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**Survey of National Legislation
relevant
to Marine and Coastal Protected Areas**

IN CO-OPERATION WITH:



SURVEY OF NATIONAL LEGISLATION RELEVANT TO
MARINE AND COASTAL PROTECTED AREAS

Report by the Legal Office of the Food and Agriculture Organization
of the United Nations based on the work of
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Preliminary remarks

The Barcelona Convention for the Protection of the Mediterranean Sea against Pollution, adopted on 16 February 1976, contains no particular article establishing marine and coastal protected areas in the Mediterranean Sea. Interest in this important question was considerably stimulated by the meeting of a group of experts invited by UNEP to Tunis in January 1977 to discuss Mediterranean marine parks, by the workshop organized by UNESCO at Side, Turkey, in June 1977, and through the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan held under UNEP auspices in January 1978 at Monaco.

The question of marine and coastal protected areas received official recognition within the framework of the Barcelona Convention at the First Meeting of the Contracting Parties to the Convention, held at Geneva in February 1979. The first sentence of recommendation 33 of that Meeting, made under article 14 (2) (iv) of the Convention, reads as follows:

"Recognizing the activities already under way within the Action Plan on specially protected areas, UNEP should, in co-operation with IUCN, FAO and UNESCO, prepare background material on existing legislation and regional legal alternatives for the protection of such marine and coastal areas".

The four organizations referred to in the recommendation met at Geneva on 14 March 1979 in order to co-ordinate measures to implement the recommendation. In a joint project document signed in September 1979 FAO was given the task of carrying out the legal research which is the subject of the present study.

As far as the legislation of the Mediterranean coastal countries is concerned, the existing sources have been found to be incomplete and inadequate. Language problems have been a further obstacle to the preparation of an exhaustive inventory. A questionnaire was addressed to certain countries, but it elicited so few replies that no intelligent use could be made of it.

A deeper study and critical appraisal of existing legislation would require discussions with officials and scientists of the countries concerned.

The object of the present study is:

1. To provide a general picture of existing national legislation on marine and coastal protected areas throughout the world and to indicate trends in that legislation.
2. To review the laws and regulations on the marine and coastal protected areas of the Mediterranean Coastal States. The review will be accompanied by proposals which are designed to facilitate the preparation of national legislation by indicating the principles on which it should be based and an outline of the measures required to implement it.

While interest has existed for a long time in protected spaces on land, interest in marine and coastal protected areas is fairly recent; there are nevertheless a few examples of marine parks established before 1945, namely the -- Glacier Bay National Monument in Alaska (1925), the Fort Jefferson National Monument in Florida (1935) and the French Antarctic Territories Nature Reserve (1938).^{1/}

^{1/} Neville C. Gare, "Review of progress in the creation of marine parks and reserves," An International Conference on Marine Parks and Reserves: Papers and Proceedings: Tokyo, Japan, 12-14 May 1975, IUCN Publications New Series No. 37, 1976.

The earliest international conference to discuss marine and coastal protected areas was the First World Conference on National Parks, held in 1962. Since then many international meetings have studied the question directly or indirectly.

Between 1962 and 1975 more than 80 marine parks appear to have been established throughout the world. It is very difficult to list marine parks because any enumeration depends on how a park is defined and on whether legal or scientific criteria are used. The first list was drawn up in 1974 1/ and shows a world total of over 182 marine parks; the second enumerates protected areas or areas in need of protection. 2/ These tentative lists reveal that official legal recognition is not always very precise or generally known, and that frequently a project to create a reserve is mistaken for the reserve itself. Moreover, it is difficult to cover all marine and coastal protected areas in a single inventory since their characteristics and purposes differ so much from place to place. An effort has been made at the scientific level to decide what marine spaces are in need of protection.

In view of the classification model for biotic land provinces prepared by IUCN and used by UNESCO for its IAB Project 8 ("Conservation of natural areas and of the genetic material they contain"), it was decided by IUCN to prepare a similar classification. The initial classification made by Ray in 1976 3/ seeks to combine the biological and geographical approaches by classifying areas in three ways, namely by zoogeographical region, biotic coastal province and habitat.

We shall now attempt to define a marine protected area from the legal and institutional standpoint.

At first sight, it would seem to be an extension to the marine world of the idea of a land park or protected area of land, but the concept of a marine protected area may differ from that of a protected area on land; the problem is to know whether the specific character of the environment concerned necessitates legal instruments which differ from those applicable to the land environment. Because of its inherent legal nature, the marine environment is a complex space with a very special status and the subject of very special attention owing to the potential resources it contains (mineral and food resources).

A marine protected area might be defined as a maritime space specially demarcated and controlled in order to provide general or specific public protection of the resources it contains. A strict definition will obviously not meet the ecological requirements of the marine environment. It is not possible to define a marine

1/ Mona Björklund, "Achievements in marine conservation: marine parks", Environmental Conservation, vol. 1, No. 3 (1974).

2/ Critical Marine Habitat Program, IUCN No. 39-4-1037. Note also H. Baccar's special list for the Mediterranean, April 1976.

3/ C. Ray, "A preliminary classification of coastal and marine environment", Bull Marine Park, res. sta. 1(2)123-137.

ecosystem with precision and there may be a conflict between the ecological requirements and the legal constraints, which may be even more complex than in the case of the land environment. The law applicable to the marine environment is dominated by considerations of sovereignty and economic exploitation which have nothing to do with the realities of marine ecosystems. The rules of law should therefore be adapted to ecological realities to the greatest extent possible; this is the whole object of environmental law.

The following points need to be borne in mind if the very broad definition suggested above is to be understood more exactly, and also because the terminology used varies a great deal:

A marine protected area must have an aquatic element which is linked to the marine environment, but it may be a coastal or littoral area or an island (depending upon penetration of salt water and currents). Frequently the protected area extends to both the water and part of the shore. The only justification for the part on land is in relation to the marine ecology. If a zone, including a land zone (coastal wetland, estuary, lagoon or backwater) is important for the preservation of the processes of biological renewal of the living resources of the sea, it may be included in a marine protected area. Wetlands, however, form a special environment which is already the subject of many studies and regulations. In so far as they are established as protected areas by appropriate legal instruments and linked functionally to the life of the marine environment, they may be assimilated to marine protected areas.

A fundamental distinction must nevertheless be made between two different situations. Some have found it necessary to distinguish a marine reserve from a coastal reserve. 1/ The marine reserve is confined to habitats submerged by water, whether tidally or not; in the latter case it includes the intertidal zone. The coastal reserve, on the other hand, is necessarily located on part of the land and is situated beyond the tidal zone; it is subject to the effects of the sea only because it is in close relationship with it; such areas are essential for the maintenance of the marine ecosystem and its biological renewal.

A second fundamental and more conventional distinction must be made between a reserve and a park. Although in everyday language the two terms are interchangeable, strictly speaking a distinction should be made between "a reserve" as a space which is protected because of its natural environment and "a park" which adds an element of public leisure and education. In general, the vocabulary used to designate these protected areas varies a great deal and does not correspond to identical legal situations in every country.

1/ B. Salvat, "Guidelines for the planning and management of marine parks and marine reserves", An International Conference ... (op.cit.).

For ecological reasons often overlooked in national legislation, the present study covers not only purely marine areas but also mixed (i.e. coastal and maritime) areas and areas purely on land but influenced ecologically by the marine environment (coastal areas). Coastal wetlands and estuaries are included in so far as they are environments in communication with the sea.

This territorial field of investigation undoubtedly complicates the legal analysis since the various areas envisaged differ markedly in legal status (private property, local authority property, public domain of the State, inland waters, territorial waters, exclusive economic zone, high seas). Solutions will in fact have to be found for areas of differing status which therefore call for appropriate legal arrangements.

In the present paper the expression "marine protected area" is used in the sense of an area that also covers the case of expanses of the littoral and coastal wetlands. This term has been preferred to "marine park" which is, however, current in English because "park" seemed a vaguer and more ambiguous term, since it is rare to find everything protected, and because "park" is more suited to the description of an area of land alone to which the inhabitants have easy access. The marine environment by its very nature does not permit such a semantic assimilation.

It will be shown, first of all, that very few countries have special legal regulations; the majority extend legislation concerning parks or nature conservancy to marine areas. Nevertheless, it is possible to indicate the main characteristics of marine protected areas as regards their purpose, their physical nature, the regulations by which they are protected and their management.

This initial statement of the situation worldwide will have removed an element of the unexpected from an analysis of the legislation applicable to the Mediterranean, since the number of legally protected marine areas is very low in that region, and it will therefore not be surprising to note that relevant special legislation is rare or even non-existent. This lacuna in the legislation is the more striking in that the marine flora and fauna of the Mediterranean is especially interesting scientifically and is seriously threatened by the sharply conflicting use made of the coast in this region (high density tourism and rapid industrial development). It would therefore seem to be a matter of great urgency to make the various States concerned aware of the need to close the present legal gaps either by more systematic extension of existing but little used legal arrangements (State leases, sea fishing and hunting reserves), or by preparing new legislation for the protection of the marine flora and fauna. Thus, this report summarizes the problems involved in the protection of a marine area and the possible solutions. The Mediterranean States might also, if they so wish, base an adaptation of their domestic law on this account.

The present analysis will be concerned with:

1. Examples of specific legislation on marine protected areas throughout the world.
2. The law applicable to marine protected areas in Mediterranean countries.
3. Issues involved in preparing legislation on marine protected areas.

I. EXAMPLES OF SPECIFIC LEGISLATION ON MARINE PROTECTED AREAS THROUGHOUT THE WORLD

Legislators have evolved specific laws to regulate human activities in connexion with the sea, dealing with fishing, hunting, mining operations and navigation. However, when it came to protecting certain sea areas, institutions initially designed for land areas were transposed. This was how the first protected marine areas were established in the United States of America. Other countries and the United States itself subsequently prepared laws that did embody the specific nature of the marine environment, since when the question has arisen as to whether the establishment of marine protected areas requires its own legislative framework. The practices followed by the various States which have organized the protection of marine spaces offer as wide a range of answers as it is possible to imagine.

To begin with, separate consideration should be given to one category of States, those which do not yet have general regulations for protected areas or for nature conservancy. The designation of an area in those countries has to be based on a law or a special decree, 1/ and if it is desired to link it to a text of more general scope laws unconnected with the subject have to be used. Thus, the national park of the Los Roques archipelago in Venezuela has its legal basis in the Ley Forestal, and the Colombian park in Tayrona and the "underwater sanctuary" of Cape San Lucas in Mexico are organized with reference to laws on sea fishing. 2/

Among the countries which have adopted legislation on protected natural spaces a first group, which includes France, and also Kenya and the Seychelles, 3/ has used texts containing no special provision for the marine environment.

A second group has laws applicable to land and to sea but with special sections devoted to marine areas. For example, the Japanese law on natural parks of 16 May 1970 distinguishes between "special marine areas" and "marine parks".

States which have enacted special laws for marine protected areas constitute a third group, in which may be included New Zealand with the Marine Reserves Act of 20 September 1971, and Trinidad and Tobago with the Marine Areas (Preservation and Enhancement) Act of 11 February 1970.

1/ The French decree of 30 December 1924 "Establishing a national park in the French possessions in the Southern Hemisphere" should be included under this heading. In 1938 the park thus created became the French Antarctic Territories Nature Reserve. Journal Officiel October 1938, p.12471.

2/ Venezuela - Decree No. 1061, 9 August 1972 - Gazeta Oficial No. 29883, 18 August 1972, p.223.

Colombia - Resolution No. 903 of 21 October 1969 - Diario Oficial No. 32 958 of 16 December 1969, p.629.

Mexico - Decree published in Diario Oficial No. 20 of 29 November 1973, p.6.

3/ Kenya - The Wildlife (Conservation and Management) Act 1976 and The Wildlife (Conservation and Management) Regulations 1976.

Seychelles - National Parks and Nature Conservancy Ordinance, 1969-1973.

France - Law No. 60708 of 22 July 1960 establishing national parks. Journal Officiel of 26 July 1960. Law No. 76 629 of 10 July 1976 on nature protection and decree No. 77 1 298 concerning nature reserves. Journal Officiel of 27 November 1977.

Federal legislation in the United States of America combines the different possible approaches. Texts common to land and sea have served for the establishment of national parks, national monuments or national shores including marine spaces. A text specific to the marine environment, the Marine Protection, Research, and Sanctuary Act of 1972, institutes the category of marine sanctuaries. Certain marine reserves have, in addition, been organized on the basis of a law of 1976 on sea fishing or on texts relating to wildlife habitats. 1/

Finally, Australia and Norway deserve special mention. The first has general legislation, the National Parks and Wildlife Conservation Act of 13 March 1975, in which there are certain provisions dealing with parks and marine reserves. But, in addition, a special federal law, the Great Barrier Reef Marine Park Act of 20 June 1975, was enacted for the whole of a coast some 1500 kilometres long. 2/ Norway, for its part, has taken a number of measures to protect the flora and fauna of the Svalbard archipelago based on the Svalbard Act of 1925, which was enacted in application of article 2 of the Spitsbergen Treaty signed on 9 February 1920. As a result of this legislation the whole archipelago is a vast protected area in which certain spaces have been established as parks or reserves. 3/

It would be risky, in view of all these possibilities, to make a value judgement and to give outright preference to one solution rather than to another. Any comparison must take account of the legislative arrangement and administrative circumstances of each particular country. The fact that the Anglo-Saxon world is in principle accustomed to very precise and very detailed laws is conducive to the framing of rules for each subject and for marine protected areas in particular. The fact that the Latin legal tradition favours short statements limited to the basic principles which the regulating authority has to implement enables laws to encompass relatively separate subjects and may thereby render the enactment of a special law for marine areas less necessary.

The present review is confined to laws specially relating to marine areas since they highlight the legal problems arising from the protection of the marine environment. Two main themes emerge from their different elements, one the legal approach used for marine protected areas, the other the institutions governing them.

1/ Fish and Wildlife Conservation Act 1934, Fish and Wildlife Act 1956, National Wildlife Refuge System Administration Act 1966, Wilderness Act 1966, Endangered Species Act 1966, amended in 1969, 1973 and 1978, Fishery Conservation and Management Act 1976.

2/ Only federal legislation is taken into account. However, it is noteworthy that in Queensland national parks are governed by the Forestry Act 1959-1971. When this State wished to give a legal basis to protected marine areas it used the Forestry Act, with the addition of amendments relating to the marine environment embodied in its Act to amend the Forestry Act 1959-1968 in certain particulars with a view to providing for the establishment of Marine National Parks, 22 April 1971 (cited as Forestry Act Amendment Act 1971).

3/ The 1920 Spitsbergen Treaty recognizes Norwegian sovereignty over this region while guaranteeing the rights of nationals of the parties to pursue their economic activities therein. Under the provisions of Article 2 it is the concern of Norway to maintain, take or decree measures for ensuring the conservation and if necessary the reconstitution of the flora and fauna in the said regions and in their territorial waters An analysis of the legislation adopted in application of these provisions can be found in the publication of the Ministry for the Environment, Environmental Regulations for Svalbard, Oslo 1974.

A. CHARACTERISTICS OF MARINE PROTECTED AREAS

Having elected to search for the characteristics of protected marine areas in arid texts rather than on the sea shore, an attempt must be made to identify a legal concept and to take stock of the applicable protective measures.

1. The concept of a marine protected area

The concept of a marine protected area combines two approaches: that of the purposes assigned to the area and that of its physical nature.

(a) The purposes of marine protected areas

The purposes assigned to marine protected areas, apart from the Australian Great Barrier Reef Marine Park, are identical with those of areas on land.

In their declarations of principle, legislators affirm a wish to protect certain parts of the marine environment on account of their unique or threatened nature, their research interest to scientists, or so as to facilitate their use and enjoyment by the public. These different ends are not always easily reconcilable and, as we know, the tendency in practice has been towards a specialization of protected areas. Thus the Council of Europe, in its well-known classification, distinguishes between four types of zones, A, B, C, D, ranging in purpose from the strict conservation of nature to the pre-eminently recreational. Despite different national nomenclatures, it is generally agreed that strict reserves correspond to zone A; that the other reserves presuppose effective protection of the natural environment, but compatible, possibly, with regulated frequent visits by the public. Lastly, nature parks, zones C and D, tolerate an extensive and constant human presence. 1/ All these categories are represented in marine areas; 2/ although with some shift in emphasis. Nature parks have been created to help to bring city dwellers into contact with nature in an already populated environment where existing economic activities are maintained as far as possible or where, as in the case of the United Kingdom's national parks, the German Naturpark or the French regional parks, a privileged region is developed. But it is not at all clear that the city dweller's need to commune with nature is satisfied in a marine protected area in the same way as in a forest, and by definition there is no question of maintaining agricultural undertakings or handicraft activities in such areas. It is more a question of satisfying man's curiosity about the sea. The most sophisticated model of this kind, the Japanese marine parks, gives the feeling of being in a kind of antiquarium. The selection criteria for protected zones are significant in this respect. 3/

Characteristic sea floor topography and abundant fauna and flora;

Water of high transparency unlikely to be turbid or polluted;

1/ Classification of the Commission on National Parks and Protected Areas (CNPPA) of the International Union for Conservation of Nature and Natural Resources (IUCN).

2/ An explicit reference to strict reserves is rare. An example may be found in section 32 (7) (e) of the Great Barrier Reef Marine Park Act, which provides for some areas of the Great Barrier Reef to be preserved in its natural state undisturbed by man for the purposes of scientific research.

3/ Criteria for the selection of Marine Park Areas. In Marine Parks in Japan, May 1975, publication of the Marine Parks Centre of Japan. Environment Agency, p.4.

Absence of excessively fast sea currents or over violent waves;

Adequate space, on the adjoining land, to erect such facilities as passenger quays, restaurants, exhibition centres, car parks, etc ;

Absence of any risk of the underwater landscape being destroyed by any kind of industrial exploitation;

The "purpose" of the marine protected areas;

Archaeological purpose; one of the marine sanctuaries in the United States, the Fort Jefferson National Monument, is aimed at protecting the Monitor Wreck (cf. Claude, p.14);

The use of archaeological marine parks is allowable in two situations that are not mutually exclusive:

1. In order to protect a wreck of an archaeological site from plunderers;
2. The organization of guided tours for already experienced (scuba) divers.

