

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Announcement of National Marine Sanctuary Program Final Site Evaluation List

AGENCY: National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice.

SUMMARY: NOAA is publishing a final list of marine sites (Site Evaluation List) that will provide the pool of areas from which NOAA will select sites to evaluate as candidates for potential national marine sanctuaries.

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SUPPLEMENTARY INFORMATION:**I. Authority**

Title III of the Marine Protection, Research, and Sanctuaries Act of 1972, 16 U.S.C. 1431 (the Act) authorizes the Secretary of Commerce, with Presidential approval to designate ocean waters as far seaward as the outer edge of the continental shelf as marine sanctuaries to preserve or restore their distinctive conservation, recreational, ecological, or aesthetic values. That authority is administered by the National Oceanic and Atmospheric Administration (NOAA) through the Office of Ocean and Coastal Resource Management (OCRM), Sanctuary Programs Division (SPD).

In January 1982, NOAA published a Program Development Plan (PDP) for the Program. The PDP describes the Program's mission and goals; site identification and selection criteria; and establishes a sanctuary nomination and designation process. On September 7, 1982, NOAA published proposed regulations for the continued operation of the Program (47 FR 39191). Pursuant to the PDP and the regulations, NOAA published a proposed Site Evaluation List (SEL) March 1, 1983 (48 FR 8527). The public comment period on the proposed SEL ended May 31, 1983. On May 31, 1983, NOAA published final regulations for designating marine sanctuaries and the continued operation of the Program (48 FR 24296). Pursuant to these final regulations, NOAA is publishing the final Site Evaluation List (SEL).

II. SEL Process

The purpose of the SEL is to establish a list comprising the most highly qualified marine sites identified and recommended by the regional resource evaluation teams. The teams made these recommendations in accordance with the Program's mission and goals set forth in the Program Development Plan, in § 922.1 of the final program regulations, and the site identification and selection criteria described in Appendix 1 of the regulations. NOAA emphasizes that these sites are included on the SEL because they are areas of high natural resource value, and may warrant further analysis to determine their feasibility as active candidates for consideration as national marine sanctuaries. Listing a site on the SEL does not mean that the site is a proposed sanctuary, or that it will necessarily be considered as an active candidate for sanctuary designation. However, with limited exceptions as described in § 922.22(c) of the final program regulations, NOAA will only consider those sites on the SEL for further review as active candidates for marine sanctuary designation. Thus, the SEL serves as the pool from which potential future marine sanctuaries will be drawn.

Placement of sites on the SEL or selection for further consideration as active candidates does not subject such sites to any regulatory controls under Federal law. Such regulations may only be established after designation, as provided under § 922.31 of the final program regulations.

III. Summary of Significant Comments on the Proposed Regulations and NOAA's Responses

NOAA received comments from approximately 400 sources. Commenters included Federal and State agencies, representatives of the oil and gas industry, environmental and public interest groups and private citizens. All comments received are on file at the Sanctuary Programs Division, Office of Ocean and Coastal Resource Management. The comments are available at that office for review upon request. The major issues raised by commenters have been summarized and NOAA's responses provided under the relevant subheadings in this section. Site descriptions follow the comments.

Generic Comments

1. **Size of Proposed Sites.** Several commenters objected to the size of proposed SEL sites including Nantucket Sound/Shoals/Oceanographer Canyon, (1805 sq mi), Green Bay (1300sq.mi) and

Virginia/Assateague (1200 sq mi). These commenters believe the sites to be too large and suggest that the geographic expanse of these sites be reexamined.

NOAA Response NOAA agrees that a few of the sites on the proposed SFL cover relatively large expanses of marine areas. The site boundaries provided in the SEL are general study area boundaries and will be refined and in most cases reduced if a site is brought to active candidate status. Although no maximum or minimum size limits are established, the final National Marine Sanctuary Program Regulations (48 FR 24296) provide that the Channel Islands and Point Reyes-Farallon Islands National Marine Sanctuaries, covering 1,252 and 948 square nautical miles respectively, are likely to represent the upper end of the sanctuary size spectrum and that future sanctuaries will be no larger. Size considerations are specifically addressed under the Mission and Goals (§ 922.1(d)) and the Active Candidate Criteria (§ 922.30(b)(4)) of the final program regulations.

2. **Showing of Necessity.** Several reviewers suggested that NOAA should demonstrate that SEL sites are unique and deserving of special attention and that other existing State or Federal authorities are inadequate to provide such protection.

NOAA Response—Title III (the Act) authorizes the Secretary to designate marine sanctuaries to preserve or restore their conservation, recreational, ecological, or esthetic values. The Act does not specify that marine sanctuaries must be "unique" marine areas; however, § 922.30(b)(1) of the final program regulations states that a primary reason for selecting a site as an Active Candidate is its "high national resource and human use values" (§ 922.30)(b)(1). Existing Federal and State regulations and authorities are considered in determining whether to designate sanctuaries and in developing site specific management frameworks. Section 922.30(b)(3) of the final program regulations states that one of the criteria for selecting Active Candidates is an assessment of the adequacy of existing management requirements for protecting resources.

3. **Development of Regulations.** Several reviewers expressed concern that possible regulations for individual SEL sites were not discussed and that in the future regulations could be imposed that would be unreasonable or developed without input from affected users.

NOAA Response—The purpose of the SEL is to indicate sites of high resource

value. The regulation of activities is considered as part of the development of a draft management plan and draft environmental impact statement (DEIS), once a site is selected as an Active Candidate. The management plan and any necessary regulations are drafted in consultation with concerned Federal, State, local agencies, Regional Fishery Management Councils and other interested persons and groups. This dialog begins early in the development of the DEIS and includes public meetings and review of significant issues (§ 922.31(a)(c)). The DEIS is subject to public review, and a public hearing on the proposal in the area or areas most affected, by the sanctuary designation is required (section 302(e) of the Act).

As part of the designation process NOAA develops a designation document which specifies, among other things, the types of activities subject to regulation. Only activities included in the terms of the designation may be regulated and the designation document may be modified only by same process by which the original designation was made, including holding public hearings and obtaining Presidential approval.

Moreover, existing Federal and State regulations are considered in determining whether to designate marine sanctuaries and in developing a management framework for such sanctuaries. NOAA will rely upon existing Federal and State regulations to preserve or restore a sanctuary's natural resource and human use values when such regulations are adequate to meet the purposes for which the sanctuary was designated.

Site Specific Comments: North Atlantic Region

Mid Coast Maine

(1) Several reviewers supported the Mid Coast Maine site. No reviewers specifically opposed placement on the SEL.

NOAA Response—No response necessary.

Stellwagen Banks

(1) Over eighty-five (85) reviewers supported Stellwagen Banks for placement on the SEL citing the significance of the whale communities or the importance of the fishery habitat. These commenters included the State of Massachusetts Executive Office of Environmental Affairs.

