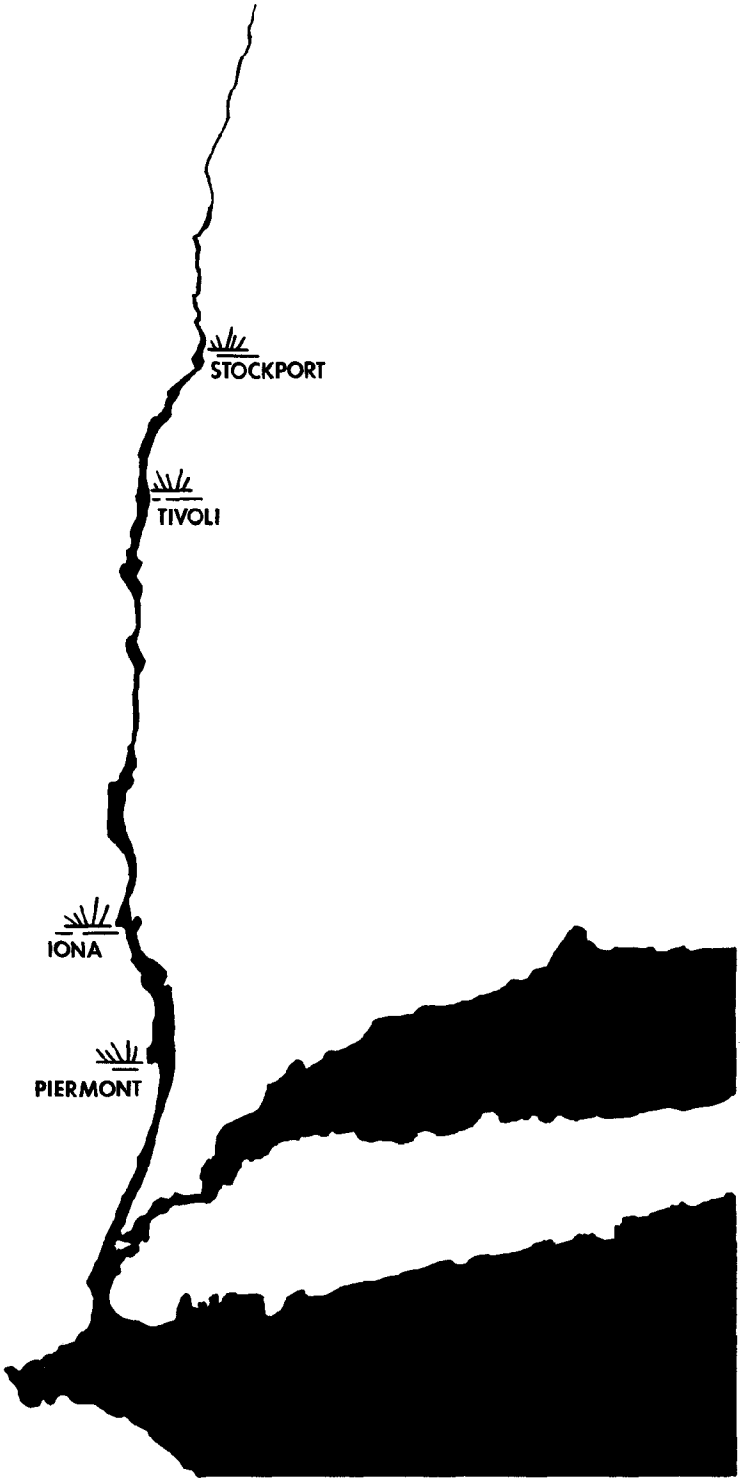
Final Environmental Impact Statement

Hudson River Estuarine Sanctuary

Proposed Estuarine Sanctuary
Grant Award for Hudson River
Estuarine Sanctuary in the
State of New York



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office Of Coastal Zone Management

ATE OF NEW YORK
partment of Environmental Conservation

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1982

United States

Department of Commerce

Final Environmental Impact Statement

PROPOSED

ESTUARINE SANCTUARY GRANT AWARD

TO THE STATE OF NEW YORK

FOR

A HUDSON RIVER ESTUARINE SANCTUARY

August 1982

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50 Wolf Road
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TITLE: Proposed Estuarine Sanctuary Grant Award to the State of New York for a Hudson River Estuarine Sanctuary

ABSTRACT: The State of New York has submitted an application for a grant from the Office of Coastal Zone Management to establish an estuarine sanctuary on the Hudson River, New York.

For the purposes of research and education, sites representative of the Hudson's estuarine gradient are appropriate. Four natural areas, the Hudson's highest quality tidal wetland complexes, are proposed for inclusion in the Sanctuary: Stockport Flats (1,184 acres), Tivoli Bays (1,481), Iona Island (556 acres), and Piermont Marsh (943 acres), for a total of 4,165 acres of land and water. The acquisition grant request to NOAA for $375,000, matched by an equivalent amount of State funds and services would be used for fee simple acquisition of wetlands, waters and shoreline at Stockport Flats (maximum 299 acres), Tivoli Bays (45 acres), and Piermont Marsh (73 acres), and to develop or renovate facilities at two or more of the four Hudson River sites. These facilities (buildings, roads, parking lots, trails, and boardwalk) will be used to accommodate research activities, educational programs, and visitors. All other land at the four sites is in public ownership.

Approval of this grant application would permit the establishment of an estuarine sanctuary representing a subcategory of the Virginian biogeographic region. The proposed sanctuary would be used primarily for research and education purposes, especially to provide information useful for coastal zone management decisionmaking. Multiple use would be encouraged to the extent that it is compatible with the proposed sanctuary's research and educational programs.

Research and monitoring in and near the proposed sanctuary would provide baseline information against which the impacts of human activities elsewhere in the Hudson River and the Virginian biogeographic region could be assessed.

APPLICANT: New York Department of Environmental Conservation

LEAD AGENCY: U.S. Department of Commerce
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Office of Coastal Zone Management

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SUMMARY

BACKGROUND

Section 315 of the Coastal Zone Management Act of 1972 (P.L. 92-583), as amended, established the National Estuarine Sanctuary Program, which provides grants on a matching basis to States to acquire, develop, and operate estuarine areas to be set aside as natural field laboratories. These areas are to be used primarily for long-term scientific and educational programs that will provide information essential to coastal management decisionmaking.

Uses of estuarine sanctuaries are intended to serve objectives such as the following:

-- To gain a more thorough understanding of ecological relationships within the estuarine environment;

-- To make baseline ecological measurements;

-- To serve as a natural control in order to monitor changes and assess the impacts of human stresses on the ecosystem;

-- To provide a vehicle for increasing public knowledge and awareness of the complex nature of estuarine ecosystems, their values and benefits to man and nature, and the problems confronting them; and

-- To encourage multiple use of the estuarine sanctuaries to the extent that such usage is compatible with the primary sanctuary purposes of research and education.

To ensure that the Estuarine Sanctuary Program includes sites that adequately represent regional and ecological differences, the program regulations established a biogeographical classification scheme that reflects geographic, hydrographic, and biological characteristics. Eleven (11) biogeographic categories are defined in the program regulations. Subcategories of this basic system are developed and utilized as appropriate to distinguish different subclasses of each category. The total number of sanctuaries that will be needed to provide adequate representation of the various estuarine ecosystems occurring within the United States is currently under study. The proposed sanctuary is representative of the Virginian biogeographic region.

The State of New York is committed to maintaining the resource productivity of its coastal zone. The Hudson River Estuary, a part of New York's coastal zone, supports an extremely valuable fishery resource and is a biological and esthetic treasure used and enjoyed by millions of people. In order to effectively protect and manage the Hudson River Estuary ecosystem, an understanding of estuarine ecology is essential. For this reason, establishment of an estuarine sanctuary in New York on the Hudson River would provide a valuable tool for enhancing the management of the Hudson River and associated coastal zone areas.

The Estuarine Sanctuary Program regulations, first published in 1974, and amended in 1977, authorize three kinds of 50 percent matching grants: (1) an optional, initial planning grant for such preliminary purposes as assessing the lands to be acquired, preparing an environmental impact statement, and developing management, research and education plans; (2) grants for acquisition of the real property within the sanctuary boundaries and development of interpretive/research facilities; and (3) operations grants for managing the established sanctuary's research and education programs.

New York's involvement in the Estuarine Sanctuary Program is not new, but has spanned a period of approximately three years (see summary of site selection process in the Alternatives section). An initial proposal for a sanctuary on Long Island was impracticable, and New York was encouraged by the U.S. Office of Coastal Zone Management to propose a sanctuary on the Hudson River Estuary, the State's alternate choice. Representatives of involved State agencies met to select sites on the Hudson; the New York Department of Environmental Conservation (DEC) took the role of Lead Agency, with cooperation from the Palisades Interstate Park Commission, the Office of Parks, Recreation and Historic Preservation, the Department of State, and the Office of General Services.

For the purposes of research and education, sites representative of the Hudson's estuarine gradient are appropriate. Four natural areas, the Hudson's highest quality tidal wetland complexes, are proposed for inclusion in the Sanctuary: Stockport Flats in the Town of Stockport, Columbia County; Tivoli Bays in the Town of Red Hook, Dutchess County; Iona Island Marsh in the Town of Stony Point, Rockland County; and Piermont Marsh in the Town of Orangetown, Rockland County. All four of these sites contain extensive high quality tidal marshes with comparable vegetation types, as well as adjoining tidal shallows and forested upland margins. The sites also contain typical plants and animals of tidal river wetlands of the Estuarine Sanctuary System's Virginian Biogeographic Region (Cape Cod to Cape Hatteras), and productive ecological communities that are representative of the region. These areas also have a history of observation and research that provides basic information valuable to the initiation of a research and education program.

On behalf of the State, DEC submitted a grant application to the National Oceanic and Atmospheric Administration's (NOAA) Office of Coastal Zone Management (OCZM) in May 1981 to gather information and plan the proposed Hudson River Estuarine Sanctuary at the above-named sites. In September 1981, a pre-acquisition grant of $50,000 was awarded by NOAA to DEC, to be matched by DEC funds and services. Work on the planning of the sanctuary began in earnest in January 1982 when the Federal money was received.

PROPOSED ACTION

The acquisition grant request to NOAA for $375,000, matched by an equivalent amount of State funds and services, would be used for establishment of a 4,165 acre sanctuary of which potentially 417 acres of wetlands, waters and shoreline would be purchased and to develop or renovate facilities at two or more of the four Hudson River sites. These facilities (i.e., buildings,

roads, parking lots, trails, and boardwalk) will be used to accommodate research activities, educational programs, and visitors. The great majority of land within the proposed sanctuary boundaries (see page 11) is already publicly owned or under negotiation for public acquisition under pre-existing programs. The chief importance of establishing the proposed sanctuary would be the development of a coordinated program of research and education that would not be otherwise realized.

The composition of real property within the proposed sanctuary is as follows (acreages are approximate):

Stockport	Total area - 1,184 acres
Currently publicly owned	692-804 acres (see Table 2, parcel 6)
Proposed for acquisition	187-299 acres (see Table 2, Parcel 6)
Tivoli	Total area - 1,516 acres
Currently publicly owned	1,436 acres
Under negotiation	45 acres
Iona Island	Total area - 556 acres
Currently publicly owned	556 acres
Proposed for acquisition	0 acres
Piermont Marsh	Total area - 934 acres
Currently publicly owned	871 acres
Under negotiation	73 acres

The total area of all four sites is 4,165 acres. Of this, 2,860 acres are wetlands and shallows, comprising 13% of the Hudson River Estuary's total area of wetlands and shallows (less than 6 feet deep at low tide).

MANAGEMENT

The DEC will administer the proposed sanctuary and will be directly responsible for the content and structure of the sanctuary's management plan, the expenditure of program funds, and the formulation and implementation of general program elements (such as research programs and educational programs). A sanctuary Steering Committee comprised of the five State agencies involved in the sanctuary (Department of Environmental Conservation (DEC), Palisades Interstate Park Commission (PIPC), the Office of Parks, Recreation and Historic Preservation (OPRHP), the Department of State (DOS), and the Office of General Services (OGS)) has been formed. DEC will chair this Steering Committee. The Committee is advisory to DEC on issues related to the formulation and implementation of the sanctuary's management plan, the expenditure of program funds, and formulation and implementation of general program elements. Consistent with the management plan, the State agencies will exercise prerogatives and make decisions regarding use of lands to which they hold title.

A Memorandum of Understanding, signed by the agencies represented on the Steering Committee, outlines interagency arrangements for the administration and management of the sanctuary, and expresses the agencies agreement to carry out the management plan (see Appendix 8).

Three citizens' advisory groups (Columbia, Dutchess, and Rockland Counties), representing local government and sanctuary user groups, will act as a Sanctuary Advisory Committee and make recommendations to the Steering Committee. The Advisory Committee will channel public support and criticism to the Steering Committee.

Estuarine sanctuary programs would be closely coordinated with related programs on the Hudson River, particularly the DEC's Hudson River Fisheries Unit and Fisheries Advisory Committee, and the Hudson River Foundation for Science and Environmental Research. Sanctuary programs would also be coordinated with and would serve to enhance existing programs of research and education including those of Hudson River Sloop Clearwater and the Hudson Valley's colleges and universities.

RESEARCH

Estuarine sanctuary research programs would emphasize ecosystem-level understanding of the Hudson Estuary and especially its wetlands and shallows, as well as applied concerns of coastal management including the management of fish, game and fur resources, vegetation, endangered and rare species, and the reduction and mitigation of human impacts on the coastal zone. Much research has been done on the Hudson River Estuary, but efforts have generally been fragmented and there are many serious gaps in the knowledge needed to effectively manage the Estuary. The proposed Hudson River Estuarine Sanctuary would help to coordinate and unify Hudson River research and to provide information to coastal managers at all levels of government and the private sector with the goal of wise resource management.

EDUCATION

The proposed estuarine sanctuary sites contain a variety of fauna and flora and estuarine habitats representative of the Hudson River Estuary, and are located within easy reach of millions of New York State and greater New York City area residents. The proposed sanctuary would provide an opportunity for many to learn more of the estuary's geology, ecology and resources. Estuarine sanctuary funds would be used to develop exhibit space at the Bear Mountain Trailside Museums complex near Iona Island Marsh for Hudson Estuary related exhibits; this complex is visited by over 600,000 people each year. Funds would also be used to set up facilities at the Tivoli Bays site for educational exhibits and for research work. Additionally, selected programs such as guided field trips, self-guided trail brochures, and educational media available to public groups and schools on loan could be developed.

RECREATION

The primary objective of the proposed Hudson River Estuarine Sanctuary is to provide long-term protection from developmental disturbances so the selected sites may be used for scientific and educational purposes.

Primary emphasis at these sites will be on their use for estuarine studies; however, other existing water use activities such as hunting, fishing, trapping, boating and wildlife observing which are compatible uses, will continue, subject only to existing State laws. Sanctuary designation will not add any Federal regulations to these areas.

IMPACTS

The overall and major impacts of designation of the proposed Hudson River Estuarine Sanctuary are expected to be positive through better scientific and public understanding of the estuary and its resources. The proposed estuarine sanctuary does not conflict with existing commercial or recreational uses of the Hudson River. Any conflicts that may arise with future uses of the river can be reduced through negotiation. Without an estuarine sanctuary, the Hudson River would not have areas dedicated specifically and permanently for research and education. However, with a sanctuary, present uses of the sites including hunting and other recreational uses where currently allowed, would continue. Furthermore, designation of the sanctuary and acquisition of lands, would provide additional public access to the riverfront for recreation and enjoyment.

PART I: PURPOSE OF AND NEED FOR ACTION

In response to intense pressures on the coastal resources of the United States, Congress enacted the Coastal Zone Management Act (CZMA), which was signed into law on October 27, 1972, and amended in 1976 and 1980. The CZMA authorized a Federal grant-in-aid and assistance program to be administered by the Secretary of Commerce, who in turn delegated this responsibility to the Office of Coastal Zone Management (OCZM) in the National Oceanic and Atmospheric Administration (NOAA).

The CZMA affirms a national interest in the effective protection and development of the Nation's coastal zone, and provides financial and technical assistance to coastal States (including those bordering on the Atlantic and Pacific Oceans, the Gulf of Mexico, and the Great Lakes) and U.S. territories to develop and implement State coastal zone management programs. The Act established a variety of grant-in-aid programs to such States for purposes of:

-- developing coastal zone management programs (Sec. 305);

-- implementing and administering coastal management programs that receive Federal approval (Sec. 306);

-- avoiding or minimizing adverse environmental, social, and economic impacts resulting from coastal energy activities (Sec. 308);

-- coordinating, studying, planning, and implementing interstate coastal management activities and programs (Sec. 309);

-- conducting research, study, and training programs to provide scientific and technical support to State coastal zone management programs (Sec. 310); and

-- acquiring land for estuarine sanctuaries and island preservation (Sec. 315).

Section 315 of the Act established the Estuarine Sanctuary Program to provide matching grants to States to acquire, develop, and operate natural estuarine areas as sanctuaries, so that scientists and students may be provided the opportunity to examine the ecological relationships within the areas over time. Section 315 provides a maximum of $3 million in Federal funds, to be matched by an equivalent amount from the State, to acquire and manage lands for each sanctuary. The regulations for implementation of the Estuarine Sanctuary Program are found at 15 CFR Part 921. Amendments were proposed on September 9, 1977, 42 Federal Register: 45522-45523 (see Appendix 7). Regulations are presently being prepared for the Island Preservation Program that is also included within Section 315 of the CZMA.

Estuarine sanctuaries have the dual purposes of (1) preserving relatively undisturbed areas so that a representative series of natural estuarine systems will always remain available for ecological research and education, and (2) ensuring the availability of natural areas for use as a control against

which impacts of human activities in other areas can be assessed. These sanctuaries are to be used primarily for long-term scientific and educational purposes, especially to provide information useful to coastal zone management decisionmaking.

Research purposes may include:

-- Gaining a more complete understanding of the natural ecological relationships within the various estuarine environments of the United States;

-- Making baseline ecological measurements;

-- Serving as a natural control against which changes in other estuaries can be measured, and aiding in evaluation of the impacts of human activities on estuarine ecosystems; and

-- Providing a vehicle for increasing public knowledge and awareness of the complex nature of estuarine systems, their benefits to people and nature, and the problems confronting these ecosystems.

While the primary purposes of estuarine sanctuaries are scientific and educational, multiple use of estuarine sanctuaries by the general public is encouraged to the extent that such usage is compatible with the primary sanctuary purposes. Such uses may generally include low-intensity recreation, such as boating, fishing, shellfishing, hunting, and wildlife photography or observation. Commercial fishing and shellfishing may also be compatible uses.

The estuarine sanctuary regulations envision that the Estuarine Sanctuary Program will ultimately represent the full variety of regional and ecological differences among the estuaries of the United States. The regulations state that "the purpose of the estuarine sanctuary program...shall be accomplished by the establishment of a series of estuarine sanctuaries which will be designated so that at least one representative of each estuarine ecosystem will endure into the future for scientific and educational purposes" [15 CFR 921.3 (a)]. As administered by OCZM, the Estuarine Sanctuary Program defined 11 different biogeographic regions based on geographic, hydrographic, and biological characteristics. Subcategories of this basic system are established as appropriate to distinguish different subclasses of each biogeographic region. The total number of sanctuaries that will be needed to provide minimal representation for the Nation's estuarine ecosystems is currently under study.

Since 1974, OCZM has awarded grants to establish twelve national estuarine sanctuaries. These include:

Sanctuary	Biogeographic Classification
South Slough Coos Bay, Oregon	Columbian
Sapelo Island McIntosh County, Georgia	Carolinian
Waimanu Valley Island of Hawaii, Hawaii	Insular
Rookery Bay Collier County, Florida	West Indian
Old Woman Creek Erie County, Ohio	Great Lakes
Apalachicola River/Bay Franklin County, Florida	Louisianian
Elkhorn Slough Monterey County, California	Californian
Padilla Bay Skagit County, Washington	Columbian
Narragansett Bay Newport County, Rhode Island	Virginian
Chesapeake Bay (2 sites) Anne Arundel and Somerset Counties, Maryland	Virginian
Jobos Bay Puerto Rico	West Indian
Tijuana River San Diego County, California	Californian

The Hudson River Estuarine Sanctuary, if established, would represent a major subcategory within the northern half of the Virginian biogeographic region. This region extends over 1,000 miles of Atlantic coastline from Cape Cod to Cape Hatteras, featuring lowland streams, marshes, and muddy bottoms and representative plants and animals.

The proposed action under consideration by OCZM is providing a land acquisition grant to the State of New York to establish a National Estuarine Sanctuary in the Hudson River. This proposed sanctuary would consist of four individual sites representing different estuarine gradient zones in the

Hudson River, and would contain approximately 4,165 acres of the Hudson's highest quality tidal wetland complexes. The acquisition grant request to NOAA for $375,000, matched by an equivalent amount of State funds and services, would be used for acquisition in fee simple or by easement of wetlands, waters and shoreline at Stockport Flats (187-299 acres), Tivoli Bays (45 acres), Piermont Marsh (73 acres), and to develop or renovate facilities at two or more of the four Hudson River sites. These facilities (buildings, roads, parking lots, trails and boardwalk) would be used to accommodate research activities, educational programs, and visitors. All other land at the four sites is in public ownership.

Approval of this grant application would permit the establishment of an estuarine sanctuary representing a subcategory of the Virginian biogeographic region. The proposed sanctuary would be used primarily for research and education purposes, especially to provide information useful for coastal zone management decisionmaking. Multiple use would be encouraged to the extent that it is compatible with the proposed sanctuary's research and educational programs.

New York's proposal follows several years of interest in and concern for the Hudson Estuary by State and local officials, and university and conservation groups. The four sites to be included in the estuarine sanctuary--Stockport Flats, Tivoli Bays, Iona Island Marsh, and Piermont Marshes--were selected by a New York Estuarine Sanctuary Steering Committee because they are essentially undisturbed, representative sites, and because publicly owned land and water comprising an estuarine system were available for research, education, and recreation purposes. In September 1981, NOAA awarded New York a $50,000 pre-acquisition grant for the proposed sanctuary, which enabled the State to initiate a real estate appraisal and environmental assessment of the sites, and to prepare management, research, education, and recreation plans.

On June 8, 1982 a workshop was held in Annandale, New York at Bard College to generate ideas on research and education programs for the proposed Hudson River Estuarine Sanctuary. Their report is reproduced as Appendix 9.

PART II: ALTERNATIVES CONSIDERED FOR THE ESTUARINE SANCTUARY (INCLUDING PROPOSED ACTION)

The action under consideration by NOAA is a proposal from the State of New York to establish a Hudson River Estuarine Sanctuary consisting of four sites representing estuarine areas on the Hudson River.

The State of New York has applied to NOAA for an acquisition grant of $375,000 to be matched with an equivalent amount of State, local, or private funds, donations of land, and in-kind services (for example, surveys and appraisals) to establish a Hudson River Estuarine Sanctuary composed of approximately 4,165 acres of water, wetlands, islands and uplands in Columbia, Dutchess and Rockland Counties. Acquisition funds would be spent for acquiring property through easements or fee simple purchases in these counties, as well as for developing facilities for research and education programs at the sanctuary. NOAA would serve as a temporary partner in the funding process for five years, after which the sanctuary would be wholly-State operated.

The proposed sanctuary would be named the Hudson River Estuarine Sanctuary with each site being designated as the "Hudson River Estuarine Sanctuary at Stockport Flats," "Hudson River Estuarine Sanctuary at Tivoli Bays," "Hudson River Estuarine Sanctuary at Iona Island Marsh," and "Hudson River Estuarine Sanctuary at Piermont Marsh."

Although this project is called the Hudson River Estuarine "Sanctuary," this does not mean that traditional uses will be changed. In fact, a multiple-use policy is clearly practicable. To insure this policy, the agencies presently administering these sites (Department of Environmental Conservation, Office of Parks, Recreation and Historic Preservation, Palisades Interstate Park Commission, and Office of General Services) will continue to make the major management policy decisions for their respective sites, in coordination with the other agencies. This coordination will be achieved through a Memorandum of Understanding (see Appendix 8). Representatives of these agencies and of the New York State Department of State are expected to confer annually to review the status of the program.

A. Preferred Alternative for the Hudson River Estuarine Sanctuary

The $375,000 acquisition grant would be used for acquisition of lands and development of facilities at the Stockport Flats, Tivoli Bays, Iona Island Marsh and Piermont Marsh sites to provide the control necessary for the establishment of a Hudson River Estuarine Sanctuary. Most of the lands included within the proposed Sanctuary boundaries are already owned by New York State.

The Hudson River Estuary in eastern New York is a long narrow tidal river containing a diversity of near-pristine and high quality natural areas and nationally significant biological features. The area includes bald eagle and osprey feeding areas, a large shortnose sturgeon population, rare estuarine plant species, a flyway for waterfowl and other birds,

brackish and freshwater tidal river marshes and swamps, undeveloped forested clay and rock bluffs, and rocky and sandy islands. The proposed sanctuary sites are the major remaining near-pristine areas on the Hudson Estuary and are characterized by relatively unpolluted air and water, moderate to low tidal ranges, large tidal wetlands, heavily forested shores, great diversity of fish, wildlife and plants, and low human populations.

The purpose of this proposed sanctuary would be to manage and to maintain the Stockport Flats, Tivoli Bays, Iona Island Marsh and Piermont Marsh as they are now--healthy, productive, unspoiled estuarine natural systems, to encourage research and public education on these little-studied tidal river wetlands and associated environments, and to continue existing uses of the sites, including hunting, fishing, and trapping where presently permitted.

1. Boundaries and Acquisition of Sanctuary Lands

The proposed sanctuary would include approximately 4,165 acres of waters, wetlands, islands and uplands. The boundaries of the proposed sanctuary are shown in Figures 1-4. Most of the lands within the sanctuary boundaries are already owned by New York State. The presently State-owned areas and the areas proposed for acquisition are shown in Figures 1-4 and listed in Table 1.

The grant request to NOAA would be matched by New York State, using such sources as Environmental Quality Bond Act and other State agency funds, value of donated land, bargain sales of the parcels to be acquired, donated money from fund raising, the value of easements granted, and the value of land acquisitions within the proposed sanctuary boundaries currently being negotiated.

Twelve specific parcels of private land are to be acquired as funds permit (not in priority order; see Figures 1, 2, 4, and Table 2). In addition, the involved State agencies may acquire other parcels adjacent to the sanctuary boundaries in fee simple, or through conservation easements, as available funds permit. Furthermore, cooperative management agreements may be sought with adjoining private owners on a voluntary basis to further protect the areas surrounding the proposed sanctuary.

2. Public and Private Access

Acquisition of public access points or protection of existing access points will be sought at Stockport and Tivoli. Access is adequate at Iona and Piermont. All four sites are accessible by small boat from the river using put-in points at both public and private landings within a few miles of the sites. Land access is limited at Stockport and Tivoli and traditionally has been largely along the railroad service roads at these sites, but Consolidated Rail Corporation has indicated that it plans to close off some access points on its land in the near future. Thus, access points within the proposed sanctuary would be even more important to the public.

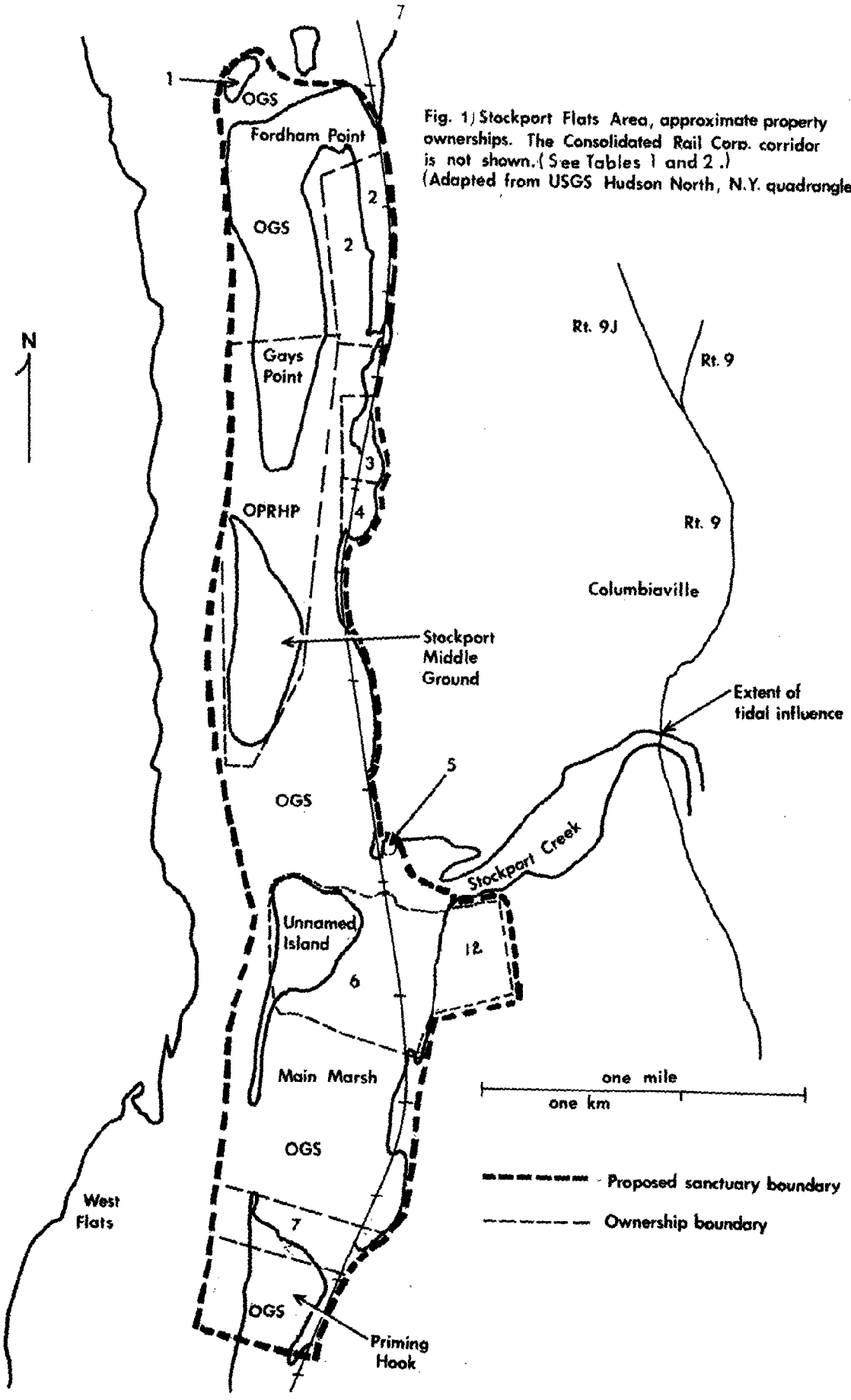


Fig. 1) Stockport Flats Area, approximate property ownerships. The Consolidated Rail Corp. corridor is not shown. (See Tables 1 and 2.) (Adapted from USGS Hudson North, N.Y. quadrangle.)

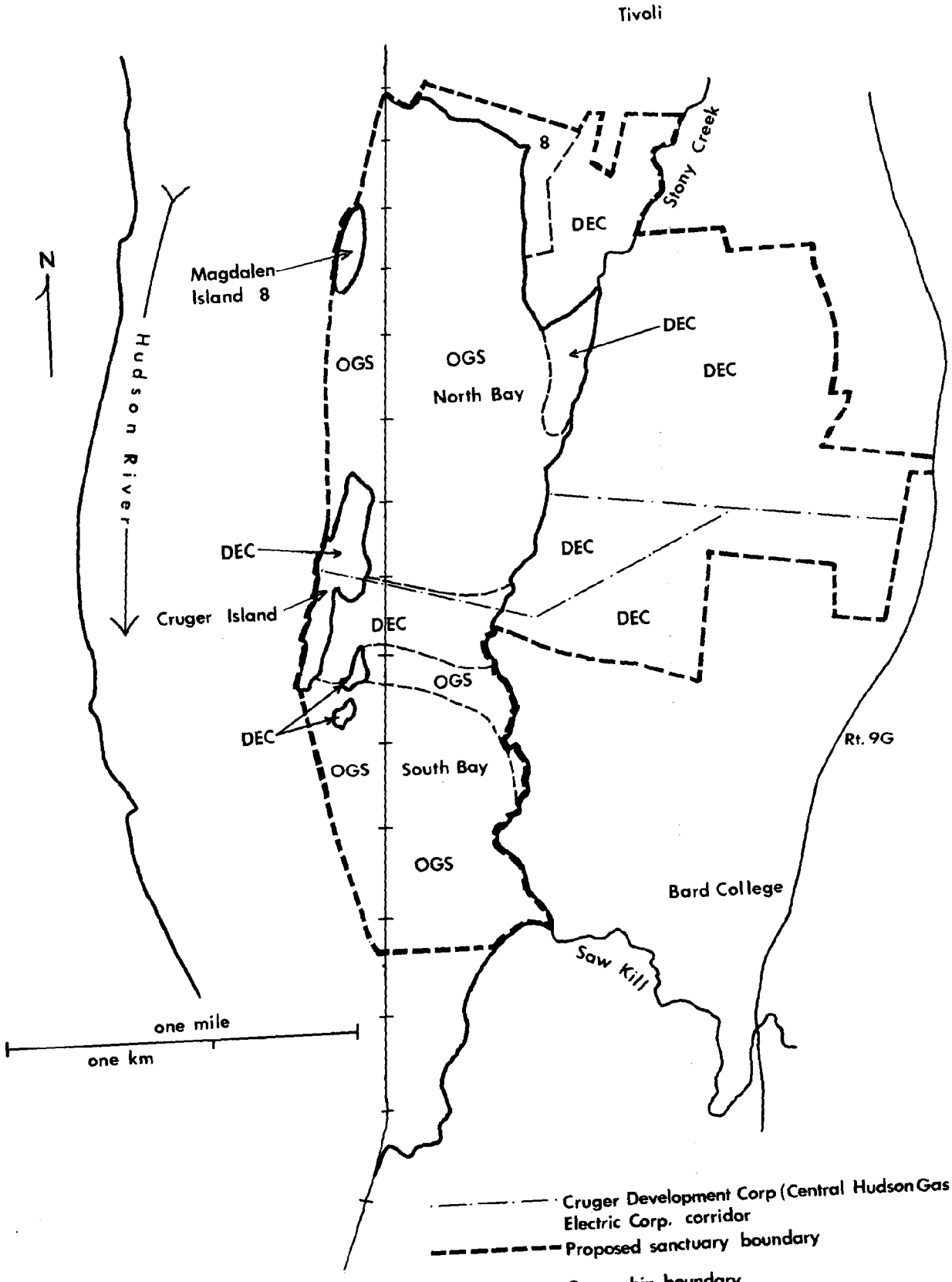


Fig. 2 Tivoli Bays Area. (See Tables 1 and 2.)
(Adapted from USGS Saugerties, N.Y. quadrangle.)

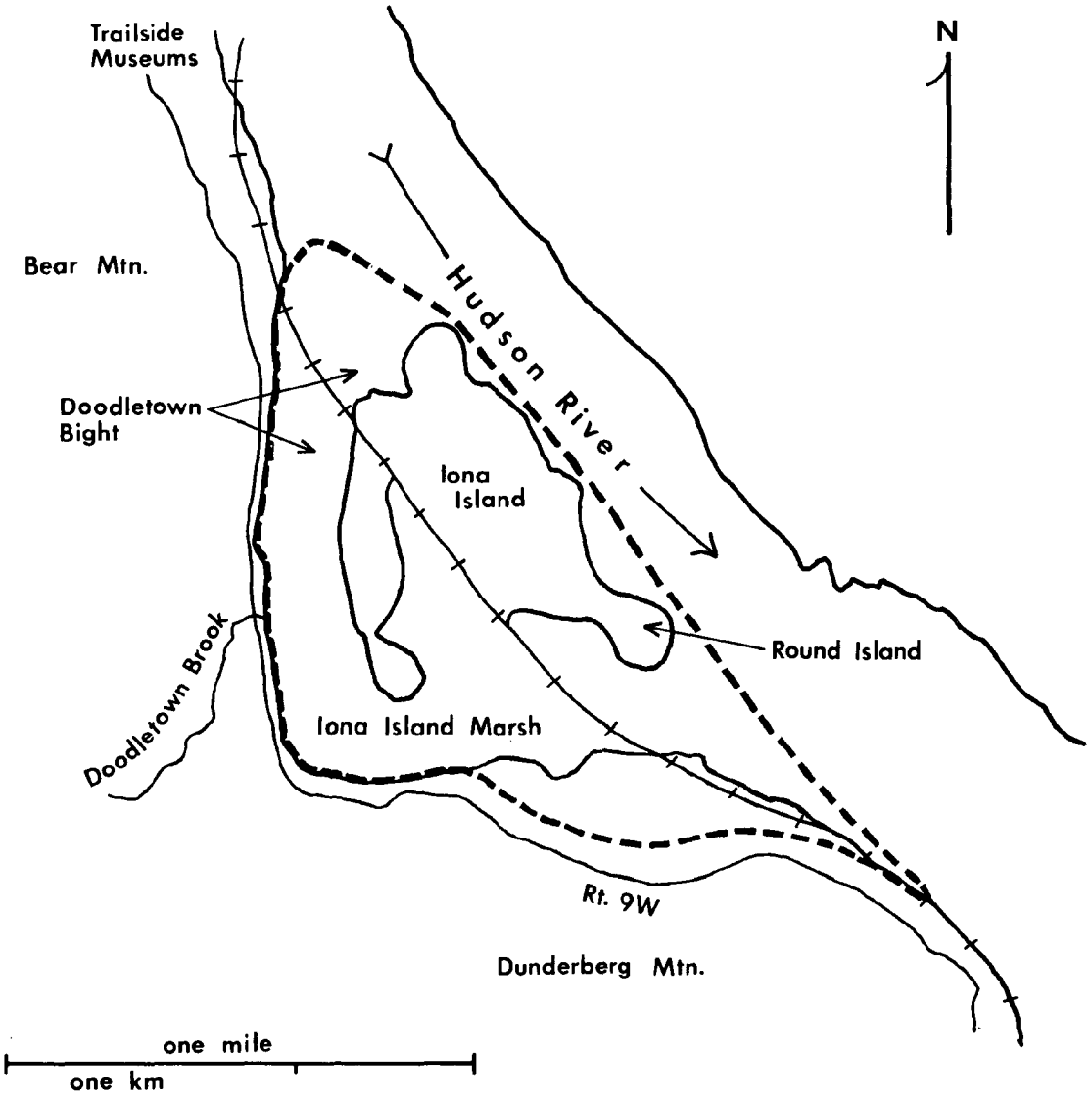


Fig. 3 Iona Island Marsh Area (See Tables 1 and 2.)
(Adapted from USGS Peekskill, N.Y. quadrangle.)
Ownership all PIPC

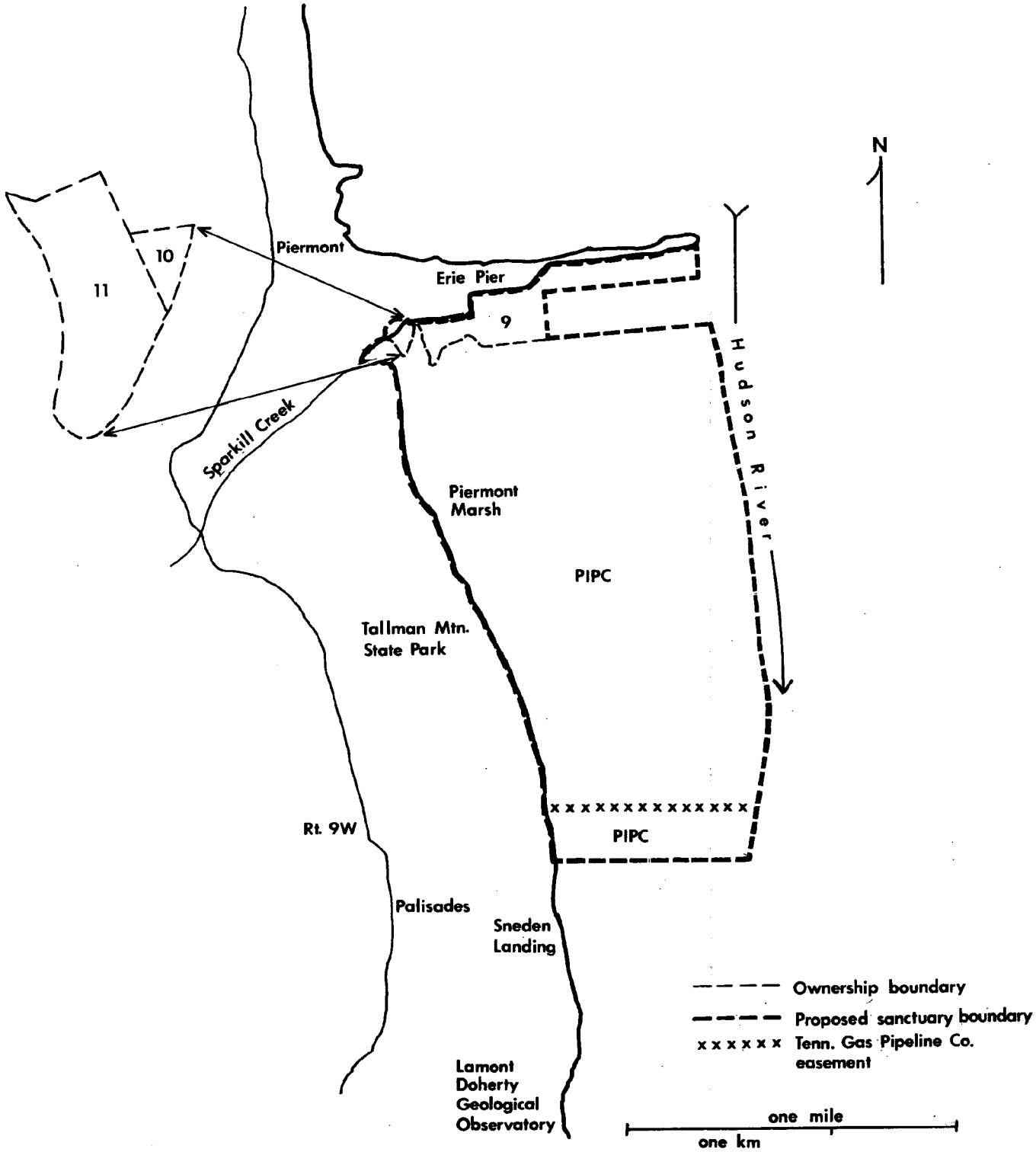


Fig. 4 Piermont Marsh Area. (See Tables 1 and 2.)
(Adapted from USGS Nyack, N.Y.—N.J. quadrangle.)