In short, everything is done to permit viewing from a glass-bottomed boat or through underwater viewing chambers. Instead of bringing fish to the land, people are taken on or under the sea, but this new type of show still has to be viewed through glass.

Lastly, the reason for the establishment of a marine national park given in one of the legislations examined 1/ is its importance in the reproduction of valuable fishery species. The Queensland Fisheries Habitat Reserves Regulations 1968 provides for the complete protection of mangrove areas and marine organisms in the internal waters of that State. Any activity likely to affect the quality of the water or the sea-bed in that area is banned. 2/ As regards hunting or fishing reserves on land, it is considered - although the matter is still open to debate - that these do not come under the category of natural protected areas, since active steps are taken in them to ensure the genetic improvement and development of game species. Does this also apply to marine spawning-grounds? Are they really nature reserves? It must be acknowledged that the texts mentioned do not include any measure in respect of feeding, restocking, elimination of predators, or selection of the best breeding stocks.

The Australian Great Barrier Reef Marine Park Act embodies a truly original approach. As already stated, this Park covers the whole of the north-east coast of Australia, roughly from the Torres Strait to Brisbane, a distance of some 1500 kilometres. But the various zones are not a continuous whole. The Act simply provides that any land or part of the sea inside the Park boundaries may be designated as one of its protected areas, without there being necessarily any

1/ Colombia, Resolution No. 903 of 21 October 1969 governing fishing in the maritime zone of the Naturel Tayrona National Park. Diario Oficial No. 32 958 of 16 December 1969, p.629.

2/ Rooney, Talbot and Clark, Marine Reserves vol. 1, Macquarie University (Australia), 1978, p.187 et seq.

continuity between them. It should be added that the Park has its own Authority which is independent of the services responsible for managing other Australian parks and reserves. This Authority is required to prepare and implement a zoning plan, having regard to the following object: 1/

- (a) The conservation of the Great Barrier Reef;
- (b) The regulation of the use of the Marine Park so as to protect the Great Barrier Reef while allowing the reasonable use of the Great Barrier Reef Region;
- (c) The regulation of activities that exploit the resources of the Great Barrier Reef Region so as to minimize the effect of those activities on the Great Barrier Reef;
- (d) The reservation of some areas of the Great Barrier Reef for its appreciation and enjoyment by the public; and
- (e) The preservation of some areas of the Great Barrier Reef in its natural state undisturbed by man except for the purposes of scientific research.

It is plain to see, from these provisions, that the formula of marine protected areas has been utilized not in order to preserve particular zones, but to place the planning of an extensive maritime feature under a single Authority, and in a region, moreover, which is far from depopulated. A cursory glance at the map will show that tropical crops, mining undertakings and quite a few settlements are to be found there.

But a marine protected area is not merely an area earmarked for a particular purpose. It has to be established in how far it is coextensive with the water mass or includes portions of land.

(b) The physical nature of marine protected areas

A marine protected area is both horizontal and vertical in its extent. Horizontally, such an area may extend, on the seaward side, as far as the limits of State jurisdiction, within the territorial sea. Recent developments in the law of the sea and the extension to 200 miles of a zone of exclusive economic competence for the benefit of the coastal State raise the question of whether parks could be established in that zone should this concept be applied by Mediterranean coastal States. While, on the one hand, the right of a coastal State to control the exploitation of natural resources in that region would be recognized, that State on the other hand, would not be able to object to the free passage of vessels in the interests of environmental protection. 2/ In fact, references in basic texts to limits to the potential extension of parks towards the open sea would appear to be rare. Mention may be made of the legislation of the Netherlands and of Trinidad and Tobago, which refers to the territorial sea, and of the United States of America,

1/ Great Barrier Reef Marine Park Act 1975, s.32 (7).

2/ Article 211 (6) of the Informal Composite Negotiation Text is of interest in this context as a possible qualification of the statement.

where the Marine Protection, Research and Sanctuaries Act of 1972 authorizes the designation of marine sanctuaries extending as far seaward as the outer edge of the continental shelf, as defined in the Geneva Convention on the Continental Shelf. 1/

On the landward side, the legislation of New Zealand and of the United States Act on marine sanctuaries limits protected areas to the high water level, but these instances are exceptions. In the second case, moreover, it should be explained that marine sanctuaries are, for preference, set up so as to border upon other protected areas which complement them on land. 2/ The Marine Areas Act 1970 (s.2) of Trinidad and Tobago states that the term marine areas "includes any adjoining land or swamp areas which form within certain submarine areas a single ecological entity". Other texts refer to the "foreshore" (Seychelles, National Parks and Nature Conservancy Ordinance 1969-1973, s.(2)), or, more generally, to areas which are part of the Marine Park (Australia, Great Barrier Reef Marine Park Act 1975, s.31). 3/ Apart from administrative considerations, it may be useful, as suggested in the Trinidad and Tobago Act, to extend a marine protected area on the landward side so as to superintend phenomena on land that have an impact on the neighbouring marine environment. But another possible solution to this problem, as will be seen, is to extend the scope of the statutory power necessary for protecting the park beyond its boundaries. As for the specific delimitation of reserved spaces, this is left to classification instruments based on reference to geographical points, and especially to longitude and latitude.

As regards vertical extent, the most detailed provisions are those in the Great Barrier Reef Marine Park Act 1975 which includes in the Marine Park subsoils extending to such depth as is specified in the Proclamation declaring an area part of the Marine Park, the airspace above the area, extending to such height above the surface as is specified in the Proclamation, likewise the waters of any sea within the area and the sea-bed beneath any sea within the area. The other texts are far less precise, but there again, there is the possibility of de facto control through protective measures.

1/ Trinidad and Tobago, Marine Areas Act 1970, s.2. Marine areas are included in "the territorial sea".

New Zealand, Marine Reserves Act 1971, s.2. Marine areas are included in "the territorial sea of New Zealand as defined by section 3 of the Territorial Sea and Fishing Zone Act 1965" ... and in the internal waters of New Zealand.

United States of America, Marine Protection, and Sanctuaries Act 1972, article 302.

2/ Directive of the National Oceanic and Atmospheric Administration (NOAA). Department of Commerce, Marine Sanctuaries 15 CFR Part 922 (20 June 1976).

3/ The Schedule to this Act defines the Park boundaries. These are fixed, on the landward side, at mean low water, so that the "lands" included in the Park can only be islands.

2. Measures for the protection of marine protected areas

Measures for the protection of marine protected areas are amply described in Anglo-Saxon-type basic texts. Some adopt a direct approach by defining a whole series of offences. 1/ Others entrust this task to the statutory authorities, but in that case, the legislator lists in equally minute detail the specific points which will be the subject of prohibitions or restrictions. 2/ It is customary to add a provision authorizing the administration to take, in addition, any step it may deem necessary to ensure observance of the principles and directives laid down by the legislator, so as to safeguard the freedom of action of the implementing statutory authority.

Considerable space is accorded to the repressive aspects of protection. All the laws studied confer on rangers, inspectors or others responsible for policing protected areas the power to check bags, containers, and vehicles and to seize any suspicious object. Penalties, often entailing short terms of imprisonment, are coupled with restitution measures: the specimens, objects and vehicles involved in the offence are seized to the benefit of the protected area, or the offenders are obliged by sentence to pay the administration of the protected area sums equal to the market value of the natural element (animal, rocks, etc.) illegally removed, or to pay for the restoration of damaged areas.

There is nothing in this type of provision which is peculiar to the marine environment, unless it is the right to stop a vessel to carry out a search and, if necessary, to seize. What are more interesting, in the present context, are the measures designed to prevent harm to the natural environment and to control human activities.

It would be tedious to list the measures taken to protect the natural environment from human interference. Different wordings apart, they are practically the same in all legislations. More often than not the only difference is in the wording of prohibitions applied in protected land areas, depending on whether they derive from Anglo-Saxon or French law. By and large, it is forbidden to kill, wound, catch, collect, harm or molest any animal, plant or mineral association, including through the introduction of extraneous species. 3/

Sea water is the subject of special protective measures. The New Zealand legislation labels as an offender anyone who "discharges or causes to be discharged, directly, or indirectly, any toxic or polluting substance of any kind injurious to plant or animal life". 4/ Under Japanese law, it is a crime to pour a liquid into the sea from the surface or by discharge from the shore or to abstract sea-water at the surface or by pipe-line from the land. 5/ Some texts go further and try to rule

1/ New Zealand. Marine Reserves Act 1971, s.19 on offences within a reserve.

2/ Australia. Great Barrier Reef Marine Park Act-1975, s.66.

3/ As an example of the specificity of prohibitions, mention may be made of the provisions of the New Zealand Marine Reserves Act 1971, which states that every person who "wilfully digs, cuts, or injures the sea-bed, or leaves any rock, stone or boulder overturned ..." commits an offence (s.19 (1) (e)).

4/ Marine Reserves Act 1971, s.19 (1) (b). Cf. also, the Seychelles legislation; article 11 (c) of the Statutory Instrument No. 58 of 10 July 1973, containing the Ste. Anne Marine National Park Regulations.

5/ National Parks Act, 1970, article 27 (3) (4) and article 18-2.

out any adverse effect on the marine environment from points outside the park boundaries. In Australia, the Great Barrier Reef Marine Park Act confers authority for "regulating or prohibiting acts (whether in the Marine Park or elsewhere) that may pollute water in a manner harmful to animals and plants in the Marine Park" (s.66 (2) (e)). More limited in its scope, the Japanese Act prohibits any person from causing the raising or lowering of the level of the rivers and lakes included within the boundaries of a special marine area or of the amount of their waters. In a similar context, but also transcending the boundaries of the protected area, it is likewise prohibited in Japan to alter the appearance of the sea-bed within a radius of one kilometre. ^{1/} Although it is relatively easy to formulate the most absolute prohibitions, it is a well-known fact that in practice the protection of nature implies the harmonious regulation of human activities within the protected area. But such regulation, which in Europe at any rate is the major problem of areas on land, is exercised under very specific circumstances in the case of marine protected areas.

First, the greater part if not all areas come under the public domain. Privately-owned land accounts for only an insignificant part, on tiny islands. That being so, it is easy, when such land becomes a nuisance, to do away with it by purchase or through expropriation, without undue charge on the exchequer. In principle, the public authorities have jurisdiction over the sea-bed and over the surface of the sea. Moreover, marine zones are obviously much less easy of access than are areas of land. The use of boats which such access presupposes limits the frequency of visits and at the same time makes monitoring easier. However, there are a number of interests bound up with sea coasts which legislators have been unable to ignore: the livelihood of the inhabitants of the protected area, water sports and recreational activities, economic interests and shipping.

Once the right of private persons to reside permanently on a particular island of a protected area is recognized, they must be allowed to lead a life in accordance with their customs, and this may perhaps necessitate the relaxation of rules that are too strict, as is done for fruit picking in protected areas on land. Barring the very special case of the measures taken on behalf of the Aborigines in Australia, or the Maoris in New Zealand, only one of the legislations studied tackles this problem, namely the Seychelles Ste. Anne Marine National Park Regulations, which accord residents on private land within the National Park the right of access by boat to their property, to beach, careen, clean, scrape or paint any craft or vessel within the National Park and lastly, to take fish from the sea. The Park Commission issues, for each family, licences for the taking of fish in casiers or on hand-lines or for the collection of shell-fish under very strict conditions and under its control. ^{2/}

^{1/} National Parks Act, 1970, article 20 (1) (2) and (6).

^{2/} The Ste. Anne Marine National Park Regulations 1973, articles 3 (1) (b), 11 (b), 12, 13, 14 and 18.

Problems arising in connexion with water sports and recreational activities are normally resolved by means of zoning in the protected areas and the right to control the movement of persons. The Ste. Anne Marine National Park Regulations holds guilty of an offence "any person who uses or causes or permits to be used in the National Park any surf-board or water-ski". 1/

As regards economic interests such as aquaculture or mineral extraction, there are two conflicting viewpoints. The New Zealand legislator gives these interests precedence over the conservation of the marine natural environment. No area in respect of which any lease or licence for the establishment of marine farms is in force may be declared a marine reserve. The establishment of a reserve does not directly put an end to existing mining interests or prevent the issue of new licences. In principle, the exercise of these rights, old or new, must be in accordance with the regulations in force in the reserve. But as it would appear impossible for this requirement to be met without leading to a cessation of activities, the law provides for the possibility of submitting such activities to rules derogating from common law established jointly for this purpose by the Ministers of Marine and Mines. Lastly, the legislator invites the Minister of Marine to refuse to declare an area a marine reserve if such declaration would

"interfere unduly with any estate or interest in land in or adjoining the proposed reserve ... with any existing right of navigation ... with commercial fishing ... with any existing usage of the area for recreational purposes ..." 2/

To appreciate the true value of such provisions, it must be explained that in New Zealand, other bodies besides the State and even, indirectly, ordinary citizens are entitled to initiate the administrative procedure for the establishment of a reserve. The role of the Minister is to exercise the power of prevention through well-founded decisions. The legislator has provided him with an arsenal for this purpose. Obviously, his intention has been to prevent ill-considered moves in this direction and not systematically to settle disputes in favour of economic interests. Other legislations which do not have this same concern at heart prohibit mining operations outright. The Great Barrier Reef Marine Park Act 1975 also makes provision for "regulating or prohibiting the carrying on of any trade or commerce in the Marine Park". 3/

1/ Ibid., article 5.

2/ Marine Reserves Act 1971, s.4 (1), (5), (6), 5 (6).

3/ S.66 (2) (j). Cf. ibid. s.38 concerning the prohibition of mining operations and the Japanese Natural Parks Act 1970 article 20-1 (5), 27-2 (3).

Shipping problems are dealt with in all legislations. In Australia, the law states that a 'vessel' means a "ship, boat, raft or pontoon or any other thing capable of carrying persons or goods through or on water, and includes a hovercraft". 1/ Equally with other texts, the Act cited makes no distinction between pleasure and commerce, and between sailing vessels or motor vessels. The general principle is one of the free movement of vessels in accordance with the rules of maritime law. But such movement may be controlled, either to preserve certain zones or to require the use of shipping lanes or the observance of maximum speeds. It may moreover give rise to the levying of charges. The right of moorage and access to the coast is likewise recognized subject to observance of the police regulations. The threat that the use of marine anchors constitutes to the natural environment and especially to beds of submerged vegetation is well-known. Such use, which is expressly prohibited by the New Zealand and Seychelles laws, is covered by the general power to make regulations relating to the use of vessels in the Australian Great Barrier Reef Marine Park. 2/

In seeking to identify the characteristics of marine protected areas, the accent has been placed on factors affecting the area itself, that is to say, the purposes assigned to it, the natural environments it may comprise and the protective measures it presupposes. It is now necessary to investigate how far the particular features identified are covered by suitable administrative institutions.

1/ Great Barrier Reef Marine Park Act 1975, s.3.

2/ New Zealand, Marine Reserves Act 1971, s.23;
Seychelles, The Ste. Anne Marine National Park Regulations 1973,
article 10;
Australia, Great Barrier Reef Marine Park Act 1975, s.66 (2) and (7).

B. MARINE PROTECTED AREA INSTITUTIONS

The term institution, as is known, denotes both that which has been created and the creative act itself. On the strength of this conveniently dual meaning, it is now possible to raise two quite separate questions, the first concerning the administration of protected marine areas and the second their establishment.

1. The administration of marine protected areas

The administration of marine protected areas most often coincides with that of protected areas on land; only rarely are the two separate.

(a) Joint administrative organization

A joint administrative organization is found in Australia, the Seychelles and Japan. The legislations of those countries deal with protected areas as a whole, making special provision, as we have seen, for marine protected areas. However, no provision is made for any special administrative body or management techniques for these latter areas.

The three countries have adopted a system of joint administration in that protected areas are not by any means autonomous units endowed with a legal personality. Nevertheless, they are not administered directly by State departments, but by an agency which does have a legal personality: the Environment Agency in Japan, the National Parks and Nature Conservancy Commission in the Seychelles and the Director of National Parks and Wildlife in Australia.^{1/} In the Seychelles and Australia these bodies have been set up by special laws governing national protected areas, and their functions appear to be limited to the management, and the establishment, of protected areas under the surveillance of the competent ministries.

(b) Separate administrative organization

Separate administrative organizations are to be found in very different contexts. Two cases may be disposed of quickly as being of little significance: the Trinidad and Tobago Marine Areas Act 1970 and the New Zealand Marine Reserves Act 1971. The former, which is very sketchy on every aspect of the subject, merely states that the Minister of Agriculture, Lands and Fisheries may designate any portion of the marine areas of Trinidad and Tobago as a restricted area and that he may assign its management as he sees fit.^{2/} The New Zealand Act places marine reserves under the direct authority of the Minister of Marine. The idea of a higher marine agency is known to have been suggested in France in some quarters. Generally speaking, the question of knowing to which ministerial departments protected areas should be assigned is controversial. It is possible to call to mind as many ministries in this context as there are countries studied. But the comparison would be meaningless. The question of administrative subordination depends on a number of factors such as the financial resources of the country

^{1/} National Parks and Wildlife Conservation Act 1975, s. 15 (1) "There shall be a Director of National Parks and Wildlife, who shall be a corporation with perpetual succession - (2) the corporation shall have a seal, and may sue or be sued in its corporate name ... etc."

