Classification and Use of Protected Natural and Cultural Areas

by

R. F. Dasmann



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A report prepared within the IUCN Secretariat in collaboration with the IUCN Commission on Ecology and International Commission on National Parks as revised in the light of discussions at the IUCN General Assembly at Banff, Canada, September 1972 and the Second World Conference on National Parks at Grand Teton National Park, Wyoming, USA, September 1972.

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CONTENTS

I.	Introduction		5
II.	Classification and Use of Protected Areas		8
	ı.	Protected Anthropological Areas	8
		A. Natural Biotic Areas	8
	14	B. Cultivated Landscapes	8
		C. Sites of Special Interest	9
	2.	Protected Historical or Archaeological Areas	9
		A. Archaeological Sites	9
		B. Historical Sites	10
	3.	Protected Natural Areas	10
		A. Strict Natural Areas	10
		B. Managed Natural Areas	11
		C. Wilderness Areas	12
	4.	Multiple-Use Areas	13
III.	National Parks		14
	1.	Definition	14
	2.	Zoning	15
IV.	Related Protected Areas		17
	1.	Provincial Parks	17
	2.	Strict Nature Reserves	18
	3.	Managed Nature Reserves	18
	4.	National Forests and Related Multiple-Use Reserves	19
	5•	Anthropological, Archaeological or Historical Reserves	20
٧.	Con	clusion	23
	Literature Cited		24

CLASSIFICATION AND USE OF PROTECTED NATURAL AND CULTURAL AREAS

R. F. Dasmann

I. Introduction

Since its establishment in 1948 the International Union for Conservation of Nature and Natural Resources (IUCN) has had a major interest in the establishment of a global network of national parks and other protected areas. Its goal has been the conservation of species, including the widest possible range of their genetic varieties, and of the biotic communities and ecosystems of which they form a part. Its work has been carried forward with the aid of all of its six Commissions, but the International Commission on National Parks (ICNP) has naturally played an especially active role.

As part of the task of conservation of biotic communities it is essential that the ecology of those communities be understood, and that protection and management be related to the physical and biotic requirements of the species involved. This means also controlling human use of the areas to be protected in order to take into account the requirements for long-term conservation. Since most protected areas must serve purposes other than species conservation, a system of nomenclature and classification of these areas, which clearly specifies the purposes for which they have been set aside and the management and controls required to achieve those purposes, is important for administration, legislation and public understanding.

For many years IUCN has addressed itself to the task of arriving at suitable definitions and management guidelines for national parks and equivalent reserves. These have been reflected in the <u>United Nations List of National Parks and Equivalent Reserves</u> (IUCN/ICNP, 1971).

More recently the IUCN Secretariat in consultation with the ICNP and the Commission on Ecology has attempted to further define the role, purpose and conservation criteria for various protected areas (Dasmann, 1972). At the 11th General Assembly of IUCN in Banff, Canada, 1972, the ICNP again addressed itself to the problem of classification, nomenclature and management guidelines. This paper attempts to reflect the current status of thinking within IUCN. It is presented for the use of those nations and intergovernmental organizations concerned with the establishment or administration of national parks or other areas set aside for the conservation of nature.

During the discussions at Banff and in previous consultations with various government agencies concerned with national parks and reserves a dilemma of nomenclature and classification became apparent. The problem came up again and was the subject of a specific Recommendation (No. 10) at the Technical Sessions of the Second World Conference on National Parks, held in the Grand Teton National Park a week later, for which IUCN was one of the joint sponsors. Many terms such as "national park", "strict nature reserve", etc., have been variously defined in national legislation and international conventions, and have further acquired various connotations and emotional overtones among the general public. To avoid the possible confusion resulting from the use of these terms it was decided at one time to use numbers and letters to designate the various categories of protected areas. Unfortunately it was found that to many people a "class B" area was considered inferior to "class A", "class I" superior to "class II", and so on, so that a "IV $\ensuremath{\text{D}}\ensuremath{\text{"}}$ area, for example, would be considered very low indeed, and no nation would care to be accused of harboring one. This dilemma is impossible to resolve without adopting esoteric symbols or inventing new terms, and in this paper the procedure will be followed of using the best known or most descriptive name for each type of area but defining it in such a way as to minimize the possibility of misunderstanding its nature and purpose.