NOAA Response—No response necessary.

(2) One reviewer supported the site but was concerned that there might be prohibitions on submarine electric

cables. One reviewer opposed any eventual marine sanctuary at Stellwagen, because of the fear that sanctuary designation will eventually lead to regulation of commercial fishing.

NOAA Response—Marine Sanctuary designation does not automatically restrict or prohibit any particular activity. For a discussion of when and how decisions on regulating activities are made, please see Generic Response #3.

Nantucket Sound/Shoals/ Oceanographer Canyon

(1) Several reviewers support the placement of this site on the SEL, including the Massachusetts Executive Office of Environmental Affairs.

NOAA Response—No response necessary.

(2) One reviewer supported the site but was concerned that there might be a prohibition on submarine electric cables. Another commenter indicated that part of the site has been or is currently being studied for potential oil/gas leasing and that portions of Oceanographer Canyon possess high resource potential. Several gas and oil industry reviewers opposed inclusion of the site on the SEL. Several commenters believe the site to be too large and/or not "unique". Several believe that future pipeline corridors might be affected.

NOAA Response—Designation of a marine sanctuary does not necessarily restrict or prohibit any particular activity. For a discussion of when and how regulating activities are made, please see General Response #3. Reviewers concerned about the question of size are referred to Generic Response #1. For a discussion as to whether or not sites must be "unique" as a prerequisite for inclusion on the SEL commenters are referred to Generic Response #2.

Assateague/Virginia Barrier Islands

Approximately 16 comments were received regarding the Virginia Assateague Barrier Islands area. Six were in favor; ten comments opposed inclusion on the SEL.

(1) The Maryland State Department of Natural Resources requested that the Maryland portion of the site remain on the SEL and expressed the belief that the local opposition was based on misinformation. The Commonwealth of Virginia Council on the Environment did not object to inclusion on the SEL and further evaluation, but expressed doubts about the benefits of marine sanctuary status. Another reviewer supported the site but was concerned that the area may be too large to manage. Several

other reviewers supported inclusion on the SEL.

NOAA Response—Before selecting a site for active candidacy, NOAA evaluates the area in terms of such factors as benefits derived from sanctuary designation and adequacy of existing management regimes (§ 922.30). For a discussion regarding the size of SEL sites please see Generic Response #2.

(2) Many Maryland and Virginia local or county governments are opposed to including this site on the SEL. These reviewers expressed concern that possible sanctuary designation would result in adverse economic impacts to the fishing industry and prevent possible offshore gas and oil development.

A public meeting to receive comments on listing this site on the SEL was held on March 2, 1983, at Berlin, Maryland, where many individuals expressed opposition to the proposed listing. Generally, the commenters believe that sanctuary designation will automatically preclude recreational and commercial fishing activities. Two commenters opposed the site because they did not know what the eventual restrictions would be.

NOAA Response—NOAA reiterates that the purpose of the SEL is to identify a pool of sites with high natural resource values from which a particular site may be selected for future analysis to determine whether the feasibility of its further consideration for designation as marine sanctuary. None of these reviewers took the position that the site was not highly significant or that the area did not meet criteria for inclusion on the SEL. The issues of regulation and prohibition of activities are worked out during the development of a management plan. No activities are automatically restricted or prohibited in a marine sanctuary. In fact, § 922.1 (b)(4) of the final program regulations specifically provides for compatible multiple use of national marine sanctuaries. For a more detailed discussion of how regulations are developed for a proposed sanctuary, please see Generic Response No. 3.

(3) Several gas and oil industry reviewers opposed the site because in their view it is too large and/or not "unique."

NOAA Response—For a discussion regarding the size of SEL sites please see Generic Response No. 1 Comment and for discussion as to whether a site must be "unique", please see Generic Response No. 2.

South Atlantic*Port Royal Sound*

(1) Twenty-two (22) commenters supported Port Royal Sound, including the Governor of South Carolina. These reviewers believe that the significance of the resources of the area warrant inclusion on the SEL.

NOAA Response—No response necessary.

(2) One reviewer opposed the site expressing concern that an estuarine system located completely within State waters is inappropriate for consideration as a marine sanctuary.

NCAA Response—The Act authorizes designating/establishing marine sanctuaries in waters where the tide ebbs and flows, or in the great Lakes and their connecting waters. Such areas include State waters—usually an area within three miles.

(3) Another reviewer objected to the site because NOAA did not indicate what type of restrictions might be placed on fishing.

NOAA Response—Please see Generic Response No. 3 for a discussion on the procedure for developing regulations for proposed marine sanctuaries.

(4) One reviewer believes that the Port Royal Sound was rejected by the regional scientific team in July of 1982 and questions why it appears as a site possibility in October 1982.

NOAA Response—Although the regional team did not include the site in the July list for public review, a public nomination was submitted in response to the July mailing. The nomination detailed the significance of the resources and enjoyed substantial public support. Consequently, the team reassessed the area and subsequently placed it on the October list of possible sites presented for public review.

Florida Coral Grounds

(1) Six (6) comments were received on the Florida Coral Grounds. Four reviewers, including the Governor of Florida, supported inclusion of the site on the SEL, indicating that the resources of the area warranted listing. Another commenter concurred and noted that a portion of the *Oculina* site may be studied for potential gas/oil leasing.

NOAA Response—No response necessary.

(2) Another reviewer indicated that the *Oculina* Reefs were an important fishing area and believes that the views of the Fishery Management Council should determine the nature of any regulation on fishing activities.

NOAA Response—NOAA consults with the appropriate Fishery Management Council before selecting a

site as an Active Candidate (§ 922.30 (b) (c) of the final program regulations) and as part of the development of a draft management plan (§ 922.31(a)). In addition, NOAA may and, in certain cases has, left regulation of fishing to the appropriate Fishery Management Council. For a further discussion on development of regulations, please see Generic Response No. 3.

(3) Another reviewer suggested several corrections to make the site description more accurate.

NOAA Response—NOAA has incorporated these changes.

Ten Fathom Ledge—Big Rock

(1) One reviewer supported inclusion of the site on the SEL.

NOAA Response—No response necessary.

(2) Another indicated that the area was being studied for potential oil and gas leasing, and a third believes the areas should not be listed until the exploratory drilling determines the hydrocarbon potential of the area.

NOAA Response—Because the only purpose of establishing the SEL is to identify areas with high natural resource and human use value, NOAA will consider existing or potential users of the site when it determines whether to select it as an Active Candidate.

Gulf of Mexico Region*Flower Garden Banks*

(1) Twenty-seven (27) comments were received on Flower Garden Banks. Twenty-five (25) reviewers supported its listing on the SEL. These reviewers believe that the biological significance of the banks warrant further consideration. One of the commenters added that sanctuary designation may be the only way to protect the reefs from certain damage caused by activities other federal programs are unable to regulate.

NOAA Response—No response necessary.