^{2/} S.5 "The Minister may assign to any Board, Committee or similar body ... responsibility for the control and management of any restricted area ..."

concerned or the special traditions and features of its administrative bodies. In short, any valid approach in comparative law requires a knowledge of the inside realities of public services which cannot be gleaned merely from reading legal texts. Seen from this angle, the experience acquired with the Great Barrier Reef in Australia will evoke more interest. There, the Marine Park in the north-east Great Barrier Reef Region has been separated from the common law governing protected areas and its administration entrusted to an autonomous body: the Great Barrier Reef Marine Park Authority. 1/

This Authority, which consists of a Chairman and two other members appointed by the Governor-General, one of them on the nomination of the Queensland Government, has a Consultative Committee consisting of at least 13 members, its Chairman being nominated by the Authority. One-third of the members are nominated by the Queensland Government, the others by the Federal Minister. Each represents a department or authority of Australia with interests in the Great Barrier Reef or the Great Barrier Reef Region. Doubtless university and scientific establishments can be included in this latter category. The act is very laconic on this point. 2/ Its main purpose is obviously to ensure co-operation between the Federal and Queensland Government public services. There is no mention of the inhabitants, of nature conservancy associations, private interests or of any scientific advisory body whatsoever. The Authority is backed up by an administrative machinery and by a police force, the "park inspectors". The moneys payable to the Authority are directly appropriated for the purposes of the Authority by Parliament. The Authority's functions are twofold. Firstly, it prepares plans on the development of the Marine Park and is solely responsible for proposing which areas should be declared to be parts of that Park, for preparing zoning plans and making recommendations regarding the necessary regulations to be promulgated by the Governor-General. The proposals regarding the designation of protected areas, and the zoning plans, are referred to the Minister and Parliament for approval. However, the Act authorizes the Governor-General to confer functions on the Authority for the purposes of the regulations. 3/ Secondly, the Authority is responsible for the management of Park areas, in which respect it has an independent power of decision. But it must comply with the directives of the Minister who supervises its activities. The Act requires the Authority to co-operate with other public authorities and particularly with the State of Queensland. It expressly provides for the possibility of co-operation with the Director of National Parks and Wildlife. The Authority may propose that certain parts of the Park be declared special areas to be administered by the Director and made subject to the provisions of the National Parks and Wildlife Conservation Act 1975.

1/ Great Barrier Reef Marine Park Act 1975

2/ Ibid., s. 22 (b) (6)

3/ Ibid., s. 66 (2) (a)

In the case of marine sanctuaries in the United States, responsibility for preparing the policies for their establishment devolves on a special body, the National Oceanic and Atmospheric Administration (NOAA), although it does not administer the Park areas directly. This task is entrusted to the body responsible for the management of an adjoining Park area, whether it be the National Park System or a State department. In open expanses of sea, it may be assumed by the Coast Guard or by the coastal State. ^{1/}

Finally, another area in which the different legislations studied provide some original solutions, without it being possible to say whether they are suitable for marine protected areas, is that of designation procedures.

2. Establishment of marine parks

With the exception of Trinidad and Tobago, where marine parks are established by a simple ministerial order without any other formalities, the different legislations provide for more or less complex designation procedures and participation by the public in that process.

(a) Designation procedures

In countries where the management of marine protected areas is entrusted to an autonomous body, the procedures for designating protected areas are initiated by the latter. After that, several options are open, involving the intervention of various bodies and ultimately requiring Government approval, after public inquiries have been made. In the Seychelles, it is the Commission itself which decrees such designation after Government approval has been secured. In Australia, under the National Parks and Wildlife Conservation Act 1975, an area is declared to be a park or a reserve by Proclamation of the Governor-General on the recommendation of the Executive Council after considering the report of the Director of National Parks and Wildlife. Also, the Director is required to prepare a plan of management in respect of the said park or reserve which must be referred first to the Minister and then to both Houses of the Parliament. The latter have 20 days in which to approve the plan or to pass a resolution disallowing it. These procedures are of interest not so much by virtue of the various authorities involved as for the importance they assign to the public and to the entities concerned.

(b) Participation of the public and of the entities concerned

Participation of the public and of the entities concerned is organized through classic public inquiries. However, one legislation, that of New Zealand, goes beyond simple consultations and gives the public a real right to initiate proposals.

Consultations have to be carried out in accordance with the customary rules governing publicity and time-limits in order to ensure their regularity. They would not merit any special attention were they not accompanied, in Australian law, by the obligation for the Government to examine the objections formulated and reply to them. This obligation recurs at all stages of the procedure. The Authority is required to transmit to the Minister a file containing the objections formulated in writing during the public inquiry, together with its own replies.

^{1/} Claude Lambrechts, Recherche sur les principes juridiques relatifs aux parcs marins. Journées d'Etudes sur le régime juridique des parcs marins, Nice-Port Cros, 28-29 May 1979, p.18

If the Minister deems it necessary to alter what the Authority proposes, he is required to notify the Authority to that effect. The latter's objections to the amendments proposed by the Minister, and the reasons why the Minister nevertheless maintains his stand, must be laid before Parliament. By these means, the practical usefulness of consultations is ensured at all levels, before resorting to any litigation against the final decision.

The New Zealand Act goes further in associating the public with the decision-making process by authorizing it to take the initiative. No Order in Council declaring an area to be a marine reserve may be made ... unless a university ... the National Parks Authority, a body appointed to administer land subject to the Reserves and Domains Act 1953, where such land has frontage to the sea-coast, or any incorporated society ... engaged in or having as one of its objects the scientific study of marine life or natural history ... has made application to the Secretary for Marine and for the adoption of such an Order. ^{1/} In view of the ease with which an association may be formed, even for the study of marine life, and in the absence of any other specification, it must be assumed from this text that the legislator has accorded each citizen the right to initiate the designation procedure. After consultations with the Secretary for Marine, the applicant must arrange for his intention to be given the necessary publicity and call upon all persons wishing to object to the making of the Order to send their objections to the Secretary for Marine within the stipulated time-limit and in accordance with the standard procedure and to serve a copy of the objections on the applicant to enable the latter to reply. The applicant's notice of intention to apply for an Order in Council, the objections and the applicant's replies are finally transmitted to the Minister of Marine, who may recommend the making of an Order in Council or reject the application. Although such procedures may well be interesting and even attractive to a jurist, it must be admitted that they are not peculiar to protected marine areas.

There is no justification for concluding, on the basis of this study, that there is an imperative need for special legislation governing marine protected areas. Some of these have been established throughout the world on the basis of laws applicable to protected areas as a whole, without any need having been felt to incorporate specific provisions. Doubtless there is no one answer to this question. While the problems remain the same, solutions will depend on the legal and administrative set-up of each country. It may be thought, for example, that a legal text on marine protected areas will obviate disputes between the various authorities responsible for the coast concerning their fields of jurisdiction. But the administrative regulations of a country or its legal provisions on protected areas of land may be sufficient to rule out any danger of friction. Suffice it to say, therefore, that there is in the sphere of comparative law, a tendency to introduce special legislation for marine protected areas.

However, although special laws are one sure way of resolving the problems created by the establishment of marine protected areas, the opposite is not necessarily true. A law initially conceived for areas on land does not necessarily furnish all the legal instruments required for the protection of the marine environment. At any rate, that is the view which seems to prevail in countries which have recently developed a policy for the protection of marine spaces.

^{1/} Marine Reserves Act 1971. S.5(1)(a)

II. THE LAW APPLICABLE TO MARINE PROTECTED AREAS IN MEDITERRANEAN COUNTRIES

A study of marine protected areas in the Mediterranean shows that practically all States have been anxious at one time or another to establish special zones for the marine fauna or flora. Too often, unfortunately, their intentions have not been followed up by the establishment of protected areas. Far more protected areas are planned than are actually established. No Mediterranean country has any special laws on marine protected areas, although, as will be shown, protected areas have been established in some on the basis of other general or special laws. Consequently, the legal void is not a complete explanation, even if it does, at any rate, justify the statements made in the third part of this report, which it is hoped will inspire Mediterranean States to make greater efforts to protect the common heritage constituted by the marine environment of this enclosed Sea. Equally, the disappointing situation as regards marine protected areas in the Mediterranean may stem from official inaction, but conceivably it may also be due to the very specificity of marine areas at the level of official competences. The fact that the number of authorities involved in coastal marine protected areas is considerable has always been an obstacle to the development of coastal protection. The authorities normally competent for natural areas (Ministry of Agriculture or Ministry of the Environment) have to work together with the Minister for Maritime Affairs or Merchant Navy, the Minister for Defence and possibly the Minister for Foreign Affairs. Thus any initiative in this area calls for satisfactory inter-ministerial co-ordination and the precise delimitation of powers and authority, and possibly their delegation. This need is all the greater if, in addition, account is taken of the complexity of the legal status of the spaces in question (maritime public domain, private coastal properties, local authority properties) and the legal vagueness of the limits and physical nature of the territorial sea in the domain theory of the States concerned. 1/ Finally, it is generally agreed that scientific knowledge of the marine environment is quite inadequate. While it is universally acknowledged that the ecological conditions of the Mediterranean are dangerously threatened by pollution, by the destruction of marine and coastal habitats, and by overfishing and excessive underwater hunting, there are few in-depth studies on marine ecology from which to identify the most threatened zones and those to be preserved. In this respect, some of our knowledge would appear to be still in a rudimentary stage or, at the least, research results are contested. The effects of chemical and radioactive waste on the marine environment are the subject of acrimonious discussions. The Director of the Artois-Picardie Basin Commission recently declared: "Nothing can be deduced from the studies so far carried out on our coast; few detailed surveys have been made concerning the dangers of pollution, particularly thermal pollution or pollution by biocides." 2/ Hence the urgent need to prepare maps of the marine biocoenoses in the proximity of coastal zones as proposed by the Council of Europe with a view to establishing a network of protected zones in the coastal and marine environment for the Mediterranean region. A better knowledge of the various species of the flora and fauna and their habitats would undoubtedly facilitate the establishment of protected zones by the various countries.

1/ See, for France, for example, F. Moderne: Les difficultés juridiques concernant le régime des plages et du domaine public maritime. In La protection du littoral, second symposium of SFDE (PPS Lyon 1979, p. 67 et seq.).

2/ Presse environnement No. 330-11 May 1979.

The task of presenting the relevant law applicable in each State appeared somewhat tedious. However, despite fairly wide divergencies between one State and another, it is now possible to draw up a global balance-sheet of positive law by dividing up our study into two parts: the establishment of marine protected areas, and their management. A review of the first of these topics will reveal first of all the underlying legal bases, after which the establishment procedure will be considered, paying attention to the different criteria for designation or re-designation as protected areas by the modification of boundaries or the rules that apply; the results of this exercise will demonstrate the enormous vagueness which exists in the matter of delimiting the zones created. The section on management will confirm the extreme diversity which exists as regards administration and the protective measures in force. No very detailed legal rules seem to have been established, moreover, in regard to compensation and sanctions.

A. THE CONDITIONS OF THE ESTABLISHMENT OF MARINE PROTECTED AREAS ALONG THE MEDITERRANEAN COAST

1. The legal basis for the establishment of marine protected areas

What texts have been used to establish protected areas? The salient feature would appear to be the enormous variety, together with the total lack of a special text dealing specifically with protected marine and coastal areas.

The following situations have been encountered:

(a) Projects at the planning stage for the creation of marine protected areas.

Some States have shown a wish to have marine protected areas, for which purpose they seek to draw upon their existing general legislation relating to fishing, the public domain or nature conservancy. Most of them already have selected sites. Beyond the legal texts, a desire to establish protected areas is apparent.

In Cyprus, the protection of turtles appears to call for special emergency measures. In Malta, the greatest obstacle to the establishment of marine protected areas stems from the fact that it is obviously necessary to establish them on a sufficiently large area. Bearing in mind the small size of the country and the occupation of the coast by tourism, fishing and aquiculture, it is difficult to find a sufficiently large area to allow effective protection of the biotope. The uninhabited island of Filfla might be envisaged. 1/ The Lebanon also has projects for ile des Palmiers and ile des Lapins as protected coastal areas with a marine zone. 2/ In Syria, wetlands and coastal areas have been selected at Sabkhat At Jabboul and Latakia. 3/

In Libya, a Secretaryship of State for Marine Resources was set up in March 1975 with a programme of protected zones. Site studies have been carried out in liason with the marine research centre, particularly in the sector where there are major underwater archaeological sites (Leptis Magna and Sabratha).

1/ See the report of Mr. L.J. Saliba, Department of Biology, Malta University; Colloquium of Castellabate, June 1973.

2/ See the report of Mr. Sami Lakkis, Colloquium of Castellabate, 1973.

3/ Cf. E. Carp, Ocean Management, No. 3, 1978, p. 175.

Special plans, varying in their formalism or strictness, are sometimes drawn up. In Syria, a Legislative Decree of 25 August 1964 on the protection of aquatic life provides a general policy for the protection of marine resources and encourages the population to learn about the different marine species (articles 69 and 34). In France, coastal planning has been undertaken on an experimental basis using categories of fitness of the sea for specific uses. These marine planning documents are drawn up in some coastal departments jointly by the State, the local authorities and the professional organizations concerned with marine problems. They must provide for the integration of marine reserves in coastal development so as to ensure that they are compatible with other competing uses of the coast. Greece has adopted the most systematic instrument for environmental planning which also includes the marine environment. The recent Law No. 360 of 18 June 1976 (Government Gazette, section A, No. 151 of 22 June 1976) on environmental planning applies to the entire territory, including the sea. The natural environment is defined as embracing the land, the sea and the surrounding air and including the flora, fauna and natural resources (articles 1.5). The institutional and procedural machinery set up by the Law is designed to provide for the elaboration of national and regional plans, as well as specialized plans covering a particular sector or an activity. A plan might thus be drawn up for marine protected areas. These plans lay down the policy to be followed in conformity with the economic and social development programme.

(b) General texts on nature conservancy may allow for the establishment of marine protected areas even if it is not expressly stated that they apply to the marine environment.

In Algeria, Order No. 76-64 of 16 July 1976 (Official Gazette [J.O.] of 10 August 1976, p. 788), as amended by Decree No. 78-61 of 25 March 1978 (Official Gazette [J.O.] of 28 March 1978, p. 214) set up the National Office for the Development of Geological and Recreational Parks and National Reserves. This is a national public agency which is responsible for developing, managing and organizing national parks and reserves for the fauna and flora. The 1976 Order states in article 2 that it concerns the fauna and flora "existing within the national territory as a whole"; it may be inferred that the coast and the sea area under the sovereignty of the Algerian State are implicitly covered by the text. In some Yugoslav republics, general laws may be considered as also covering marine areas. Thus, Law No. 5 of 13 January 1972 in Bosnia Herzegovina regulates protected areas or parks, as do a law of 6 August 1952 in Montenegro and a law of 1959 in Slovenia. Spain, one of the first European countries to adopt a law on national parks in 1916, recently revised its legislation by Law No. 15 of 2 May 1975 on protected natural areas. The text does not mention the extension of those areas to the sea, nor does it contain any provision to that effect. The territorial coverage is never stated precisely. The view may be taken that it naturally covers the territorial sea of the Spanish State. At the same time, a Law of 13 May 1933 governs the protection of sites of historical and archaeological interest. The national park of Doñana was set up on the basis of the 1916 law (Decree of 16 October 1969 - Official State Bulletin [B.O.E.] 1969, p. 16,789); it is a coastal park especially designed to protect waterfowl.

(c) General texts on nature conservancy may on the other hand specifically state that they concern both the land and the marine environment or some of its aspects.

The clearest case is that of France, where several general texts explicitly apply to marine protected areas. A Law of 2 May 1930 allows natural sites or places of artistic, historical, scientific, legendary or scenic interest to be classified. Law No. 60-708 of 22 July 1960 on the establishment of national parks provides in article 1 that parks may be established on all or part of the territory, and that they may "extend to the maritime public domain". For the authors of the law, who never

use the term "Marine park", a park is essentially a land area, of which the sea area is merely a possible extension. This possibility became a reality with the creation of the Port Cros National Park by Decree 63-1235 of 14 December 1963. Much more directly, Law No. 76-629 of 10 July 1976 on the protection of nature provides in chapter III, article 16, for real maritime nature reserves. This is no longer a case of a land area extending seaward as in the case of national parks, but of a zone directly and exclusively covering a marine area. The Law states that designation as a natural reserve may affect the maritime public domain and French territorial waters; this implies that, under the Law of 28 November 1963 concerning the maritime public domain, a nature reserve can cover the sea bed and subsoil of the public domain. The Camargue reserve (1975), the Scandola reserve in Corsica (1975), and the marine nature reserve of Cerbière-Banyuls-sur-mer (1974) were set up under the regime governing nature reserves laid down in the Law preceding the 1976 Law (article 8 bis of Law No. 57.740 of 1 July 1957). Turkey appears to be in a similar situation with its general law on parks of 1956 and the creation of several national parks on the coast (Olympus, Dilek, Halicarnassus and several protected wetland areas). In Israel, the National Parks and Nature Reserves Act of 7 August 1963 (Laws of the State of Israel, Vol. 17.5723) does not specifically mention geographical coverage. It is indirectly indicated, however, that the purpose of nature reserves may be to protect water against biological changes (article 1) and that the protective measures of nature reserves may concern shipping traffic (article 37), which implies that they may relate to the maritime environment. This Israeli National Parks Act, which has been amended repeatedly (Act of 28 July 1974, Act of 27 March 1968, Act of 23 December 1974 and Act of 17 February 1975, Laws of the State of Israel, Vol. 18.5724, 22-5728, 29-5735), has made it possible to establish several marine and coastal protected areas: Coral Beach Reserve and Ashkelon National Park, each with its own regulations.

(d) In some cases, special texts are used to establish marine protected areas.

The traditional texts governing fishing, hunting (maritime or not), and the use of the maritime public domain may also be used to this end. This is sometimes the case in countries which do not have general legislation on protected areas, and such texts are sometimes used concurrently with more general texts.

Special texts used in the absence of other provisions:

The case of Yugoslavia at the federal level should be mentioned separately. Reference was made earlier to the legislation of individual federated States for the establishment of protected areas. At the federal level, a Law of 27 February 1965 on fishing prohibits fishing in places where there are archaeological objects (article 11).

