale projects could be contemplated for the second stage. These might well be the subject of a United Nations Development Fund application, to be prepared and submitted by the Greek Government to the United Nations.

May 1970

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: the World Wildlife Fund
: the International Wildfowl Research Bureau.

map · No. 1

NATIONAL PARK

PRESPA

Proposals
of IUCN · IWRB · WWF
for Nature Conservation
Projects
in Greece

Boundary
National Park

Bird
Sanctuary

scale 1 : 5o ooo

0 1 2 3 4 5 km

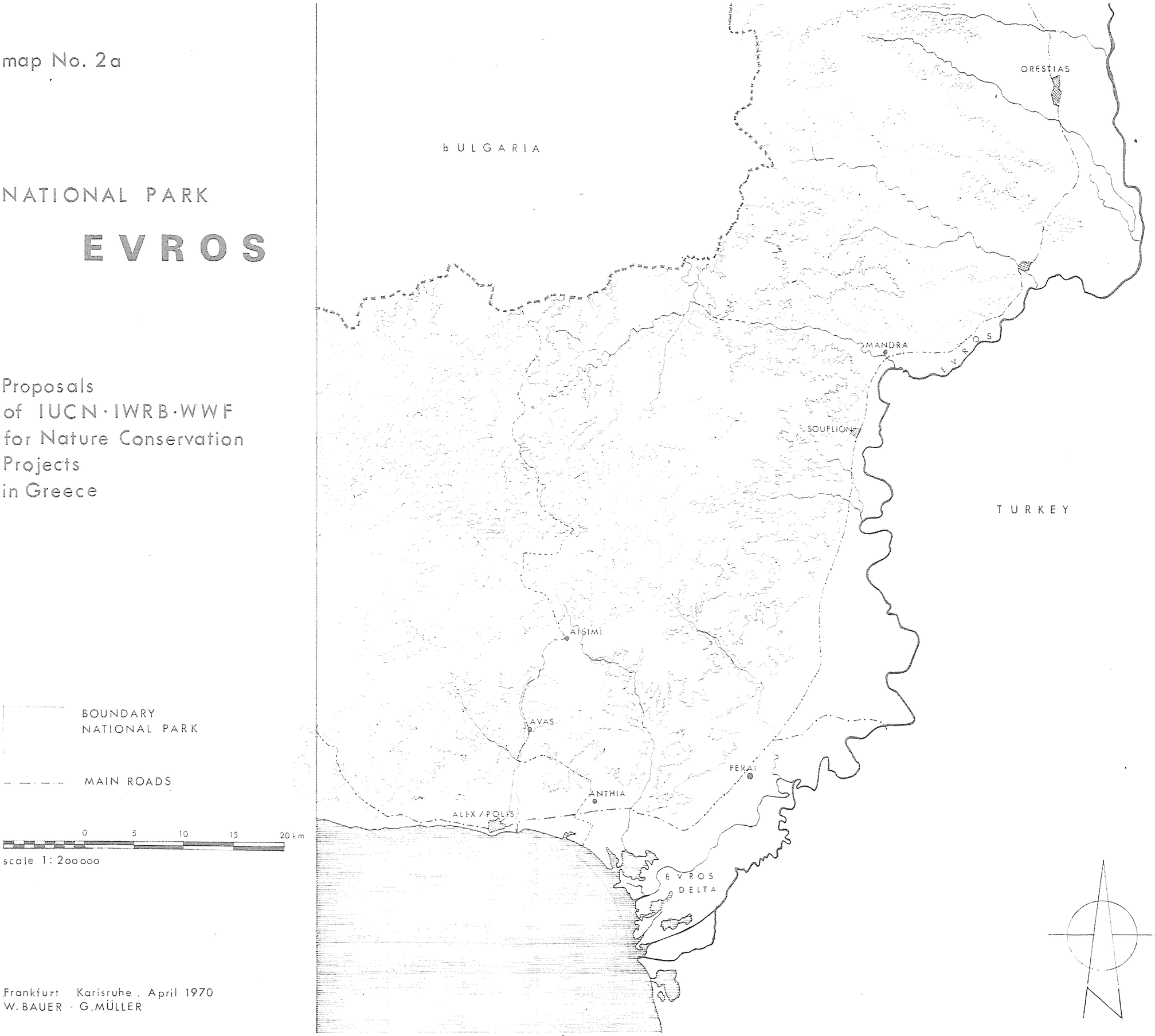
Frankfurt – Karlsruhe · April 197o
W. BAUER - G. MÜLLER