(2) Two reviewers opposed placement on the final SEL. These commenters believe that existing federal regulatory programs are adequate to protect the Banks.

NOAA Response—Detailed analysis of the adequacy of existing regulatory schemes will be undertaken should the site be considered for Active Candidacy. For more discussion on the process NOAA uses to develop regulations for proposed sanctuaries, please see Generic Response #3.

Big Bend Grassbeds

(1) Ten (10) comments were received in support of the Big Bend Grassbeds.

The Governor of Florida and nine other reviewers believe the site warrants further consideration and should be placed on the SEL.

NOAA Response—No response necessary.

(2) One of these reviewers recommended that the site boundaries be drawn to include Crystal River and Bay.

NOAA Response—The boundaries presented in the SEL are study area boundaries and in many cases will be modified when a management plan and environmental impact statement are developed. One of the stated reasons for considering the Big Bend Grassbeds as a potential sanctuary is the importance of the area as habitat for the endangered manatee. Accordingly, emphasis will be placed on drawing the boundaries to include important habitat areas.

(3) One reviewer opposed inclusion of the site on the grounds that it is not unique. Another reviewer stated there were no threats and that existing laws and regulations provide adequate protection for the resources of the area.

NOAA Response—The SEL identifies areas of high resource and human use values. The final program regulations provide for a consideration of threats and adequacy of existing management or regulatory schemes (§ 922.30(b)(2) (3)) before selection as an active candidate. Please see Generic Response #2 for further discussion.

(4) One commenter indicated that current fishing regulation is extensive and suggested that NOAA should rely on the Regional Fishery Management Council to determine any fishing regulations.

NOAA Response—The final program regulations require consultation with the appropriate Fishery Management Council before selecting a site as an Active Candidate (§922.31(a)). In addition, NOAA may and, in certain cases, has left regulation of fisheries to the FMC. For further discussion of development of regulations please see Generic Response #3.

Shoalwater Bay—Chandeleur Sound, Louisiana

(1) One reviewer supported inclusion on the list citing the natural significance of the resources.

NOAA Response—No response necessary.

(2) Two reviewers expressed the belief that the area was not threatened and indicated that the area was already adequately managed for fish and wildlife purposes by the State of Louisiana. Two other commenters concurred expressing the belief that

added federal control in state waters was not justified. The Governor of Mississippi withdrew a previous endorsement of the site, indicating that sufficient management regimes exist to protect the area.

NOAA Response—Placement on the SEL only indicates high resource and human use values. Other considerations such as the adequacy of existing management/protective regimes are addressed when and if the site is considered for Active Candidate status. For further discussion of these issues please see Generic Response #2.

Baffin Bay

(1) Five individuals supported the inclusion of Baffin Bay on the SEL.

NOAA Response—No response necessary.

(2) One reviewer expressed reservations about the "national interest" in the resources of the site, and another suggested that the site was better suited for an estuarine sanctuary.

NOAA Response—Before selecting a site as an active candidate, NOAA will consider the site's relative contribution to the Program's mission and goals and further evaluate the natural resource values of the area as provided for by §922.30(b)(1).

(3) Two reviewers believe that the area is not threatened and that existing laws and regulations are adequate to protect the resources.

NOAA Response—Before selecting a site as an Active Candidate, NOAA considers such factors as the existing management/regulatory schemes. Please see Generic Response #2 for further discussion.

(4) Two other reviewers indicated that the area has ongoing gas and oil activities and believe that the area is of limited ecological value and not appropriate for eventual consideration as a marine sanctuary.

NOAA Response—The mission and goals of the National Marine Sanctuary Program provide for multiple use of marine sanctuaries (§ 922.1(a)). NOAA will consider existing and proposed uses before selecting a site as an Active Candidate (§922.30 (b)(5)).

Eastern Pacific Region

Washington Nearshore

(1) Over forty-five (45) reviewers supported inclusion of the site on the SEL.

NOAA Response—No response necessary.

(2) One commenter did not express a formal position but recognized the importance of the area and expressed a

desire to be involved in any further actions.

NOAA Response—The process for designating a national marine sanctuary provides a number of opportunities for public involvement. The junctures for public involvement in the designation process include: preliminary public consultation prior to selection of an Active Candidate (§ 922.30(c)); local public meetings after Active Candidate selection and while preparing the draft management plan and environmental impact statement (§922.31 (a) and (c)); and during the public comment period and public hearing after publication of the draft management plan and draft environmental impact statement.

(3) One reviewer expressed the concern that management of a sanctuary should not restrict recreational use. Other commenters indicated that fishing in the area is an important and traditional use that should be allowed to continue.

NOAA Response—Designation of a national marine sanctuary does not automatically restrict or prohibit any particular activity. Decisions of this nature are made during the development of the management plan after selection as an Active Candidate. For further discussion on the development of regulations, please see Generic Response #3.

(3) Two other commenters opposed placement of the site on the SEL. These reviewers do not believe that inland waters are appropriate for consideration as marine sanctuaries.

NOAA Response—The Act authorizes designating/establishing marine sanctuaries in areas where the tide ebbs and flows, or in the Great Lakes and their connecting waters. Such areas can include State waters.

(4) Two other reviewers believe that the site is too large to be classified as "unique".

NOAA Response—For a discussion on the size of the SEL sites, please see Generic Response #1. For a discussion on whether an area must be "unique" to qualify for the SEL, please see Generic Response #2.

(5) Several commenters believe that the Skagit Bay, Dungeness Bay, and the waters around McNeil and Gertrude Islands should be included in the site for SEL purposes.

NOAA Response—The Eastern Pacific Regional Team recommended Skagit Bay. NOAA considered the site but did not place it on the list for two reasons:

(1) There was an absence of local and State support. During the preliminary stages of formulating the SEL, there was significant local opposition to placement of any area in Puget Sound placed on

the SEL. While the State of Washington Department of Ecology did not specifically object to Skagit Bay, it did not offer support;

(2) There was the issue of relative ecological significance. While Skagit Bay is an area of ecological importance, NOAA believes that in light of the lack of strong support, the most reasonable approach is to list the regional area of greatest nature resource value. We believe that area is the waters around the San Juan Islands

Washington Outercoast

(1) Several reviewers supported inclusion of the site on the SEL.

NOAA Response—No response necessary.

(2) One commenter believes that any sanctuary proposal should allow for recreational use. Two others indicate that fishing is an important traditional use that should be allowed to continue.

NOAA Response—For further discussion of the development of regulations please see Generic Response #3.

(3) The Makah Tribal Council indicated that it would like to support the site but was concerned over issues such as treaty rights, extent of regulation and the role the Tribe would play in the management planning process.

NOAA Response—For a discussion of the development of regulations if a national marine sanctuary is designated please see the response (2) above and Generic Response #3. The relation of treaty rights to sanctuary designation would be addressed if the site is selected as an Active Candidate.