Furthermore it facilitates understanding to use a system of numbers and letters in a classification scheme. These, however, have no relation to the value or importance of the areas so designated.

The IUCN Secretariat was further requested during the deliberations at Banff to find a term other than "cultural" for the category of areas other than those which are termed "natural areas" and dominated by wild, or non-domesticated, species. No single word has been found which equally well designates the range of areas including, at one extreme, landscapes with a visual appeal resulting from cultivation, and at the other urbanized areas dominated by structures of historical or archaeological importance, and also including areas occupied by people whose ways of life are endangered by technological change and the expansion of industrial civilization. However, a more elaborate terminology has been devised for this paper.

In the following pages a system of classification of areas protected because of their natural or cultural interest is presented. These areas are then examined in relation to their place or function in national parks or other types of reserves, and their appropriate management and use. Only those areas in which the primary purpose is the long-term protection of features of natural or cultural interest are discussed in any detail although mention is made of the value of areas protected primarily for other purposes.

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II. Classification and Use of Protected Areas

1. Protected Anthropological Areas

Areas set aside to provide for the continuance of ways of life endangered by the expansion of industrial civilization and its technology. These areas are those occupied by people practising ways of life of considerable anthropological or historical interest and are intended to provide for the continuance of those ways of life for so long as there are people willing to practise them and capable of doing so. They may include, at one extreme, people who have traditionally practised "primitive" ways of life or, at the other, people who are employed specially or themselves choose to continue various forms of land-use or cultivation in order to maintain technologies, domesticated species or cultural practices that have scientific or cultural value. Three principal categories of these areas are identifiable as follows.

A. Natural Biotic Areas

These are essentially natural areas of which man is a component and obtains his livelihood by means that do not involve extensive cultivation or other major modifications of the vegetation and animal life.

Examples are: Central Kalahari Game Reserve (Botswana), Parque Indigena de Tumucumaque (Brazil). Normally public visitation would not be permitted in such areas, although zones in which tourism is acceptable are not necessarily ruled out.

B. Cultivated Landscapes

These are areas set aside to protect landscapes created by past agricultural or pastoral activities and to maintain these activities as continuing ways of life. In addition to their anthropological interest, they may have important visual and aesthetic interest based on the quality of the landscape. They also may have high scientific interest as reservoirs of genetic materials associated with land-use practices which are disappearing from lands managed by modern agricultural technologies. Through appropriate zoning such areas can be made available, in part, for tourism.

C. Sites of Special Interest

Areas established to protect sites in which evidence of human evolution or of early man is to be found, including deposits of skeletal materials, artifacts, or other evidence of human occupancy. Depending on the requirements for protection and preservation such sites may, or may not, be open to tourists.

2. Protected Historical or Archaeological Areas

Areas protected because of their historical or archaeological value, in which the principal interest is usually associated with buildings, monuments, or other structures, villages, towns or cities. Activities permitted in these areas are those that do not impair the historical or archaeological values to be preserved, and normally include some level of tourism. Two general categories may be recognized:

A. Archaeological Sites

Areas of past human occupancy reflecting various stages in the development of civilization. In some cases, e.g. Rome or Carthage, these may occur as part of communities still occupied by man, and blend into the second category.

B. <u>Historical Sites</u>

Areas established to protect more recent records of human activity. These are most commonly sectors of occupied areas such as villages or towns in which special measures are taken to protect the features of historical interest.

3. Protected Natural Areas

Areas set aside primarily for the conservation of natural biotic communities and associated physiographic features and within which only those activities are permitted which do not interfere with the long-term protection of these natural features. Excluded are areas set aside primarily for the production and exploitation of natural resources, for recreation as a principal use, or for residential, commercial, industrial or their associated forms of land-use. Protected Natural Areas include three main categories.

A. Strict Natural Areas

The purpose of these areas is to protect nature in an undisturbed state in order to have it available for scientific study, aesthetic interest, or for the contribution it can make to the value of other areas. Natural processes are allowed to take place in the absence of any direct human interference. They may include those processes that alter the biota existing at any given time, such as natural succession, the action of naturally occurring fires, insect or disease outbreaks, storms and the like. Man-made disturbance of any kind is necessarily excluded.