Tunisia provides the highly interesting example of a State which has effectively created a protected area without using a general text but simply by referring to the legislation on sea fishing. It should be observed furthermore that reference to the legislation does not appear in the recitals of the Order establishing the protected area of Zembra but in the operative provisions concerning penalties (implementation of the Decree of 26 July 1951 on sea fishing). An Order of the Minister of Agriculture (No. 4 of 12 January 1979, Official Gazette [J.O.] p. 152) on hunting in the public domain might likewise be used. In the Lebanon, a special text also appears indirectly to allow the creation of protected areas to counter excessive

underwater fishing. Decision 347/1 of 11 June 1972 of the Minister of Agriculture (Official Gazette [O.G.] 1972, No. 161, p. 1459) regulates underwater fishing not only because it is now a widespread sport which attracts foreign tourists but also in order to safeguard the wealth of the sea. The text establishes that prior authorization must be received for underwater hunting and diving but does not explicitly provide for protected areas, with the exception of the coastal strip and at a distance of less than 2,000 m. around fishing boats (article 4). In Albania, protected areas are classified under a Law on hunting, No. 1351 of 1 November 1951, and a Law on forest conservancy, No. 3349 of 3 October 1963. In Morocco, the texts on hunting or fishing might be used. An Order, No. 1005-75 of 20 August 1975 (Official Bulletin [B.O.] No. 3282 of 24 September 1975, p. 1128), establishes hunting reserves and areas set aside for hunting by tourists either permanently or for a period of two years. Dahir No. 1.73.255 of 23 November 1973 (Official Bulletin [B.O.] No. 3187 of 28 November 1973, p. 2040) regulates sea fishing without directly providing for reserves. In Syria, special reserves are established for the protection of sponges. Legislative Decree No. 30 of 25 August 1964 (Official Gazette [J.O.] No. 41 of 10 September 1964) on the protection of water life regulates fishing and pisciculture both in inland waters and in Syrian sea waters. Article 40 establishes reserves for sponges: "Sponge fishing is permitted in all waters with the exception of regions where such fishing is prohibited under the orders promulgated by the Minister of Agriculture for the purpose of conservation". Likewise, according to article 3(b) of Legislative Decree No. 152 of 23 July 1970 (Official Gazette [J.O.] No. 32 of 12 August 1970) on hunting, the Minister of Agriculture may prohibit hunting in some regions when the conservation and propagation of game so requires.

Finally, the example of Italy is rather characteristic of the situation in a good many Mediterranean States. In Italy, where there are many protected areas, including coastal or marine areas, no general law has been adopted: the protected areas have been established on the basis of special texts. Four methods have been used:

State concession: the Miramare Marine Park was set up on 31 May 1973 simply by a concession by the harbour master of Trieste under article 36 of the Navigational Code. The existing concession was granted on 1 June 1976 and expires on 31 May 1980. This entirely unprecedented legal basis has unquestionably made possible an interesting experiment, but the precarious nature of the concession does not seem well suited to the goals pursued.

Recourse to fishing laws: on the basis of Law No. 963 of 14 July 1965 on fishing, the Montecristo Island nature reserve (Decree of 4 March 1971), the Castellabate biological monitoring area (Decree of 25 August 1972), the Ustira Island restoration area (Decree of 4 July 1973) and the Montecristo biological monitoring area (Decree of 5 April 1979) were established at the decision of the Minister for the Navy.

The creation of parks on the basis of regional laws: most regions have adopted laws on parks and reserves making it possible to establish coastal parks. The nature park of Maremma in Tuscany was created under such a text (Regional Law of 5 June 1975 No. 65, Official Gazette [G.U.] 1975, No. 255, p. 6783).

The classification of international wetland areas: a series of lakes or wetlands communicating with the sea have been declared of international importance within the meaning of the Ramsar Convention by several Orders of the Minister of Agriculture and Forests (seven Orders in 1977 and 1978), particularly the wetlands of the Corru S'Ittiri fisheries (Order of 3 April 1978, Official Gazette [G.U.] No. 114, of 26 April 1978, p. 3025).

Special texts used at the same time as more general texts.

In France, while there is a general Law on parks and reserves which can apply to the marine environment, there are at the same time special laws applying directly to marine areas.

Ever since Law No. 68-918 of 24 October 1968 on maritime hunting, it may be said that the protection of the marine environment through its wild fowl allows for the creation of genuine maritime protected areas. ^{1/} Although the protection only extends to waterfowl, it may have an important effect on the marine ecosystem. Reserves may be established at sea within territorial waters, salt water pools or other bodies of salt water . . . and in the maritime public domain (article 11 of the Law of 24 October 1968). These reserves are created by Order of the Minister responsible for hunting and the Minister responsible for the merchant navy for a period of not less than six years (article 9 of Decree No. 72-876 of 25 September 1972). Thus, several Orders of 25 July 1973 supplemented by the Orders of 11 and 30 July 1974 established hunting reserves in the maritime domain along the French coast (78 reserves covering 12 per cent of the coastline).

The protection of fish against fishing may greatly help to improve the balance of disturbed marine environments. In implementation of old texts on coastal sea fishing (Decree Law of 9 January 1852, Decree of 10 May 1862, Decree of 1 September 1936) an Order of 4 June 1963 provides for reserves or protected areas in which either any kind of fishing or the use of boats over a certain weight or the use of specific fishing gear is prohibited. These fish reserves are established by Order of the Minister for the Merchant Navy on the advice of the Scientific and Technical Institute for Sea Fishing on a portion of the maritime territory within and beyond the three-mile limit (12 miles since 1971) measured from the low-water mark. Reserves were created under this Order in the maritime area of Dieppe and Fécamp between 1967 and 1971 (Order of 13 January 1967), as were protected areas for shellfish (Order of 1 February 1977) and a fish conservation area along the Corsican coast (Order of 20 June 1978). This Order of 20 June 1978 (JONC, 28 July 1978, p. 5897) does not wholly prohibit sea fishing but states (article 1) that "in order to foster attempts to restore the shellfish population, fishing is prohibited with the sole exception of fishing without gear and rod fishing from the land".

In Algeria, besides the general Law on national parks and reserves of 1976, Order No. 76.84 of 23 October 1976 (Official Gazette [J.O.] No. 30, 13 April 1977, p. 442) establishes the general regulations for fishing and provides in article 9 that "sea fishing by any means whatsoever may be restricted or prohibited for a time or in a place whenever such restriction or prohibition is considered necessary for

^{1/} D. de Saint Marc, La chasse maritime dans "la protection du littoral", P.P.S. Lyon, 1979.

the safeguarding of the reproduction of species and for their development". Article 10 empowers the Minister responsible for fishing to determine the boundaries of the various areas in which fishing is prohibited.

Finally, in Spain special laws on fishing prohibit the use of bottom-dragging nets in a depth of less than 100 metres during certain periods of the year in the maritime province of Barcelona and the Balearic Islands (Order of the Minister of Trade of 5 March 1973 concerning fishing in the Mediterranean, Official State Bulletin [B.O.E.] 1973 No. 1, 23 March 1973, p. 5693).

2. The process by which marine protected areas are established

The general texts are rarely very detailed with regard to the ways in which marine protected areas are to be established, as a result of the absence of specific legislation for such areas. Customary law rules will apply to all protected areas, with a number of gaps which can be justified or explained only by a knowledge of the administrative practices of each country.

(a) The initiative for the establishment of protected areas.

Because very few texts establish who initiates the establishing of marine protected areas, it is very difficult in practice to know the exact state of affairs.

The most frequent situation is naturally that in which the initiative is taken by the central government, in the form of the Ministry of Fishing, of Agriculture or of the Environment, as the case may be. In some countries, the initiative is taken jointly by the central government and scientific bodies, as was the case for the Ministry of Agriculture and the Faculty of Science of Tunis in the establishment of the Zembra reserve in Tunisia. In Israel, a special authority for parks and reserves has the initiative. In France, it is always the central State administration for national parks. Theoretically, that is also true for nature reserves, although sometimes local or regional authorities may request the Ministry of the Environment to create them.

Exceptionally, private bodies (environmental defence groups) may initiate the creation process. Thus, Montecristo Island, originally a royal hunting preserve and subsequently managed by a hunting association, became a managed nature reserve in 1971, and then a biological monitoring area in 1979, on the initiative of the World Wildlife Fund, in order to protect the monk seal population. In France, private landowners may request that property of particular scientific and ecological interest may be classified as a voluntary nature reserve by the Minister of the Environment (article 24 of Law No. 76-629 of 10 July 1976 on nature conservancy). This formula is of limited interest for marine protected areas, since by definition marine areas cannot be privately owned. It can therefore apply at most only to the coastline or the land area of private islands. In Spain, the Law of 2 May 1975 on protected natural areas also provides in article 12 that the initiative for the creation of natural parks may come from individual or legal persons. Lake Manyas Park in Turkey, a coastal wetland area, was established in 1950 on the initiative of a private body (the Turkish Biological Association) and then transformed in 1959 into a national park with the status of a strict bird reserve. It is one of the wetland areas which have attracted the attention of the International Union for Conservation of Nature and Natural Resources (IUCN) and of the Council of Europe.

(b) The process of creating protected areas.

It might be imagined that the creation of any protected area, marine or not, would be considered only after detailed preliminary studies to appraise its true scientific interest and pave the way for delimiting its boundaries. In fact, prior studies of that kind are rarely obligatory, even if they are in fact carried out. Only too often, marine protected areas are established without careful consideration.

Articles 3 and 4 of the French Decree No. 61.1195 of 31 October 1961 on the establishment of national parks provide for two stages. Preliminary studies on the desirability of creating a protected area are carried out by the ministry concerned, while at the same time local representatives and professional organizations are consulted. In the light of those studies and consultations, the Prime Minister decides whether or not to continue with the project. If yes, the establishment procedure is set in motion. For the establishment of nature reserves, the project document must include a report on the purpose, reasons and scope of the future reserve as well as a "study of the general implications and of the socio-economic consequences of the project" (Article 1 of Decree No. 77.1298 of 25 November 1977). The latter may take the form of an impact appraisal study.

After the studies have been carried out, the procedure in all countries is to hold consultations with one or more of the following five sectors: Government departments, a national nature conservancy council, the public, professional and scientific bodies, and local bodies. Consultation of the various government services concerned is the most widespread (Algeria, France, Israel, Italy, Spain, Tunisia). The government authority responsible for the navy is the most directly concerned. When a national advisory body exists, it is always consulted for all protected areas (Inter-Ministerial Commission for the Environment in Spain, Inter-Ministerial Council for National Parks and National Council for Nature Conservancy in France; Parks and Reserves Council in Israel, which can even propose the establishment of parks and reserves).

Public participation is rarely provided for. In France, it takes the form of a public enquiry: the project documents are made available to the public so that it may record comments in the register of the enquiry. The results of the survey are summarized by the committee of enquiry which gives its advice in the light of the comments received. The consultation is in no way binding on the decision-making authority. In some cases, the Spanish legislation provides for the consultation of the persons concerned when the protected area relates to the public weal (article 8.2 of the Law of 2 May 1975).

The consultation of professional bodies (fishermen's unions, Chamber of Commerce, etc.) is very rare, although essential if the protected area is to be integrated smoothly into the environment. The Spanish Law explicitly provides for the consultation of various professional organizations (various corporations, local farmers). In the case of the Montecristo Park in Italy, the local sea-fishing commission was consulted. Consultation is provided for in France for national parks but not for nature reserves.

The consultation of scientific bodies is organized in Tunisia (Faculty of Science in Tunis, National Scientific and Technical Institute of Oceanography, Tunisian Association for the Conservation of Nature and the Environment); in Spain, when strict reserves are to be created a report must be obtained from the higher body attached to the Institute of Spain and from the faculties and higher research centres (article 8.3 of the Law of 2 May 1975). In France, the creation of marine nature

reserves has been preceded by the consultation of the Scientific and Technical Institute for Sea-Fishing (Order of 26 February 1974 creating the reserve of Cèrbère-Banyuls-sur-mer); this was also the case for the creation of the fish conservation areas along the Corsican coast (Order of 20 June 1978). The Decree of 5 April 1979 on the creation of the Montecristo Island biological monitoring area states that a request was made by the Italian World Wildlife Fund Association on 17 March 1978.

Finally, the consultation of local authorities appears to be quite widespread: in Tunisia, the governorates are consulted; in France, the municipal councils and general councils for national parks and nature reserves (article 4 of the Decree of 31 October 1961, article 8 of the Decree of 25 November 1977); and in Israel, the local authorities (article 6 of the Act of 7 August 1963).

(c) The competent authority for the establishment of a protected area:

None of the countries has considered that a law is needed to create a protected area. The necessary legal instrument is most frequently promulgated by the central government, and exceptionally a local authority. In Spain and Italy, it is the Ministry of Agriculture which orders the establishment of reserves. In France, it is usually a Decree of the Prime Minister on the advice of the Council of State, in the absence of consent on the part of the owners, for nature reserves; a Decree of the Council of State in all cases for national parks; a Ministerial Order or Decree for the designation of natural sites under the Law of 12 May 1930; and an Inter-Ministerial Order for hunting and fishing reserves. In Italy, Montecristo Park was established by a Decree of the Minister of the Navy, as was the proclamation of the wetland areas. Only regional parks may be established by a regional law (as in the case of Maremma, under the Tuscan Law of 5 July 1975), which is also the case in the Yugoslavian republics. In Israel, it is the Minister of the Interior who has the power to establish parks and nature reserves, but since the law of 27 March 1978 the Ministry of Defence must give its agreement if a protected area is considered important for security.

The establishment of a protected area by a local authority is quite exceptional (except in the case of federal States or States with regional entities, such as Italy). Mention may, however, be made of the case of an Order by the Prefect of Evros in Greece, dated 8 December 1978, establishing a hunting reserve for the protection of waterfowl in the Evros River delta. The establishment of the reserve was carried out in application of articles 251 to 267 of the Greek Forestry Code.

(d) Redesignation or modification of marine protected areas.

The modification of the boundaries of a protected area, or of the corresponding conservation regime, or the total abolition of the protected area, are not always explicitly provided for in the positive law. This is a disturbing loophole. In accordance with the usual principles in this field, the principle of formal symmetry must be considered to apply: in other words, any modification of the protected area may only result from an action taken in the same form and by the same authority as for designation. This situation is found in Tunisia, in Italy and in France for national parks. In the case of specialized reserves (hunting or fishing) established for a limited duration, these cease to exist when the specified period expires.

If redesignation is explicitly provided for, it is either more difficult than or identical to the original act. The only instance where redesignation is more difficult to carry out than designation is Israel. The national parks and reserves council and the local communities concerned have to be consulted, and since the Act of 17 February 1975 amending article 7 of the Act of 7 August 1963 on parks and reserves, the approval of the Knesset (Parliamentary) Commission on the Interior and Ecology must

also be given. For nature reserves in France, article 16 of Decree No. 77.1298 of 25 November 1977 states that changes in the boundaries or regulations of the reserve, and the partial or total redesignation of the reserve, are subject to the same formalities of inquiry and consultation as applied to the establishment of the reserve.

A comprehensive view of the procedure for the creation of protected areas in the various States considered shows that in many instances the procedure is not sufficiently strict or complete. Greater participation of the public and of the various interest groups concerned appears essential, bearing in mind the sensitive conflicts which exist on the coast. Finally, no text distinguishes between redesignation by reducing the area or relaxing the protective measures and modification by enlarging the area or strengthening the measures.

3. The delimitation of marine protected areas

Unlike parks on land, marine protected areas are faced with difficult problems of delimitation. The term embraces three different issues which must be precisely defined: the physical nature of the protected area which determines the fundamental territorial coverage for the exercise of powers and the application of protective measures; the criteria of delimitation which determine exactly how far the marine protected area extends in the sea; and finally, the materialization of the boundaries. The legal methods used by the various Mediterranean States show that the peculiar nature and complexity of the environment in question have not been sufficiently taken into account.

(a) The physical nature of marine protected areas.

The protected areas may theoretically comprise land, sea, air, the seabed and the subsoil. The legal rules currently applicable are not at all precise on this question. They implicitly cover the water, surface and bottom of the sea. In the absence of greater precision, problems might arise in relation to control over mining operations on the seabed and aerial overflight. The definition of the maritime public domain plays a decisive role here. Thus, in France, it includes the seabed and subsoil of the territorial sea; however the sea water itself is not formally part of the public domain, and is considered as res communis. With regard to the vertical dimension, French law remains silent but it may be considered that the park authority may also regulate the air space on the grounds of appurtenance: article 21 of the Decree of 14 December 1963 creating the Port-Cros National Park provides that it is prohibited to overfly the park (including the marine area) at a height of less than 1,000 metres from the ground. However, this prohibition does not apply to military aircraft in case of absolute necessity.

Sometimes the physical dimensions of the park are indicated by its delimitation from the standpoint of depth. In the case of Montecristo Island in Italy, the reserve includes a marine area around the island consisting of water and the seabed. At Cerbère, in France, it is a priori impossible to know the exact physical dimensions of the reserve in the absence of any specification of depth.

The Mediterranean marine protected areas are almost all mixed (land and sea). The only cases of reserves confined to a marine area are the Zembra reserve in Tunisia, the Order creating which specifies that it concerns the surface "around the island" and the biological monitoring area of Montecristo Island, created on 5 April 1979. Finally, there are cases where the protected area is defined purely

from a land standpoint, but with the possibility of action extending to the sea; thus in Gibraltar, the Lyndsay County Nature Reserve created on 25 May 1952 only covers the dunes and the beach, but allows for the prohibition of fishing in the adjacent waters.

(b) Delimitation criteria.

How can the physical boundaries of the protected area be precisely delimited at sea? Various methods are used, either separately or in combination.

The protected area may be delimited by reference to isobath curves: the Montecristo reserve in Italy follows the 500 m isobath. More frequently, a distance is measured seawards from the low-water mark: at Zembra in Tunisia, it is one and a half miles seawards from the low-water mark; at Port-Cros in France, the maritime area of the National Park surrounds the islands and islets to a distance of 600 metres from their coasts; the Sept Iles Nature Reserve (Côtes du Nord) extends for a mile from the low-water mark.

Sometimes, depending on local topography, the area is delimited by longitude and latitude (as in the case of fish reserves in France), by alignment or line segments (as in the Cerbère-Banyuls reserve) or by a reference line between two constructions. The deed of concession of Miramare Park in Italy specifies that it consists of a stretch of water of 264,000 m² between the outer limit of the breakwater marking the end of the bathing establishment and the sea wall of Port Gignalo.

(c) The materialization of boundaries.

The most difficult problem is to find a means of indicating to shipping and others the boundaries of the protected area. The safest solution would be to enter them on nautical charts, but no general text provides for so doing. An improvised arrangement is made for each protected area, using beacons, buoys, nets or floating indicators, or else the boundaries are not even marked off at all. The only example of explicit provisions for boundary marking is that of the marine reserve of Cerbère-Banyuls in France, where the Order of 26 February 1974 provides in article 10 that "the marking of the boundaries of the reserve and the corresponding nautical information shall be carried out by the Management Committee in liaison with the Chief of the Maritime and Shipping Service of Languedoc Roussillon". The link between sea markings and supplementary nautical information is clearly established here.