The process for designating a national marine sanctuary provides a number of opportunities for public involvement: before selecting a site as an Active Candidate NOAA requests comments from the Public (§ 922.30(c)); after selecting the site as an Active Candidate and while preparing the draft management plan and environmental impact statement (§ 922.31(a) and (c)) and after publication of the draft management plan and draft environmental impact statement.

Heceta Stonewall Banks

(1) Two commenters supported inclusion of this site on the SEL.

NOAA Response—No response necessary.

(2) One reviewer notes that exploratory hydrocarbon activities have taken place in the area and believes that NOAA should provide assurances that sanctuary designation would not prohibit oil and gas activities.

NOAA Response—The purpose of the SEL is to identify sites with high natural resource and human use values. The decisions on which activities are restricted or prohibited are made after a site is selected as an active candidate. For further discussion on how and under what circumstances regulations are developed, please see Generic Response #3.

Morro Bay

(1) Several reviewers and a petition with over 80 signatures supported inclusion of Morro Bay on the SEL. These reviewers emphasized the crucial role the Bay plays as a vital stopover for migratory birds along with Pacific Flyway.

NOAA Response—No response necessary.

(2) Two reviewers opposed placement on the SEL indicating that the State has taken steps to protect the Bay.

NOAA Response—An analysis of existing regulatory/management schemes and their adequacy is undertaken when a site is selected as an active candidate. For further discussion please see Generic Response #2.

Tanner-Cortes Banks

(1) Two reviewers supported inclusion on the SEL, indicating that the area was reasonable size and contained unique resources.

NOAA Response—No response necessary.

(2) One reviewer opposed placement on the list expressing the belief that the quality of the resources did not justify the expense of a marine sanctuary.

NOAA Response—Section 922.30(b)(5) of the final program regulations directs NOAA at the time of evaluation for Active Candidate Status to consider the economic impacts and benefits of sanctuary designation.

Western Pacific

(1) Two comments were received on the Western Pacific Region. One reviewer expressed concern that there may be conflict between any possible marine sanctuary and present and future development of Cocos Lagoon and indicated that a feasibility study and harbor master plan for a deep draft harbor at Tanapag, Saipan has been developed.

NOAA Response—The mission and goals of the National Marine Sanctuary Program provide for multiple compatible use of marine sanctuaries (§ 922.1(a)).

AA will consider existing and proposed development before selecting a site as an active candidate (§ 922.30(b)(5)).

(2) One reviewer provided unqualified support for Cocos Lagoon and Papaloloa Point but questioned the large size of the Southern Mariana Islands site and the need for sanctuary status of the Facpi Point to Santo Angel site.

NOAA Response—For a discussion on the size of SEL sites, please see Generic Response #1. With respect to the need for sanctuary status, NOAA will consider existing management/regulatory regimes before selecting a site as an active candidate (§ 922.30(b)(4)). For further discussion on this point, please see Generic Response #2.

Caribbean

Only two comment letters were received on these proposed Caribbean sites. One reviewer supported all three sites. The other reviewer supported the East End St. Croix site and indicated that the waters have been utilized by commercial interests and recreational divers.

NOAA Response—NOAA appreciates this information regarding uses of the resources and will take such activities into consideration if the site is evaluated for selection as an Active Candidate.

Great Lakes

(1) One reviewer expressed concern over any designation of marine sanctuaries in the Great Lakes. This commenter believes the areas on the proposed SEL are too large; that existing state regulations are adequate to protect the resources; and that the sites include incompatible areas such as dredged shipping channels.

NOAA Response—For a discussion of boundaries of the SEL sites please see Generic Response #1 and for a discussion of the adequacy of existing State legislation please see General Response #2. Before selecting a site as an Active Candidate, NOAA will consider existing uses of an area such as dredged shipping channels and determine whether those uses are compatible with the purposes for which the site is being considered for designation.

Green Bay

(1) One reviewer supported the site believing that the proposal is consistent with the "Future of the Bay Program."

NOAA Response—No response necessary.

(2) Several reviewers opposed placement of the Green Bay site on the SEL. One commenter believes that industries relying on water transportation would be put out of business if a marine sanctuary were established.

NOAA Response—Designation of a marine sanctuary does not automatically restrict or prohibit any particular activity. Please see Generic Response No. 3 for a further discussion on how and when regulations are developed.

(3) Several reviewers believe that this site is not of comparable value to the other proposed SEL sites because it is warm water, estuarine and polluted. These reviewers also doubt that "restoration" is in order. One commenter indicated that the lower Bay is totally developed and additional plans for enlarging the harbor have been adopted. Another reviewer indicated that two harbors in lower Green Bay have substantial dredging needs. One reviewer also suggested that the lower Bay was unsuitable for a marine sanctuary and proposed limiting the area to the upper portion of the site.

NOAA Response—NOAA appreciates this information regarding (past) existing uses of the resources of the lower Green Bay site provided by these reviewers. The area was originally recommended and placed on the draft SEL because of the possibility of "restoring" the site, as Section 302(a) of the Act permits designation of marine sanctuaries for "the purpose of preserving or restoring such areas . . .". Although NOAA will place this site on the SEL, if a preliminary decision is made to pursue this site NOAA will evaluate carefully the feasibility of including the lower Bay in the Active Candidate determination in light of the information and concerns provided by these reviews. In addition, at that same time NOAA will contact these reviewers and request additional information.

Western Lake Erie Island Including Sandusky Bay

(1) Several reviewers, including the Ohio Department of Natural Resources, believe that the quality and diversity of the resources of the site warrant further consideration and possible sanctuary status.

NOAA Response—No response necessary.

(2) One reviewer expressed concern that a marine sanctuary might result in additional regulation of the nuclear power plant located in the area. Another was concerned that the sanctuary designation may be in conflict with maintenance dredging and spoil disposal that presently occur within the site.

NOAA Response—Before NOAA selects sites as active candidates, the area is further assessed in light of national resource and human use values

and the adequacy of existing protection/regulatory schemes (§ 922.30(b)(3)). For further discussion please see Generic Response No. 2.

Cape Vincent

(1) One reviewer supported inclusion on the SEL noting that the area contains high recreational values.

NOAA Response—No response necessary.

(2) Two reviewers opposed placing the site on the SEL. These reviewers believe that existing New York State regulations offer adequate protection.

NOAA Response—Before selecting a site as an Active Candidate, NOAA considers such factors as the existing management/regulatory framework. For further discussion please see Generic Response No. 2.

Thunder Bay

(1) Two reviewers support inclusion of the site on the SEL.

NOAA Response—No response necessary.

(2) One commenter believes that the site has potential for sanctuary designation but is concerned that much of the area may be inaccessible.

NOAA Response—The purpose of the SEL is to identify areas of high resource value. Before selecting an area as an Active Candidate, NOAA evaluated the site in terms of the human values and benefits to be derived from sanctuary designation (§ 922.130(b)(1)(3)). Accessibility for the public is one factor in this evaluation.