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Washington, D.C. 20230

OFFICE OF THE ADMINISTRATOR

August 20, 1982

Dear Reviewer:

In accordance with the provisions of Section 102(2)(C) of the National Environmental Policy Act of 1969, we are enclosing for your review and consideration the final environmental impact statement prepared by the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, Department of Commerce, on the proposed Hudson River National Estuarine Sanctuary.

Any written comments or questions you may have should be submitted to the contact person identified below by September 26, 1982. Also, one copy of your comments should be sent to me in Room 5813, U.S. Department of Commerce, Washington, D.C. 20230.

CONTACT PERSON

Dr. Richard J. Podgorny
Sanctuary Projects Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235
Telephone: 202/634-4236

Thank you for your cooperation in this matter.

Sincerely,

Thomas E. Bigford for

Joyce M. T. Wood
Director
Office of Ecology and Conservation

Enclosure

Table 1. Ownership of Parcels Within the Proposed Estuarine Sanctuary Boundaries (see Figures 1-4)[a] (approximate acreages).

	Acres
Stockport Flats:	
New York State Office of General Services (OGS)	692-804[b]
New York State Office of Parks, Recreation and Historic Preservation (OPRHP)	193
Private (see Table 2)	187-299[b]
Tivoli Bays:	
New York State Department of Environmental Conservation (DEC)	707
New York State Office of General Services (OGS)	729
Private (see Table 2)	45
Iona Island Marsh:	
Palisades Interstate Park Commission (PIPC)	556
Piermont Marsh:	
Palisades Interstate Park Commission (PIPC)	871
Private (including The Nature Conservancy, see Table 2)	73

Stockport Flats	approximately 1,516 acres
Tivoli Bays	approximately 1,481 acres
Iona Island Marsh	approximately 556 acres
Piermont Marsh	approximately 944 acres
Total	approximately 4,165 acres

[a] The following ownerships are adjacent to, but will not be part of, the proposed sanctuary: corridors approximately 75 feet wide passing through or adjacent to Stockport Flats, Tivoli Bays and Iona Island Marsh and owned by Consolidated Rail Corporation; a Y-shaped corridor (undeveloped) 200 feet wide crossing part of the Tivoli Bays State lands and owned by Cruger Development Corporation of Central Hudson Gas & Electric Corporation; the Erie Pier properties at the north end of Piermont Marsh owned by the Village of Piermont, Clevepak Corporation, and Federal Paper Board Company.

[b] The ranges of acreage given are due to the incompletely determined size of the private holding on the unnamed island, the rest of which is owned by OGS.

Table 2. Parcels Proposed for Acquisition (not in priority order)

At Stockport Flats:

Parcel 1: An approximately 5-acre sandy islet owned by Joseph Nostrand between Fordham Point and Little Nutten Hook.

Parcel 2:* An approximately 57-acre area of shallows and shoreline, a water grant known as the "Gay Grant," owned by Irving Domnitch.

Parcel 3:* An approximately 18-acre area of water, marsh and shoreline, a water grant known as the "Judson Grant," owned by Irving Domnitch.

Parcel 4: An approximately 10-acre area of water and marsh, a water grant known as the "Alvord Grant," owned by Robert L. Pierson.

Parcel 5: An approximately 1-acre area of madeland adjacent to the railroad and the mouth of Stockport Creek with an unimproved parking area and landing, owned by Consolidated Rail Corporation.

Parcel 6. Portions of the "unnamed island" lying off the mouth of Stockport Creek owned by Porter Fearey, Jr. The extent of Mr. Fearey's ownership is believed to be between 7 and 119 acres, and to this extent the State is negotiating with him.

Parcel 7: An approximately 54-acre area of water, marsh and shoreline, a water grant known as the "French Grant," owned by Algis C. Saurusaitis.

Parcel 12: An approximately 35-acre area of land on the south side of Stockport Creek, owned by John P. and Sallie Barrett, and currently under study as a potential public access point.

At Tivoli Bays:

Parcel 8: Approximately 45-acres of land including the approximately 9-acre Magdalen Island and additional area of upland at the north end of North Bay, owned by Tivoli Properties, Inc. This acquisition is under negotiation by the State and the exact size of the parcel has not been agreed upon.

* Mr. Domnitch has indicated he does not want to participate in the sanctuary project. The State of New York is preparing an offer to him. If refused, his lands will be removed from the proposed boundary and will not be included as part of the sanctuary.

At Piermont Marsh:

Parcel 9: An approximately 71-acre area of water and marsh now owned by DEC. This parcel consists of approximately 65-acres donated to this village of Piermont by Continental Group, Inc., and about 6-acres then owned by the village, both transferred to The Nature Conservancy and then to DEC during the preparation of this FEIS.

Parcel 10: An approximately 0.04-acre area in the northwest corner of Piermont Marsh, owned by Louis Hurban, Jr.

Parcel 11: An approximately 2-acre area in the northwest corner of Piermont Marsh owned by James J. MacMurray.

Stockport. Existing access is mostly via the large unimproved parking area and unimproved boat landing on the ConRail property at the railroad crossing of Stockport Creek. Purchase of this access point would ensure its continued availability to the public.

The need for an additional access point on tidal Stockport Creek near the proposed sanctuary site would be studied. This point would provide access for researchers, fishermen, and canoeists. Gay's Point and Stockport Middle Ground are accessible by boat. There are three improved public boat launch sites (at Coxsackie, Hudson, and Athens) within approximately two miles of the proposed sanctuary site.

Tivoli. Most access now is via the railroad service road from the Cruger Island Road (both northward and southward), from Barrytown (northward), and from Tivoli (southward). The management plan being developed by the DEC for the Tivoli Bays area will include development of two unimproved boat landings using old roads, one at the south end of North Bay (from Cruger Island Road), and the other on the east side of North Bay at a point just north of Stony Creek. Additionally, an existing trail system around the east side of North Bay connecting Cruger Island Road and Kidd Lane will be renovated for foot access to the site. Three small primitive parking areas will be developed in conjunction with the access points, away from the margin of the wetlands. The proposed access system will provide access for researchers and educational groups as well as fishermen, hunters and outdoor recreationists. There is an unimproved river landing at the Village of Tivoli north of North Bay.

Iona. There is access to the marsh from Rt. 9W and also from the dirt causeway connecting 9W to Iona Island. The Palisades Interstate Park Commission will repair the causeway in 1982 or 1983 as soon as PIPC funds are available. The causeway provides access for researchers and certain other users, but generally permits are required from the Park Commission. The Trailside Museums complex north of the site is accessible from the highway and will house the proposed sanctuary educational facility. The Appalachian Trail passes through this complex.

Piermont. The Erie Pier, owned by the Village of Piermont, is used for launching boats and has parking space for about 40 vehicles. The Village is planning construction of a launching ramp.

The pier is also used by fishermen and birdwatchers. There is footpath access to the marsh edge as well as to views over the marsh in Tallman Mountain State Park.

3. Management of the Proposed Sanctuary

The Estuarine Sanctuary Program is not a new State or Federal regulatory program. The proposed sanctuary would be managed using existing State laws and programs. The Estuarine Sanctuary Program is a State program; the Federal government is a partner in providing funds and guidance during the establishment phase. The principal goals of the proposed Hudson River Estuarine Sanctuary are to:

(1) Manage the area's natural resources in a manner compatible with the National Estuarine Sanctuary Program goals and objectives in order to maintain, protect, and enhance the quality of the area's biological, physical, and cultural resources.

(2) Encourage scientific research that focuses on both improving decisionmaking in coastal management and increasing understanding of estuarine ecosystems.

(3) Increase national and local awareness of the significance of the estuarine resources within the proposed sanctuary and the Hudson River Estuary in general, and encourage wise use of these resources.

(4) Allow traditional resource uses (including hunting, fishing and and trapping) in coordination with National Estuarine Sanctuary Program objectives.

a. Management Plan

A Management Plan for the proposed Hudson River Estuarine Sanctuary would be formulated within one year after the acquisition grant is received. This plan would be prepared under the direction of the Sanctuary Steering Committee in full consultation with the land-owning agencies, the Sanctuary Advisory Committee, and the public. The plan would provide a framework for conducting research and educational programs and for integrating public uses into broader National Estuarine Sanctuary purposes, while ensuring compatibility of the various Federal, State, and local programs already in effect on the Hudson River Estuary. The management plan would incorporate the management prerogatives of the various Sanctuary land-owning agencies.

b. Management Structure

The DEC will administer the proposed sanctuary and will be directly responsible for the content and structure of the sanctuary's management plan, the expenditure of program funds, and the formulation and implementation of general program elements (such as research programs and educational programs). A Sanctuary Steering Committee comprised of the five State agencies involved in the proposed sanctuary has been formed.

The Steering Committee consists of representatives from the following State agencies:

1. Department of Environmental Conservation (DEC) including Regions 3 and 4 (lead agency, owner of certain sanctuary lands).

2. Office of Parks, Recreation and Historic Preservation (OPRHP) (Saratoga-Capital District State Park and Recreation Commission) (owner of certain sanctuary lands);

3. Palisades Interstate Park Commission (PIPC) (owner of certain sanctuary lands);

4. Office of General Services (OGS) (owner of certain sanctuary lands);

5. Department of State (DOS) (responsible for N.Y. State's Coastal Management Program).

DEC will chair this Steering Committee. The Committee is advisory to DEC on issues related to the formulation and implementation of the proposed sanctuary's management plan, the expenditure of program funds, and formulation and implementation of general program elements. Consistent with the management plan, the State agencies will exercise prerogatives and make decisions regarding use of lands to which they hold title.

The National Oceanic and Atmospheric Administration (NOAA) would serve as an ex-officio representative to the Steering Committee. A Memorandum of Agreement, signed by the agencies represented on the Steering Committee, is reproduced as Appendix 8. The Memorandum of Understanding outlines interagency arrangements for the administration and management of the proposed sanctuary, and expresses the agencies' agreement to carry out the management plan.

The Sanctuary Advisory Committee (SAC) will represent local government, user groups, conservation organizations, researchers, educators, funding organizations, and adjoining land owners. The purpose of the SAC is to achieve coordination among the public and private groups participating in the sanctuary program, and to assist and advise the Sanctuary Steering Committee. The SAC will help in securing funding from the private sector, organizing volunteer efforts in education and management work, soliciting and channeling public input to the sanctuary planning process, reviewing the proposed sanctuary management plan and any changes in the plan, reviewing proposals for educational and research use and other activities within the proposed sanctuary, enhancing communication and cooperation among all interests involved in the proposed sanctuary.

The SAC will function as three local committees for the three local counties containing proposed sanctuary sites (Columbia, Dutchess, and Rockland), with an executive committee that meets to coordinate the work of the three local committees. The committees will consist of local representatives as outlined in Table 3. The chairpersons of the three local committees will meet with the Steering Committee.

Coordination of the Steering Committee is assured by the Memorandum of Agreement among the agencies involved that they agree to the objectives and specifications of this Final Environmental Impact Statement and the Federal Guidelines for the National Estuarine Sanctuary Program. The purpose of the coordinated management approach is to improve consistency, reduce conflicts, and provide better service to the public. The site-by-site organization of ownership and management responsibility follows.

Table 3. Sanctuary Advisory Committee (Tentative Composition)

Stockport (Columbia Co.)

Town Government
County Environmental Advisory Group
Sportsmen's Group
Commercial Fisherman
Conservation Group or Nature Club
Adjoining Land Owner
Scientific Researcher
Educator
Business Representative

Tivoli (Dutchess Co.) (This committee will be the same as the Tivoli Bays State Lands Advisory Committee.)

Town Government
Village of Tivoli Representative
Town Conservation Council
Dutchess County Trappers' Association
Ralph T. Waterman Bird Club
Adjoining Land Owner
Scientific Researcher
Bard College Educator
Business Representative
Local Waterfowl Hunter

Piermont and Iona (Rockland Co.)

Local Government
Municipal Environmental Advisory Group
Sportsmen's Representative
Commercial Fisherman
Conservation Group or Nature Club
Adjoining Land Owner
Scientific Researcher
Educator
Business Representative

Stockport

Office of Parks, Recreation and Historic Preservation, Saratoga-Capital District Park and Recreation Commission:

owns land at Gay's Point and Stockport Middle Ground and is responsible for any facilities at those areas. There is a management plan for the Gay's Point and Stockport Middle Ground elements of the Hudson River Islands State Park, and picnicing, camping, fishing and hunting are permitted at those areas in accordance with provisions in the management plan.

Office of General Services:

owns the remainder of the currently State-owned lands at the Stockport site. Fishing, hunting and trapping are permitted on OGS lands, and these uses will continue. OGS has no facilities on its lands at Stockport.

Department of Environmental Conservation; Office of Parks, Recreation and Historic Preservation, and Office of General Services:

together will plan and conduct whatever further acquisition of lands at the Stockport site is desired.

Tivoli

Department of Environmental Conservation:

owns lands at Cruger Island, North Bay, and east of North Bay, and is negotiating further acquisition there. A management plan for the Tivoli Bays State lands is being prepared by DEC under a directive that predated the Estuarine Sanctuary Program. (This acquisition project was initiated in 1980 using on a 50-50 matching basis a Heritage Conservation and Recreation Service grant and New York State's Environmental Quality Bond Act funds, and has also been called "Tivoli Bays Nature and Historical Preserve." The area will also serve as a wildlife management area.) Facilities constructed at the Tivoli site for the proposed estuarine sanctuary would be funded (construction and maintenance) with estuarine sanctuary funds and other funds as needed. However, DEC will be responsible for physical management of the site.

Office of General Services:

owns lands in North Bay, the northern end of South Bay, and around Cruger Island and Magdalen Island which are to be transferred to DEC under an agreement which pre-dated the Estuarine Sanctuary Program. OGS also owns lands in the middle of South Bay and outside South Bay (west) which will remain in OGS ownership, but will be managed by DEC under the National Estuarine Sanctuary Program. OGS has no facilities at the Tivoli site.

Iona

Palisades Interstate Park Commission:

owns the Iona Island Marsh and all surrounding areas west of the railroad, as well as the portions of Iona Island and Round Island east of the railroad, the shallows adjacent to the island, and the Bear Mountain State Park Trailside Museums complex. PIPC maintains a portion of the Appalachian Trail which passes within three-tenths of a mile of the marsh (this is the only point where the Appalachian Trail passes through the coastal zone). The United States Department of the Interior holds a reversionary interest in the portions of Iona Island and Round Island east of the railroad. PIPC patrols the entire site, and regulates use of the site in accordance with established PIPC management policies. PIPC will be responsible for the maintenance of all improvements, additions, and exhibits at the Trailside Museums built with estuarine sanctuary funds. PIPC is also responsible for the maintenance of the access road to Iona Island. Hunting and trapping have not been permitted for more than 65 years at Iona Islands on PIPC lands and permits are generally required for other uses.

Piermont

Palisades Interstate Park Commission:

owns the major (central) portion of Piermont Marsh, and water rights grants adjacent to the eastern edge of the marsh. Hunting and trapping have not been permitted for more than 50 years on the PIPC lands, which are managed according to established PIPC policy. There are no structures on the PIPC lands included in the proposed sanctuary boundaries.

Department of Environmental Conservation:

is acquiring lands in the north end of Piermont Marsh between Sparkill Creek and the Erie Pier, and will manage the parcels to be acquired and any other parcels acquired in that portion of the marsh under the National Estuarine Sanctuary Program.

c. Sanctuary Staff

The DEC in consultation with the Sanctuary Steering Committee would direct a staff consisting of at least one person, the Sanctuary Manager. The Manager will be an individual experienced in the environmental sciences and in grant proposal preparation. An alternative arrangement would be two individuals, a scientist and a grants writer. The Manager will occupy an office to be selected near the Tivoli or Iona site or between these two sites. If only one person is appointed, arrangements would be made to secure the part-time services of at least one other person, so that one staff member resides near the up-river sites and one resides near the downriver sites. The part-time staff member could be a shared position with another Hudson River Estuary related job in the public or private sector. Additionally, the services of volunteers would be sought wherever possible.

The sanctuary staff would be accountable to the DEC and the duties of the staff would be:

(1) Coordinating research within or related to the proposed sanctuary, and sharing the research results with the State Coastal Management Program and other State Programs related to the Hudson River Estuary;

(2) Coordinating the educational program for the proposed sanctuary and establishing a forum for open discussion between environmental and economic interests along the estuary;

(3) Preparing grant proposals and managing the finances of the proposed sanctuary;

(4) Performing other administrative duties for the proposed sanctuary, including maintenance of complete and detailed scientific and management records of the proposed sanctuary;

(5) Working with the Steering Committee and the Sanctuary Advisory Committee;

(6) Advising government agencies on issues, questions and projects that have an impact on the proposed sanctuary.

d. General and Specific Management Requirements

Management policies would be based on the primary objective of maintaining the proposed sanctuary in a natural condition to assure long-term protection of these four areas for research, education, and recreation. Development uses that would significantly alter the ecosystem or that are inconsistent with the purposes and goals of the proposed sanctuary would not be allowed on the proposed sanctuary lands.

Existing Federal, State, and local laws would, as in the past, control uses of the land and water areas within the proposed sanctuary boundaries. Changes in management policies and regulations that affect the proposed sanctuary would be reviewed by the Sanctuary Advisory Committee. This Committee may provide advisory comments on policies and programs, but would have no regulatory authority.

Major traditional uses of the lands and water within the proposed sanctuary boundaries are compatible with the research and education objectives of the proposed sanctuary. These traditional uses include fishing, hunting, and trapping (at Tivoli and Stockport), commercial shipping and recreational boating, rail and transportation, and recreational use of the Erie Pier at Piermont. The Experimental Ecological Reserve Program at Tivoli, the DEC Management Plan for the Tivoli Bays State Lands (in preparation), the National Natural Landmark status (U.S. National Park Service) of Iona Island Marsh, other State Park uses of the proposed sanctuary sites, and other established policies of the involved State agencies will remain in effect.

Although some Experimental Ecological Reserves have programs of large-scale physical manipulation of habitats for experimental purposes, such manipulation would not be consistent with the goals of the proposed Hudson River Estuarine Sanctuary. Experiments would be designed to assess, evaluate and expand knowledge of natural systems within the proposed sanctuary, or larger scale manipulations outside of the proposed sanctuary boundaries which would not alter the natural systems within the proposed sanctuary. Significant long-term or permanent habitat manipulation is generally considered incompatible with estuarine sanctuaries.

e. Enforcement of Existing Laws

Enforcement of existing Federal, State and local laws within the proposed sanctuary would continue as it has in the past. Establishment of an estuarine sanctuary does not bring any new Federal or State regulation to the area, but it emphasizes the importance of the area for research and education. The following laws, among others, would guarantee the integrity of the proposed sanctuary: Federal Clean Waters Act, Section 404; and Rivers and Harbors Act Section 10; State Tidal Wetlands Act, Freshwater Wetlands Act; and Stream Protection Act; other parts of the State Environmental Conservation Law; New York State Parks and Recreation Law; and New York State Waterfront Revitalization and Coastal Resources Act. A more detailed list of existing laws and jurisdictions is in Appendix 2.

f. Research Program: Hudson River Estuarine Sanctuary

Estuarine sanctuary research would focus on estuarine studies and studies of the interaction of terrestrial and marine ecosystems with the estuarine ecosystem. Studies would be carried out in wetlands, shoreline, shallows and deepwater habitats with a special emphasis on shoreline and wetlands habitats because these habitats of tidal rivers have been least-studied, particularly in the Hudson River Estuary. Most research would be done by private laboratories, colleges, universities and State agencies. The Steering Committee would coordinate research objectives and priorities for the proposed sanctuary, and coordinate research activities.

The State agencies represented on the Steering Committee would stimulate new research in the proposed sanctuary. Public interests, especially sanctuary user groups, would draw attention to practical problems of ecology and management in the Hudson River Estuary. Interaction between New York's Coastal Management Program (NYS Department of State), New York Sea Grant Institute, and the Steering Committee members would enable the Sanctuary Research program to function partly in an "experiment station" mode to identify and address the information needs of coastal management. A significant factor in future scientific research on the Hudson is the newly-established not-for-profit Hudson River Foundation for Science and Environmental Research, Inc., with an endownment of $12 million provided by Consolidated Edison Company of New York, Inc., Niagara Mohawk Power Corporation, Central Hudson Gas & Electric Corporation, and Orange and Rockland Utilities as a result of the landmark negotiated settlement involving the utilities, U.S. Environmental Protection Agency, N.Y. State DEC, Scenic Hudson, Inc., Hudson River Fishermen's Association, and the Natural Resources Defense Council.

A considerable amount of research has already been done on the Hudson River Estuary. The National Estuarine Sanctuary Program can provide the coordination needed to make the most efficient use of funds, existing data, and research opportunities, while facilitating the availability of information resulting from research and avoiding duplication within the proposed sanctuary. The goals of the proposed estuarine sanctuary are compatible with those of the Hudson River Environmental Society and the Hudson River Research Council (groups of scientists and educators formed to coordinate research and disseminate research results to the public). There is opportunity for improved sharing of equipment, facilities and personnel of the type shown by the two Hudson River Field Weeks in April 1977 and August 1978. Special opportunities also exist for the public (students, sportsmen, naturalists, etc.) to assist as volunteers in research projects; this approach was used successfully by Boyce Thompson Institute in collecting data on Hudson River Estuary fish, invertebrates, and marsh vegetation. This "volunteerism" will link research and education efforts in two ways: (1) educational field trips can collect samples and make observations useful to scientists, and (2) amateur naturalists can do field work under scientific supervision. Fishermen are already assisting in tagging projects, and a postcard reporting system is under study by the Hudson River Fisheries Advisory Committee to enable sportsmen and naturalists to contribute to a scientific data base information on observations of unusual events and species that would otherwise

be lost. The Fisheries Advisory Committee and the DEC Hudson River Fisheries Coordinator will work closely with the Steering Committee to stimulate and plan research, and exchange assistance and information.

Tivoli Bays was designated an Experimental Ecological Reserve (EER) in 1981 under the Institute of Ecology (Butler University) national system of Experimental Ecological Reserves. This is a non-funded system of reserves that are selected to serve as sites for long-term ecosystem-level studies. Some of the monitoring and research planned for the EER would be extended to cover all four estuarine sanctuary sites. The proposed sanctuary sites were selected to allow research on a cross-section of areas representing similar habitats (shoreline, marshes, shallows) along the ecological gradient of the estuary, and these sites are well-suited for long-term studies comparing stability and change in vegetation, animals and ecosystem function. New York's commitment to maintaining these natural areas will permit long-term ecological research not possible elsewhere.

In connection with the proposed estuarine sanctuary, appropriate facilities (existing or new) would be designated to serve as respositories for published and unpublished reports, data, and voucher specimens of plants and animals in different reaches of the Estuary. It is expected that the planning of repositories would be coodinated with the Hudson River Foundation for Science and Environmental Research, Inc. and other active groups.

Estuarine Sanctuary grant funds will not be adequate to support all research. Some operations funds may be used for environmental monitoring. Therefore, estuarine sanctuary staff would conduct an active fund-raising effort to support research, in conjunction with the preparation of grant proposals by independent researchers and other institutions.

The specific research projects to be conducted would be determined later and would be carried out within the scope of available funding. In general, research would be encouraged that is relevant to effective coastal management and the wise use of Hudson Estuary resources. The following topics are examples.

(1) Ecosystem-level studies of the flows of energy and nutrients within the wetlands, between the wetlands and the open estuary, and between the wetlands and the shores;

(2) Studies of the role of terrestrial and acquatic plant detritus in the nutrition of estuarine organisms in the Hudson's fresh-tidal and brackish-tidal areas, and the effects of detritus from different sources of these processes;

(3) Patterns and changes in vegetation of wetlands, shallows and shores, and effects on fish and wildlife populations, soils, and nutrient cycles;

(4) Ecology of wildlife food plants such as water-celery, wild-rice and cattail;

(5) Role of the Hudson River Estuary wetlands and the shallows in the spawning, juvenile development (nursery) and feeding of commercial and sport fishes;

(6) Role of the Hudson River in the Atlantic waterfowl and shorebird flyway, and the value of the wetlands and shallows as resting, breeding, and wintering places for waterfowl;

(7) Marsh bird (rail, gallinule, bittern, wren, blackbird and sparrow) populations and their relationship to marsh vegetation, food organisms, and other animals;

(8) Muskrat ecology, populations, relationship to soil, vegetation and other wildlife, diseases, environmental contaminants, limiting factors, and economic value;

(9) Invertebrates (benthic and planktonic) and their role as fish and wildlife food and in sediment processes and nutrient cycling in the wetlands and shallows;

(10) The species composition and production of Hudson River marsh vegetation compared to fresh-tidal and brackish-tidal marshes in other East Coast estuaries, and to saline-tidal marshes;

(11) The ecology, vegetation, wildlife, and resource values of freshwater-tidal swamps;

(12) Ecology of endangered species including shortnose sturteon, bald eagle, osprey, heartleaf plantain and Nuttall's micranthemum, and ecology of "estuarine endemics" such as cylindrical bulrush;

(13) Effects of rising sea level on tidal wetlands;

(14) Geologic character and history of wetland sediments and vegetational history of the wetlands; and

(15) Microbial communities and role in ecosystem processes.

In addition, the "experiment station" approach could address management problems elsewhere on the estuary such as:

(1) Fish stocking potentials and policies;

(2) The sources and cycling of toxic substances and the uses of plants and animals to monitor toxic substances;

(3) Effects of introduced plant and animal species on the estuary and on native species;

(4) Mitigation of effects of channel maintenance and dredged material disposal;

(5) Shoreline erosion and its management;

(6) The assimilation capacity of natural environments for nutrients and other waste materials;

(7) Manipulative experiments on wetlands outside the proposed sanctuary sites, to study effects of management practices such as impoundment, water level control, pest control, and wildlife species management, and restoration of damaged wetlands; and

(8) Experiments in mitigation and minimization of development and management impacts to include industry, marinas, railroad right-of-way management, and shoreline stabilization.

g. Existing Monitoring

Several State and Federal Agencies and private institutions conduct monitoring of physical, chemical and biological characteristics of the Hudson River Estuary.

(1) Tides and freshwater flow;

(2) Water quality;

(3) Air quality and weather;

(4) Fisheries surveys and stock assessments;

(5) Commercial fishing activity;

(6) Levels of PCB and metals in fish;

(7) Distribution and abundance of endangered animals and plants;

(8) Mid-winter aerial water fowl surveys (see Appendix 5);

(9) Christmas Bird Counts (several locations):

(10) New York State Breeding Bird Atlas;

(11) Breeding birds and vegetation of the railroad right-of-way; and

(12) Seismic activity.

The monitoring and research program at the proposed sanctuary would be designed for compatibility with similar work at the other existing National Estuarine Sanctuaries and coastal Experimental Ecological Reserves. It is anticipated that the proposed Hudson River Estuarine Sanctuary would be the site of regular workshops and conferences on ecology and management of estuaries and wetlands. A research prospectus would be circulated regularly to inform and attract potential researchers.

h. Education and Public Awareness Program

While few people live next to the proposed sanctuary sites themselves, approximately 15 million people are located within a 45- minute drive of the sites. Each year millions of people visit the shores of the Hudson River for recreation and other purposes. The Trailside Museums complex adjoining the Iona Island Marsh site has an estimated 600,000 visitors annually. At the Trailside Museums and at selected locations on or adjacent to the other three proposed sanctuary sites, it would be possible to accommodate many people for educational purposes without damage to the natural areas or conflicts with other uses.

The proposed sanctuary staff and Sanctuary Advisory Committee would be active in public education. There is a growing body of scientific information on the Hudson River Estuary, but relatively little of it has been interpreted for the lay public. During the last 5-10 years, Hudson Valley residents have evidenced considerable interest in seeing and learning about the estuary and its life, and the wetland and shoreline environments represented in the proposed sanctuary lend themselves well to this purpose.

These are examples of possible education programs:

(1) Improvements to the Bear Mountain Trailside Museums to accommodate indoor and outdoor exhibits on the Hudson River Estuary and the Iona Island Marsh complex, oriented toward the general public with no prior knowledge of the estuary;

(2) Facilities in an addition to the Bard College Field Station at Tivoli Bays for graduate and undergraduate students, visiting scientists, and invited public class use;

(3) A boardwalk accessible to the handicapped, through tidal marsh, swamp and pool habitats at the margin of the Tivoli Bays wetland, for the use by public and by researchers;

(4) Traveling exhibits about the estuarine sanctuary for sportsmen's shows, elementary and secondary schools, nature and civic club meetings, county fairs, conferences, and other events;

(5) Interpretive brochures describing the four proposed sanctuary sites and the Hudson River Estuary in general, with trail maps and guides to access points and special interest features (e.g., birding "hotspots");

(6) A kit for teachers outlining estuary-related classroom activities for various age groups, coastal studies curricula, and do-it-yourself field trips to the proposed sanctuary sites or other Hudson River Estuary wetlands and shoreline locations;

(7) Slide shows with pre-recorded taped narrations for loan to schools and public groups;

(8) Posters interpreting the estuary and its life and management;

(9) Videotaped programs for cable television stations, other public television, and school use;

(10) Organized field trips, guided by volunteer experts, at the proposed sanctuary sites and other locations, dealing with specific as well as general subjects;

(11) A "speakers' bureau" for all public groups, consisting of persons with special knowledge of various Hudson River and general estuarine subjects (e.g., wetland ecology, fisheries, birds); and

(12) A canoeist's guide to the proposed estuarine sanctuary.

Estuarine sanctuary educational activities would be closely coordinated with ongoing programs at the Dutchess Community College Norrie Point Environmental Center, Hudson River Sloop Clearwater, Wave Hill Environmental Studies Center, and other institutions. The New York State Sea Grant Institute in cooperation with the County Extension service has just inaugurated the position of Hudson River Sea Grant Cooperative Extension Specialist to promote public understanding of and appreciation for the estuarine system.

B. Other Alternatives Considered

1. No Action

Without a Hudson River Estuarine Sanctuary there would be no estuarine area specifically identified and protected within New York, and New York would lose the opportunity to participate in the National Estuarine Sanctuary Program. New York and the Nation would be unable to derive the benefits from the research information and public awareness that would result from establishing and this area as an Estuarine Sanctuary.

Although much of the land within the proposed sanctuary boundaries is already State-owned, under the "No Action" alternative New York would not be as readily able to acquire the remaining lands to fill in the public ownership gaps in the Piermont, Tivoli and Stockport marshes and these areas might not be manageable as State reserves. Furthermore, there would be less incentive for the several State agencies to work together to develop consistent management policies and practices with short-term and long-term benefits for natural area conservation, rare and endangered species, research, education, and recreation. Without designation of the estuarine sanctuary there would be less incentive for donation or bargin sales of lands adjacent to present State ownerships. Also, there would be no prestigious national program to attract research funds and highly qualified scientists from various fields to do long-term research with the confidence that their study area would remain protected.

Without the designation of the Hudson River Estuarine Sanctuary, the National Estuarine Sanctuary System would lose the opportunity to study the extensive low salinity brackish and fresh-tidal estuarine marshes and swamps so little studied to date. Also the opportunity would be lost to inform the large urban populations of the New York Metropolitan Area and the State Capital District that have had little exposure to information about estuarine systems.

The "No Action" alternative would not specifically prevent any single research project or land acquisition project, but the impetus for unification of management and coordination of research and education would be lost. The sanctuary designation plus the provision of management funds and the planning accompanying it, would establish a more comprehensive program as well as encourage additional research in the area, while such focus would likely not occur without designation.

2. Alternative Sites and the Site Selection Process for New York State

The State of New York commenced its site selection process soon after receiving a memorandum from the Office of Coastal Zone Management (OCZM) sent in September 1979, inviting Mid-Atlantic States to nominate a candidate site. The Coastal Management Unit staff of the New York Department of State forwarded this invitation, along with the Federal Estuarine Sanctuary guidelines and case studies of Sanctuaries created in other parts of the country, to other State, regional and county agencies which had already been assisting in development of the New York Coastal Management Program. Representatives from these agencies, as well as from the New York Sea Grant Institute and the Marine Sciences Research Center of the State University were asked to review the Federal site selection criteria and consider possible candidate sites. Virtually all eligible sites had already been identified through the State's Coastal Management Program, and many were documented as Geographical Areas of Particular Concern or as Significant Habitats. New York' landmark Tidal Wetlands and Freshwater Wetlands regulatory laws also helped to identify candidates through the mapping required by those statutes. Information was also provided by the programs of the Department of Environmental Conservation to identify and acquire key tidal and freshwater wetlands with funds provided under the State Environmental Quality Bond Act of 1972. All of these identification and registration programs and involved broadbased public input from sportsmen, scientists, naturalists, educators, politicians and other interested individuals and groups.

In October 1979, representatives from these agencies met to discuss New York's possible involvement in the Program and to identify potential candidate sites. At this meeting the Estuarine Sanctuary Steering Committee was created (in a slightly different form than at present) to guide the Department of State in its selection of the best candidate site. The Steering Committee then consisted of the following persons:

Ms. Frances Dunwell, Center for the Hudson River Valley

Mr. Francis A. Hyland, Long Island State Park and Recreation Commission

Mr. Joe Ketas, City of New York Department of City Planning

Mr. Ronald Killian, The Nature Conservancy

Mr. Erik Kiviat, Bard College

Dr. Lee E. Koppelman, Long Island Regional Planning Board

Mr. James W. Morton, NYS Department of State

Mr. John Muenziger, Westchester County Environmental Management Council

Mr. Steven Resler, Town of Smithtown Planning Department

Dr. Jerry R. Schubel, State University at Stony Brook

Dr. Donald F. Squires, New York Sea Grant Institute

Mr. Anthony Taormina, NYS Department of Environmental Conservation

Mr. Ivan Vamos, New York State Office of Parks and Recreation

The Steering Committee evaluated a number of candidate sites using the selection criteria listed in the Federal Estuarine Sanctuary Program Guidelines. The three sites which best met the Federal criteria were:

(1) The Peconic-Flanders Bays area;

(2) The Hudson River marshes; and

(3) The Nissequogue River.

Short position papers describing each estuarine area were prepared and sent to OCZM for preliminary review. The object of this review was to determine in any of these sites would be clearly ineligible for the Program. OCZM staff deferred expression of preference for any one site in order to allow New York to make an independent decision on the State's best candidate. OCZM staff prepared a memorandum clarifying the current interpretation of the Federal selection criteria. Copies of this memorandum and all three position papers were sent to every Steering Committee member for review.

Early in December 1979 the Steering Committee held public information meetings in Hauppauge and New Paltz to publicize its interest in selecting a candidate site and to seek public comment on the selected sites. Shortly afterwards, members of the Steering Committee and a representative from Washington visited each of the three areas, making overflights and holding meetings with local public officials and interested groups.

Later in December, the Steering Committee met to re-evaluate the sites in light of the OCZM memorandum on selection criteria, their observations during the site visits, and additional information provided at the public meetings. Each Steering Committee member had been asked to complete site evaluation forms prior to the meeting. Evaluation scores were compiled at the beginning of the meeting and discussion of the strengths and weaknesses of each candidate followed. After considerable discussion, the Peconic-Flanders Bays area was selected as the State's best candidate for nomination in the Program, with the Hudson River Marshes as a strong second.

When the primary nomination had to be withdrawn in early 1980 due to programmatic and local political difficulties, the Hudson River proposal became the primary candidate, and the pre-application process resumed, with a new lead agency (DEC) and a new Steering Committee (see list of preparers). The initial Hudson River proposal included five wetland complexes, from north to south: Tivoli Bays, Constitution Island Marsh, Iona Island Marsh, Croton Marshes, and Piermont Marsh. OCZM and Hudson River ecologists suggested that Constitution be dropped from the proposal because of a localized pollution problem, and that Croton be dropped because of conflicting land uses. Afterwards, Stockport Flats was added to the Hudson River proposal to represent the narrow and sandy upper reach of the estuary.

The Federal guidelines require that the sites be representative of the estuary, and that the sites do not duplicate each other in character. The four Hudson River Estuary sites represent the salinity-vegetation-fauna gradient of the Hudson, and one site is located in each of the four differing geologic-ecologic segments of the estuary (see Affected Environment). The total (high tide) surface area of the Hudson River Estuary from Battery Park to Troy is approximately 82,800 acres, and the portion of this total which is composed of intertidal wetlands plus subtidal shallows (less than 6 feet deep at low tide) is 21,200 acres (26%). Thus, the total acreage of the wetlands and shallows of the four sites (Stockport, Tivoli, Iona, Piermont) is approximately 2,860 acres or about 13% of the Hudson River Estuary's wetlands-shallows component, a fraction considered representative and adequate for the estuarine sanctuary purposes.

All four Hudson River Estuary sites are large wetland complexes, among the Hudson's largest, and all four have subsystems that lend themselves to comparative research along the estuarine salinity gradient: extensive cattail stands cut by tidal creeks, associated tidal shallows and mudflats, and forested terrestrial zones. All sites include the wetlands-shallows and wetlands-uplands habitat combinations that promote wildlife use and allow study of ecosystem linkages.

The four Hudson River Estuary sites are among the Hudson's highest quality estuarine natural areas, and contain biological features of national significance including rare and endangered species. The sites are well-buffered by compatible adjoining land uses, ensuring manageability and future quality. All areas are conveniently near (for research and education) academic facilities, laboratories, and large urban populations, but retain their wildland character and offer secluded and pleasing environments for research and educational activities. All sites have suitable existing or potential access for the purposes of the Estuarine Sanctuary Program.

The Hudson River Estuary is demographically central in New York State. A great amount of biological research has been done on the Hudson Estuary, in part because of its proximity to New York City and to numerous academic and scientific institutions, in part due to environmental analysis carried out in connection with land use planning and environmental management, and also due to the Hudson's inherent and unique interest to biologists as a diverse and productive natural estuarine system.

For at least 12 years private and public groups have called attention to the need for overall coordination of research, education, and management efforts on the Hudson. The Hudson River Research Council convened two conferences to address this problem in 1976 and 1977, and the Hudson River Environmental Society held a Hudson River Marsh Workshop in 1976, five Hudson River Ecology Symposia from 1966 to 1980, and a Hudson River Fisheries Conference in 1981.

Because of an excellent State land acquisition program during the last several decades, many of the ecologically significant Hudson River Estuary wetlands, islands, and shore natural areas are already in State ownership as parks, wildlife management areas, and preserves. Therefore, it was appropriate to propose the establishment of an estuarine sanctuary involving areas already predominantly State-owned and to use the program to fill out existing core public lands.

Several alternatives were considered during the process of selecting sites on the Hudson River Estuary. One alternative was a sanctuary consisting of the entire Hudson River Estuary from Battery Park to Troy. This alternative has many advantages for management, research and education, but was rejected as being unworkable in the short-term due to constraints of funding and land use conflicts. Individual alternative sites were considered, and a number of sites were suggested by individuals and private groups. Several recommendations were received in favor of the addition of the Grassy Point wetland complex at Haverstraw to the proposal, but this seemed inappropriate because of the same standards of environmental quality to Constitution Island Marsh and Croton Marshes. Among many other areas considered were Con Hook Island and Marsh, Manitou Marsh, Moodna Marsh, Vanderburgh Cove, Suckley Cove, Kingston Point Marsh, Rogers Island Marshes, the Hudson North and South Bays, Inbocht Bay-Duck Cove, West Flats-Vosburgh Swamp, Ramshorn Creek-Livingston Marsh and Papscanee Creek Marshes. These areas were all rejected for one or more of the following reasons: small size, lack of representative sub-systems, localized environmental quality problems, incompatible land and water uses. Special consideration

was given to selecting a site in the northernmost section of the estuary between Troy and Saugerties, before settling on Stockport Flats as the best choice. Papscanee Creek Marshes have modified tidal circulation and the quality of the cattail stands is not as high; the West Flats-Vosburgh Swamp complex is partly diked off from tidal flow and the diversity in the remaining tidal portion is low; Hudson North and South Bays have been adversely affected by neighboring land uses; and the Rogers Island complex does not contain vegetation types comparable to the three southern sites although it is a high-quality natural area. Stockport Flats stood out as the site with the highest environmental quality and having subsystems appropriate to the overall representativeness of the Hudson River Estuary selection.

3. Alternative Boundaries

Boundaries set for the individual sites represent a mix of these considerations: inclusion of the primary resources for research and education, adequate protection and manageability, sufficient terrestrial buffer zones, access, present ownership, availability of funding for acquisition.

a. Inclusion of Primary Resources. The extensive main wetland areas at all four sites are the focal points of the proposed sanctuary. The placement of the lower (river) boundaries of the sites near the minus-6 foot contour includes enough of the shallows for management purposes while acknowledging that research work can be carried out in the deeper waters where no specific protection is required.

b. Adequate Protection and Manageability. The range of size of the four sites is within a range considered manageable yet still provides for the future integrity and protection of the sites. Inclusion of areas on both sides of the river at any one site (e.g., Stockport Flats and West Flats) was avoided because of logistical problems. Extension of site boundaries across zones with little or no shallow water was also avoided because it would have created unnecessary disjunction (e.g., Iona Island Marsh and the mouth of Popolopen Creek).

c. Terrestrial Buffer Zones and Access. Extent of buffer zones was set depending upon status of adjoining lands and topography. At Iona and Piermont, the amount of terrestrial mainland included in the site boundaries was moot because of the stringent protection afforded the State Park lands. At Tivoli, a decision was made to include the entire State-owned uplands to achieve consistency in the boundaries of the State lands, Experimental Ecological Reserve, and proposed estuarine sanctuary, while creating a management unit. At Stockport, the primary considerations were access and reasonable size of management unit and proposed acquisitions, while affording protection for the main marsh and for endangered species. All of the terrestrial portions of Iona Island are included in the site boundary because of management consistency and protection of endangered species. At Piermont, it was decided to include the north end of the marsh to avoid management conflicts, to protect both sides of the mouth of Sparkill Creek, and to use the Erie Pier as an access point.

