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National Marine Sanctuary Program

Program Development Plan

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Coastal Zone Management
Washington, D.C.
January 1982

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Program Development Plan

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National Marine Sanctuary Program

PROGRAM DEVELOPMENT PLAN

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TABLE OF CONTENTS

		Page
	Summary	1
I.	Background	7
II.	National Marine Sanctuary Program Mission and Goals	11
	A. Mission	11
	B. Goals	13
III.	Sanctuary Nomination/Designation Process	19
	A. Procedural Refinements -- An Overview	19
	B. Site Identification and Evaluation	21
	1. Regional Resource Evaluation Teams	21
	2. Regional Resources Survey	22
	3. Site Identification and Evaluation	24
	4. Site Recommendations	28
	5. Site Evaluation List	28
	C. Active Candidates	28
	1. Ecological Considerations	30
	2. Immediacy of Need	31
	3. Timing and Practicality	31
	4. Public Comment	31
	D. Designation Process	32
	E. Policy Aspects of the Sanctuary Designation Process	34
	1. Sanctuary Size	34
	2. Management and Regulatory Strategies	36
IV.	Management Plan	37
	A. Goals and Objectives	38
	B. Administration	39
	C. Resource Studies	40
	D. Interpretive and Recreational Programs	42
	E. Surveillance and Enforcement	46
	F. Regulations	47
V.	Scope of the Program	47
VI.	References	48
VII.	Appendices	51

Page

LIST OF APPENDICES

A.	Marine Protection, Research and Sanctuaries Act of 1972, as amended in 1980, and Regulations	A-1
B.	National Marine Sanctuary Program Resource Classification System	B-1
C.	National Marine Sanctuary Site Identification Criteria	C-1
D.	Site Evaluation Matrix	D-1
E.	Size and Zoning Concepts For Protected Areas	E-1
F.	Glossary	F-1

LIST OF FIGURES

FIGURE 1	Nomination/Designation Process	23
FIGURE 2	Site Evaluation Matrix	27

LIST OF TABLES

TABLE 1	National Marine Sanctuary Site Identification Criteria	25
TABLE 2	Sanctuary Site Information Needs	29
TABLE 3	Sanctuary Management and Administrative Responsibilities (Examples)	41

National Marine Sanctuary Program

PROGRAM DEVELOPMENT PLAN

SUMMARY

Title III of the Marine Protection, Research and Sanctuaries Act of 1972 (MPRSA), as amended in 1980, (the Act) authorizes the Secretary of Commerce with Presidential approval to designate ocean waters as national marine sanctuaries for the purpose of preserving or restoring their conservation, recreational, ecological, or esthetic values. The Act is a broad-based mandate that allows for comprehensive management of special marine resources. The Act is administered by the National Oceanic and Atmospheric Administration (NOAA) through the Office of Coastal Zone Management (OCZM), Sanctuary Programs Office (SPO).

Since its establishment in 1972, the National Marine Sanctuary Program (the Program) has had a number of years of operating experience. Through this experience and considerable commentary on the Program, a number of refinements in operational policy and procedure have been designed and are described in this document, the Program Development Plan (PDP).

The purpose of this PDP is to describe a policy and administrative framework for continued implementation of the Program. The PDP provides a description of the Program's mission, goals, and operational policy; the site identification criteria and site evaluation process; the nomination and designation process; and the elements and purposes of site specific Management Plans. In certain cases the PDP describes the existing management framework; in others, procedures are revised or changed substantially. The PDP will become the Program's work plan and program regulations will be revised to reflect the PDP.

Program Mission

The mission of the Program is the establishment of a system of national marine sanctuaries based on the identification, designation, and comprehensive management of special marine areas for the long-term benefit and enjoyment of the public.

Program Goals

Specific sanctuaries are designated to meet the following goals:

- Enhance resource protection through the implementation of a comprehensive, long-term management plan tailored to the specific resources;
- Promote and coordinate research to expand scientific knowledge of significant marine resources and improve management decisionmaking;
- Enhance public awareness, understanding, and wise use of the marine environment through public interpretive and recreational programs; and
- Provide for optimum compatible public and private use of special marine areas.

Program Operational Policy

This aspect of Program implementation is important to understanding how the mission and goals will be carried out. It is the philosophy with which the agency administers the Program. Although a philosophy is usually difficult to describe in absolute terms, a number of important policy elements can be discussed.

The intent of the Program is to protect and manage special marine areas for the long-term benefit and enjoyment of the public. Marine sanctuaries include, to the maximum extent feasible, multiple uses of the site by public and private interests. This includes recreational and commercial uses so long as these activities do not threaten the basic

integrity of the site's resource values. The Program is not intended to be used as a means to block or unduly restrict human use and development of marine resources; rather, it can be thought of as a management tool in a broader national-interest approach to marine resource development, conservation, and utilization.

Only sites with special marine resources are selected for marine sanctuary status. Sites selected for consideration are evaluated on the merits of resource and human use values and the public benefits to be derived from sanctuary status.

Sanctuary sizes vary, but generally are the smallest area possible in which to achieve management objectives. By example, existing sanctuaries vary from the 1-mile diameter U.S.S. MONITOR site to the 1,252 square-nautical mile Channel Islands Sanctuary, with the latter likely representing the upper size limit for future sites.

The Program serves as a coordination mechanism to provide a more comprehensive management approach where fragmented, single-purpose authorities exist. Enhanced enforcement, surveillance, and monitoring may be provided by a sanctuary where existing authorities are inadequately enforced. New regulations are imposed within sanctuaries only if existing laws are inadequate in scope or implementation to protect or manage the resources of the site. Normally, this means that new regulations may be added where needed to augment existing regulatory authority.

Program Refinements

The refinements emphasize the Program's primary role as a comprehensive, site-specific marine management program, rather than a strictly regulatory

program. Changes in past Program procedures include a new nomination/designation process and an emphasis on site specific Management Plans. Interagency coordination, research, public awareness, and interpretive programs are given higher priorities in sanctuary implementation than in the past.

Refinements in the Program's present procedures include:

1. Elimination of the List of Recommended Areas (the list has caused substantial confusion and concern over the status of areas listed, the likelihood of further action on the listed areas, and the overall emphasis of the Program);

2. Institution of a new site evaluation process which applies more definitive nomination requirements, site identification criteria and evaluation procedures and results in a base pool of suitable sites (the nomination process used in the past has resulted in the accumulation of an extraordinary range of sites, most of which will never be suitable for sanctuary status); and

3. Development of the site specific Management Plan during the EIS phase, as opposed to preparing the Plan following designation (this allows a more thorough discussion and analysis of the implications of sanctuary designation during the public review process).

Under the new procedures, eight regional resource evaluation teams are established by NOAA to aid in the initial identification and evaluation of possible marine sanctuary sites (see Section III.B.1.). Each team identifies the truly special marine resources in their region and selects three to five priority sites based on the Program's site identification criteria (see Section III.B.2. and Appendix C). Public review is solicited

to obtain additional information on each team's initial list of sites. Using the comments from the public review, each team's list is finalized and submitted to NOAA. NOAA reviews the final lists, eliminates any sites that are inconsistent with the objectives of the Program, and places all appropriate sites on a Site Evaluation List (SEL). Later, NOAA selects sites on the SEL for further evaluation as Active Candidates based on additional considerations (see Section III.C.).

This process provides a pool of marine areas which meet the Program's site identification criteria and have undergone a certain level of public review prior to being presented to NOAA. This process should eliminate much of the confusion and criticism that has surrounded the current process, particularly the List of Recommended Areas (LRA). It should substantially eliminate inappropriate sites, such as those nominated solely to complicate needed development of marine resources, and result in a pool of sites which, because of their resource and human use value, qualify for further consideration as marine sanctuary candidates.

The other major procedural change--developing a site Management Plan during the EIS process rather than after site designation--should allow for earlier and more detailed public input and discussion on the proposed purposes and effects of sanctuary designation than is possible under the present process. Currently, sanctuary EIS development over-emphasizes the regulatory side of management and neglects the other equally important aspects of sanctuary management such as research, interpretation, and recreation. By preparing a site specific Management Plan as part of the EIS process, the public and private sectors have a more

complete proposal on which to comment and a more complete picture of the purposes and benefits of a proposed sanctuary designation.

With these procedural refinements and a more deliberate operational policy, a more predictable path for the future national marine sanctuary system is established.

I. BACKGROUND

Increasing pressures on the marine environment precipitated a number of Federal initiatives in the 1970's. Generally, Congress reacted to situations which required protection of a specific resource or control of the effects of a particular activity with new legislation. For example, the use of the marine environment for waste disposal (as a pollutant sink) led to the enactment of legislation, such as portions of the Clean Water Act (33 USC §§1251-1376) and the Ocean Dumping Act (33 USC §§1401-1444; Title I of the MPRSA), which are designed to control marine pollution. A growing dependence on the waters off the United States as a major source of food led to an extension of the Nation's jurisdiction over its offshore fisheries through the Fishery Conservation and Management Act (16 USC §§1801 et seq.). Increasing development of oil and gas reserves on the outer continental shelf, coupled with intensified public concern over the impacts of such development, led to comprehensive amendments to the Outer Continental Shelf Lands Act (43 USC §§ 1331 et seq.). The anticipated reliance on the sea to support energy facilities, such as deepwater ports, liquefied natural gas terminals, and floating nuclear power plants, led to legislation such as the Deepwater Ports Act (33 USC §§1501-1524) and the coastal energy impact provisions of the Coastal Zone Management Act (16 USC §§1451-64 et seq.). Finally, broadening ocean uses such as thermal energy and mineral development necessitated the passage of legislation covering ocean thermal energy conversion (OTEC) activities (42 USC 9101 et seq.) and deep seabed mining (30 USC §§ 1401 et seq.).

While these and related legislative responses address particularly pressing marine resource protection problems, they are single-purposed and do not ensure a balanced and comprehensive approach to the protection and wise use of selected marine areas. Title III of the MPRSA, however, does provide such an approach. The Act is not limited to regulating or managing particular marine-related activities or protecting singular resources, but includes flexible provisions for identifying and comprehensively managing marine areas based on their various resource and human use qualities.

While the Act and its legislative history clearly indicate that the Program was designed to protect significant marine areas, it is not intended to prohibit all uses, but rather to protect the recognized values of the site and emphasize compatible human uses.

In discussing the protection of special marine areas, the House Report accompanying H.R. 9729 (of which a modified version became Title III) noted that:

> Title III deals with an issue which has been of great concern to the Committee for many years: the need to create a mechanism for protecting certain important areas of the coastal zone from intrusive activities by man. This need may stem from the desire to protect scenic resources, natural resources or living organisms: but is not met by any legislation now on the books... The pressures for development of marine resources are already great and increasing. It is never easy to resist these pressures and yet all recognize that there are times when we may risk sacrificing long-term values for short-term gains. The marine sanctuaries authorized by this bill would provide a means whereby important areas may be set aside for protection and may thus be insulated from the various types of "development" which can destroy them (H.R. Rep. No. 92-3671, 92d Cong., 1st Sess. p. 15 (1971)). (Emphasis added).

In analyzing the debate over marine sanctuaries, one commentor traces a change in philosophy which highlights the Program's potential for protecting significant marine areas for their resource quality, while permitting multiple uses compatible with the purposes of the sanctuary:

> [As originally proposed] (t)he objectives of the legislation were negative, that is to stop the specific action. However, from the introduction of the first sanctuary bill in 1968 until the passage of the Marine Protection, Research and Sanctuaries Act of 1972, a key conceptual transition took place. This was a reversal from the thrust of the early bills oriented to preventing actions such as dredging and oil drilling back to the concept that areas of the ocean and coastal waters had values vital to a balanced use of the resources of the ocean which should be protected and/or restored for their own merits. While this may be a subtle difference, it represents the difference between a negative and a positive philosophy. (Robert Kifer, 1975: "NOAA's Marine Sanctuary Program." 2 Coastal Zone Management Journal 177 (Emphasis added)).

Finally, in recognition of the need to protect special marine areas, the legislative history also emphasizes the importance of maximizing human benefit and use:

> I must admit that the word sanctuaries carries a misleading connotation. It implies a restriction and permanency not provided in the title itself. Title III simply provides for an orderly review of the activities on our Continental Shelf. Its purpose is to assure the preservation of our coastal areas and fisheries... Title III gives more than mere consideration to both of these compelling national problems. It provides for multiple use of the designated areas. It provides a balanced even-handed means of prohibiting the resolution of one problem at the expense of the other. It guards against "ecology for the sake of ecology." It also guards against the cynical philosophy that the need for oil is so compelling that it justifies the destruction of our environment (Congressman Hastings Keith, R-Mass. Cong. R., H 8190-1, September 8, 1971). (Emphasis added).
>
> Let me reemphasize the fact that marine sanctuaries as proposed in Title III of this legislation are not intended to prevent legitimate uses of the sea. They are intended to protect unique areas of the ocean bordering our country... A sanctuary is not meant to be a marine wilderness where man will not enter. Its designation will insure very simply a balance between uses. (Congressman Thomas Pelly, R-Wash. Cong. R., H-8232, September 8, 1971).

Between 1972 and 1977, two national marine sanctuaries were designated -- the site of the U.S.S. MONITOR off the coast of North Carolina (January 1975) and a portion of the Florida reef tract offshore Key Largo, Florida

(December 1975). In the May 1977 Presidential Environmental Message to Congress, special attention was devoted to marine sanctuaries; NOAA responded by accelerating the development of the Program. Recommendations for additional candidates were solicited in 1977 and final regulations for the designation and management of marine sanctuaries were issued in July 1979. By January 1981, four additional sanctuaries were designated --the waters around the Northern Channel Islands and Santa Barbara Island off California, the waters off Point Reyes and around the Farallon Islands off California, Gray's Reef off Georgia, and Looe Key off Florida.

Two major, independent assessments of the Program have been made to date --one by the Congressional Research Service (CRS) and another by the U.S. General Accounting Office (GAO). Both conclude that Title III has a legitimate and important role to play in the overall picture of marine resource development and conservation. The CRS report states that although there is some overlap with other Federal laws designed to protect the environment, the marine sanctuary program offers environmental protection benefits "not directly achievable through other Federal statutory authorities" (CRS, 1979 & 1980). The GAO report notes that the Program:

- provides comprehensive regulation, planning, and management (within the limits of international law) to assure long-term preservation of all the resources that require protection;
- provides environmental protection where gaps exist in the coverage provided by other laws; and
- encourages and supports research and assessment of the condition of sanctuary resources and provides an educational and information service to promote public appreciation of their value and wise use.

GAO concludes that the "benefits make the program useful in protecting designated sanctuaries" (GAO, 1981).

II. NATIONAL MARINE SANCTUARY PROGRAM MISSION AND GOALS

The Program mission and goals, although broad in scope, provide a framework under which specific program activities are formulated. The mission and goals are derived from the Act and its legislative history, as described in the previous section, and illustrate the Program's focus on the comprehensive management of diverse and special marine areas.

A. Mission

The mission of the Program is the establishment of a system of national marine sanctuaries based on the identification, designation, and comprehensive management of special marine areas for the long-term benefit and enjoyment of the public.

In the marine environment, certain areas have resource and human use qualities which make them of high value. The Program identifies specific areas (based on criteria listed on Table 1 and Figure 2 and discussed in Appendices C and D), evaluates the need for and public benefit from comprehensive management of the area, and if such need and benefits are demonstrated, designates those which qualify as national marine sanctuaries.

For over 100 years the Nation has recognized the importance of protecting special areas of its public lands. Yet these efforts have been directed almost exclusively to land areas above the high water mark of the oceans and Great Lakes, largely ignoring the more than 43 percent of the nation's public lands which lie offshore (Blumm and Blumstein, 1978). One observer notes that aquatic ecosystems "are apparently considered 'second class' resources...[because] (t)he protection that is afforded to highly visible terrestrial resources has not been given to the aquatic

resources, even in the same park" and stresses the increasingly apparent "need to protect aquatic resources with the same fervor that we apply to terrestrial resources" (Davis, 1980) (see also, Robinson, 1975; Davis and Dodrill, 1979).

The Program represents a mechanism for reversing this "out-of-sight, out-of-mind" attitude toward the marine environment and actively promoting marine resource management. It provides a means to protect marine resources and promote comprehensive management in a manner similar to that used for our land-based resources. From the standpoint of resource protection, public use, and public awareness, the Program mission offers a corollary to some terrestrial programs in that special marine areas are managed for public use and benefit in concert with resource protection. Marine sanctuaries are not, however, envisioned as encompassing as much territory as large terrestrial parks.

From a global perspective, international recognition and cooperation in marine resource management is increasing. Many special marine resources within U.S. jurisdiction have international scientific or cultural significance. In addition, certain migratory species such as endangered whales, birds, or turtles must be considered in an international context. International exchange of information on marine resource management, research, and protection and establishment of an international system of marine parks should be encouraged. The need for international action on marine resource protection, particularly for migratory species, has been recommended in a recent report, Global Future: Time to Act (Council on Environmental Quality and United States Department of State, 1981).

B. Goals

The goals of the Program expand on the mission by establishing specific designation purposes. National marine sanctuaries are designated to:

1. Enhance resource protection through the implementation of a comprehensive, long-term management plan tailored to the specific resources;
2. Promote and coordinate research to expand scientific knowledge of significant marine resources and improve management decisionmaking;
3. Enhance public awareness, understanding, and wise use of the marine environment through public interpretive and recreational programs; and
4. Provide for optimum compatible public and private use of special marine areas.

The resource protection goal is primary and will be the principle focus in each designated sanctuary. The emphasis on the other three goals varies among sites, although a large degree of overlap is expected in many instances. For example, while one sanctuary may emphasize recreation and, thus Goals 3 and 4, another may be designated primarily for research purposes (Goals 2 and 4).

Goal 1: Enhance resource protection through the implementation of a comprehensive, long-term management plan tailored to the specific resources.

During the designation process, NOAA assesses the resources of a sanctuary candidate and any existing protective regulatory regime to determine the proper role of the proposed sanctuary management system. A comprehensive management plan is developed for each site which details all aspects of sanctuary management. Site specific management emphasis varies depending on resource needs, existing and anticipated

uses, and the effectiveness of the existing regulatory regime. Overall, however, each management system is tailored to protect effectively the resources while allowing compatible multiple uses.

Sanctuary designation and implementation of the Management Plan enhances and ensures long-term continuity of resource protection in the area. Through the Management Plan, NOAA addresses a wide range of agency and institutional issues concerning sanctuary resources and potential uses. Enhanced resource protection is also derived from the presence of a single institutional voice which advocates the management and wise use of sanctuary resources and fosters: (1) improved coordination among existing agencies and regulatory programs; (2) enhanced monitoring and enforcement capabilities; (3) coordinated research, increased scientific understanding of prevailing environmental conditions, and assessment of human impacts on the environment; (4) increased public awareness; and (5) new regulations, if necessary. In many cases NOAA is able to improve protection by augmenting enforcement of existing regulations.

The technical foundation for marine resource protection and management stems from sanctuary monitoring and research activities (see Goal 2). Sanctuary status provides the means to promote and coordinate resource studies to expand knowledge of sanctuary resources. The results should increase the effectiveness of a particular sanctuary's management structure. In addition, the technical information generated would be available to other agencies or private entities which manage marine resources or oversee activities which may affect the sanctuary.