Although the problems of delimitation are only too often overlooked, they are nevertheless essential. They should at least be specified in the text creating the protected area. The evaluation of the minimum area essential for the preservation of ecological equilibria is a matter of scientific study and should be a part of the studies preceding the creation of the protected area. The materialization of boundaries is a determinant of the effectiveness of the conservation system. established, especially in the Mediterranean where many of the future users are foreign tourists who do not know the local laws on the protection of the fauna and flora.

B. MANAGEMENT OF MARINE PROTECTED AREAS

Management requires, on the one hand, an ad hoc administrative structure and, on the other, sufficiently strict protection measures accompanied by sanctions, and possible compensation measures for the inhabitants or users of the protected area.

1. Administration of marine protected areas

The type of administration chosen by individual States depends very considerably on the administrative structure of the country and the extent to which there is a tradition of centralization or decentralization. The areas concerned generally come under one or more ministries, but that is not of any great importance and does not in any way prejudge the type of park administration chosen. Marine protected areas come under the Minister of the Interior and the Minister of Agriculture in Israel, the Minister of Agriculture in Tunisia and Spain, the Minister of Water and Environmental Protection in Algeria and the Minister of the Environment in France. As far as the choice of form of administration is concerned, this may be either centralized or decentralized. In either event, the form chosen in many countries gives some place to scientists and associations.

(a) Centralized types of administration

Two forms are used: direct management by the ministry which the area comes under or management of all reserves by a national specialized agency.

In Tunisia, the marine parks are attached directly to a ministry under the authority of the Minister of Agriculture; it is nevertheless intended to establish a management council for the Zembra Reserve. A similar situation exists in Turkey, where, up to 1966, the parks were attached to the sixth Forestry Service Directorate. Since 1970, the Directorate of National Parks, under the authority of the Ministry of Forestry, has administered all the Turkish parks. A similar form of administration exists in Italy, where the Montecristo reserve is administered by the Ministry of Agriculture, in liaison with the National Research Council, with which it forms a joint management committee for directing scientific work on the island.

Management through a centralized national agency exists in Algeria, Spain and Israel. In Algeria, the National Office for the Development of Geological and Recreational Parks and National Reserves, established by an Order of 16 July 1976, is responsible for the direct management of parks and reserves. It is a public scientific and cultural establishment with financial autonomy and legal status. Its president is appointed by decree and its administrative council includes representatives of various ministries and of scientific institutions. On its establishment, the Office was placed under the Minister of Agriculture, but since 1978 it has been under the Minister of Water, Land Development and Environmental Protection. Efforts to relax direct management by the Office have resulted from Decree No. 78-61 of 15 March 1978 enabling the management of the reserves to be transferred to the local authorities.

In Spain, article 7 of the Law of 2 May 1975 on protected natural areas established the National Institute for Nature Conservancy (ICONA), which represents the State in the management of protected natural areas. If protected areas are

established on State land, their administration is the direct responsibility of ICONA. Some relaxation of centralization is provided for by article 10 of the Law, which provides for a management body in each protected area, collaborating with ICONA. For example, Decree No. 2412 of 16 October 1969 on the Dañana National Park establishes such a body composed of representatives of administrations and of owners. Conservation, however, depends directly on ICONA, which continues to establish protection regulations in the reserve, the management body being competent only to make recommendations; there is therefore no real transfer of management in this case.

A distinction is made between parks and reserves in the administration of protected areas in Israel. In the case of parks, there is a national agency (National Parks Authority) under the Minister of the Interior. As in Algeria, this body is responsible for the centralized management of all parks; it has some autonomy but its budget has to be approved by the Government. The Authority itself may make rules for the parks under the control of the Minister of the Interior; it has its own staff and performs some operations. Some relaxation of such complete centralization has been allowed for by article 18 of the Act of 7 August 1963, under which the Authority is able to delegate its powers to towns or groups of towns. Such delegation may be either permanent or temporary, general or partial. There is another specialized agency for nature reserves (Nature Reserves Authority) under the Minister of Agriculture; its organizational and operational conditions are identical to those of the Parks Authority. In addition, the Israeli system comprises two other types of protected areas which could cover marine areas and which do not come under any agency but are directly dependent on the Minister of Agriculture; they concern the special protection of natural resources (protected natural assets) (article 40 of the Act of 23 December 1974). The designation of these areas enables the Minister of Agriculture and the Minister of the Interior to adopt regulations for the purpose of protection after consultation with the National Council for Parks and Reserves. This type of national council also exists in some other countries (for example, the National Council for the Protection of Nature in France, reorganized by Decree No. 77.13 1300 of 25 November 1977). The National Council for Parks and Reserves in Israel is a broad collegiate body (seven representatives of central administrations, seven representatives of local authorities, seven representatives of public or private scientific or nature defence bodies and four representatives of the public). It has advisory powers and can make proposals for the establishment of parks; it also has strict trusteeship over the establishment of national sites and special natural resources protection areas and, lastly, it has real powers under article 21 of the 1963 Act to take the financial decision to authorize the levying of charges for entry into and use of parks and reserves.

It is noted that a recent trend towards the centralized administration of reserves by a national agency does not prevent the delegation as necessary of some local management to local institutions (as in the case of Israel and Algeria).

(b) Decentralized types of administration

These may be public or private bodies, depending on the country.

Management by public administrative bodies exists in Yugoslavia, where in certain republics, the parks are managed by experimental farms under the Ministry of Agriculture or by local self-administered committees or bodies under the Ministry of National Education or under a nature conservancy institute. The public

bodies in France may take several forms. In the case of national parks (Port-Cros type), the body in question is a national public administrative establishment whose administrative board includes representatives of the administrations concerned, representatives of local authorities, and private individuals. The decree of 14 December 1963 provides, at Port-Cros, for 11 officials, five local elected representatives and 10 private individuals, three of whom are appointed on the nomination of the National Council for the Protection of Nature and one on the nomination of the Touring Club de France, and one of whom is a property owner or permanent resident of the island. The director of the park is appointed by Order of the Minister of the Environment on the advice of the administrative council. In the case of nature reserves, there may also be a public establishment or there may be direct management by the local authorities. The State itself sometimes administers the reserve, but does so by establishing a more or less decentralized local management body. An example of this is the Cerbère-Banyuls marine reserve, where there is a management committee presided over by the prefect of the department and composed of officials, local representatives, scientific bodies, local fishery representatives and the President of the French Underwater Studies and Sports Federation. The Management Committee or the director appointed by the Committee recommends decisions to be taken on the reserve to the Minister for the Environment and the Minister of Transport, who alone are legally competent, since the reserve has no legal status of its own.

Management by private bodies is fairly common insofar as scientific or nature conservancy associations are sufficiently competent and prepared to collaborate with the public authorities. This form of management, however, rapidly reaches its limits as far as marine protected areas are concerned because of the nature of the environment and the fact that it is legally part of the public maritime domain. Since the administration is unable to delegate its powers of policing to private organizations, the protected areas have fewer effective legal means applicable to them that would preserve the area for which the organizations are responsible. In Italy, the Miramare Marine Park is the subject of a concession to an individual who, in reality, represents a private association formed by the Italian World Wildlife Fund. This association manages the park, providing for the administration of the concession and the financing of scientific research through grants from the Italian WWF, from the commune and from the region. Article 25 of the French Act of 10 July 1976 on nature conservancy provides that nature reserves may be managed by landowners, foundations or private associations provided that they enter into an agreement to that effect with the Minister of the Environment. The Camargue Nature Reserve is administered in this way by a foundation bound by an agreement with the State.

(c) The role of scientists in the management of marine protected areas

Bearing in mind the purposes of the protected area, it is essential for scientific authorities to be able to be associated in its management. Such participation by scientists is organized in different ways in the various countries studied.

In the case of States with centralized management of protected areas, provision is made for scientists either possibly as members of ad hoc bodies for each of the existing protected areas or directly within the national management authority. Algeria and Tunisia are examples of the first of these alternatives. In Algeria, the

Order of 16 July 1976 provides for scientific committees, which may be established on the recommendation of the administrative council of the National Development Office, to advise on the development of the protected areas and to make scientific studies. These committees are composed of representatives of the National Scientific Research Office, the Agronomical Research Institute, the Pasteur Institute, the Veterinary Science Institute, the Institute of Public Health and Hygiene and of any other scientific body. It may be assumed that for the marine protected areas of the future the scientific committee will include members of the Oceanography and Fisheries Centre established by Decree of 25 September 1974 (Official Gazette of 15 November 1974, p. 260), whose task is, inter alia, to develop any research aimed at better knowledge of marine and undersea resources with a view to their development.

In Tunisia, following the establishment of the Zambra Reserve, it is intended officially to establish a scientific council for the reserve composed of the National Oceanographic and Fisheries Institute, the Tunis Faculty of Sciences, the Tunisian Association for the Protection of Nature and of the Environment, the Directorate of Forestry and the Sub-Directorate for the Rural Environment.

The second alternative is exemplified by Israel, where scientists are simply found at the central organizational level as members, on the one hand, of the National Council for Parks and Reserves, in which seven of the 25 members are representatives of scientific institutions and, on the other, as members of the Nature Reserves Agency, in which members of scientific bodies may be included under article 29 of the Act of 7 August 1963.

In States with decentralized management, the local management body for the protected area sometimes includes scientists. In France, for example, while the Act of 22 July 1960 does not make mandatory provision for the inclusion of scientists in the administrative council for the national parks, it is noted that one or more seats are sometimes available for private persons. Of the 26 members of the Administrative Council of the Port-Cros Park, one member is a representative of the National Centre for Scientific Research, and three are representatives of the National Council for the Protection of Nature. Furthermore, article 34 of the Decree of 14 December 1963 concerning Port-Cros establishes a scientific council along with the administrative council: "An order of the Minister for the Protection of Nature and of the Environment, issued on the recommendation of the administrative council, shall, within one year following the publication of this Decree, establish a scientific committee composed of persons selected for their competence and responsible for providing the establishment with technical advice and carrying out any studies entrusted to them". In the case of nature reserves, on the other hand, French law makes no express provision for the inclusion of scientists, but, in practice, most reserves do include them. The management committee of the Cerbère-Banyuls Marine Reserve includes the director of a scientific laboratory and the director of the National Centre for Ocean Development.

2. Protective measures in marine protected areas

The essential purpose of marine protected areas is to ensure that certain activities which are injurious to the marine environment are prohibited or strictly controlled. The various categories of protective measures are therefore a direct function of the purposes of the protected area. In reality, the texts on the

subject rarely bring out clearly the link between the aims of the reserve and the categories of restriction placed on the use of the protected area. They are incomplete and they often consider only one aspect of the problem. General prohibition provisions either in the outline text or in the Act establishing the protected area, or provisions for the regulation and control of certain activities, may be found. The two sometimes exist together within the same protected area.

(a) General prohibition

As a radical measure, prohibition may be aimed at one or at several types of activity. The Zembra protected area in Tunis, which is known as a biological monitoring area, may be assimilated to a specialized protected area, since the protection there amounts to the total prohibition of any fishing, either for livelihood or sports purposes (undersca hunting), at all times (article 2 of the constitutive decree). Additional measures are, however, under study. This single prohibition is standard in all fisheries reserves. In Syria, article 32 of the Legislative Decree of 25 August 1964 prohibits the dumping of chemical or oil wastes into public waters. In Greece, public access to three protected island areas constituted in 1937 and 1938 (Antimilos, Dias and Guioura) is entirely prohibited. In Italy, free access of the public to Miramare, which is deemed to be a scientific research area, is prohibited. Similarly, on the island of Montecristo, which is both a managed nature reserve and a fisheries reserve (for protecting the monk seal and encouraging the reproduction and growth of other marine species of economic importance), fishing for commercial or sports purposes is prohibited, as is bathing and public access (access is strictly reserved for wardens and for scientific studies and nature excursions). Passage and anchorage are also prohibited except in cases of force majeure. In the Gibraltar reserve, access of any person without authority from the Council of the Committee is prohibited and feeding of animals, dumping of refuse or engaging in trade is also forbidden.

In other countries, there are limitations as well as prohibitions. In protected areas in Israel, the regulatory powers are vested jointly in the Minister of Agriculture and the Minister of the Interior. According to the type of protected area, the Ministers may either prohibit all activities in, beneath or above the marine protected area or, with the consent of the Minister of Transport, prohibit or limit the entry of persons or vehicles, vessels or aircraft. In general, there is a systematic prohibition against the handling, moving or modification of any object or any living species in the protected area. In the Port-Cros park in France a complete prohibition has been placed on hunting, sheep or goat rearing, possession or concealment of a hunting weapon, underwater fishing, the use of dragnets, advertising, camping, military exercises, including range practice, except on the island of Bagaud, and industrial or commercial activities. Fishing is prohibited in the Corbère-Banyuls Marine Nature Reserve. It is also prohibited to destroy, pick, uproot, mutilate or remove any species of plant or marine animal (except for laboratory research). There is also to be found in this marine reserve one of the rare examples of protection measures which take account of outside pollution that might have an injurious effect on the reserve. Article 11 of the Decree of 26 February 1974 provides that: "The discharge or disposal in the sea, or the dumping in the public maritime domain, of urban or industrial waste water, or more generally of any refuse that might lead to pollution of the reserve, are prohibited".

(b) Limitation of certain activities

General legal texts frequently provide that "control may be exercised", which means that the authority responsible for the protected area may or may not limit activities, depending on the purposes of the protected area or on short-term needs.

In Algeria, article 11 of the Order of 16 July 1976 provides that the Director-General of the National Office shall, in particular, regulate the access, movement or halting of persons, vehicles or animals and shall arrange for the posting of public information notices. In Egypt, provision is made for areas in which sponge fishing is controlled. In Syria, the aforementioned legislative decree of 1964 provides that a special authorization must be obtained from the Minister of Agriculture for the establishment of factories and laboratories on the coast, with a view to avoiding water pollution by harmful wastes. In Turkey, public access to the coastal national parks is controlled and limited. Hotel building is prohibited but tourist activities are still authorized. Scientific research is authorized and organized, with laboratories and with reception facilities for the research workers. In the Mljet Park in Yugoslavia, control is exercised over forestry, hunting, fishing and certain agricultural activities. In the Stunian Nature Reserve, a lagoon is used for experimental studies of the effects of marine pollution. In the Gibraltar nature reserve, prior authorization is required for any access or movement of persons on foot, on horseback or in vehicles.

In Israel, articles 19 and 20 of the 1963 Act provide that industrial or commercial establishments may be set up in national parks or nature reserves only after special authorization. No other specific protective measures are provided for under the Act, since it leaves the details to the regulatory competence of the National Parks Authority.

In addition to the absolute prohibitions described above, certain activities are subject in the Port-Cros park in France to control by the director of the park: agriculture may be engaged in provided the Director's agreement is obtained in the case of new activities or of a change in existing activities; forestry may be engaged in only on the authority of the Director, based on a recommendation by the Administrative Council; fishing or the gathering of marine produce may be regulated. Construction work may be authorized only if it has been allowed in the park development programme. The professional activities of radio and television undertakings and of the film-making industry are subject to authorization by the Director of the park. Crafts may be pursued freely only if they are compatible with the park programme. Navigation and mooring may be regulated by the maritime authorities within whose competence they usually fall, on the recommendation of the Director of the Park. In the Cerbère-Banyuls marine reserve, the harbourmaster may limit the speed of outboard motor vessels or any other vessels within the perimeter of the reserve.

Many protective measures are tempered by derogations or relaxations either for the benefit of scientific research workers or in the interest of the inhabitants of the region. In the latter case, these may be considered as veritable compensation measures providing for the maintenance of privileges to reconcile the establishment of the protected area with certain local interests. These measures will therefore be studied together with other compensation measures.

3. Compensation measures

Restrictions on, or interference with private property or with the exercise of certain freedoms (freedom of movement, trade and industry) usually entail obligations on the part of the State. This is the price to be paid for preserving endangered or insecure spaces. Expropriation or the payment of compensation are the usual proceedings in protected areas on land. As far as marine protected areas are concerned, the problem is, a priori, less acute, since the protected area already belongs to the State. Certain users, such as fishermen and yachtsmen, may nevertheless find that their rights are restricted. Few special provisions on these matters have been found in the legislation studied. Three forms of compensation should nevertheless be distinguished: direct compensation, participation in the benefits of the protected area and the maintenance of certain privileges.

(a) Direct compensation

In the case of coastal areas or islands, expropriation is the traditional procedure applied when it is essential for the State to acquire the areas in question. Easement may produce the same result. Article 21 of the French Act concerning national parks (Act of 22 July 1960) provides that owners may ask for their land to be expropriated when the development and management of a national park reduce by more than half any kind of benefit they obtain from their property. Apart from the case of expropriation, compensation might be paid on account of certain easements. In this respect a general principle is laid down for the French national parks. Article 5 of the Act of 22 July 1960 provides that compensation may be payable on account of protection measures applied in the park: such payments are the responsibility of the public establishment in charge of the park (article 43 of the Decree of 14 December 1963 makes such provision in the case of Port-Cros). In the case of nature reserves (article 20 of the Act of 10 July 1976) and protected sites (article 8 of the Act of 12 May 1930) compensation is payable only if designation has the effect of changing the state or former use of the places concerned. As far as marine hunting or fishing reserves are concerned, no provision is made for the payment of any compensation.

Spain has provided for a system similar to that of France. Under the Act on natural areas of 2 May 1975 (article 14) the administration has to come to an agreement with the property owners or the holders of rights affected by the establishment of a protected area in order to establish indemnity payments or compensation for any injury caused. Failing such agreement, the act of designation will amount to an act of expropriation.

(b) Participation in the benefits of the protected area

The establishment of a protected area may lead to the creation of jobs which are reserved for the local population. The Spanish Act of 2 May 1975 even provides that compensation may take the form of a share in produce from the park. Such redistribution is uncertain, however, short of making the protected area a zone of remunerated spare-time activities.

(c) Compensation through the maintenance of certain privileges

Instead of paying compensation to the local population or compensation for ongoing activities, it may be more economical to provide for derogations from the prescribed prohibitions for the benefit of certain individual interests. Such derogations can only be made if they are compatible with the purposes of the protected area. Examples of derogations in the Mediterranean area are rare.