The proposed boundaries are the products of extensive Steering Committee discussions and meet the needs of all State agencies involved as well as the requirements of the Federal Program. The boundaries will permit workable administration and ease of management of the proposed sanctuary.

4. Alternative Management Scheme

The proposed management scheme (separate State agency ownerships with integrated management agreement and management plan) is considered the best choice because it respects traditional agency prerogatives and enables the pooling of resources and expertise of all agencies and interests involved. Consideration was given to alternative schemes, for example, transfer of all lands to a single agency or administration of the proposed sanctuary by a private group. The other alternatives were rejected because of the lack of adequate mechanisms and the desire to retain traditional uses and policies as much as possible. The State's Coastal Management Program has involved strong cooperation among State agencies and has shown that collaborative management of the proposed sanctuary is the best alternative.

5. Funding

Several sources of funds have been used in the past for the acquisition of natural areas in the Hudson River Estuary; these include Federal Land and Water Conservation Fund, State Environmental Quality Bond Act of 1972 funds, and private initiatives including the donation of lands to conservation groups. At the present time, no adequate source of funds is available for an estuarine sanctuary project (acquisition and operation) other than the NOAA National Estuarine Sanctuary Program funds here considered.

Special advantages of NOAA National Estuarine Sanctuary Program funding include:

(1) The emphasis on research and education programs while retaining other traditional uses of the sites;

(2) The prestige of the National Estuarine Sanctuary System which would attract national attention to New York, increase the chances of receiving substantial research grants from other public and private sources, improve research and education opportunities at the selected sites, and strengthen public support for continued pollution abatement and public enjoyment of the resource; and

(3) The National Estuarine Sanctuary Program provides five years of matching operations funds which are needed to establish the proper management of the proposed sanctuary during its first years after establishment.

Federal estuarine sanctuary grants are not available for other purposes. During the first years of sanctuary operation, plans would be made for funding of the proposed sanctuary after Federal funding expires. Sources of post-Federal funding may include one or more of the following: State agency funds; private donations or grants for sanctuary operations; interest from an endownment raised by a not-for-profit corporation; a possible State Legislative appropriation; equipment, services, and time donated to the proposed sanctuary by the private sector; and voluntary donations by users of the proposed sanctuary.

PART III: AFFECTED ENVIRONMENT

A. Hudson River - General Description

The Hudson River flows 315 miles through eastern New York State from the Adirondack Mountains southward to New York City. The Hudson is a tidal river for 152 miles from Troy to Battery Park at the tip of Manhattan Island where it empties into New York Harbor, Lower New York Bay, and the New York Bight. Tidal freshwater extends from Troy south to Hyde Park (Figure 5). The 0.1 parts-per-thousand salinity "salt front" shifts through the Hyde Park to Yonkers reach.

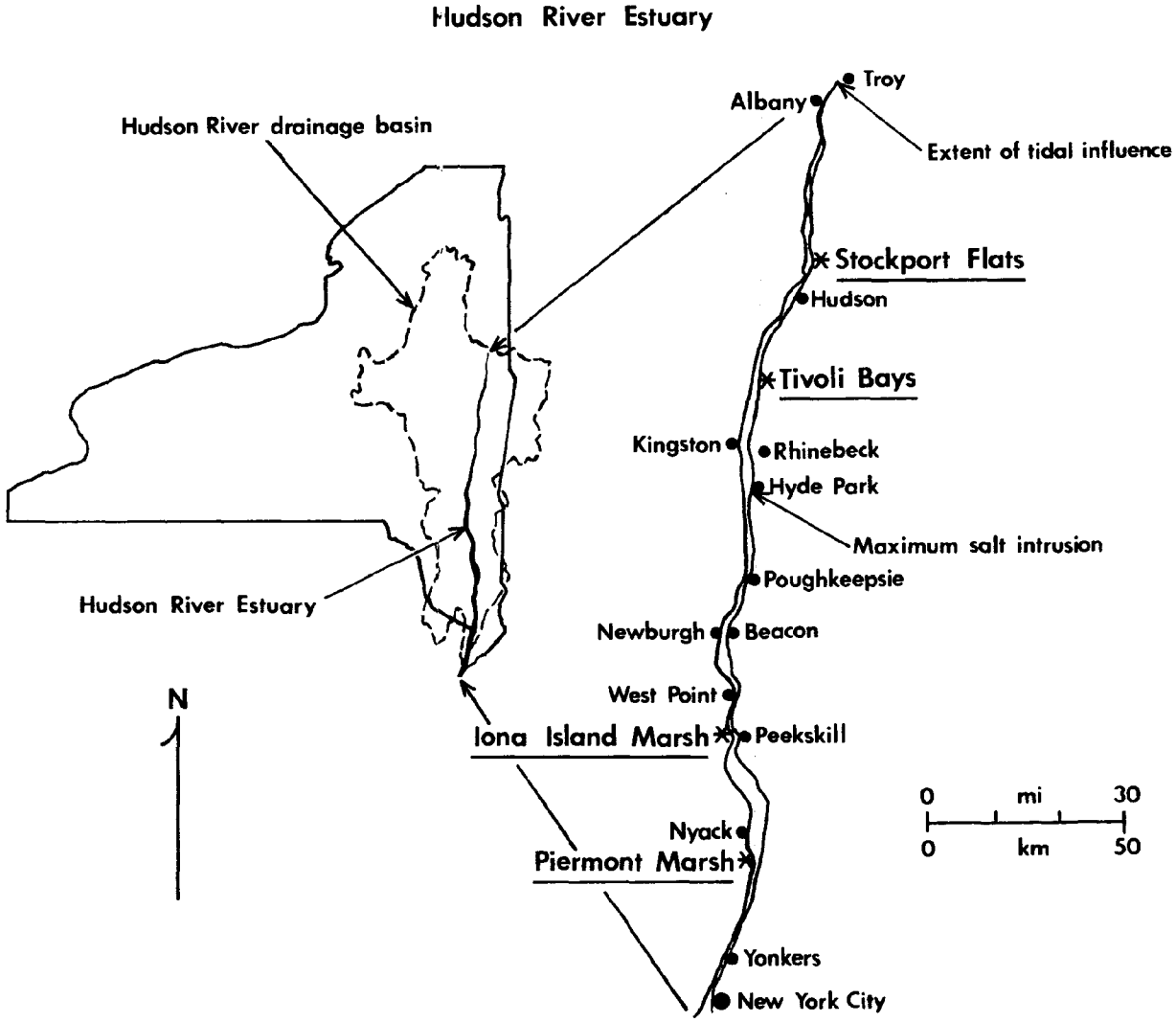
The Hudson River is entirely in New York State except for 20 miles at its mouth where it flows between New York and New Jersey. The Hudson River watershed lies in New York State except for small areas in New Jersey, Massachusetts, Connecticut and Vermont. In New York, the Hudson Estuary flows through or past 14 counties and 41 townships.

Geologic diversity is great in the Hudson River watershed and along the tidal Hudson itself. Sandstone, shale, limestone, gneiss, diabase, sand, clay and till are prominent along the tidal shores. Topography is also varied, with narrow shallow reaches, narrow deep reaches, and broad shallow reaches. River widths are about one-sixth to two-and-one-half miles; maximum depths 13-200 feet. The tidal Hudson is a long narrow estuary with an extended tidal-freshwater reach. Partial stratification occurs at times in the lower estuary where a layer of fresher water may flow outward over a layer of more saline water. The mean vertical tide range averages 3-4 feet.

Ecologically, the Hudson River Estuary resembles other East Coast estuaries in the Virginian Biogeographic Region (Cape Cod to Cape Hatteras). For example, wetlands and shallows vegetation, and communities of fish and wildlife resemble those found in the Connecticut River Estuary, the Delaware River Estuary, and Chesapeake Bay.

Numerous habitat types are present in the Hudson Estuary. These include open deep water, shallows, marshes, swamps, rocky and sandy islands, silt bottom, peat bottom, clay banks, and rock cliffs. Extensive areas of the Hudson Estuary shores are forested with oaks, maples, beech, birches, hemlock, white pine and other trees. About 150 species of fishes occur in the Hudson.

The four sites proposed for inclusion in the Hudson River Estuarine Sanctuary are distributed as shown in Figure 5, and mapped in Figures 6-9. These sites are, from north to south, Stockport Flats, Tivoli Bays, Iona Island Marsh and Piermont Marsh. The great majority of lands (both estuarine and terrestrial areas) at these sites are already State-owned.



19 mi 45 min	Tivoli		
67 mi 120 min	49 mi 75 min	Iona	
84 mi 160 min	66 mi 120 min	18 mi 45 min	Piermont

Stockport

Distances (airline miles) and approximate driving times (minutes) between sites.

Fig. 5

Stockport Flats. The northernmost site is in the Town of Stockport in Columbia County, near Columbiaville, 4 miles north of the city of Hudson and 22 miles south of Albany (Figures 5-6). The Stockport site comprises the mouth of a tributary stream (Stockport Creek) and a four-mile long series of peninsulas, islands, marshes and shallows along the east shore of the Hudson. Parts of the site are (or have been) known as Columbiaville Creek, Stockport Marsh, East Flats, Priming Hook, Unnamed Island, Stockport Middle Ground, Gay's Point, and Fordham Point. Stockport Middle Ground and Gay's Point are part of Hudson River Islands State Park. Stockport Flats was listed in the following surveys: The Hudson: Biological Resources (Smith et al. nd) for rare plants, bird migration stopover, landscape and educational values; Geographic Areas of Particular Concern (CZM Study Program, 1977a); Significant Coastal Related Fish & Wildlife Habitats of New York (CZM Study Program, 1977b).

Tivoli Bays. The next site to the south is in the Town of Red Hook, Dutchess County, and stretches for two miles between Tivoli and Barrytown; it is 7 miles north of Rhinebeck and 19 miles north of Poughkeepsie (Figures 5, and 7). A small portion at the north end of the proposed site is within the jurisdiction of the Village of Tivoli. Tivoli Bays comprises two large coves on the east shore of the Hudson River, North Bay and South Bay, and includes Cruger Island and Magdalen Island and associated tidal shallows, as well as the mouths of two tributary streams, Stony Creek and Saw Kill. Parts of the site are (or have been) known as Tivoli Bay, North Tivoli Bay or Tivoli North Bay, South Tivoli Bay or Tivoli South Bay, North Cove, South Cove, DeKoven's Cove or Bay, the Vly or Fly, Goat Island, Slipsteen Island, South Curger Island, White Clay Kill and Stony Kill. North Bay and most of South Bay, Cruger Island, and a mainland area east of North Bay make up the Tivoli Bays State lands. (This acquisition project was initiated in 1980 using, on a 50/50 basis, matching funds from the U.S. Heritage Conservation and Recreation Service and New York State's Environmental Quality Bond Act.) The area has also been called "Tivoli Bays Nature and Historical Preserve". The area has been designated an Experimental Ecological Reserve by the Institute of Ecology at Butler University. The Tivoli Bays is under consideration (1982) by the U.S. National Park Service as a potential National Natural Landmark. The entire Tivoli Bays site is listed on the National Register of Historic Places and is included in the Mid-Hudson Historic Shorelands State Scenic Area which extends from Clermont to Hyde Park. Tivoli Bays was listed in the following surveys: The Hudson: Biological Resources (Smith et al. nd) for rare plants, bird migration stopover, landscape and educational values; Geographic Areas of Particular Concern (CZM Study Program, 1977a); Significant Coastal Related Fish & Wildlife Habitats of New York (CZM Study Program, 1977b); Hudson River Valley Study Site Inventory (Raymond, Parish, Pine and Weiner, 1979); Hudson River East Bank Natural Areas, Clermont to Norrie (Kiviat, 1978).

Iona Island Marsh. The next site is in the Town of Stony Point, Rockland County, 6 miles south of West Point and 4 miles northwest of Peekskill (Figures 5 and 8). The Iona Island marshes occupy a mile-long area between Iona Island and the west shore of the Hudson. Parts of the Iona Island site are (or have been) known as Salisbury Meadow, Ring Meadow, Doodletown Bight, Doodletown Brook, Round Island, Manahawagh, Salisbury Island, Weint's Island, and Beveridge's Island. The Iona Island site is

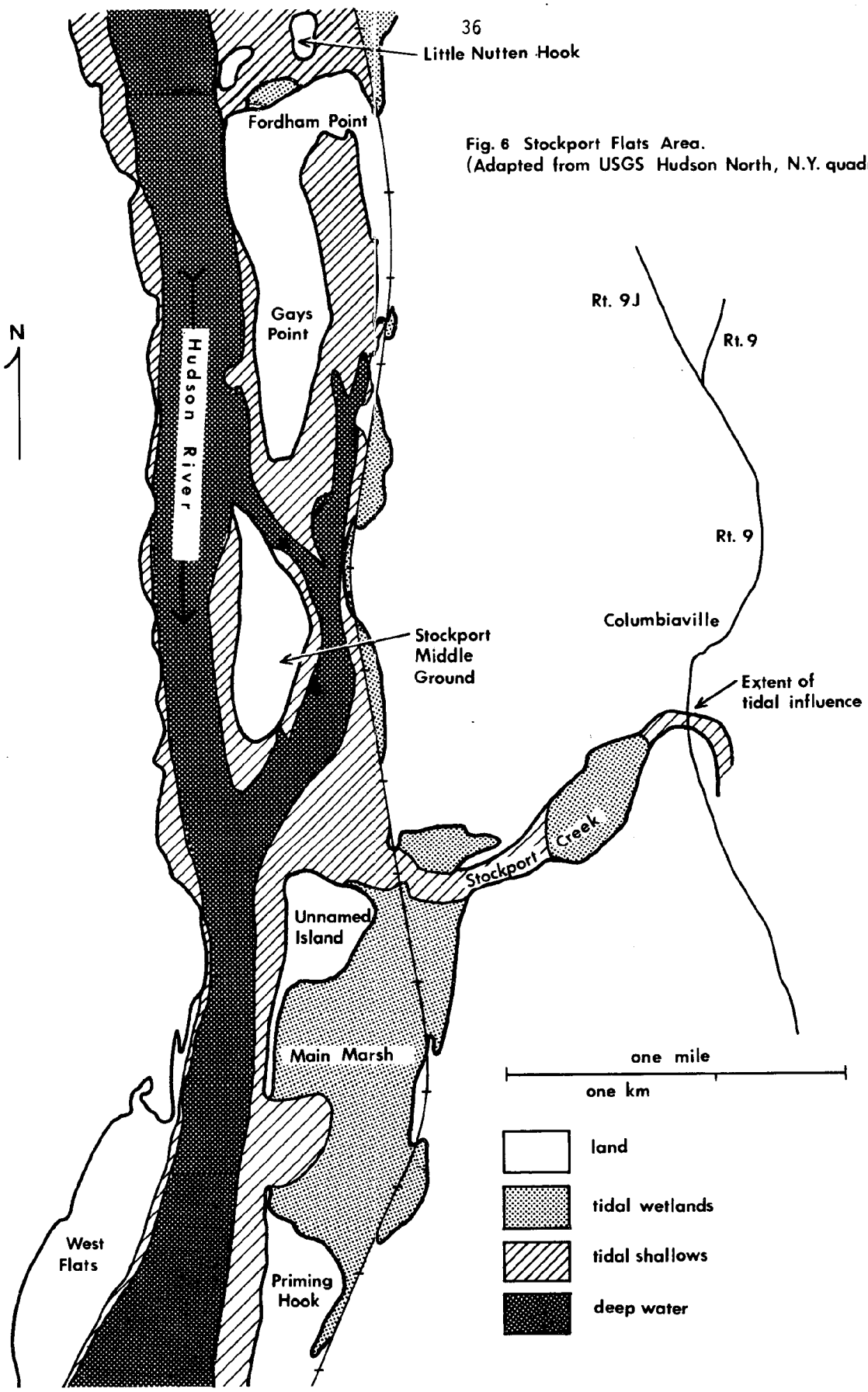


Fig. 6 Stockport Flats Area.
(Adapted from USGS Hudson North, N.Y. quadrangle.)

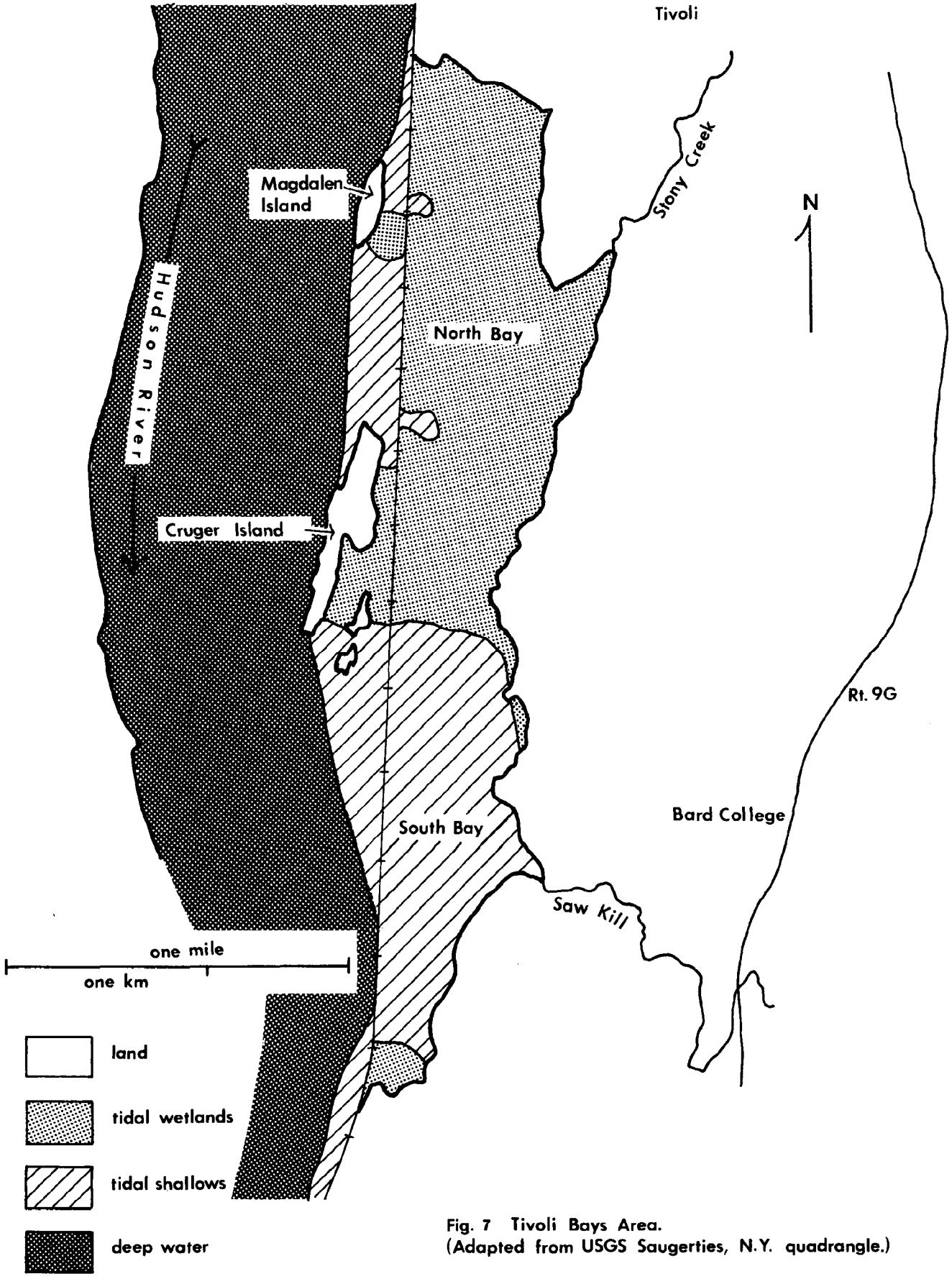


Fig. 7 Tivoli Bays Area.
(Adapted from USGS Saugerties, N.Y. quadrangle.)

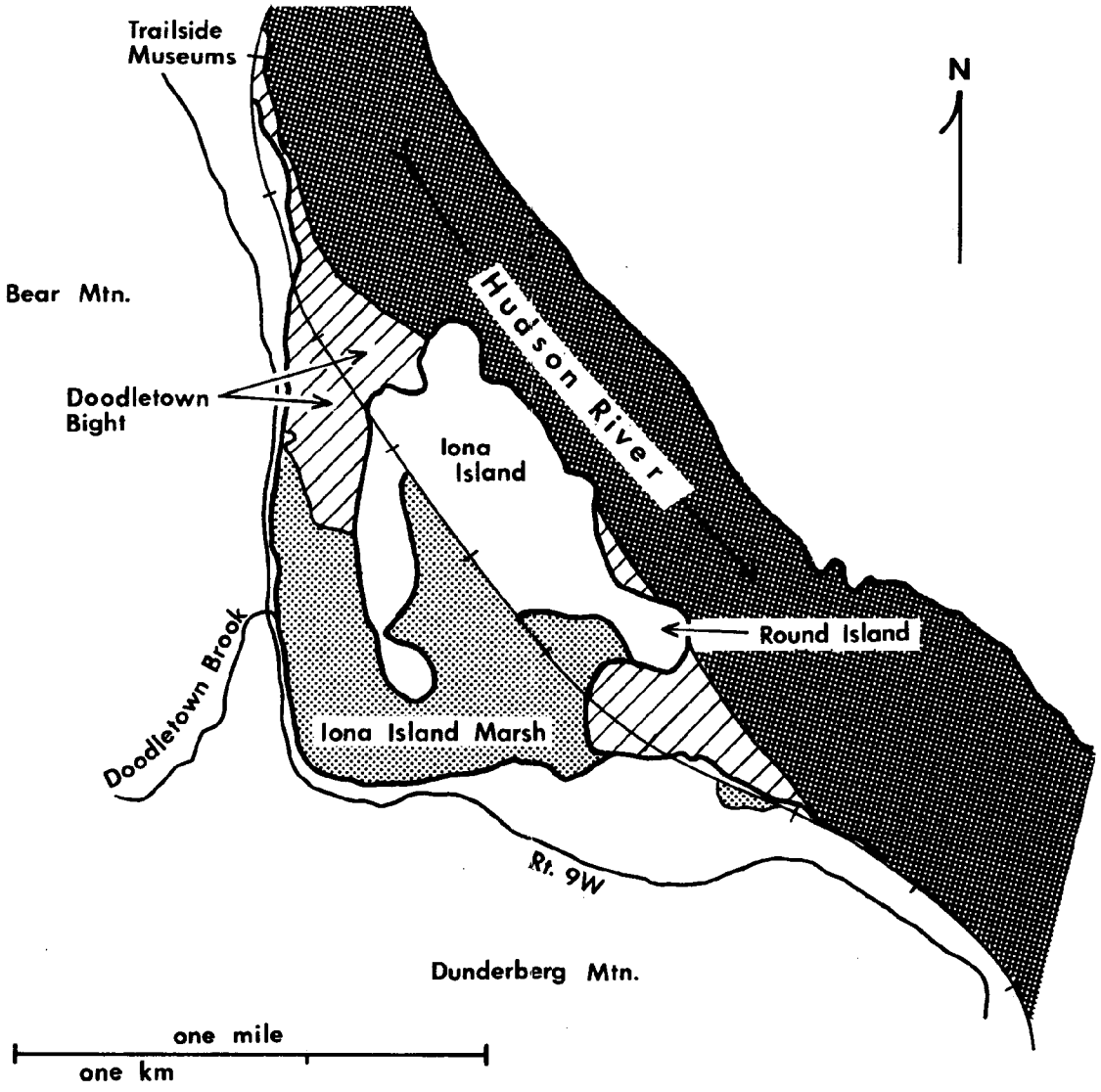


Fig. 8 Iona Island Marsh Area
(Adapted from USGS Peekskill, N.Y. quadrangle.)

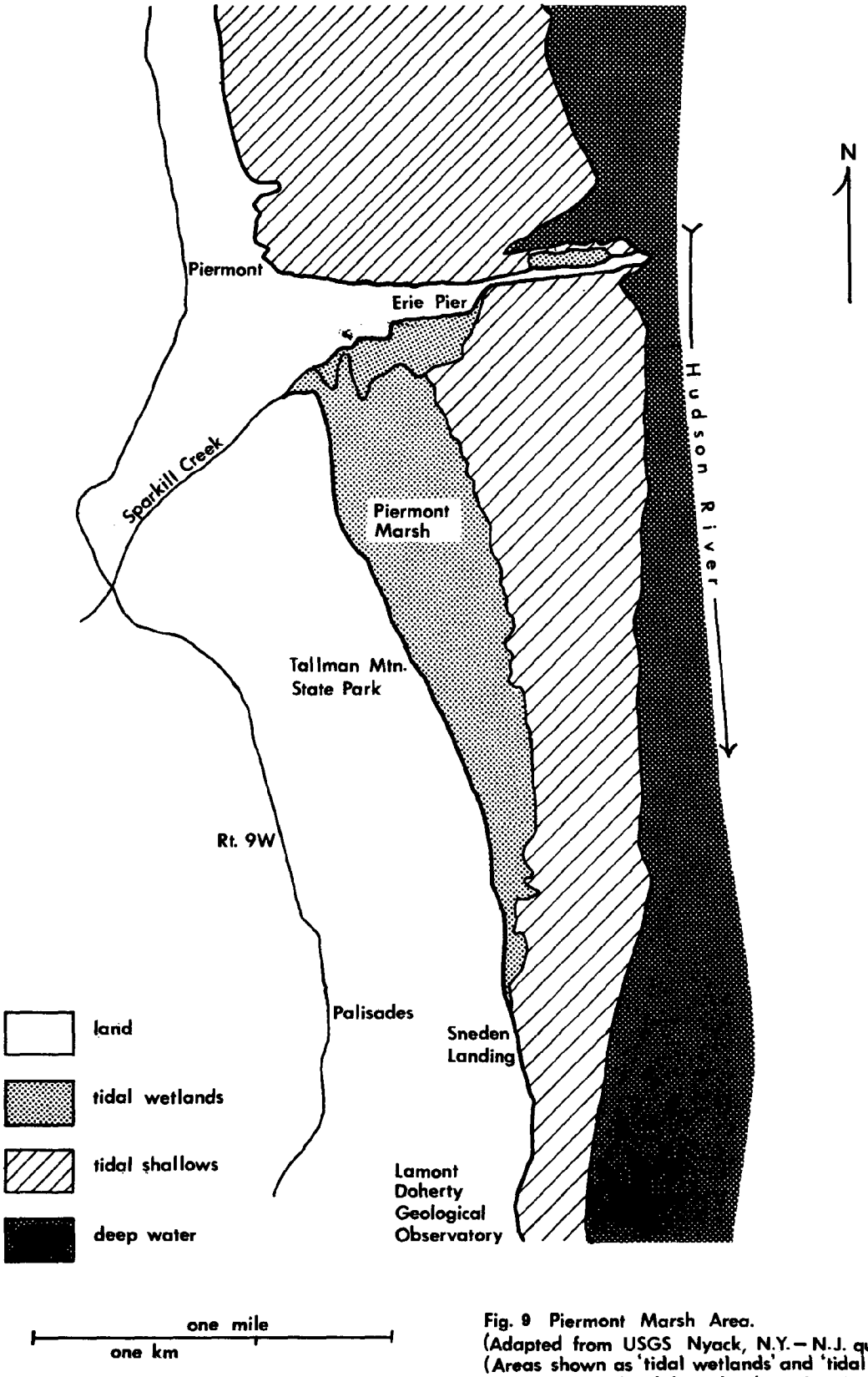


Fig. 9 Piermont Marsh Area.
(Adapted from USGS Nyack, N.Y.—N.J. quadrangle.)
(Areas shown as 'tidal wetlands' and 'tidal shallows' are both considered tidal wetlands under the State Tidal Wetlands Act.)

part of Bear Mountain State Park, an element in the Palisades Interstate Park system. The Iona Marsh has been designated a National Natural Landmark by the United States National Park Service. Iona Island Marsh was listed in the following surveys: The Hudson: Biological Research (Smith et al. nd) for rare ecological niches, rare plants, bird migration stopover, and educational value; Geographic Areas of Particular Concern (CZM Study Program, 1977a); Significant Coastal Related Fish & Wildlife Habitats of New York (CZM Study Program, 1977b); Hudson River Valley Study Site Inventory (Raymond, Parish, Pine and Weiner, 1979).

Piermont Marsh. The southernmost site is in the Town of Orangetown, Rockland County, 4 miles south of Nyack (Figures 5, and 9). A portion at the north end of the proposed site is within the jurisdiction of the Village of Piermont. Piermont Marsh is one-and-one-half miles long, between Piermont and Sneden's Landing; it includes the mouth of a tributary stream (Sparkill Creek) and is surrounded by very extensive tidal shallows. Parts of the site are (or have been) known as Sparkill Marsh, and Taulman Landing or Point. The Piermont Marsh site is largely a part of Tallman Mountain State Park, an element of the Palisades Interstate Park system. Piermont Marsh was listed in the following surveys: The Hudson: Biological Resources (Smith et al. nd) for rare ecological niches, rare plants, bird migration stopover, landscape and educational values; Geographic Areas of Particular Concern (CZM Study Program, 1977a); Significant Coastal Related Fish and Wildlife Habitats of New York (CZM Study Program, 1977b); Hudson River Valley Study Site Inventory (Raymond, Parish, Pine and Weiner, 1979).

1. Natural Environment

a. Geology

The Hudson River watershed is one of the most geologically complex regions in the United States, and the shores of the Estuary show great variety of bedrock, landforms and soils. After several geologic episodes of uplift, folding and faulting, alternating with periods of erosion, the Hudson Valley was overridden by the continental ice sheets. Glaciers gouged out the broad U-shaped valley of the Estuary, and left bare rock exposed in some locations and other areas covered with glacial and post-glacial deposits of till, sand and clay. The bed of the Estuary itself is filled with glacial deposits beneath recent estuarine sediments. Because of predominantly steep shores, the Hudson's floodplain is very limited in extent.

The Hudson River Estuary may be divided in four geologic-ecologic reaches (Kiviat, 1979):

1. Troy south to Saugerties, narrow and shallow with many islands and wetlands, bordered by low bluffs of sand, clay and shale;

2. Saugerties to Beacon, deep, of medium width, with scattered islands and wetlands, bordered by bluffs of clay or sedimentary rock (sandstone, shale, some limestone);

3. Beacon to Peekskill, the Hudson Highlands, narrow, twisting and deep, bordered by steep high hills of gneiss and granite;

4. Peekskill to New York City, at first broad and shallow, then narrow and deep, bordered on the west by a diabase ridge (the Palisades Ridge) and on the east by low hills and bluffs of various metamorphic rocks.

The four proposed sanctuary sites, Stockport, Tivoli, Iona and Piermont, respectively, lie one in each of the geologic-ecologic reaches listed above.

Generalized soil types along the Hudson River Estuary are: limy soils on clay and silt deposits from postglacial lakes; usually acid soils on sands from terraces and deltas; acid (occasionally limy) soils on glacial tills (unsorted deposits containing clay, silt, sand, gravel and larger stones); soils on alluvium (stream-deposited material); and tidal wetland sediments.

Stockport Flats. The bluff north of the mouth of Stockport Creek is Cambrian shale with thin layers of interbedded quartzite, and there are clay deposits farther inland. The bluff south of the creek is clay. Slate, conglomerate, and limestone are also present near the site. These steep bluffs rise to an elevation of 100 feet above the river, and then the land levels off. Small tidal coves are scalloped into the bluffs at several locations along the shore. There is evidence of a clay slide in at least one location on the south bank of Stockport Creek.

Tidal influence in Stockport Creek extends inland to the Route 9 highway bridge, almost one mile. The mouth of the creek is dotted with islands of floodplain and tidal swamp at elevations of about 0-3 feet above high tide level, and these islands are interspersed with areas of tidal marsh, subsidiary stream channels, and the main channel of the creek. The wetlands and islands both inside and outside of the creek mouth comprise the tidal delta deposits of the creek.

The main marsh (East Flats) lies just south of the mouth of Stockport Creek in the river proper, between the unnamed island (north) and the point of Priming Hook (south). A sandy bar extends southward along much of the western margin of the main marsh, broken by one large and one small passage between the marsh and the main river. A few tidal creeks cut through the marsh. The marsh bottoms vary from fine sand to shallow or deep soft muck.

A large island, Stockport Middle Ground, and a large peninsula, Gay's Point - Fordham Point, lie northwest and north of the creek mouth. Stockport Middle Ground, Gay's Point, Fordham Point, Priming Hook and the Unnamed Island are sandy and composed partly of old dredged material, and they have maximum elevations of about 5-20 feet above high tide level. Extensive shallows lie between Gay's Point - Fordham Point and the mainland, and there are small channels around Stockport Middle Ground. The dredged shipping channel west of the Stockport Flats site is 32 feet deep. Terrestrial soils of the site are derived from clay, sand and till.

Tivoli Bays. Bedrock at this site is Ordovician gray sandstone and shale. The more resistant sandstone outcrops are on the islands, the points projecting into the bays, and in the waterfalls of the creeks. Bluffs east of the bays are composed largely of clay with small areas of sand; the bluffs rise steeply to an elevation of 100 feet above the river and then level off inland. The clays were deposited as thin alternating winter and summer layers of clay and silt in a postglacial lake. Gradual slumping is common on the clay bluffs. "Clay dogs," small ring-shaped concretions of limestone and clay that formed around the stems of marsh plants, occur in the clays.

Cruger Island is one-half mile long, with a maximum elevation of forty feet above high tide level. Magdalen Island is smaller and lower. North Bay is predominantly intertidal marsh, with a well-developed network of tidal creeks and pools. The deepest creeks and pools are about five feet deep at low tide. A similar network of creeks and pools is beginning to form in South Bay, which is predominantly shallows and mudflats near low tide level. A few deep spots in South Bay are also about five feet at low tide. The bottom in the bays is largely soft muck, as much as 25 feet deep. The tidal swamp between North Bay and South Bay has 8 feet of peat overlying silt.

Extensive tidal shallows lie north and south of Cruger Island, and much of this area is only 1-2 feet deep at low tide. Just west of Cruger Island, the main river is 50 feet deep.

Terrestrial soils of the site are derived largely from clay, with sandy soil in local areas, and till soils farther east.

Iona Island Marsh. Bedrock at this site is mostly Precambrian gneiss. This rock is very resistant to erosion and forms the bold hills that rise more than 1,000 feet within a half mile of the marshes (Dunderberg and Bear Mountains) and the rocky knobs of Iona Island that project 100 feet above the river. The same steep slopes dive down under the marsh where the sediments are more than 100 feet deep. Iona Island is in the Hudson Highlands, a part of the Old Appalachians, and this is the only location where the Old Appalachians are breached by an estuary. Pegmatite dikes occur locally in the Iona Island area, and there is a great variety of minerals associated with these igneous intrusions.

The Iona Island Marsh formed in the shelter of the island, in a side channel of the Hudson River that was made larger by glacial erosion and glacial meltwaters. The marsh began to form at least 6,000 years ago according to radiocarbon dating of the peat, and some of the sediments uderlying the marsh are 12,500 years old. The marsh surface is peaty, but the sediments become increasingly silty beneath. Winding tidal creeks lace the marsh, with greatest depths at low tide about three feet. In Doodletown Bight, large areas of mud flats are exposed at low tide. The main river close to Iona Island has a maximum depth of 143 feet, and this is one of the narrowest reaches of the Hudson Estuary.

Soils on Iona Island and the mainland are derived from glacial till and tend to be very shallow, acid, and nutrient-poor.

Piermont Marsh. The west shore of Piermont Marsh is formed by part of the Palisades Ridge, where an abrupt flat-topped 150-foot high cliff-and-sliderock formation close to the marsh. The cliff is Triassic diabase, a hard igneous rock. The ridge is underlain by Triassic sandstone and shale which outcrop in small areas close to the marsh. Sparkill Gap, the valley of Sparkill Creek just west of the north end of Piermont Marsh, is the only sea level break in the Palisades Ridge and was thought to be a former route of the Hudson River. However, the gap was more likely created by torrential glacial meltwaters. Sparkill Gap has been proposed as a geological National Natural Landmark (Butler et al., 1975).

The marsh sediments are peat and organic silt and are at least 40 feet deep in the western part where the marsh has been developing for 4-5 thousand years. A few well-defined tidal creeks cut the marsh, but their deepest portions are only a few feet deep at low tide. Piermont Marsh is located at the south end of the very broad and shallow segment of the Estuary known as the Haverstraw Bay and Tappan Zee, and very extensive shallows border the east side of the marsh. While these shallows are only 1-2 feet deep at low tide, the river channel farther east has 50-foot depths.

Soils on shore near Piermont Marsh are derived from glacial till and are shallow and acid, with deeper, richer pockets close to the marsh. The Erie Pier borders the marsh on the north.

b. Hydrology

The Hudson River Estuary drains about 13,400 square miles of land, mostly in New York State but includes small areas of New Jersey, Massachusetts, Connecticut and Vermont. The tidal river is 152 miles long from Troy south to the southern tip of Manhattan Island (Battery Park). Throughout this distance, the river bed is below sea level, allowing tidal penetration to Troy. Salt water, however, intrudes only half the length of the tidal river due to the Hudson's substantial and relatively dependable freshwater flow.

Average freshwater flow (net discharge) in the tidal Hudson is 13 billion gallons per day, of which 60% enters from the mainstream of the Hudson-Mohawk above Troy and 40% comes in from 25 major and numerous minor tributaries below Troy. Peak freshwater flows occur in March or April with snow melt, and secondary peak flows often occur in November. Minimum flow is in summer and early fall. The reversing tidal flow moves about 30 times as much water as the average freshwater discharge. The average flushing rate for the tidal Hudson River (turnover time) is about 5 months.

Salt water from the Atlantic Ocean moves upriver, mixing with the fresh water, and penetrating farther upriver at times of lower freshwater flow. Depending on freshwater flow, the 0.1 parts-per-thousand (ppt) salinity level ("salt front") may occur anywhere between about Yonkers and Hyde Park, but usually is somewhere in the region between Nyack and Beacon (Figure 5). Late summer and early fall are generally the periods of farthest intrusion of saline water. In the mid-1960s drought, the

salt front was recorded at the farthest known inland location in this century, definitely at Hyde Park and possibly at Kingston, but no farther. Freshwater flow from the Hudson River slightly dilutes sea water well out into the New York Bight.

The Hudson is a partially stratified estuary. More saline water tends to move upriver under lighter outflowing fresh water in the New York City to Peekskill region. However, vertical salinity gradients are small with bottom waters only 0-20% more saline than surface waters.

Vertical tidal fluctuation (tide range) is least in the middle of the estuary, about 3.1 feet at West Point, and greater at the two ends of the estuary, reaching a maximum of about 5.1 feet at Troy (National Ocean Survey 1982 Tide Tables for East Coast of North and South America). Individual tides can be considerably higher or lower than average levels, and maximum tide ranges for any one month may exceed 9 feet. Although extremely high tides flood the higher wetlands to greater depth and for longer times, these tides do not cover large areas of land because the steep banks of the estuary generally restrict the extent of the floodplain to small areas. There are two high tides alternating with two low tides in an approximately 25-hour period, but the time, duration, and height of both high and low tides are affected by wind and runoff (freshwater flow as well as by gravitational forces). Tides are less regular farther upriver.

The estuary has reversing tidal currents. Downriver ebb currents are slightly faster than upriver flood currents. Peak current speeds during a normal tidal cycle are about 2 miles-per-hour.

All major estuaries in the Virginian biogeographic region have water quality problems. Quality in the Hudson River Estuary is remarkably good in view of the proximity of the Nation's largest metropolitan area. Dissolved oxygen may be in short supply at New York City during hot dry weather, but elsewhere in the estuary oxygen levels are almost always adequate for aquatic animals. Water quality has improved considerably in the last 15 years. Many health and esthetic problems associated with raw sewage discharges have been solved by construction of secondary treatment facilities. The generalized contamination of the Hudson by PCB discovered in the early 1970s has declined during the last 5 years as evidenced by reduced PCB levels in large samples of fish of several species monitored annually by the New York State Department of Environmental Conservation. There are persistent reports by longtime residents that the Hudson Estuary has become less turbid during the last few decades.

Wetland hydrology in the Hudson is influenced most by the estuary's vertical tidal fluctuation, but also by runoff from tributary streams, wind, and the degree of shelter afforded by adjacent shallows, islands and bars. Incoming tides churn up sediments in the confines of marsh creeks creating high turbidity. Outgoing tides and dilution by clear water from tributaries, reduce turbidity greatly in the landward portions of the marshes. The downriver marshes are subject to higher salinity than the main river due to evaporation of water from the marsh surface: at Piermont Marsh, river salinity reaches a maximum around 12 ppt (Table 4) but on the intercreek marsh areas salinity may reach 15 ppt (nearly half the strength of sea water).

Table 4. Environmental Characteristics of the Four Proposed Estuarine Sanctuary Sites

Site	Salinity in main river	Tide range (feet)	Bedrock	Sediments	Marsh
Stockport Flats	fresh	4.0	shale, etc.	muck, sand	cattail, wild-rice
Tivoli Bays	fresh	3.9	sandstone, shale	muck	cattail, purple loose-strife, spatterdock
Iona Island	fresh to 6 ppt	2.8	gneiss	peat, silt	cattail, reed
Piermont Marsh	fresh to 12 ppt	3.2	diabase, shale, sandstone	peat, silt	cattail, reed, etc.