The mere act of designating an area as a national marine sanctuary emphasizes the national importance of the resources and encourages more caution with respect to the area's use. Sanctuary educational and interpretive efforts can enhance protection by focusing public attention on the marine environment, on the national significance of the sanctuary's resources, and on the need for wise human use and proper management.

Sanctuary regulations may be used to improve resource management, but only if determined necessary after a thorough evaluation of the condition of the resources, activities affecting the resources, and the adequacy of the existing regulatory regime to provide necessary long-term protection. If regulations are not deemed appropriate at the time of designation, NOAA may reserve the right to regulate particular activities at a later date. The development and implementation of regulations is further discussed in Section IV--the Management Plan.

Goal 2: Promote and coordinate research to expand scientific knowledge of significant marine resources and improve management decisionmaking.

Although interrelated with resource protection, a vital and distinct component of the comprehensive management system for a particular sanctuary is the promotion and coordination of research and monitoring programs and the acquisition of adequate data for accurate scientific interpretation and effective management decisions. Sanctuary Management Plans include resource studies plans which identify information needs in each designated sanctuary and describe projects needed to generate data that will improve resource management by increasing our understanding of marine systems. Resource studies plans provide guidance for acquisition or improvement of baseline data on sanctuary resources and activities, coordination

of research projects, and identification of future study needs. Coordinated research programs serve to eliminate duplicative efforts, increase scientific productivity, and reduce expenses. NOAA supports research programs to the extent funds are available.

Research is also undertaken to improve development and implementation of management policies and techniques. Such efforts might include research to determine the appropriate size of buffer areas between the resources and existing or potential activities; the effects of visual and acoustic disturbances on marine mammals and seabirds; the effects of various pollutants on corals; or the appropriate user activity levels consistent with resource protection.

On a program-wide scale, a system of national marine sanctuaries which represents diverse ecological areas and supports informative monitoring programs serves as a barometer of the environmental quality of our Nation's marine ecosystems and provides the technical guidance for sound management of these and similar areas. Long-term monitoring and assessment of the ocean's vital processes within the sanctuaries identifies subjects needing additional research or management attention at these and similar key locations.

Goal 3: Enhance public awareness, understanding, and wise use of the marine environment through public interpretive and recreational programs.

The sanctuary goal of ensuring long-term protection of special areas can be effectively promoted through interpretive and recreational programs which enhance understanding of the marine environment and the need for wise use of marine resources and, in certain circumstances, for specialized protection measures. This goal is particularly crucial and over

the long-term should contribute to a broad-based, national marine conservation ethic and greater program effectiveness.

Public knowledge of marine ecosystems lags far behind that of terrestrial systems. Sanctuary interpretive and recreational programs are designed to remedy this; that is, to focus national attention on the marine environment and thus, stimulate broad public interest in special marine areas. The interpretive and recreational component of a sanctuary's Management Plan describes the sanctuary-sponsored programs available to schools, universities, adult education programs, tourists, and the general public. Where appropriate, sanctuary information centers may be established and interpretive programs dealing with sanctuary resources and the marine environment made available. Where possible, and when consistent with the sanctuary's goals and objectives, public access and recreation may be encouraged, particularly in combination with interpretive programs.

Goal 4: Provide for optimum compatible public and private use of special marine areas.

To the degree possible, the Program should provide for maximum use of designated sanctuaries while at the same time minimizing damage to the ecological, recreational, conservation or esthetic values of the area. This goal is intertwined with the public awareness goal (Goal 3) since use of the sanctuary is likely to increase public appreciation of the particular area and the marine environment in general.

Sanctuaries often provide exceptional recreational opportunities, such as sport fishing, diving, sightseeing, and nature study. Marine sanctuaries can also protect commercial fisheries and areas that provide exceptional opportunities for research and education.

The designation of marine sanctuaries near urban centers may be particularly instrumental in achieving this goal. Offshore marine sites of recreational and cultural value that complement shoreline opportunities, particularly those afforded by national seashores, monuments, estuarine sanctuaries, and coastal parks, may be considered for sanctuary status to provide additional public benefits.

III. SANCTUARY NOMINATION/DESIGNATION PROCESS

A. Procedural Refinements -- An Overview

The sanctuary nomination/designation process is designed to evaluate the suitability of particular sites for potential designation as national marine sanctuaries. Initiation of the process does not, however, presuppose that an Environmental Impact Statement (EIS) will be prepared or that a sanctuary will be designated. The PDP makes several changes to existing procedures for the identification, evaluation, nomination, and designation of sites. Briefly, the List of Recommended Areas (LRA) has been eliminated and replaced by a Site Evaluation List (SEL). Eight regional resource evaluation teams will be convened by NOAA to assist in the identification, evaluation, and recommendation of suitable sites for inclusion on the SEL (see Section III.B). Site identification criteria are refined and a site evaluation process is provided (see Appendices C and D). Finally, during preparation of the draft environmental impact statement, regional scoping meetings replace the issue paper/public workshop.

The SEL concept is designed to resolve weaknesses in the use of the existing LRA. Under the current system, NOAA receives recommendations from external sources (e.g., private citizens, other government agencies, research/environmental organizations). Many of these recommendations are accompanied by limited information on the site and may or may not represent the "best" candidate for sanctuary consideration.

In accordance with Program regulations, Program staff must consider all recommendations and place on the LRA all sites meeting the minimal selection criteria. This process has resulted in an extraordinary range of site nominations, often with little substantive resource information;

in fact, most of the sites on the current list are not suitable for sanctuary status. Under present regulations, listing on the LRA is a prerequisite for sanctuary designation, but does not imply that designation will ever occur.

NOAA established the LRA as a means of eliminating clearly inappropriate proposals, advising the public at large of recommended sites, and soliciting information on those sites. The LRA, however, never fulfilled these purposes. The minimal site evaluation criteria left an open door for nominations which, although marginally acceptable, are on balance inappropriate for further consideration. It also resulted in much unnecessary and certainly premature controversy over the Program as a whole. Since its inception the LRA has caused substantial confusion and concern over the status of areas on the list, the likelihood of further action on the listed areas, and the overall emphasis of the Program. Even though the vast majority of the listed sites would never become active candidates, the LRA has often been perceived as the blueprint for the sanctuary program. This has led to concern over the future size of the Program, particularly since recommendations are placed on the LRA as submitted to NOAA; in some instances, sites on the list cover thousands of square nautical miles of Outer Continental Shelf waters.

The SEL process is proposed to eliminate these problems. Under this process, NOAA will use regional resource evaluation teams to identify, evaluate, and recommend sites suitable for sanctuary consideration. Site identification and evaluation criteria have been refined to assure recommendation of only those sites with special resource and human use values and with a high likelihood of eventual designation. The criteria also consider activity impacts and management concerns. By actively

seeking appropriate sites based upon sound resource data and early public input through regional public review, inappropriate recommendations will be eliminated. Figure 1 illustrates the revised process.

B. Site Identification and Evaluation

A systematic approach for identifying and evaluating potential marine sanctuary sites is essential. To ensure consideration of all sites or ecosystem types which might be appropriate for listing, NOAA will establish regional resource evaluation teams to identify, evaluate, and recommend to NOAA sites for inclusion on the SEL.

1. Regional Resource Evaluation Teams

To facilitate the regional sanctuary site identification and evaluation process, NOAA has identified eight regions: (1) North Atlantic; (2) Great Lakes; (3) South Atlantic; (4) Gulf of Mexico; (5) Caribbean; (6) Eastern Pacific (California, Oregon, and Washington); (7) Alaska; and (8) Western Pacific (Hawaii, Guam, and American Samoa). The boundaries of the regions approximate those dividing the regional fishery management councils established by NOAA under the Fishery Conservation and Management Act except that a Great Lakes region has been added and the Mid-Atlantic region is contained within the North Atlantic region. For the SEL process, the boundary between the North and South Atlantic regions is Cape Hatteras, North Carolina; the boundary between the South Atlantic and the Gulf of Mexico regions is Route 1 in the Florida Keys.

Within each region, NOAA will identify resource evaluation team leaders who will in turn select team members based upon NOAA's general team-member qualifications and final approval. Two (2) to five (5) team members per region will be selected based upon their knowledge of regional

and coastal resources and processes in their region. The resource evaluation teams will have several responsibilities, as described below, including site identification, evaluation, and recommendation. The teams will exist for approximately 1 year. In the future NOAA will review additional sites only if the site is newly discovered or if new information suggests the need to reassess an unlisted site.

2. Regional Resources Survey

The resource evaluation teams will assemble information on natural resources and processes in their region and on human activities associated with the resources. They will consult all relevant sources, including scientific literature, research institutions, regional fishery management councils, governmental bodies, and appropriate public and private sources.* The resource information acquired will be organized and coded in a computer-compatible format according to the sanctuary resource classification system in Appendix B. While no formal classification scheme adequately describes the heterogeneity of natural systems or their values, this scheme incorporates concepts of marine and coastal biogeography, natural resource features and processes, and human activities into a workable format which lends itself to survey, evaluation, and comparison of particular sites. It should be useful to external nominators, the regional teams, and NOAA.

---

* Note: The existing sites on the LRA (44 Fed. Reg. 77228 (1979)) will be separated by region and provided to the appropriate regional team for further consideration. All sites on the present LRA will be dropped unless selected by the appropriate regional team and placed on the new SEL by NOAA. In addition, any sites recommended by external sources, but not currently on the LRA, will also be considered by the teams.

FIGURE 1

NOMINATION/DESIGNATION PROCESS

SITE IDENTIFICATION & EVALUATION	NOAA / REGIONAL / GENERAL RESOURCE PUBLIC EVALUATION TEAMS	
	↓	
	REGIONAL RESOURCE EVALUATION TEAMS APPLY SITE IDENTIFICATION CRITERIA	
	↓	
	INITIAL LIST OF SITES	
	↓	
	PUBLIC REVIEW	
	↓	
	FINAL REGIONAL LIST (3 to 5 Sites) RECOMMENDATIONS TO NOAA	
	↓	
SITE EVALUATION LIST (SEL)	NOAA SELECTS SEL	° FR NOTICE WRITTEN WRITTEN ANALYSIS OF HOW SITE MEETS CRITERIA
	↓	
	PRELIMINARY CONSULTATION	° PUBLIC NOTICE ° DISSEMINATE WRITTEN ANALYSIS
	↓	
ACTIVE CANDIDATES (Active Candidate Selection Starts NEPA Process)	NOAA SELECTS ACTIVE CANDIDATES	° FR NOTICE
	↓	
	REGIONAL SCOPING MEETING	° FR NOTICE
	↓	
	DEIS, DRAFT MANAGEMENT PLAN & PUBLIC HEARING	° FR NOTICE ON AVAILABILITY OF DEIS
	↓	
	FEIS, FINAL MANAGEMENT PLAN & FINAL CONSULTATION	° FR NOTICE
	↓	
SANCTUARY DESIGNATION	PRESIDENTIAL APPROVAL	
	↓	
	IMPLEMENTATION OF MANAGEMENT PLAN	

The resource classification scheme will be used by the resource evaluation teams in three ways: (1) to identify significant marine and coastal ecological processes or features which are characteristic of the region; (2) to delineate discrete sites in which these major systems, processes or features occur; and (3) to describe these areas in terms of resource and human-use values and potential user impacts. During this initial examination, the regional resource evaluation teams will consider the area's potential for satisfying the site identification criteria. Following the regional resource survey, the regional teams will begin the next phase of the SEL process--Site Identification and Evalution.

3. Site Identification and Evaluation

Sanctuary site identification criteria have been developed to provide standards for assessing the value of potential marine sanctuary sites and to ensure that only high quality sites are recommended. The criteria are listed in Table 1 and described in Appendix C. They are grouped into four categories: (1) natural resource values; (2) human-use values; (3) potential activity impacts; and (4) management concerns (e.g., relationship to other programs; management of a conservation unit; accessibility; surveillance and enforcement; and economic considerations). The criteria include features which are significant to the Program and are related to its mission and purposes.

Each site preliminarily identified by the resource evaluation teams is examined to determine which criteria are met. This is followed by an evaluation of the relative value of applicable criteria using a Site Identification Matrix (Figure 2) and guidelines provided in Appendix D. Each site is evaluated in terms of resource and human-use

TABLE 1

NATIONAL MARINE SANCTUARY SITE IDENTIFICATION CRITERIA*

I. Natural Resource Values

A. Regional Representation

B. Subregional Representation

C. Community Representation

D. Biological Productivity

E. Biotic Character/Species Representation

F. Species Maintenance

G. Ecosystem Structure/Habitat Features

II. Human-Use Values

A. Fishery Resources of Recreational Importance

B. Fishery Resources of Commercial Importance

C. Ecological/Aesthetic Resources of Importance For Recreational Activities Other Than Fishing

D. Research Opportunity

E. Interpretive Opportunity

F. Historical, Cultural or Paleontological Importance

Additional Factors

III. Potential Activity Impacts

IV. Management Concerns

A. Relationship to other programs
B. Management of a conservation unit
C. Accessibility
D. Surveillance and enforcement
E. Economic considerations

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* Note: See Appendix C for detailed description of sanctuary site identification criteria.

value (e.g., low, moderate, or high) and in relationship to other sites with complementary characteristics. Overall, site evaluations should accomplish the following, after Ray (1975b): (1) judge the quality or applicability of areas within the mission of the national marine sanctuary program, and (2) determine priorities for the most suitable among various sites.*

Rather than adding-up a total score for each site, the rating scheme is used primarily for sorting purposes. For example, sites which do not satisfy a majority of the criteria and/or consistently have low values receive an overall "low priority" assessment and are eliminated. On the other hand, sites which satisfy a majority of the criteria and/or consistently have high values receive a "high priority" assessment and are recommended for further consideration.

The Site Evaluation Matrix is used to tabulate this information. A narrative is prepared to support the evaluation and provide the rationale for the particular priority ranking. From this evaluation, the resource evaluation teams compile an initial list of the most highly qualified sites and eliminate less suitable sites.

At this point, initial regional lists are sent out for regional public review. Comments on each list and information about the initial sites and other sites are requested. Information such as present or potential user conflicts, activity levels, and management options is sought.

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*Note: Later, when NOAA considers a particular site on the SEL for active candidate status, selection will depend not only on this evaluation, but also upon policy considerations and the political climate, as described in Section III.C. of the PDP.

Figure 2

Site Evaluation Matrix

CRITERIA		LOW VALUE (L)	MEDIUM VALUE (M)	HIGH VALUE (H)	COMMENTS
NATURAL RESOURCES	A. Regional Representation				
	B. Subregional Representation				
	C. Community Representation				
	D. Biological Productivity				
	E. Biotic Character/ Species Representation				
	F. Species Maintenance				
	G. Ecosystem Structure/ Habitat Features				
HUMAN USE	A. Recreational Fisheries Importance				
	B. Commercial Fisheries Importance				
	C. Ecological/Aesthetic Importance				
	D. Research Importance				
	E. Interpretative Importance				
	F. Historical/Archaeological/Paleontological Importance				
POTENTIAL ACTIVITY IMPACTS (List Relevant Activities)	A.				
	B.				
	C.				
	D.				
MANAGEMENT CONCERNS	A. Relationship to other Programs				
	B. Management of a Conservation Unit				
	C. Accessibility				
	D. Surveillance & Enforcement				
	E. Economic Considerations				
	F. Others (List)				

4. Site Recommendations

Based on initial analysis and public review, each regional team compiles a final list of sites--each containing a minimum of three and a maximum of five sites--which represent the most significant marine resource areas in the region. A detailed explanatory text referenced to each site accompanies each regional list. Regional lists are submitted to NOAA as formal site recommendations containing the rationale for consideration and the information requested in Table 2.

5. Site Evaluation List (SEL)

NOAA makes the final decision on which sites are to be placed on the SEL. NOAA reviews regional site lists and accompanying documentation (i.e., resource data base, site evaluation matrix, and explanatory text) and places suitable sites on the SEL. Notice of placement on the SEL is published in the Federal Register.

NOAA prepares a written analysis--site evaluation analysis--of the sites on the SEL as a record for later review. As active candidates are selected, the number of sites on the SEL is reduced. NOAA will consider future recommendations only if sites are newly discovered or if new information suggests a need to reassess a particular site. NOAA will follow the same site identification and evaluation procedures described above.

C. Active Candidates

The SEL consists of the most highly qualified marine sites identified in accordance with the Program's mission, goals, and site identification criteria. All SEL sites have undergone initial evaluation and public review to assess their qualifications. They are all suitable for active candidate selection and evaluation as potential national marine sanctuaries.

Table 2

SANCTUARY SITE INFORMATION NEEDS

SITE	Name or description of site
GEOGRAPHIC LOCATION	Coordinates of latitude and longitude Biogeographic or regional location (see Appendix B -- National Marine Sanctuary Program Resource Classification System) Map Area in square nautical miles/acres
DESCRIPTION OF AREA	Brief description of the features qualifying the site for marine sanctuary consideration (see Appendices C & D). The nomination should specify, to the degree possible, the site identification criteria which are met. The description should include, but need not be limited to, the following: (1) Physical and geological features; (2) Floral and faunal species; (3) Scientific research potential (including past, present, and proposed research in the area; any special problems or dominating features which require research or monitoring; available data on the resources; and principal data deficiencies); (4) Human uses and impacts (including past, present, and prospective uses of the area; any beneficial/negative impacts on the site and its distinctive features; and uses of adjacent areas).
PROPOSED MANAGEMENT FRAMEWORK	Brief description of the purpose and need for protection and management, including a description of the following: (1) Existing legal protection; (2) Recommended management goals and objectives; (3) Any activities which should be regulated to ensure protection of distinctive features; (4) Probable effects of sanctuary designation, including local, national, and international impacts; (5) Recommended on-site manager, including name, location and qualifications; and (6) Estimated budget for on-site management.
PRINCIPAL REFERENCE MATERIAL	Bibliography Resource Data Base
NAME OF PERSON(S) OR ORGANIZATION(S) SUBMITTING THE RECOMMENDATION	Principal contact: Name/Title Address Telephone Number

Only a limited number of sites at a time can be selected as active candidates and evaluated by NOAA for possible sanctuary designation. NOAA's selection and scheduling of sites from the SEL for active candidate evaluation necessarily involves not only the initial site evaluation, but also a balancing of relevant policy considerations including: ecological factors; immediacy of need; timing and practicality; and public comment.

1. Ecological Considerations

A primary reason for considering a site as a marine sanctuary candidate is its inherent natural resource quality and ecological value. When selecting an active candidate, NOAA considers a site's contribution to the overall system of national marine sanctuaries. A consideration of representativeness ensures that the system not only includes sites which adequately represent the diverse coastal, marine and Great Lakes ecosystems in the United States, but also contains the "best" examples among representative sites. A consideration of diversity ensures that the system is illustrative of a variety of ecosystem types.

The rationale for considering representativeness and diversity in a national system is also based on (1) providing for comprehensive management of nationally important marine resources for the long-term benefit and enjoyment of the public; (2) maximizing research opportunities and benefits by creating a system reflective of the heterogeneity of marine and coastal ecosystems of the United States; (3) providing for public education and interpretation of the marine environment in the broadest sense (i.e., providing programs which encompass a wide spectrum of marine systems); and (4) establishing genetic reservoirs for the perpetuation of marine organisms of high resource or human use value.