As thus defined, a Strict Natural Area is not appropriate for the protection of particular stages

of successional vegetation or successional animal life unless their perpetuation is assured by the action of recurrent natural disturbances (e.g. lightning fires). Thus a pine forest located in a reserve of this category might well disappear in time, through natural succession leading to its replacement by a broad-leaved forest.

B. Managed Natural Areas

The purpose of these areas is to protect a species, a group of species, biotic communities, or physical features of the environment where these require specific human interference for their perpetuation and consequently would be in danger of disappearing in a strict natural area. The vegetation, animal life, or terrain in such an area may be managed and modified to afford near optimum conditions for the species, communities, or features of special concern. Thus a particular grassland or heath community may only be protected and perpetuated through a limited amount of livestock grazing, a Sequoia dendron gigantea forest may require controlled burning for its perpetuation, a marsh for wintering waterfowl may require continual removal of excess reeds and the planting of waterfowl food plants, a reserve for an endangered animal may need complete protection against predators, and so forth. Although a wide variety of protected areas fall within this category, each must have as its primary purpose the protection of nature, and not, for example, the production of harvestable resources or the provision of outdoor recreation space.

Use of Strict and Managed Natural Areas

In both categories human use needs to be carefully controlled and regulated. Even scientific study must be done under permit and be of a kind that will not interfere with realization of the purpose for which the area was set aside. Recreational use, aesthetic enjoyment or educational values to be derived from such areas must not be permitted to contribute to their disturbance except where, in managed natural areas, such disturbance is appropriate. However, none of these uses are necessarily ruled out if carried out under the proper controls.

C. Wilderness Areas

An area in this category has two principal purposes, that of protecting nature (defined as primary) and that of providing recreation for those capable of enduring the vicissitudes of wilderness travel by primitive means (without motorized transport, roads, improved trails and developed camp-grounds, etc.). The area is maintained in a state in which its wilderness or primitive appearance is not impaired by any form of development, and in which the continued existence of indigenous animal and plant species is assured. However, it is available to wilderness travellers, essentially in its entirety, and thus does not have the limits on use that are imposed on strict or managed natural areas. Some modifications of natural conditions resulting from wilderness recreational use may be expected, but major modifications need be avoided through restricting either the number of visitors or their activities.

4. Multiple-Use Areas

It is recognized that for the purpose of protecting nature or cultural sites, protected areas other than those described are often effective. These may be defined as de facto natural or cultural reserves in that they in fact serve a purpose for which they were not principally intended. Examples are readily found: the forest reserves of many countries, although intended to serve various purposes including the production of timber, range forage, water yield, recreation, etc., include in their functions the protection of nature. This is often subordinated to other uses, but in fact, in many countries such forests serve as effective natural reserves. The same applies to various areas reserved for hunting, watershed protection or primarily as recreational areas. Where such areas come under intensive management, which in some cases is consistent with their purposes, they may lose the character of de facto natural reserves and assume an artificial or exotic aspect not consistent with the protection of indigenous fauna or flora. Examples are the exotic plantation forests of East Africa or Australia, or intensively managed outdoor recreation areas in Europe and North America.

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III. National Parks

1. Definition

National Parks have been defined by IUCN at the New Delhi 10th General Assembly as having the following characteristics: relatively large size; containing natural ecosystems of special interest, "not materially altered by human exploitation or occupation"; protected and managed by the "highest competent authority of the country"; and open to visitors, under special conditions, for "inspirational, educative, cultural and recreative purposes". This definition recognizes the dual purpose of conservation of nature and human use. The need to "prevent or eliminate ... exploitation or occupation in the whole area and to enforce effectively the respect of ecological, geomorphological or aesthetic features which led to its establishment", which was also included in the definition, is variously interpreted, but is usually not taken to apply to necessary occupation and use of some portion of the national park for the accommodation of visitors or for administrative reasons. Similarly, the emphasis placed upon natural ecosystems, while defining a primary purpose for the existence of a national park, is not taken to be an exclusive function of a national park: many national parks containing important cultural features as well as natural ecosystems are accepted without question by the ICNP as meeting all essential criteria.