Lake Superior

(1) Two reviewers support inclusion of the site on the SEL noting the significance of the resources.

NOAA Response—No response necessary.

(2) The State of Michigan Department of Natural Resources opposes placement of the Isle Royale portion on the SEL because the U.S. National Park Service already has jurisdiction over the area and additional protection and management is not warranted.

NOAA Response—If NOAA decides to proceed with this site, close contact and coordination with the Department of the Interior will be undertaken to determine whether or not there are significant benefits from including Isle Royale as a proposed sanctuary.

Site Evaluation List: North Atlantic

Mid-Coastal Maine, Maine

This site covers an area of 430 mi² of coastal waters including both State and Federal waters. The site encompasses the mouths of three major estuaries and two bays. It contains intertidal shallow,

and deep water zones which vary greatly in bottom type, wave exposure, and biological components. The three rivers are the Kennebec, Sheepscot, and the Damariscotta; the site includes the waters of Johns and Muscongus Bays, and Southport, Sequin, Damariscove, Fishermen's Inner Heron, Outer Heron, White, Squirrel, Georges, and Monhegan Islands. Three marine research and educational facilities are situated on land adjacent to the site; the Maine Department of Marine Resources laboratory, the Bigelow Laboratory for Ocean Sciences (both in Boothbay Harbor), and the University of Maine Darling Center in Walpole, ME.

Stellwagen Bank

This site is approximately 31.7 miles (50 km) by 19.1 miles (30.6 km) covering approximately 605 mi² (1,567 km²). The site is entirely within Federal waters situated on submerged Stellwagen Bank which is 6.3 miles (10.2 km) north of Cape Cod, Massachusetts.

Scientific and educational interest has been drawn to Stellwagen Bank due to the recurring seasonal abundance of several cetaceans, species, including the largest high-latitude population of humpback whales in the contiguous United States. The biologically-productive waters of the Bank provide important feeding and nursery grounds for this and other cetaceans, including fin, minke, and northern white whales. There are at least seven cetacean species occurring at Stellwagen Bank.

Commercially valuable fishery resources are also found in the area, including mackerel, bluefin tuna, and blue fish. The Bank is extensively used by commercial and recreational fishermen, whalewatchers, and cargo vessels.

Smaller cetacean species include the Atlantic white-sided dolphin, the white-beaked dolphin, and the harbor porpoise. In addition to these frequently observed cetacean species, killer whales and pilot whales have also been spotted.

Nantucket Sound/Shoals and Oceanographer Canyon

The proposed Nantucket Shelf site encompasses approximately 1,805 mi² (4,650 km²) and represents a variety of habitats within the biogeographic transition zone between the northern Acadian and southern Virginian regions. Habitats included are open bay (Nantucket Sound), nearshore open ocean and shoals (Nantucket Shoals), and a shelf-edge submarine canyon (Oceanographer Canyon). The Nantucket Sound site is in Federal waters between Nantucket Island and Cape Cod, Massachusetts, and its

boundaries are contiguous with the Massachusetts Ocean Sanctuaries. The Nantucket Shoals and Oceanographer Canyon sites lie wholly within Federal waters off the coast of Massachusetts.

a. *Nantucket Sound*: Located south of Cape Cod, the Sound is affected by the convergence of two major ocean currents, the Labrador Current and the Gulf Stream. The mixture of these systems contributes to the large diversity of species found here. The richness of this transition zone ecology enhances the stability of plant life and the productivity of the estuaries in bordering coastlands that provide habitats for the many species that use the proposed marine sanctuary areas as nursery and feeding grounds. More than 16 species of fish and shellfish are commercially harvested in the area. The most common species found are alewife, bluefish, cod, flounder, clams, whelks, scallops, and squid.

b. *Nantucket Shoals*: Nantucket Shoals are a series of shifting sand shoals, derived from glacially deposited sediments that have been winnowed by marine processes. Most of the shoals are found under water depths of only 25 feet (8 m). Between many of the shallow areas are channels extending 60–120 feet (18–36 m) deep. The site includes Great South Channel.

Fishes common to this area include bluefish, striped bass, pollock, little tuna, Atlantic cod, and mackerel. Clams, scallops, and quahogs are found in some of the shoal's areas. Sea ducks overwinter in this area, and humpback whales occasionally feed within the proposed site.

c. *Oceanographer Canyon*: Submarine canyons, in general, provide a heterogeneous environment characterized by a variety of substrate types, and because they act as conduits for the transport of material from the shelf to the abyss, filter feeding organisms are more common there than on the shelf. Within Oceanographer Canyon, the concentrations of organisms per 100 m² shows peak values of 400–450 around depths of 1,300 feet (400 m) to 6,000 feet (1,800 m). Major faunal groups include corals (primarily alcyonarians), echinoderms, fish and crustaceans (particularly shrimp).

Virginia/Assateague Island

The candidate site would cover approximately 1,200 mi² (3,100 km²) and lies within both State (Virginia and Maryland) and Federal waters. The site would include the estuarine waters and wetlands adjacent to the barrier islands and mainland along the Atlantic coast of Virginia and Maryland from the north

end of Assateague Island southward to Fisherman's Island out to 10 miles (16 km) from shore.

Along the periphery of this area are extensive, immensely productive salt marshes dominated by *Spartina alterniflora*. Dozens of benthic species are found here including at least 18 species of decapods crustaceans. Crabs, oysters, and clams feed upon the vegetation and microorganisms within these waters. More than 96 species of fish inhabit or migrate through these waters. Seals and dolphins are occasionally reported in this area. The threatened Atlantic loggerhead and green turtles occur here. Tracts of widgeon and eelgrass cover bay bottoms, and scallops inhabit beds of seagrass. A great diversity of waterfowl and shorebirds, including both migratory and resident species, is abundant. Active breeding colonies of birds exist on islands surrounded by these estuarine waters. Eagles, ospreys, brants, peregrine falcons, and the endangered brown pelican utilize the habitat of the area.

South Atlantic Region

Ten Fathom Ledge—Big Rock

This site consists of two areas. The inner shelf site (Ten Fathom Ledge) is a 135 mi² rectangle with its center located about 17 miles south of Cape Lookout, NC. The outer shelf site, "Big Rock" is located on the shelf break about 36 miles offshore, and is a 36 square mile area. These are both hard-bottom areas, with high productivity and assemblages of tropical marine organisms at the northern extreme of their range. The inner site includes four popular recreational diving spots; one of which includes a World War II German submarine.