Ice forms first and remains longest on the wetlands, and the constant grinding of ice lifted and lowered by the river's tides is highly erosive. Ice covers the wetlands from one to four months per year, depending on the severity of the winter. The downriver wetlands have less ice cover than upriver areas. Ice a foot or more thick may form on tidal creeks and pools in the wetlands. However, in dense upper intertidal zone vegetation (such as cattail, purple loose-strife, or woody plants) thick dense ice does not normally form, but rather many layers of thin ice are produced. The surface of the main river in the vicinity of Tivoli Bays and Stockport Flats usually freezes solid; but the Coast Guard keeps open the shipping channel.

c. Climate

Average annual precipitation along the Hudson River Estuary is about 37-46 inches, tending to be higher southward. Monthly averages for Poughkeepsie (39 inches annually) range from 2.7 inches in February to 4.1 inches in July. Average annual snowfall is about 39-50 inches mid-estuary.

January average air temperature is 23-29° F, and July average 71-73° F. Average temperatures are slightly lower northward, higher southward. Growing season is in the range of 150-200 days. The large water mass of the estuary warms more slowly in spring and cools more slowly in the fall than the air. This temperature lag moderates the climate in wetlands and shoreline areas relative to sites off the river. The Hudson River Estuary is to some extent a climatic arm of the coast where coastal weather mixes with inland weather.

Prevailing winds are north or northwest in winter, and south or southwest in summer. Average wind speeds are highest in March and lowest in August. Winds are highly variable, and sudden squalls, summer thunderstorms, and occasional hurricanes affect the river. Day-to-day weather is variable and shoreline areas and wetlands are exposed to extremes of sunshine, temperature, freezing and thawing, wind, waves and spray, and other factors. Temperature inversions with night and morning fogs are frequent in summer and fall.

d. Biology

Vegetation. Lists of plants found in the four proposed sanctuary sites are in Appendix 6.

The tidal shallows, from low tide level down to about 6 feet below low tide level (Figures 6-9), and the subtidal creeks and pools in the wetlands, support communities of submerged plants. There are some patches of bare mud.

Wetlands of the upper intertidal zone (between average tide level and high tide level) are mostly covered by grass-like plants 1-10 feet tall, often growing in extensive and dense patches of one or a few species. Locally, a few kinds of broadleaved plants are also common, and there are many less common or smaller secondary species of plants that occur scattered or in small patches especially on creek and pool banks and near the high tide shoreline.

Lower intertidal wetlands (average tide level to low tide level) are mostly bare mud in downriver more saline marshes, but in fresher upriver marshes are covered with broad-leaved plants with large heartshaped or arrowhead-shaped leaves 2-3 feet tall and some grass-like plants. Predominant species vary, but the communities in the proposed sites are typical of the Hudson River Estuary in general in the four geologic-ecologic reaches of the river.

Near the high tide level, flooded by the higher high tides, are localized areas of tidal swamp, especially upriver in tidal freshwater. These areas are covered by trees and/or shrubs.

Tidal freshwater and low-salinity marshes are similar in the Hudson and other Virginian Region estuaries, with the most abundant species generally including the following: narrowleaf cattail (Typha angustifolia), wild-rice (Zizania aquatica), river bulrush (Scirpus fluviatilis), spatterdock (Nuphar advena), pickerelweed (Pontederia cordata), arrow arum (Peltandra virginica), broadleaf arrowhead (Sagittaria latifolia), tall cordgrass (Spartina cynosuroides), swamp rose mallow (Hibiscus palustris), tidewater-hemp (Amaranthus cannabinus), bur-marigolds (Bidens spp.), water-millet (Echinochloa walteri), jewelweed (Impatiens biflora), rice cutgrass (Leersia oryzoides), purple loosestrife (Lythrum salicaria), smartweeds (Polygonum spp.), and common reed (Phragmites communis). Aboveground standing crops reported for Hudson River marshes are similar to those reported for Delaware and Chesapeake Bay estuary marshes. Plant communities of fresh-tidal and low-salinity shallows are also similar in the Hudson River Estuary and other Virginian Region estuaries, with the most abundant species generally water-celery (Vallisneria americana), pondweeds (Potamogeton spp.) and watermilfoil (Myriophyllum spicatum). Freshwater tidal swamps also occur in other Virginian Region estuaries but have been the subject of virtually no research.

Terrestrial vegetation along the Hudson River Estuary in undeveloped areas is generally deciduous forest. On the dry rocky slopes of the Palisades Ridge and Hudson Highlands the most abundant trees are red oak (Quercus borealis), chestnut oak (Q. prinus), and a few other deciduous species. Mid-Hudson and upper estuary deeper-soil areas, as well as moist ravines down-river, support oaks, sugar maple (Acer saccharum), tulip tree (Liriodendron tulipifera), black birch (Betula lenta), beech (Fagus grandifolia), white pine (Pinus strobus), hemlock (Tsuga canadensis) and flowering dogwood (Cornus florida). All four proposed sanctuary sites have very well developed forested buffer zones on most of the upland frontage and particularly on steeper slopes. These buffer forests range in width (map distance) from 100 yards to well over one-half mile.

The railroad rights-of-way, away from the tracks, tend to be thickly grown with herbs, shrubs and sometimes trees. Among the most common larger species are false-indigo (Amorpha fruticosa), sumacs (Rhus glabra, R. typhina), silky dogwood (Cornus amomum), honeysuckle (Lonicera spp.), and brambles (Rubus spp.). Vegetation of the Erie Pier at Piermont is similar with the addition of white mulberry (Morus alba).

Stockport Flats. Water-celery is very abundant in the shallows. The intertidal marshes are dominated by narrowleaf cattail, wild-rice, spatterdock and pickerelweed. The wild-rice stands are very lush and appear to be the most extensive stands of wild-rice anywhere on the Hudson; wild-rice has increased greatly in the last 5 years both in Stockport and elsewhere on the Hudson Estuary and now approximates former (1930s-40s) levels.

Tidal swamps and floodplain swamps are dominated by red ash (Fraxinus pennsylvanica), silver maple (Acer saccharinum), cottonwood (Populus deltoides), sycamore (Platanus occidentalis), willows (Salix ssp.) and silky dogwood. Some of the tidal swamps have many large trees (stems 1-3 feet or more in diameter-at-breast-height).

The bluffs along the south side of Stockport Creek and east of the main marsh are covered by deciduous forest with oaks and other trees, and localized areas of white pine. The sandy islands and points have abundant cottonwood, black-locust (Robinia pseudoacacia), red cedar (Juniperus virginiana), oaks, staghorn sumac (Rhus typhina), etc.

Tivoli Bays. Water-celery, watermilfoil, and waterchestnut (Trapna natans) are the most abundant plants in the shallows. The intertidal marshes are dominated by narrowleaf cattail, spatterdock, and purple loosestrife. The tidal swamps are predominantly red maple (Acer rubrum), red ash, black ash (Fraxinus nigra), silky dogwood, willows, buttonbush (Cephalanthus occidentalis) and smooth alder (Alnus serrulata). The Tivoli tidal swamps cover 45 acres and are very rich in shrub and moss species.

The clay bluffs and rocky islands support well-developed forest with sugar maple, hemlock, red oak, white oak, chestnut oak, white ash (Fraxinus americana), pignut hickory (Carya glabra), shagbark hickory (C. ovata), white pine and flowering dogwood. A grove of particularly large oaks and hemlocks borders the tidal mouth of Stony Creek.

Iona Island Marsh. Water-celery is very abundant in the shallows. The intertidal marshes are dominated by narrowleaf cattail, with small amounts of swamp rose mallow and common reed. A small area of tidal swamp is dominated by crack willow (Salix fragilis).

The island and mainland slopes are covered with deciduous forest with abundant red oak, chestnut oak, and pignut hickory.

Piermont Marsh. Pondweeds are present in the shallows. The intertidal marshes are dominated by narrowleaf cattail and common reed, with lesser amounts of tall cordgrass, saltwater cordgrass (Spartina alterniflora), salt-meadow cordgrass (S. patens), saltgrass (Distichlis spicata), swamp rose mallow, and purple loosestrife. There is no appreciable area of tidal swamp.

The mainland forest at the base of the Palisades Ridge has abundant and large beech, tulip tree, red oak, black birch and flowering dogwood. The cliff-and-sliderock has red oak, black birch and other trees.

Endangered, Threatened and Rare Plants. Several species listed in the New York State Museum's Rare and Endangered Vascular Plant Species in New York State (Mitchell et al., 1980) have been found in the proposed sanctuary sites and are listed in Table 5. Heartleaf plantain (Plantago cordata), proposed in the Federal Register for Federal Endangered status, is present at the Stockport and Tivoli sites. Potential for continued survival of the plantain, and for research on it, is excellent at these locations.

Nuttall's micranthemum (Micranthemum micranthemoides) is known from Tivoli Bays. This is the only recorded station for this species in New York and one of about 20 localities known in the world (all in East Coast tidal freshwater habitats). Although the micranthemum was last seen in 1936, some botanists think the species may still survive at Tivoli; it is a small plant and difficult to identify. Nuttall's micranthemum was proposed in the Federal Register for Federal Threatened status. It has not been found recently at other East Coast locations.

Most of the other species listed in Table 5 are restricted to brackish-tidal or fresh-tidal wetlands, and are the subject of concern by botanists because of the general vulnerability of these types of ecosystems on the East Coast.

Numerous other species of wetland and terrestrial plants that are not considered threatened or endangered, but are rare in New York and have special interest to scientists are (or may be) found at the proposed sanctuary sites. One example is goldenclub (Orontium aquaticum), a species common in the southeastern United States in inland wetlands, but declining in northeastern estuaries. Goldenclub occurs at Stockport Flats and Tivoli Bays, and is sought out as an esthetic attraction during its May flowering period. A list of "Plants Concentrated in the Tidal Marshes of the Hudson River" prepared by the late Stanley J. Smith in 1974 includes 21 species of mostly rare (and a few common) plants; many of these 21 have been recorded from the proposed sanctuary sites.

Because of the large size and environmental complexity of the proposed sites, thorough botanical studies in the future may discover many more rare plants and unusual plant communities than are now known.

Fish and Wildlife. The deep waters, shallows, wetlands, and shores of the Hudson River Estuary act as a migration and dispersal pathway for many kinds of fish and wildlife. These environments provide suitable corridors for movements of animals northward and southward, and suitable stopover habitats with shelter and food. Many kinds of animals also find habitats on the estuary where they reside seasonally or permanently (NYS DEC 1978).

Of Hudson River Estuary animals, many do not remain in a single type of habitat, but more back and forth between two or more habitat types in tidal, daily or seasonal cycles. These species require combinations of

Table 5. Plants of the Proposed Sanctuary Sites Listed in "Rare and Endangered Vascular Plant Species in New York State" (Mitchell et al., 1980).

Species	Site	Significance (NY)[a]
Spatulate arrowhead, *Sagittaria spatulata*	Stockport	HAB
Ovate spikerush *Eleocharis ovata*	Stockport Tivoli, Iona	R, SERL
Cylindrical bulrush, *Scirpus cylindricus*	Iona, Piermont	SPOR
Parker's pipewort, *Eriocaulon parkeri*	Stockport, Tivoli	R, VULN
Sea pink, *Sabatia dodecandra*	Iona	EXT?, NRL, SNYS?
Nuttall's micranthemun *Micranthemum micranthemoides*	Tivoli	*EXT?, R, SNYS, SPOR, VULN
Heartleaf plantain, *Plantago cordata*	Stockport, Tivoli	*R, DECL, SPOR
Eaton's bur-marigold, *Bidens eatonii*	Tivoli	R, HAB, END
Estuary beggar-ticks, *Bidens hyperborea*	Tivoli	SRL

[a] DECL = Observed to be declining in New York State; END = Highly restricted range, endemic; EXT? = Possibly extirpated in New York State; HAB = Restricted to habitats rare in the State; R = Rare throughout its range; SNYS = Single New York station; SPOR = Sporadic: scattered populations; VULN = Vulnerable to commercial or private exploitation or imminent land development; SRL, SERL, NRL = Southern, southeastern, or northern range limits or nearing the periphery of their distributions.

* Listed in the Federal Register (proposed for Federal Endangered or Threatened listing).

habitat types to fulfill their life requirements: for example, the wood duck that nests in a hollow tree in the forest, but raises its brood in the marsh, and the striped bass (Morone saxatilis) that moves from the river channel into the marsh, pools, and creeks to feed. The most important habitat combinations are the marsh-shallows combination, and the marsh-forest combination. These patterns of animal use emphasize the special nature of the shallows-wetlands-forest complexes at the four proposed sanctuary sites.

Some Hudson Estuary habitats support unusual abundance or diversity of animals. Some examples are: abundance and diversity of chironomid midge larvae in submerged vegetation in the Haverstraw Bay - Tappan Zee; abundance and diversity of burrowing animals in sandy soils; abundance of post breeding humming birds in jewelweed in the marshes; abundance of certain breeding birds (least bittern, long-billed marsh wren) in extensive cattail stands (Kiviat, 1979).

Endangered, Threatened, and Special Concern Animals. Species currently on Federal or New York State Endangered Species lists, or on the Tentative New York State Species List (a proposed revision of the existing State list), and which occur at the proposed sanctuary sites, are shown in Table 6. The Fish and Wildlife Service of the U.S. Department of the Interior has affirmed, by letter dated March 25, 1982 that no Federally listed Endangered or Threatened Species, under their jurisdiction, apart from occassional transients, are known to exist in the project area. The Tentative State List has three categories (in decreasing order of endangerment): Endangered, Threatened, and Special Concern.

Endangered. The shortnose sturgeon (Acipenser brevirostrum) is listed on both Federal and New York State Endangered Lists, and has a sizeable resident population in the Hudson River Estuary. Early in the spring, those individuals that are ripe for spawning migrate north as far as Troy, New York. Spawning occurs from April 15 to May 15 from Coxsackie to the dam above Troy. After spawning (generally late in May), the spawning population disperses and feeds throughout the summer. In early fall, those individuals that are ripe enough to spawn the next spring migrate to an overwintering area in the Esopus Meadow-Kingston Flats area, approximately 2-9 miles below Tivoli Bays. Individuals that are not ripe for spawning migrate further south to the Haverstraw Bay area between Piermont Marsh and Iona Island. The proposed Hudson River Estuarine Sanctuary is consistent with the draft Shortnose Sturgeon Recovery Plan dated May 1982, with respect to maintaining natural populations; preventing further modifications or destruction of essential habitat; developing a public information/education program; and determining natural population dynamics.

The bog turtle (Clemmys muhlenbergi) has been reported from locations within a few miles of two of the proposed sites (early-mid 1900s) and could occur at the sites, but the nature of the available habitats makes this unlikely. This species is listed as Endangered by New York State.

Golden eagle (Aquila chrysaetos) records are few, and it is not clear if they occur regularly at any of the proposed sites.

The bald eagle (Haliaeetus leucocephalus) was common on the Hudson

Table 6. Animals Recorded at the Proposed Sanctuary Sites either Currently Listed as Endangered by the State or Federal Government, or Included in the December 1981 "Tentative New York State Species List" (Endangered, Threatened Special Concern). Additional species have been recorded near the sites and are discussed in the text.

Species	Site	Status
Shortnose sturgeon, *Acipenser brevirosturm*	(see text)	Endangered (US,NY)
Spotted turtle, *Clemmys guttata*	Tivoli	Special Concern
Common loon, *Gavia immer*	all	Special Concern
Double-crested cormorant, *Phalacrocorax auritus*	all	Special Concern
Least bittern, *Ixobrychus exilis*	all	Special Concern
Cooper's hawk, *Accipiter cooperii*	all	Special Concern
Red-shouldered hawk, *Buteo lineatus*	all	Threatened
Golden eagle, *Aquila chrysaetos*	Tivoli, Iona, Piermont	Endangered (NY)
Bald Eagle, *Haliaeetus leucocephalus*	all	Endangered (US, NY)
Marsh hawk, *Circus cyaneus*	all	Threatened
Osprey, *Pandion haliaetus*	all	Endangered[a] (NY)
Peregrine falcon, *Falco peregrinus*	Iona, Piermont	Endangered (US,NY)
Common tern, *Sterna hirundo*	Tivoli, Iona, Piermont	Threatened
Black tern, *Chlidonias niger*	Tivoli, Piermont	Special Concern

Table 6 (Continued)

Species	Site	Status
Common raven, *Corvus corax*	Tivoli	Special Concern
Grasshopper sparrow, *Ammodramus savannarum*	Tivoli Piermont	Special Concern
Henslow's sparrow, *A. henslowii*	Tivoli	Special Concern
Vesper sparrow, *Pooecetes gramineus*	Tivoli, Iona	Special Concern

[a]The osprey is currently on the New York Endangered List, but the "Tentative List" proposes a change to Threatened status.

may see one or more bald eagles yearly, and there are slight indications that numbers have increased in the last two years. There are regular sightings at the proposed sanctuary sites mostly when the waters are partly frozen. Some eagles have been seen during other seasons as well, but there have been no nesting attempts. Bald eagles require open water and dead fish or other carrion for food. Iona Island has the potential to become a regular winter roosting area.

Ospreys (Pandion haliaetus) are commonly seen in small numbers (1-4 at once) along the Hudson in April and May, and occasionally in summer and fall. There are isolated historical records of osprey breeding along the Hudson River Estuary, but it is not clear to what extent ospreys nested successfully here. Possibly the high natural turbidity of Hudson River waters makes it difficult for nesting osprey to catch enough fish to feed their young. The sizeable Long Island Sound osprey population declined severly after World War II due to DDT contamination of their food, but in the last few years Long Island Sound ospreys have begun a remarkable comeback. Unverified reports of nesting attempts along the Hudson could indicate a spillover from the sound. Osprey occur at all four proposed sanctuary sites where they catch fish in the shallows and marsh pools and and retire to eat in large (often dead) tree. A late -1950s nest was reported at Tivoli Bays, and a possible 1970s nest near Iona Island, but no details are available for verification.

Several pairs of peregrine falcons (Falco peregrinus) nested along the Hudson River Estuary on the Palisades and Hudson Highlands cliffs for many years until the nationwide population decline in the 1950s. None of these nesting sites is active at present. Peregrine falcons are being reintroduced experimentally to former nest sites at other northeastern locations and there is potential for re-establishment at one or more of the Hudson River eyries. The peregrine falcon occurs now as a rare transient along the Hudson.

Threatened. The mud turtle (Kinosternon subrubrum) has been reported from Bear Mountain State Park, but no verification is available. There is a single specimen of this species from Ossining, but mud turtle distribution in the lower Hudson region is a mystery (Craig et al., 1980). Mud turtles could occur at Iona or Piermont; they have been found in tidal marshes outside of the Hudson Estuary.

Red-shouldered hawks (Buteo lineatus) are seen along the Hudson during migration, and nests have been found at a small number of off-river localities in the 1970s. Nesting is possible at the proposed sanctuary sites.

The marsh hawk (Circus cyaneus) is seen regularly at Hudson River marshes including the proposed sanctuary sites in late summer and fall, rarely in winter, and occasionally in spring. There is no evidence of nesting although the species formerly nested at inland localities in the Hudson Valley.

The common tern (Sterna hirundo) is seen occasionally as a windblown wanderer at the proposed sanctuary sites, more often downriver. There does not seem to be any breeding potential.

Special concern. The Jefferson salamander (Ambystoma jeffersonianum) is found at a few locations inland and could occur near nontidal woodland pools at the proposed sanctuary sites. Spotted turtles (Clemmys guttata) are quite rare in tidal wetlands, but nesting has been verified at least at Tivoli Bays; the species is more common at certain inland locations. Hognose snakes (Heterodon platyrhinos) have not been reported from the sites although found here and there offriver; the hognose could be found wherever toads (their food) are abundant and especially in sandy soils.

Common loons (Gavia immer) are seen occasionally as migrants on the estuary, including the proposed sites; there is no breeding potential. Double crested cormorants (Phalacrocorax auritus) occur regularly downriver, sporadically upriver; they are quite rare near the two upriver sites. There does not appear to be any breeding potential. The least bittern (Ixobrychus exilis) is known from the extensive cattail marshes of the proposed sanctuary sites as a breeding species. It is a rare bird in the Hudson Valley because of the scarcity of large cattail stands. Semiquantitative data suggest a stable breeding population of perhaps a dozen pairs at Tivoli Bays during the period 1973-81. The Cooper's hawk (Accipiter cooperii) is seen occasionally at the proposed sites, and recent inland breeding records suggest potential breeding in the forests of the proposed sanctuary. The black tern (Chlidonias niger) is a rare spring migrant on the Hudson River Estuary; there are no breeding records, although black terns breed in large inland marshes in central New York. The barn owl (Tyto alba) is rare along the Hudson where availability of nest sites may be a limiting factor. Barn owls could occur, and there is some breeding potential at the proposed sanctuary sites. Short-eared owls (Asio flammeus) could occur in winter at the proposed sites as there are a few regular wintering areas offriver in the Hudson Valley. The common raven (Corvus corax) seems to be increasing in the northeast, but there is only one record from the proposed sanctuary. Grasshopper sparrow (Ammodramus savannarum), Henslow's sparrow (A. henslowii) and vesper sparrow (Pooecetes gramineus) formerly bred in fields near Tivoli, and there may be breeding potential at Tivoli and Iona.

Blue List Birds. Some other species that are not included in the Tentative New York List, but were in the American Birds "Blue List for 1981" (Tate, 1981) and occur at one or more of the proposed sanctuary sites are: great blue heron (Ardea herodias), black-crowned night heron (Nycticorax nycticorax), American bittern (Botaurus lentiginosus), sharp-shinned hawk (Accipiter striatus), king rail (Rallus elegans), screech owl (Otus asio), ruby-throated hummingbird (Archilochus colubris), cliff swallow (Petrochelidon pyrrhonota), purple martin (Progne subis), shortbilled marsh wren (Cistothorus platensis), golden-winged warbler (Vermivora chrysoptera), eastern meadowlark (Sturnella magna), black duck (Anas rubripses), and canvasback (Aythaya valisineria). These are species that seem to be undergoing (or have recently undergone) noncyclical decline in the Northeast.

Marine Mammals. Few species penetrate the Hudson River Estuary above the New York Bay complex. Harbor seals (Phoca vitulina) occasionally appear almost anywhere in the Hudson River Estuary, in recent years as in the 1800s. There were reports of the harbor porpoise (Phocoena phocoena) in the lower estuary in the 1800s. A single well-documented incursion of common dolphins

(Delphinus delphis) up the Hudson Estuary nearly to Albany took place in 1936. There is no evidence that any specific locations or habitats in the Hudson are significant to marine mammal populations.

Wetland and Terrestrial Mammals. At least 31 species of wild mammals have been recorded on or close to the proposed sanctuary sites (other than marine mammals). The muskrat (Ondatra zibethicus) is the most characteristic mammal of the Hudson River Estuary marshes and is present at all the proposed sanctuary sites in numbers that vary considerably from year to year. The mink (Mustela vison) also occurs at the sites. The river otter (Lutra canadensis) is rare in the Hudson, but transient individuals have been seen at Iona and Tivoli in the marshes.

The whitetail deer (Odocoileus virginianus) is very common along the Hudson including at the four proposed sites. Deer frequently enter Iona Island Marsh, probably to feed. Deer have been seen in Piermont Marsh in winter, and occasionally in the marsh at Tivoli North Bay, but they are common upland at these sites and at Stockport.

Some other mammals that enter the tidal wetlands are: white-footed mouse (Peromyscus leucopus) mostly in winter; eastern cottontail (Sylvilagus floridanus), in tidal swamps in winter; gray squirrel (Sciurus carolinensis) and red squirrel (Tamiasciurus hudsonicus), tidal swamps and shoreline; meadow vole (Microtus pennsylvanicus); shorttail shrew (Blarina brevicauda); raccoon (Procyon lotor); gray fox (Urocyon cinereoargenteus); red fox (Vulpes fulva); and opossum (Didelphis virginiana).

Birds. Many species of land, wetland and water birds are found along the Hudson River Estuary. Marine and coastal species penetrate upriver varying distances, becoming less diverse and less abundant upriver. All four proposed sanctuary sites attract rare birds wandering through or settling in the Hudson Valley. Common species also tend to concentrate in the proposed sites. The four sites are well known as excellent birding areas--among the best in the Hudson Valley (Drennan, 1981.) A list of birds recorded at the proposed sanctuary is in Appendix 4.

Herons. A dozen great blue herons is not an unusual sight at Tivoli South Bay or Stockport Flats during late summer on a low tide. Great egrets (Casmerodius alba) are also common in some years. Apart from the bitterns, the only nesting heron at the proposed sanctuary sites is the green heron (Butorides striatus).

Waterfowl. The proposed sanctuary sites are concentration areas for waterfowl during migration. Wintering waterfowl occur wherever there is open water, mostly downriver. Numbers of breeders are small, probably because suitable nests sites are scarce on the intertidal marshes. At least 30 species of ducks, geese, and swans have been recorded at the proposed sites. The most abundant migrants are Canada goose (Branta canadensis), mallard (Anas platyrhynchos), black duck, green-winged teal (A. crecca), blue-winged teal (A. discors), wood duck (Aix sponsa), and canvasback. Hundreds of canvasbacks feed in the Iona Island shallows, and probably thousands winter in some years in the Haverstraw Bay Tappan Zee. (See Appendix 5 for data on wintering waterfowl.) The most abundant nesting species are black duck, mallard, and wood duck; the Tivoli Bay site supports about a dozen pairs of of each of three species each year.

Raptors. The shores of the Hudson River, including the proposed sites, are moderately attractive to birds of prey. Migrating hawks cross the Estuary at a number of locations, but there is an area of concentrated crossing especially in fall at Anthony's Nose and Dunderberg Mountain by Iona Island, and concentrated migration along Hook Mountain just north of Piermont Marsh.

Regular residents at or near the proposed sanctuary sites include red-tailed hawk (Buteo jamaicensis), American kestrel (Falco sparverius), great horned owl (Bubo virginianus) and screech owl (Otus asio). Rough-legged hawks (Buteo lagopus) frequent the Iona Island fields in winter. (See discussion of Endangered Animals, above.)

Marsh Birds. Several species of marsh-nesting birds use the extensive cattail stands and associated vegetation at the proposed sites. Regular breeders are the least bittern (discussed under Endangered Animals) and long billed marsh wren (Cistothorus palustris). Irregular breeders are the American bitterns (Botaurus lentiginosus), clapper rail (Rallus longirostris), king rail (R. elegans), Virginia rail (R. limicola), sora (Porzana carolina), and common gallinule (Gallinula chloropus). In the Hudson Valley, the least bittern, long-billed marsh wren, common gallinule and king rail are nearly restricted to large (many acres) cattail marshes as breeding habitat, although a few other wetland plant communities are used for nesting elsewhere in United States.

The sharp-tailed sparrow (Ammospiza caudacuta) and seaside sparrow (A. maritima) have nested at Piermont Marsh. These species are associated with specific saline marsh plant communities and are quite rare away from the immediate coast in New York.

In addition to the obligate marsh species, red-winged blackbirds (Agelaius phoeniceus), American goldfinch (Carduelis tristis), swamp sparrow (Melospiza georgiana), and song sparrow (M. melodia) also nest in the tidal marshes.

Shorebirds. The Hudson River Estuary marshes and mudflats, including the proposed sanctuary sites, are good habitat for migrating shorebirds. The most commonly seen species are killdeer (Charadrius vociferus), common snipe (Capella gallinago), spotted sandpiper (Actitis macularia), greater yellowlegs (Tringa melanoleuca), lesser yellowlegs (T. flavipes), and least sandpiper (Calidris minutilla). At least eleven other species are seen at times. The only breeding shorebirds at the proposed sites are American woodcock (Philohela minor), killdeer, and spotted sandpiper.

Gulls and Terns. The Hudson River Estuary is good habitat for non-breeding gulls, but attracts few terns due to the inland location. No gulls or terns breed on the Hudson. The herring gull (Larus argentatus) is the most common gull and is a conspicuous feature of the proposed sanctuary sites nearly all year round. Ring-billed gull (L. delawarensis) and great black-backed gull (L. marinus) are common. Laughing gull (L. atricilla) and Bonaparte's gull (L. philadelphia) are uncommon and usually seen only downriver. A few other species of gulls and terns are seen occasionally, mostly downriver.

Other Birds. Ruffed grouse (Bonasa umbellus) are resident in the terrestiral forests, and feed in the tidal swamps in winter. Woodpeckers are common in the tidal swamps and forest, including the pileated woodpecker (Dryocopus pileatus). Winter birds of the marshes include downy woodpecker (Picoides pubescens), black-capped chickadee (Parus atricapillus), winter wren (Troglodytes troglodytes), tree sparrow (Spizella arborea), white-throated sparrow (Zonotrichia albicollis) and song sparrow. Very large flocks of tree swallows (Iridoprocne bicolor), bank swallows (Riparia riparia), starlings (Sturnus vulgaris), red-winged blackbirds, and common grackles (Quiscalus quiscula) roost in the marshes, especially in late summer and early fall. Breeding birds of the tidal swamps are many, including willow flycatcher (Empidonax traillii), great crested flycatcher (Myiarchus crinitus), blue jay (Cyanocitta cristata), black-capped chickadee, veery (Catharus fuscescens), yellow warbler (Dendroica petechia) and common yellowthroat (Geothlypis trichas).

There are many species of small birds in the terrestrial forests. Breeding bird communities are typical of northeastern forests, including warblers, vireos, thrushes and others. The cerulean warbler (Dendroica cerulea) nest here and there and is much sought-after by birdwatchers. Spring and fall warbler migrations also attract birdwatchers to the proposed sites.

The railroad right-of-way supports a very interesting breeding bird community (Stapleton and Kiviat, 1979). The most abundant species are gray catbird (Dumetella carolinensis), yellow warbler, and song sparrow. Population density of all breeding species combined is among the highest reported for any breeding bird communities of the United States.

Reptiles and Amphibians. About two dozen species of reptiles and amphibians occur along the Hudson River Estuary and almost all are present at one or more of the proposed sites. Tidal fluctuation and salinity prevent some species from living in the estuary itself. The most important habitats for reptiles and amphibians are the tidal marshes and shallows, woodland pools and ponds, and the terrestrial forests.

The snapping turtle (Chelydra serpentina) is common in the wetlands and shallows at all four sites. The map turtle (Graptemys geographica) maintain small scattered populations in the estuary and has been found at Stockport and Tivoli. The diamondback terrapin (Malaclemys terrapin), the ecological equivalent of the map turtle in brackish areas, is rare in the Hudson River Estuary and has been found at Iona and Piermont.

The five-lined skink (Eumeces fasciatus) occurs on land near the Iona Island Marsh, and there are unverified reports of the fence lizard (Sceloporus undulatus) which is better known from the east bank of the estuary in the Hudson Highlands.

Several snakes occur at the sites. Those that most often enter the tidal wetlands are water snake (Nerodia sipedon) and garter snake (Thamnophis sirtalis).

Amphibians are not abundant in the tidal habitats probably because tidal wetlands are not favorable for amphibian reproduction. The green frog (Rana clamitans) is present at low densities at Tivoli and Iona, and probably Stockport. Bullfrogs (R. catesbeiana), pickerel frogs (R. palustris), American toads (Bufo americanus), spring peepers (Hyla crucifer), and gray treefrogs (H. versicolor) enter the wetlands to some extent, but are more common in nearby nontidal wetlands where the woodfrog (Rana sylvatica) also occurs. Few salamanders have been found in Hudson Estuary tidal habitats, but several species occur in the terrestrial forests and tributary streams at the proposed sites.

Fishes. About 150 species of fish have been found in the Hudson River Estuary in the last 15 years, and the fish community of the Estuary is probably one of the best-studied estuarine fish communities in the world. Like coastal birds and marine mammals, marine and estuarine fishes penetrate up the Hudson in relation to salinity intrusion and distance from its mouth. Also, many freshwater fish species inhabit the upper estuary. The Hudson is a very important nursery area for many fish species including several very valuable food and game fishes: striped bass (Morone saxatilis), white perch (M. americana), American shad (Alosa sapidissima), alewife herring (A.pseudoharengus), blueback herring (A. aestivalis), tomcod (Microgadus tomcod), Atlantic sturgeon (Acipenser oxyrhynchus), American eel (Anguilla rostrata), and rainbow smelt (Osmerus mordax).

Important nursery areas for some migratory fishes in the estuary are in the Haverstraw Bay - Tappan Zee region within a few miles of Nyack (Figure 5), where conditions of salinity, shelter and food availability in the tidal shallows are very favorable for juvenile fish. Additionally, shad, alewife, blueback herring, and other species use the upper estuary for spawning and as a nursery.

Much remains to be learned about the role of the Hudson River wetlands and tributary mouths in the support of the estuary's fishery resources. Many fish species reside in or temporarily enter the wetlands and tidal stream mouths. For example, of 59 species that have been found in the vicinity of the Tivoli Bays complex, 34 have been found in the wetlands and stream mouths. Banded killifish (Fundulus diaphanus) and mummichog (F. heteroclitus) are very abundant in the marshes and apparently reside there. American eels of all sizes live in the marshes. Alewife spawn in the upriver shallows, and alewife, rainbow smelt and white sucker (Catostomus commersoni) spawn in the tributary stream mouths. Striped bass and white perch enter the marshes to feed, and are particularly common at locations around the tidal inlets connecting the marshes and the main river. Juvenile striped bass have been found in tidal creeks in Iona Island Marsh in early fall and are reported to occur in other marshes as well.

Among the more unusual records of fishes from the proposed sanctuary sites are blue-spotted sunfish (Enneacanthus gloriosus) reported from Iona; American brook lamprey (Lampetra appendix) and northern hog sucker (Hypentelium nigricans) from the mouth of the Saw Kill at Tivoli South Bay; and a population of central mudminnow (Umbra limi) in ponds on Cruger Island (Tivoli). A list of fishes known from the proposed sanctuary sites is in Appendix 3.

Invertebrates. Important groups of larger invertebrate animals in benthic communities of the Hudson River Estuary include polychaete worms, oligochaete worms, chironomid midge larvae, snails and clams, crabs and crayfish, Gammarus and other amphipods, and isopods. Zooplankton communities include rotifers, crustaceans, and other groups. The most economically important invertebrate, the blue crab (Callinectes sapidus), moves upriver in summer and fall as salinity increases and may become common as far as the Hudson Highlands (Peekskill to Beacon).

The red-jointed fiddler crab (Uca minax) is common in Piermont Marsh. Several species of land and aquatic snails occur at the proposed sites, but most have not been definitively identified. In fact, the invertebrates of the marsh are very poorly known. Estuarine invertebrates are a very important link in food chains between, on the one hand, algae and detritus, and on the other hand, fish, reptiles, birds, and mammals. Invertebrates are particularly important in the nutrition of young and adult fish, including the endangered shortnosed sturgeon and the economically important American shad, striped bass, and other species. Invertebrates occur on and in the sediments, in the water, on plants, and in the air, as well as on land. Invertebrate ecology of the proposed sanctuary is a very important field for research.

The wetlands support many invertebrates on the aerial parts of plants. Some of the most conspicuous or abundant species are a snail (Succinea ovalis); the waterlily leaf beetle (Pyrrhalta nymphaeae) on spatterdock and other plants; the cattail moth (Lymnaecia phragmitella) on cattails; a caterpillar of genus Mompha in purple loosestrife stalks; the weevil Smicronyx in dodder (Cuscuta gronovii); and scale insect (Chaetococcus phragmitis) on common reed. Monarchs (Danaus plexippus) and other butterfiles, and various bees (including honeybees (Apis mellifera) are attracted to blossoms of pickerelweed and other plants.

A rare bug (Bellonochilus numenius) has been found on sycamore fruits at Stockport. A newly-described crayfish (Orconectes kinderhookensis) has so far been found only in Kinderhook Creek, a tributary of Stockport Creek. It is not known if it occurs downstream as far as the proposed sanctuary sites.

In late spring and early summer, mosquitos can be annoying on the marshes on calm nights, and in moist woods and tidal swamps day or night, but mosquitos do not bite in the marshes by day. Deer flies (Chrysops) may bite for a few weeks in June and July during the day around the edges of the marshes, but rarely fly far out onto the marshes. "Shad flies" (Simuliidae) and punkies (Ceratopogonidae) bite on calm days in April and their numbers vary from year to year; they also do not fly out on the marshes. Scheduling of field activities or use of insect repellents mitigates biting fly nuisances and no problems are anticipated for the proposed sanctuary research and education programs.

e. Estuarine Ecosystem

Generalized patterns of energy flow (production and feeding) for the proposed sanctuary sites are shown in Figure 10. These diagrams represent many interwoven food chains (for example spatterdock to leaf beetle to songbirds to birds of prey, or vascular plants to detritus to crustaceans to small fish to striped bass), and there are many species that feed on more than one type of food. In general, using energy from the sun, green plants produce matter which is consumed while alive by grazing animals or after death by detritus-feeding animals. These primary consumers in turn are eaten by larger and larger animals, culminating in the highest-level consumers such as striped bass, snapping turtle, herons, hawks, mink and man. The great abundance of plants, small invertebrates and small fish in the Hudson River Estuary provides a rich food base for economically important larger animals such as sport and commercial fishes, waterfowl, blue crab, etc.

The major producers in the Hudson are phytoplankton in the waters, and vascular plants in the shallows and wetlands. Turbidity limits phytoplankton populations but these producers are important in the Haverstraw Bay - Tappan Zee region. Zooplankton and benthic invertebrates feed on phytoplankton and on detritus (dead plant particles) from the plants of the marshes and shallows as well as from terrestrial sources. The zooplankton and benthic invertebrates are food for larger invertebrates and small fish, which in turn are eaten by larger fish, birds, and other animals. Estimates of the relative importance of terrestrial and estuarine energy (food) sources vary.

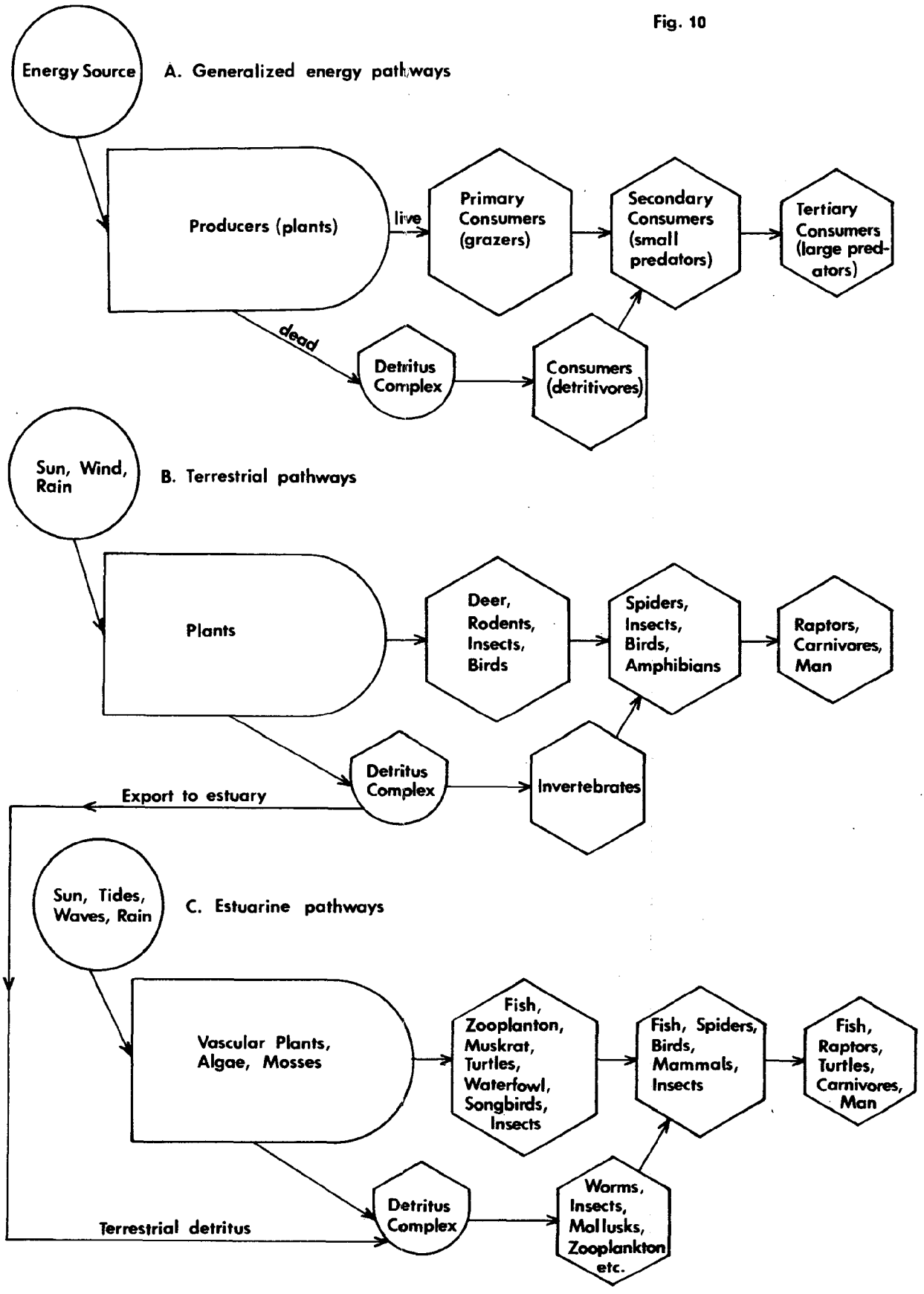
Research done in other estuaries suggests that Hudson River wetlands may absorb nutrients from the main river, but it is not clear to what extent these nutrients may be returned to the river with the decomposition of dead plants. The vegetation of the wetlands and shallows is a nutrient-recycling system that channels nutrients into food chains that yield resources for society in the form of fish, crabs, ducks, and furbearers. At the same time this vegetation is improving water quality in the river.