NOAA considers a site's contribution to the overall Program positively or negatively. For example, lack of representation within the national system of a particular resource type could be an impetus for active candidate selection. Although areas that duplicate existing sanctuaries may be given lower priorities than areas not yet represented, Ray (1975b) notes that "(r)edundancy of sites is important in the establishment of a reserve system and is essential from the genetic and ecological points of view...to circumvent loss from natural catastrophes or the inadvertent activities of man." In light of this, areas with intense user interest, research potential, and ecological significance, such as coral reefs and marine mammal rookeries, deserve serious consideration regardless of previous Program actions.

2. Immediacy of Need

When selecting active candidates, NOAA also considers the immediacy of need for sanctuary designation based on the sensitivity of the resource, the the present or potential threats to resource quality, and the benefits to be derived from sanctuary designation.

3. Timing and Practicality

In selecting an active candidate, timing and practicality considerations refer to the feasibility of sanctuary designation; i.e., when to proceed with a particular proposal in light of the political and public climate, sanctuary size, program staffing, fiscal constraints, and requirements for managing the site.

4. Public Comment

Before officially declaring a site an active candidate, NOAA seeks preliminary consultation to obtain additional public and government agency input on various aspects of the recommendation, including the resources of the site, activities within the area (existing and proposed), and management

considerations. Local, state, national and, where appropriate, international input is sought. To aid in this process, NOAA's written evaluation of the site and how it meets the selection criteria is provided for review. Public comments are given full consideration in this process.

Based on the result of the analyses described above, NOAA determines whether to select the site as an active candidate and initiate the designation process. Notice of this determination is published in the Federal Register. If a decision is made not to proceed, reasons are specified in the notice.

D. Designation Process

Selection as a active candidate begins the sanctuary designation process. In compliance with the National Environmental Policy Act of 1969 (NEPA), an analysis of the effect of sanctuary designation on the affected environment is made. A notice of intent to prepare a draft environmental impact statement (DEIS) is published in the Federal Register.

The DEIS assesses the impacts of implementing a comprehensive Management Plan for the sanctuary. As part of the DEIS process, a regional scoping meeting is held in the area near the proposed site to solicit public and government input on the significant issues related to the proposed action. Additional scoping meetings are also held with Federal agencies at headquarters level to solicit their views. When appropriate, NOAA provides funds to ensure public participation in the EIS process, particularly in the public hearings.

The DEIS discusses in detail the resources of the area, existing and potential activities, a comprehensive management scheme (see Section IV.), and the environmental consequences of alternative boundaries and management measures including any necessary regulations. Consultation with the public

and with government agencies is sought throughout the development process. When the DEIS is completed, notice of its availability is published in the Federal Register. The notice includes the full text of the proposed Designation Document, which is the basic constitution for the sanctuary.

No sooner than 30 days after the availability notice appears in the Federal Register, a formal public hearing is held in an area near the nominated site. The public hearing provides a forum in which all interested parties can present their views on the adequacy of the DEIS, the proposed Management Plan, and any necessary regulations, and the desirability of establishing a national marine sanctuary. Written comments on the DEIS are accepted for 45 days from the date of the notice. After the close of the comment period, a final environmental impact statement (FEIS) is prepared and distributed for final comment. Specifically, final consultation is sought with the Departments of State, Defense, the Interior, Transportation, Energy, the Environmental Protection Agency, the appropriate Regional Fishery Management Councils, and the heads of other interested Federal agencies. If the proposed sanctuary includes waters lying within the territorial limits of any State, officials of the State are consulted.

After consulations on the FEIS, the Secretary of Commerce, upon approval of the President, designates the area as a national marine sanctuary. The designation becomes effective unless: (1) within 60 days of publication of the designation in the Federal Register, the Governor of any State with territorial waters within the sanctuary certifies that the designation or any of its terms is unacceptable, or (2) both Houses of Congress adopt a Concurrent Resolution within the first 60 calendar days of continuous session after publication of the designation that disapproves the designation or any of its terms.

E. Policy Aspects of the Sanctuary Designation Process

As noted, the sanctuary designation process begins once an area is selected as an active candidate and continues until the sanctuary is designated or rejected. It is an open process which involves, through continuing public and government agency participation, the gathering and analysis of information, evaluation of sanctuary management and boundary alternatives, and formulation of a preferred option. Thus, the important policy issues to be addressed in the designation process include optional boundaries for the sanctuary, necessary management and regulatory strategies, and, ultimately, whether to recommend designation. These issues are highlighted below. The mechanics of sanctuary designation--evaluation of a site for placement on the SEL, selection as an active candidate, and preparation of the DEIS and FEIS--have been described in previous sections (III B-D).

1. Sanctuary Size

Sanctuary size determination is complex and involves an in-depth analysis of: (1) areal distribution of the resources and their susceptability to activities within and outside of the area under consideration; (2) type, intensity, and affect of existing and potential human activities in the area; (3) surveillance and enforcement requirements; and (4) alternative management approaches.

Size criteria have not been established in the Program's regulations. Setting size limits would, in many cases, negate the Program's flexibility to tailor a sanctuary to address the nature of affected resources and human activities and to maximize public interest and benefit. In the past, certain nominations have involved enormous areas and have generated substantial public controversy about the optimum or maximum size for a sanctuary. The Georges Bank proposal, for example, drew extensive public attention because it covered

approximately 20,000 square nautical miles and overlapped with fishing grounds and oil and gas lease sale areas. On the other hand, the 5-square nautical mile Looe Key National Marine Sanctuary, designated in 1981, has a small core area with a protective buffer commensurate with the resource values.

Although the resources of the area are a key consideration, management feasibility and effectiveness largely determine sanctuary size. The sanctuary must be large enough to adequately protect the resources and provide for other sanctuary benefits such as research, interpretion, recreation, and other uses. Surveillance and enforcement needs are also considered. Generally, these efforts are easier in small, discrete sanctuaries, assuming adequate staff and equipment exist; in larger sanctuaries, more innovative techniques may have to be developed and employed such as using volunteer surveillance and self-policing methods. Although no maximum or minimum size criteria have been established, the Program anticipates that the Channel Islands National Marine Sanctuary and Point Reyes-Farrallon Islands National Marine Sanctuary, covering 1,252 and 948 square nautical miles, respectively, are likely to represent the upper end of the sanctuary size spectrum and other sanctuaries will be smaller.

An additional boundary consideration relates to delineation of "core" and "buffer" zones within a particular sanctuary (see Appendix E). In many cases, the location of resources of concern can be classified as the "core" of the sanctuary, such as a central coral reef area, a primary breeding ground or another important habitat area, or the immediate site of a shipwreck or other cultural artifacts. Important management concerns involve determining the size of the core and the size of the area needed to protect the core from external threats; i.e., the buffer size. The buffer concept recognizes that

marine systems are dependent not only on the conditions in discrete areas, but also on the conditions prevailing throughout a broader marine setting (Epting and Laist, 1979). Thus, marine management planning and implementation must take into account the unique impact-transfer aspects of the marine environment.

2. Management and Regulatory Strategies

Management and regulatory strategies are incorporated into a Management Plan which provides the comprehensive management framework for the sanctuary (see Section IV -- Management Plan). The specific components of the Management Plan, and in particular the need for sanctuary regulations, are determined as part of the EIS process. From this information, alternative management strategies and regulatory programs are developed and a preferred national marine sanctuary configuration selected.

The mission of the Program recognizes that areas under consideration are of special significance and would benefit from sanctuary status. Thus, a critical element in evaluating a site for sanctuary status is an assessment of the adequacy of existing State and Federal regulatory and management arrangements for protecting sensitive marine resources and habitats. Through the EIS process, a programmatic evaluation of marine resource protection under existing institutional arrangements, as well as an assessment of the potential effectiveness of alternative marine sanctuary management/regulatory mechanisms is performed. Relevant questions include whether the existing mechanisms have the administrative and legislative flexibility to respond to changing conditions, whether the present system is too fragmented to be voluntarily networked to provide comprehensive protection, whether existing mechanisms can generate information in a timely fashion to protect the resources, and whether existing mechanisms cover all aspects of the resources.

IV. MANAGEMENT PLAN

A Management Plan is developed for each marine sanctuary to guide efforts to protect the resources and ensure maximum public benefit from the Program.* It provides direction toward achieving the sanctuary mission and goals. A Management Plan is developed early in the designation process with public and government agency participation. Management considerations are discussed in the preliminary consultation process and at the regional scoping meeting and are further developed in the DEIS. Once the sanctuary is designated, the Management Plan should be ready for implementation. The initial Management Plan spans 5 years; it is reviewed annually and revised as appropriate experience is gained in operating a particular sanctuary.

The Management Plan provides the means for ensuring that the purpose and implementation of a particular sanctuary are within the confines of the overall Program goals and objectives. Each Management Plan is developed independently, although some continuity in format and administrative procedure is required. Individual sanctuary resources and special circumstances determine the management emphasis. For example, certain nearshore resources which are more resilient to human use may provide excellent opportunities to develop public awareness, increase public education of the marine environment, and enhance public recreational opportunities. In such cases, the Management Plan concentrates on elements such as an information center, interpretive programs, and public access. Special management measures (e.g., regulations)

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*Note: The information in this PDP about the Management Plan is intended to provide a generic description of what a Management Plan will contain, its purpose, and how it is used. Individual plans will reflect the resources and needs of the particular sanctuary.

may not be required. On the other hand, in a proposed sanctuary where resources are especially sensitive to human use and are threatened by unregulated activities, controls may be necessary and can be developed.

The Management Plan is composed of six interrelated functional elements:

A. Goals and Objectives

B. Administration

C. Resource Studies

D. Interpretive and Recreational Programs

E. Surveillance and Enforcement

F. Regulations (if necessary)

In preparing the Management Plan, NOAA evaluates all activities which may potentially affect sanctuary resources and lists them in the Designation Document. It describes the geographic coordinates of the sanctuary, the distinctive features requiring protection and management, the extent to which other regulatory programs will continue to be effective, a framework for sanctuary management, and a list of activities that may be subject to regulation. Only those activities listed may be regulated; changes to the list involve reapproval by the President. Listing of an activity does not, however, always mean that the activity will be regulated either at the present or in the future.

A. Goals and Objectives

Management Plans include site-specific goals under which sanctuary activities are structured. The management goals for each sanctuary are normally long-term and somewhat open-ended, focusing on desired conditions rather than specific actions and are formulated in accordance with the Program's overall goals (see Section II.B.). Management objectives represent short-term,

measurable steps towards fulfilling these goals. For example, a coral reef sanctuary goal might be to protect and maintain the integrity and natural quality of the coral reef ecosystem. Management objectives, in this case, would be to implement specific programs to protect the benthic habitat from damage, to maintain or restore resource abundance and diversity, and to protect or enhance environmental quality of the overall system. Such programs might include a boater's guide to safe anchoring procedures; a diver's guide to the coral reef resources with an explanation of natural community processes and the need for conservation; reestablishing corals or seaweeds destroyed by visitor related activities or natural events; and intergovernmental consultation concerning activities which affect the sanctuary environment and its surrounding area.

B. Administration

The Administrator of NOAA has the primary responsibility for the overall management of national marine sanctuaries pursuant to the delegation of authority from the Secretary of the U.S. Department of Commerce. NOAA may designate an on-site manager to carry out local, day-to-day responsibilities for sanctuary management in accordance with the site-specific management plan. On-site management responsibilities are usually contracted through a cooperative agreement to a local, State, or Federal authority. In many sanctuaries, NOAA will also establish and guide an interagency task force or advisory committee capable of providing input and advice to the sanctuary manager and NOAA.

The overall administrative objective is to operate well-managed sanctuaries which ensure that the purposes for which they were designated are fulfilled. Examples of management responsibilities are listed in Table 3.

C. Resource Studies

Research, monitoring, and environmental assessment are essential components of comprehensive, effective sanctuary management. One of the goals for designating national marine sanctuaries is to provide opportunities to improve the understanding of the marine environment and management of special marine areas. To fulfill this goal, a comprehensive resource studies plan is developed in the management plan for each designated sanctuary.

Designated sanctuaries provide excellent "natural laboratories" or "control sites" for research. Studies which improve the understanding of ocean systems systems and processes are encouraged. Research may include: physical, geological, and chemical oceanography; meteorology; marine biology and ecology; archeological investigations; and studies on the relationship between sanctuary user groups and the sanctuary environment.

Research in national marine sanctuaries is also directed toward management-related issues. Specific information is sought to improve management effectiveness and to ensure that regulations and other program elements are working properly. Management-related studies address practical, use-oriented, or "cause-and-effect" questions. For example, in a sanctuary which serves as a breeding or nursery ground and is important for stock rejuvenation, studies might look at the relationship among human activities, resource health, and conservation techniques. The Looe Key National Marine Sanctuary, for example, may provide a refuge for tropical reef organisms which could be important in restocking adjacent reefs. Thus special management measures enhance resource quality in the Sanctuary and on adjacent reefs as well. Other management areas to explore might include: (1) the ability of the system to support varying types and levels of human use; (2) the adequacy of protective buffer areas; and (3) the effects

Table 3

EXAMPLES OF SANCTUARY MANAGEMENT & ADMINISTRATIVE RESPONSIBILITIES

National Marine Sanctuary Program Office

- Develop, and revise as necessary, guidelines for the development and implementation of national marine sanctuary management plans.
- Develop, and revise as necessary, policy statements, concerning sanctuary management issues.
- Synthesize, analyze, and resolve sanctuary management problems and issues over time.
- Coordinate national program activities with those of individual sanctuaries, and cooperate and provide guidance to sanctuary managers including conveying information requests, policy statements, and directives.
- Develop, or assist on-site manager develop, comprehensive, long-term management plans for designated sanctuaries. Revise management plans as necessary.
- Prepare Program budget and allocate financial resources among individual sanctuaries:
  - Review individual sanctuaries to determine how new or existing resources (such as capital and research) should be allocated among existing sanctuaries.
  - Provide advice and assistance to on-site managers in the preparation and administration of the sanctuary's budget;
  - Monitor sanctuary's financial performance, including transferred funds, contracted studies, and management grants and contracts.
- Advise and assist sanctuary managers identify of program priorities and implement management practices and plans.
- Assist sanctuary managers or other contractors conduct appropriate baseline studies or other research, interpretive programs, and recreation programs in designated sanctuaries.
- Prepare, or assist sanctuary managers prepare, a cost/benefit analysis of proposed or existing management and regulatory efforts at the existing sanctuaries.
- Coordinate an evaluation of the effectiveness of sanctuary management and regulatory regimes.
- Evaluate permit applications for activities to ensure consistency with sanctuary regulations, as applicable; enlist sanctuary managers' assistance and additional technical review where necessary.
- Ensure that each sanctuary is operated in a manner consistent with established Program policies and with applicable national, international, State, and local laws, and recommend changes if necessary.
- Establish a data management capability (i.e., storage and retrieval) for information collected on nominated sites and designated sanctuaries, and make information available to the public.
- Publicize the program and develop a national constituency.
- Coordinate with Federal, State and local government agencies, as well as public, private and international entities concerning protection and management of marine resources.
  - Coordinate Program efforts with other projects and programs, such as estuarine sanctuaries, national seashores, regional fishery management councils and State CZM plans.
  - Comment on major Federal marine-related actions and accompanying EIS's as to their effect on proposed and designated sanctuaries.
  - Consult with individual members of Congress and with Congressional committees.

On-Site Manager

- Assume responsibility for day-to-day management of the sanctuary.
- Assist in the preparation, evaluation, and necessary revision of the comprehensive, long-term management plan for the sanctuary.
- Implement, or assist in the implementation of, various phases of the management plan as appropriate.
  - Coordinate a monitoring program to obtain information on natural resources and human activities in the sanctuary over time.
  - Make recommendations on enviromental assessment, resource studies, user activities, and public interpretation and information programs.
  - Coordinate and cooperate with interested parties in resource studies, interpretation, and recreation in the sanctuary.
  - Coordinate advisory committee activities, when established.
  - Establish a data management capability for information collected on the sanctuary compatible with the national Program data management system.
  - Develop and conduct an on-site review and evaluation of research proposals and permit requests. Submit recommendations to NOAA.
  - Where feasible, maintain and operate a visitor center to increase public awareness and appreciation of the resources of the sanctuary. Provide interpretive services, where necessary.
  - Institute public information programs by means of printing brochures, making presentations, sponsoring structured events, writing articles for publication, and undertaking other activities as necessary.
  - Provide quarterly reports on (1) administrative activities; (2) advisory committee meetings; (3) environmental quality of sanctuary area; (4) research activities; (5) visitor use activities and impacts; (6) surveillance and enforcement; and (7) additional or future management needs.
  - Publicize the sanctuary as appropriate and develop a local constituency.
  - Cooperate with surveillance and enforcement agents. Where appropriate, coordinate surveillance and enforcement activities and provide surveillance and enforcement agents with background information as needed to ensure adequate protection of the sanctuary.

of different types of development (or activities) on particular resources such as marine mammals, seabirds, and coral.

Long-term monitoring provides data on the natural history of the sanctuary environment, both present and evolving, and on human activities in the area. These data are needed to detect and monitor changes/trends in physical, geological, chemical, and biological resource conditions and human use patterns over time. Data acquired through sanctuary resource studies provide the foundation for interpreting or predicting natural or human-induced events in the sanctuary and related areas, identifying areas where critical data are lacking, and identifying the direction of future research and monitoring efforts.

The resource studies component of the Management Plan also provides a means for coordinating projects and tracking their progress, reviewing proposals and permit requests, serving on advisory committees on resource studies (where appropriate), stimulating information exchange, identifying new study areas and integrating new information into an evolving understanding of the sanctuary. NOAA provides funding, as possible, for various research projects described in the plan and encourages other funding agencies to support related proposals.

D. Interpretive and Recreational Programs

Establishment of a national marine sanctuary emphasizes the national importance of the area's resources and the activities involving those resources, such as diving, boating, and fishing. Through sanctuary interpretive and recreational programs, NOAA broadens public awareness and understanding of the area's marine resources and various onsite activities and provides for optimum compatible use of sanctuary areas consistent with the sanctuary Management Plan.

Interpretive and recreational programs differ for each sanctuary. A primary consideration in developing these programs is the extent to which the area can be visited by the public without damaging the resources. For certain resources, or at certain times of the year such as during critical breeding or nursery periods, it may be necessary to restrict access or certain uses. For other resources which are less vulnerable, particularly those of cultural or recreational importance, greater access may be acceptable.

Another management question relates to whether the natural resources are suitable for direct visitor involvement (e.g., snorkeling, SCUBA, small boating) or to what extent indirect techniques (e.g., underwater chambers, glass-bottom boats, remote television, educational slide shows, brochures) can be developed. The Management Plan considers the appropriateness of "structured vs. unstructured," "active vs. passive," and "consumptive vs. non-consumptive" activities. Where compatible with the resources, on-site "hands-on" programs are favored to broaden public awareness and appreciation of the sanctuary's values. In determining what types of programs are appropriate, the relative sensitivity of the resources, the type of use proposed, and the proximity of the resources to the users are considered. Also related, if direct access to the resources is allowed, is a consideration of potential visitor numbers and resource carrying capacity; i.e., determination of practical limits on visitor use based on the capacity of the resources to support various activities. An ancillary consideration relates to public access and transportation to the site. Information from site surveys and management-related research serves as the basis for decisions concerning interpretation and recreation. Since use levels by activity are not static, conditions should be evaluated over time to detect any changes in resource requirements and uses.