Port Royal Sound, South Carolina

The site lies entirely within State waters covering an area of approximately 54.6 mi² (140 km²). Port Royal Sound is South Carolina's largest deepwater sound and largest high salinity body of water. Freshwater influence is primarily from the Coosawatchie and Pocotaligo Rivers. The site is bordered in part by extensive tracts of highly productive marshlands which provide important nutrient input for the area's food web. Numerous shellfish including shrimp, oysters, crabs, and clams inhabit these waters. Many species, such as king and Spanish mackerel, found primarily in coastal ocean waters elsewhere, are common. The site is a habitat for the endangered bald eagle, brown pelican, and alligator. The threatened green turtle has been

reported in the area and the loggerhead turtle nests on beaches in the vicinity, and endangered turtle species which are occasionally reported in the area include: Leatherback, hawksbill, and Kemp's Ridley. Bottle-nosed dolphins are also common.

Florida Coral Grounds, Florida

This site consists of two areas off the coast of Florida. These two areas are the 4.5 mi² "worm," or "bathtub," reef at St. Lucie, FL, and 92 mi² of the Oculina Reefs located 17 miles off the Florida coast in 70 to 100 m of water. The Oculina Reefs are unusual formations of ivory tree coral that forms delicately branched structures of moderate to high relief. *Oculina varicosca* provides a substrate and protection for a diversity of marine macroinvertebrates. The Oculina Reefs are also important breeding grounds for commercially valuable populations of gag and scamp grouper, nursery grounds for juvenile snowy grouper, and feeding grounds for these and other fish including black sea bass, red grouper, amberjack, and red snapper. This shelfedge system may form part of the migration pathway for king mackerel. Large populations of commercially important squid, *Illex oxygonius*, spawn on reefs and spiny tail stingray use the reef region for courtship and mating.

St. Lucie Nearshore Reefs are hard bottom nearshore reefs of moderate to high relief, 1-15 feet (0.3-4.6 m), situated at a depth of 5-27 feet (1.5-8 m) adjacent to St. Lucie Inlet, south of Ft. Pierce, Florida. Hard corals such as the ivory tree coral (*Oculina varicosa*), soft corals, and tube-forming sabellariid worms grow on limestone ledges, 15 feet (4.6 m) arches, and spur-and-groove buttresses. St. Lucie reef represents the northern limit for several species of hard corals (*Diploria clivosa*, *Oculina diffusa*) and soft corals.

Caribbean Region

Cordillera Reefs, Puerto Rico

This site includes approximately 62 mi² (160 km²) around the Cordillera Islands totally lying within the waters of the Commonwealth off the northeast coasts of Puerto Rico. The area contains extensive and well-developed coral formation and provides habitat for the endangered manatee (*Trichechus manatus*) and the hawksbill turtle (*Eretmochelys imbricata*).

Southeast St. Thomas, U.S. Virgin Islands

This site consists of 12.3 mi² (32 km²) of Virgin Islands' territorial waters immediately southeast of St. Thomas,

Jersey and Cowpet Bays, and the waters surrounding Great and Little St. James, Dog, Buck and Capella Islands. The area encompasses diverse tropical marine ecosystems, important coral reefs, and transitional marine meadows of algae and turtle grass.

East End, St. Croix, U.S. Virgin Islands

The area of this site is approximately 40 mi² (102 km²). The site is within territorial waters and is adjacent to the east end of St. Croix, including the waters east of Buck Island and the area of Lang Bank out to a 60 foot depth to Great Pond Bay on the south coast. The site consists of a rich diversity of tropical species and marine habitats, including corals, marine meadows and fish.

Gulf of Mexico Region

Big Bend Seagrass Beds, Florida

This site is composed of 100 mi² of seagrass beds in the "big bend" region of Florida. These beds extend up to 22 miles (35 km) offshore and are a vastly productive habitat supporting a rich diversity of marine organisms including the endangered manatee. The seagrass community greatly increases the surface area available for plants and animals and provides a suitable substrate for many organisms that would not be able to colonize bare sand. In this way, the seagrass beds sustain the growth and proliferation of vast numbers of marine invertebrates and algae which interact in a delicately balanced food web that supports several commercially important species such as oysters, scallops, blue crab, stone crab, shrimp, red drum, spotted sea trout, and mullet.

In addition to supporting a rich diversity of food organisms for commercially important indigenous and migratory species of finfish, detrital material derived from the seagrass beds may also provide an important source of nutrition supporting the adjacent oyster reef communities.

Shoalwater Bay—Chandeleur Sound, Louisiana

This site includes approximately 80 mi² (207 km²) of State waters, pristine, shallow-water seagrass beds and algae located upon a subsiding remnant of abandoned Mississippi River delta. Adjacent to the east of this site is the Breton National Wildlife Refuge.

Dense stands of manatee grass (*Syringodium*), turtle grass (*Thalassia*), shoalgrass (*Halodule*), and widgeon grass (*Ruppia*) provide shallow-water habitat for numerous finfish and shellfish in the proposed sanctuary. All five species of marine turtles which

inhabit the Gulf of Mexico historically have been known to forage and nest in this area. These are the loggerhead turtle (*Caretta caretta*) and the threatened green turtle (*Chelonia mydas*), as well as three endangered turtles: hawksbill (*Eretmochelys imbricata*), Atlantic ridley (*Lepidochelys kempii*), and leatherback (*Dermochelys coriacea*).

The island shores adjoining the proposed site support black mangrove (*Avicennia germinans*) and intertidal marsh grass communities. Approximately 13,000 migratory waterfowl rely upon the shoals of this area for winter foraging.

Flower Garden Banks

This site is located 110 miles (160 km) offshore, consisting of east and west sections approximately 16 miles (25 km) apart and representing the northernmost coral reef community in the western Gulf of Mexico. The borders of any proposed sanctuary would conform to the Bureau of Land Management "no activity zone" and encompass a total of 44 mi² (114 km²). The area is a valuable representation of a tropical coral reef community dominated by hermatypic coral (*Montastra annularis*, *M. cavernosa*, *Porites astreoides*, and *Diploria strigosa*) and associated reef fishes and invertebrates.

Baffin Bay

At high tide, this site covers approximately 95 mi² (246 km²), entirely within Texas State waters, and includes Baffin Bay, Laguan Salada, Cayo del Grullo, and Alazan Bay. Approximately 25 percent of the Bay system is composed of intertidal salt flat communities. The waters of the Bay are confluent with the upper Laguna Madre; however, the waters of the Bay system remain notably hypersaline.

The Baffin Bay complex occupies a former river valley, drowned as the sea level rose after the last ice age, 5,000–10,000 years ago. Depths throughout this area are shallow, averaging less than 9 feet (3 m). Extensive areas of soft black and grey mud, rich in hydrogen sulphide, cover the central bay bottoms. Isolated reef rocks and reef fields, composed of masses of calcareous tubes of living and dead serpulid worms, are scattered over the bay bottom, and are most notable across the mouths of Baffin Bay and Alazan Bay.