2. Current Uses of the Sites

a. Commercial and Recreational Fishing

Fishing has been an important activity along the Hudson River Estuary from Indian times to the present day. Catch records were first kept in the late 1880s. From that time, the commercial fin-fishery grew until the late 1930s-early 1940s, then declined. Average annual commercial finfish catch from 1913-1964 was 847,000 lbs., with the largest catch 2.3 million lbs., reported in 1945. Average annual catch from 1965-74 was 170,000 lbs., including 275,000 lbs. in 1974. Shad represented 86% of these catches. Reported catches are minimum and Sheppard (1976) estimated actual 1976 catch at around 600,000 lbs. Sheppard felt that the commercial fisheries of the Hudson River Estuary could be increased to perhaps 1-2 million lbs. per year. In 1978, there were 47 licensed commercial fishermen on the Hudson.

Fig. 10


Energy Source
A. Generalized energy pathways
Producers (plants)
live
Primary Consumers (grazers)
Secondary Consumers (small predators)
Tertiary Consumers (large predators)
dead
Detritus Complex
Consumers (detritivores)
Sun, Wind, Rain
B. Terrestrial pathways
Plants
Deer, Rodents, Insects, Birds
Spiders, Insects, Birds, Amphibians
Raptors, Carnivores, Man
Detritus Complex
Invertebrates
Export to estuary
Sun, Tides, Waves, Rain
C. Estuarine pathways
Vascular Plants, Algae, Mosses
Fish, Zooplanton, Muskrat, Turtles, Waterfowl, Songbirds, Insects
Fish, Spiders, Birds, Mammals, Insects
Fish, Raptors, Turtles, Carnivores, Man
Detritus Complex
Worms, Insects, Mollusks, Zooplankton etc.
Terrestrial detritus

The Hudson River Estuary contributes to marine fisheries of striped bass, shad, bluefish, butterfish, winter flounder, summer flounder, menhaden, weakfish, tidewater silversides and sea robin (Sheppard, 1976). In 1974, New York marine landings were about 7 million lbs. The average Hudson River contribution to the marine striped bass fishery alone has been estimated at about 700,000 lbs. in the period 1965-74.

During the period 1970-74 between Troy and the Tappan Zee Bridge (Nyack), there were an estimated 165,000 person-days spent in recreational fishing on the Hudson (Sheppard 1976). Sheppard felt that the estuary was capable of supporting perhaps 2 million angler-days of recreational fishing per year. The major recreational species include striped bass, white perch, alewife and blueback herring, brown bullhead, largemouth and smallmouth bass, yellow perch, smelt, bluegill, and pumpkinseed sunfish.

In 1978, the Hudson River Estuary generated an estimated $150-200,000 from the commercial sector and $1.65 million from the recreational sector, as well as a contribution to the marine fin fishery worth $20 million (commercial plus recreational). These figures do not include blue crab fisheries, nor the recreational fin fishery in the Hudson south of the Tappan Zee Bridge. A summer 1980 survey of anglers between Troy and the George Washington Bridge (just north of Manhattan) estimated over 16,000 individual recreational fishermen using the estuary. The creel survey showed that in August 33% of anglers had caught white perch, 23% had caught blue crab, and 9% had caught catfish (New York State Department of Environmental Conservation Hudson River Unit, 1980).

In 1976, the Hudson River Estuary was closed to commercial fishing of all species except American shad, Atlantic sturgeon, and blue crab, due to PCB residues in some species exceeding the Federal allowable limit for interstate commerce of 5 parts-per-million. Intensive monitoring of Hudson River fish since then has shown significant declines of PCB levels. The Department of Environmental Conservation (DEC) is lifting the bans on commercial fishing for alewife, blueback herring, smelt and tomcod in 1982. It is hoped that the ban on striped bass can be lifted during the next few years.

Shad enter the Hudson River in early spring and migrate up-river to spawn in tidal shallows from the Kingston area northward. Commercial (staked and drift gillnets) and recreational fishing for shad takes place almost throughout the estuary. In 1981, the DEC published a leaflet "A Guide to Angling for Hudson River Shad" which has been successful in promoting hook-and-line fishing for shad and a concomitant increase in interest in the Hudson River and its management among recreational fishermen.

Fishing for blue crab (blue-claw crab) with pots and lines is popular as far up the Hudson River Estuary as Beacon. There is also a small commercial crab fishery. Both blue crab and shad appear to have increased in numbers in the Hudson in the last 15 years, probably due partly to improved water quality.

The commercial fishery for Atlantic sturgeon is very small. There is a small commercial seine fishery for baitfish, primarily killifish and shiners, in the shallows and marshes.

A few commercial shad fishermen operate in the shallows near Piermont Marsh. There is a recreational fishery for blue crab and fin fish (including tomcod in winter) off the tip of the Erie Pier, and some recreational fishing by boat near the marsh and in the mouth of Sparkill Creek.

There is virtually no commercial fishing near Iona Island. The marsh itself is closed to all fishing. Limited crabbing and recreational fin fishing take place along the railroad.

Considerable commercial shad fishing takes place in the Kingston Flats area a few miles south of Tivoli Bays, but little shad fishing is done close to the bays. One commercial fisherman seines baitfish in the Tivoli Bays. Recreational fishing is concentrated at the stream mouths (Saw Kill and Stony Creek) and the railroad bridges, with some boat fishing. Species fished at Tivoli are primarily alewife (scap-netted), striped bass, white perch, yellow perch, largemouth bass, white sucker, catfish and eel. There are approximately 500 person-days per year of recreational fishing in the Tivoli Bays area.

Some commercial shad fishing occurs in the areas near Stockport Flats. One commercial fisherman seines bait fish in the wetlands and shallows. The tidal mouth of Stockport Creek is an excellent recreational fishing area best known for striped bass. Most of the recreational fishing is concentrated at the railroad bridge area and the Route 9 highway bridge, with some fishing by boat. Fishing from small craft also takes place on the river side of Stockport Middle Ground and Gay's Point.

The carrying capacity of the Hudson River Estuary for fisheries is far greater than the present harvest. The DEC is prepared to carefully regulate fishing for striped bass when commercial fishing for this species is once again permitted. Hudson River commercial fishing operations are currently licensed and monitored, but there is no license required for recreational fishermen on the estuary. Such a license is under consideration by the DEC. There is no foreseeable conflict between fishing and scientific or educational use of the proposed estuarine sanctuary. Hudson River fish stocks and fisheries are under continued study.

b. Fur Trapping

Historically, fur trapping was a mainstay of the Hudson Valley's economy. Today trapping is a source of supplementary income for a number of Valley residents.

The primary furbearer along the Hudson River Estuary is the muskrat, although raccoon, mink, red fox, and gray fox are also trapped in very small numbers.

Muskrat population fluctuate considerably over several-year periods and trapping effort and harvest also vary. In tidal marshes, muskrats make tunnels connecting the tidal creeks and pools to the intercreek areas, and also construct winter lodges (houses) in the intercreek areas. Much trapping is done in the tunnel entrances; a few trappers also use floating trap platforms. Leghold traps and conibear traps are used on the Hudson.

The 1980-81 and 1981-82 muskrat trapping season ran November 15 to March 15. As of February 1982, good muskrat pelts were selling for $4-5 each, down markedly from a year before. During the late 1960s - early 1970s, muskrat populations were high in Hudson River marshes, and estimated annual catch at that time was 500-800 muskrats at Tivoli Bays and perhaps a similar number at Stockport Flats. Several trappers are active in each area, but catch has been lower in the last few years. The Palisades Interstate Park areas at Iona and Piermont are closed to trapping.

Sharp fluctuations in muskrat numbers are normal in most muskrat habitats in North America, with or without trapping. Muskrats are important in the marsh ecosystem as diggers of tunnels that aerate the sediments, and creators of clearings around their winter lodges that increase variety in the vegetation. In general, fur trapping is not in conflict with existing or potential scientific and educational uses of the proposed sanctuary sites.

c. Hunting

Hunting along the Hudson River Estuary is primarily waterfowl hunting and deer hunting. Hunting is not permitted in the Palisades Interstate Park areas at Iona and Piermont, but hunting is permitted on State-owned lands at Tivoli Bays and Stockport Flats.

There is limited hunting for Canada geese on the Hudson but most waterfowl hunting is duck hunting. The primary game species are mallard, black duck, green-winged teal, blue-winged teal, wood duck and canvasback. Canvasbacks are shot on open waters as this species rarely enters the wetlands; there is little hunting of canvasbacks or other diving ducks at Tivoli and Stockport.

Duck hunting season on the Hudson Estuary usually opens in the first half of October and runs (with or without a closed period) until sometime in December or January. Lack of open water and ducks upriver in December and January effectively limits the season to October-November. Duck season usually opens on a Wednesday. The heaviest hunting is on opening day, and hunting may be fairly heavy the Thursday and Friday after opening day and the first 2-3 weekends. Hunting is thus concentrated into the equivalent of about a week's time. Furthermore, there is little shooting between about 10 a.m. and 5 p.m.

There are four types of shooting on the wetlands and shallows at Stockport and Tivoli: shooting from blinds, pass shooting on foot on land, shooting on foot in the wetlands, and shooting from boats in the

wetland creeks and pools and along the shorelines of the shallows. At Tivoli Bays, almost all shooting is from blinds or boats; at Stockport Flats, most shooting is done on foot.

At Tivoli Bays, at opening day dawn of the duck season, Wednesday, 15 October 1981, there were 45 hunters' vehicles parked around the area, indicating a total of about 90 hunters that morning. There were about 40-45 active duck blinds in Tivoli Bays in fall 1981, almost all of them in North Bay where most of the hunting occurs. On opening day, 25 parties of hunters interviewed by DEC bagged 140 ducks, of which 19 were black ducks or mallards and the rest mostly teal.

It is estimated that the number of hunters in the Stockport Flats area on opening day 1981 was approximately the same as at Tivoli. There were only 7 blinds in the main marsh at Stockport in fall 1981. Reports of hunters indicate a considerable decline in hunter numbers at Stockport since the 1940s or 1950s, and a continued decline during the last 10 years. Car counts at Tivoli indicate a reduction in the hunter numbers on opening day since the early 1970s when the season opened on weekends instead of Wednesdays.

The upper Hudson River Estuary, including Tivoli and Stockport, was restricted to the use of steel shot for waterfowl hunting for the first time in the 1981 season. This rule was based on a finding of ingested lead shot in approximately 10% of ducks bagged on the upper estuary. Steel shot use should reduce the incidence of lead poisoning in ducks from ingesting lead shot pellets while feeding on organisms in the mud.

Concentration of duck hunting in early morning and late afternoon during October reduces potential conflicts between hunting and other uses of the marshes. Research field work has been conducted for 11 years at Tivoli North Bay during duck season with relatively few problems. The management plan for Tivoli Bays will include measures to further reduce conflicts or potential conflicts between hunting and other uses of the area. This is important because of the mix of different uses existing and anticipated at Tivoli, and would occur regardless of the sanctuary designation. At Stockport Flats, differences in use patterns and the proposed emphasis in the sanctuary program on spring and summer research (as opposed to year-round research and educational activities) insures that major problems with use conflicts will not arise.

There is a moderate amount of deer hunting at Stockport and Tivoli on terrestrial areas. Deer populations have been high throughout the 1970s-80s and are very high now (1982). Deer hunting season usually opens in mid-November and runs for 3 weeks.

There is a moderate amount of hunting for upland small game (ruffed grouse, pheasant, gray squirrel, eastern cottontail, raccoon, red and gray foxes). The various small game seasons run through much of the fall and winter. There is virtually no hunting of rails, gallinule, snipe or woodcock at Stockport or Tivoli.

d. Forestry

The Hudson River Valley has had an increasing amount of forest cover over the last century, and now is about half covered by forest. Forest cover is much more than 50% on most slopes immediately adjacent to to the estuary. Shore forests at some locations are selectively harvested for timber and fuel. There is no harvest in the Palisades Interstate Park system, including the Iona Island and Piermont areas.

Portions of the State lands at Tivoli Bays were selectively logged in 1980 before State acquisition. Very little was cut within 100 yards of the estuarine habitats and most cutting was well over 200 yards east of the North Bay; there was no cutting on Cruger Island or along the tidal mouth of Stony Creek. The last time the forests close to North Bay had been extensively cut was around 1906. There has been virtually no recent cutting on private forests adjoining the Tivoli Bays.

There has been no recent logging at the Stockport Flats area. Some fuelwood has been cut on a few small private areas near the wetlands.

e. Agriculture

Field corn, grain, hay, apples, peaches, grapes and a few other crops are cultivated atop the bluffs along the Hudson River Estuary, in the middle and upper regions from about Beacon to Albany. Recent years have seen a resurgence of grape culture in the Mid-Hudson region, and continued strength in the apple industry. Stock are grazed on the bluff tops in some areas. Non-agricultural (usually wooded) zones generally exist between agriculture and the shoreline, especially where shore slopes are steep (over 10% slope); rarely is agriculture less than 100 yards from the shoreline and usually the distance is much greater.

Crops and stock are raised on farms east of Stockport Flats. Hay, field corn and oats were grown on the fields east of Tivoli North Bay until 1979, and the DEC expects to permit hay cutting again on some of these fields. Thoroughbred horses are raised on the private property north of North Bay, and apples and peaches are grown commercially east of South Bay. In all cases at Stockport and Tivoli, substantial areas of forested slopes (map distance of 100 yards to one-half mile wide) separate agriculture from the tidal shoreline. There is no agriculture near the Piermont and Iona Island marshes.

f. Industry

In the 1800s, many industries stood right on the Hudson River Estuary shoreline, among them brickworks, ice houses, and grist, saw, and textile mills. Most of these structures are gone with little trace. Contemporary industry along the Hudson includes cement and aggregate plants, petroleum terminals, manufacturing plants, and electric power stations. However, virtually no heavy industry is visible from the proposed sanctuary sites, with the exception of Piermont.

Stockport. The nearest heavy industry to the main marsh is one and one-half miles to the southwest across the river, not visible from the marsh. A locality near the proposed sanctuary site was included on a DEC list of possible sites for a toxic waste treatment facility.

It is anticipated that once the estuarine sanctuary is designated and a management plan has been adopted, that use of areas near the sanctuary and within the State Coastal Area Boundary as a hazardous waste treatment facility would be a noncompatible use. The treatment facility proposal is inactive now.

Tivoli. The nearest heavy industry is more than two miles to the northwest, at Saugerties, and not visible from the proposed sanctuary site.

Iona Island. The portion of the island east of the railroad was a Navy supply depot from about 1900 to 1965, when it was acquired by the Palisades Interstate Park Commission (PIPC). All, but five of the buildings were removed, along with railroad sidings, docks, and roads, and the occupied areas were restored to field. The remaining buildings are used by PIPC for part of its maintenance and storage operations, the rest of which is located on the mainland near Doodletown Bight. This is the only existing industry near the site. The nearest heavy industry is across the river in Peekskill one and one-half miles to the east. The Indian Point nuclear power station is across the river and over two miles southeast (downriver) of Iona Island; the power station is hidden from the proposed sanctuary site by Dunderberg Mountain.

Piermont. A paper recycling plant and a carton factory are located at the base of the Erie Pier just north of the proposed sanctuary site and visible from the marsh. Other industry and a railroad siding formerly occupied the rest of the pier, but have been removed. There is no other industry adjacent to Piermont Marsh; the next nearest industry is over one mile east of the marsh across the river. The factories on the Erie Pier are monitored by the State DEC and Department of Health for potential pollution. A former municipal landfill adjacent to the pier has recently been bored and the levels of metals and pesticides found in the pore water were very low.

g. Transportation

The Hudson River Estuary has been a primary transportation route throughout historic and prehistoric human occupancy of the northeast. In the 1900s, much transportation shifted to highway routes off the river, but the Hudson is still an important transportation corridor.

Shipping. A Federally marked and maintained shipping route extends the length of the Hudson River Estuary. Most of this route has naturally sufficient depths, but the portions of the route between Nyack and Peekskill in Haverstraw Bay, and between Saugerties and Troy, have been deepened and are periodically maintained by dredging. The dredged channel passes close to the Stockport Flats proposed site. None of the proposed sites, however, includes any part of the shipping routes; the proposed site boundaries in all four cases extend downward only to the six foot depth contour below low tide level.

Formerly, some wetlands, islands, and shoreline areas on the upper Hudson Estuary were used for dredged material disposal. The United States Army Corps of Engineers (1981) has published a Draft Environmental Impact Statement for the next decade of channel maintenance and spoil disposal along the Hudson, in which a commitment is made to upland disposal and to avoidance of sensitive natural areas. Dredged material from the shipping channel is expected to be sandy and low in PCB content (less than one part-per-million) so that toxic substance problems are not anticipated. Analyses will be performed just before dredging any reach, and contingency plans will be available for safe landfilling if high-contaminant material is found.

Ship traffic in the narrow and relatively shallow upper estuary produces wakes and swash that have been blamed for shoreline erosion and other problems. The matter is currently under study by the Hudson River Fisheries Advisory Committee to DEC. Most estuaries in the United States that are used for shipping have speed limits; the Hudson is an exception. Commercial ships on the Hudson carry fruit, cement, petroleum, and other products. Small craft are discussed under Recreation, below. The Erie Pier at Piermont is used for infrequent docking of the Lamont Doherty Geological Observatory ocean-going research vessel, but not for other large craft.

Railways. Two ConRail railroads parallel the Hudson River Estuary and border the shoreline in places, the Hudson Division line on the east shore and the West Shore line across the river. These railroads were built circa 1850 and 1880, respectively. The east shore railroad carries both freight and passenger service; along the upper estuary about 8 passenger trains and a similar number of freight trains pass daily each way. The west shore railroad carries only freight.

The railroads pass through the proposed sanctuary sites at Stockport, Tivoli and Iona, but not at Piermont. The railroad at Stockport is between the major wetlands and the uplands; at Tivoli and Iona, the railroads pass mostly between the wetlands and the main river. The railroad at Tivoli was built on a fill causeway with several small openings for tidal flow; at Iona, the railroad was built partly on pilings and has much larger openings. The railroad at Stockport has a single large opening where it crosses the mouth of Stockport Creek. The openings in the railroads are sufficient to allow complete flooding and draining of water onto and off the wetlands with each tidal cycle, much as occurs in wetlands which are not bordered by the railroads.

Ecologically, the railroad causeways, where they lie between the wetlands and the main river, resemble baymouth bars. The tidal openings (bridges) are much used for feeding by predatory fish, especially striped bass, and are well known recreational fishing spots. Large portions of the causeways (rights-of-way) have dense belts of herbaceous or woody vegetation 25 or more feet wide on both sides of the tracks, and these belts support a diversity of plant species, breeding birds, and small mammals. The vegetation also screens the wetlands from the train disturbance. Even where there is no vegetation, migrating ducks on the shallows do not flush when a train passes unless they are within about 50 yards of the tracks.

h. Recreation

Hiking, ski-touring, birdwatching, and related activities are discussed here; hunting, trapping and fishing were discussed in section 3a-c.

Birdwatching. The four proposed sanctuary sites are very well known birding areas and received high ratings in Where to Find Birds in New York State; The Top 500 Sites (Drennan, 1981) and other guides. Many birdwatchers regard the proposed sites among the five most productive sites along the Hudson River Estuary for water and wetland birds as well as land birds (the 5th area is Crofton Point).

Most birdwatching takes place in spring and fall, with less in summer and little in winter. Almost all birding is done by foot from the shoreline and the railroads (and Erie Pier); a few birders use canoes. Birders generally come from the counties containing the proposed sites, either in organized field trips or individually, but birders also come from other Hudson River counties, as far away as New York City and Albany, and farther. A minimal estimate of the number of person-days spent annually birdwatching at the proposed sites is 200 person-days per year per site on the average (10 organized field trips of 10 people each plus an equal amount of individual or small party use). Thus the amount of birdwatching use at Tivoli and Stockport is approximately equal to the amount of hunting use.

Birdwatching has little impact on the sites. There is occasional disturbance of nesting birds through close observation or the playback of recorded bird calls to locate birds.

Other nature recreation occurs at the sites, but is difficult to separate quantitatively from birdwatching, hiking, etc. Some individuals and occasional organized groups come specifically to botanize, and a number of persons visit the areas soley to photograph nature.

Hiking. There are existing foot trails at or near the sites at Piermont, Iona, and Tivoli, and trails are planned for the Gay's Point portion of Hudson River Islands State Park at the Stockport site. A network of hiking trails connects Tallman Mountain State Park and Bear Mountain State Park (Webster, 1971), effectively linking the Piermont and Iona Marshes. The hub of this trail system is the Long Path which begins at the George Washington Bridge in New Jersey, passes near Piermont Marsh and west of Bear Mountain, and will eventually extend to the Adirondacks - nearly the course of the Hudson River itself.

The Appalachian Trail, from Georgia to Maine, passes through the Bear Mountain State Park Trailside Museums complex, and crosses the Hudson River on the Bear Mountain Bridge about two miles north of Iona Island. This is the only place where the Appalachian Trail crosses an estuary in its 2,000 mile length.

Old trails on the State and Bard College lands at the Tivoli Bays are well-used for walking, cross-country skiing, and some snowshoeing and running. Skiing is also popular on the trails near the Piermont and

Iona sites. These activities offer rewarding access to views of the marshes, with little impact. Public transportation allows access to the sites for non-car owners. Buses from New York City stop at Piermont and Bear Mountain; Amtrak trains from New York City and Albany run to Hudson and Rhinecliff, about 8 road-miles from the Stockport and Tivoli sites, respectively.

Miscellaneous Recreation. Occasional groups (e.g., scout encampments) use the Iona Island fields during the warm season, under special permits from PIPC. Otherwise the Island is closed to the public.

A bicycle trail paralleling the west shore of the estuary passes by the Piermont and Iona Island Marshes, partly on highways and partly on old roads reserved for bicycle and pedestrian use and affording good views of the marshes. The Dunderberg section of the bicycle trail is currently (1982) closed for repairs.

Ice boating originated on the Hudson River in the 1860. Ice boats resemble elongated sailboats on sled runners, and are still built and sailed by a few residents in the Mid-Hudson area, particularly near Barrytown and Rhinecliff. Ice boating occurs on the main river during periods of smooth solid ice, often near Tivoli Bays and sometimes on South Bay. Skaters also occasionally use South Bay. Tidal ice can be dangerous, but these activities have no ecological impact.

There are no safe swimming beaches, and swimming in the Estuary is not permitted on public lands at the proposed sites.

Small Craft. Recreational boating by canoe, kayak, sailboat, and powerboat is popular on the Hudson River Estuary. Improved and unimproved boat landings are available to the public at locations near the proposed sanctuary sites. Primitive landings and a semi-improved landing are adjacent to Piermont Marsh (the Erie Pier). There are no improved landings within the proposed sanctuary boundaries. All boating is prohibited in the Iona Island Marsh, except for research purposes.

The ideal way to see the wetlands and shallows is by canoe. Different habitats of the wetlands are accessible, depending on the tide and the season. Canoeists can view wildlife and vegetation with minimal disturbance. The Sparkill Creek, the main river near Iona Island, the Tivoli Bays and the Saw Kill, and Stockport Creek and its tributaries are described in Appalachian Water 2: The Hudson River and its Tributaries (Burmeister, 1974), a canoeing guide. The main river is described in The Illustrated Hudson River Pilot (Wilkie, nd).

i. Archaeological Resources

The Hudson River Estuary corridor, especially stream mouths, points, and islands, is rich in archaeological sites. Several Native American cultures inhabited the region, and some sites were in use as far back as 10,000 years ago. Food remains from estuary sites show a considerable

use of estuarine productivity, particularly sturgeon, mollusks, and turtles as well as deer and other terrestrial species. The Indians were attracted to the same sites as modern hunters, fishermen, and birdwatchers--for the same reasons.

Archaeological sites at Iona Island and Tivoli Bays have been scientifically excavated and documented, as have several sites across the river from Stockport. Much remains to be learned about these sites, and the archaeological resources need protection from illegal "scavenging" of artifacts. A substantial amount of "pot hunting" (non-scientific destruction of archeological information) has taken place and continues today throughout the Tivoli Bay properties, specifically Cruger and Magdalen Islands.

The New York State Education Law, Section 233, Parts 4 and 5 provide protection of these sites. Parts 4 and 5 are reproduced below to further inform the public regarding prohibited and permitted activities:

"4. Except as otherwise provided in subdivision three of this section no person shall appropriate, excavate, injure or destroy any object of archaeological and paleontological interest, situated on or under lands owned by the state of New York, without the written permission of the commissioner of education. A violation of this provision shall constitute a misdemeanor. The discovery of such objects shall be forthwith reported to the commissioner by the state department or agency having jurisdiction over such lands.

5. Permits for the excavation or gathering of archaeological and paleontological objects upon the lands under their respective jurisdictions may be granted by the heads of state departments or other state agencies to persons authorized by the commissioner of education for the purposes of the state museum and state science service, with a view to the preservation of any such objects worthy of permanent preservation and, in all cases, to the acquisition and dissemination of knowledge relating thereto."
L.1947, c.820; amended L.1958, c.121, eff. March 6, 1958.

It should be noted that future expenditures of State and Federal funds will not adversely impact these National Register Archaeological Sites.

j. Plant Resources

There has been no commercial harvest of plant material from the Hudson Estuary. Although wild-rice is abundant at Stockport Flats and a few other upriver marshes, the amount potentially available for harvest is tiny compared to the wild-rice marshes of Great Lakes that sustain commercial harvest. Hudson Estuary wild-rice ripens over several weeks and only a portion of the crop is harvestable at any one time; furthermore, tidal fluctuations means that access to these middle-intertidal zone plants is difficult.

k. Esthetic Use

The Hudson River has a three-century tradition of esthetic appreciation of the natural landscape, and the wetlands and shores are an intimate part of this scenic resource. Artistic interest in the estuary reached a high level in the 1800s with the Hudson River School of landscape painting. Many contemporary artists, including painters, photographers and filmmakers, use the estuary as a source of inspiration and a subject for their works.

In an article titled "Some International Values of Wetlands" Jorgensen (1980) said, "Wetlands are important in bringing visitors from many lands together to enjoy a common interest while promoting a better understanding among people." International visitors have shown interest in the Hudson's wetlands and shores throughout the river's history, and there is great potential for increased tourist appreciation of the estuary in keeping with the interest of Hudson Valley communities in tourism as an industry with relatively little environmental impact. Related to this are the burgeoning activities in regional historic preservation and excursion boat operation.

l. Research and Education

Research. Past research on the Hudson River has emphasized sport and commercial fish species; roughly $50-100 million has been spent by the public utilities alone in work on fisheries and related aspects of Hudson River ecology. Other research subjects have been wetlands plants, bottom invertebrates, plankton, marsh and land birds, reptiles, mammals, sediments, economic geology, hydrology, water quality, and endangered species. A program tilted "The Hudson River Field Weeks" was organized by the Hudson River Research Council in 1977 and 1978, and involved coordination of efforts among a dozen different research institutions in a study of water quality under high-flow and low-flow conditions in the entire estuary. Most of the intensive research to date has focused on the main river and relatively little work has been done in the wetlands. Although there is a hydraulic model of the Hudson Estuary at the U.S. Army Corps of Engineers Waterways Experiment Station in Vicksburg, Mississippi, there are no quantitative models of the Hudson River Estuary ecosystem or of marshes and shallows subsystems. References to published work on the proposed Sanctuary sites appear in a bibliography in the Appendices. Available information on the four sites is being synthesized in more detail and will be published later this year as a basic reference for research workers.

Institutions currently active in Hudson River Estuary research are listed in Table 7, and current research projects involving the four sites are listed in Table 8. A program for future research in the proposed estuarine sanctuary is outlined in the Alternatives section of this FEIS; the program would emphasize long-term environmental monitoring, ecosystem-level studies, and applied problems of management of resources including such topics as shoreline erosion, sedimentation, waterfowl, fisheries, furbearers, wetlands and aquatic vegetation, rare and endangered species, and the impacts of human activities on estuarine resources.

The Estuarine Sanctuary Program would enhance coordination and communication in Hudson River research. A program extending the length of the estuary and setting priorities for certain types of work would encourage fuller and more efficient use of existing facilities, equipment, and collections, perhaps on a time-sharing basis among research institutions. Availability of existing data and its effective use could be enhanced, and a system for indexing and sharing published and unpublished information could be set up. It is expected that planning and conducting research would be closely coordinated with the new Hudson River Foundation for Science and Environmental Research, Inc. resulting from the settlement between the United States Environmental Protection Agency and the public utilities, as well as with older groups set up to coordinate research and communicate research results (Hudson River Environmental Society and Hudson River Research Council). There are ample opportunities for public involvement in certain types of research, e.g., fish tagging by recreational fishermen, and reporting of observations on estuarine animals and plants by sportsmen and naturalists.

Education. Schools, nature clubs, conservation organizations and other groups use the Hudson for educational activities. Most colleges in the New York City to Troy region have courses that take field trips to the estuary. Subjects include geology, botany, fish, wildlife and history, and the numbers of class trips vary from one to 25 per college per year. Class trip time is divided about evenly between the main river and the wetlands. Vassar College, Rockland Community College, and the New School for Social Research have offered courses specifically on the Hudson Estuary. A few schools maintain small laboratories on the shoreline: Dutchess Community College, Bard College, and Marist College. A few elementary schools and a number of secondary schools have also used the estuary for field trips. North Rockland High School has for several years had a program of education and data collection focusing on the Grassy Point marsh complex at Haverstraw. Boyce Thompson Institute used teacher and student volunteer groups very successfully for data collection in its multi-year intensive studies of the lower estuary wetlands and shallows. Graduate students from New York University and other schools have written master's and doctoral theses on the estuary.

Hudson River Sloop Clearwater has the largest public education program on the estuary. The Sloop, a replica of early commercial vessels, sails up and down the Hudson several months each year, making scheduled stops at many cities and taking groups of children and adults aboard for half-day educational trips. The on-board program involves short lectures, and sampling or water, benthos, or fish.

About 20 nature clubs offer their members and the general public field trips and lectures relating to the Hudson Estuary. Some of the most active groups are bird clubs, but clubs with other specific interests (e.g., botany) and general purpose nature clubs also use the estuary. Each club has from one to 10 field trips per year on the Hudson.

Several museums and galleries have featured exhibits on Hudson River Estuary biology and history, including the New York State Museum, American

Museum of Natural History, Museum of the Hudson Highlands, Hudson River Museum, Wave Hill Environmental Studies Center, and the gallery at Hudson River Sloop Clearwater's Fire House.

The last 13 years have seen an extensive popular educational literature on the Hudson River. A major contribution is Robert Boyle's (1969) The Hudson River; a Natural and Unnatural History. This book and the Hudson River Sloop Clearwater have been predominant influences on the burgeoning public interest in the Hudson during the 1970s-80s.

Table 7. Some Institutions and Agencies that Have Used the Hudson River for Research and Education.

Institution or Agency	Type of Use
American Museum of Natural History New York, NY	Research and Education
New York State Museum Albany, NY	Research
Lamont-Doherty Geological Observatory of Columbia University, Palisades, NY	Research
Cary Arboretum of the New York Botanical Garden, Millbrook, NY	Research
Stonykill Environmental Education Center, Fishkill, NY (DEC)	Education
Cornell University Ithaca, NY	Research (planned)
Boyce Thompson Institute for Plant Research, Ithaca, NY	Research
Rockefeller University Center for Field Research, Millbrook, NY	Research
Academy of Natural Sciences, Philadelphia, PA	Research
Museum of the Hudson Highlands Cornwall, NY	Research and Education
Wave Hill Environmental Studies Center, Bronx, NY	Education
New York University, Institute of Environmental Medicine, New York, N.Y.	Research
State University of New York Stony Brook, NY	Research
Marist College Poughkeepsie, NY	Education
State University College New Paltz, NY	Education

Table 7. (Continued)

Institution or Agency	Type of Use
Queens College Flushing, NY	Research and Education
Manhattan College and College of Mount St, Vincent, Riverdale, NY	Research and Education
Bard College, Annandale, NY	Research and Education
United States Military Academy West Point, NY	Education
Vassar College Poughkeepsie, NY	Research and Education
Columbia-Greene Community College Hudson, NY	Education
The New School for Social Research New York, NY	Education
Dutchess Community College Staatsburg, NY	Education
Ulster Community College Stone Ridge, NY	Education
New York State Department of Environmental Conservation Albany, NY	Research and Management
New York State Department of State Coastal Management Program Albany, NY	Research and Management
New York State Office of Parks Recreation, and Historic Preservation Albany, NY	Research and Management
United States Army Corps of Engineers New York, NY	Research and Management
Scenic Hudson, Inc. Poughkeepsie, NY	Research and Education
The Oceanic Society Stanford, CT	Research

Table 7. (Continued)

Institution or Agency	Type of Use
Hudson River Sloop Clearwater Poughkeepsie, NY	Education
National Audubon Society New York, NY	Education
Ralph T. Waterman Bird Club Poughkeepsie, NY	Education
Alan Devoe Bird Club Chatham, NY	Education
Rockland Audubon Society New City, NY	Education
John Burroughs Natural History Society, Olive Bridge, NY	Education
New Jersey Audubon Society Ramapo Research Group Mahwah, NJ	Research
Project L.O.S.T. Mountainville, NY	Research and Education

Table 8. Some Current Research Projects Involving the Proposed Sanctuary Sites. (Proposed research is outlined in the Alternatives section.)

Flora and fauna survey updates

Fish surveys of the marshes

Rare and endangered plant and animal distribution and abundance

Muskrat populations, muskrat ecology

Waterfowl nesting

Duck blind ecology

Vegetation patterns and changes in wetlands

Vegetation structure and bird populations

Toxic substances in sediments, plants and animals

Wetland sediment structure and history of marshes

Insects associated with marsh plants

PART IV: ENVIRONMENTAL CONSEQUENCES

A. General Impacts

An acquisition grant from NOAA would enable the State of New York to acquire lands and develop facilities (i.e., buildings, roads, parking lots, trails, boardwalk). These lands and facilities, combined with other lands already owned by the State and existing facilities, would constitute a National Estuarine Sanctuary representative of the Hudson River as a subcategory of the Virginian Biogeographic Region. The proposed action would have a variety of environmental and economic consequences. It is important to understand the overall effect of the estuarine sanctuary designation. The sanctuary designation would not change existing ownerships, uses, or activities at the proposed sites, but would offer significant future benefits. These benefits would include additional protection of the marshes, and improved and better coordinated research and education opportunities.

The most important overall effect would be to better protect areas included within the sanctuary from development pressures and to improve access to wildland and estuarine natural areas for research and educational purposes. The sanctuary would require very little development because most facilities already exist in some form; little change would be caused in the existing natural environment. The sanctuary would not significantly affect current uses or activities in or near the proposed sanctuary sites.

The greatest environmental benefit of this sanctuary would be the long-term protection of the natural resources of the tidal wetlands, shallows, shoreline, and islands of Stockport Flats, Tivoli Bays, Iona Island Marsh and Piermont Marsh. The sanctuary would serve as an area for people to use for esthetic and recreational enjoyment as well as for scientific and educational purposes. Information collected in the sanctuary would increase knowledge of East Coast estuarine ecosystems and provide an important link with existing National Estuarine Sanctuaries and other coastal research and educational reserves. The estuarine sanctuary designation would complement and enhance existing ecological, scenic, and historical management programs.

Including a representative of this type of estuary within the Virginian Biogeographic Region would also improve understanding of estuarine species and processes peculiar to tidal river systems along the Atlantic Coast.

The establishment of the proposed estuarine sanctuary would have minimal adverse effects on the natural environment. An increased number of visitors to the sites should be anticipated. The sanctuary management plan would describe sanctuary facilities, including trails and access points. The management plan would also describe educational uses in areas of the sites where such use would not damage the environment, disturb adjoining landowners, or interfere with other uses of the sanctuary.

Traditional uses vary from one proposed sanctuary site to another. These uses include (in certain areas): waterfowl and upland hunting, sport and commercial fishing, fur trapping, recreational boating, bird watching and other forms of nature recreation.

B. Specific Impacts

1. Natural Environment

a. Fish and Wildlife Habitat

Many species of fish and wildlife, both resident and migratory, use the proposed sanctuary sites for feeding, reproduction, and other purposes. Establishment of this proposed sanctuary would ensure long-term protection of important fish and wildlife habitats including tidal wetlands, shallows, shorelines and islands. This protection of habitats could benefit endangered species including bald eagle, osprey, possibly the shortnose sturgeon, and also the other endangered, threatened, and "special concern" species discussed in the Affected Environment (Part III) section of this FEIS. Additional information on endangered species is being collected to assist in developing the sanctuary management plan.

With respect to the shortnose sturgeon, Section 7 consultation under the Endangered Species Act has been initiated with the National Marine Fisheries Service. It is believed that this action will not adversely impact this species.

The proposed sanctuary would have a positive impact by protecting high quality ecosystems in the Hudson River Estuary. Increased visitor use of the sanctuary sites for educational, recreational, and research purposes would have a minimal adverse effect on the proposed sanctuary's value as a fish and wildlife habitat. Hiking, cross-country skiing, boating and other recreational activities would not increase greatly over levels anticipated without the establishment of the proposed sanctuary, and fishing, trapping and hunting are expected to remain at present levels in areas where these activities are currently allowed. Existing management policies at Piermont and Iona protect fish and wildlife in those areas. The management plan under development by DEC for Tivoli Bays takes into account the protection of fish and wildlife habitat. At Stockport, there is no evidence of any threat to habitat from existing recreational uses or from research activities proposed under the proposed sanctuary program.

b. Soils and Vegetation

Adverse impact on soils within the proposed sanctuary would be minimized by taking appropriate precautions. Trail construction and improvement will be largely confined to locations of former or existing trails or roads, and steep slopes and poorly drained soils will be avoided. A boardwalk may be constructed at Tivoli North Bay after studies are made to determine the appropriate design and location to avoid degradation of soils, vegetation, or fish and wildlife habitats. A boardwalk would allow visitors and researchers to experience wetland habitats with minimal detrimental effects. The impacts of any construction activities would be assessed and appropriate permits obtained.

Vegetation would not be significantly altered by establishing the proposed sanctuary. Parking would occur in existing parking areas or in the case of Tivoli Bays, in small areas which are not wooded or near the shoreline. Sanctuary programs, such as research and education, would provide increased opportunities to monitor human activities which could damage the environment--for example, potential theft of fuelwood.

c. Water Quality

Establishing the proposed sanctuary would prevent potential impacts from water pollution that might otherwise occur due to further industrial or residential development within the proposed sanctuary sites. Increased recreational boating due to sanctuary establishment would be mostly non-motorized craft, and the use of motorized craft in the proposed sanctuary areas is expected to remain at low impact levels. Vigilance associated with research and educational activities would speed detection and clean-up of any pollution incidents that might occur.

2. Human Environment

a. Residents of the Towns and Counties

There are no residences in the areas proposed for inclusion in the proposed sanctuary, and no displacement of residents would result. The public has limited access to the shoreline and waters of the Hudson River Estuary, and the establishment of the proposed sanctuary would benefit people by protecting existing access points in the proposed sanctuary areas and providing additional access at Tivoli and possibly Stockport. Assessments of properties adjoining the proposed sanctuary would not change as a result of sanctuary establishment.

The proposed estuarine sanctuary would help preserve the Hudson River's scenic and historic uniqueness and already great attraction to tourists. Visitors from all over the United States and indeed the world visit the Hudson River for enjoyment of esthetic, historic, and recreational resources. This tourism is part of the Hudson's rich tradition and is an environmentally sound source of income to communities along the estuary. Research and education activities associated with an estuarine sanctuary would contribute to local economies: users of the sanctuary would require transportation, housing, food, and supplies from area merchants.

An estuarine sanctuary on the Hudson River would encourage a more thorough examination and understanding of the relationships between human activities and the environment. There would be increasing public knowledge and awareness of natural resources, ecosystems, sensitivities, and conservation needs. The proposed sanctuary would increase the support for and public understanding of coastal management programs and activities.

Residents would benefit from long-term protection of sport and commercial fishing, and (at Tivoli and Stockport) fur trapping and hunting, by protection of the estuary. The impacts of these activities would remain unchanged. The integrity of fish and wildlife habitats and populations would be

protected by preserving the natural areas of the proposed sanctuary sites from adverse development. Protection of water quality and habitat quality and improvements in the quality of fishing and hunting experiences would go hand-in-hand. Furthermore, increased research resulting from sanctuary establishment would very probably result in better management of fish and wildlife populations and their habitats along the entire Hudson River Estuary.

b. Scientific and Educational

Existing research and education programs would be enhanced by establishment of an estuarine sanctuary, and new opportunities would be created for research and education both within the proposed sanctuary and elsewhere along the Hudson River. There would be increased coordination and improved effectiveness of the now disparate and often fragmented programs on the estuary, especially research on the wetlands and shallows. Protection of high-quality natural ecosystems and improved access would allow school groups and the general public of all ages easier access to educational and scientific resources. It would be an advantage to scientists and students of science to have areas set aside as an estuarine sanctuary for long-term ecological research and environmental monitoring.

c. State and Federal

Establishment of a Hudson River Estuarine Sanctuary would protect for New Yorkers and other Americans natural areas to enjoy and use for science and education. The sanctuary designation would especially benefit people from urban areas who have difficulty finding coastal areas for these activities.

Establishment and management of the proposed sanctuary would have a relatively slight and short-term financial impact on the Federal Government. Since long-term operation of the proposed sanctuary would be based on retention of its natural features, expenditures would be minimal. All facilities would be designed for minimal maintenance. Volunteer efforts could assist in the upkeep and management of trails and other features of the sanctuary. The proposed sanctuary Advisory Committee's fund-raising activities could provide an appropriate blend of private sector and public sector support for the perpetuation of suitable sanctuary operation. Sanctuary programs would be closely coordinated with other government programs as well as private programs of research, education, and conservation.

Sanctuary goals would be compatible with the protection of wetlands, floodplains, shorelines and other estuarine environments in accordance with Executive Orders 11988 and 11990, the State Coastal Management plan, and other Federal and State laws listed in Appendix 2.

The United States Department of Defense shall not be prohibited from conducting any activity that is essential for national defense or because of emergency. This includes military flights above or in the vicinity of the proposed sanctuary sites. Such activities shall be conducted consistent with all regulations, to the maximum extent practicable.