The term "national park", however, is applied by some countries to areas which in most respects do not satisfy the New Delhi criteria. Thus the Cevennes National Park in France is an area of interest for conservation but is dominated by planted forests consisting of many exotic as well as native species of trees and is not free from exploitative use. However, if a significant portion of this park were set aside to protect natural ecosystems and managed to provide for this protection, it could qualify. The national parks of England

and Wales, although of both natural and cultural interest, often lack adequate protection for either their natural communities or cultural landscapes and are periodically invaded or threatened by invasion from hydroelectric installations, mining developments or other forms of urbanindustrial intrusion. The national parks of Japan, although originally lacking clear definition or adequate protection, have basically satisfied the New Delhi criteria by the establishment of "Special Protection Areas" within their boundaries. Some areas designated as national parks by Mexico appear to be essentially urban parks with little overall value to conservation of natural communities. The Mount Sajama National Park of Bolivia was essentially destroyed by exploitation in the absence of necessary measures for its protection. Any attempt to include all such areas in an internationally acceptable definition of national parks would make the term essentially meaningless.

2. Zoning

At the 11th General Assembly of IUCN at Banff it was agreed by ICNP that areas to be designated as national parks should include areas here designated as strict natural areas, managed natural areas, and wilderness areas. In addition it was agreed that they could appropriately contain cultural areas of the kind here designated as protected anthropological areas or protected historical or archaeological areas. To be considered as national parks, however, they must be available for public visitation. This use, it was agreed, could be combined with the primary function of nature conservation through a system of zoning. Such a system could provide for the establishment of a zone in which roads or other access ways may be constructed, buildings or other structures to accommodate tourism and park administrative functions may be located, and in which appropriate recreational facilities may be placed. This special tourism/

administrative zone would not be one designated primarily for nature conservation, but would be so delimited and located as to create minimum interference with the nature conservation function of the park. National parks can also satisfy the public visitation function by establishment of wilderness zones over all or part of their area, thus providing for limited tourism of a special kind.

To qualify as a national park, therefore, in the IUCN sense, an area may consist of various combinations of zones, as follows:

- 1. Wilderness zone (3C) only.
- 2. Wilderness zone combined with strict natural zone (3A), managed natural zone (3B) or both.
- 3. Any or all of the above zones combined with a tourist-administrative zone.
- 4. Any or all of the above zones combined with one or more zones classified as anthropological, archaeological or historical (1A, 1B, 1C, 2A, 2B).

To qualify as a national park for inclusion in the United Nations List of National Parks and Equivalent Reserves, a national park must include at least 1000 hectares of fully protected area falling within wilderness, strict natural, or managed natural zones (exceptions being made for small islands). This size limitation is intended to stress the importance of maintaining a sufficient area for protection of biotic diversity including mobile species of animals. It has also the practical value of maintaining the size of the List within manageable proportions, since there are thousands of smaller reserves in North America, Europe and in some areas of other continents. In fact the size of a reserve needs to be studied in relation to the ecological requirements, the genetic variability and the mobility of the species to be protected. The study of the appropriate extent and the location of boundaries of reserves is the subject of a special project of IUCN/WWF, which is expected in due course to produce additional guidelines.

IV. Related Protected Areas

Although it has been noted above that many areas called "national parks" do not meet reasonable international criteria, it should also be noted that other areas called by other names fully satisfy these criteria. Thus in Great Britain the national nature reserves have been accepted for the UN List. In the United States various wildlife refuges, game ranges, national monuments and wilderness areas appear to meet the criteria, whereas some national parks do not. These areas, under various names which satisfy fully the criteria for national parks, will be known as "equivalent reserves" in future editions of the UN List. In past editions of the List the term "equivalent reserve" was used more loosely to include a wider variety of areas believed to deserve special mention. These, in future, will be listed separately in the UN List, and it is also intended to cover a wide spectrum of protected areas in the World Directory of National Parks and Other Protected Areas now being prepared by IUCN.