Eastern Pacific

Washington State Nearshore, Washington

This consists of waters around the San Juan Islands within Puget Sound. It

encompasses approximately 250–275 mi² and is representative of rocky-shore, deep-water, and shallow-embayment habitats. The area contains mud and sand flats, sheltered bays and marshes. Biotic zonation patterns typical of rocky shore habitats are clearly evident as the 12 foot (3.7 m) tidal range exposes a rich diversity of marine flora and fauna. Rockweed and a variety of smaller green, red, and brown microalgae form the basis of the nearshore food web, and support vast populations of isopods, amphipods, hermit crabs, shrimp, barnacles, and other marine organisms associated with rocky shore habitats. Subtidally, rockfish, lingcod, cabezone, sculpins, and salmon abound in large numbers. The deeper waters serve as an important habitat for minke, gray, killer, and pilot whales, harbor and dall porpoises, harbor seals, stellar sea lions, and elephant seals. Bird nesting and feeding sites are interspersed throughout the San Juan Island complex, which supports the highest known concentration of nesting oystercatchers in the United States. Bald eagles are common and depend upon the marine environment for much of their food.

Western Washington Outer Coast, Washington

This site extends from Duntz Rock (north of Tatoosh Island on the northwestern tip of Washington State), 90 miles (145 km) southward along the coast to Point Grenville. The area lies within Washington State's jurisdiction. The inshore boundary would extend to mean high water; the offshore boundary is contiguous with the boundary established for the Washington Islands National Wildlife Refuge, 2–3 miles (3.2–4.8 km) offshore and would encompass approximately 230 mi². The area is representative of high wave-energy, rocky shore ecosystems, but is unique as a breeding and feeding ground for migratory marine birds, mammals, and fish. The area includes offshore kelp beds, numerous pocket beaches of fine or coarse-grained sands, and richly productive estuarine systems.

Heceta-Stonewall Banks of Oregon

This site is a hard-bottom bank which has an area of approximately 400 square miles (1,000 km²) lying entirely within Federal waters. The outer boundary of the site lies along the 100-fathom depth contour. The surface waters of this area are highly productive, especially during the summer when northerly winds drive surface water offshore and nutrient-rich water upwells into the area. Bottom topography also causes turbulence bringing nutrient-rich waters to the surface. The Columbia River influences

the area during the summer, adding nutrients which contribute to the high productivity.

The highly productive waters at this site provide a large food supply for fish populations. Abundant zooplankton thrive upon the phytoplankton blooms and, in turn, are eaten by other marine animals. The commercially important rockfish feed upon the euphausiid shrimp, small fish, squid, and various zooplankton that inhabit this area. Fish caught in this area include: various rockfish, hake, lingcod, ocean perch, flounder, sole, halibut, mackerel, salmon, sablefish, skate, sculpin, and ratfish.

Morro Bay, California

Situated south of the city of Morro Bay in San Luis Obispo County, this 2,000 acre embayment supports three habitats: coastal salt marsh, tidal mud flats, and deep-water channels. Morro Bay, within California State waters, is a heavily used fishing port and one of the largest bay wildlife habitats on California's coast. At low tide, 1,400 acres of mud flats are exposed, providing a vast feeding ground for over 250 species of birds and access to an extensive clam shellfishery resource. This is an important nesting area for egrets, herons, and the endangered American peregrine falcon. A portion of this site falls within a State Park.

Tanner-Cortes Banks off California

This site consists of two neighboring rocky-bottom sites some 112 miles (180 km) west of San Diego, California. The composite area of these two sites is approximately 10 mi² extending down to the 200 feet (60 m) depth contour. The location of the banks in relation to oceanic currents results in a combination of both nearshore and offshore organisms. The underwater visibility is normally in excess of 10 feet (20 m). This area contains accessible, rare, relict lifeforms and newly-discovered species which have been the subject of scientific investigations. This area is important for maintenance of those species.

Western Pacific Region

Northern Mariana Islands

This site includes the waters out to 12 miles (20 km) from Uracus, Maug, Asuncion, Pagan, Guguan and Saipan Islands; and encompasses approximately 700 mi². All of the islands are unpopulated and the area consists of a unique north-south orientation that presents a natural setting for biogeographical studies of marine organisms along a temperature gradient.

Sea turtles (green and hawksbill), porpoises, whales (humpback and sperm) and marine birds are present in area.

thern Marians Islands

This site consists of a variety of tropical marine habitats in selected sites off the islands of Saipan, Rota, and Tinian, as well as the waters surrounding Aguijan Islands and Naftan Rock. All sites extend from the high-water line to the 150 foot (46 m), depth contour. The site includes Tanapag Lagoon, the fringing reefs around Managaha Island, the barrier reef down to 150 feet (46 m), around the northern tip (Point Sabaneta), and south to Point Tanke. On Tinian Island, the patch reef just south of the harbor is proposed. On Rota, the fringing reefs and submarine terrace from West Dock south around Puntan Taipingot to East Dock as well as the south-eastern portion of Sosanjaya Bay are proposed. The proposed sites of Saipan, Rota, Tinian, and Aguijan include a wide variety of marine organisms found in various habitats, i.e., lagoons, fringing reefs, barrier reefs, patch reefs and wave-washed beaches. The lagoon around Managaha Island is unique in that few lagoons exist in the Mariana Islands. An assemblage of marine birds nest on Bird Island (Saipan) and Naftan Rock (off Saipan). The northern portion of Tanapag Lagoon (Wing Beach) is a known nesting area for green turtles.

Cocos Lagoon, Guam

This site includes the Cocos barrier reefs, Cocos Lagoon, three islets (Cocos Island, Babe Island, and a third sandy island), and the coastal region lying between the mouth of Mamaon and Manell Channels. The Triangular Lagoon is enclosed by barrier reefs nearly 3 miles (5 km) long on the northwest side, 3.5 miles (5.6 km) long on the south side, and by 2.5 miles (4 km) of steep mountainous land and alluvial coastal lowland on the northeast side. The area of the barrier reefs and lagoon together is 3.9 mi² (10 km²).

The Cocos Lagoon site consists of various habitats and a unique community of marine organisms: (1) fringing reef flats and nearshore area, (2) barrier reef with its seaward slopes and lagoonal slopes, (3) deep channels with vertical and oblique sloping walls, (4) patch reefs, and (5) shallow lagoon floor.

Facpi Point to Fort Santo Angel, Guam

The proposed area includes the nearshore waters to depths of 60 feet (18.3 m) from Facpi Point to Fort Santo Angel on the northern side of Umatac Bay. The

total area of the site is approximately 2 mi² (5 km²). The shoreline consists of rocky volcanic headlands with steep volcanic shorelines and beaches at the heads of three bays: Sella Bay, Cetti Bay, and Fouha Bay. Low-lying narrow terraces of limestone border much of the shoreline. The bordering reef flat is a narrow intertidal reef. A wide variety of coral and fish are found in the area. Both the green and hawksbill turtles utilize the area. The coastline also contains seven prehistoric archaeological sites and five historic sites from the Spanish occupation.