C. Unavoidable Adverse Environmental or Socioeconomic Effects

Except for the minor problems listed earlier, there are no adverse environmental effects associated with this proposed action. With regard to the alternatives (except for the No Action Alternative), none have significantly different environmental impacts. However, the Preferred Alternative would create an excellent estuarine sanctuary for research and education. If the No Action alternative were chosen, the net benefits presented in the proposal would be foregone.

Unavoidable adverse economic effects would include the loss of tax revenue if additional land acquisition takes place. The following figures are approximate, but they are the best available estimates on potential loss of property tax revenues in connection with proposed sanctuary acquisitions on the Hudson River:

Stockport Marsh area	-	Approximately $1,141/year
Tivoli Bays area	-	Approximately $ 780/year
Iona Island area	-	No Acquisition proposed
Piermont Marsh area	-	Approximately $1,000/year

The total potential loss of property tax revenues is estimated at $2,921 per year. Some or all of this lost property tax revenue would be offset by new spending from sanctuary visitors, scientists, and educators.

Some of this tax loss may also be reduced by employing alternative preservation techniques such as purchase of development rights, conservation easements, or reserved life estates.

Establishment of this proposed sanctuary could result in minor disturbances to the environment through the construction or improvement of trails and parking areas, and renovation of existing buildings. Any proposed construction in wetland areas would require an environmental assessment.

D. Relationship between Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity

Sanctuary designation would provide long-term assurance that the natural resources and resulting benefits of the area would be available for future use and enjoyment. Without sanctuary designation, intensive uses such as residential subdivisions or commercial-industrial development might take place in some parts of the proposed sanctuary. However, such uses would result in a loss of ecological benefits due to disruption and degradation of natural resources.

Research information collected from the proposed estuarine sanctuary over the long-term would assist Federal, State and local government in making better coastal management decisions. Better management would in turn help resolve use conflicts and mitigate adverse impacts of human

activities in the coastal zone, saving both money and resources. Research in the proposed estuarine sanctuary might well allow more efficient and safer use of resources in the coastal zone, and this research might also result in the discovery of previously unknown resources (medical, nutritional, esthetic, recreational) for human use. A public education program would provide a grassroots foundation for wise public use of estuarine resources.

E. Irreversible or Irretrievable Commitment of Resources

Within the proposed sanctuary, there are no resources that will be irreversibly or irretrievably lost. The intent of the proposed action is to protect, enhance, and manage the natural resources for research, education, and recreation. If these resources are protected and managed instead of altered, they would be available for future use. It is also believed that establishment of the proposed sanctuary could insure the future harvest by commercial and sport fishermen and also hunters and trappers through scientific research and proper management of resources, without resulting in loss of other potential benefits such as nonconsumptive enjoyment of the resource.

F. Possible Conflicts between the Proposed Action and the Objectives of Federal, State, Regional and Local Land Use Plans, Policies and Controls for the Areas Concerned

No conflicts are anticipated between this proposed action and the objectives of Federal, State, regional or local land use plans, policies, and controls for the area concerned.

1. Federal and Regional Plans

The entire Tivoli Bays site is listed on the National Register of Historic Places as part of a historic district that stretches along the the east bank of the Hudson River from Germantown south to Hyde Park. A special procedure is required before structures existing on the property may be altered. However, none of the several buildings on the upland area away from the wetlands has any great historic value and it is planned by DEC to raze these buildings which are in too poor condition to use, except for the concrete barn. A private cemetery of less than one-fourth acre in size, dating from approximately the 1930s-40s, is located on the uplands more than 300 yards east of the wetlands. This cemetery will be protected and marked as part of the DEC management of the property. A small (less than 50 feet square) ruins on South Cruger Island was built for ornamental reasons in the mid-1800s and will be left as is.

The establishment of the proposed Hudson River Estuarine Sanctuary in and of itself would not interfere with the maintenance or enforcement of the U.S. Coast Guard rules and regulations. The proposed sanctuary would also not interfere with commercial shipping use or U.S. Army Corps of Engineers maintenance of the Federal Shipping Channel. The proposed sanctuary sites would not be available for disposal of dredged material from the navigation channel. Alternative disposal sites are available upland outside of the proposed sanctuary boundaries. The Corps of Engineers in their DEIS and 10-year management plan for Federal channel maintenance dredging has indicated that spoil disposal in marshes is no longer acceptable. There

is a small, long disused silted-in mapped spur channel within the proposed sanctuary boundary at Stockport. The proposed sanctuary would not interfere with existing railroad operations and maintenance.

A five mile stretch of the Hudson River between Barrytown and Malden has been included in the Final List of Potential Wild, Scenic, and Recreational Rivers by the U.S. Department of the Interior.

CRITERIA OF THE WILD AND SCENIC RIVERS ACT
(Public Law 90-542, as amended)

The Final List of Potential Wild, Scenic and Recreational Rivers constitutes the results of the Nationwide Rivers Inventory. Identified are natural and undeveloped rivers and river segments that meet the minimum criteria for further study and/or potential inclusion under the Wild and Scenic Rivers Act. The Inventory has focused on those rivers nominated by government agencies, private groups and/or individuals, which are significant for their recreation, cultural and natural values. Each of these rivers met the minimum criteria of Public Law 90-542 and related guidelines which specified that an eligible river must:

1. Be five miles or more in length.

2. Be a free-flowing river or stream (rivers may have undergone some impoundment or diversion in the past).

3. Be generally undeveloped. (River corridors may be developed for full range of agricultural uses and can include small communities as well as dispersed or cluster residential housing.) Be readily accessible by road or railroad or be largely undeveloped. (Rivers or sections or rivers with shorelines or watersheds essentially primitive or largely undeveloped.)

4. Be adjacent to or within a related land area that posesses an outstanding remarkable geologic, ecologic, cultural, historic, scenic, botanical, recreational or other similar value. (Interpreted to near an area of multi-state or national significance.)

No conflict between the proposed estuarine sanctuary status and this designation is foreseen.

Sanctuary management policies would not interfere with existing regulations of the U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, or any other Federal regulatory agency.

2. State Plans

The purposes and objectives of the proposed estuarine sanctuary are consistent with the programs of the Department of Environmental Conservation (DEC), the Department of State (DOS), the Office of Parks, Recreation and Historic Preservation (OPRHP), and the Palisades Interstate Park Commission (PIPC). All of these agencies, as well as the Office of General

Services, are involved in planning the proposed estuarine sanctuary and are represented on the Sanctuary Steering Committee. DEC, DOS, OPRHP and PIPC were all involved in the statewide and the Hudson River site selection processes for the proposed sanctuary.

The proposed sanctuary is consistent with the objectives and plans of the developing State Coastal Management Program.

The Tivoli Bays site lies entirely within the DEC-designated Mid-Hudson Historic Shorelands State Scenic Area, which stretches from Germantown to Hyde Park and is approximately conterminous with the National Register of Historic Places historic district. The proposed sanctuary objectives are consistent with the objectives of the Scenic Area, and both programs would be mutually supportive.

At Stockport and Tivoli, portions of State Agricultural Districts approach or adjoin the proposed sanctuary sites. No portion of any Agricultural District is within the proposed sanctuary boundaries. The management of the proposed sanctuary would not interfere with agricultural land uses.

Proposed and potential estuarine sanctuary research and education programs are complementary to, and would not interfere with, any research or education programs conducted by State agencies, or within the State educational system, or by private groups or schools. Indeed, sanctuary programs and other research and education programs would be mutually enchancing.

3. Local Plans

The proposed Hudson River Estuarine Sanctuary would not interfere with any known county, town, or village plans, policies, or regulations (see Appendix 2). The proposed sanctuary management plan would take into account all county, town, and village laws and regulations governing portions of the proposed sanctuary that lie within these political divisions. Protection of scenic, recreational, historic, and archaeological resources within the proposed sanctuary is consistent with local plans and policies as well as with State policies. Existing uses of the proposed sanctuary would continue, including hunting, fishing, trapping, recreational boating, bird watching and other recreational uses where permitted.

It is not anticipated that the establishment of the proposed sanctuary would interfere with existing or potential industrial or commercial land uses near or adjoining the proposed sites. Such uses include: the Tennessee Gas Pipeline Company corridor at Piermont, the Clevepak Corporation and Federal Paper Board Company plants on the Erie Pier at Piermont, the thoroughbred horse breeding farm of Tivoli Properties, Inc., other agricultural activities at Tivoli and Stockport, the Central Hudson Gas & Electric Corporation corridor at Tivoli, and the railroads. If problems should arise, negotiated agreements would be sought.

PART V: LIST OF PREPARERS

Dr. Richard J. Podgorny -- U.S. Department of Commerce

Dr. Podgorny holds both B.A and Ph.D. degrees in Biology and a M.S. degree in the earth sciences. He is the Project Manager for the Hudson River Estuarine Sanctuary proposal. Also, he is the Regional Sanctuary Projects Manager for the Great Lakes, portions of the East Coast, and the Gulf of Mexico for both of NOAA's National Estuarine and Marine Sanctuary Programs. His background includes serving as Director of Marine Education for the District of Columbia Public School System, Science Professor, and Peace Corps Volunteer in Ethiopia.

His responsibilities in the preparation of the FEIS included overall direction, organization, and preparation of the report for publication. Dr. Podgorny had assistance from Ms. Gloria Thompson, Program Specialist, Ms. Jaunice Yates, Program Support Specialist, and Ms. Lois Mills, Clerk/Typist, Sanctuary Programs Office.

Mr. Edward Radle -- New York State Department of Environmental Conservation

Mr. Edward Radle oversaw the preparation of the FEIS. Mr. Radle is the Hudson River Fishery Management Coordinator with the New York State Department of Environmental Conservation. He has a master's degree in fisheries biology and lives in Clifton Park, New York.

Mr. Erik Kiviat -- Director, Hudsonia Limited

Mr. Erik Kiviat prepared the Affected Environment, Alternatives, and Consequences sections, and edited the appendices. Mr. Kiviat taught natural history at Bard College 1970-78 and was director of the College Field Station; he is now Research Associate in Ecology at Bard, and a director of Hudsonia Limited. He has done research on the Hudson Estuary since 1970. Mr. Kiviat has a master's degree in biology, and lives in Barrytown, New York.

Mr. James J. Stapleton -- Director, Hudsonia Limited

Mr. James J. Stapleton assisted in the preparation of the entire FEIS. Mr. Stapleton teaches at the New School for Social Research in New York City, is Director of the John Burroughs Sanctuary, and is a director of Hudsonia Limited. He has master's degrees in biology and physics, and lives in West Park, New York.

Dr. Robert E. Schmidt -- Director, Hudsonia Limited

Mr. Robert E. Schmidt edited the hydrology section and compiled the fish list of the FEIS. Dr. Schmidt teaches at Upsala College in Sussex, New Jersey, and has taught at Manhattan Community College, New York City; Mercy College, Dobbs Ferry, New York; and Fordham University, Bronx, New York. He is a director of Hudsonia Limited and has done research on Hudson River fish populations for several years. Dr. Schmidt has a Ph.D. in ichthyology and lives in Newton, New Jersey.

Ms. Suzanne Blatter -- Hudsonia Limited

Ms. Suzanne Blatter prepared the illustrations for the FEIS. Ms. Blatter has a bachelor of fine arts degree, and lives in Kingston, New York. She is an affiliate of Hudsonia Limited.

Ms. Nancy Zeising -- Hudsonia Limited

Ms. Nancy Zeising compiled the plant list and assisted with other portions of the FEIS. Ms. Zeising teaches environmental education in the Hyde Park, New York, school district and is involved in Hudson Estuary research. She is an affiliate of Hudsonia Limited and lives in Clinton Hollow, New York.

Mr. Clarence T. O'Brien -- New York State Department of Environmental Conservation

Mr. Clarence T. O'Brien researched property ownerships at the Stockport Flats site. Mr. O'Brien is Regional Land Surveyor, Region 4, with the New York State Department of Environmental Conservation. He has an Associate Degree in Electric Power Generation and Transmission from Alfred University, SUNY, and lives in Guilderland, New York.

The following members of New York's Estuarine Sanctuary Steering Committee contributed significantly to the preparation of the FEIS:

J. W. Aldrich (DEC)
Harry Earle (OPRHP)
Peter D. Gregory (OPRHP)
Paul Keller (DEC)
David McCoy (PIPC)
Robert T. McLean (OGS)
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Nancy Pierson (OPRHP)
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Nancy Tobin (OPRHP)

In addition, valuable information or comments were received from the following State agency administrators or staff members:

Nash Castro (PIPC)
Glenn Cole (DEC)
Salvatore Cozzolino (DEC)
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Herbert Doig (DEC)
Wayne Elliot (DEC)
Patrick Festa (DEC)
Jack Focht (PIPC)
Richard Guthrie (DEC)
Dennis Haight (PIPC)
Howard Haight (PIPC)
Edward Horn (DEC)
Phillip Hulbert (DEC)
Alan Mapes (DEC)
Eugene McCaffrey (DEC)
John Meade (PIPC)
Richard Mitchell (NYS Museum)
Jack Ryan (DEC)
Fred Slater (DEC)
Ronald Sloan (DEC)
Anthony Taormina (DEC)
John Troy (PIPC)
Ivan Vamos (OPRHP)

The following individuals provided information or assistance:

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Maurice Brignull (Hudson, NY)
Robert Deed (Rockland Audubon Society)
Kate Dunham (Alan Devoe Bird Club)
Frances Dunwell (Scenic Hudson, NY)
Richard Griffiths (Bard College)
William Hogan (Dutchess County Cooperative Extension)
John Holsapple (New York Power Pool)
William Kivlen (Columbia County Sportsmen's Federation)
Lee LaBuff (Ithaca, NY)
Wade Linden (North Chatham, NY)
Steve Lopez (New York Sea Grant)
William T. Maple (Bard College)
Donna Matthews (Tivoli, NY)

Grace Meyer (Piermont, NY)
Joe Murell (Hudson, NY)
Everett Nack (Claverack, NY)
Beth Yanuck Platt (The Nature Conservancy)
Ruth Piwonka (Kinderhook, NY)
Michael Rosenthal (Bard College)
David Seeley (North Chatham, NY)
C. L. Smith (American Museum of Natural History)
Robbe P. Stimson (Hudson River Shorelands Task Force)
Roland Vosburgh (Columbia County Department of Planning)
Lynn Wayand (DEC)
Anne Williams (The Nature Conservancy)

Special recognition is due to Scenic Hudson, Inc. for sponsoring research on the Hudson River Estuary that contributed to the development of this proposal.

PART VI: LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS RECEIVING COPIES OF THE DEIS

Federal Agencies

Advisory Council on Historic Preservation
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers
National Park Service
Department of Agriculture
Department of Commerce
Department of Energy
Department of Health and Human Services
Department of Housing & Urban Developement
Department of the Interior
Department of Justice
Department of Labor
Department of Transportation
  U.S. Coast Guard
Federal Energy Regulatory Commission
Nuclear Regulatory Commission
Conrail

National Interest Groups

A.M.E.R.I.C.A.N.
AFL-CIO
American Association of Port Authorities
American Bureau of Shipping
American Farm Bureau Federation
American Fisheries Society
American Gas Association
American Industrial Development Council
American Institute of Architects
American Petroleum Institue
American Shore and Beach Preservation Association
American Society of Civil Engineers
American Society of Landscape Architects, Inc.
American Society of Planning Officials
American Waterways Operators
Amoco Production Company
Atlantic Richfield Company
Atomic Industrial Forum
Boating Industry Association
Bultema Dock and Dredge Company
Center for Law and Social Policy
Center for Natural Areas
Center for Urban Affairs
Center for Urban and Regional Resources
Chamber for Commerce of the United States
Chevron U.S.A., Inc.
Cities Service Company
Coast Alliance

Conservation Foundation
National Interest Groups (Cont'd.)

Continental Oil Company
Council of State Planning Agencies
The Cousteau Society
CZM Newsletter
Edison Electric Institute
El Paso Natural Gas Co.
Environmental Policy Center
Environmental Defense Fund, Inc.
Environmental Law Institute
EXXON Company, U.S.A.
Friends of the Earth
Great Lakes Basin Commission
Gulf Energy and Minerals, U.S.
Gulf Oil Company
Gulf Refining Company
Industrial Union of Marine and Shipbuilding Workers of America
Institute for the Human Environment
Interstate Natural Gas Association of America
Lake Michigan Federation
Marathon Oil Company
Marine Technology Society
Mobil Oil Corportation
Mobil Exploration and Producing, Inc.
Murphy Oil Company
National Association of Conservation Districts
National Association of Counties
National Association of Home Builders
National Association of Realtors
National Audubon Society
National Coalition for Marine Conservation, Inc.
National Farmers Union
National Federation of Fishermen
National Fisheries Institute
National Forest Products Association
National Marine Manufacturers Association
National Ocean Industries Association
National Parks and Conservation Association
National Recreation and Park Association
National Research Council
National Society of Professional Engineers
National Waterways Conference
National Wildlife Federation
Natural Resources Defense Council
Natural Resources Law Institute
The Nature Conservancy
Norfolk Dredging Company
Outboard Marine Corporation
Resources for the Future
Rose, Schmidt & Dixon
Shell Oil Company

Sierra Club
National Interest Groups (Cont'd.)

Skelly Oil Company
Soil Conservation Society of America
Sport Fishing Institute
Standard Oil Company of Ohio
State University Law School
State University of New York
Sun Company, Inc.
Tenneco Oil Company
Texaco, Inc.
Texas A & M University
Union Oil Company of California
University of Pittsburgh
Urban Research and Development Association, Inc.
Western Oil and Gas Association
Wildlife Management Institute
The Wildlife Society
Woods Hole Oceanographic Institute

State/County Government

New York City Department of City Planning
New York State Department of Environmental Conservation
New York State Office of General Services
New York State Department of State
New York State Office of Parks, Recreation and Historic Preservation
Bear Mountain State Park
New York Department of Public Service
Saratoga Capital District State Park Commission
Palisades Interstate Park Commission
New York State Department of Transportation
New York State Governor's Offfice
Department of Education
State Museum and Science Service
Taconic State Park and Recreation Commission
New York Fish and Wildlife Management Board
Tallman Mountain State Park
Dutchess Co. Department of Planning
Town of Red Hook Conservation Council
Town Planning Board of Red Hook
Rockland County Legislature
Rockland County Environmental Management Council
Stony Point Town Planning Board
Orangetown Planning Board
Dutchess County Environmental Management Council
Columbia County Environmental Management Council
Rockland County Department of Planning
Red Hook Town Board
Stockport Town Board
Stony Point Town Board
Orangetown Town Board
Piermont Village Board

State/County Government (Cont'd.)

Tivoli Village Board
Heritage Task Force for the Hudson River Valley
Piermont Conservation Advisory Commission
Rockland County Planning Departmert

State and Local Interest Groups

Red Hook Rotary Club
West Branch Conservation Association
West Hudson Environmental Association
Rockland County Cooperative Extension
Piermont Civic Association
Hudson River Conservation Society
Hudson River Heritage, Inc.
Manitoga Hudson River Center
American Littorial Society
Rockland Audubon Society
Central Westchester Audubon Society
New Jersey Audubon Society
Ralph T. Waterman Bird Club
Federation of New York State Bird Clubs
The Nature Conservancy
Hudson River Environmental Society
Hudson River Shorelands Task Force
National Audubon Society
Putnam Highlands Audubon Society
Alan Devoe Bird Club
Linnaean Society of New York
Sierra Club
Torrey Botanical Club
Federated Garden Clubs of New York
Marshlands Conservancy
Federated Conservationists of Westchester Co.
Commerical Fisherman's Association of New York
New York Bass Chapter Federation
John Burroughs Natural History Society
Dutchess County Garden Clubs
Palisades Nature Association Greenbrook Sanctuary
The Wildlife Society
Hudson River Fishermen's Association
Trout Unlimited
Columbia County Sportsmen's Federation, Inc.
Federated Sportmen's Club of Ulster County Inc.
Federation of Dutchess County Fish and Game Club
Hudson River Waterfowlers
Upper Catskill Fur Takers
New York-New Jersey Trail Conference
Dutchess County Landmarks Association
Ducks Unlimited
Dutchess County Trappers' Association
Dutchess County Archeological Society
Project L.O.S.T.

State and Local Interest Groups (Con't.)

The Georgia Conservancy
Tappan Zee Sloop Club
Buccaneer Boat Club, Inc.
Julius Petersen, Inc.
Chelsa Marina
Norrie Point Marine Corporation
Hudson River Pilots Association
Tappan Zee Marina
Lighthouse Yacht Center
Sailhaven
Poughkeepsie Yacht Club
Beacon Sloop Club
Scenic Hudson
Rockland County Conservation Association
Hudson River Sloop Clearwater
The Nature Conservancy, Lower Hudson Chapter
Sierra Club, Mid-Hudson Chapter
New York State Coastal Coalition
New York State Conservation Council
Sparkill Creek Watershed Protection

Congressional

Daniel P. Moynihan
Alphonse M. D'Amato
William Carney
Thomas J. Downey
Gregory W. Carman
Norman F. Lent
Raymond J. McGrath
John LeBoutillier
Joseph P. Addabbo
Benjamin S. Rosenthal
Geraldine Anne Ferraro
Mario Biaggi
James H. Scheuer
Shirley Chisholm
Stephen J. Solarz
Frederick W. Richmond
Leo C. Zeferetti
Charles E. Schumer
Guy V. Molinari
Bill Green
Charles B. Rangel
Ted Weiss
Robert Garcia
Jonathan B. Bingham
Peter A. Peyser
Richard L. Ottinger
Hamilton Fish, Jr.
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Congressional (Cont'd.)

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David O'B. Martin
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Leif Reichelt
Samuel Sage
Mike Selender

Copies of the DEIS were sent to the agencies and groups and individuals listed above for their review and comments during a 45 day comment period. All comments received on the DEIS are presented in Part VII of this document.

PART VII: WRITTEN AND VERBAL COMMENTS RECEIVED ON THE HUDSON RIVER ESTUARINE SANCTUARY DRAFT ENVIRONMENTAL IMPACT STATEMENT, AND NOAA's RESPONSES

This section presents the written and verbal comments received on the Draft Environmental Impact Statement (DEIS) and provides NOAA's response to these comments. Generally, responses are made in one or more of the following ways:

1. Expansion, clarification, or revision of the DEIS,
2. General response to comments raised by several reviewers, and
3. Specific responses to the individual comments made by each reviewer.

The written comments received are arranged in the following order:

1. Federal Agencies
2. State and Local Government
3. Environmental Organizations
4. Research Organizations
5. Fish and Game Clubs
6. Industries and Private Individuals

The written comments are followed by a section containing a verbatum transcript of speakers at the four public hearings. They appear in the order of their presentation at the hearings.

For the convenience of the reader, all comments appear on the left side of the page and corresponding responses appear on the right side of the page.

The following are some of the most common issues raised by reviewers.

GENERAL COMMENTS AND RESPONSES

A. Concern that the use of the term "santuary" to describe the program is inappropriate and misleading. The implied negative effects of the title "sanctuary" are contradictory to the hunting, fishing and trapping heritage of the Hudson River Valley.

Many reviewers expressed concern about the authority of the Federal government to regulate activities in the area within the proposed Hudson River Estuarine Sanctuary sites. Because a Federal grant is being requested by New York to establish and manage the sanctuary, it is feared that the Federal government could control or prohibit recreational activities such as hunting, fishing, trapping and boating if these activities interfered either

with research or educational programs being conducted within the sanctuary. This concern is directly related to Section 921.5 of the Estuarine Sanctuary Program Guidelines published on June 4, 1974 [15 CFR Part 921, Federal Register 39 (105): 19922-19927].

Section 921.5 Multiple Use, paragraph (b) states: "There shall be no effort to balance or optimize uses of an estuarine sanctuary on economic or other bases. All additional uses of the sanctuary are clearly secondary to the primary purpose and uses, which are long-term maintenance of the ecosystem for scientific and educational uses. Non-compatible uses, which would cause significant short-term or long-term ecological changes or would otherwise detract from or restrict the use of the sanctuary as a natural field laboratory, will be prohibited".

The intention of the Federal guidelines cited above is to help States understand what an estuarine sanctuary is to be used for so they will know how to establish criteria and set priorities for selecting potential sanctuary sites that will qualify for Federal assistance. Section 921.5 attempts to distinquish compatible from non-compatible uses and provides some examples, again with the intention of helping States to decide which areas would qualify as potential sanctuary sites and which would not, for Federal funding pruposes. Thus, States are informed clearly in the beginning that areas proposed to NOAA as sanctuary sites must be relatively undisturbed and available for long-term research and educational programs as primary objectives.

There is no Federal law or regulations to implement the sanctuary that would supercede State law. Section 921.5 does not give the Federal government any new authority in the implementation phase of an estuarine sanctuary program. An estuarine sanctuary is designated by law, and the guidelines referred to above, to be State owned and State managed. Provision is also made for citizens or organizations which are concerned about improper use or restriction to petition the State management agency, and if necessary the Office of Coastal Zone Management directly, for review of the managment program. In Section 921.31, the pubic is assured that approved boundaries and management policy, including permissible and prohibited uses, may only be changed after public notice and public review and participation.

With these provisions to safeguard continuing public involvement in decisions, plus the establishment of Sanctuary Advisory Committees for the estuarine sanctuary on the Hudson River, with local citizens and groups represented, every feasible step has been taken to assure citizens maximum access to any decisions that would be made concerning the use of the sanctuary waters or adjacent waters. The Federal government's role in any conflict situation over use or restriction would be to assure that all parties had an opportunity to express their views and that the final decision was clearly in the public interest and consistent with the original agreement in setting up the sanctuary in the first place.

However, in the case of the proposed Hudson River Estuarine Sanctuary, there is very little existing or potential conflict of traditional consumptive activities (hunting, trapping, fishing, crabbing, etc.) with proposed research or public education. Hunting and trapping are

prohibited by PIPC regulations at Piermont and Iona Island Marshes (at Piermont on the portion of the marsh owned by PIPC). At Tivoli and Stockport, hunting and trapping are permitted on State lands. At these two areas, waterfowl hunting as presently practiced is concentrated on opening day of the duck season (usually a Wednesday) and on the first one or two weekends of the duck season. Relatively little hunting occurs on other days during the season. The duck season usually opens in mid-October. Very little shooting occurs between about 10:00 AM and 4:00 PM during the duck season, even on opening day. Research on a variety of topics has been done during duck hunting season at Tivoli in the past. There is no problem with hunting being the predominant activity during the times of greatest concentrated hunting. The midday hours and the midweek days (except opening day) are still available to researchers with relatively little shooting on the marshes. Under a directive which preceded the Estuarine Sanctuary proposal, DEC is preparing a management plan for its land at the Tivoli Bays site. This plan wil establish regulations for the use of the property for traditional activities including research, hunting, and birdwatching. Options under consideration for the Tivoli plan include closing the area to duck hunting on certain days each week or setting aside a small part of the marshes as a "no hunting" area. These regulations, if adopted, could have the effect of improving duck hunting (by reducing the "hazing" of ducks from the area due to very intense hunting early in the season) while setting aside times and places where non-consumptive uses of the marsh could occur separately from hunting. This type of "zoning" of the Tivoli Bays site could be important because of the diverse mixture of consumptive and non-consumptive activities there. At Stockport, there is no plan for site-specific regulations. Stockport, while heavily hunted early in the duck season, does not attract the intensity of non-consumptive uses that Tivoli does. Late winter, spring, summer and early fall are still available to researchers at Stockport with no duck hunting in progress, and certain days and times of day are also available during the duck season with relatively little shooting. Stockport is envisioned in the Estuarine Sanctuary proposal as a low-intensity public use area that is available for research but which would not be used as much for this purpose as Tivoli. Therefore, little conflict between hunting and research is anticipated.

Trapping, fishing, and crabbing, where presently permitted, would not interfere with research and public education. One function of research in the proposed Estuarine Sanctuary would be to assess the role and impact of these activites in the balance of wild populations and of the ecosystem. DEC as lead agency, and the Estuarine Sanctuary Steering Committee, are committed to maintaining high-quality hunting, trapping, fishing and crabbing experiences in those portions of the proposed Estuarine Sanctuary site where these activities are currently permitted. These consumptive uses of the marshes are indeed an important part of the heritage of the Hudson River Estuary. It is anticipated that the interactions between sportsmen and non-sportsmen, including researchers and educators, can enhance the effectiveness of the sanctuary for recreation as well as for research and education. Sportsmen and non-sportsmen alike have a common interest in the protection of these marhses, and much to gain from cooperating in the programs of the proposed sanctuary.

B. Positive statements in the DEIS regarding consumptive uses are lacking and/or inadequate.

There are two ownerships in the Piermont Marsh. The DEC property is located between the Erie Pier and Sparkill Creek (north of Sparkill Creek, see DEIS p. 10). It is the intention of DEC to open this parcel to hunting, trapping, fishing and crabbing. The marsh and shallows south of Sparkill Creek are owned by PIPC and are part of Tallman Mountain State Park. Firearms are prohibited in the Palisades Interstate Park system unless specific exceptions are made. Hunting and trapping are not permitted in the PIPC portion of Piermont Marsh or in Iona Island Marsh. In these two areas, fishing and crabbing are allowed by permit, subject to the discretion of PIPC. These policies have been in effect for many years. Whatever hunting may have occurred on the PIPC-owned portion of Piermont Marsh was in violation of park regulations. Within the Village of Piermont boundary (including most of the DEC parcel) under most circumstances Village law prohibits shooting within 500 feet or any building or playground, but shooting is legal otherwise. Most of the DEC land is not within 500 feet of a building or playground, which leaves any policy regarding hunting to the discretion of DEC. There are no laws in the Town of Orangetown or Rockland County specifically prohibiting the use of rifles for hunting but State Conservation Law prohibits the use of rifles for hunting deer in Rockland County and Dutchess County. All of the discretionary policies of the involved State agencies are under review.

COMMENTS AND RESPONSES

1. FEDERAL AGENCIES

Statement of Air Force Position

On The Proposed Hudson River Estuarine Sanctuary

And Draft Environmental Impact Statement (DEIS)

We have reviewed the proposal for the Hudson River Estuarine Sanctuary and DEIS and offer the following comments:

1-1 a. According to the 8 July 1982 DOD Area Planning Chart for Military Training Routes, the proposed sanctuary area does not underlie any existing military training routes or military operating area. However, training routes and operating areas are changed frequently for mission-essential purposes.

1-2 b. Page 82, Paragraph 2.c., State and Federal - We request that the designation document for the Hudson River Estuarine Sanctuary include the following statement:

> Defense Activities. The regulation of those activities listed in this designation document shall not prohibit any activity conducted by the Department of Defense that is essential for national defense or because of emergency. This includes military flights above or in the vicinity of sanctuaries. Such activities shall be conducted consistent with all regulations, to the maximum extent practicable.

1-1 Comment accepted. No response necessary.

1-2 Comments accepted. The statement is included in the FEIS.

U.S. Department of Transportation
United States Coast Guard

Commandant
United States Coast Guard

Washington, DC 20593
Staff Symbol: G-WP/11
Phone: 202-426-2262

JUL 21 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven St. N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

2-1 My staff has reviewed the Draft Environmental Impact Statement on the proposed Hudson River Estuarine Sanctuary and offer the following comment. On page 110, "Existing Jurisdiction"-- under Department of Transportation, U.S. Coast Guard, change the "Legislation" cite from 14 USC 89 to 14 USC 2, Primary Responsibilities of the Coast Guard.

The opportunity to review this document is appreciated.

Sincerely,

2-1 Change has been made in the FEIS.

30 JUL 1982

Dr. Richard J. Podgorny
Office of Coastal Zone Management
National Oceanic and Atmospheric
Administration
U. S. Department of Commerce
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny

Attached is a statment of the Air Force position on the Proposed Hudson River Estuarine Sanctuary and Draft Environmental Impact Statement (DEIS). We appreciate the opportunity to review this document. Please provide us with a copy of the Final Environmental Impact Statement (FEIS) and designation document when completed.

Sincerely

ROBERT L. KLINGENSMITH, Colonel, USAF
Chief, Environmental Division
Directorate of Engr and Services

1 Atch
Air Force Position
Statement

105

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

IN REPLY REFER TO:

July 27, 1982

Ms. Joyce M. T. Wood
Director, office of Ecology
and Conservation
U. S. Department of Commerce
Washington, D. C. 20230

Dear Ms. Wood:

3-1 The Federal Energy Regulatory Commission staff has reviewed the Draft Environmental Impact Statement on the proposed Hudson River Estuarine Sanctuary. Staff has no comments at this time. The opportunity to review the DEIS is appreciated.

Sincerely,

Carl N. Shuster, Jr. - Ph.D.
Coordinator, Coastal Zone Affairs
Task Force

3-1 No response necessary.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

16 JUN 1982

1982 JUN 24 AM 8:56

OFFICE OF
THE ADMINISTRATOR

Dear Dr. Podgorny:

I am writing to verify the official filing of the EIS entitled:

Draft: Proposed Estuarine Sanctuary Grant Award, Hudson River Estuarine Sanctuary, New York (#820385)

This EIS was received by the Office of Federal Activities on June 10, 1982. It has been determined the above document meets the requirements for filing an EIS as set forth under Section 1506.9 of the CEQ Regulations. Accordingly, EPA has scheduled publication of the Notice of Availability in the Federal Register dated June 18, 1982 and the public review period is scheduled to terminate on August 2, 1982. 4-1

If you have any questions or concerns relating to this matter, please do not hesitate to contact me or Ms. Jan Lott of my staff on 245-3006.

Sincerely,

Kathi L. Wilson

Kathi L. Wilson
Management Analyst
Office of Federal Activities (A-104)

Dr. Richard J. Podgorny
Sanctuary Projects Manager
Office of Coastal Zone Management
National Oceanic and Atmospheric Administration
US Department of Commerce
3300 Whitehaven Street, NW
Washington, DC 20235

4-1 No response necessary.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

21 JUL 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Class: LO-2

Dear Dr. Podgorny:

We have reviewed the draft environmental impact statement (EIS) concerning the proposed estuarine sanctuary grant award to the State of New York for the creation of a Hudson River Estuarine Sanctuary System at Stockport, Tivoli, Iona and Piermont marshes. According to the Estuarine Sanctuary Guidelines, Section 921, grants may be awarded on a matching basis to states to acquire, develop and operate natural areas as estuarine sanctuaries in order that scientists and students have the opportunity to examine ecological relationships within the area over a period of time.

The Environmental Protection Agency (EPA) has no objections to the concept of establishing an estuarine sanctuary but we believe that additional analysis and evaluation of the alternative locations is needed. The following comments are offered to assist you in preparing such an analysis for inclusion in the final EIS.

5-1 To fulfill the requirements of an EIS, the alternative sites, the Peconic-Flanders Bay area and the Nissequogue River, need to be fully described and evaluated. Location maps and the evaluation of the state's sanctuary evaluation steering committee should be presented to aid in review of the EIS. We are particularly interested in the evaluation of the Peconic-Flanders Bay area as it is a unique and threatened area, whereas the proposed Hudson River sites are already publically owned.

The final summary should clearly state that while scientific, educational, and multiple use are the intended uses of the estuarine sanctuary, the primary purpose of the sanctuary is to provide long-term protection for natural areas.

5-2 Use of the sanctuary is allowed according to the Estuarine Sanctuary Guidelines to the extent that use does not prevent the long term protection or adversely impact the continuing existence of the ecosystem. To adequately review the proposed program, the final EIS should contain the following:

5-3 1) Provide proposed locations and plans for construction of buildings, roads, parking lots, trails and boardwalks within the sanctuary sites.

5-1 NOAA feels that the discussion presented on alternative sites in Part II, B.2. is adequate within the scope of this EIS since the proposed action concerns the Hudson River site, and because the Peconis-Flanders Bay area was thoroughly reviewed in 1980 by the State and was withdrawn by the State because of lack of local support. The residents of eastern Long Island did not want an Estuarine Sanctuary at Peconis Bay.

5-4 2) Evaluation of the intended research in terms of its effect on low intensity recreation such as fishing, etc. Would the proposed research cause potential use restrictions or conflicts now or in the future?

5-5 3) Provide for monitoring tailored to determine the effects over time of the specific research proposed. Monitoring results that indicate negative effects to the ecosystem should result in termination or alteration of the causative research and restoration of any adversely affected sites.

5-6 4) Plan for appropriate nationwide distribution of sanctuary research and studies.

5-7 5) Determination of hydrological systems that each proposed estuarine sanctuary area is dependent upon for its continued existence. It must be determined if the proposed boundaries encompass the entire estuarine hydrologic system or if the sanctuary area may be threatened by changes in the hydrology of the area surrounding the sanctuary. A discussion of potential threats to the sanctuary should be provided.

5-8 6) Archaeological sites should be identified. Protection of these sites from potential impacts by the proposed uses should be discussed by the final EIS.

5-9 7) Determine to what extent public use of the santuary will increase with the provision of facilities and additional access and what impacts this may have on the area. Should the proposed sanctuary encourage public visits in excess of that expected, and determined to be adversely affecting the sanctuary, we recommend that provisions be made to limit access.

5-10 The proposed estuarine sanctuary sites are termed "among the Hudson's highest quality estuarine natural areas." We have reservations concerning a few of the possible research projects listed as examples in the draft EIS and request more information to provide a review. Should consideration be given to implementing these studies, careful evaluation must be made of the possible impacts in order to ensure that the estuarine ecosystem is not adversely affected. These projects include:

1) sources and cycling of toxic substances. We recommend that studies be conducted on toxins already existing in the wetland ecosystem.

2) effects of introduced plant and animal species.

3) assimilative capacity of natural environments for nutrients and other waste materials.

4) manipulative experiments on wetlands.

5-2 Estuarine Sanctuary Guidelines, 921.3 "Objectives and Implementation of the program. General. The purpose of the estuarine sanctuaries program is to create natural field laboratories in which to gather data and make studies of the natural and human processes occuring within the estuaries of the coastal zone...the primary use of estuarine sanctuaries shall be for research and educational purposes,..."

Statements appear throughout the document (ex. pages 1,2,4,6,14,20,79, and appendix 7) which clearly present the purpose of establishing an estuarine sanctuary.

An additional statement has been added on page v of the summary.

Additionally, given the way our designation process works right now, all this information will be provided during the development of the sanctuary's management plan. The Research Plan, which will be developed as part of the management plan, is a plan based on information needs of the area, including monitoring, the identification and protection of archeological sites. Public use and access will also be described in the management plan. NOAA does not fund the Research plan, it is funded whenever the State has money available. Items 1 through 7 plus many other issues will be addressed in the sanctuary's management plan, which will be formulated within one year after the acquisition grant is awarded. The plan will be prepared under the direction of the Sanctuary Steering Committee in full consultation with State agencies, the Sanctuary Advisory Committees, and the public. The plan will provide a framework for conducting research and educational programs and for integrating public uses into broader National Estuarine Sanctuary purposes, while ensuring compatibility of the various Federal, State, and local programs already in effect on the Hudson River. There will be a distribution of the management plan to everyone that is interested.

Based on the above, and in accordance with Environmental Protection Agency
5-11 policy, we have rated this EIS as LO-2, indicating that we lack objections (LO) to the proposed project but that more information (2) on the alternative plans is required to more fully evaluate them.

Any questions regarding our comments should be directed to Christine Yost of my staff at FTS 264-0722.

Sincerely yours,

Richard M. Walka

for Anne Norton Miller, Chief
Environmental Impacts Branch

cc: Joyce M.T. Wood, Director
Office of Ecology and Conservation

5-3 Locations and plans of buildings, roads, parking lots, trails and the boardwalk will be discussed in the Sanctuary Management Plan. No new buildings will be built as currently envisioned. Existing buildings, at the Bear Mountain Trailside Museums complex (Iona Island area) and at the Bard College Field Station (Tivoli Bays), would be renovated and/or enlarged as appropriate, to house sanctuary research and educational facilities. These improvements will not require clearing new sites, and are located away from the margins of the tidal wetlands and waters. New roads will probably not be built; road improvements currently anticipated would be to existing or old roads or trails. All trails under consideration are existing or old trails with the exception of a proposed nature trail on the Gays Point area of the Stockport site; this area is on old dredge spoil. Parking areas under consideration would be small (approximately 6-12 cars each) and constructed in existing openings or site of former intensive use. No parking lot construction is anticipated at Iona or Piermont. The boardwalk at Tivoli would be sited at the edge of the North Bay marsh in a location that would be examined for potential conflict with protection of rare species.

5-4 Conflicts of research with recreation - see responses to comments presented at the hearings. Very little conflict is anticipated because there are many times and places where research can be done that are not permissible or desirable times/places for recreation or consumptive uses.

5-5 Monitoring impacts of research is appropriate.

5-6 Distribution of research results would occur through a newsletter and conferences of the National Estuarine Sanctuary Program, scientific journals, and the popular press, as well as other educational media suggested on DEIS p. 25-26, as appropriate.

5-7 Hydrological interactions and hydrological sufficiency of the proposed sanctuary will be addressed in the Sanctuary Management Plan and in the sanctuary's environmental monitoring program. Potential threats to the proposed sanctuary will also be discussed in the management plan.

5-8 Planning for uses of the proposed sanctuary will take into account information on locations of archeological sites.

5-9 The areas under consideration for the more intensive types of public use (e.g., waterfowl hunting, interpretive exhibits) are either already being used for these purposes, or will be determined through additional siting studies to be appropriate for these uses. If public use grows beyond the "carrying capacity" of parts of the proposed sanctuary, measures will be taken to reduce impact or restore habitats (e.g., closing parking areas or gates, reducing numbers of permits, closing the boardwalk at certain seasons).