1. Provincial Parks

Provincial parks may satisfy all of the criteria for national parks as defined by IUCN with the exception of their legal status. They are not controlled or managed by the highest competent authority in the country but by some lesser governmental jurisdiction such as the province, state, canton or department. Although in some countries this may mean that they have in fact adequate protection and management in perpetuity, this is not necessarily true of all countries, and the quality of protection and management may vary from province to province.

By nature of their legal status they are more subject to local influences and changes in local policy and are therefore, in many instances, less securely protected than a national park. Furthermore, international agreements between national governments will not necessarily be binding at a provincial level. For these reasons it has been decided by the ICNP to

list them separately from national parks in the UN List and not include them as equivalent reserves.

Like national parks, provincial parks may represent various combinations of the protected areas classified in this paper. They equally require zoning to separate and distinguish the various categories of protected areas and thus provide for their appropriate management and use.

2. Strict Nature Reserves

Strict nature reserves consist entirely of strict natural areas, set aside for protection of nature and for scientific research. They are essentially single-zone reserves, although a small area may be used for administration, access roads or facilities associated with scientific research. Since they are not open to tourism or public visitation except in a limited way under highly restrictive controls, it is misleading to consider them as equivalent to national parks or to list them together with parks. Their value to conservation and science, however, is as high or higher than national parks and they are consequently to be listed separately in future editions of the UN List.

3. Managed Nature Reserves

A variety of different kinds of protected natural areas are known as game refuges, sanctuaries, wildlife refuges, game ranges, game, faunal or zoological reserves or by other names. These may vary from areas in which the only control is over hunting to areas that are as carefully protected and managed as any national park. In general, however, such reserves have as a special purpose the protection of wild animal life, and other goals such as the protection of natural vegetation are sometimes sacrificed to this aim.

Many wildlife reserves fully meet the criteria for national parks as defined by IUCN. Others, which are not

available to public visitation except under strict limitation or controls, may exist as managed natural zones within national parks or as separate <u>managed nature reserves</u> serving the dual purpose of providing for scientific research and protection of nature. These managed nature reserves will be included with strict nature reserves in future editions of the UN List.

Areas set aside to protect flora may similarly qualify as managed nature reserves or they may be included within national parks.

4. National Forests and Related Multiple-Use Reserves

Notably in the United States, but also in other nations, major contributions to the conservation of wild species and biotic communities are made through protected areas in which conservation of nature is only one of the several purposes for which an area has been given a protected status. Other purposes which are given equal, or in some sites greater, importance include the production for use of forest products, wildlife, fisheries and forage for livestock; outdoor recreation; and the protection of watersheds for soil stability, water yield, or hydroelectric power. These areas are managed in accordance with the principle of multiple-use with a view to the long-term sustained yield of resources. Where carefully protected and managed they may serve equally as well as national parks and nature reserves for the conservation of a broad spectrum of wild species.

The national forests of the United States provide a model for multiple-use conservation and protect larger areas with a wider range of species and communities than are to be found in national parks. They serve as outdoor recreation centers for great numbers of visitors who seek wild environments. At the same time they yield continuing supplies of timber, range forage, wildlife for hunters and fishermen, water and power. So long as continued emphasis is placed on

maintaining balanced use of these areas for sustained yield they will continue to play a major role in nature conservation.

A similar function is provided by the public lands administered by the Bureau of Land Managemeht, which represent an even greater land area in the United States, and by certain lands administered by other agencies, including some military reservations.

The danger to all such areas lies in emphasis on the production of one resource at the expense of another, or in difficulties in controlling exploitative activities. When forest reserves or national forests are used for timber production on an intensive basis, their value for conservation of nature or for outdoor recreation diminishes, and reaches its lowest ebb in plantation forests of exotic species.

In France the National Game Reserves are outstanding conservation areas, in which, however, controlled hunting, timber exploitation and, in some reserves, limited livestock grazing are permitted. These nevertheless provide adequate protection for a varied flora and fauna. In Germany, the Naturschutzgebiete are multiple-use areas, usually carefully managed and serving an important role in nature conservation. The 'national parks' of England and Wales can be considered, at the present time, to have a similar role.