In Yugoslavia, local fishing is permitted in controlled marine reserves in which fishing is normally prohibited. In Israel, industrial or commercial establishments already existing in a park or reserve are upheld by law (article 19 of the Act of 7 August 1963). In France, the Decree of 14 December 1963 establishing the Port-Cros park authorizes the maintenance of existing agricultural activities in their present form as well as the maintenance of commercial activities pursued prior to the designation of the park. As far as the measures provided for in the Cerbère-Banyuls Marine Reserve are concerned, these are characterized by a controlled derogation from the general prohibition against fishing. Professional sea fishermen may continue their activities provided they do so from vessels of under 10 tons and under 50 h.p. The number of vessels benefiting from this derogation is limited to 33, their total tonnage and horsepower being limited to 150 gross tons and 600 h.p. respectively. These privileges are granted only on the issue of a separate authorization to each vessel; the catches made by the vessels have to be declared and may be verified.

An original form of compensation is provided for by the Spanish Act of 2 May 1975 on protected natural spaces: tax exemption and relief have to be allowed by law to the owners of land enclosed in a protected natural area.

4. Controls and sanctions

Few specific legal regulations for the application of sanctions or controls are to be found. The texts concerned mostly provide for penalties for the violation of protection regulations. What is most surprising is that there is no inspectorate in existence. In view of the absence of legal texts applicable to marine protected areas, local control is exercised by officials and agents of the administrations to which the areas concerned are attached.

(a) Organization of control

In Israel, a system for the inspection of parks and reserves is provided for by law. Members of national agencies are empowered to make inspections, and their activities are supplemented by those of regional inspectors. Control is exercised, however, by the administration responsible for the protected area, and has to be supplemented by a network of agents who maintain on-the-spot surveillance to ensure that the public respect the regulations. In France, the national park agents are recruited by the public establishment; they are assisted by agents from the Ministry of Agriculture. The only provision specifically applicable to marine parks is article 38 of the Act of 10 July 1976 on the protection of nature, under which: "Agents of national parks and nature reserves are empowered to verify any infringement, in the maritime area of such parks and reserves, of the regulations concerning the protection of that area. Such agents shall be commissioned and sworn in for this purpose by the Minister for Merchant Marine and Sea Fisheries".

(b) The applicable sanctions

The texts concerned are very reticent on this point, as this implies that there is recourse to customary law sanctions. The usual offences with regard to fishing, hunting and the use of forests will be found to occur in protected areas. In Tunisia, it is laid down that the sanctions applicable in the Zembra Reserve are those provided for by sea fishing legislation (decree of 26 July 1951). In Israel, a penalty of three months' imprisonment is provided for by law for any breach of the parks and reserves regulations, but fines may subsequently be applied for certain offences. In France, the national parks Act establishes that offences shall be verified by sworn agents: articles 35 to 45 of the decree of 31 October 1961 list all the special categories of offence connected with the protection of national parks.

(c) Conservation measures

In the case of an offence in a protected area, it may be important to provide for seizure of the equipment (such as a motor vehicle or vessel) by which the offence has been committed. Such seizure is provided for in France, but only as a secondary penalty pronounced by the judge; the judgement may order the restitution or replacement to the establishment of any kind of animal, plant or object fraudulently removed from a national park. It may call for the confiscation of any machine or instrument used by the offenders (article 42 of the Decree of 31 October 1961).

This brief comparative study of the legal situation in the various Mediterranean States makes it possible to confirm the initial observation that the situation varies greatly from State to State. It has been possible to observe, however, that despite the absence of special regulations for marine protected areas, there are marine parks in the Mediterranean area based on very diversified legal provisions (the laws on fishing, on national parks or nature conservancy or on the public domain). In each case, however, the texts concerned appear to be somewhat ill-adapted to the particular objective of the protection of the marine and coastal environment. As regards the limits of the protected area and the delimitation techniques, for example, the marine environment calls for the application of special laws and special techniques relating to the public maritime domain. It is, above all, at the level of the authorities responsible for establishing and managing such areas that the specific nature of the marine protected area is apparent. The organization of the competence of the administrative services is such that overlapping of competence frequently affects the marine and coastal area. In the absence of good co-ordination, the authorities in the protected area may have no more than theoretical powers if they are unable to exercise their authority directly over the maritime zone of the protected area. Lastly, the great variety of protection measures, together with control difficulties, confirm the need for general consideration to be given to the timeliness of providing specific regulations for marine protected areas.

III. ISSUES INVOLVED IN PREPARING LEGISLATION ON MARINE PROTECTED AREAS

World experience and experience in the Mediterranean area show that it is possible to protect a marine area on the basis of a special text independent of any general regulations or on the basis of various types of legislation such as that on sea fishing rights or on the public maritime domain, but the results obtained in such conditions are obviously poorer and more limited than those achieved by the application of general regulations for the protected areas.

A number of countries have applied basic texts formulated for protected areas on land to the marine environment. This solution, too, is not entirely satisfactory since it does not take account of specifically oceanic characteristics. In particular, it is liable to show unfortunate gaps as far as the delimitation of the area, the efficacy of the protection regulations and the determination of the competence of the responsible authorities are concerned. As emerged from the comparative law study, the answer to the question posed certainly depends largely on the legal and administrative background of individual countries. Nevertheless, a law adopted for areas on land alone will not always provide a satisfactory solution to the problems raised by the establishment of marine protected areas, while, on the contrary, specific legislation will certainly achieve the desired results.

There is a unanimous doctrine in favour of the adoption of special legal provisions for marine protected areas, and the most recent legislation is moving in this direction. This report is therefore angled on the single case of legislation recognizing the specific nature of marine protected areas. That does not mean, however, that there must necessarily be an exclusive law devoted to such institutions. General regulations common to protected areas on land and marine areas, but including special provisions for the latter, could also be devised. Such regulations could be drawn up from scratch, or by a revision of texts on protected areas on land where such texts exist. The problem of determining whether provisions appropriate to marine protected areas should be embodied in a separate law or included in joint land and sea legislation is purely a question of convenience, on which it is not for us to take a position.

It should also be stated that the object of this report is not to propose "model legislation" for Mediterranean coastal States. The legal systems of these States and the development of legislation on nature conservancy are too diversified for such a project to be helpful. The order in which the subject matter is considered corresponds to that which might be adopted in a legal text, but it is only one possibility.

A. THE DEFINITION OF MARINE PROTECTED AREAS

The definition of marine protected areas covers two separate questions. Firstly, there is the question of determining to what types of natural area the expression might apply. Once the general concept has thus been specified, the question of the categories of marine protected area to be covered has to be considered.

1. The general concept of a marine protected area

The general concept of a marine protected area may be given a narrow or a broad interpretation. In the former case it presupposes the presence of marine waters in the protected area. It is conceivable that no land surface will be included in the delimitation of the area. This will be so, for example, in the case of the protection

given to an off-shore wreck or an underwater archaeological site. Limitation of coastal marine areas to high water mark or low water mark is also conceivable. Such a solution, however, has serious disadvantages as far as the protection of the marine environment against "attack" from on land is concerned. Moreover, scientists have shown the interdependence and the richness of the marine and terrestrial biocoenoses at their meeting point. The coastal strip (ecotone) in which the natural interactions between the marine and terrestrial environments take place should, therefore, obviously be included in the marine area.

The concept of a coastal marine area restricted to the area covered by the sea may, however, be useful in a case in which a protected area of land is established up to but not including the public maritime domain. Efforts might, of course, be made to provide marine protection by extending the limits of the protected area into the sea through a mere revision of such limits, but such an operation might encounter legal obstacles that would be difficult to overcome. It is particularly difficult to imagine how an infra-State organization on land which had established a coastal protected area could extend it to the public maritime domain which is within the exclusive competence of the State. The solution then lies in the designation by the State of the contiguous maritime area. It is in response to this type of problem that United States legislation has established the category of "marine sanctuary" to be established preferably on coasts already protected by a park on land, as a maritime adjunct to the latter. The formulation of a text defining marine protected areas should therefore be flexible enough to encompass this possibility.

Is it possible for a protected coastal area of land covering no marine waters in the legal sense of the term to be included in a marine protected area? A positive reply would appear to be necessary if the protected area or its coastal zone and the contiguous strip of sea are considered as an ecological whole. From the legal standpoint, the application of regulations for the marine protected area might give rise to difficulties. Such regulations are of interest here only if they give the authorities responsible for the protected area powers of control extending over the marine area, or at least warranted by the latter's protection. There is then a danger of a conflict of competence with State administrations such as that responsible for the public maritime domain, or between the State and the organizations on land subordinate to it. It nevertheless does not appear prudent to dismiss a priori coastal protected areas directly subjected to a marine influence by virtue of their configuration, their flora or the fauna which inhabits or frequents them. Failing seaward extension of the limits, or the creation of a contiguous marine area, it may be useful to extend the concept of marine protected areas to cover protected coastal areas, as is done by the 1971 Ramsar Convention on Wetlands.

2. Categories of marine protected area

The categories of marine protected area are, like their counterparts on land, determined by the purposes assigned to them. These condition the possible uses of the area and the protection measures to be taken in it.

The comparative law study shows that reference to the purposes of protection on land reappears in the text on marine areas, whether in relation to maintaining ecosystems in their natural state, facilitating scientific observation or performing a recreational or educational role. On the latter point, a distinction could be observed between land and sea areas. While frequent visits to natural areas on land are generally admitted to be necessary for a balanced human existence in the

contemporary world, particularly for city dwellers, the same does not appear so obviously essential as far as the undersea area is concerned. To offer the public a view of the underwater world by whatever technical means is to satisfy an admittedly justified curiosity, but care should be taken not to transform the attraction into one of easy access. In other words, we consider that the recreational and educational ends in a marine protected area can be met by access to the land zones of this protected area, and by permission to pursue nautical sports and pastimes compatible with the conservation of the protected area, but that access to the underwater area is not indispensable, or should at least be strictly controlled.

In our examination of the comparative law of marine protected areas both in the Mediterranean region and in other regions, we deemed it possible to consider certain fishing reserves as true protected areas. That does not mean, however, that fishing reserves have to be included in the field of application of a law on marine protected areas. It is one thing to take note of de facto situations or of rights established by legislation and quite another thing to consider the necessary provisions for the establishment of protected areas. The latter should remain distinct from the fishing rights areas or restricted fishing areas established by fisheries' legislation. Care must also be taken to avoid overlapping of administrative competence. Regulations relating to fishing areas and fishing depths, as well as to the fishing methods used, concern the control of marketable species; on this account, they come under the authorities responsible for sea fishing. It would therefore be courting difficulty to refer to fishing reserves in a text devoted to protected areas whose application would be entrusted to the services responsible for the marine environment. On the other hand, the protection of a particular species or object unconnected with fishing should be included among the possible purposes of a specialized reserve.

These purposes may be set forth in texts specifically applicable to each area designated. In general regulations, it is advisable to make a comprehensive list. This should refer to the conservation or restoration of the environment with a view to maintaining a biotope or a site strictly in its natural condition, to facilitating scientific observation or experiment, to preserving animal or plant species, to preserving the archaeological cultural heritage or geographical or geological sites, to facilitating public recreation and education and, lastly, to promoting the reproduction and natural development of economically exploitable marine species.

The latter point calls for some comments inasmuch as it excludes intensive aquiculture, which certain authors consider to be one of the legitimate purposes of marine protected areas. Although it may be considered that aquiculture requires water of a quality identical to that which it is endeavoured to maintain in protected marine areas, it does not appear logical to infer therefrom that aquiculture is compatible with the protection of the natural marine environment. Leaving aside the installations, buildings, tanks or piping which such undertakings require, it is difficult to imagine that they will operate without any measures being taken against possible predators, without chemicals or feedstuffs being used and without any waste discharge. Some forms of aquiculture may no doubt be maintained in zones of transition, in the same way as agricultural activities have been maintained in national parks, but these are exceptional. In principle, intensive aquiculture is the antithesis of nature conservancy. If aquiculture itself requires protection measures these should be adopted in a context other than that of legislation on marine protected areas. . . .

In positive law, the categories of protected area are known by very varied names: national park, biological trust area, sanctuary, etc. Within this apparent diversity, the concepts already in use in relation to protected areas on land are again to be found. In this connexion, distinctions are made between the complete, or strict, reserve, which is closed to any human activity or presence; the nature reserve, whether managed or not, which may be the subject of scientific observation or experiment, in which measures with a view to restoring a habitat or a species are legitimate and which will possibly be open to the public; and the national park, which is distinguished from the reserve by the fact that it is obliged to give access to the public. In view of what has been stated concerning the recreational purpose of marine areas and the absence of human establishments similar to those in nature parks on land, the latter category should not appear here unless considered useful in the case of a coastal park. It should also be pointed out that a park, and particularly a marine reserve, may serve an archaeological purpose. Lastly, the strictly marine category of fishing reserve should be added. Each of these categories may operate on its own or together with others. The latter possibility covers the case of an area adjacent to another or an area confined within the limits of another. Such a situation calls for harmonization of the entire area. This will be the responsibility of one and the same administrative authority. Failing this, in the case of adjacent areas, it is essential to provide for a joint structure to ensure a concerted administration of such areas.

In addition, since an area has a main purpose together with secondary purposes, or together with the maintenance of compatible uses and activities, provision should be made for its division into zones which facilitate the harmonization of the various intended uses. This rule will necessarily apply to national parks which may be assumed to combine a number of purposes. Moreover, it will be laid down as a principle that the secondary uses provided for or authorized by the administrative authority of the area will be lawful only in so far as they are effectively compatible with the main purpose or purposes of the area. More effect control by the competent courts over the ancillary uses will thus be facilitated.

B. DELIMITATION OF MARINE PROTECTED AREAS

The delimitation of marine protected areas determines the physical nature of a natural environment which may include water masses below the surface whose legal status is not always clearly established. The problem of delimiting what lies below the surface never arises on land because access to the subsoil is obtained through the soil. Understandably, the situation differs radically where the sea is concerned. Similarly it is more difficult than on land to guarantee the effectiveness of boundaries by publicizing them.

1. Delimitation rules

Since a marine protected area is delimited on the horizontal and the vertical plane, each must be considered in turn. On the horizontal plane, delimitation must be envisaged to the seaward and the landward. As far as the former is concerned, each State may extend the limits of a protected area to the limits of its jurisdiction. If a 200-mile economic jurisdictional zone is established, each State should be able to establish a protected area therein provided that it does not interfere with the free passage of shipping. Comparative law shows that some legislations have limited the possible site for designating a protected area to the territorial sea. A priori it is difficult to see the use of such a restriction. It seems preferable for fundamental law to remain silent on that point, thus granting each State the latitude it will have under international law.

On the other hand there is a point which general legislation should settle, namely, that of the references to be used in effecting the delimitation. International experience offers several solutions on the subject. The first technique involves delimiting a perimeter on the basis of landmarks, alignments or seamarks situated on the coast that can be joined by an imaginary line. This procedure can be used only for a deeply incised bay or for the area landward of two constructions forming with the coast itself three of the sides of a quadrilateral. In other words the procedure is only useful for very small areas such as the Miramare Marine Park in Italy which extends between the coast and two breakwaters. The second technique establishes the width of a strip of sea measured along the normal to the coast in the horizontal plane. Thus the Port-Cros National Park in France extends for 600 metres all around the island of that name. The third possibility circumscribes the marine zone on the basis of depth, i.e. according to an isobath. This is the procedure used for the Monte Cristo Reserve in Italy, the marine part of which comprises a strip of sea to a depth of 150 metres. Lastly, some areas, such as for example the Great Barrier Reef Marine Park in Australia, are bounded by imaginary lines joining points defined by co-ordinates of geographical latitude and longitude. The legal writer is not responsible for the adoption of one or several of these methods, the use of which may depend on the geographical conditions of the area. Suffice it here to draw attention to the problem and stress the importance of defining marine areas in the way that is most easily understandable to navigators.

To the landward, the only problem is to decide whether the high water mark or the low water mark will be taken as the boundary of the area or whether it will be established on a land zone. In the case of marine protected areas which include adjacent land forming an ecological entity with the sea, it is evident that the law should not in principle opt for the first solution. However, a marine area which supplements a protected land and coastal area might be of interest, in which case the possibility of delimitation at the boundary of the public maritime domain to form such a contiguous zone would be acceptable. Delimitation on land requires no other comment than that it should be based on geographical elements that are not liable to rapid change.

On the vertical plane, it should be made clear that delimitation of a stretch of water involves designation of the water beneath it, the sea bed and the subsoil as well as the air above it. In some legislations the instrument of designation indicates the altitude as well as the depth of the marine subsoil to which the protected area extends. Thus the administrative competence of the authorities of the area can be more accurately defined. Conversely, there is a danger, if such limitations are established in too great detail, that it may be possible to exploit the subsoil financially even though such exploitation may be incompatible with the conservation of the area, or that the boundaries may give rise to disputes between the administrations of the public maritime domain and the area.

2. Publicizing of the delimitation

Whatever the methods adopted for delimitation, they will be effective only if sufficiently publicized. The problem is relatively simple on land where easy means are available for drawing the public's attention to the boundaries of an area.

As regards the sea, it is possible first to publish the boundaries of the area in nautical instructions and navigation charts and to provide information in neighbouring marinas or to commercial fishing organizations. The law will also provide for signs where possible using beacons or buoys. In this context international standardization could be envisaged.

C. DESIGNATION AND REDESIGNATION OF MARINE PROTECTED AREAS

Given that marine protected areas, in principle comprise maritime spaces, their designation and redesignation are normally the province of the authorities of the State to which the public maritime domain belongs. However, if the suggestion already made concerning marine and coastal protected areas is accepted, provision must be made for their establishment by local bodies.

1. Designation and redesignation of marine protected areas by the State

First, with regard to designation, the law must indicate the procedure to be followed and the nature of the instrument of designation. The procedure followed here may be virtually the same as that for areas on land. Its regulation is largely dependent on national legal institutions. Therefore consideration will be confined to a few essential elements of the procedure: the initiative, consultations and decisions.