5-10 The possible research projects listed on DEIS p. 22-24 are examples of research that could be done in the proposed sanctuary. A research prospectus will be included in the Sanctuary Management Plan or in a separate document that could be issued after sanctuary designation. Research permits would not be issued for quality of the sanctuary sites. Specifically: toxic substance research would be directed towards substances present in the environment (not introduced for research purposes); introduced species research would be directed towards species already present such as purple loosestrife, water-chestnut, and carp; studies of assimilative capacity for nutrients already entering the system, or fertilization studies on small plots if this is deemed safe; manipulative experiments as listed in item (7) on DEIS p. 24 would be performed on sites outside of the proposed sanctuary, with permission of the landowners (unintentional "experiments" of this sort are being done now and there is a need to know the impacts).

5-10 (cont.) NOAA agrees that every research project must be carefully evaluated, before implementation to ensure that the estuarine ecosystem is not adversely affected.

5-11 It would be academic to further evaluate the Peconic-Flander Bay area as a potential estuarine sanctuary because it was withdrawn by the State in 1980 because of lack of support and lack of willing participation in the National Estuarine Sanctuary Program. NOAA has no new information to indicate the situation has changed.

Also, it would be academic to further evaluate the Nissequogue River site since it is rated a lower status by the State than the Hudson River site because of several factors including size, representative sub-systems, environmental quality, compatible land and water uses, potential for research and willing local support and participation. If granted the award, the State may establish only one sanctuary system. The State has elected to pursue designation of the Hudson River sites as its National Estuarine Sanctuary.

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, D.C. 20410

OFFICE OF THE ASSISTANT SECRETARY FOR
COMMUNITY PLANNING AND DEVELOPMENT

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street NW
Washington, D. C. 20235

Dear Dr. Podgorny:

6-1 We have reviewed the Draft Environmental Impact Statement and Management Plan for the proposed Hudson River National Estuarine Sanctuary. The anticipated sanctuaries from Stockport to Permont do not interrelate with properties or jurisdictional boundaries coincidental with HUD Community Development Block Grant or housing program projects. We do not anticipate infringement of HUD interests or requirements through approval of these sites. Management plans and usages projected for the Sanctuaries indirectly enchance local property values in the long run and, through protection of Hudson River amenities, increase the desirability of local jurisdictions as places of residence.

6-2 We endorse the proposed Hudson River Estuarine Sanctuary plans and recommend approval. Further information may be secured from our HUD New York Area Office CZM Coordinator, Bernard Levine.

Sincerely,

Richard H. Broun
Director
Office of Environment and Energy

cc: Joyce E. T. Wood, Director
Office of Ecology and Conservation, NOAA
Dept. of Commerce
Washington, D.C. 20230

6-1 Comments accepted. No response necessary.

6-2 Comments accepted. No response necessary.

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

AUG 6 1982

In Reply Refer
to: ER 82/1167

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
National Oceanic and Atmospheric Administration
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

We have reviewed the draft environmental impact statement for the proposed Hudson River Estuarine Sanctuary, Columbia, Dutchess and Rockland Counties, New York, and have the following comments.

7-1 Promotion and coordination of research and education toward a better understanding of the ecology of the Hudson River Estuary and proper management are stated as reasons for establishing a sanctuary under the National Estuarine Sanctuary Program. This is also a function of the Hudson River Foundation for Science and Environmental Research, Incorporated. The national program will be restricted to operation in four distinct areas of the estuary; the latter can operate in the entire estuary. In order to properly reflect the nature of potential impacts, the final impact statement should clarify the relationship between the Hudson River Foundation program and the National Estuarine Sanctuary Program. Also, the relationship between existing and proposed levels and types of use and access needs to be discussed in more depth.

7-2 The U.S. Fish and Wildlife Service letter of March 25, 1982, documents Section 7 consultation under the Endangered Species Act (87 Stat. 884, as amended), however, the letter is neither referenced nor included in the draft statement. A copy is provided so that it may be included in the final statement (Enclosure 1).

Segments of the Hudson River have been included in the Final List of Potential Wild, Scenic and Recreational Rivers which have been considered under criteria of the Wild and Scenic Rivers Act (Public Law 90-542, as amended). The segment in the study area being considered for potential inclusion in the System is the five mile stretch north of Barrytown to south of Malden on Hudson. Qualities which afford this designation are the significant fish habitat areas at the confluence of Esopus Creek and Tivoli Bay; the hydrology of this southernmost remaining free-flowing, sparsely developed segment of the Hudson River; and the historic value of Clermont, the home of Robert Livingston, a National Historic Landmark.

7-1 There is no formal relationship between the Hudson River Foundation and the proposed Hudson River Estuarine Sanctuary. No relationship would be appropriate since the Foundation has made no financial or program commitments and the Sanctuary has not yet been designated. Nevertheless the administration of the Foundation and the proposed management of the Sanctuary are aware of the commonality of interests and doubtlessly will be discussing implementation of mutual goals in the months ahead.

The relationship between existing and proposed levels and types of use and access will be described, in depth, in the sanctuary management plan, which DEC will prepare after receiving the estuarine sanctuary grant award.

The draft statement describing designation of the estuarine sanctuary
7-3 does not appear to conflict with these resources. However, the final statement should acknowledge and briefly discuss the Nationwide Rivers Inventory designation and how these resources will be affected by the proposed action. Specific criteria are provided at Enclosure 2. Please contact the Natural Resources Division, Regional Director, Mid-Atlantic Region, National Park Service, 143 South Third Street, Philadelphia, Pennsylvania 19106, telephone 215/597-7013, for further information.

The document states that the recreational qualities of the sites will be protected through the Memorandum of Agreement with State agencies. Inasmuch as the recreational properties of Iona Island and Tivoli Bay have received Land and Water Conservation Fund monies, we would encourage
7-4 planning compatible with their recreational activities and values. It should be noted that Iona Island was purchased in 1965 through the Federal Surplus Property Program pursuant to Public Law 91-485, as amended, for recreational use in perpetuity. The final statement should incorporate the views and concurrence of the New York State Parks and Recreation and Historic Preservation Agency.

Iona Island Marsh in Rockland County is designated a National Natural Landmark. This program encourages preservation of areas that illustrate the ecological and geological character of the United States, to enhance the educational and scientific value of the areas preserved, to strengthen cultural appreciation of natural history, and to foster a
7-5 wider interest and concern in the conservation of the nation's natural heritage. The establishment of a sanctuary could enhance this landmark designation. For additional information contact the Regional Director, North Atlantic Regional Office, National Park Service, 15 State Street, Boston, Massachusetts 02109, telephone 617/223-3769.

Specific Comments

Page 5, 1st paragraph - The nature of potential impacts should be
7-6 discussed at least in general terms. Additionally, since most of the acreage proposed for inclusion in the sanctuary is already in State ownership, the reason why the areas would not be available for research and education without the sanctuary program should be explained.

Page 6, 2nd paragraph - The use of the adjective "unspoiled" is not
7-7 entirely proper since all the areas have been subject to recreational, agricultural or industrial uses and river-borne contaminants such as PCB's and DDT.

Pages 35 through 40 - The Hudson River Fish and Wildlife Report for the
7-8 Hudson River Level B Study cited in the bibliography should also be referenced.

Page 72, 2nd paragraph - The apparent contradiction of two statements
7-9 regarding archeological sites made in this paragraph should be resolved.

7-2 Comments accepted. The letter has been included in the FEIS and referenced in Part III, A. 1. d.

7-3 Comments accepted. This information has been added to the FEIS in Part IV. F. 1.

7-4 Comments accepted. The DEC, when formulating the sanctuary management plan, will take these facts into account. The Memorandum of Understanding (see Appendix 8) embodies the concurrence of all relevant State agencies, including the State Office of Parks, Recreation, and Historic Preservation.

7-5 Comments accepted. DEC will contact the North Atlantic Regional Director upon finalization of the grant award.

7-6 Specific impacts are discussed in Part IV. B. The proposed areas are available for research and education, but these programs will be facilitated and implemented by the proposed sanctuary, as outlined in Part II. A. 3. f-h in the DEIS.

7-7 Comments accepted. The term "unspoiled" here means: relative to other areas in the industrial Northeast and along the Hudson specifically. This is made clear in the preceeding paragraphs in the DEIS.

7-8 Comments accepted. "NYS DEC 1978" has been added in part III. A. 1. d. of this FEIS.

7-9 There is no real contradiction: some work on archaeological excavation has been done, and more work remains to be done.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
HARRISBURG AREA OFFICE
100 CHESTNUT STREET, ROOM 310
HARRISBURG, PENNSYLVANIA 17101

ER-82/467 March 25, 1982

Dr. Nancy Foster, Deputy Director
Sanctuary Programs Office
Office of Coastal Zone Management
3300 Whitehaven Street NW
Washington, D.C. 20235

Dear Dr. Foster:

This responds to your Notice of Intent, as published in the Federal Register, to prepare an Environmental Impact Statement for the Hudson River Estuarine Sanctuary, New York.

7-13 Except for occasional transient species, no federally listed or proposed threatened or endangered species under our jurisdiction are known to exist in the project impact area. Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) is required with the Fish and Wildlife Service (FWS). Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. A compilation of federally listed endangered and threatened species in New York is enclosed for your information.

This response relates only to endangered species under our jurisdiction. It does not address other FWS concerns under the Fish and Wildlife Coordination Act or other legislation.

Sincerely,

Norman R. Chupp
Area Manager

Enclosure

cc:
Significant Habitat Unit, NYSDEC, Delmar, NY
Director, FWS, Washington, D.C. (OEC)
Regional Director, FWS, Newton Corner, MA (AFA/SE)
Field Supervisor, ES, Cortland, NY
Asst. Field Supervisor, ES, Upton, NY

HAO:DNBusch:lk 3/25/82

ENCLOSURE 1

7-13 Comments accepted. Please see response 7-2.

CRITERIA OF THE WILD AND SCENIC RIVERS ACT
(Public Law 90-542, as amended)

The Final List of Potential Wild, Scenic and Recreational Rivers constitutes the results of the Nationwide Rivers Inventory. Identified are natural and undeveloped rivers and river segments that meet the minimum criteria for further study and/or potential inclusion under the Wild and Scenic Rivers Act. The Inventory has focused on those rivers nominated by government agencies, private groups and/or individuals, which are significant for their recreation, cultural and natural values. Each of these rivers meet the minimum criteria of Public Law 90-542 and related guidelines which specified that an eligible river must:

1. Be five miles or more in length.

2. Be a free-flowing river or stream (rivers may have undergone some impoundment or diversion in the past).

3. Be generally undeveloped. (River corridors may be developed for the full range of agricultural uses and can include small communities as well as dispersed or cluster residential housing.) Be readily accessible by road or railroad or be largely undeveloped. (Rivers or sections or rivers with shorelines or watersheds essentially primitive or largely undeveloped.)

4. Be adjacent to or within a related land area that possesses an outstandingly remarkable geologic, ecologic, cultural, historic, scenic, botanical, recreational or other similar value. (Interpreted to near an area of multi-state or national significance.)

ENCLOSURE 2

7-10 Page 84 - The reference to the buildings to be razed is too general to assess the impact on the Tivoli Bay Historic District. The final statement should give more information on these specific sites and Section 106 planning with the Advisory Council on Historic Preservation pursuant to the National Historic Preservation Act. Documentation of concurrence for this sanctuary from the State Historic Preservation Officer should also be incorporated into the final statement.

7-11 Page 100, etc. - The use of the letters S, T, I and P should be explained either at the beginning or the end of the bibliography.

7-12 Page 110, Appendix 2 - Section 10 should also be cited under the listing for the Army Corps of Engineers.

We thank you for the opportunity to review and comment on this proposal.

Sincerely,

Bruce Blanchard, Director
Environmental Project Review

Enclosures (2)

7-10 The final disposition of the buildings at the Tivoli Bays site will be decided during the formulation of the sanctuary management plan.

Concurrence for sanctuary designation from the State Historic Preservation officer was obtained during the pre-acquisition application process and is on file.

7-11 The symbols S, T, I, P are explained at the beginning of the bibliography in the DEIS.

7-12 Comments accepted. Change made in FEIS.

CZM
REC'D.
1982 AUG -2 AM 10: 21
MAIL ROOM

(404) 262-6649

July 30, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Mr. Podgorny:

We have reviewed the Draft Environmental Impact Statement (EIS) for the Proposed Estuarine Sanctuary Grant Award to the State of New York for the Hudson River Estuarine Sanctuary. We are responding on behalf of the U.S. Public Health Service and are offering the following comments for your consideration in preparing the final document.

8-1 In general, we support the proposed grant award and proposed sanctuary designation. However, the designation and management of this sanctuary should not preclude the use of any control measures in the sanctuary for public health purposes.

8-2 Since it is foreseeable that mosquitoes could be a problem from the proposed sanctuary areas, the State and local public health department should be contacted for information on existing and future vector control measures.

8-3 With regard to the proposed research topics (page 22), consideration should also be given to including research about mosquitoes or other vectors of public health importance in the sanctuary. A study of the effects of past dredged material disposal upon mosquito propagation may be helpful to many Federal and State agencies involved in water resources activities.

We appreciate the opportunity to review this Draft EIS. Please send us one copy of the final document when it becomes available.

Sincerely yours,

Frank S. Lisella, Ph.D.
Chief, Environmental Affairs Group
Environmental Health Services Division
Center for Environmental Health

8-1 Comments accepted. No response necessary.

8-2 NYS Department of Environmental Conservation, the State's lead agency for this project, has contacted the appropriate public health agencies and requested this information.

8-3 Research related to mosquitoes and/or other vectors of public health importance in the sanctuary will be considered during the formulation of the sanctuary management plan. Also, please see response #5-3.

COMMENTS AND RESPONSES

2. STATE AND LOCAL GOVERNMENTS

Dutchess County
Environmental Management Council

P.O. Box 259
Farm & Home Center, Millbrook, N.Y. 12545
(914) 677-3488

July 12, 1982

Dr. Richard J. Podgorny
Sanctuary Products Manager
Office of Coastal Zone Management
3300 Whitehaven Street N.W.
Washington, DC 20235

Dear Dr. Podgorny,

9-1 I am writing in support of the application of the U.S. Department of Commerce and the State of New York for an Estuarine Grant, as expressed in the draft EIS issued in June 1982. It is my opinion and the unanimous opinion of the Dutchess County Enviromental Management Council that the Estuarine Sanctuary will provide a unique educational opportunity for the citizens of Dutchess County, a fact which will greatly enhance the value of the estuary as a resource. This greater personal involvement in the Hudson estuary will, by heightening public awareness, help develop a citizenry more responsive to public issues in regard to the Hudson River.

We feel that the draft EIS is sound, and we urge that the grant be awarded.

Sincerely yours,

Dr. Michael Rosenthal

Michael Rosenthal, Ph.D.
Chairman

MR:dm

Cooperative Extension in New York State provides equal program and employment opportunities

9-1 Comments accepted. No response necessary.

STATE OF CONNECTICUT

DEPARTMENT OF ENVIRONMENTAL PROTECTION

COASTAL AREA MANAGEMENT PROGRAM

CZM REC'D.
1982 AUG -2 AM 9:45
MAIL ROOM

July 29, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, NW
Washington, DC 20235

Dear Dr. Podgorny:

10-1 Thank you for the opportunity to review and comment on the draft Environmental Impact Statement for the Hudson River Estuarine Sanctuary. The State of Connecticut endorses the efforts of New York State to designate fresh and brackish tidal systems on the Hudson River. If these selected sites mirror the biophysical conditions found on the Connecticut River, they are truly outstanding and unique systems, at least from a regional perspective.

10-2 Our support for the Hudson Estuarine Sanctuary is tempered, however, by concern for the future fate of the sanctuary program for the southern New England region, particularly in light of the practical blueprint outlined by Clark (1982) for an effective sanctuary program. In our opinion, it would be regrettable if the Hudson River Estuary was the only sanctuary to be designated in the region. Rather, we feel that it would be prudent to develop a holistic program to address the full range of natural system variation worthy of inclusion throughout the entire region. It is our contention that typological representatives from both the Hudson and Connecticut Rivers should be designated in order to fulfill the directive of the sanctuary program and assure inclusion of the full spectrum of natural variation.

I am including for your information specific comments from my staff ecologist with regard to the Hudson River Estuarine Sanctuary from this perspective. Also included is a brief ecological description of the salient characteristics of fresh and brackish tidal marshes associated with the Connecticut and Housatonic Rivers. A conclusion and recommendation of the report from which they are exerpted is to designate and manage all fresh and brackish tidal marshes in these river systems as a collective natural area. Sanctuary designation of at least selective ones might facilitate that goal.

Again, thank you for the opportunity to review the DEIS for the Hudson River Estuary. We look forward to providing your agency with technical assistance in developing a truly representative and holistic program for the

10-1 Comments accepted. No response necessary.

10-2 Your concerns regarding the State of Connecticut's participation in the National Estuarine Sanctuary Program have been forwarded to the North Atlantic Regional Sanctuaries Projects Manager in NOAA's Sanctuary Programs Office for further action.

southern New England region. We would also appreciate the opportunity to discuss the merits of assigning the Long Island Sound regional status similar to the Chesapeake Bay and Puget Sound estuaries. Please direct any questions or comments to my staff ecologist, Mr. Ronald Rozsa; he may be reached at (203) 566-7404.

Sincerely,

Arthur J. Rocque, Jr.
Director

AJR/RR/mic

Enclosure

CONNECTICUT COASTAL MANAGEMENT PROGRAM

Comments on the Draft Environmental Impact Statement
for the Hudson River Estuarine Sanctuary

10-3 One apparent omission from the DEIS process is interstate coordination and consultation to determine the representativeness and quality of the Hudson River designations. At this time we cannot judge whether 1) this designation is representative, although it clearly is for New York State, 2) higher quality and therefore more desirable sites exist in the region and 3) there exists sites in the region that are emminently threatened and in greater need of protection through acquisition. According to Appendix 3 (Clark, 1982)*, the Connecticut River is acknowledged as 'an estuary of current high national interest' and, as signified by an asterisk, is felt to represent one of the best candidates for such designation. An obvious though unfortunate exclusion from this list is the Hudson River. (Another seemingly inconsistent recommendation is the inclusion of major estuaries such as Chesapeake Bay and Puget Sound and the blatant omission of the similarly large and productive Long Island Sound estuary. Before Clark's regions are cast in concrete, we would like an opportunity to discuss the merits of assigning Long Island Sound and its estuarine rivers to regional status.) This would seem to indicate that there has been little or no attempt to understand either the Hudson or Connecticut Rivers in a regional framework.

To resolve some of these concerns and to assure that the best sites are eligible for inclusion in the Southern New England Region sanctuary program, we propose the following long-term strategy:

1. Establish a holistic sanctuary program for the region as suggested by Clark (1982). This will require the reclassification of the Hudson
10-4 River designations to subsanctuary status (i.e. typological systems) within the Southern New England Region. This will establish a flexible program for the inclusion of other typological conditions not represented on the Hudson and to include all significant natural variations that currently exist in the region. Therefore, the significant variation observed on the Connecticut River can supplement and compliment the Hudson River designations.

2. Proceed with the designation of the Hudson River sites since these represent a segment of the variation that exists for large tidal rivers.
10-5 Only combined nominations from both the Hudson and Connecticut Rivers can provide the region with a full compliment of fresh and brackish tidal system variation for large river systems. Such segmentation may be necessary as is encouraged by Clark (1982). Ecologists studying the Connecticut River and its intrinsic variation from site to site strongly contend that designations from both rivers is essential to the sanctuary program. That designations from both rivers is warranted

*Clark, John 1982. Assessing the Natural Estuarine Sanctuary Program American Littoral Society, New Jersey

10-3 Please see response #10-2. The National Estuarine Sanctuary Program has been reaching out to all States since 1974 to encourage their identification of appropriate estuarine areas for participation in the Program. NOAA does not have the responsibility to identify these areas, but relies on interested States to submit nominations. NOAA does evaluate, from a regional perspective all estuarine sanctuaries nominations submitted and selects the most appropriate site, based on site selection criteria stated in Subpart C - Selection Criteria, 921.20 in the Estuarine Sanctuary Guidelines.

10-4 Please see response #10-2.

10-5 Please see response #10-2.

is based upon the following:

10-6

A. No two wetland complexes, particularly such as those found in fresh and brackish water sections of either the Hudson or Connecticut Rivers are identical. Given the geographic isolation of the Hudson and Connecticut Rivers, and as the result of basic hydrogeological differences, it is reasonable to expect that there are some profound distinctions between their estuarine ecosystems. Only site inspections and detailed observation by scientists from both states will facilitate identification of salient differences and viable new candidates for the purposes of including natural variation in the sanctuary program.

B. The Connecticut River estuary supports a different assemblage of rare and endangered species (refer to Appendix 1 and 2). While seven of the listed plants are shared by both rivers, nine apparently occur only on the Connecticut River (not including the rarities associated with alluvial, non-tidal deposits). The practical aspect to including sites from both rivers is to include a larger assemblage of rare taxa, so as to protect a greater degree of genetic variation and safeguard certain species in the event of disaster, natural or otherwise, causing a local extinction on one River.

10-7

3. In cooperation with regional scientists, reassess the merits of assigning regional status to the Long Island Sound (at least if the sanctuary program is intended to be scientifically sound and complete in its approach).

10-8

4. Reformulate a sanctuary program of broader scope so that additional typological types can be nominated and designated for the purposes of complimenting existing nominations in order to fulfill the requirements of the estuarine sanctuary program; namely, to "reflect regional differentiation and variety of ecosystems so as to cover all significant natural variations...". Concurrently, early participation by and coordination between the states of the Southern New England Region is important so that a practical list of range of typological conditions can be compiled and selection of the most exemplary sites can proceed. Unless such cooperation is established, substandard sites might be inadvertently designated.

Appendix III contains a preliminary list of four sites and their salient features which in our opinion are clearly of New England regional value, particularly when viewed as a holistic system. At this time, and based upon Clark's recommendations, the areas proposed would not require acquisition funds (this is not to state that other equally valuable areas might not require acquisition funds or an alternative management strategy to less than fee simple acquisition). Those nominated are owned by the D.E.P. or the Connecticut Chapter of the Nature Conservancy. All have a history of research but many significant scientific questions remain unanswered.

There exists at least one general potential threat to all these areas;

10-6 Please see response #10-2 and #10-3.

10-7 Please see response #10-2.

10-8 Please see response #10-2. NOAA appreciates your comments regarding redesigning and reformulating the National Estuarine Sanctuary Program, however, these matters are beyond the scope of this EIS.

namely, proposed diversion of water from the Connecticut River in Massachusetts for the purposes of supplementing water supplies to the Boston Metropolitan area. This diversion proposal of long standing would inevitably be resurrected during the next drought. An Estuarine Sanctuary designation might safeguard these valuable resources, particularly those located at the fresh/brackish water tension zone.

RR/mic

7/29/82

APPENDIX I - RARE AND ENDANGERED PLANTS OF THE CONNECTICUT RIVER

SPECIES	STATUS
Equisetum palustre L.	CTR-slr
Isoetes eatonii Dodge	CTR-vuln;NEE/T; pUST
Zanichellia palustris L. var major (Boenn.)W.D.J. Koch	CTR
Sagittaria montevidensis C. & S. ssp. spongiosus (Engelm.) Bogin	CTR-vuln; NER
Diplachne maritima (Bickn.) Gl.	CTR
*Elymus wiegandii Fern.	CTR
Panicum stipitatum Nash	CTR-nlr; NEE/T
Puccinellia paupercula (Holm.) Fern. & Weath. var. alaskana (Scribn. & Merr.) Fern. & Weath.	CTR-sing; NER
Eleocharis diandra C. Wright	CTR-slr; NER
Scirpus torreyii Olney	CTR-slr
Orontium aquaticum L.	CTR-nlr; NEE/T
*Arisaema dracontium (L.) Schott	CTR-nlr; NER
Eriocaulon parkeri Robins.	CTR-vuln; NER
*Populus heterophylla L.	CTR; NEE/T
*Salix interior Rowlee	CTR
Nymphaea tuberosa Paine	CTR
*Polanisia dodecandra (L.)DC.	CTR
*Prunus allegheniensis Porter	CTR-nlr; NEE/T
*Vitis novae-angliae Fern.	CTR
*Ludwigia polycarpa Short & Peter	CTR-elr; NEE/T
Sabatia dodecandra (L.) BSP.	CTR-nlr: NEE/T
*Stachys tenuifolia Willd. var. platyphylla Fern.	CTR
*Teucrium occidentale Gray var. boreale (Bickn.) Fern.	CTR
Limosella subulata Ives	CTR
Valerianella radiata (L.) Dufr. var. fernaldii Dyal	CTR-nlr; NEE/T
*Bidens coronata (L.) Britt.	CTR-nlr
Bidens eatonii Fern. var. simulans Fassett	CTR-end; NER

*signifies taxa generally associated with the alluvial portions of the Connecticut River (these may occur on the alluvial levees associated with the fresh tidal wetlands)

CT - Connecticut
E - endangered
end - endemic
elr - eastern limits of range
NE - New England
nlr -northern limits of range
R - rare
p - a potential candidate
sing - single station
slr - southern limits of range
T - threatened
US - United States
vuln - vulnerable

Sources: 1. Crow, G. et al. 1981. Rare and Endangered Vascular Plant Species In New England. Rhodora 83:259-299.

2. Mehrhoff, L. J. 1978. Rare and Endangered Vascular Plant Species in Connecticut. The New England Botanical Club.

APPENDIX II - RARE AND ENDANGERED ANIMALS OF THE CONNECTICUT RIVER

SPECIES	STATUS
Pisces:	
American Brook Lamprey (Lampetra lamottei LeSueur)	Indeterminate
Shortnose Sturgeon (Acipenser brevirostrum LeSueur)	CTR; USR
Atlantic Sturgeon (Acipenser oxyrhynchus Mitchill)	CTR;UST
Atlantic Salmon	Restoration Program
Shad	best concentration in state, of commercial significance
Aves:	
American Bittern (Botaurus lentiginosus)	CTR
Marsh Hawk (Circus cyaneus)	CTR
Osprey (Pandion haliaetus)	CTR
Yellow Rail (Coturnicops noveboracensis)	CTR
Black Rail (Laterallus jamaicensis)	CTR
Piping Plover (Charadrius melodus)	CTR
Willet (Catoptrophorus semipalmatus)	CTR
Least Tern (Sterna albifrons)	CTR
Sedge Wren (Cistothorus platensis)	CTR

CT - Connecticut
R -rare
T - threatened
US - United States

Source: Dowhon, J. J. and Craig, R. J. Rare and Endangered Species of Connecticut and Their Habitats. Conn. Geol. Nat. Hist. Sur., Rpt. Invest. No. 6.

APPENDIX III - POTENTIAL CANDIDATE SITES ON THE CONNECTICUT RIVER
FOR THE ESTUARINE SANCTUARY PROGRAM

1. Griswold Point/Great Island Complex
   a. Griswold Point is an exemplary barrier beach spit typical for the embayed Long Island Sound. Site contains exemplary coastal grassland vegetation and is the critical breeding habitat for the state rare Least Tern and Piping Plover. Historically, the state rare grass, Panicum amarum, grew here.

   b. Great Island Salt Marsh and Intertidal Flats - This is an extensive salt marsh which functions as the critical breeding habitat for Ospreys and Willets. The rare northern wetland plant, Spergularia canadensis, probably grows here. Associated brackish wetlands historically supported the following rare plants: Puccinellia paupercula, Bidens eatonii var. simulans (the var. major grows on the Hudson R.) and Sabatia dodecandra. Also present is coastal woodlands on rocky knolls containing Post Oak, a tree nearing its norther range limits.

2. Lords Cove Brackish Wetland and Cove System
   Brackish cattail wetland with a lower intertidal zone of Spartina alterniflora and S. cynosuroides. This zonation is unique to this site. Rare plants include at least Zanichellia palustris and Sagittaria montevidensis. Potential rare animals for this and the freshwater tidal wetlands are Yellow and Black Rails, Sedge Wrens, Least and American Bitterns.

3. Seldens Cove Freshwater Tidal Wetland/Cove/Upland Forest
   This site supports an extensive freshwater tidal wetland. Particularly conspicuous is Wild Rice (Zizania palustris). Intertidal habitat historically supported 10 rare plants, one of which is Isoetes eatonii) which represents a potential candidate for U.S. Endangered/ Threatened status. An extensive upland bedrock hill and associated forest also occur on this site.

4. Chapmans Pond
   Chapmans Pond consists of extensive freshwater tidal wetlands and a deep, tidal freshwater pond interior to a levee. At least two rare plants occur here, Scirpus torreyi and Lophotocarpus spongiosus. This is one of the few such systems with a deep pond that serves as a finfish concentration area and refuge for overwintering fish

5. General Mainstem River
   The Connecticut River serves as a regionally significant biological corridor for Shortnose Sturgeon, perhaps Atlantic Sturgeon, . Atlantic Salmon and commerically significant runs of Shad.

Vol. 10(1):
March, 1982

NEWSLETTER OF THE CONNECTICUT BOTANICAL SOCIETY

CONNECTICUT BOTANICAL SOCIETY, INC. is formed to secure a thorough knowledge of the flora of the State, to accumulate, hold, and maintain such specimens and documents as are necessary for a permanent record of such flora; to identify and recommend for protection and management, areas of botanical significance; and to carry on such lawful activities as may conduce to the above objects and to hold and administer funds for such purposes. By-Laws, Article II

VEGETATION OF FRESH AND BRACKISH TIDAL MARSHES IN CONNECTICUT

The purpose of this article is to describe briefly the vegetation of fresh and brackish tidal marshes, an outstanding and uncommon class of tidal wetlands. These wetlands attain their optimal development on large river systems characterized by gentle slope gradients coupled with tidal influence over considerable distances. The marshes of the Connecticut and Housatonic Rivers are the most exemplary cases in Connecticut. Tidal inundation is the main factor shared by salt, brackish and fresh marshes, with dissimilarity in major floristic elements and physiognomy correlated to variations in salinity. As a rule of thumb, areas with salinities greater than 15 ppt (parts per thousand) and less than 0.5 ppt will support salt and fresh marshes respectively. Brackish marshes occupy the salinity zone between the fresh and salt marsh zones. The distribution of brackish and fresh marshes on the Connecticut and Housatonic Rivers is illustrated in Figure 1. Note that fresh tidal marshes on the Connecticut River north of the Salmon River have been excluded due to space limitations here.

In brackish marshes gradual salinity gradients can be observed in changes in floristic composition, vegetation pattern and physiognomy over short distances. The contrast between Great Meadow marsh in Essex and Lord Cove marsh in Lyme illustrates this point. Although this may be an oversimplification, the zonation or mosaic of vegetation across any particular marsh is correlated to duration and frequency of tidal flooding, as well as to salinity.

Figure 1a illustrates the typical zonation of vegetation commonly encountered on these marshes. The capital letters in the figure refer to the corresponding vegetation zones described below. Nomenclature follows Dowhan *(1)*.

A. *RUPPIA ZONE* (Brackish subtidal aquatic bed). Rooted aquatics such as *Ruppia maritima* L., *Vallisneria americana* Michx., and *Potamogeton pectinatus* L. prevail in brackish subtidal creeks, pools and coves. *Zanichellia palustris* L. is often locally abundant. The *Ruppia* Zone differs from fresh subtidal aquatic beds by the absence of freshwater subtidal species and by the relative abundance of *Ruppia maritima, Zanichellia palustris*, and numerous brackish water algae.

B. *ELODEA ZONE* (Fresh subtidal aquatic bed). Fresh subtidal aquatic beds are dominated by rooted aquatics, especially *Elodea* spp., *Vallisneria americana*, and a variety of pondweeds (*Potamogeton* spp.). *Ceratophyllum demersum* L., a floating aquatic, is also found in this zone as well as in brackish waters.

C. *SAGITTARIA - UNVEGETATED ZONE* (Lower intertidal flat). Regularly exposed lower intertidal flats are typically devoid of vegetation. However, *Sagittaria montevidensis* C. & S. ssp. *spongiosus* (Engelm.) Bogin, and *S. subulata* (L.) Buchenau, often form local, sometimes extensive colonies. On strictly freshwater tidal flats, *Ludwigia palustris* (L.)Ell., *Scirpus smithii* Gray, and *Elodea nutallii* (Planch.) St. John, also are found. Rare taxa historically collected in this zone are *Tillea aquatica* L., *Heteranthera reniformis* R. & P., *Limosella subulata* Ives, and *Eriocaulon parkeri* Robins.

D. *SPARTINA ZONE* (Midtidal brackish marsh). The *Spartina* Zone is restricted to regularly flooded portions of brackish marshes where it is similar in both floristic composition and midtidal position to its salt marsh counterpart. Although dominated by *Spartina alterniflora* Loisel., various admixtures of *S. cynosuroides* (L.) Roth, *Hibiscus palustris* L., *Amaranthus cannabinus* (L.) Sauer, and *Agrostis stolonifera* L., var. *palustris* (Huds.) Farw., often occur. In general, this zone is a useful indicator of the summer salinity conditions of the adjacent coastal waters. While brackish marshes with higher salinity have a midtidal area dominated by *Spartina alterniflora*, the corresponding zone in lower salinity marshes will contain dense colonies of *Scirpus pungens* Vahl, *Zizania aquatica* L., or both.

E. *SCIRPUS COMPLEX ZONE* (Midtidal marsh border). The *Scirpus* Complex occurs as a narrow zone in regularly exposed midtidal flats of fresh to slightly brackish sites. The vegetation is complex, ranging from almost pure stands of *Scirpus pungens* to mixtures of this plant with *Amaranthus cannabinus, Bidens laevis* (L.) BSP., *B. comosa* (Gray) Wieg., *Polygonum punctatum* Ell., *Sium suave* Walt., *Helenium autumnale* L., and *Spartina pectinata* Link. *Zizania aquatica* locally forms pure colonies.

(continued, p. 2)

WETLANDS, cont'd.

combine to elevate their overall significance: 1) physiognomic and species diversities are markedly greater in these marshes than salt marshes, a fact which contributes to increased wildlife use of the former; 2) these are critical habitats for a variety of rare plants and animals; 3) no two marshes are identical; 4) wild rice marshes are an outstanding type which function as significant resting and feeding areas for waterfowl, shorebirds, and especially Sora Rails; and 5) productivity can equal or exceed that of salt marshes. For these reasons, it is recommended that fresh and brackish tidal marshes be managed as collective, natural areas of state and regional import.

Note: The Quinnipiac River obviously once supported fresh and brackish marshes (2) at the turn of this century. However, this region has been omitted from this report since the status of these wetlands and their relationship to those described above is currently unknown.

- Ken Metzler and Ron Rosza

LITERATURE CITED:

(1) Dowhan, J. J., 1979. *Preliminary Checklist of the Vascular Flora of Connecticut.* Conn. Geol. & Nat. Hist. Surv., Rept. Invest. No. 8. Hartford. 176 pp.

(2) Fassett, N. C., 1928. *The Vegetation of the Estuaries of Northeastern North America.* Proc. Bost. Soc. Nat. Hist. 39:73-130.

VVV

MUSEUM FORMED

Recently, the Board of Trustees of the University of Connecticut voted into existence a MUSEUM OF NATURAL HISTORY (MNH). The Museum embraces the collections of the Vertebrate Museum (one of the best in the Northeast); the entomological collections, the G. Safford Torrey Herbarium, and the General Collection of living plants in the Biology Greenhouses. Taken together, these systematic collections are an extremely useful tool for teaching and research at all levels at the University and throughout the state.

All of the collections listed above are housed in the Torrey Life Sciences building on the Storrs Campus. There is no separate building for the collections; instead, the Museum is a new and unifying administrative framework for obtaining funding to maintain and upgrade the systematic collections. The Director, Dr. Carl W. Rettenmeyer (also Head of the Systematic and Evolutionary Biology Section of the Biological Sciences Group), anticipates that the existence of the new Museum will lead to continuing improvement in teaching and research in Zoology and Botany, and in service to the scientific and general public.

VVV

THE NEWSLETTER OF THE CONNECTICUT BOTANICAL SOCIETY *is pubnlished quarterly by the Connecticut Botanical Society, Inc., Donald M. Swan, President; Dr. Michael Wm. Lefor, Editor. Newsletter Committee: Leslie J. Mehrhoff, Joe D. Pratt, and Dorothy Swan.*
INSTRUCTIONS TO CONTRIBUTORS: *This newsletter welcomes unsolicited material. Manuscripts should be typed and double-spaced whenever possible. Illustrations should be in black ink on stiff white stock; photographs are acceptable -- black-and-white glossy prints. All illustrative materials should be suitable for reduction to a maximum of one-half their original size. All manuscripts are subject to review, especially those of a technical nature. All manuscripts are subject to editing for syntax, etc. Style will be left alone as much as possible. Authors will be shown final copy before the issue in which it is to appear goes to press. Originals submitted for publication remain the property of the newsletter unless we arrange otherwise, so it is adviseable to keep a copy of anything you submit.* ADDRESS MANUSCRIPTS TO:*Dr. Michael Wm. Lefor, The Botany Section, U-42, The University of Connecticut, Storrs, Connecticut, 06268.*

VVV

This issue marks the second anniversary of my editorship. I should like to thank all of those who have helped, commented, carped, written, typed, drawn, and printed as this publication has progressed to its present form. My personal thanks to all of you. -Ed.

PLANT LIST

A *LIST OF PLANTS* has been published by the University of Connecticut's Biological Sciences Group. The list, a systematic listing of the living plants in the Biology General Collections Greenhouses, was compiled by Mr. Eric A. Christenson, a graduate student pursuing taxonomic work in tropical Orchidaceae, and edited by Dr. M. W. Lefor of the Botany Section. The 40 pages list some 2000 species under cultivation for use in teaching and research. The collection has grown somewhat recently by exchange of excess materials with other botanical institutions and individuals. Copies of the list are available free of charge by writing to the Editor of this newsletter. The Greenhouses are open to the public during normal business hours, and an appointment to visit may be made by contacting the Supervisor, Ms. Pamela Lillquist, at (203)-486-4052, or by mail at Biology, U-42, University of Connecticut, Storrs, Connecticut, 06268.

VVV

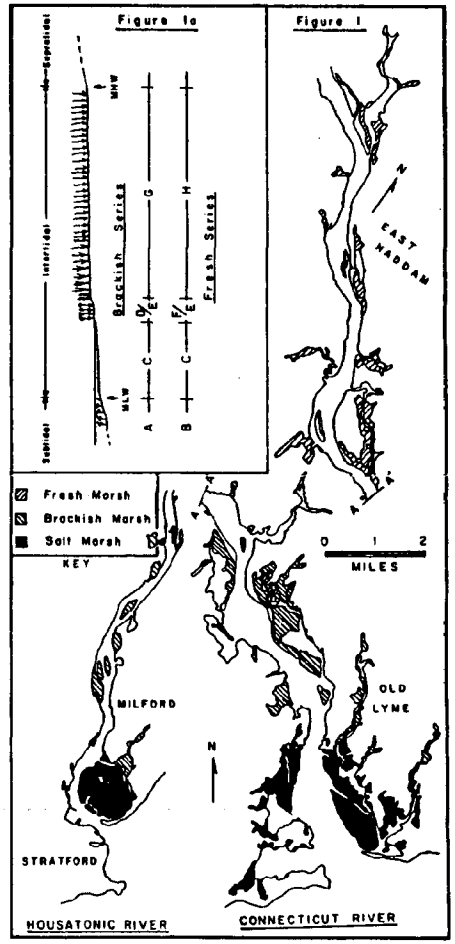
F. *ZIZANIA ZONE* (Midtidal flat). *In fresh to* slightly brackish waters, *Zizania aquatica* forms extensive, monospecific stands on midtidal flats. Associates include *Pontederia cordata* L., *Scirpus pungens*, *S. validus* Vahl, *Sagittaria latifolia* Willd., and *Nuphar variegatum* Engelm. Locally, *Orontium aquaticum* L. can be found. The *Zizania* Zone attains its greatest development in the lower reaches of the freshwater tidal zone. This vegetation is acknowledged for its great importance as resting and feeding areas for waterfowl, shorebirds, and a variety of terrestrial birds, particularly during their fall migration.

G. *TALL REED ZONE* (Upper Brackish marsh). Typically, Tall Reed marshes are dominated by *Typha angustifolia* L. with admixtures of *Phragmites australis* (Cav.) Trin. *ex* Steud., *Hibiscus palustris*, *Amaranthus cannabinus*, *Scirpus robustus* Pursh, and *Bidens laevis*. Locally, phragmites becomes an aggresive weed on disturbed sites created by mowing, burning and dredge spoil disposal. Floristic composition varies markedly from almost pure stands of *Typha* in the more saline reaches to a remarkably diverse and lush reed vegetation in the nearly freshwater locations.

H. *MIXED FORB ZONE* (Uppertidal fresh marsh). The Mixed Forb Zone is an extremely variable type of fresh marsh vegetation. It is composed of a number of co-dominant taxa which form an intricate mosaic over the marsh surface. Important species are *Scirpus fluviatalis* (Torr.) Gray, *Acorus calamus* L., *Calamagrostis canadensis* (Michx.) Nutt., *Typha angustifolia*, *T. latifolia* L., *Onoclea sensibilis* L., *Sagittaria latifolia*, and an endless list of grasses, sedges and forbs. Shrub thickets are locally found and consist primarily of *Alnus* spp., *Rosa palustris* Marsh., *Fraxinus pensylvanica* Marsh., *Amorpha fruticosa* L., *Viburnum recognitum* Fern., *Salix* spp., and *Acer rubrum* L.

Fresh and brackish marshes are indeed an uncommon to rare class of tidal wetlands in Connecticut. The area of fresh and brackish marshes on the Connecticut River is approximately 1,040 and 1,080 acres, respectively. In contrast to this are the figures for fresh and brackish marshes on the Housatonic River, namely 57 and 320 acres, respectively. Combined acreage of fresh and brackish marshes reported here represent a mere 6.3% and 8.0% of the total acreage of tidal wetlands, respectively. *Reduction of wetland acreage by* 50% since 1914 further magnifies their importance from the perspectives of their ecology and natural heritage. From a regional standpoint, the nearest estuaries known to support similar extensive fresh and brackish marshes are the Hudson River, New York, and the Merrimac River, Massachusetts *(2)*. Aside from their restricted range and occurrence, the following characteristics

- *continued, p. 3.*



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July 12, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, DC 20235

Dear Dr. Podgorny:

The Region 3 Fish and Wildlife Management Board reviewed and discussed the Draft Environmental Impact Statement of the Hudson River Estuarine Sanctuaries program at the regular June meeting in New Paltz. Regional FWM Boards are charged by law with the preservation and development of the fish and wildlife resources of the State and with maintaining and improving access opportunities for recreational purposes by the people of the State of New York.