In many other parts of the world forest reserves have a major conservation function which varies with the degree of control exercised by the government and the extent to which multiple-use management is actually practised.

5. Anthropological, Archaeological or Historical Reserves

Many areas set aside to protect anthropological, archaeological, or historical values will be entirely separate from national parks and thus will not form zones within a national park. Unless these include areas in which the

protection of relatively undisturbed ecosystems is a primary concern they would not, in their own right, qualify as national parks under the definition accepted by IUCN.

Although the adequate protection and care of archaeological and historical sites is of interest and concern to everyone it is not an activity in which IUCN has been involved, nor is IUCN qualified to recommend procedures for conservation and management of these areas. A different situation prevails in protected anthropological areas. Areas established to protect ways of life or cultivated landscapes also serve to protect nature, and several existing large national parks, such as Odzala National Park (Congo Republic), Manu National Park (Peru), and the Kalahari Gemsbok National Park (Botswana and South Africa) serve also as homes for indigenous peoples leading an essentially pre-agricultural way of life.

There is a need for IUCN to give careful attention to the problems presented by areas falling in category lA in order to determine ways in which the dual problem of protection of nature and culture may best be resolved. The Central Kalahari Game Reserve and the Parque Indigena de Tumucumaque (Brazil) are not listed as national parks because they are not open to tourism and may perhaps best be termed Strict Anthropological Reserves. National Parks such as Manu, Odzala, and Kalahari Gemsbok clearly need to have protected anthropological zones to protect indigenous peoples from unwanted interference by tourists. However, the problem is not readily resolved by simple zoning, and meanwhile areas that fully deserve national park status are not provided protection because of unresolved questions concerning indigenous peoples.

Category 1B of anthropological areas, involving cultivated landscapes, may appropriately be included as zones within larger national parks, or may be set aside as separate reserves.

Often, however, such a high degree of protection may not be required and a national, provincial or local system of land-use planning, zoning and building restrictions, may provide sufficient protection. This particular problem is being addressed by the Environmental Planning Commission of IUCN in relation to the production of a Green Book of Threatened Landscapes.

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V. Conclusion

Ideally one would hope that areas established for the same purposes and managed by the same rules would be known throughout the world by the same or similar names. In practice this ideal seems virtually impossible to achieve. Nevertheless an international terminology and classification is a necessary tool to enable organizations to sort out the wide variety of protected areas that exist throughout the world and begin to evaluate the extent to which conservation has become effective.

More importantly, however, recognition of the purposes for which an area is being protected, and of the ecological characteristics of the species and biotic communities which are included, allows for a realistic programme of management directed toward realization of conservation goals. many national parks today are managed under a well-intentioned policy of complete protection, similar to what must be applied to a strict nature reserve. However, such measures may be entirely unsuited to the perpetuation of the species and biotic communities for the protection of which the national park was created. Zoning into strict natural areas and managed natural areas is a step toward more suitable management policies. Similarly, in many national parks the pressure for further development for tourism and outdoor recreation leads to a continuing degradation of their primary function of nature conservation. A careful system of zoning can allow for both development and conservation to proceed with a minimum degree of conflict.

This paper hopefully takes a step toward providing for a continuing inventory and surveillance of the status of conservation throughout the world as reflected by the establishment, protection, and management of parks and reserves. It seeks to establish a basis for elaboration of principles and guidelines for the administration and management of these protected areas.

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The International Union for Conservation of Nature and Natural Resources (IUCN) is an independent international body, formed in 1948, which has its headquarters in Morges, Switzerland. It is a Union of sovereign states, government agencies and non-governmental organizations concerned with the initiation and promotion of scientifically-based action that will ensure perpetuation of the living world - man's natural environment - and the natural resources on which all living things depend, 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 organization dedicated to saving the world's wildlife and wild places, carrying out the wide variety of programmes and actions that this entails. WWF was established in 1961 under Swiss law, with headquarters also in Morges.

Since 1961, IUCN has enjoyed a symbiotic relationship with its sister organization, the World Wildlife Fund, with which it works closely throughout the world on projects of mutual interest. IUCN and WWF now jointly operate the various projects originated by, or submitted to them.

The 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 as well as support for certain key international conservation bodies.

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.