The initiative is normally taken by the legally appointed authorities of the State, the Ministers of the Environment, of Agriculture or the Navy, or a specialized national agency. It should include a detailed project, the elements of which will be established by the law or its rules for implementation. The following may be cited, inter alia, as an indication:

Justification of the project giving the aims sought and the reason for the designation;

Description of the site including its natural aspects, legal status of the land and spaces, inventory of the economic concerns with headquarters in the area and of the persons living there;

Determination of the proposed area, zoning plan with attached map, protection measures envisaged, compensation to be granted to the economic and social interests affected, work envisaged and estimated costs;

Foreseeable impact of designation on the natural environment, economic concerns and social situations;

Incorporation of the proposed area in coastal development plans.

However, the main problem concerns the importance to be attached to the expression of the various interests involved when a protected area is established. It has been possible to create some protected areas without any advance

consultation, but such experiences have given rise to much criticism. Therefore legislations generally make provision for consultative procedures even when the classification concerns land of which the public has acquired exclusive tenure. The organization of consultations obviously varies according to the administrative institutions of the countries concerned and the importance of the planned conservation measures. There are however three broad types of consultations, those involving national bodies, local authorities and the public.

At the national level requests can first be made for the views of Ministries affected by the project, for example, the Ministry of Defence, since overflight at low altitudes will be forbidden, or the Ministry of the Navy in the case of coastal parks. Secondly, the subject can be raised with advisory councils for the environment or nature conservancy where they exist.

At the local level, consultations will involve the central administrative services concerned, bodies representing organized interests, such as departmental hunting federations, chambers of agriculture or commerce and industry, commercial fishing or deep sea diving organizations and finally the local authorities, particularly at the municipal level. Through these consultations, in which either officials or qualified persons who have direct contact with the problems of the area or the elected representatives of the people can express their views, the reactions of the interests directly affected by the project will become clear. It is possible to go further and allow everyone, including the inhabitants, owners and societies for the conservation of nature to express their views in a public enquiry. The public enquiry procedure is rather over formal. For such a consultation to be meaningful, the procedure must comprise an entire set of rules concerning the publicizing of the enquiry, the appointment of an impartial investigator, and the means whereby the public can express its views and obtain information. Recourse to a public enquiry is far less frequent than consultation of administrative or representative bodies. Generally speaking, legislations avoid a public enquiry when the public has tenure of the classified land whether State property or simple rental is involved. It is only if the designation involves private land whose owners are to retain tenure, but in a reduced form, that a public enquiry is envisaged. Efforts are nevertheless made to economize by seeking the agreement of the owners.

Whether views are expressed by administrations, local bodies, organized interests or private individuals, they are always advisory in scope. The only exceptions to this rule are the views of certain ministers when they are directly affected by the designation: national defence and air transport in the case of intervention in overflight, agriculture in the case of areas including State forests administered by that ministry, shipping for coastal zones, etc. Apart from these very limited cases, the authority that is competent to decide on designation is not therefore legally bound by the views expressed, so that in fact the effect of the consultations depends on the attitude of the central authority. In the interests of the protected areas themselves, the central authority should really work closely with the bodies consulted. Inter alia, it can amend initial projects in the light of observations made at the local level. Certain legislations provide for precisely this contingency.

Consultations should not be allowed to hamper the progress of the procedure for designating an area with time-wasting delays in the expression of views. Such abuse can be prevented by providing for reasonable deadlines for the expression of views following which the person consulted will be considered to have approved the project. A very similar solution would be to state that the view of the body consulted will be disregarded if not given before expiration of the stipulated time limit. If deadlines are not strictly observed, the designation procedure, particularly for a large area, can be prolonged indefinitely since local interests are frequently hesitant to make the real or imagined sacrifices involved in setting up a park and political opposition parties all too frequently tend to use the opportunity offered them to exploit local discontent.

The final decision is generally issued by government decree or more rarely ministerial order. Comparative law provides examples of areas established by an act or decree-law, but such a procedure is not justified when a legislator drafts the statute of an area. In such a case the creation of an area would involve the implementation of a legislative text by an administrative instrument.

Redesignation of a protected area may be total or partial. The former causes political difficulties because it is more spectacular and has a greater impact on public opinion: in addition the economic benefits are not always apparent. Partial redesignation is more risky and may lead to a gradual undermining of protection efforts through the establishment of installations which, although localized, have a far wider geographical effect on the balance of nature. Partial redesignation must therefore be treated with the same legal exactitude as total redesignation. The law may not provide for redesignation. It may be deduced, by application of the rule of formal symmetry, that the legislator implicitly understood redesignation to be subject to the same procedure and administrative competence as designation, but points which go without saying are even clearer when actually stated and a clause can be included in the text of the law making express provision for the procedures, consultations and competences provided for concerning designation to be respected. In this context, it will be observed that the dilatory nature of the procedure noted as an inconvenience in the case of designation becomes an advantage where redesignation is concerned. It gives the associations concerned the time to mobilize public opinion and bring pressure to bear to maintain the integrity of the threatened area.

The perpetuation of protected areas could be made more secure without altering the investigational procedure for the case or the prior consultations, if the legislator were to give the power to redesignate an area to a higher ranking authority than for designation; the legislature in the case of a governmental act and the Government in the case of a ministerial act.

Lastly, preventive measures should be taken against misinterpretations of texts or partial redesignation under the guise of improvement. Obviously it is for the competent jurisdiction to annul illegal administrative authorizations and undoubtedly the best guarantee of respect for the law is supervision by a magistrate. However, it might perhaps be useful to specify in drafting the law that any modification of the boundaries of a protected area involving the exclusion of any surface or space therefrom can be decided only by a formal act of redesignation. Similarly, it could be specified that the amendment of protection measures or of procedures for the issue of administrative authorizations would not have the legal effect of substantially altering the legal protection régime to which the area is subject.

2. Designation and redesignation of marine protected areas on local initiative

The reference to local initiative is designed to cover the creation of a protected coastal area by a territorial authority or by a private owner of the land. Coastal protected areas could be designated on the basis of local legislation without any State intervention. It is also conceivable that the State could propose a legal framework to be implemented by the territorial authorities and that it could adopt a policy to encourage such authorities to participate. In these circumstances, the problems of designation and redesignation take on a contractual aspect. The State gives a seal of approval to the area created, partially guarantees its financing and provides its officers with technical assistance, in exchange for which the territorial authority designates the area in accordance with the procedure provided for and guarantees respect for the decreed protection regulations. The State controls the area. It withdraws its designation and the assistance provided if the protection regulations applicable are not implemented. Among the forms State assistance might take, the exercise of regulatory authority over the contiguous public maritime domain could be proposed to enhance protection of a specific marine and coastal protected area.

The situation of a protected area created on the initiative of a private owner is very similar. The State establishes the conditions for its approval and provides assistance in exchange for respect of the protection measures by the owner. The reserve will however remain subject to the vagaries of inheritances and expropriations. That is why it is preferable for the owner to be a legal entity, association or foundation. As for expropriation, there is a solution whereby a foundation may declare some of its property inalienable. Then expropriation can be decided only by law. Furthermore, the designation of protected areas should be brought into line with land or coastal development plans. Designation by the State may be considered equivalent to amendment of a plan when the plan envisaged another use for the designated area. Greater prudence should be exercised with regard to designation carried out on local initiative. Advance amendment of the plan could be requested under the procedure provided for that purpose.

D. ADMINISTRATION AND MANAGEMENT OF MARINE PROTECTED AREAS

1. The choice between a separate administration or joint administration with other protected areas

A study of comparative law shows that although some States have set up special administrations for marine protected areas the opposite solution is widespread. In fact, it is a question of expediency mainly dependent upon the administrative customs of each country. In this report, it is only possible to refer to the problem noting that, while in practice joint administrations exist where the basic texts are also common to the land and the sea, logically nothing implies such a link. A text concerning the sea could perfectly well entrust management of marine areas to a joint service.

Similarly, the choice between centralization and decentralization has no bearing on consideration of this question. If decentralization is chosen, the competent administrative organization responsible for supervision of decentralized institutions must in any case be defined.

It can be argued that a joint administration is efficient and particularly that it is less expensive. On the other hand, the problems facing the managers of marine areas call for knowledge or give rise to concerns that differ widely from those encountered in protected areas on land. This may lead to difficulties within a joint administration.

2. The choice between centralization and decentralization

The administration of a protected area is decentralized when the services managing it form an autonomous legal entity capable of instituting legal proceedings, inheriting having its own budget, etc. When on the other hand the area is merely an administrative unit of a larger whole and the authorities responsible for it are directly attached to a ministerial hierarchy then the administration is centralized.

Obviously centralization could not be applied to all protected areas in the same country and decentralization is the only appropriate course for protected areas established on local initiative. The parameters of the problem differ according to whether the State or another entity is responsible for establishment of the area.

(a) Areas established by the State

Centralization offers the advantage of a concentration of administrative and financial means. It facilitates the implementation of national policy on protected areas and a priori appears to be the most economic global method of management. Manpower materials and credit can be transferred from one area to another as needed. A central authority can always impose its views, supervise the activities of the officials responsible for the areas and modify them. Furthermore, centralization is better suited to the training of a body of specialized officials outside the conventional administrations, in that it offers wide career prospects in nature conservancy. In a word, it is the organizational method which, in principle, is most favourable to administrative continuity. The drawbacks of centralization become apparent when efforts are made to involve local interests in the smooth running of an area. It is not, therefore, surprising to note that States have opted for centralization of the management of nature reserves. They are, in fact, relatively small areas largely unaffected by social and economic interests and they cause fewer human problems. Centralization can be implemented by the services directly under the authority of the minister or by a national agency with more or less extensive autonomy.

As regards decentralization, the internal organization of the institutions managing protected areas is characterized in principle by the sharing of administrative authority between a director and a deliberative assembly. This assembly, known as an administrative board, approves the budget and management plans for the protected area and takes decisions on matters concerning it. The director, who is always appointed by the central authority, prepares and implements the decisions of the administrative board. When the policing powers normally attributed to the local authorities are transferred to the protected area it is the director who becomes responsible for them.

The membership and method of recruitment of the administrative board obviously indicate the extent of decentralization. Specific solutions vary considerably not only from one country to another but even within the same country. In fact such questions should not receive inflexible answers considered valid for the entire national territory. The law can classify the categories of interests which may be represented on an administrative board, as well as the methods for appointing members or establishing the duration of their functions, but the constituting act of each protected area should be left to define the balance between the various interests in the light of local data. However, the options available are not very broad. They include: local authorities, hunting organizations, commercial fishing and diving associations, administrations concerned with the protected area such as the agricultural administration or the forestry commission, scientific institutions, particularly universities, the inhabitants of the protected area, its users, and nature conservancy organizations. Generally speaking, it will prove useful to include scientists among the administrators in the management of the protected area. This will make it possible to avoid conflicts arising between the two camps in so far as they will bear equal responsibility for the decisions taken.

The recruitment procedures may involve simple nomination by the central authority or nominations based on the proposals of a legally designated body or membership may result from the exercise of other functions, a seat on the council being attributed ex officio. Legislations generally combine these techniques. It should be added that the balance between the interests involved must take into account the possibility that some members may belong to two different groups. Thus a mayor who represents the local authority could also be the president of the departmental hunting federation etc.

The legal status of the body managing the protected area does not give it absolute autonomy. The director is not subject to the hierarchical authority of the minister, but his acts and those of the administrative board remain subject to supervision. It will be borne in mind that this differs from hierarchical authority in that the scope of the powers devolving upon the "supervisor" is strictly limited by legislation. The supervision mainly covers approval of the budget and management plans, the rules of procedure of the protected area and contracts such as the purchase or sale of property. The central administration managing protected areas is responsible for supervision and the ministry of finance for financial control. It should also be noted that the executive staff and the director are members of the large central administrations. They are frequently officials of the forestry commission even in countries which, like France, have a ministry of the environment.

Decentralization makes it possible to entrust the management of areas set up by the State to local administrative bodies or even to private individuals. This solution is obviously of interest when the State sets up a marine area that supplements a protected area on land which is dependent on a territorial authority.

The practical scope of the distinction between centralized and decentralized management should not be overestimated. The limitations of the latter have just been discussed. The former may have elements which liken it to the decentralized model. When local interests are not involved in management decisions concerning the protected area, they can be represented on the advisory commissions. Such a provision is made in the Spanish law governing "directorates" of which "the representatives of local corporations and/or those whose rights are affected by the establishment of the nature reserve" will be members, "and will be elected by members of professional organizations and within those organizations". Obviously such commissions are limited to expressing views which they have no legal way of enforcing.

Areas established on local initiative are managed by their promoters or at least by the institutions they have set up. They will therefore fall of necessity into the decentralized category. The specific nature of the administrative problems they create is first and foremost dependent on the contractual nature of their ties with the supervisory authority. The State will in fact provide a number of advantages for the managers of such areas. The State can, moreover, grant assistance in the form of staff or material and ensure technical assistance. At the very least it guarantees legal status and use of the appropriate label of nature park or nature reserve. However, the State supervises the way in which the manager fulfils his undertakings with regard to nature conservancy and the management of the area. Supervision in this respect will focus less on the validity of a particular expenditure or the legality of a given administrative act and more on respect for the general regulations and purposes assigned to the area, the penalty being withdrawal of the approval initially given.

In the case of protected areas established on the initiative of local authorities, the question of the legal formulation of the management body arises. Legislations have avoided imposing a standardized statute. Some merely confirm that the protected area will be managed by the public body which set it up, others lay down certain principles to be implemented in various institutional frameworks.

The protected area may be administered by a body other than the authorities which established it; the choice between the various types of legal entities offered by positive law remains open. The protected area may be entrusted to a public institution. Its management may also be entrusted to an association or foundation governed by private law. When the law obliges local authorities to guarantee the financing of the public institutions they have set up, the said institutions provide better guarantees for the continuity of financing than those of a legal entity under private law. The management of a protected area by a private individual or a legal or individual entity on land belonging to it and designated on its initiative in principle does not present a problem.

3. Powers of the management body

Whether it is centralized or decentralized, the management body will enjoy a number of powers, several of which are enjoyed normally by other authorities. Transfers of competence must be envisaged, particularly with regard to regulations governing pedestrian traffic and motorized traffic on land and water, policing of hunting and fishing or permits for utilization of the land or water, such as permits for building, hydraulic engineering works and drilling.

The principle of administrative unity must govern the powers of the management body of the area. Administrative unity must be understood to mean that the authority established in a given area is competent to solve all the legal or administrative questions arising therein concerning the running of the area. The principle is simple. It treats the protected areas as islands that are not subject to customary law or the administrative authorities normally competent in certain fields such as development, agriculture or forest management.

In practice, situations differ widely. The problem of the powers to be granted to the authority responsible for an area differs according to the type of area and depends on three elements: the use of the area for the purposes of strict protection or recreation, public or private ownership of land, and the more or less restrictive nature of the protection measures used.

A priori the most simple administration will be that of a strict reserve. On the other hand a park established on private property and open to the public for more recreational purposes will give rise to a maximum of administrative difficulties, for example, with regard to urban planning and land development. The rules for protection applicable to the area must also be considered. They may include very explicit prohibitions or regulations. The administration's task will then be facilitated. Since its jurisdictions will be interrelated in such a case it will be legally obliged to take a certain decision. Whether the authority is unified or shared is then less important, which is not the case when the legislation lays down objectives and leaves the administrative authority a wide margin of judgement. Administrative unity is all the more useful when the power of decision is discretionary. Fragmentation of responsibilities among various administrative bodies and overlapping of competences may compromise or hamper the conservation mission established for the area. Lack of administrative unity inevitably leads to less successful protection of nature in that the various authorities involved in management of the area - local authorities, forestry commissions, planning agencies - will be, as experience has shown, more sensitive to immediate economic arguments than to the more remote interests of the balance of nature.

4. The financing of marine protected areas

A standard statute for marine protected areas should also define the financial means of such institutions. The various practices found in comparative law are listed below. They include direct financing by the State, subsidies and cost-sharing when a local body is responsible for management and, finally, the revenue from the services provided, entry fees paid by visitors or fines levied for infractions of the regulations of the area.

In order to facilitate the financing of protected areas, the State could waive the rule of budgetary universality and establish a tax, revenue from which would be directly allocated to expenditure on the area. Such a tax could be based on use of the seashore for building housing, industrial and commercial establishments or port facilities. Under a joint law for marine areas and areas on land, the establishment of the tax would be extended to any building in a sensitive environment. However, it should be noted that the establishment of parks or reserves is a priori less costly in the marine environment than on land. Compensation is lower in that the public maritime domain is involved and the cost of necessary development is less. Lastly, it will be noted that the establishment of an entrance fee with a payment voucher (ticket) has the advantage of facilitating supervision and limiting the number of visitors admitted to an area at one time. If marine parks and reserves

were to have the same success with the public as certain parks on land, such a measure could prove very useful for protecting the area against the damage incurred as a result of excessive tourism.

5. Legal regulations for the protection of marine protected areas

The legal regulations for protection applicable to marine protected areas are determined by the legislative statute of the area. In this respect, the legislator should not fix all the regulations to be observed in a rigid and uniform manner. Such a solution is disadvantageous in that it cannot be adapted to the special circumstances of each area. Conversely it may be dangerous to give the administrative body of the area full responsibility for taking the protective measures it deems appropriate. Between these two extremes, the best formula is for the law on the one hand to lay down a minimum of general and compulsory provisions and on the other to provide for other measures which the administration can implement through regulations. In any case the content of the protection turns on three points: protection from attacks against natural or archeological elements, regulation of human activities and establishment of zones within the area.

Comparative law offers a variety of measures which can be listed as the prohibition of killing, injuring, capturing, collecting, damaging, frightening or disturbing any animal, plant or mineral formation and any archeological object, including the introduction of extraneous species. It is generally stipulated that protective measures also cover animal or plant remains. In drafting a law, it is preferable to begin by enunciating the principle of intangibility of the life forms and objects of the area and then giving a simple indicative list of the acts prohibited by virtue of that principle. The text could, for example, use the formula "it is forbidden, inter alia, to ...". A restrictive list or a list which appears as such would in fact have the disadvantage of encouraging misinterpretations which might authorize a contrario what is not actually referred to by the law.