Papalola Point, Ofu Island, American Samoa

The site extends from the southernmost tip of Ofu Island eastward to Asagatai Point. It encompasses approximately 3 miles (4.8 km) of shoreline and adjacent fringing reef down to a depth of 150 feet (45 m). Papalola Point is an excellent example of a fringing reef community and is typical of that found throughout the tropical insular South Pacific. Fishes, corals, and other invertebrates are highly diverse and abundant. The site is unique in that it is the only place in American Samoa where the blue coral, *Heliopora coerulea*, is known to occur.

Great Lakes Region

Cape Vincent (Lake Ontario), New York

This site encompasses 450 mi² (1,165 km²) situated in the northeastern corner of Lake Ontario, and is the gateway to New York State's Thousand Islands resort area and the St. Lawrence Seaway. The Cape Vincent area includes some of the most biologically rich and diverse habitats within the Great Lakes region and represents an environment critical to the life histories of many commercially and recreationally important fisheries of the Great Lakes.

The area contains major fish spawning habitats for 27 species of finfish. Alewives and rainbow smelt (important food fish for Lake Ontario's rapidly growing Pacific salmon fishery), as well as northern pike, bullhead, yellow perch, smallmouth bass, brown trout, and rainbow trout spawn in these bays.

Grenadier Island, Little Galloo Island, and Gull Island are important resting, feeding, and nesting habitats for more than 3,000 birds, representing 69 species of migrating and indigenous waterfowl. Loons, grebes, petrels, gulls, white pelicans, double-crested cormorants, great blue herons, egrets, bitterns, ibises, swans, geese, ducks, teals, widgeons, terns, sandpipers, as well as osprey,

bald eagles, and peregrine falcons feed and nest within the boundaries of the area.

Western Lake Erie Islands Including Sandusky Bay, Ohio (Lake Erie)

This site encompasses approximately 440 mi² (1,140 km²) of Sandusky Bay, open Lake Erie waters, lake and bay bed, and wetlands, all within Ohio State jurisdiction. The Muddy Creek Bay wetland on the western end of Sandusky Bay is the most extensive wetland in Ohio along the Lake Erie coast. The site is utilized as a migration area by waterfowl, shorebirds, and passerine (perching) birds. Mallards, black ducks, and blue-winged teals breed in the marsh areas. The endangered bald eagle has historically nested in this area. Dense concentrations of great blue herons, great egrets, and black-crowned night herons nest within the West Sister Island U.S. Game Refuge. Cormorants, gulls, and various waterfowl breed on other islands. The common egret, least bittern, hooded merganser, king rail, and common tern are also found within the proposed site.

Ninety-five species of fish have been reported from this area. The area's dominant fish species which breed within these waters are: walleye perch, bass, channel catfish, alewife, gizzard shad, carp, goldfish, freshwater drum, and emerald shiner.

The bottom-dwelling community is composed primarily of wide-spread and abundant chironomids and oligochaetes which are major food items for fish. Also distributed on and with the bottom are polychaete worms, caddis flies, coelenterates, flatworms, molluscs, amphipods, isopods, and other crustaceans. Two dozen species of freshwater mussel have been found on various substrates within the site.

Thunder Bay (Lake Huron), Michigan

This site includes Thunder Bay and vicinity (up to Middle Island) extending out to 83° W. Depths extend to over 300 feet (91 m) along the northeast section of the site. Altogether, the site has an area of approximately 400 mi² (1,034 km²) and is entirely within Michigan State waters.

The underwater limestone sinkhole, the large concentration of historical shipwrecks, and the proximity of the Michigan Islands National Wildlife Refuge establish this area as a particularly valuable historical, educational, and recreational resource.

There is a variety of biological niches in the Thunder Bay area. March vegetation along the edges of the

Michigan Islands provides a habitat and breeding area for thousands of colonial nesting birds such as ringbilled gulls, common terns, and herring gulls.

Thunder Island alone hosts 11,000 breeding pairs of shorebirds. The area also serves as a habitat for 20 species of gamefish. Chinook salmon, rainbow trout, brown trout, splake, and steelhead are annually stocked by the Michigan Department of Natural Resources in the inland rivers that feed Thunder Bay.

Green Bay (Lake Michigan), Michigan and Wisconsin

The site covers an area of approximately 1,300 nmi² (3,300 km²) of Michigan and Wisconsin waters in Green Bay and part of Lake Michigan. The site consists of upper and lower units. The upper region is unpolluted and supports an existing (and potentially greater) fishery and important nursery and spawning grounds. The lower portion of the Bay is estuarine and contains warm water. Lower Green Bay is extremely polluted and highly eutrophic, although a concerted local, State, and Federal effort is continuing to improve water quality.

Over 37 species of fish spawn in the area. Salmon and lake trout are stocked by both State and Federal programs. A drastic depletion of certain fish populations occurred during recent

times. Cisco are greatly reduced in number and the once common lake sturgeon is now endangered. Introduction of exotic species, such as German carp, alewife, ocean smelt, and sea lamprey, have markedly affected fish species composition in the area.

Bottom-dwelling tubificid worms and midge larvae, generally recognized as indicators of poor environmental quality, are abundant near the middle and south portions of the Bay. The pollution-intolerant "shrimp" *Pontoporeia affinis* inhabits the northern Bay bottom.

Apostle Islands/Isle Royale, Lake Superior, Wisconsin

This site, composed of two important subunits, encompasses a total of 1,031 mi² of Wisconsin and Michigan waters situated in the western half of Lake Superior. One unit, roughly 375 mi² (970 km²), of the site lies adjacent to the Federally owned Apostle Islands National Lakeshore. The boundaries of this park extend ¼ mile (0.4 km) into Lake Superior. The proposed site would include submerged lands beyond this boundary owned by the State of Wisconsin. The second unit consists of 656 mi² (1700 km²) of Michigan State waters and submerged lands surrounding Isle Royal National Park to a depth of 600 feet (183 m). Eastward of

Blake Point, the site boundary extends offshore Isle Royale a maximum distance of approximately 11.5 mi (18.5 km).

The waters surrounding the Apostle Islands and Isle Royale represent an important habitat, feeding and breeding grounds for commercially and recreationally important fish and wildlife. Twenty-one species of fish are known to spawn in these waters. Two unusual forms of lake trout (the Sicowet and the "humper") have been found to inhabit the deeper waters of the site. The pygmy whitefish is known to occur only in Lake Superior.

The waters in and around the islands in this region are used extensively as breeding, nursery, and feeding areas for more than 43 species of birds and ducks, including such fish-eating birds as the common loon, bald eagle, osprey, mergansers, and endangered double-crested cormorants which are making a comeback.

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K. E. Taggart,

Acting Assistant Administrator for Ocean Services and Coastal Zone Management.

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