The character and orientation of anticipated visitors are also addressed in the Management Plan. Also considered is the extent to which sanctuary interpretive programs complement local educational goals and objectives.

During the development of the Management Plan, alternative approaches are considered for reaching a wide spectrum of audiences. Brochures, pamphlets, and slide shows providing information on the sanctuary are planned for and later developed and made available. Where feasible, sanctuary information centers are established to foster education and information exchange.

The Management Plan also considers alternative interpretive programs. Interpretation focuses on revealing the meanings and relationships of environmental features and processes to sanctuary visitors through the use of various nature-oriented techniques. Interpretation involves a level of "hands-on" public experience beyond that provided by educational tools such as brochures and pamphlets. A first step for the Management Plan is to determine the goals to be met by interpretive programs. The goals are, of course, dependent upon the particular resources of the area and the type of anticipated visitor.

Robinson (1975) discusses several interpretive techniques presently employed in marine parks, including guided snorkel trips, self-guiding underwater nature trails, designated diving areas, guided or self-guided motor boat tours, glass-bottom boats, underwater viewing chambers, remote underwater sound and television, and actual involvement in some marine park-related events, such as observing fish spawnings. Robinson (1975) advocates small-scale programs which can be built upon in the future.

He notes that a balanced interpretive program is probably preferable to one focusing on a single "big" attraction.

> A balanced interpretive program, which includes an orientation contact upon first entering the park, an opportunity to obtain a range of interpretive or naturalistic publications, and an assortment of guided or self-guided activities, will probably be more effective than emphasizing a single interpretive event. An underwater nature trail, a submerged viewing chamber, or some other innovative device, if promoted too heavily may become an artificial attraction to the detriment of the interpretive story (Robinson, 1975).

These techniques are only presented as examples of interpretive programs; these and others are to be explored in the individual Management Plan and tailored to fit each sanctuary's particular values.

Research and resource management also benefit educational, interpretive, and recreational opportunities. A sanctuary resource data base developed pursuant to the Management Plan is readily accessible to both the scientific community and the broader public. This information is used to maximize public awareness and use of the sanctuary. For example, research results published in scientific journals, NOAA technical publications and in popular literature serve to enhance public awareness/education about sanctuary values and issues affecting them. Similarly, fishing, diving and nature-watching guides developed from sanctuary resource data enhance recreational experiences. A major theme of the research/information/education linkage is to foster a better understanding of the marine environment, the nature and intensity of human activities in the sanctuary, and possible mitigation techniques.

E. Surveillance and Enforcement

NOAA seeks to ensure adequate surveillance and enforcement activities for each designated sanctuary. Such activities are designed on a site specific basis. In Federal waters, the U.S. Coast Guard (USCG) is the primary enforcement agency and, depending upon the need at any given site, the USCG will enforce sanctuary regulations as a part of their routine surveillance activities. In sites where more intensive attention is required, NOAA will financially assist the USCG, other Federal enforcement agencies, or State law enforcement division to ensure an on-site presence. In sanctuaries involving State waters, State enforcement agencies will be asked to assume this responsibility with NOAA providing funding assistance as necessary.

All sanctuary activities, including activities subject to existing authorities which may affect the sanctuary are monitored over time to: (1) ensure they are consistent with sanctuary purposes; (2) assess potential impacts on sanctuary resources; and (3) ensure that the existing management/regulatory system adequately protects the resources. If monitoring/surveillance efforts indicate that an existing or proposed activity is inconsistent with sanctuary goals and objectives, or that an existing authority is not adequately protecting the resources, other options are available. The first option is to consult with the appropriate agencies to urge them to increase resource protection or develop mitigation measures. If agency self-enforcement fails, other options including regulation of the activity can be employed to ensure the resources are protected.

F. Regulations

As part of the Management Plan, regulations are developed as necessary based on a thorough evaluation of the resources, activity levels, the adequacy of the long-term protection provided by the existing regulatory system, and the economic impacts of new regulations. The authority for promulgating sanctuary regulations is provided by Section 302 of the MPRSA which provides that "the Secretary of Commerce, after consultation with other interested Federal Agencies, shall issue necessary and reasonable regulations to control activities permitted within the designated marine sanctuary." The scope of the regulations varies usually within a continuum of controls--prohibition of certain activities, controls on others, and no restrictions on others.

V. SCOPE OF THE PROGRAM

The national marine sanctuary system is to be illustrative of a variety of ecosystems; therefore, the minimum number should be large enough to provide adequate representation of the diverse coastal, marine and Great Lakes ecosystems in the United States. At the same time, the maximum number should be small enough to ensure efficient management and availability of funding as well as to maintain the integrity and significance of the national system. This number is expected to be less than forty (40).

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VII. APPENDICES

A. Title III of the Marine Protection, Research and Sanctuaries Act and the Regulations for the National Marine Sanctuary Program.

B. National Marine Sanctuary Program Resource Classification System

C. National Marine Sanctuary Site Identification Criteria

D. Site Evaluation Matrix

E. Size and Zoning Concepts for Protected Areas

F. Glossary

APPENDIX A

MARINE SANCTUARIES LEGISLATION

MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT
AMENDMENTS OF 1980 TO TITLE III (P.L. 96-332)
INCORPORATED INTO
TITLE III OF THE MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT
of 1972 (P.L. 92-532)

AN ACT

To regulate the transportation for dumping, and the dumping, of material into ocean waters, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that this Act may be cited as the "Marine Protection, Research, and Sanctuaries Act of 1972."

For the purposes of this document Title I (Ocean Dumping) and Title II (Comprehensive Research on Ocean Dumping) have been deleted.

TITLE III - MARINE SANCTUARIES

SEC. 301. Notwithstanding the provisions of subsection (h) of section 3 of this Act, the term "Secretary," when used in this title, means Secretary of Commerce. The term 'State', when used in this title, means any of the several States or any territory or possession of the United States which has a popularly elected Governor.

SEC. 302. (a) The Secretary, after consultation with the Secretaries of State, Defense, the Interior, and Transportation, the Administrator, and the heads of other interested Federal agencies, and with the approval of the President, may designate as marine sanctuaries those areas of the ocean waters, as far seaward as the outer edge of the Continental Shelf, as defined in the Convention of the Continental Shelf (15 U.S.T. 74; TIAS 5578), of other coastal waters where the tide ebbs and flows, or of the Great Lakes and their connecting waters, which he determines necessary for the purpose of preserving or restoring such areas for their conservation, recreational, ecological, or esthetic values. The consultation shall include an opportunity to review and comment on a specific proposed designation.

(b)(1) Prior to designating a marine sanctuary which includes waters lying within the territorial limits of any State or superjacent to the subsoil and seabed within the seaward boundary of a coastal State, as that boundary is defined in section 2 of title I of the Act of May 22, 1953 (67 Stat. 29), the Secretary shall consult with, and give due consideration to the views of, the responsible officials of the State involved.

(2) A designation under this section shall become effective unless --

(A) the Governor of any State described in paragraph (1) certifies to the Secretary, before the end of the sixty-day period beginning on the date of the publication of the designation, that the designation or any of its terms described in subsection (f)(1), are unacceptable to his State, in which case those terms certified as unacceptable will not be effective in the waters described in paragraph (1) in such State until the Governor withdraws his certification of unacceptability; or

(B) both Houses of Congress adopt a concurrent resolution in accordance with subsection (h) which disapproves the designation or any of its terms described in subsection (f)(1).

The Secretary may withdraw the designation after any such certification or resolution of disapproval. If the Secretary does not withdraw the designation, only those portions of the designation not certified as unacceptable under subparagraph (A) or not disapproved under subparagraph (B) shall take effect.

(c) When a marine sanctuary is designated, pursuant to this section, which includes an area of ocean waters outside the territorial jurisdiction of the United States, the Secretary of State shall take such actions as may be appropriate to enter into negotiations with other Governments for the purpose of arriving at necessary agreements with those Governments, in order to protect such sanctuary and to promote the purposes for which it was established.

(d) The Secretary shall submit an annual report to the Congress, on or before November 1 of each year, setting forth a comprehensive review of his actions during the previous fiscal year undertaken pursuant to the authority of this section, together with appropriate recommendation for legislation considered necessary for the designation and protection of marine sanctuaries.

(e) Before a marine sanctuary is designated under this section, the Secretary shall hold public hearings in the coastal areas which would be most directly affected by such designation, for the purpose of receiving and giving proper consideration to the views of any interested party. Such hearings shall be held no earlier than thirty days after the publication of a public notice thereof.

(f)(1) The terms of the designation shall include the geographic area included within the sanctuary; the characteristics of the area that give it conservation, recreational, ecological or esthetic value; and the types of

activities that will be subject to regulation by the Secretary in order to protect those characteristics. The terms of the designation may be modified only by the same procedures through which an original designation is made.

(2) The Secretary, after consultation with other interested Federal and State agencies, shall issue necessary and reasonable regulations to implement the terms of the designation and control the activities described in it, except that all permits, licenses, and other authorizations issued pursuant to any other authority shall be valid unless such regulations otherwise provide.

(3) The Secretary shall conduct such research as is necessary and reasonable to carry out the purposes of this title.

(4) The Secretary and the Secretary of the department in which the Coast Guard is operating shall conduct such enforcement activities as are necessary and reasonable to carry out the purposes of this title. The Secretary shall, whenever appropriate and in consultation with the Secretary of the department in which the Coast Guard is operating, utilize by agreement the personnel, services, and facilities of other Federal departments, agencies, and instrumentalities, or State agencies or instrumentalities, whether on a reimbursable or a non-reimbursable basis in carrying out his responsibilities under this title.

(g) The regulations issued pursuant to subsection (f) shall be applied in accordance with recognized principles of international law, including treaties, conventions, and other agreements to which the United States is signatory. Unless the application of the regulations is in accordance with such principles or is otherwise authorized by an agreement between the United States and the foreign State of which the affected person is a citizen or, in the case of the crew of a foreign vessel, between the United States and flag state of the vessel, no regulation applicable to ocean waters outside the territorial jurisdiction of the United States shall be applied to a person not a citizen of the United States.

(h)(1) For purposes of subsection (b)(2)(B), the Secretary shall transmit to the Congress a designation of a marine sanctuary at the time of its publication. The concurrent resolution described in subsection (b)(2)(B) is a concurrent resolution which is adopted by both Houses of Congress before the end of the first period of sixty calendar days of continuous session of Congress after the date on which the designation is transmitted, the matter after the resolving clause of which is as follows: 'That the Congress does not favor the taking of effect of the following terms of the marine sanctuary designation numbered : transmitted to Congress by the Secretary of Commerce on : .', the blank space being filled with the number of the designation, the second blank space being filled with the date of transmittal, and the third blank space being filled with the terms of the designation which are disapproved (or the phrase 'the entire designation' if the entire designation is disapproved).

(2) For the purpose of paragraph (1) of this subsection

(A) continuity of session is broken only by an adjournment of Congress sine die; and

(B) the days on which either House is not in session because of an adjournment of more than three days to a day certain are excluded in the computation of the sixty-day period.

(3) A designation which becomes effective, or that portion of a designation which takes effect under subsection (b), shall be printed in the Federal Register.

SEC. 303. (a) Any person subject to the jurisdiction of the United States who violates any regulation issued pursuant to this title shall be liable to a civil penalty of not more than $50,000 for each such violation, to be assessed by the Secretary. Each day of a continuing violation shall constitute a separate violation.

(b) No penalty shall be assessed under this section until the person charged has been given notice and an opportunity to be heard. Upon failure of the offending party to pay an assessed penalty, the Attorney General, at the request of the Secretary, shall commence action in the appropriate district court of the United States to collect the penalty and to seek such other relief as may be appropriate.

(c) A vessel used in the violation of a regulation issued pursuant to this title shall be liable in rem for any civil penalty assessed for such violation and may be proceeded against in any district court of the United States having jurisdiction thereof.

(d) The district courts of the United States shall have jurisdiction to restrain a violation of the regulations issued pursuant to this title, and to grant such other relief as may be appropriate. Actions shall be brought by the Attorney General in the name of the United States, either on his own initiative or at the request of the Secretary.

SEC. 304. (Appropriations not to exceed $2,235,000 per year have been authorized for fiscal years 1982 and 1983.)

Code of Federal Regulations-Chapter IX

Title 15—Commerce and Foreign Trade

PART 922—MARINE SANCTUARIES

Subpart A—General

Sec.
922.1 Policy and objectives.
922.2 Definitions.
922.10 Effect of marine sanctuary designation.

Subpart B—Initial Review of Areas Recommended as Sanctuaries

922.20 Submission of recommendations.
922.21 Analysis of recommendations.
922.22 Effect of placement on the list of recommended areas or active candidates.

Subpart C—Selection of Active Candidates and Designation of Sanctuaries

922.23 Selection of Active Candidates.
922.24 Review of Active Candidates.
922.25 Coordination with States.
922.26 Designations

Subpart D—Enforcement

922.30 Penalties.
922.31 Notice of Violation.
922.32 Enforcement Hearings.
922.34 Final Action.

AUTHORITY: Title III, Public Law 95-532, as amended; 86 Stat. 1061 (16 U.S.C. 1431-1434).

Source: 44 FR 44837, July 31, 1979, unless otherwise noted.

Subpart A—General

§ 922.1 Policy and objectives.

(a) The purpose of the marine sanctuaries program is to identify areas in the ocean from the shore to the edge of the continental shelf and in the Great Lakes that are distinctive for their conservation, recreational, ecological or esthetic values, and to preserve and restore such areas by designating them as marine sanctuaries and providing appropriate regulation and management.

(b) The primary emphasis of the program will be the protection of natural and biological resources, and in most cases higher priority will be afforded candidate sites containing these resources.

(c) The presence of actual or potential conflicts among existing or potential human uses of a candidate site is not of itself a basis for designating the site as a marine sanctuary. Human activities will be allowed within a designated sanctuary to the extent that such activities are compatible with the purposes for which the sanctuary was established, based on an evaluation of whether the individual or cumulative impacts of such activities may have a significant adverse effect on the resource value of the sanctuary.

(d) The marine sanctuary program will be fully coordinated with the coastal zone management and estuarine sanctuary programs established under the Coastal Zone Management Act of 1972, as amended 16 U.S.C. 1451 *et seq.* (The estuarine sanctuary program, 16 U.S.C. 1461, authorizes grants for the acquisition, development or operation of estuarine areas as natural field laboratories. See regulations at 15 CFR Part 921).

(e) The marine sanctuaries program will be conducted also in close cooperation with other related Federal and State programs, including those of the Regional Fishery Management Councils under the Fishery Conservation and Management Act of 1976, as amended, 16 U.S.C. 1801 *et seq.*; the marine mammal protection and endangered species programs of the National Marine Fisheries Service, under the Marine Mammal Protection Act, as amended, 16 U.S.C. 1361 *et seq.* and the Endangered Species Act, as amended, 16 U.S.C. 1531 *et seq.*; leasing programs of the Department of the Interior for the Outer Continental Shelf under the Outer Continental Shelf Lands Act, as amended, 43 U.S.C. 1331 *et seq.*; relevant programs of the Department of Energy; and the regulatory and enforcement programs of the United States Coast Guard.

(f) A basic objective of the marine sanctuaries program is to obtain the maximum public participation throughout all the stages that may lead to the designation of a sanctuary. To further this purpose NOAA may make funds available to compensate eligible persons for the costs of participation in certain proceedings in accordance with NOAA regulations at 15 CFR Part 904.

§ 922.2 Definitions.

(a) "Act" means Title III of the Marine Protection, Research and Sanctuaries Act of 1972, as amended, 16 U.S.C. 1431-1434.

(b) "Administrator" means the Administrator of the National Oceanic and Atmospheric Administration, United States Department of Commerce.

(c) "Assistant Administrator" means the Assistant Administrator for Coastal Zone Management, National Oceanic and Atmospheric Administration, United States Department of Commerce, or his designee.

(d) "Continental Shelf" means the Continental Shelf, as defined in the Convention on the Continental Shelf, 15 U.S.T. 74 (TIAS 5578), which lies adjacent to any of the several states or any territory or possession of the United States, or the Trust Territory of the Pacific Islands.

(e) The "Great Lakes" means the waters within the territorial jurisdiction of the United States consisting of the Great Lakes, their connecting waters, harbors, roadsteads, and estuary-type areas such as bays, shallows, and marshes.

(f) "Person" means any private individual, partnership, corporation, or other entity; or any officer, employee, agent, department, agency or instrumentality of the Federal Government, or any State, local or regional unit of government.

§ 922.10 Effect of marine sanctuary designation.

The designation of a marine sanctuary and the regulations implementing it are binding on any person subject to the jurisdiction of the United States. Designation does not in any case constitute any claim of territorial jurisdiction on the part of the United States, and the regulations implementing it apply to foreign citizens only to the extent consistent with recognized principles of international law or authorized by international agreement.

Subpart B—Initial Review of Areas Recommended as Sanctuaries

§ 922.20 Submission of recommendations.

(a) Any person (including NOAA employees in their official capacity or otherwise) may recommend a site to be considered for potential designation as a marine sanctuary. Recommendations should be addressed to: Director, Sanctuary Programs Office, Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, 3300 Whitehaven St., N.W., Washington, D.C. 20235.

Further information can be obtained by contacting this office.

(b) Recommendations should be submitted in the following format:

Site recommended
General description of area
Approximate coordinates
Area in square miles
Name of person or organization submitting recommendation
Principal Contact
- Name, Title
- Address
- Telephone number

Detailed description of the feature or features which make the site distinctive (See sec. 922.21)
Available data on the resources and site
Summary of existing research and other data to support description
- Principal data deficiencies

Description of past, present and prospective uses of site
Impacts of present and prospective uses on site and its distinctive features
Probable effects of marine sanctuary designation and recommended regulations
- Present uses of resources
- Future uses of resources
- Uses of adjacent areas (including those on shore)

Management
- Summary of who should manage area and why
- Summary of activities which must be regulated to ensure protection of distinctive features

(c) The Assistant Administrator may request such additional information as is necessary to make the determination called for by §§ 922.21 and 922.23.

§ 922.21 Analysis of recommendations.

(a) Within 3 months of receiving a recommendation for any site the Assistant Administrator shall review the site in accordance with the criteria of subsection (b) to determine if it should be placed on the List of Recommended Areas. The Assistant Administrator shall promptly notify the recommender in writing of his determination. In the event the site is rejected, the Assistant Administrator shall include a statement of the reasons for the rejection and indicate that the recommendation may be resubmitted with additional information. Notification of the placement of any site on the List will be published in the FEDERAL REGISTER.

(b) To be eligible for placement on the List of Recommended Areas for marine sanctuaries a candidate area shall contain one or more of the following:

(1) Important habitat on which any of the following depend for one or more life cycle activity, including breeding, feeding, rearing young, staging, resting or migrating:

(i) Rare, endangered or threatened species; or

(ii) Species with limited geographic distribution, or

(iii) Species rare in the waters to which the Act applies, or

(iv) Commercially or recreationally valuable marine species.