Legislations which devote special provisions to the marine environment also deal with the protection of sea water. Reference can be made in this context to the ban on removing sea water, pouring any liquid into it on the surface or by drainage from the shore, discharging or causing the direct or indirect discharge of any toxic or polluting substance harmful to animal or plant life. In order to take into account the extreme susceptibility of the marine environment to its surroundings, provision may be made for protective measures whose effects extend beyond the boundaries of the area. Thus any act which might pollute the waters in the area, even if committed outside the boundaries of the area, will be prohibited. Similarly any act which might alter the discharge of watercourses into the waters of the area or the volume of ponds and lakes which communicate with the marine area will be prohibited. There is no danger that geographical zones that are too remote from the area will be subjected to the authorities implementing the measures, because the prohibition only applies to acts which might have an impact on the waters of the area.

The regulation of human activities within the boundaries of a marine protected area will pose different problems depending on whether the part of the area involved is the land or the sea.

An arsenal of measures for protected areas on land already exists. They are aimed principally at ensuring that the body administering the area has authority over the land. This presupposes either acquisition by the public through purchase,

donation or expropriation, or the exercise of an exclusive right to tenure through voluntary or forced rental, or the establishment of easements on private properties. It will be noted that since the extent of private properties is in principle relatively small in a marine protected area it should be easier to purchase the land by agreement or make a compulsory purchase without becoming involved in excessive commitment of funds. Furthermore, if a marine area has residents, provision must be made for their compensation and derogations in their favour.

The easements on private property will include prohibition or submission to advance authorization for building, industrial, agricultural or commercial activity as well as restrictions on rights of access and various conveniences such as collection of rubbish and provision of water, gas or electricity.

Permits granted for this purpose may be subject to an initial reporting procedure on the environmental impact. Hotel and tourist activities must be subject to concessions issued by the administrative authority of the area. At sea, the public authorities are normally in control of the area; they cannot however disregard economic or recreational interests based in the public maritime domain. The law must, first and foremost, make provision for the regulation of nautical sports and leisure activities, while the implementational text should stipulate the areas and conditions for water-skiing, surfing, bathing and diving, if access to the area is not entirely forbidden. Secondly, it may be decided to ban industrial, commercial or aquacultural activities generally and regulate commercial or sport fishing.

There remains the problem of navigation and frequentation of marine areas by pleasure boats. Freedom of innocent passage of shipping does not prevent access to certain areas or certain zones therein being prohibited or shipping being restricted to designated channels. Anchorage must be prohibited in the zones where it might cause damage. The law can provide an extensive definition of a ship in order to avoid any tendentious interpretation of its text.

Experience shows that discerning measures conducive to respect for protection measures are effective. It is safer to close a cove off with a cable or a chain and provide pleasure craft with moorings than merely to ban anchorage. The law could therefore request administrative authorities responsible for the management of marine areas to provide material encouragement to enhance respect for the regulations.

(a) Establishment of a zoning plan

A zoning plan defines the field of application and adaptation of the protection measures of an area, with a view to reconciling the various uses of the area. It is mainly a management device which must be flexible and depend on the competence of the administrative authorities of the area. The law will only make a zoning plan compulsory for multi-purpose areas. The law, constituting act or implementational regulation must stipulate that the zoning plan is established by the management body of the area and that it is submitted for approval to the hierarchical or supervisory authority. It must be reviewed at regular intervals determined by the statutes of the area, while allowing the authority managing the area to make any urgent amendments required for protection of the natural environment. The zones of marine areas may in fact be changed or their position be altered more easily than those in a park on land. The rotation of certain zones, particularly those open to the public, can thus be considered an element of environmental protection. Finally, the zoning plan can be incorporated in a larger document, the management plan, to which reference will be made subsequently.

The law should not determine the categories of zones too rigidly. However, there are not many possibilities. They can be grouped in terms of the strictness of the degree of protection. In the top category there will be zones that are strictly reserved, others that are reserved but open to scientific observations or supervised visits, and zones for restoration of the marine environment. The latter is a zone provisionally closed to public access or scientific observation for the natural restoration of the populations and habitats damaged by previous human presence.

Among the less protected zones, reference can be made to those which are open to various recreational activities and within which it will undoubtedly be necessary ultimately to distinguish stretches of water open to motor boats and those reserved for swimmers or divers. In addition there are experimental zones in which scientific experiments or practical work can be carried out temporarily disturbing the marine environment.

The less protected zones can be made more effective by coastal development plans which should for example prevent the installation of industries near a marine protected area.

Obviously the proposed classification covers the English concepts of core and buffer zones. Without wishing to enter into the subtleties of translation, it would seem that the two French expressions frequently used as the equivalent of the word buffer should be avoided. The first involves the distinction between "park" and "pre-park". This suggests in fact the idea of a separate administration for the "pre-park" which does not come under the jurisdiction of the park authority, as is the case in French national parks. This solution which has already been criticized in the case of French parks on land would be even more difficult to apply to the marine environment. Secondly, the expression peripheral zones should be avoided. This implies that the "buffer" zone surrounds the strictly protected area, whereas it is by no means evident that such a belt is needed for the protection of marine areas. It may be preferable to focus the less protected zones on a specific point of interest which is better adapted to their establishment or forms a continuum with the nearest tourist resort. That is why we suggest using the expression "transition zones" which describes the purpose of these spaces without any other connotations.

(b) Management plans for marine protected areas

Management plans for marine protected areas are documents containing guidelines for the area and the means of implementing them. Such documents, which should be provided for in principle in the law, could include:

Zoning plan with the corresponding regulations,

Programme of marine environment control including:

monitoring of the natural elements of the area,

data collection on a region or the entire Mediterranean, particularly within the framework of the Barcelona Convention,

Scientific research programme,

Area maintenance programme,

Programme for reception of the public, including an indication of informational or "interpretational" activities and tourist and hotel facilities,

Plan of the economic or social situations and activities of the area, .

Plan of the administrative, material and financial means used.

This document is drawn up by the body responsible for administration of the area with the approval or supervision of the hierarchical or supervisory authority. It is reviewed at intervals to be determined. Its review may be anticipated to allow for the adoption of urgent conservation measures.

6. Derogations and compensations envisaged for social and economic interests

Various categories of persons may have property or interests inside the boundaries of a marine protected area. To refer to only the main categories, there are ground landlords, residents, commercial fishermen and local tradesmen. Depending on the social and legal situation prevailing in each country and area, local interests may be eliminated or subject to numerous restrictions. Elimination which is obviously the best formula for nature conservation calls for compensation if it is not to constitute an unacceptable theft. The compensation will take the form of an agreed purchase, an expropriation or rental of private property. It may also involve the purchase of administrative concessions. Lastly, reference should be made to the elimination of administrative authority which may be accompanied by a cash compensation or compensation in material benefits. However, although the elimination of private interests in a protected area has the advantage of simplifying the problem, it is not always either possible or even desirable. Provision must therefore be made for reconciling conservation measures with the maintenance of private interests. That reconciliation will include derogations to protection measures, job privileges and profit-sharing of the revenues of the area.

Derogations from protection measures cover first and foremost the daily needs of residents. For example, provision could be made for access by boat to their property, or anchoring or beaching their boats, careening, painting and carrying out the maintenance work on them in reserved sites, or access by vehicle overland. In a similar vein, residents may have the right to pick fruit or to fish for family consumption but not for sale. Furthermore limited commercial fishing rights may be allowed to remain. Two types of limitations are possible. If gradual extinction of all activity is required, fishing privileges could be extended for life, expiring upon the death of the persons with such rights. If it is felt that controlled fishing for an indefinite period is compatible with protection of the area, quotas can be fixed for the number of fishing boats, their individual and collective tonnage and horsepower. The administration then issues licences which are transferable inter vivos or through inheritance. This solution is merely one specific application of an administrative institution already used to control the number of taxis or to licence sales of alcoholic beverages in each commune.

The compensations offered to private interests could include priority for jobs created by the area whether for the recruitment of public service officers for conservancy and administration work or posts offered by the tourist facilities and hotels of a protected area, but it is evident that this solution is not necessarily very attractive. It may be that the competence or capital required

to take on the responsibility of a hotel concession is not available locally and the concession will be granted to outsiders. The residents will then witness the establishment of sources of substantial revenues in which they have no share and in which they will be offered only subordinate employment. Such a situation may well give rise to bitterness. That is why it seems preferable to add profit-sharing in the revenue of the protected area to job priorities.

Hotel and tourist concessions may well be granted to a semi-public company in which persons whose rights have been infringed as a result of the classification of the protected area would be offered shares in proportion to the damage they have suffered. A simpler variation would be to pay them a percentage of the protected area's annual receipts.

7. Scientific missions in marine protected areas

It was proposed earlier that scientists should be closely associated with the administration of marine protected areas. It was implied that they would represent the nature conservancy interests within management bodies and that they would be useful in counterbalancing economic interests, but this does not mean that all allegedly scientific interventions in the protected area should be approved without administrative supervision. Such interventions can represent a danger for the conservation of the natural environment which the administrative authority must be able to assess. Moreover care should be taken to ensure that science is not used as a cover for commercial intentions, particularly the profitable gathering of specimens for sale. It would therefore be useful for any scientific mission to be subject to administrative authorization. Such authorization can be issued ad hoc or under a programme in the area's management plan.

In any case the leader of the mission should be designated by name and the purpose of the mission, when it is to be carried out and the places involved, the personnel who will participate in it, the techniques or materials to be used, the samples or experimental material which might be taken or used, and generally speaking any operation which might harm the protected environment directly or indirectly, should be indicated.

E. PENAL PROVISIONS APPLICABLE TO MARINE PROTECTED AREAS

The penal provisions applicable to marine protected areas are very largely determined by the national penal law of each country concerned. The first problem concerns the investigation of offences. There must be a sufficient number of officers empowered under national law to investigate offences legally to ensure supervision of the area. Such officers may belong to the general police force, but the guards or other area staff should also be given the necessary jurisdiction. Furthermore, the officers entitled to do so must have the power to board ships and small craft or stop any vehicle, to search them and have personal luggage or receptacles opened for inspection and the seizure on conservational grounds of any equipment or animals it is forbidden to introduce within the confines of the area, any equipment or vehicles which serve to commit an offence and any animals, plants or minerals illegally captured or collected. The problem of the option of paying a fixed fine is a matter that is separate from the definition of offences and the corresponding penalties by the law. In order to accelerate the collection of fines and simplify the procedures involved, provision can be made, as has already been done in several legislations, for payment of the fine directly to the administration thus avoiding criminal proceedings. Conversely, it has been noted that this convenient procedure reduced the psychological impact of the fine. If this is the case, it would be preferable to ensure that the penalty has an exemplary quality by bringing the offenders before the criminal courts. In any case, a portion of the fine should be paid into the areas in which the offences were committed, although this may constitute an exception to the rule of budgetary universality.

GENERAL BIBLIOGRAPHY

Baum, P. Création de parcs marins. Forum.

--- Aspects écologiques des zones protégées en milieu côtier et marin.
Nice - Port-Cros, 1979.

Beurier and Le Morvan. Quelques réflexions sur le concept de parcs marins en droit français. Nice - Port-Cros, 1979.

Bjorklund, M. Achievements in Marine Conservation. Environmental Conservation 1:3, 1974.

Creze and Jegou. Le parc marin outil de protection des milieux marins soumis à des activités économiques. Nice - Port-Cros, 1979.

Dorst, J. Parcs et réserves insulaires, 2e conférence mondiale sur les parcs nationaux. UICN, 1974, p. 298.

Dupuy and Kiss. Les parcs marins dans le cadre international. Nice - Port-Cros, 1979.

--- La reconnaissance internationale des espaces protégés. Nice, 1978.

Du Saussay, Ch. Les aires protégées transfrontalières. Nice, 1978.

--- Parcs et réserves marins dans quelques législations comparées.
Nice - Port-Cros, 1979.

Eidsvik, H.K. Le public et la planification des parcs au Canada. Parks 3:1, 1978.

Grindley, J. The Establishment of the Sardinia Bay Marine Reserve. Eastern Cape Naturalist 54, 1974.

Hambro, E. Some Notes on the Future of the Antarctic Treaty Collaboration. American Journal of International Law, 1974, p. 217.

Harroy, P. Parcs nationaux et parcs naturels. Nature and National Parks 14:54, déc. 1976.

Holt, J. Norwegian national parks and related reserves. In: Nelson, 1978, p. 471.

IUCN no. 35. Promotion of the establishment of marine parks and reserves in the Northern Indian Ocean, Teheran, 1975 (1976).

--- no. 37. An International Conference on Marine Parks and Reserves, Tokyo 1975 (1976).

--- Categories, objectives and criteria for protected areas, Morges 1978.

--- Liste des Nations Unies des parcs nationaux et réserves équivalentes, Hayez, Bruxelles.

Lambrechts, C. Les parcs marins dans le droit des Etats Unis. Nice - Port-Cros 1979.

March, J. Marine Parks and Resources, Recreation and Research, Western geographical 3, 1970, p. 117 et s.

--- Marine parks, an annotated bibliography. Council of Planning Librarians, février 1971, Illinois.

Marine park center of Japan, 1975.

McMichael. Marine parks. Parks and Wildlife, June 1972.

Nelson. International Experience with National Parks and Related Reserves, geography publication series no. 12, Waterloo, Ontario, Canada, 1978.

Prieur, A. and Cohen, J. Les mesures législatives prises ou à prendre par les Etats membres du Conseil de l'Europe pour la protection des côtes. Conseil de l'Europe, 1973.

Prieur, M. Recherche sur les principes juridiques relatifs aux parcs marins. Nice - Port-Cros, 1979.

Randall, J.E. Conservation in the sea, a survey of marine parks. Onyx, 1969.

Ray, C. Les réserves et parcs marins envisagés du point de vue écologique, 2e conférence mondiale sur les parcs nationaux. IUCN, 1974, p. 291. (Also in English, p. 26).

--- A preliminary classification of coastal and marine environments. Bull, Marine Parks, 1-1977.

Robert, A. Urgent need: a global system of marine parks and reserves. Parks, 1:3, 1976.

Robinson, A. Planning Consideration for Preservation and Use of the National Seashores. Coastal Zone Management Journal 5:1-2.

Rooney, Talbot, and Clark. Marine Reserves, the Development of Policy for Marine Reserves in Australia. Macquarie University, Center for Environmental Studies, 1978.

Roper. Patrimoine culturel subaquatique. Conseil de l'Europe, Assemblée parlementaire 1978.

S.F.D.E. 2e colloque de la S.F.D.E. sur la protection du littoral (P.P.S. Lyon 1979).

Visser't Hooft. Les Nations Unies et la conservation des ressources de la mer. La Haye, 1958.

Wallis, O. Establishing underwater parks worldwide. Trans. N. Amer. Wild. Nat. Res. Conf. 36, 1971.

BIBLIOGRAPHY ON THE MEDITERRANEAN

- Annuaire du parc maritime de Miramar. Trieste 1975.
- Baccar, H. Preliminary report on a survey of existing and potential marine parks and resources in the Mediterranean Sea and its surrounding coast. Bull. Marine Park Resource, 1977.
- Bussani, M. Istituzione e gestione del parco marino di Miramar. Zuaderni (Trieste) : 12, 1977.
- Carp, E. Marine parks and wetlands as natural reserves important for the ecological balance of the Mediterranean Sea, Ocean Management 3, 1978.
- Conférence sur les parcs marins en Méditerranée, Pacem in Maribus, Castellabate, Italie, 1973.
- Hiscock Marine parks in the Mediterranean. Marine Poll. Bull. 4:10, 1973.
- Kiss, Ch.A. La Convention pour la protection de la mer Méditerranée contre la pollution, Revue juridique de l'environnement 1977:2, p. 151.
- La Convention de Barcelone. Annuaire français de droit international, 1976, p. 731.
- OCDE, Etude pilote méditerranéenne concernant la lutte contre la dégradation et la pollution du milieu ambiant dues au développement du littoral, Paris 1975.
- Pavan. Montecristo, réserve naturelle, Ministère de l'agriculture, Collana Verde, 1976.
- Port-Cros. S.O.S. Vie Nature, Environnement, 7, janvier 1977.
- Prieur, M. Aspects juridiques de la protection des zones côtières dans le bassin méditerranéen, 2e stage européen sur l'écologie appliquée en Italie. Collana Verde, 39, 1976.
- Renzoni, A. Marine parks and reserves in Italy. Environmental Conservation 3:2, 1976.
- UNEP, Consultation d'experts sur les parcs marins et les zones humides dans la région méditerranéenne, Tunis, 12/14 janvier 1977.
- Cerbère-Banyuls, La première réserve marine. Environnement et cadre de vie (Paris) 5, juillet 1979.

ANNEX

LIST OF MEETINGS AND CONFERENCES ON MARINE PARKS

First World Conference on National Parks, Seattle, 1962.

Eleventh Pacific Science Congress, Japan, 1966.

Tenth General Assembly of IUCN, New Delhi, 1969.

Regional Symposium on Conservation of Nature (Reefs and Lagoons), Nouméa, 1971.

Twelfth Pacific Science Congress, Australia, 1971.

United Nations Conference on the Human Environment, Stockholm, 1971.

Eleventh General Assembly of IUCN, Banff, 1972.

First Regional Meeting on Marine Parks for the Mediterranean, Castellabate, Italy, 1972.

Central American Meeting on Management of Natural and Cultural Resources, Costa Rica, 1974.

Regional Conference on a Co-ordinated System of Parks and Reserves in East Africa, Tanzania, 1974.

South Pacific Conference on National Parks and Reserves, New Zealand, 1975.

Regional Conference on the Promotion of Marine Parks and Reserves in the Indian Ocean, including the Red Sea and the Persian Gulf, Teheran, Iran, 1975.

International Conference on Marine Parks and Reserves, Tokyo, Japan, 1975.

Second Regional Symposium on Conservation of Nature in the South Pacific, Samoa, 1976.

Expert Consultation on Mediterranean Marine Parks and Wetlands, UNEP, Tunis, 1977.

Group of Experts on Protected Zones in the Littoral and Marine Environment, Council of Europe, la Marsiliana, Italy, 1978.

Study Days on the Legal Régime of Marine Parks, Nice/Port-Cros, 28-29 May 1979
(SFDE and University of Nice)

Session on the Cartography of Marine Biocoenoses, Council of Europe, Strasbourg, May 1979.