map No. 2a

NATIONAL PARK

EVROS

Proposals
of IUCN · IWRB · WWF
for Nature Conservation
Projects
in Greece



BOUNDARY
NATIONAL PARK

MAIN ROADS

0 5 10 15 20 km

scale 1: 200 000

Frankfurt Karlsruhe, April 1970
W. BAUER · G. MÜLLER

map No. 2 b

Nature Reserve

EVROS DELTA

Proposals
of IUCN · IWRB · WWF
for Nature Conservation
Projects
in Greece

BOUNDARY
NATURE RESERVE

BIRD SANCTUARIES

DAMS & ROADS

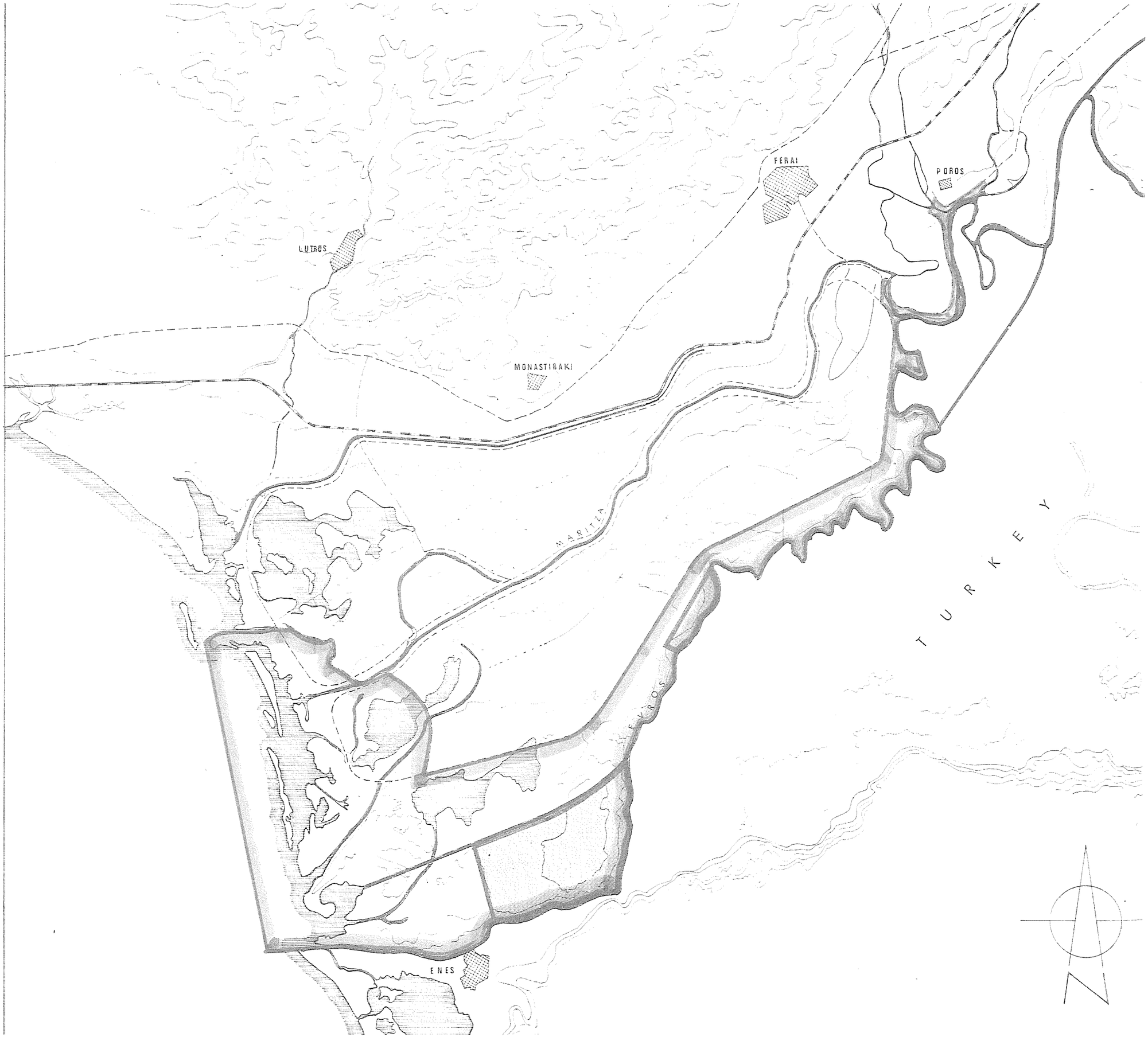
CHANNELS

RAILROAD

0 1 2 3 4 5 km

scale 1 50 000

Frankfurt · Karlsruhe, April 1970
W. BAUER - G. MÜLLER



ap No. 2c

'ILDFOWL REFUGE

VROS DELTA

oposals
IUCN · IWRB · WWF
r Nature Conservation
ojects
Greece

BOUNDARY
WILDFOWL REFUGE
(no-hunting area)

BIRD SANCTUARY
(no-hunting area)

DAMS & ROADS

CHANNELS

0 1 2 3 4 5 km

ıle 1 : 50 000

ınkfurt - Karlsruhe , April 1970
BAUER - G. MÜLLER