(2) A marine ecosystem of exceptional productivity indicated by an abundance and variety of marine species at the various tropic levels in the food web.

(3) An area of exceptional recreational opportunity relating to its distinctive marine characteristics.

(4) Historic or cultural remains of widespread public interest.

(5) Distinctive or fragile ecological or geologic features of exceptional scientific research or educational value.

(c) Sanctuary boundaries should include an area sufficient to provide reasonable assurance that the resource value of the area can be protected against degradation or destruction. The boundary will not include an area greater than that appropriate to protect the resource. The determination of boundaries should consider the following elements, depending on the resource values that justify establishing the sanctuary:

(1) The range and interrelations of key elements of the ecosystem,

(2) The potential for adverse impact from human activities at some distance from where they are conducted, whether as a result of normal operations or foreseeable accidents,

(3) The economic, safety, and other effects of displacing certain human activities to other locations to the extent such displacement is likely to occur,

(4) The feasibility and cost of conducting surveillance and enforcement activities in the area.

(d) Where overlapping or adjacent sites are recommended or where the recommended boundaries of an area appear either excessive or inadequate to protect the identified features, the Assistant Administrator may prepare a combined or revised description for placement on the List of Recommended Areas.

(e) All recommendations submitted prior to the effective date of these regulations will be reviewed in accordance with this section and an initial List of Recommended Areas will be published in the FEDERAL REGISTER within 3 months of such date. Thereafter the List will be updated at least semi-annually and a cumulative List published in the FEDERAL REGISTER.

§ 922.22 Effect of placement on the List of Recommended Areas or Active Candidates.

(a) The List of Recommended Areas provides a source of information on sites believed to contain some resource value and may be helpful to Federal agencies and others planning or conducting activities that affect these sites. It is anticipated that, normally, once a site is selected as an Active Candidate, such status will be mentioned in an agency's Environmental Impact Statement (EIS) covering such an activity.

(b) Placement of a site on either List does not establish any regulatory controls, which can be established only after designation in accordance with § 922.26. Listing is a prerequisite for designation as a marine sanctuary but many more sites will be listed than designated and listing does not imply that designation will ever occur.

Subpart C—Selection of Active Candidates and Designation of Sanctuaries

§ 922.23 Selection of Active Candidates.

(a) A site on the List of Recommended Areas will be selected as an Active Candidate for designation as a marine sanctuary on the basis of:

(1) The significance of the resources identified during review for listing under § 922.21(b);

(2) The extent to which the means are available to the Assistance Administrator to support full review within the time specified in § 922.24; and

(3) The following additional factors:

(i) The severity and imminence of existing or potential threats to the resources including the cumulative effect of various human activities that individually may be insignificant.

(ii) The ability of existing regulatory mechanisms to protect the values of the sanctuary and the likelihood that sufficient effort will be devoted to accomplishing those objectives without creating a sanctuary.

(iii) The significance of the area to research opportunities on a particular type of ecosystem or on marine biological and physical processes.

(iv) The value of the area in complementing other areas of significance to public or private programs with similar objectives, including approved Coastal Zone Management programs.

(v) The esthetic qualities of the area.

(vi) The type and estimated economic value of the natural resources and human uses within the area which may be foregone as a result of marine sanctuary designation, taking into account the economic significance to the nation of such resources and uses and the probable impact on them of regulations designed to achieve the purposes of sanctuary designation.

(vii) The economic benefits to be derived from protecting or enhancing the resources within the sanctuary.

(b) Before selecting a site as an Active Candidate, the Assistant Administrator shall consult on a preliminary basis with relevant Federal agencies, state and local officials including port authorities, Regional Fishery Management Councils and other interested persons including the recommender to determine the nature of potential impacts in the area and to gather additional information as necessary to conduct the review process.

(c) Selection of any site as an Active Candidate for designation shall be announced in the FEDERAL REGISTER and all Active Candidates shall be placed on a separate list published and updated concurrently with the List of Recommended Areas as provided in § 922.21(e).

(d) Any site for which a Public Workshop as described in § 922.24(a) has been held or for which such a workshop has been scheduled prior to the effective date of these regulations, shall be considered an Active Candidate. These Active Candidates shall be announced in the FEDERAL REGISTER as soon as practicable after the effective date of these regulations, and prerequisites to Active Candidate status will be considered satisfied by inclusion in this announcement.

§ 922.24 Review of active candidates.

(a) Within six months of selection as an Active Candidate as specified in § 922.23, the Assistant Administrator shall conduct one or more Public Workshops in the area or areas most affected to solicit the views of interested persons to aid in determining whether the site should be further considered for Designation and whether any modifications to the recommendation may be appropriate. This workshop shall be before and in addition to the public hearings required under section 302(e) of the Act.

(b) Based on the views obtained at the Public Workshop and other relevant information, the Assistant Administrator shall determine whether the site should continue to be an Active Candidate and shall announce that decision in the FEDERAL REGISTER within 90 days of the last Public Workshop. If the site will not continue to be an Active Candidate, the notice shall specify the reasons. If the site continues to be an Active Candidate, the Assistant Administrator shall prepare a draft Environmental Impact

Statement (DEIS), containing a draft Designation document and regulations implementing the Designation in consultation with relevant Federal, State and local officials, Regional Fishery Management Council members and other interested persons. At or about the same time, the Assistant Administrator will publish the proposed Designation and regulations in the FEDERAL REGISTER in acordance with the Administrative Procedure Act.

(c) No less than 30 days after the Environmental Protection Agency (EPA) publishes a Notice of Availability in the FEDERAL REGISTER, the Assistant Administrator shall hold at least one public hearing in the area or areas most affected by the proposed designation in accordance with section 302(e) of the Act to consider the draft Designation, proposed regulations and DEIS.

§ 922.25 Coordination with States.

(a) Following the receipt of any recommendation, the Assistant Administrator shall notify the designated Coastal Zone Management Agency of an affected State or States with an approved Coastal Zone Management Program.

(b) The Assistant Administrator shall make every effort to consult and cooperate with affected States through the entire review and consideration process. In particular the Assistant Administrator shall

(1) Consult with the relevant State officials prior to selection of an Active Candidate for consideration, pursuant to § 922.23(b),

(2) Ensure that any State agency designated under sections 305 or 306 the Coastal Zone Management Act of 1972 and any other appropriate State agency is consulted prior to holding any Public Workshop pursuant to § 922.24(a) or public hearing pursuant to § 922.24(c), and

(3) Ensure that such Public Workshops and Public Hearings include consideration of the relationship of a proposed designation to State waters and the consistency of the proposed designation with an approved State Coastal Zone Management Program.

§ 922.26 Designation.

(a) In response to the comments received, including those at the Public Hearing described in § 922.24(c), the Assistant Administrator shall prepare a final environmental impact statement including the Designation and implementing regulations and file it with EPA. After final consultation with all appropriate Federal agencies and Regional Fishery Management Councils, the Secretary shall transmit to the President for approval the proposed Designation prior to making the site a Marine Sanctuary.

(b) The Designation shall specify by its terms the geographic coordinates of the Sanctuary area, its distinctive features that require protection, and the types of activities that may be subject to regulation. The terms of the Designation may be modified only by the same procedures through which the original designation was made.

(c) The regulations shall be consistent with and implement the terms of the Designation and shall set forth the limits of human activities within the sanctuary and procedures for the review and certification of permits, licenses or other authorizations pursuant to other authorities. All amendments to these regulations must remain consistent with the Designation.

(d) Where essential to prevent immediate, serious and irreversible damage to the resources of a sanctuary, activities other than those listed in the Designation may be regulated within the limits of the Act on an emergency basis for an interim period not to exceed 120 days, during which an appropriate amendment of the Designation would be sought.

(e) If, within 60 days of the publication of the Designation as provided in paragraph (e), the Governor of a state whose waters are included in the sanctuary certifies that any terms of the Designation are unacceptable, such terms and any regulations implementing them shall not become effective for the part of the sanctuary in state waters until the certification is withdrawn. If the Governor so certifies, the Designation may be withdrawn if, in the opinion of the Assistant Administrator, the sanctuary, as modified, no longer achieves the objectives specified in the Act, the regulations, and the Designation.

(f) The Assistant Administrator shall announce the designation of a Sanctuary and publish the Designation document and implementing regulations in the FEDERAL REGISTER.

Subpart D—Enforcement

§ 922.30 Penalties.

Any person subject to the jurisdiction of the United States who violates any regulation issued pursuant to the Act shall be liable for a civil penalty of not more than $50,000 for each such violation. Each day of a continuing violation shall constitute a separate violation. No penalty may be assessed under this section until the person charged has been given notice and an opportunity to be heard. Upon failure of the offending party to pay an assessed penalty, the Attorney General, at the request of the Administrator, will commence action in the appropriate District Court of the United States in order to collect the penalty and to seek such other relief as may be appropriate. A vessel used in the violation of a regulation issued pursuant to the Act will be liable in rem for any civil penalty assessed for such violation and may be proceeded against in any District Court of the United States have jurisdiction thereof. Pursuant to section 303(a) of the Act, the District Courts of the United States having jurisdiction to restrain a violation of the regulations issued pursuant to the Act, and to grant such other relief as may be appropriate.

§ 922.31 Notice of violation.

Upon receipt of information that any person has violated any provision of this title, the Administrator shall notify such person in writing of the violation with which charged, and of the right to demand a hearing to be held in accordance with § 922.32. The notice of violation shall inform the person of the procedures for requesting a hearing and may provide that, after a period of 30 days from receipt of the notice, any right to a hearing will be deemed to have been waived.

§ 922.32 Enforcement hearings.

Hearings requested under § 922.31 shall be held not less than 60 days after the request is received. Such hearings shall be on the record before a hearing officer. Parties may be represented by counsel, and shall have the right to submit motions, to present evidence in their own behalf, to cross examine adverse witnesses, to be apprised of all evidence considered by the hearing officer, and, upon payment of appropriate costs, to receive copies of the transcript of the proceedings. The hearing officer shall rule on all evidentiary matters and on all motions, which shall be subject to review pursuant to § 922.33.

§ 922.33 Determinations.

Within 30 days following conclusion of the hearing, the hearing officer shall make findings of facts and recommendations to the Administrator, unless such time limit is extended by the Administrator for good cause. When appropriate, the hearing officer may recommend a penalty, after consideration of the gravity of the violation, prior violations by the person charged, and the demonstrated good faith by such person in attempting to achieve compliance with the provisions of the title and regulations issued pursuant thereto. A copy of the findings and any recommendation of the hearing officer shall be provided to the person charged at the same time they are forwarded to the Administrator. Within 30 days of the date on which the hearing officer's findings and recommendations are forwarded to the Administrator, any party objecting thereto may file written exceptions with the Administrator.

§ 922.34 Final action.

A final order on a proceeding under this part shall be issued by the Administrator no sooner than 30 days following receipt of the findings and recommendations of the hearing officer. A copy of the final order shall be served by registered mail (return receipt requested) on the person charged or his representative.

APPENDIX B

NATIONAL MARINE SANCTUARY PROGRAM RESOURCE CLASSIFICATION SYSTEM

The national marine sanctuary program resource classification system will be used by NOAA and its regional resource evaluation teams to consolidate, code, and facilitate analysis of data acquired on marine sites which are being evaluated to determine their suitability as possible marine sanctuaries. Through the use of this classification system, existing baseline resource data can be used to provide: (1) the identification of (a) representative ecosystems and processes, (b) major geological, physical, chemical, and biological oceanographic features, and (c) unique or ecologically significant characteristics which apply to coastal and marine systems of the United States; (2) the location of sites which best represent these ecosystems, features, or characteristics; and (3) a description of the human uses of these ecosystems, features, or characteristics. The classification system will also be used to identify high quality resource/human use sites which have a good chance of meeting sanctuary site indentification criteria and being listed on the Program's Site Evaluation List (SEL). It will also be used in selecting sites from the SEL for evaluation as active candidates based on the further criteria discussed in Section III. C. The use of such a system to select active candidates helps to ensure that the system of marine sanctuaries is both diverse and representative, consistent with the Program's mission. It should be noted, however, that this classification system is not intended to be a "sanctuary want list" where every classification is meant to be represented by a site, but rather it serves as a point of reference for guiding the Program towards its mission.

The following classification system incorporates four separate systems designed to identify: (1) oceanic biogeographic provinces; (2) regional coastal systems; (3) the resource values of the site; and (4) the human use characteristics. The organization scheme is computer-compatible and permits the addition of new classification categories without the need for renumbering the existing ones. This should prove to be a workable and valuable scheme. For example, II. A.1.f.(2)(j), h.(1)(h), and i.(4)(b) indicate that the site is between Cape Cod and Cape Hatteras, represents an oyster reef habitat and is important as a commercial shellfish species area:

Zoogeographic Region	II.A.	North Temperate and Boreal-Austral Temperate Atlantic
Coastal Biotic Province	1.	Virginian
Resource Value	f.(2)(j) h.(1)(h)	Benthic Invertebrates Oyster Reefs
Human Use Value	i.(4)(b)	Shellfishing Areas

This classification system represents a modification of several schemes, including:

Briggs, J.C. 1974. Marine zoogeography. McGraw Hill. New York. 475 p.

Darnell, R.M., P.C. Lemon, J.M. Neuhold, and G.C. Ray. 1974. Natural Areas and their Role in Land and Water Resource Preservation. Final Report to the National Science Foundation. U.S./IBP Program for Conservation of Ecosystems. American Institute of Biological Sciences. December 1974. 286 p.

Ditton, R. B. and M. Stephens. 1976. Coastal Recreation: A Handbook for Planners and Managers. U.S. Department of Commerce, NOAA Office Coastal Zone Management. Washington, D.C. Multi. pp.

Ekman, S. 1953. Zoogeography of the Sea. Sidgwick and Jackson, London. 417 p.

Ketchum, B.H. (ed.) 1972. The Water's Edge: Critical Problems of the Coastal Zone. MIT Press. Cambridge, MA. 393 p.

Odum, H.T., B.J. Copeland, and E. A. McMahn. 1974. Coastal Ecological Systems of the United States, Vols I, II, III & IV. The Conservation Foundation. Washington, D.C. Multi. pp.

Ray, G.C. 1975a. A Preliminary Classification of Coastal and Marine Environments. IUCN Occasional Paper No. 14. International Union for Conservation of Nature and Natural Resources. Morges, Switzerland. 23 pp.

Ray, G.C. (Chairman), J.R. Clark, N.M. Foster, P.J. Godfrey, B.P. Hayden, S.P. Leatherman, W.E. Odum, J.H. Sather and W.P. Gregg, Jr. 1981. Identification and Selection of coastal biosphere reserves -- Interim Guidelines. An Expert Panel on Coastal Biosphere Reserves Report to the Directorate on Biosphere Reserves. United States Man and the Biosphere Program (MAB). University of Virginia, Charlottesville, VA. August 19-20, 1981.

Roy Mann Associates Inc. 1975. Aesthetic Resources in the Coastal Zone. U.S. Department of Commerce, NOAA, Office of Coastal Zone Management. 199 pp.

Thomas W. 1981. Pacific Basin Ecosystems Descriptions. Prepared for the Office of Coastal Zone Management. Multi. pp.

NATIONAL MARINE SANCTUARY PROGRAM CLASSIFICATION SYSTEM

I. Tropical Warm Water Shelf Provinces. Less than 200 m in depth. Dominated by mangroves, coral reefs and their associated biota. Tropical and subtropical regions included: tropical between the 20°C isotherms and subtropical extending to about 16°-18°C. Barriers between provinces and subregions are land masses. In the past, i.e., Mesozoic through early Tertiary, the entire area was joined by the great Tethys Sea, hence some biotic similarity throughout.

A. Central and Western Pacific Basin, Indo Pacific--Tropical Insular Pacific. High and low islands, mostly of volcanic origin, considerable wave action, endemic tropical and subtropical biota, although the biota becomes somewhat impoverished as one progresses east from the Indo-Malayan center. Includes Guam and the Northern Mariana Islands, and Trust Territories of the Pacific Islands, the Samoa Islands, and the Hawaiian Archipelago.

1. High Islands - Precipitous mountains of volcanic origin, rocky sea fronts, high energy beaches, high velocity channels, inland water ecosystems (coastal wetlands, streams, and anchialine pools), shoreline ecosystems (estuaries, rocky beaches, shallow lava beaches, boulder habitats, marine tidepools, sandy beaches, mudflats, and mangroves), and offshore ecosystems (coral reef flats, protected coral communities, sand deposits and channels, and deepwater terraces and slopes).

   - Area of exceptional resource value.*
   - Area of exceptional human-use value.*

2. Low Islands - Formed by geological subsidence of volcanoes. Gradual slopes, low energy beaches, steep shoreline cliffs, high velocity channels, shoreline ecosystems (horizontal faces, boulder habitats, marine tidepools, mangroves) and offshore ecosystems (atolls, coral reef flats, protected coral communities, sand channels, deepwater terraces and slopes).

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

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* Areas of exceptional resource and human use value are defined by the National Marine Sanctuary Criteria (Section III. and Appendix C) and coded in the following section of this Resource Classification System (see B-8).

B. American Atlantic and East Pacific--Tropical Subtropical. The Isthmus of Panama separated the two American coasts until relatively recently in geologic time (Tertiary) so that considerable similarities exist between them.

1. Floridian - West Indian. Eastern coast of tropical North America (including in the U.S., Cape Canaveral to Key West, the Tortugas, Sanibel Island, Florida and the U.S. Virgin Islands and Puerto Rico in the West Indies). Continental shelf is narrow off the east coast of Florida and the islands and wide off the west coast of Florida. Coastal plain is wide off Florida, other areas are insular. Coasts are fringed by extensive sandy beaches and barrier islands with extensive wetlands dominated by mangroves. Shoreland is low-lying (karst) limestone varying to mountainous, but distinctly calcareous, often of biological origin. Living reefs are common in nearshore areas; second in species richness only to the Indo-Malayan, but not nearly so rich in corals as the latter. Tropical waters are generally clear, of Caribbean and Antillean origin. Continental land-mass influence justifies erecting subprovinces: (1) Floridian subprovince--Cape Canaveral south to Key West, the Tortugas Islands, and Sanibel Island; and (2) American (Atlantic) Antillean subprovince--the West Indies.

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

2. Louisianian - Gulf of Mexico. Northern coast of the Gulf of Mexico including in the U.S., west central Florida from Sanibel Island to south Texas. Quite similar to Carolinian - South Atlantic, but more tropical in environmental conditions and in biotic composition. Continental shelf is wide, sediments mostly terrigenous in origin. coastal plain is wide fringed by sandy beaches, barrier islands, and wetlands. Salt domes are common, some bearing living coral. Shelf waters are moderately turbid and more so near the Mississippi River.

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

3. Carolinian - South Atlantic. Coast of south Atlantic states from Cape Hatteras to Cape Canaveral, with the area of the Georgia Embayment south to Palm Beach transitional to the Floridian - West Indian region. Continental shelf is wide, gently sloping with infrequent outcrops limerock banks, and bordered by the deep Blake Plateau. Coastal plain is wide, fringed by sandy beaches, siliceous barrier islands, and extensive wetlands and (cyprus) swamps. Carbonate sands are common both southward and seaward of the coast. Nearshore

waters are highly productive, turbid with high sediment load of terrigenous origin. Submerged aquatic vegetation is limited in distribution nearshore and associated with hardbottoms offshore. Biota is temperate with subtropical reef forms associated with hardbanks, although reef building corals are generally lacking. Ocean waters are greater than 35 parts per thousand (ppt), except where freshwater influence is great, and are strongly influenced by the Gulf Stream. Shoreline characteristics, terrestrial landforms and oceanic influences suggest two distinct subregions--the Carolina Capes and the Georgia Embayment.

- Area of exceptional resource value.
- Area of exceptional human-use value.

4. Californian - Subtropical American Eastern Pacific. Western coast of North America (including in the U.S. Point Conception, California and Gulf of California to the California-Mexico border). Fairly well developed continental shelf containing the Channel Islands. Nearshore submarine canyons and baymouth barriers of moderate to small size are common coastal features. Shoreland is generally mountainous (often volcanic); rocky coasts with volcanic sand; general absence of marshes, swamps, and calcareous bottoms. Ocean waters are of southern origin; entire region characterized by upwelling. Biota is transitional from temperate Eastern Pacific to tropical Eastern Pacific; high degree of endemism. Southern border especially subject to change by reason of north-south current shifts.

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

II. North Temperate and Boreal-Austral. Temperate regions are the most variable of all seas, being tropical in temperature in summer and falling to almost polar temperature in winter, especially inshore. Thus, the biota varies seasonally and boundaries are very hard to define.

A. Temperate Atlantic

1. Virginian - Mid Atlantic. Warm temperate western Atlantic from Cape Cod to Cape Hatteras. Continental shelf is uniformly wide, cut by submarine canyons at outer edge. Coast is unglaciated, fringed by siliceous sandy beaches and barrier islands. Coastal plain become increasingly wide to the south and indented by very large estuaries with extensive submerged aquatic vegetation. Lowland is wide to the south and indented by very large

estuaries with extensive submerged aquatic vegetation. Lowland streams, coastal marshes, and muddy bottoms become prominent. Nearshore waters receive moderate load of sediment from land areas. Some winter icing occurs in protected areas. Very complex hydrology; ocean waters generally originate in the north, less than 35 ppt but occasionally replaced by more saline slope water and water of the Gulf Stream. North and south boundaries of the region are hard to define: roughly Cape Hatteras to about Cape Cod; but neither is a precise boundary. Boundary is variable seasonally. Coastal Labrador Current forms a "cold wall" between much of the coast north of Cape Hatteras and the Gulf Stream. Climate, topography, and biota transitional between Carolinian and Acadian; biota primarily temperate with some boreal species.

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

2. Acadian - Boreal. Cold temperate and boreal American North Atlantic. Northeast coast of North America (including U.S., Maine to Cape Cod, Massachusetts). Rocky, glaciated shoreline and submarine topography with deep basins prominent. Sandy beaches are common along the southern shores of the Gulf of St. Lawrence and in the southern portion of the region. Complex and fluctuating interrelationships between the Labrador Current and Gulf Stream. Waters are relatively clear, subject to winter icing. Ocean waters are less than 35 ppt salinity, originating mostly from the Labrador Current and St. Lawrence River. Boundaries of region difficult to delineate: Cape Cod to Newfoundland appears to be boreal and Newfoundland to arctic is transitional, but neither is a precise boundary. Biota is essentially boreal, with large attached algal species as important producers.

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

B. Great Lakes of North America (including in the U.S., the U.S. portion of the Great Lakes and their connecting waters). Rocky, glaciated topography with limited wetlands; cold temperate climate; fresh water only; biota is a mixture of boreal and temperate species together with anadromous and marine invaders.

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

C. Temperate North Pacific. Incorporates a vast area of the North Pacific.

1. Oregonian (Columbian) - Temperate Eastern Pacific. Northwest coast of North America including in the U.S., the Washington-Canada border to Point Conception in southern California. Continental shelf is narrow shorelands rocky, mountainous with rocky headlands and sandy pocket beaches. Many small and some large rivers. Estuaries are generally small with baymouth barriers, with exception of San Francisco Bay and Puget Sound. Waters are cool and relatively clear; ocean waters dominated by California Current. Biota is boreal to temperate with extensive algal communities, especially offshore kelp beds.

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

2. Sitkan - North Pacific. From British Columbia to the base of the Alaskan peninsula (including in the U.S., the southern coast of Alaska). Continental shelf is generally narrow. The coast is incised, rocky and dominated by glacial fjords, except in the central section from Prince William Sound to Glacier Bay where many sand beaches and baymouth barriers occur. Precipitous coastal mountains are glaciated heavily in north. Deep tidal estuaries with glacial moraines and turbid backwash. Uniformily cool temperatures. Ocean waters cold temperate; biota boreal to north and west.

   - Ares of exceptional resource value.
   - Area of exceptional human-use value.

3. Aleutian - Insular North Pacific. From the base of the Alaska Peninsula throughout the Aleutian, Pribilof, and Kommandorski Islands. Continental shelf narrow or absent. Shorelines precipitous, dominated by north Pacific weather and oceanic influences. Ocean waters are north Pacific in origin; very little fresh water input. Biota boreal.

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

III. Arctic - Boreal/Arctic. From the Southern Bering Sea to the Chukchi and Beaufort Seas and the archipelago of the Canadian Arctic. Continental shelf and coastal plain width moderate to wide. Sea surface and shores subject to ice stress and scouring most of the year. Floating ice common. Shores often cliffed. Coastal landforms varied, include large deltas with extensive wetlands, large lakes and lagoons and long barrier islands and beaches. Ocean waters

westward and southward originate in north Pacific and strongly influenced by the Yukon and Kuskokwim Rivers; to the east and north, the MacKensie River influences. A biotic boundary at Point Barrow demarcates two marine subregions: the Boreal-Arctic Bering and Chukchi Seas and the Arctic Beaufort Sea. Biota boreal and dominated by marine mammals and marine birds. Extremely productive shelf waters; diatoms inhabit ice, in and on undersurface and phytoplankton often present.

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

IV. Oceanic Bathypelagic and Benthic Deep Sea. These are regions mostly outside our immediate purview though we must be conscious of them. Included are: warm water northern and southern cold water oceanic regions; the bathypelagic seas, mostly poorly lit; and the archi-benthal and abyssal benthic deep sea. In the deeper regions lives a partly archetypal, peculiarly specialized biota, highly dependent on production in nearsurface waters and consequently the "rain" of detritus to deep depths. Water mass characteristics, more than any other features, delimit regions and the nature of the benthic sediments has a powerful influence on the benthic forms.

   - Area of exceptional resource value.
   - Area of exceptional human-use value.

APPENDIX B. 1.

CLASSIFICATION BY TYPE OF SANCTUARY

(Characteristics may be overlapping)

Area of exceptional resource value

a. Area which is particularily characteristic of the broad biogeographic region in which it is found.

b. Area which is particularily characteristic of the biogeographic subregion in which it is found.

c. Area which is significant in relation to the diversity of ecological communities found in a specified habitat type or biogeographic region or subregion.

d. Area which is significant in relation to its level of biological productivity.

e. Area which is significant in relation to its biotic character or species representation:

(1) Area with rare, threatened, endangered, or depleted species, endemic species or species of limited geographic range.

(2) Area with ecologically important marine species, such as:

a) Cetaceans (whales and porpoises)
b) Pinnipeds (seals and sea lions)
c) Polar bears
d) Sea otters
e) Manatee and dugong
f) Marine turtles
g) Pelagic finfish
h) Demersal finfish
i) Cryptic finfish
j) Benthic invertebrates (e.g., shellfish, coral, sponges)
k) Deepwater species
l) Marine birds
m) Marine plants
n) Marine microorganisms (e.g., phosphorescent bays, red tides)

(3) Area with unique species associations or biological assemblages:

a) Kelp - sea urchin - abalone - sea otter association
b) Scleractinian coral - algae association
c) Submarine canyon "pueblo" community

d) Red tide
e) Phosphorescent bays
f) Others

f. Area which is important for species maintenance including:

a) Courtship areas
b) Breeding grounds
c) Feeding grounds
d) Nesting/nursery areas
e) Haul-out areas
f) Resting/wintering areas
g) Migratory pathways

g. Area which is characterized by special ecosystem structure (i.e., physical, chemical, and/or geological habitat features):

(1) Coast Associated Habitats

a) Estuaries

i. Misohaline - 30 to 35 ppt
ii. Polyhaline - 18 to 30 ppt
iii. Mesohaline - 5 to 18 ppt
iv. Oligohaline - 0.5 to 5 ppt

b) Fjords
c) Sedimentary deltas
d) Hypersaline lagoons
e) Bays
f) Marshes
g) Mangroves
h) Oyster reefs
i) Worm and clam flats
j) Submerged vegetation beds
k) High velocity channels
l) Living coral reefs
m) Soft bottom habitats

i. Intertidal sand bottom communities
ii. Intertidal mud bottom communities
iii. Subtidal sand bottom communities
iv. Subtidal mud bottom communities

n) Hard bottom habitats
o) Rocky intertidal algal communities
p) Cyprus swamps
q) Migrating subsystems (migrations cued by seasonal food pulses)
r) Plankton bays
s) Coastal cliffs

(2) Offshore Habitats

a) Soft bottom habitats
b) Kelp beds
c) Coral and algal reefs
d) Atolls
e) Drowned reefs (including submerged shorelines, rocky outcrops, snapper banks or "live bottoms")
f) Insular environments (including bird/mammal islands)
g) Submerged vegetation beds
h) Sponge communities
i) Shellfish beds
j) Submarine canyons
k) Sand banks and shoals
l) Upwelling areas
m) Topographic highs
n) Naturally deep holes
o) Artifical reefs and structures
q) Transition zones
r) Migrating subsystems
s) Continental shelf/slope environments
t) Continental slope environments
u) Offslope environments (e.g., oceanic bathypelagic, abyssal plains, submarine trenches, seamounts, and submarine ridges)
v) Ice environments (e.g., shore fast, pack, shelf, glacial and berg)
w) Water circulation bodies (e.g., currents, circulation cells, gyres)
x) Pelagic ecosystems (develop independent of the bottom)

<u>Area of exceptional human-use value</u>

g. Area of importance for recreational fisheries

h. Area of importance for industry or the military

(1) Fishing areas
(2) Shellfishing areas
(3) Mining areas
(4) Facility siting areas
(5) Transport areas
(6) Other

i. Area of importance for recreational activities other than fishing

(1) Diving areas
(2) Boating areas
(3) Nature study areas

(4) Shoreline water contact sport areas (such as swimming, surfing and water skiing)
(5) Aesthetic Areas

a) Scenic seascapes
b) Submerged scenic

(6) Wilderness Areas

j. Area of exceptional research opportunity (both pure and applied research)

(1) Ecosystem analysis
(2) Specific species research (such as feeding habits or biochemistry of a marine organism)
(3) Marine geology
(4) Physical oceanography
(5) Chemical oceanography
(6) Resource monitoring
(7) Other

k. Area of exceptional interpretative opportunity

l. Area of historical, archeological and paleontological importance

(1) Historic wrecks
(2) Human artifact sites
(3) Human archeological sites
(4) Life-style support areas

APPENDIX C

NATIONAL MARINE SANCTUARY SITE IDENTIFICATION CRITERIA

During summer 1981, the National Marine Sanctuary Program draft Site Identification Criteria were reviewed and refined by three marine scientists: Drs. Walter H. Adey, Rezneat M. Darnell, and G. Carlton Ray. Taking their recommendations into consideration, the criteria presented below and the Site Evaluation Matrix in Appendix D were developed.

The site identification criteria are directly related to the Program's purposes: (1) that the system of sanctuaries established is illustrative of the variety of ecosystems found in the United States; (2) that sanctuaries allow, to the maximum extent feasible, multiple use for public and private interests; (3) that sanctuaries are designated for the purpose of protecting or restoring conservation, recreational, ecological, or esthetic values; and (4) that sanctuaries are established to serve as a conservation component, or a management tool, in a broad national-interest approach to marine resource development, conservation, and utilization. The criteria are grouped accordingly into four categories: (1) natural resource values; (2) human use values; (3) potential activity impacts; and (4) management concerns. The criteria under each category reflect concerns significant to the Program.

Sites initially identified using the Sanctuary Program Classification System (Appendix B) are evaluated in terms of these criteria (i.e., to see which criteria are met). Appendix D describes how sites meeting a majority of the criteria are further assessed to identify priority sites. The Regional Resource Evaluation Teams are to utilize these criteria in their site evaluations. A glossary of terms which are used in this and other sections of the PDP is presented in Appendix F.

I. Natural Resource Values

A. Regional Representation

The area under consideration is characteristic of the broad biogeographic region in which it is located. (Reference: Sanctuary Program Classification System for biogeographic regions of the United States and its territories -- Appendix B).

B. Subregional Representation

The area under consideration is representative of the biogeographic subregion in which it is located. (Reference: Sanctuary Program Classification System).

Example: This criterion would apply to an area containing species assemblages which are especially characteristic of the Oregonian subregion of the British Columbian region. Another example would be an area containing species assemblages which are especially characteristic of the Floridian or American Atlantic Antillean subregion of the West Indian region.

C. Community Representation

The area under consideration is significant in relation to the ecological communities which are found within the specified habitat type or within the biogeographic region or subregion (i.e., on a macroscale, communities are assemblages of species populations within a prescribed area or habitat).

Examples: (1) The wide spectrum of marine habitats in the Channel Islands National Marine Sanctuary in California created by accentuated bottom relief, varied bottom substrates, and gradation in water depth from island shorelines to deep coastal basins support a variety of ecological communities.

(2) Coral reef, grass bed, soft bottom, and open-bay habitat areas in the Key Largo National Marine Sanctuary support a variety ecological communities associated with the east Florida reef tract.

D. Biological Productivity

The area under consideration is significant in relation to its level of primary and/or secondary production.

Examples: (1) East Breaks at the edge of the outer continental shelf off Corpus Christi, Texas is characterized by intense local upwelling, high primary productivity, and exceptional fish production.

(2) In the Gray's Reef National Marine Sanctuary, much production may be imported; outcroppings of limestone rocks may serve to entrap, conserve, and circulate detritus and plankton which provide energy sources for reef invertebrates, which in turn support marine fisheries and sea turtles.

(3) In the Channel Islands National Marine Sanctuary, the cold waters of the California Current flowing north meet the warm waters of the California Counter Current flowing south to create upwellings of cold nutrient-rich waters that enhance the biological productivity of the area. (Note: This example also meets Criterion I.G.).

(4) In many cases, coral reefs are not only energetically self-sustaining (i.e., they produce locally enough food to support the community), but they are also specifically organized to entrap, hoard, and recycle materials received from the surrounding waters (i.e., products that are imported and conserved).

E. Biotic Character/Species Representation

The area under consideration is of special interest because it supports:

(1) ecologically limited species;
(2) ecologically important species; or
(3) unique species associations or biological assemblages.

Examples: (1) This criterion would apply to marine habitat areas upon which ecologically limited species (e.g., threatened, endangered, rare, depleted, endemic, or peripheral species) are dependent during all or part of their lives.

(2) This criterion would apply to marine areas containing species which contribute in a significant way to the maintenance of a specified ecosystem found in the region or subregion, such as the Channel Islands National Marine Sanctuary which supports one of the largest and most varied assemblages of marine mammals and seabirds in the world.

(3) The waters off Point Lobos, California support a unique assemblage of kelp, sea urchin, abalone, and sea otters.

(4) Submarine canyons support unusual biological communities of soft corals, crustaceans, and fish known as "pueblo villages."

(5) This criterion would also apply to wide sandy bottom areas which are characterized by low productivity, but unique species composition, such as certain areas off central Texas.

F. Species Maintenance

The area under consideration is important to life history activities, including special feeding, courtship, breeding, birthing/nursery, resting/wintering, and migration areas.

Examples: (1) The waters off the Point Reyes-Farallon Islands provide deep and shallow water feeding areas for a wide variety of marine organisms, including seabirds, marine mammals, and marine fisheries. The Farallon Islands support the largest seabird rookeries in the contiguous United States and are used, along with the mainland, by California sea lions, harbor seals, and elephant seals for hauling out and pupping purposes. Whales, including several endangered species, and porpoises pass through the sanctuary on annual migrations.

(2) The waters around certain Hawaiian islands are important wintering, birthing/nursery, and perhaps courtship/breeding areas for endangered humpback whales.

(3) Spiny lobster migration routes off Florida are important for the "off shelf" movement of this species.

(4) The mouth of the Mississippi River is an important brown shrimp over-wintering ground.

G. Ecosystem Structure/Habitat Features

The area under consideration is characterized by special chemical, physical, and/or geological habitat features.

Examples: (1) The Florida Middle Grounds on the Gulf of Mexico continental shelf represent an unusual geological formation -- a drowned Pleistocene reef--which supports rich and diverse reef communities.

(2) Transition zones occur where two different marine systems converge -- such as at coastal/marine system interfaces, shelf/slope interfaces, soft bottom/hard bottom ecotones, or cold water/warm water current convergence zone. These areas of mixing often have unique physical and ecological characteristics, high production, and species diversity/ population densities which are often greater than in areas flanking them. For example, a transition zone is formed near Cape Hatteras where cold northern waters of the Labrador Current mix with warm water eddies of Gulf Stream/Florida Current and as a result, northern and southern species mix and co-exist with species endemic to the area. (Note: This example also meets Criterion I.D.).

(3) Easternmost coastal areas of Maine--with unique bay-heads and rocky coasts, varied substrates derived from glacial materials, extensive sub-fjord character, and numerous offshore islands--are matched by few areas in the world in habitat types and species diversity.

II. Human-Use Values

A. Fishery Resources of Recreational Importance

The area under consideration contains fish and shellfish species, species groups (e.g., snapper-grouper complex), or fishery habitats which are important to the recreational fishing industry/community and for which conservation and management is in the public interest.

Example: The Florida Middle Grounds rank high in statistical surveys of demersal and pelagic fish catch and effort, recreational sector participation, and socioeconomic contribution.

B. Fishery Resources of Commercial Importance

The area under consideration contains fish and shellfish species, species groups (e.g., snapper-grouper complex), or fishery habitats which are important to the commercial fishing industry and for which conservation and management is in the public interest.

Example: The waters of the Point Reyes-Farallon Islands National Marine Sanctuary provide substantial fishing opportunities, including commercial fisheries for bottom fishing, crab, salmon, albacore, and pelagic anchovy, herring, and other species.

C. Ecological/Aesthetic Resources of Importance For Recreational Activities Other Than Fishing

The area under consideration contains exceptional natural resources and features which, because of their importance to nature watching and other nonconsumptive recreational activities, enhance human appreciation, understanding, and enjoyment of nature.

Examples: (1) Rocky shorelines, shallow nearshore waters, and intertidal pools in the Channel Islands and Point Reyes-Farallon Islands National Marine Sanctuaries have rich and varied plant and animal life which attract many persons interested in photography and nature study.

(2) The prominent topography around the Channel Islands and Point Reyes-Farallon Islands National Marine Sanctuaries provides outstanding ocean vistas.

(3) The spectacular spur-and-groove coral reef formation in the Looe Key National Marine Sanctuary attracts SCUBA and snorkeling enthusiasts from all over the world.

(4) The waters off Maui, Hawaii are popular for humpback whale watching.

D. Research Opportunity

The area under consideration provides exceptional opportunities for research in marine science and resource management.

Examples: (1) The Gray's Reef National Marine Sanctuary serves as a natural laboratory or control area for research in live bottom ecology.

(2) The Key Largo National Marine Sanctuary is amenable to onsite research activities for many reasons, including the diversity of resources available, the past history of scientific research and education in the area, the compatibility with similar research efforts in adjacent John Pennekamp State Park and Biscayne National Park, and the proximity of the site to user groups. In addition, the Carysfort Reef Lighthouse provides a unique research base from which to launch studies concerning the sanctuary environment.

(3) The Channel Islands National Marine Sanctuary offers a special opportunity to coordinate research with the Channel Islands National Park. Such coordination will contribute to a better scientific understanding of the marine environment and to more effective management by answering questions such as those related to fisheries, marine mammals, seabirds and those related to development and use of marine resources.

E. Interpretive Opportunity

The area under consideration provides an excellent opportunity to interpret the meanings and relationships of special marine resources in order to enhance general understanding, appreciation, and wise use of the marine environment.

Examples: (1) Through a variety of interpretive media, including aquaria displays, narrated slide shows and glassbottom boat tours, a visitor to the Key Largo National Marine Sanctuary is exposed to a variety of marine and coastal ecosystems, including open ocean, fringing coral reefs, patch reefs, mangroves, and open bay and barrier islands.

(2) The Channel Islands National Marine Sanctuary provides an exceptional opportunity to interpret marine and insular ecosystem features through the use of various interpretive "hands on" techniques that go beyond traditional educational tools, such as brochures and pamphlets.

F. Historical, Archaeological or Paleontological

The area under consideration contains (or is likely to contain) submerged remnants of past life that are of special historical, cultural or paleontological value.

Examples: (1) This criterion would apply to marine areas where known or possible shipwrecks, armaments, or other maritime relics occur and where protection is desirable to conserve or restore aesthetic values and to advance the goal of the United States antiquities laws to protect historical resources.

(2) This criterion would apply to marine areas containing, or suspected of containing, remnants of historic human occupation by Indians, Eskimos, early Americans, or other peoples.

(3) This criterion would apply to marine areas containing fossils and geological formations whose study would reveal clues to the earth's geologic history, the characteristics of ancient environments and the relationship of ancient plants and animals to the earth's evolutionary history.

ADDITIONAL FACTORS IN SITE IDENTIFICATION

III. Potential Activity Impacts

Many marine areas are subject to human use, some of which bring adverse pressures to bear on the natural resources. The initial identification of potential marine sanctuary areas by Resource Evaluation Teams should include a summary of existing and potential human activities in these areas as well as a preliminary assessment of environmental impacts. Since the pressures may arise from various activities, the present or potential ecological significance of each activity, as well as the cumulative impact of several activities, must be analyzed so that appropriate management action may be designed and implemented. Definitive environmental impact analyses, however, are hampered by the fact that adequate field data on natural or "existing" conditions are often lacking, thus making assessments of "human-induced" versus "natural" conditions difficult. Many judgments are, therefore, based on projections and can be subjective, i.e., the evaluation depends largely upon the experience and special interest of the reviewer.

Regional resource evaluation teams will preliminarily assess activity impacts based on a review of scientific literature (e.g., baseline studies and environmental impact studies) and discussions with persons knowledgeable in the field. The types of activities which may be considered for potential impacts include: (1) vessel traffic; (2) aircraft overflights; (3) commercial and recreational fishing; (4) other recreational activities such as SCUBA, snorkeling, spearfishing, and specimen collecting; (5) ocean dumping and waste disposal (including litter); (6) scientific research and educational demonstrations; (7) dredging and dredge disposal; (8) disturbing marine mammals and seabirds; (9) anchoring; (10) salvage operations; and (11) oil and gas recovery and associated activities. This is not meant as an exhaustive listing, but rather to illustrate the range and types of activities which may be evaluated for potential impacts on resources within a site identified for future marine sanctuary consideration.

IV. Management Concerns

A. Relationship To Other Programs

While some sanctuaries may be designated to protect resources not currently managed by other existing programs (e.g., the U.S.S. MONITOR on the continental shelf off North Carolina), most recommendations involve cooperation with some other Federal, State, or local agency or organization. The ability of existing regulatory mechanisms to protect the values of the area and the contribution of the Sanctuary Program to that existing management effort may be an important factor in selecting sanctuary candidates. Depending on the location, the resource, and the existing system, the Program could either complement the status quo by filling specific gaps or form a management umbrella over a fragmented system to help coordinate and strengthen diverse, but related efforts. At different sites, NOAA may work to complement other programs efforts such as estuarine sanctuaries, national parks, wildlife

refuges, or state preserves, among others. There may be instances where NOAA's primary contribution to protection of special marine areas will be in the form of enhanced public awareness through interpretive and research programs.

B. Management of a Conservation Unit

Optimum size of a marine sanctuary is an issue to be considered in potential sanctuary sites. Sanctuary boundaries are discussed in some detail in Section III.F and Appendix E of the PDP. The size or extent of a marine sanctuary should be a cohesive conservation unit amenable to effective management given fiscal and staff constraints of the managing entities.

C. Accessibility

Since national marine sanctuaries are to be readily available for public use, when use is compatible with the sanctuary's goals and objectives, consideration should be given to factors which limit or enhance public access to a particular site.

D. Surveillance and Enforcement

Another issue to be considered when evaluating a potential sanctuary site is the the degree to which the area (i.e., the location, its size, and the types of resources involved) lends itself to adequate enforcement and surveillance and the capabilities of responsible agents (e.g., U.S. Coast Guard, state law enforcement divisions, or the like). Specifically, consideration should be given to: (1) degree of surveillence/enforcement presence needed in the area-light, medium, or heavy; (2) schedule--routine, prescribed, or case-by-case basis; and (3) logistics--vessels, aircraft, manpower, equipment, and budgetary requirements.

E. Economic Considerations

The designation of any national marine sanctuary could have economic effects at both local and national levels. Prior to the development of a management plan for a particular site which describes permitted and restricted activities, it is difficult to calculate the economic impact of sanctuary designation. It is even more difficult to determine the economic value of the sanctuary to society as a whole based on such things as public use, research and interpretive value. Sanctuary designation often enhances economic value by ensuring long-term protection for commercially significant resources, such as commercial or recreational fish stocks, vital habitats, and resources which generate tourism. Conversely, a marine sanctuary may also have negative economic impacts if management regulations restrict activities that generate income. However, in these cases, the economic value is usually not irretrievably lost since the resources remain protected for the long term and could be used if necessary. In cases where certain economic values are reduced or foregone, this impact must be weighed against the long-term benefits to society. Analysis of a potential site for marine sanctuary status will take socioeconomic impacts into consideration.

APPENDIX D

SITE EVALUATION MATRIX

Appendix C outlines the criteria for identifying potential marine sanctuary sites. Four categories of criteria are presented, namely, natural resource values, human use values, potential activity impacts, and management concerns. The criteria address characteristics which are of particular significance to the national marine sanctuary program.

After a site is examined to determine which criteria are met, the next step involves an evaluation of the relative value of each criterion. This is accomplished using the Site Evaluation Matrix (see Figure 2, page 25) and the guidelines provided below. Sites are evaluated in terms of the individual value of each criterion met (e.g., low, moderate, or high value) and in relation to other sites with complementary characteristics. The following rating system is recommended:

Low Value (L) -- Low quality; not significant but still a viable concern; of minor contribution to national system; of minor importance; other equally good representatives are available; or duplicates, in significant measure, another recommended area or designated sanctuary.

Moderate Value (M) -- Moderately good quality; significant but not the most important concern; helps to support species, but not critical; helps to support the regional ecology, but only in a small measure or in a general way; a few other good representatives are available; or moderate contribution to the national system.

High Value (H) -- Very high value; high quality; a major reason for sanctuary consideration; extremely important to regionally significant species; of great importance in terms of ecological features and processes; regional ecology would likely be significantly altered if the values were not protected; no significant duplication of other recommended areas; absolutely unique; one of a kind; best available regional representive; or excellent contribution to the national system.

Unknown Value (X) -- Value or consequences unknown; more study needed to determine value or consequence; factor does not apply; or factor is not an issue, does not need to be considered.

Sites which consistently have relatively low values receive an overall "low priority" assessment and are eliminated. In contrast, sites which consistently have relatively high values receive a "high priority" assessment and are recommended for further consideration. The Site Evaluation Matrix is used to tabulate this information. From this evaluation, the Regional Resource Evaluation Teams compile an initial list of the most highly qualified sites for public review (see page D-11). Guidelines for evaluating sites using program criteria are presented in the following pages.

I. NATURAL RESOURCE VALUES

A. Regional Representation

L -- Other equally good or better sites available; not a good representative of the region.

M -- Few other sites available; good representative of the region.

H -- Best available site; only one or two sites in the region; best representative of regional characteristics.

B. Subregional Representation

L -- Other equally good or better sites available; not a good representative of the subregion.

M -- Few other sites available; good representative of the subregion.

H -- Best available site; only one or two sites in the subregion; best representative of subregional characteristics.

C. Community Representation

L -- Poor representation of the community types found within the specified habitat type or within the biogeographic region or subregion; low percentage of communities on site; low percent cover of communities on site.

M -- Good representation of the community types found within the specified habitat type or within the biogeographic region or subregion; limited number of communities on site; good range of common communities present; moderate percent cover of communities on site.

H -- Excellent representation of the community types found within the specified habitat area or within the biogeographic region or subregion; good or very good range of habitats and communities on site; localized, relict, or special communities present.

D. Biological Productivity

L -- Contribution to regional/subregional production minor.

M -- Contribution to regional/subregional production moderate; trophic relationships are typical or common for the region or subregion.

H -- Contribution to regional/subregional production extremely important; regional/subregional ecology would likely be significantly altered if natural (normal) production levels change; highly exemplary, special or unusual trophic relationships.

E. Biotic Character/Species Representation

L -- Characteristic species are common in the region/subregion; few, if any: (1) ecologically limited species (e.g., threatened, endangered, rare, depleted, endemic or peripheral species); (2) ecologically important speices; or (3) special species combinations or biological assemblages; low percentage of regionally or locally available species; other equally good or better sites available.

M -- The area is only of moderate importance to populations of ecologically limited species or ecologically important species; few, if any, special species combinations or assemblages; percentage of regionally or locally available species is moderate; some other similar sites available.

H -- Very important to species which are of high ecologic value or ecologically limited in regional, national or international distribution or existence (e.g. endemic, threatened, endangered, rare, depleted); contains special species combinations or biological assemblages; outstanding diversity for a particular habitat or community type; best available site; only one or two sites in the region or subregion.

F. Species Maintenance

L -- Of some importance to supporting life history activities of regional/subregional species; no local dependence upon this area; many other equally important sites available.

M -- Important to supporting life history activities of regional/subregional species, but not critical; some other equally important sites available.

H -- Extremely important to supporting life history activities of regional/subregional species; only one or two other sites available.

G. Ecosystem Structure/Habitat Features

L -- Habitat features are common in the region/subregion, but are not outstanding representatives; no significant contribution to regional/subregional ecosystem structure; no special chemical, physical or geological habitat features.

M -- Habitat features are common in the region/subregion; some special features are available; few other sites available; moderate contribution to the regional/subregional structure.

H -- Unique, different or special habitat features; only one or two other sites available; significant contribution to regional/subregional structure; structual features have strong influence on ecological processes in the area.

II. Human Use Values

A. Fishery Resources of Recreational Importance

L -- Low recreational importance; many other fishery opportunities available.

M -- Moderate recreational importance; some other fishery opportunities available.

H -- High recreational importance; only one or two other fishery opportunities available.

B. Fishery Resources of Commercial Importance

L -- Low commercial importance; many other fishery opportunities available.

M -- Moderate commercial importance; some other fishery opportunities available.

H -- High commercial importance; only one or two other fishery opportunities available.

C. Ecological/Aesthetic Resources of Importance for Recreational Activities Other Than Fishing

L -- Low value; minimum opportunity for recreation; many other sites available.

M -- Moderate value. good opportunity for recreation; few other sites available.

H -- High value; excellent opportunity for recreation; rare in the region; only one or two sites available.

D. Research Opportunity

L -- Very limited research opportunities; the site has already received considerable research attention (i.e., "researched to death"); not suitable for study; many other sites available.

M -- Good research opportunities; good for use at most levels of research, formal and informal; few other sites available.

H -- Excellent research opportunities; outstanding for use at all levels of research, formal and informal; can withstand some pressure from these activities; only one or few other sites available.

E. Interpretive Opportunity

L -- Low or minimal interpretive value; opportunities for interpretation are limited; has already received considerable interpretive attention; resource features are common in the region; many other sites available.

M -- Moderate or good interpretive value; opportunities for interpretation fairly good; visually attractive features; resource features are fairly limited in the region; few other sites available.

H -- Excellent interpretive value; opportunities for interpretation excellent or unusual; visually attractive features; resource features are special in the region or subregion; only one or two other sites available; good potential for interpretive center and/or displays; the enhancement of public awareness through this resource is paramount.

F. Historical, Cultural or Paleontological Importance

L -- Little or no historical, cultural or paleontological importance; many other sites available.

M -- Moderate or good historical, cultural or paleontological importance; few other sites available.

H -- Very special historical, cultural or paleontological value; only one or two other sites available.

III. Potential Activity Impacts

Existing and potential activities within a particular area are listed by Resource Evaluation Teams on the Site Evaluation Matrix. The potential impact of each activity is evaluated using the following recommended scheme:

L -- This activity is not highly significant, but still a viable issue; little or no impact at current activity levels; very little potential for harm by increase of this activity; if the activity is remote, there is an adequate buffer to protect the area; no known or proposed future development which could affect resource or human use value; no current or potential user conflict.

M -- This activity is significant, but not the most important issue; some impact on resources of current activity levels, but the system is resilient with little permanent damage or other long-lasting effect; some possible negative impact if activity level increases; if the activity is remote, there is a fairly good buffer zone to protect the area; some

possible future development likely which could affect resource or human use values; some current or potential user conflicts which threaten resource or human use value.

H -- Potential for impact at current activity levels is high or is already major issue; resources are suspected to be very sensitive to environmental change, not resilient; resources would likely be significantly altered if values are not protected; the area is in immediate need of protection; negative impact likely if activity levels increase or continue continue at present level; current or potential user conflicts could significantly threaten resource or human use values.

X -- Environmental consequences unknown. More study is needed.

IV. Management Concerns

A. Relationship to Other Programs

L -- Other equally good or better programs in effect for all aspects of marine sanctuary management.

M -- Few complementary programs in place, but none that offer the same comprehensive management opportunities or public benefits.

H -- No other programs available or in place; marine sanctuary program is the best available program; offers unique or special management opportunities or public benefits; fills existing regulatory or nonregulatory management gaps; coordinates management, research and education efforts.

B. Management of a Conservation Unit

L -- Does not represent a conservation unit; contains only fragments of the ecosystem of concern; protection of a portion of the system does not help or only minimally helps the overall system; not a manageable unit; excessive size; some boundary problems foreseen.

M -- Represents a good portion of the ecosystem in question; represents fairly good conservation unit; protection of this area would benefit the ecosystem, but only in a small measure or in a general way; fairly manageable unit; moderate size; few, if any, boundary problems.

H -- Represents a complete and ecologically sound conservation unit; protection of this area would benefit the ecosystem in a significant way; manageable unit; not of excessive size; no boundary problems foreseen.

C. Accessibility

L -- Inaccesible or accessible with considerable difficulty; situated in an extremely remote area; no human interest in visiting the site.

M -- Fairly accessible; if remote, access is good, but often with some difficulty (e.g., weather or sea conditions variable); only limited human interest in visiting the site.

H -- Easily accessible, with no major difficulty; considerable human interest in visiting the site; increased visitation is likely and/or could severely threaten resource or human use values without some management structure.

D. Surveillance and Enforcement

L -- Open, long, or insecure boundary; remote, not amenable to surveillance and enforcement efforts; requires considerable commitment of manpower, equipment and budget; no on-going or potential activities that would require an increase in surveillance and enforcement efforts.

M -- Moderate boundary, fairly secure; accessible; requires moderate commitment of manpower, equipment and funds; some on-going or potential activities in the area which would require an increase in current surveillance and enforcement efforts.

H -- Reasonable boundary, secure; accessible; amenable to surveillance and enforcement efforts; minimal commitment of manpower, equipment and funds; major activity (ies) in the area which require an increase in surveillance and enforcement efforts.

E. Economic Considerations

L -- High management costs likely; designation or restriction of certain activities would result in negative economic impact; public benefit does not outweigh economic values which may be reduced or foregone by designation.

M -- Moderate management costs likely; designation or restriction of certain activities would result in some short-term negative economic impact, but public benefit outweighs economic values which may be reduced or foregone; resources are protected for the long term.

H -- Low management costs; designation or restriction of certain activities would result in very minor if any negative economic impact; benefit to society greatly outweighs any reduction of economic value; designation enhances economic value.

Overall Site Evaluation By Resource Evaluation Teams

Even though a value rating scheme is used, the overall assessment of a particular site is based on a subjective evaluation. This is preferred over adding-up a total score for each site -- a procedure which tends to mask significant features, gives poor discrimination among sites, and leads to faulty assumptions about the value of a particular site. Instead, value judgments are meant to be used only as a sorting mechanism; i.e., to compare complementary sites and to eliminate those sites which are inappropriate. As mentioned previously, sites which consistently have relatively low values receive an overall "low priority" assessment and are eliminated. In contrast, sites which consistently have relatively high values receive an overall "high priority" assessment and are recommended for further consideration.

The Regional Resource Evaluation Teams consider each category of criteria separately so that any one category does not override the others and thus affect the overall evaluation. For example, the rationale for low priority judgment might be based on the following observations: low natural resource values; low human use value; low protection interest; or management problems likely. In contrast, high priority sites might be characterized as having: outstanding natural resource value; high human use value; special features requiring higher level of protection; or no management problems foreseen.

A narrative is written by the Regional Resource Evaluation Teams to support the evaluation. The narrative provides the rationale for the particular priority ranking and identifies sources of information.

At this point, public comment on priority sites is sought and based on this comment, a list of three to five sites per region along with the written narrative is submitted to NOAA. NOAA makes the final decision as to which sites are to be placed on the SEL.

Later, when NOAA considers a particular site on the SEL for active candidate status, its selection will depend not only on the evaluation performed by the resource evaluation teams, but also upon specific policy considerations and the political climate, as described in Section III.C. of the PDP.

APPENDIX E

SIZE AND ZONING CONCEPTS FOR PROTECTED AREAS

1. Sanctuary Size Considerations

Sanctuary sizes vary depending on the resources involved, the potential impacts threatening the resources, and the management scheme required to achieve substantial benefits from sanctuary status. The boundary configuration varies in relation to the size of the area that is necessary to ensure protection to the resources of concern. In some cases, the location of the resources of concern can be classified as the "core" of the sanctuary. Ray (1975) characterizes the "core" as "(t)he park or reserve itself which incorporates the 'critical marine habitat.' In many cases, more than one 'habitat' is included. In others, historical or archaeological sites comprise the central feature." Ray (1975) further notes that the boundaries for core areas "should encompass entire ecological units (habitats and communities) in as far as possible," although he recognizes that it is difficult to include whole ecosystems. For purposes of the marine sanctuary program, the core area is viewed as encompassing the critical resources of concern--whether coral reefs, breeding grounds or other habitat areas, shipwrecks, or other cultural artifacts.

Sanctuary management provisions ensure the core's resources are protected as necessary from environmental disturbances. The management difficulty arises in determining what size and configuration of buffer area is needed, if any, to protect the core from external threats.

Ray's (1975) definition of a "buffer" area illustrates the complexity of the issue. A "buffer" is

> (a)n area adjacent to or surrounding the core and upon which the core depends or vice versa in the ecosystem sense; i.e., an "area of ecological concern" as it is sometimes called. This is the hardest term to define. What is "critical" may not be known. Once a core area is acquired, it may prove not to be the critical one or in the case of geomorphological change it may move. The difficulty lies in the identification and prediction of natural processes.

Although difficult to define and delineate, buffers are nonetheless important. According to Ray (1975),

> (b)uffer zones are created to protect the core, to provide space for wide-ranging movements of animals, to provide space for the existence of rare or endangered species or for manipulative research. . . . Most importantly, buffers must accommodate the shift of the core in cases of biological, ecological, or geomorphological change.

The buffer concept recognizes the unique impact-transfer aspects of the marine environment, as differentiated from land-based pollution. Natural processes such as species foraging patterns, current patterns, and the related mobility of pollutants in an aquatic environment serve to disperse impacts over broad geographic areas. Thus, the ability of the marine environment to support geographically limited or representative phenomenon of significant value depends not only on the conditions present at a particular site, but also on the prevailing conditions exhibited throughout a broader marine setting (Epting and Laist, 1979). Planning and management in the marine environment is therefore distinct from traditional land-based planning. For example, although marine parks and preserves have been established to protect critical marine habitats (such as mangrove swamps and coral reefs) and species (whales and sea turtles), it is clear that establishing park boundaries does

not necessarily ensure protection from air, land, and water contaminants, as Ray (1975) explains:

> Even when coral reefs are included in parks, their protection is not assured. For instance, Voss (1973) has reported the death of patch reefs in the John Pennekamp Reef State Park in Florida because of outside, as yet unidentified influences.

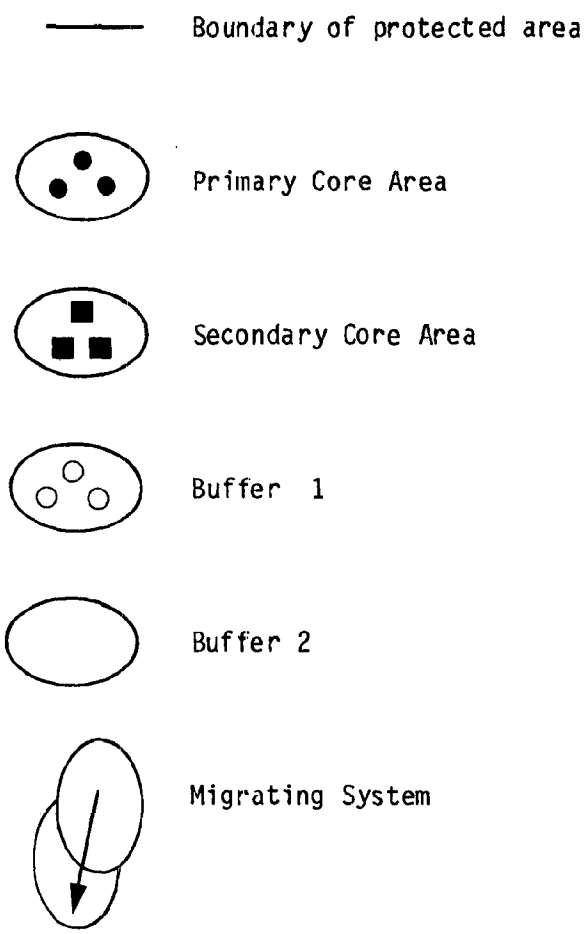
Certain nonliving, isolated resources, particularly certain cultural/historic resources, may require small boundaries which only roughly delineate the resources. More fragile resources, such as coral reefs, may be affected by intensive development or other activities occurring at some distance from the core and, therefore, may require a relatively large protective buffer to help ensure nondegradation of the reef. Expanded buffers are generally also required for other types of habitat areas, especially breeding areas and migratory paths; this is most true if the species is vulnerable to visual or acoustic disturbance or particularly susceptible to physical contact such as oiling. An example is the 6 nautical mile buffer around the northern Channel Islands incorporated into the Channel Islands National Marine Sanctuary which is designed to protect important marine mammals and seabirds from potential harm.

2. Examples of Core/Buffer Zonation

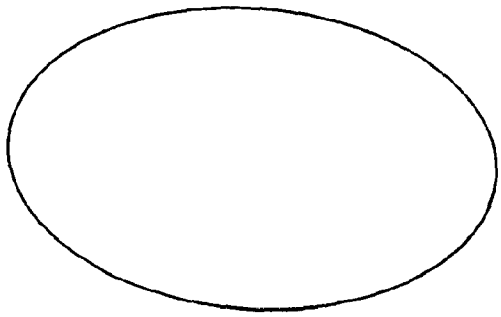
As noted above, a "core" is defined as the area encompassing critical resources of concern and, in many cases, entire ecological units (habitats and communities) of whole ecosystems, and a "buffer" is the area adjacent to or surrounding the core (Ray, 1975).

Diagrams of "core" and "buffer" areas are provided on the following pages to illustrate these concepts and describe the possible uses of these zones within the boundaries of protected areas. The diagrams are simple, but suggest a few of the complex situations in different biomes. The concepts

and diagrams presented here have been adapted from a variety of sources, including: Diamond, 1975; Great Barrier Reef Marine Park Authority, 1980; IUCN, 1976; Johnson, Olson and Reichle, 1975; and Man and the Biosphere 1974. The following are keys to understanding the diagrams:

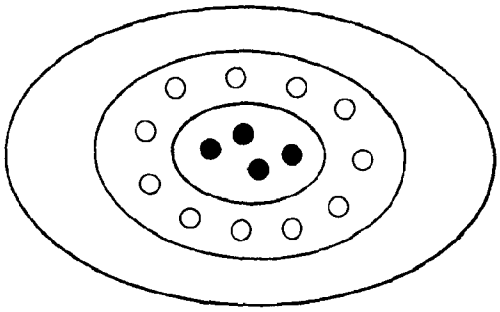


a. Homogeneous boundary area -- no "core" or "buffer" zones.



This example portrays a natural area, such as a coral reef or live-bottom area, which is managed as one single conservation unit, for conservation purposes and various public activities, but without delineating separate "user" areas, such as for research, education and recreation. Conservation here means wise resource utilization, allowing activities which conform to the theory of maintaining and utilizing renewable resources, not strictly preservation.

b. Central "core" area with surrounding "buffer" zone(s).



core -- areas which are judged to have great natural value, usually due to some unusual or unique ecological attribute; uses are strictly controlled.

buffer 1 -- areas which could be used for research and educational purposes; use and movement by the public would be limited to authorized sections and tracks.

buffer 2 -- areas which may be used for various purposes, including public recreation, but uses are controlled according to the carrying capacity of the area.

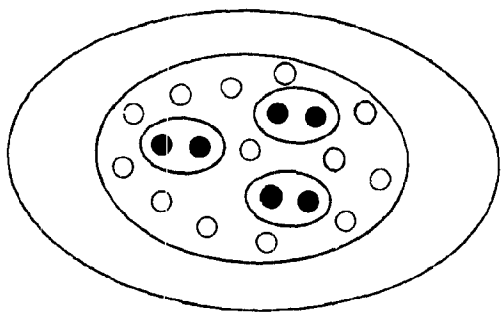
c. Discontinuous/disjunctive "core" areas and "buffer" zones.

It may be necessary to subdivide an area into several core areas. In this case, the cores should be as close to each other as possible to promote colonization and genetic exchange. The following are examples of discontinuous or disjunctive core areas:

(i) Replicate core areas established for similar purposes -- if several disjunctive core areas are established for the same purpose, strips of similarly protected habitat connecting the core may significantly improve conservation and exchange of colonists and genetic material.

(a) Natural areas managed for preservation purposes.

(b) Degraded areas managed for restoration purposes.

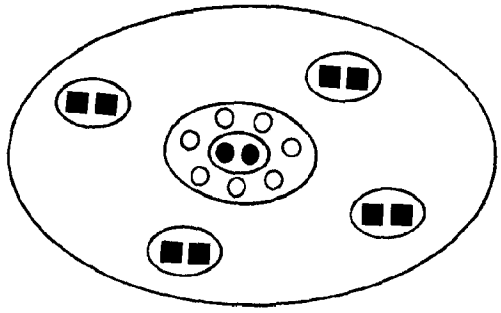


core -- natural areas, or remnants of natural areas; uses strictly controlled.

buffer 1 -- area managed for preservation or restoration; used for research.

buffer 2 -- area managed for preservation or restoration, but allowing various public uses such as education and recreation.

(ii) Disjunctive core areas established for different purposes (e.g., core or reserve cluster).



primary core -- natural area which serves as a central conservation area.

buffer 1 -- contiguous area managed for conservation and used for observational research.

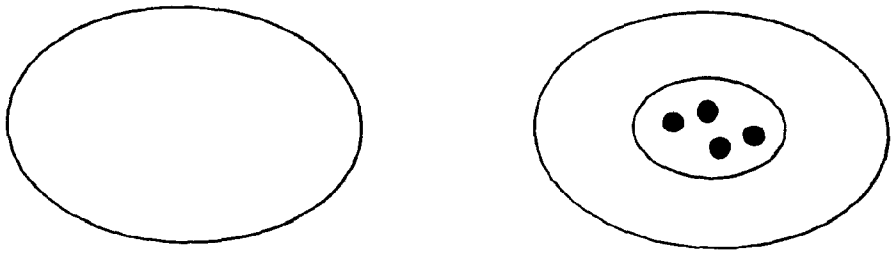
secondary cores -- natural areas which may serve as (1) experimental reserves for manipulative research and comparison with natural area; (2) recreation zones; (3) education zones (4) wilderness or strict preservation zones; or (5) any combination of the above.

buffer 2 -- fringing buffer area managed for conservation but allowing activities such as recreation/education.

d. Migrating, moving or flexible "core" and "buffer" zones.

(i) Replenishment "cores" -- natural areas closed from time to time for specified period to allow for recovery of stocks.

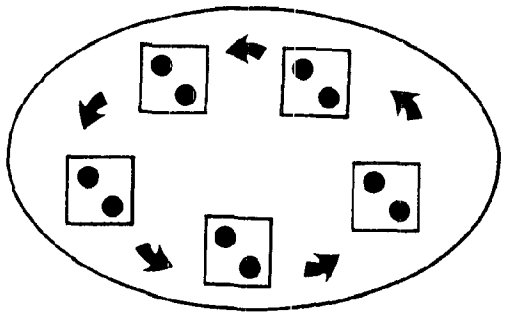
(ii) Seasonal "cores" -- natural areas with restricted seasonal use to protect important habitat areas, such as courtship, breeding, nesting/nursery, migrating, staging, resting, or feeding areas.



Time X Time Y

(iii) Migrating "cores" -- natural areas in which critical resource areas shift due to natural dynamic or catastrophic events, such as seasonal pulses of food, migrating animals, or migrating barrier islands, which cause populations or communities to be found in different regions of the ecosystem with time.

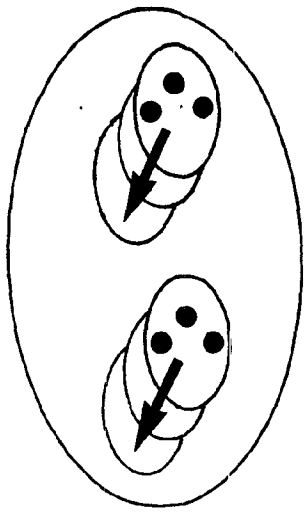
(a) Migrating species (e.g., penaeid shrimp)



Estuary Ocean

(b) Migrating systems (e.g., barrier islands)

North



South

APPENDIX F

GLOSSARY OF TERMS IN THE PDP AND APPENDICES C AND D

(From Various Sources, including: Clark, 1974; Krebs, 1978; Odum, 1971; and Ricklefs, 1974)

Benthos -- a collective term for the community of botton-dwelling life in an ecosystem.

Biogeography -- the branch of biology that deals with the geographic distribution of plants and animals.

Biota -- species of all the plants and animals occurring within a certain area or region.

Buffer zone -- an area adjacent to or surrounding a protected area or an area of particular environmental concern.

Carrying capacity -- the number of individuals that the resources of a habitat can support.

Cetacean -- a term used in scientific classification to represent marine mammals consisting of whales, dolphins, porpoises, manatees, and related forms; Order: Cetacea.

Characteristic species -- species that are rigidly limited to certain communities and thus can be used to identify a particular type of community.

Climax community -- the final equilibrium community in the process of ecological succession.

Community -- a group of species (populations) of plants and animals in a given place; ecological unit used in a broad sense to include groups of various sizes and degrees of integration.

Conservation unit -- an area of environmental concern encompassing a readily defined habitat type or ecosystem, or major portion thereof, containing resources of such high value, such as coral reefs, submerged oyster reefs, or seabird rookeries, that activities affecting the the resources should be controlled or monitored to ensure long-term protection.

Density -- the number of individuals in relation to the space in which they occur.

Depleted species -- species where the number of individuals within the species or population stock: (1) has declined to a significant degree over a period of years; (2) has otherwise declined and, if such decline continues or is likely to resume, will become subject to the provisions of the Endangered Species Act; or (3) is below the optimum carrying capacity for the species or stock within its environment (Marine Mammal Protection Act of 1972).

Detritus -- particles of plant and animal matter in varying stages of decomposition.

Diversity -- a measure of the variety of species in a community; takes into account the relative abundance of each species.

Dominance -- a condition in communities in which one or more species, by means of their number, coverage, or size, have considerable influence upon or control of the conditions of existence of associated species.

Ecosystem -- the biotic community and its abiotic environment; an ecosystem can be defined as any size as long as it has producers, consumers, decomposers, and the necessary abiotic factors such as energy, minerals, etc.

Ecotone -- a transition zone between two diverse communities (e.g., the hardbottom-sandbottom ecotone).

Ecotype -- a subspecies or race that is especially adapted to a particular set of environmental conditions.

Eddy -- a water current moving contrary to the direction of the main current, especially in circular motion.

Endangered species -- a species which is in danger of extinction throughout all or a significant portion of its range; an official designation such as by a State or the Federal government.

Endemic -- a species of limited geographic extent, confined to or indigenous to a region.

Environment -- all the biotic and abiotic factors that actually affect an individual organism at any point in its life cycle.

Epifauna -- a collective term for the organisms that live on or attached to a substrate such as the seafloor, another plant or animal, a pier or pilings, or floating debris.

Fauna -- a collective term for the animal species present in an ecosystem.

Flora -- a collective term for the plant species present in an ecosystem.

Habitat -- a place where an animal or plant normally lives, often characterized by a dominant life form or physical characteristic (i.e., the stream habitat, the forest habitat).

Haul-out area -- an area, usually a beach or rocky shore, where pinnipeds come out of the water onto the land for certain periods of time.

Infauna -- a collective term for the benthic animals that live in the sediment; i.e., live in the spaces between sediment particles.

Interpretation -- revealing the meaning, significance, and relationship of environmental features and processes to audiences through the use of various nature-oriented, "hands on" techniques, such as talks, self-guided tours, demonstrations, that go beyond typical educational tools, such as brochures or posters; stimulating the audience's interest, promote understanding and appreciation of the environment, and make the experience/encounter more meaningful and enjoyable.

Intertidal area -- the area between high and low tide levels.

Live bottom -- an area containing such sessile invertebrates as sea fans, sea whips, hydroids, anemones, sea squirts, sponges, bryozoans, and hard coral living upon and attached to naturally occurring hard or rock formations with rough, broken, or smooth topography and whose lithotope favors the accumulation of turtles, fishes and other marine animals.

Migration -- a special type of species/population movement that often involves the mass transmit or displacement of entire populations from one place to another along a set migratory route during a given period of time.

Migratory route -- a route or path (often well-defined) taken by those individuals or populations in a migratory movement.

Nursery area -- a place where larval, juvenile, or young stages of aquatic life concentrate for feeding or refuge.

Optimum yield -- the amount of material that can be removed from a population that will maximize biomass (or numbers, or profit, or any other type of "optimum") on a sustained basis. The level may vary over time and per species within any population. Socioeconomic factors are usually invovled in the determination.

Paleontological -- of or relating to life of past geologic periods; known from fossils remains.

Peripheral -- refers to a species group or subpopulation that lives away from or on the fringes of the central location of the population.

Pinniped -- a term used for a group of marine mammals, including seals, sea lions, and the walruses.

Plankton -- microscopic floating aquatic plants (phytoplankton) and animals (zooplankton).

Pleistocene -- of or relating to the most recent episode in the geological chronology of the earth; a geologic period of time dating from one million years before present; a time when immense ice sheets and glaciers covered the northern part of North American and most of Canada at least four times, each time separated by a mild-climate interglacial period.

Population -- a group of individuals of a single species.

Processes -- the energy flows that "drive" the ecosystem.

Production -- the amount of energy (or material) formed by an individual, population, or community in a specific time period.

Rare species -- species which: (1) occur as a very few individuals or small groups at widely scattered locales over a large geographic area of what appears to be suitable habitat; (2) are found in very small numbers in each community where they live and grow, but in many suitable areas over their geographic range; and (3) are restricted to so few localities that they are considered rare even when they occur in large numbers at each locality (Drury 1974).

Recruitment -- an increment to a natural population usually from young animals or plants entering the "adult" population.

Resilient -- ability to withstand perturbations without large changes in composition and number of individuals.

Rookery -- a communal breeding/nursery site of some sea birds and marine mammals.

Stability -- absence of fluctuations in population; ability to withstand pressures to change.

Succession -- replacement of one kind of community by another kind; the progressive changes in vegetation and animal life that if left undisturbed should develop into a climax community.

Threatened species -- a species which is likely to become endangered within the foreseeable future throughout all or a significant portion of range.

Transition zone -- an ecotone, an area of mixing or gradual change, as along a gradient, formed by the convergence of two physical envirnomental regimes and characterized by properties and organisms of each overlapping regime as well as by those unique or endemic to the area of mixing.

Trophic level -- functional classification of organisms in a community according to feeding relationships; the first trophic level includes green plants, bacteria, yeasts, etc.; the second trophic level includes herbivores; and so on.

Upwelling -- vertical movement of water currents, usually near coasts and driven by offshore winds that bring nutrients from the depths of the ocean to surface layers.

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