11-1 It is a continued concern of the Board that the use of the term "sanctuary" to describe the program is inappropriate and misleading. The implied negative effects of the title "sanctuary" are contradictory to the hunting, fishing and trapping heritage of the Hudson River Valley. Parts III and IV of the DEIS are
11-2 well written, however, positive statements regarding the consumptive uses are lacking and/or inadequate. Educational and research programs are supported by the Board only if there are no adverse impacts on current recreational opportunities. The potential for conflicts between these permits is apparent and
11-3 nowhere in the DEIS is a clear-cut statement of priorities described.

Specifically, the DEIS is inaccurate in its statement regarding hunting on Piermont Marsh. Waterfowl hunting has been ongoing on that area since before 1940 and has continued through the past year. Fishing and limited trapping
11-4 opportunities can also be continued with no adverse impact and the DEIS should be more explicit.

ADVISORY MEMBERS New York State Department of Environmental Conservation, New York State Department of Agriculture and Markets, New York State Office of Parks & Recreation, New York State Conservation Council, Inc., New York Farm Bureau, New York State Farming Groups, New York State Forest Practice Board, New York State Bank Wildlife League, New York State Soil and Water Conservation Committee, New York State College of Environmental Science and Forestry at Syracuse University, New York State College of Agriculture and Life Sciences at Cornell University

11-1 Please see General Response A regarding the term "sanctuary" and multiple use.

11-2 Please see General Response B regarding consumptive uses in the sanctuary.

11-3 Please see response #5-2 regarding development of the management plan.

11-4 Please see General Response B regarding hunting on Piermont Marsh.

11-5 The DEIS can only be enhanced with a clearer reference to the implication that hunting, fishing and trapping opportunities are a bona-fide concern of the controlling authority. The nebulous statement of continuation of these recreational pursuits, coupled with the questionable theme of sanctuary designation, are not accepted by the Region 3 Fish and Wildlife Management Board.

Sincerely,

Peter Nuzzolese /a

Peter Nuzzolese
Chairman
Region 3 FWM Board

PN:db

11-5 These comments have been considered and addressed in the above responses.

OFFICERS
Chairman
Ira Reed, Jr.
314 Turkey Hill Road
Ithaca, New York 14850
(607) 273-7408
Vice-Chairman
Deane G. Winsor
Milford, New York 13870
(607) 286-7601
Secretary
Clark E. Pell
Division of Fish and Wildlife
New York State
Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233
(518) 457-5410

New York State
FISH AND WILDLIFE MANAGEMENT BOARD

July 12, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, DC 20235

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12-2 well written, however, positive statements regarding the consumptive uses are lacking and/or inadequate. Educational and research programs are supported by the Board only if there are no adverse impacts on current recreational opportunities. The potential for conflicts between these pursuits is apparent and
12-3 nowhere in the DEIS is a clear-cut statement of priorities described.

12-4 The present levels of utilization at Tivoli Bays and Stockport Flats are satisfactory, however, more positive assurances should be included in the DEIS. Hunting, fishing and trapping activities are a primary concern of the sportsman of the Hudson Valley, and a more forthright guarantee of their continuation is needed.

ADVISORY MEMBERS

12-1 Same response as 11-1.

12-2 Same response as #11-2

12-3 Same response as #11-3.

12-4 Hunters will be able to continue hunting where hunting is currently permitted on the proposed Estuarine Sanctuary sites. Some additional regulations for the Tivoli site are being developed by DEC in their site management plan. That plan was required by DEC's recent land acquisition at the site, and the plan will

12-5 The DEIS can only be enhanced with a clearer reference to the implication that hunting, fishing and trapping opportunities are a bona-fide concern of the controlling authority. The nebulous statement of continuation of these recreational pursuits, coupled with the questionable theme of sanctuary designation, are not accepted by the Region 3 Fish and Wildlife Management Board.

Sincerely,

Peter Nuzzolese III

Peter Nuzzolese
Chairman
Region 3 FWM Board

PN:db

12-4 (cont.) be written and implemented whether or not the estuarine sanctuary is designated. The Tivoli site requires more careful management precisely because DEC will allow the continuatjon of traditional uses of the property including hunting, fishing, and trapping, and because of the variety of uses and numbers of people involved at Tivoli.

12-5 Same response as #11-5

OFFICERS
Chairman
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New York State
FISH AND WILDLIFE MANAGEMENT BOARD

July 12, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, DC 20235

Dear Dr. Podgorny:

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13-2 well written, however, positive statements regarding the consumptive uses are lacking and/or inadequate. Educational and research programs are supported by the Board only if there are no adverse impacts on current recreational opportunities. The potential for conflicts between these pursuits is apparent and
13-3 nowhere in the DEIS is a clear-cut statement of priorities described.

Specifically, fishing opportunities should be continued at Iona Island. Limited trapping opportunities, perhaps under a controlled permit situation,
13-4 is a legitimate form of recreation and should be considered.

The DEIS can only be enhanced with a clearer reference to the implication
13-5 that hunting, fishing and trapping opportunities are a bona-fide concern of the controlling authority. The nebulous statement of continuation of these recre-

13-1 Same response as #11-1.

13-2 Same response as #11-2.

13-3 Same response as #11-3.

13-4 Comments accepted and will be given due consideration during the development of the sanctuary management plan.

13-5 Same response as #11-5.

ADVISORY MEMBERS: New York State Department of Environmental Conservation, New York State Department of Agriculture and Markets, New York State Office of Parks & Recreation, New York State Conservation Council, Inc., New York Farm Bureau, New York State Pomona Grange, New York State Forest Practice Board, New York State Bank Walton League, New York State Soil and Water Conservation Committee, New York State College of Environmental Science and Forestry at Syracuse University, New York State College of Agriculture and Life Sciences at Cornell University.

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Sincerely,

Peter Nuzzolese /tt

Peter Nuzzolese
Chairman
Region 3 FWM Board

PE:db

STATE OF NEW YORK
PARKS AND RECREATION
ALBANY

ORIN LEHMAN
COMMISSIONER

July 12, 1982

Dear Dr. Podgorny:

I am writing to endorse the concept and goals of the Hudson River Estuarine Sanctuary as detailed in the Draft Environmental Impact Statement submitted to your agency in June 1982 by the New York State Department of Environmental Conservation.

14-1 The four non-contiguous areas are tidal marshes owned by the State of New York and managed for the protection of their natural resources as well as for limited recreational activities. Dedication of these marshes and shallows as part of a National Estuarine Sanctuary will further assure ecological diversity and high biological productivity and will allow the State to enhance and extend existing management opportunities in the areas of research, education and recreation.

14-2 The New York State Office of Parks, Recreation and Historic Preservation owns and manages land at three of the four sites identified for inclusion in this sanctuary. While management responsibilities will continue to rest with this agency, we intend to cooperate fully with the Sanctuary Advisory Committee, a variety of citizens groups and sister agencies with ownership responsibilities in the furtherance of this program.

14-3 We are enthusiastic and proud to be an integral part of this challenging program. We stand ready to participate in any way we can.

Sincerely,

Orin Lehman

Dr. Richard Podgorny
Project Coordinator
Hudson River Estuarine Sanctuary
National Oceanic & Atmospheric Administration
Office of Coastal Zone Management
2001 Washington Avenue, N.W.
Washington, D.C. 20235

14-1 Comments accepted. No response necessary.

14-2 Comments accepted. No response necessary.

14-3 Comments accepted. No response necessary.

GERMANTOWN PARK COMMISSION

TOWN OF GERMANTOWN GERMANTOWN, NEW YORK 12526
518-537-6687

EDWARD A. ZAJAC, JR., Chairman
518-537-6570

BRUCE C. FINN 518-537-4520
CHARLES E. RAMSEY 518-537-6007

ALLAN J. TYMCZUK 518-537-6803
WESLEY LORENZ III 518-537-6098

January 27, 1982

Mr. Eric Kiviat
Hudsonia
Bard College
Annandale on Hudson, New York

Dear Mr. Kiviat,

15-1 A recent article in the Hudson Register Star indicated that you are involved in a Hudson River Estuarine Sanctuary Project. This letter is to offer our assistance and cooperation as determined by the Germantown Town Board.

The park commission operates two river access points. One called Cheviot Landing on the south side of town and the Half- Moon Anchorage in North Germantown.

If you have any questions regarding these access facilities, please feel free to contact me.

Sincerely,
GERMANTOWN PARK COMMISSION

Edward A. Zajac, Jr.
Chairman

EZ/flo

15-1 Comments accepted. No response necessary.

PIERMONT CIVIC ASSOCIATION

Piermont, New York

CZM RECD.
1982 AUG -2 AM 9 5
MAIL ROOM

July 27 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington,D.C. 20235

Dear sir:

16-1 The Piermont Civic Association supports the proposed Hudson River Estuarine Sanctuary as presented in the Draft Environmental Impact Statement.

The PCA has frequently expressed support for the preservation and study of the Piermont Marsh as shown by the enclosed

16-2 clippings from our Newsletter.At our June, 1982, regular meeting, the PCA sponsored a slide show and talk by Mr. Jim Stapleton of Hudsonia on the sanctuary program and it was very well received.

On the question of hunting and trapping in the Piermont marsh, we favor enforcement of existing regulations banning such

16-3 activity in the Palisades Interstate Park area and banning firearms on the Village pier property. Given the intensive recreational use of the pier and Tallman Park, the discharge of firearms presents a clear danger to the public.Hopefully, the sanctuary program policy of continuing past uses of lands will not include the past practice of ignoring hunting and trapping violations in areas where it is not permitted.

Very truly yours,

Bob Heitman

Bob Heitman-President
Piermont Civic Association

Enclosures

16-1 Comments accepted. No response necessary.

16-2 Comments accepted. No response necessary.

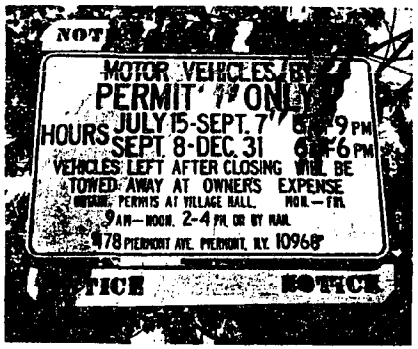
16-3 Comments accepted. Please see General Responses A and B.

SEPT. 1981

PERMITS ISSUED FOR VEHICLES ON PIER

As of July 15th a permit system was instituted on the pier to regulate vehicular use. A permit costs Piermont residents $10 and can be obtained at the Village Hall. People outside of Piermont must pay a higher fee -- Orangetown residents $25 and all others $50. After one month, 32 permits have been issued -- 1 for $50, 4 for $25 and the rest to Piermont residents. Mary Hardy reported that one man outside of Piermont who comes to fish considers this his vacation spot. He was happy to pay the fee. Who can have a vacation anywhere for under $50?

The permit entitles you to drive out on the pier from 6:00 a.m. to 9:00 p.m. in the summer until Labor Day. After Sept. 7th, the pier gate will be closed at 6:00 p.m. Plans are in the offing to build a small boat launching pad at the end of the pier on the south side. When this is completed, motorists who want to launch boats in addition will be charged an added fee.



New sign at the entrance to the pier. Pier permits are still available.

The permit system was devised by the Village Board to allow access to Piermont residents and at the same time create some control over this access so that the pier can be better maintained and policed. Already more litter containers have been placed on the pier and pick-up is every Monday after the weekend. A light is going to be placed by the gate to insure better security in that critical area.

There are those in Piermont who would like to see no motorized traffic on the pier at all and on the other hand, there are those who feel that the pier should be open to anyone who wants to go out there at any time. The permit system is a good compromise. It will be reviewed in a year to see how effective it has been or if any changes or improvements need to be made. And remember, if you want to walk or bike the most beautiful view on the Hudson River is still free.■

The Ecological Perspective

PIERMONT MARSH CONSIDERED FOR SANCTUARY STATUS

In the March, 1980, issue of the Piermont Newsletter, it was reported that the Piermont Marsh and other Hudson River marshes just missed being designated a national Estuarine Sanctuary through a Federal Program. An area on Long Island was chosen instead, but the Committee made this decision with great difficulty as they felt the Hudson River marshes were of highest priority, also. In the ensuing months, it was found that the community support needed for such a program was lacking in the chosen Long Island area and their selection had to be withdrawn. That put the Hudson River estuary next in line.

A public hearing was held at Lamont Doherty Geological Observatory on July 28th to gather local opinion again for this program on the river. The meeting was attended by Donald Hardy, Chairman of Piermont's Conservation Advisory Commission, as well as Nash Castro, Director of the Palisades Interstate Park Commission. Donald Hardy reiterated Piermont's interest and support of the program, as did Mr. Castro.

If accepted, the Hudson River estuary would receive federal money for acquisition of some land plus, more importantly, money for much-needed research. We need to know much more how the marshes in our unique estuary interreact within the system as a whole. This understanding is particularly vital to the fishing industry. We must learn how to minimize pollutants and their effect on all forms of Hudson River life.■

at the Library...

Opening seven days a week a year ago proved to be a very welcome service to the community. Our weekend hours will be beginning again the first weekend after Labor Day -- Sept. 12th and 13th. The Library Board is again making a plea to anyone interested in donating a few hours of their time to working a Sunday afternoon from time to time during the year. The weekend hours are: Saturday and Sunday from 1:00 p.m. to 5:00 p.m.; weekday hours: 3:00 p.m. to 10:00 p.m.

Tuesday afternoon film programs for school children will also be resuming on Sept. 15th at 3:45 p.m. Look for the schedule of films being shown either at the Library, the Bank, Post Office or on the bulletin board on the front of the Village Hall.

The Library is proud to present a beautiful display during the month of September. Eloise Stafford of Hudson Terrace has been working for years on needlepoint versions of the French tapestry series, "The Lady and the Unicorn." These exquisite tapestries were on loan to this country years ago and could be seen at the Cloisters or at the Metropolitan Museum of Art. They are now back home in the Museum of Cluny in Paris. Mrs. Stafford has recreated three of the six large tapestries -- hearing, sight and adoration -- plus several small inserts from them. The glowing red background laden with flowers enhances the magical quality of each scene. These reproductions are truly works of art in themselves. If you missed the exhibits of the originals, Mrs. Stafford's hangings will prove to be just as exciting.

On Wednesday, September 16th, the Library will be showing the film versions of two short stories by Isaac Asimov. "All the Troubles of the World" is a science fiction tale of a civilization run by Multivac, an all-powerful computer system. "The Ugly Little Boy" has been brought to earth from the Neanderthal Age. Attempts at communication and understanding still remain difficult even though scientists have succeeded in breaking the time barrier. Both films should be of interest to science fiction buffs and film buffs alike.

During the summer, the Library has been reviewing its record collection very carefully, replacing old or worn recordings with more up-to-date versions, and adding many standard classics that had previously been missing. The result is a superb selection of the finest recordings available of the top classical music. These new records will be the focus of our October display. On Sunday, October 18th, the afternoon will be devoted to listening to these recordings at your request while enjoying refreshments and talking to the Library staff and others about music.

Firth Haring, daughter of Mr. and Mrs. James Haring of Piermont, has just published her fourth novel, The Woman Who Went Away. It has been selected as a Literary Guild Alternate. Please leave your name at the desk if you would like to be put on the waiting list for this popular book. We also have the novels of two Grand View authors -- Tar Baby, by Toni Morrison and Morgana's Fault, by Susan Lukas.

Several good friends of the Library have recently donated invaluable historical material to its collection. The Scheffolds of Piermont Place found boxes of material stored in the attic from the previous owner of their house, Miss Main. In them were found many interesting papers pertaining to the beginning of the Piermont Library and the Piermont Improvement Association. Miss Main was the daughter of the family who owned the present library building and devoted many hours of loving service to the Library in her younger years. These papers can be seen by asking Grace Meyer, the Director.

A scrapbook of Florence Ripley Mastin was also donated to the Library. It includes clippings of her poems from newspapers and magazines, as well as a few pictures, letters and words written in the author's own handwriting. The Library now has quite a complete collection of Miss Mastin's poetry -- much of it devoted to Piermont and the Hudson River. If you have never read any of her poems, come and check them out to see her charming vision of this area years ago.

MARCH 1981

ERIE PIER TRANSFERRED TO VILLAGE, STATE

by Grace Meyer

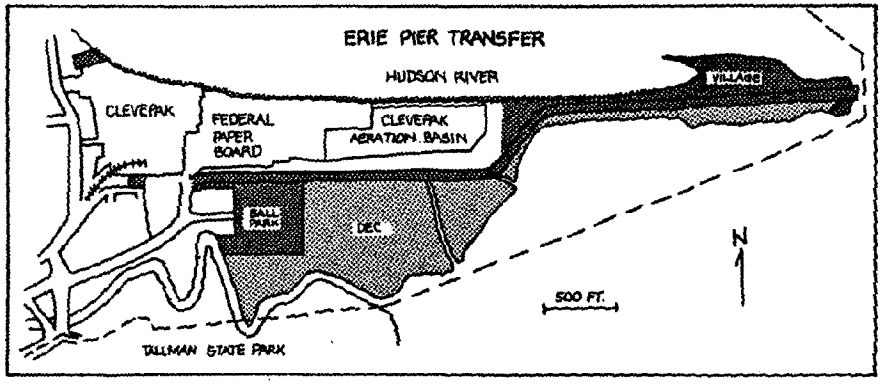
If you were to ask someone in Piermont to name one of their favorite spots in the Village, many people would answer: "The pier." But the pier has never really belonged to the Village. Even though many Piermonters have been out there for a walk or to fish, they have really been trespassing all these years because the property has belonged to Continental Can.

Now, as of February 6, the pier (for the most part) officially belongs to Piermont. That was an unexpected realization of a dream to many residents of Piermont and lovers of the river. The turn of events happened out of the blue. Some high echelon members of the Continental Group decided that the pier property was more of a burden than an asset and approached the Village to see if it would be interested in receiving it as a gift. Of course, the Village was more than interested, but also realized that it was accepting not just a piece of land, but the responsibility and costs of maintaining it. All of these factors had to be weighed in its acceptance.

now owns the north side of the pier from 15 ft. south of the pier road, plus the ball field area and Parelli Park. New York State DEC owns the south side by Nature Conservancy turning over their share to this agency so that the marsh might be preserved. This latter transaction was something the DEC had been working towards for quite a long time.

In March of 1978, Marge Spring, former Chairman of the Planning Board, learned that the state had some money available for purchase of wetlands and called the DEC in to look at the Piermont marsh to see if they would be interested in purchasing and preserving it. They definately were and had been working since that time to remove obstacles for acquisition. With this recent development, they were able to receive the marsh land instead of purchasing it. Now its preservation is assured.

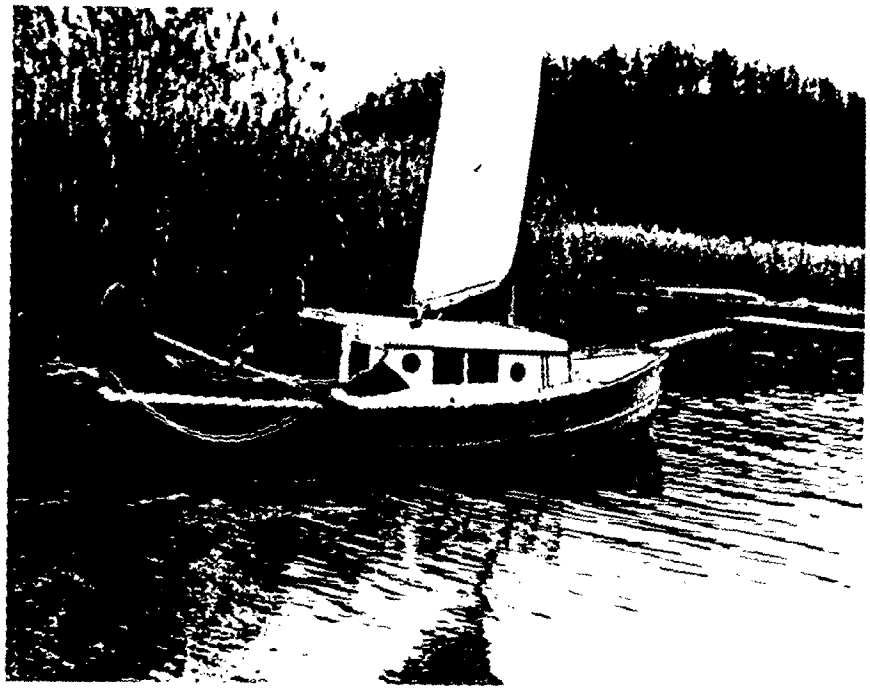
Hopefully, with this change of ownership we will see a marked difference in the appearance of the pier. In years past with an absentee landlord owning the property, it was virtually impossible to insist that they maintain it



The President of the Continental Group, being an environmentalist, was also concerned about the marshes on the south side of the pier, so Nature Conservancy and the New York State Dept. of Environmental Conservation (DEC) were also brought into the picture. A meeting took place in June with all groups involved to discuss how a reasonable settlement could be reached that would be satisfactory to all interested parties. A tentative agreement was drawn up. While the logistics have changed over the months, the final outcome has remained the same. Piermont

properly. Now that the Village owns it, the pier will be Piermont's responsibility, but it should also be the responsibility of all of us who love and enjoy it to start treating it better now that it belongs to us. The litter over the years has been appalling. For many years the Piermont Conservation Advisory Commission (CAC) sponsored an annual clean-up in an effort to alleviate the problem, but it was always just a temporary relief. Days later, it looked as if it had never been cleaned. We must all make a better effort now that it be-

(cont. p.4)



longs to us.

While it is all very exciting that this large portion of the pier now truly belongs to Piermont, we must also realize that its future is also in our hands. The Village Board and the Planning Board will be working on this planning in the months ahead. If you have any strong opinions or ideas, please let them be known.

A questionnaire was recently circulated asking for your opinion on several pressing issues in the Village. Please include your opinions on this newly-acquired pier property as well. If you have not received a copy of the questionnaire, inquire at the Village Hall. ■

PEOPLE

The Reverend Walter Van Popering is the new pastor at the Reformed Church. He was previously serving as interim pastor at the Fort Washington Collegiate Church in Manhattan, after serving for five years at the First Reformed Church in New Hyde Park on Long Island and nineteen years before that at the Walkill Reformed Church upriver.

The Reformed Church congregation is very active, including a youth group which meets Friday evenings, a Missionary Society and a Women's League noted for their chicken dinners. Sunday functions include Sunday school at 9:30 a.m. and church service at 11:00a.m. Special lenten services in conjunction with neighboring churches are planned.

Reverend VanPopering offers that he is a fanatical bridge player and will respond to any invitation for a fourth hand. ■

MAR. 1981

The Ecological Perspective

WHICH WAY THE WIND IS BLOWING

by Tom Mitchell

The Piermont Conservation Advisory Commission has obtained detailed information on wind speed and direction on the pier during the period of March through July, 1980.

On March 7, 1980, the York Services Corporation of Stamford, Connecticut, installed a device on a utility pole on the Ferry Road that monitors both wind speed and direction and records the average for each hour.

Conservation Advisory Comission members noticed the device and made inquiries as to its owner, being interested in the data. Finally, it was traced to York Services through Con Edison, which had let a contract to collect and analyse the wind data.

One possible application of this data concerns accident studies for the nuclear power site upriver. But the wind data is interesting to Piermonters for other reasons than to note that at noon in March, April and May, the wind is usually blowing towards us from Indian Point at a speed carrying particles to us in about one hour-and-a-half.

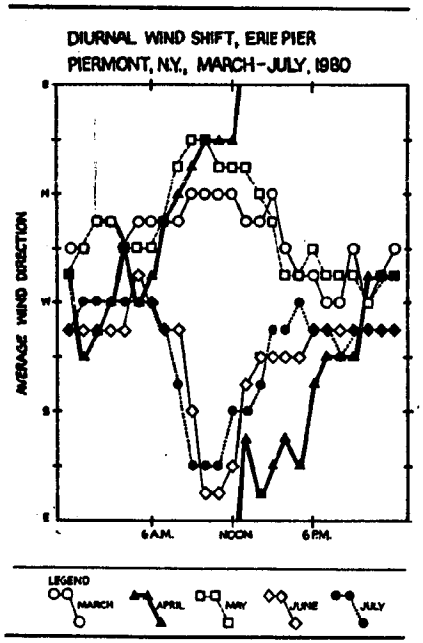
Local sailors and all boaters have noted wind shifts on their own observation. The data show that the wind is usually from the west before dawn and shifts into the north in the spring but into the south in the summer during the morning (see graph). Peak wind speed is usually about 4:00 p.m. and the greatest recorded wind speed was 32 mph on March 21.

Romantics whose heads seem to spin in April may be charmed to know that during April, 1980, the wind direction spun completely around the compass over the course of the average day, coming from the west at 3:00 a.m., the north at 8:00 a.m., the east at 1:00 p.m. and the south at 6:00 p.m.

The Conservation Advisory Commission values the wind data as a basis for evaluating the potential of the pier as a site for windpower alternate energy projects. The CAC is also collecting information on several other sites in the village with its own wind odometer.

The data cooperatively shared by York Services with the CAC are a priceless "windfall" for the village which could never afford the expense of the recording device and computer analysis of the hourly readings. (The printout sheets for each month are about six feet long.)

One suspects that the pier is a good site since it is exposed to both wind funneled up and down the river and wind funneled through the Sparkill wind gap between Clausland Mountain and the State Line. But a good suspicion does not provide the hard numbers needed to make accurate predictions of power output and the York data has enabled the CAC to ask both the state Department of Energy and a manufacturer for their assessments of the pier site.



Unfortunately, at the end of September, 1980, the recording device was vandalized and has not yet been repaired, so that the wind data over these months has been lost to us. It appears that a rifle or shotgun was used to blast off the rotating anemometer cups.

(cont. p.6)

WIND, cont.

In this case, the reckless misuse of firearms destroyed an expensive scientific instrument, but a fool with a weapon is not just dangerous to property. Let us hope that the discharge of firearms on the pier is banned before someone is a casualty. Bird hunting next to the Tallman marsh sanctuary is a cheap shot, anyway.

* * *

The Conservation Advisory Commission welcomes new members Bill Herguth and Sue Hurst. ■

ZONING IN PIERMONT UNDER REVIEW

by Ken Barnes

Within the Village boundaries there are several different kinds of zoning. Each kind of zoning permits a different type of use according to set guidelines which are made in order to spell out the permissable and non-permissable uses on a certain piece of property. In recent times, local governments have found it necessary to reevaluate the present zoning to determine if changes are needed. This process is currently underway in Piermont.

The Piermont Zoning Code has eleven different classifications: R-40, R-20, R-15, R-10, R-7.5, R-1.25, R-M, WF-1, WF-2, BB and BA. The "R" classification means residential and the number following indicates the minimum size of the lot. This formula is broken down by multiplying the number times 1000. Therefore, R-40 would mean that the minimum lot size for R-40 zoning would be 40,000 square feet (about one acre). R-M zoning is multi-family residential such as Roundtree, Lawrence Park and Diplomat. WF means waterfront properties and any use for these areas are by special permit only as granted by the Village Board of Trustees. BA and BB indicates either business area A or B. A is heavy industrial and B is light commercial use such as Main Street.

Anyone who is interested in what area they live can check with the Village Hall on the Zoning Map. A rough map of the village zoning as it stood in 1969 on the opposite page shows areas that have changed uses and need rezoning.

The two areas which are of considerable importance are the occupied portion of the pier and the South Orangetown School District property, which includes the Tappan Zee Elementary School on a lot that totals about 37 acres.

As everyone knows, the occupied portion of the pier is presently used and owned by Federal Paper Board and Clevepak. They are zoned as Business A. The Planning Board is considering changing this zoning from BA to something else that is already in the Village zoning or maybe creating an entirely new classification which would be unique for that area.

In December, 1980, the Village Board held a public meeting on the subject of the pier and discussed the possibility of changing the pier factory area to residential use with a magic number of 280 units being built. This number merely represents the estimated number of units needed to replace the lost tax revenue under Judge Sullivan's 1980 ruling reducing taxes on the factory properties. This number does not represent any concrete or mandatory amount of units that will be built if a change were made.

Thought is being given to the idea that the north side of this area would be converted into a waterfront business area which would specialize in some sort of craft shops and would be done by converting and using some of the existing buildings. The remaining area would be used for residences of some form, ranging from single family houses to single family town house condominiums to multi-family apartments.

Whatever formula is worked out, it will be done with the utmost care and consideration for blending in with the surrounding environment.

It must also take note that these companies may remain in Piermont for the next fifty years and even if the zoning is changed, the companies may remain under the nonconforming use section of the zoning code which means that they already existed when the zoning was enacted. But all the same, the Village must be able to present a new zoning code which fits the current and future needs of Piermont.

The other area of great importance is the school property. There has been great concern about the undeveloped land that is part of T.Z.E. For years the village populace has speculated over the possibility that some day the school would close and be sold. So they have wanted the undeveloped land to be rezoned to protect its natural beauty.

A new study just prepared for the South Orangetown School Board recommends in two of their three plans that they close T.Z.E. by the 1983-84 school year. Also shown in this report is the recommendation that the school district sell off the undeveloped portion of the T.Z.E. property in the interim.

THE PIERMONT NEWSLETTER

VOLUME XIV, No. 4 PUBLISHED BY THE PIERMONT CIVIC ASSOCIATION DECEMBER, 1980

Clarence Branch, Jr. leading field trip along the Sparkill Creek — photo by Roger Pellegrini

The Ecological Perspective

STUDENTS EXPLORE SPARKILL CREEK

by Clarence Branch, Jr.

Of what importance is the Sparkill Creek to the communities along its path? When this question was raised in a ninth grade Science class at the South Orangetown junior high school, one student replied: "It's not really important, is it?" Other students challenged this uncertain view. They considered the creek to be important for such things as fishing, winter ice-skating and drainage. Further discussion and related assignments on other ways in which streams are important prompted plans for a class trip to several points along the creek.

Our main objective was to collect firsthand information about the creek that could help students to understand some basic principles of science. We also wanted to increase student awareness of the interdependence that

(cont. p.2)

exists between people and the biotic communities that occupy a stream environment.

On the day of the trip, students were accompanied by their teacher, Clarence Branch, Jr., and Tom Mitchell, a parent, amateur naturalist and close observer of the creek. Our first stop was the main headwaters of the creek, a pond near the top of Clausland Mountain. Drought conditions had reduced the pond to puddles of slimy water. But the students were undaunted. They were able to collect water samples and bottom sediments with ease. There was lively discussion among some members of the group about the unfortunate misuse of the creek by some people who use it as a dumping place for refuse. Their expressions were more than idle talk. These students, on their own initiative, removed cans, bottles and other litter from the stream and pond area and placed them in refuse containers.

Our next stop was a creek site along Route 303 near the intersection of Mountain View Avenue. Here, the students measured an appreciable stream flow. They observed a school of minnows and a few trout that were readily visible in the shallow clear water against the silt bottom. They soon discovered that catching fish with a seine is not always easy. However, diligence paid off. After several attempts, one of them made a quick scoop of the stream and netted a sample to take back to the classroom.

Student interest and excitement over the wildlife of the stream was obvious. But their interest included the "lifeless" conditions along the stream bank as well. They inquired about the recent bulldozing operations which had removed all of the vegetation from the east side of the stream for more than 50 meters. They asked about the effects of these changes on the stream and its wildlife. Shouldn't the exposed soil be re-seeded for plant growth or protected by shrubs? This and other questions made it clear that the field trip was indeed serving its intended purpose: students were raising important questions about the natural environment in their own community. They were also recognizing and collecting the kind of data that could be useful in finding answers.

The group returned to the bus and traveled to our next creek site in Sparkill. Along the way, students noted the meandering course of the stream near business and industrial establishments and wondered aloud about possible problems of stream pollution from such places.

The source of the creek on Clausland Mountain

Soon we had arrived at our next stop near the intersection of Ferdon and Valentine Avenues. Those students who live in the area were now in familiar territory and declared themselves to be "experts" on scouting this section of the creek. Following their lead, the group first explored the creek along William Street from the A.M.E. Zion Church to the Sparkill Fire House. They compared physical features of the creek with those observed at previous sites. While some students busied themselves with such activities as measuring stream flow rates and collecting plant specimens, others conducted chemical tests on water samples, seined the stream and chased salamanders that disappeared under stones and into mud flats.

Students noticed signs of occasional flooding and stream bank erosion in the immediate area. One student pointed out the stream flow gauge that is monitored by the United States Geological Survey. The class was reminded that readings taken from gauging stations can provide useful informations when records are kept over a given period of years.

Our next site was just across the street from the gauging station where the creek overflows into the skating pond when there is heavy rainfall. This stop turned out to be the highlight of the trip as students explored the waters in the tunnel and the diversity of plants and animals in the wildlife sanctuary along the creek. The excitement among the students seemed to spread to passersby who stopped to observe the group and to inquire about their activities.

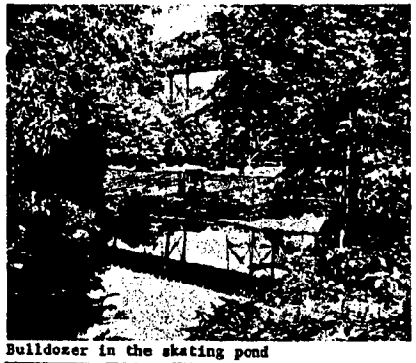
Before leaving the area, part of the excite-

ment shifted to puzzlement as the group stared at the unsightly condition of the skating pond. The shallow basin was completely void of water and plant growth, largely as the result of another bulldozing operation. Workmen at the site explained that the project was undertaken to deepen the pond so that it could contain a higher level of water for freezing during the ice skating season. "But what will happen to the animals that normally inhabit the pond?" asked one of the students. The answer became apparent as the group watched a large snapping turtle, recently unearthed by the bulldozer, struggling to find a new home. After a brief discussion of these engineering activities and their possible consequence to people as well as the ecological setting, it was time for lunch.

Subsequently, the group observed the waterfalls along the creek and probed stream depth below the dam. Noting the pumping station nearby, students asked about the use of creek water for industrial purposes. "How much water is used by the factory? Who regulates the amount of water that can be taken from the creek? Is the water cleaned up before it is returned to natural streams?" Again, the students' questions provide thought for adults as well as learning projects for the classroom.

Our last stop on the tour was the Hudson River. Time limitations and logistics would not permit us to follow the creek to the point where it joins the river. However, an alternate route by way of the pier road was eventful. Students were able to observe the marshlands which form a picturesque background for the meandering creek in the final part of its journey to the Hudson.

After a bumpy ride over the pier road, we arrived at the edge of the river where a few people were relaxing and enjoying the river view from the pier. Others were fishing in the shallow water nearby. The setting was tranquil. It seemed a perfect place to reflect on the activities of the day and to discuss with students some of the important lessons that nature has taught us about rivers and tributary streams like the Sparkill Creek. When these resources are treated with the care and respect which they deserve, they enhance our welfare. But our failure to observe this simple truth can, and often does, result in such horrors as flooding and pollution and all of the attendant problems that flow from these perils.■



Bulldozer in the skating pond

SEE PAGE 4 "AT THE LIBRARY" FOR THE CHILDRENS ANNUAL CHRISTMAS PARTY

Halloween celebrants in the Chemical Bank

Chemical Bank/photo by Jeff Weiner

at the Library...

by Grace Meyer

The Board of Trustees of the Piermont Public Library has been very pleased with the response to the Library's new hours and Sunday openings. Both the number of people using the Library and the circulation figures increased considerably during the first month of this expanded service.

Presently, Board members themselves are volunteering their time to make Sunday openings possible. Other members of the community are welcome to volunteer a Sunday afternoon in order to keep the Library open seven days a week. Contact Grace Meyer, Director, at 359-4595 for further information. The Library's new hours are Monday through Friday from 3 p.m. to 10 p.m. and Saturday and Sunday from 1 p.m. to 5 p.m.

Mardy Allen will have her dried flower pictures and arrangements on display at the Library during the month of November. Many of the items are from her shop next to the Piermont Exchange on Piermont Avenue. Her pictures are unique in that they are a combination of collage and dried flowers.

In December, the traditional Christmas display will again give you gift ideas available from our local shops in Piermont. Many of these gifts are handmade and relatively inexpensive. "Shop Piermont" is more of a pleasure each year with the continual addition of new shops.

The annual Christmas party for the children will be on Tuesday, December 16, at 3:45 p.m. Handmade ornaments will be made to decorate the tree in the Children's Room. Refreshments will be served. This party is always a lot of fun. Be sure to mark it on your calendar.

Grace Meyer, Director of the Piermont Public Library, is helping work on a cooperative project initiated by the Tappan Zee Elementary School to get children acquainted with the communities in which they live. Along with Mark Singer, TZE librarian, Dr. Holland, principal, and Dr. Lowris, music teacher, she took a group of nine children for a walk on the pier in October when the Clearwater was docked for its pumpkin festival. The children learned of the history of the pier and its importance in the Hudson River ecosystem. They are now working on different aspects of the pier -- past, present and future -- which will be presented in the form of reports, maps and constructions that may be viewed at the Piermont Library during the month of January.

VHS videotapes are now available through the Piermont Library and other libraries in the Ramapo Catskill Library System. Ask to see the catalog the next time you are at the Library. Some new feature films are available as well as some older classic titles. Requests must be made at least two weeks prior to showing date.

Ewan MacQueen was re-elected Trustee of the Ramapo Catskill Library System at their Annual Meeting in October. Mr. MacQueen will be serving a five year term as one of four trustees representing Rockland County on the Board. The Ramapo Catskill Library System serves four counties -- Rockland, Orange, Sullivan and Ulster. Through the System many services are available that could never be afforded on an individual basis. Inquire what these services are the next time you come to the Library.■

JOIN US!

1981 PCA DUES ARE NOW BEING COLLECTED

THE PIERMONT NEWSLETTER

VOLUME XIV, No. 3 | PUBLISHED BY THE PIERMONT CIVIC ASSOCIATION | SEPTEMBER 1980

The Ecological Perspective

TO CATCH A BLUE CRAB
by Tom Mitchell

Callinectes sapidus, the scientific name of the blue crab, means savory, graceful swimmer, certainly an apt description. It is also fierce and clever, as any who have pursued it for the table will tell you.

The blue crab ranges all along the east coast of the United States and beyond, occurring in greatest numbers in the Chesapeake Bay. The creeks and mud flat off the Piermont marsh are an ideal habitat for it and crabs have been taken in great numbers here for many years.

While many of the fish in the river are contaminated, particularly with PCBs, the blue crab has a remarkably efficient filter system of gills and does not metabolize this poison into the meat. But you can't enjoy this culinary treat unless you catch one first.

Used to be, crabbers in Piermont would return from a day's effort with bushels of crabs, but not often in recent years. Unless the late summer crab run improves dramatically this year, commercial crabbers may begin to abandon their pursuit since the return does not pay. But recreational crabbers can still come up with enough to provide a meal if not a feast upon this delicacy.

There are many methods used to catch crabs, including baited hand lines, nets, seines, collapsing traps and overnight pots. The collapsing traps with folding sides that snap shut when pulled in are most popular here. Crabbers will set out a dozen or more from shore, favoring the end of the pier and the ends of docks along the waterfront. Fish or chicken parts are commonly used for bait.

Overnight pots are also used, but require ingenuity to construct and a boat to get to them. These pots have funnel-shaped throats to let the crabs inside, much like lobster pots. Commercial crabbers have a sizable investment in manufactured pots, but recreational crabbers usually make their own according to their various skills and notions of a better crabtrap.

Having a rowboat and access to the Sparkill Creek, I have tried the overnight pot method as a novice this year with some success. I prefer low tide for going through the marsh because motorboats dare not risk encountering the many snags, leaving me to appreciate the undisturbed wading birds feeding along the mud banks. I use killifish from the creek for bait and can expect to return from a pleasant hour to an hour-and-a-half row out to the river with a couple of keepers from a couple of pots.

A blue crab measuring six inches point-to-point is what I consider a keeper, with seven-and-a-half my largest catch. Five inches does not yield much meat and is best returned to the river.

(cont. p.2)

ECOLOGICAL PERSPECTIVE, cont.

Crabs shed their shells periodically in order to grow and you may catch one that is a "buster" beginning to open up. Kept alive until it sheds, it is a soft crab delicacy. At low tide the remains of the shed shells can be seen along the bank.

Almost all of the crabs caught in the shallows are males, having a "T"-shaped piece on the underside of the shell. Females have a triangularly-shaped piece, but they spend most of their lives in deeper more saline water. Should you catch a female with a spongy egg mass attached to the underside, release her at once.

Why are the crabs getting scarce? There is no sure answer. Probably the decline has been caused by a combination of things.

Sure, there is a natural periodic rise and fall of the local crab population according to variations in natural conditions, making for good years and bad, but the good years are no longer as good or as frequent.

It may be that the old days of collecting by the bushel resulted in overharvesting and in time the population of crabs will rebuild itself if commercial crabbing declines. Maybe. In the meantime, by some estimates there are as many as a thousand overnight pots in the Tappan Zee. Crabbers should have the common sense to limit their catch rather than increasing their collection of traps.

It may also be that pollution is gradually reducing the carrying capacity of the marsh. Crabs are high up on the food chain and tend to concentrate any poisons, though luckily for us not in the meat. The marsh itself is a natural filter which collects all manner of debris and discharge in the stalks of the marsh grass, fragmites. Often you can see an oil-slicked sludge flowing up the creek as the flood tide comes in, releasing matter that has collected in the marsh. A section of the Crumkill Creek in the marsh has changed its course and the stagnant pool remaining is collecting a sample of this scum as it deposits onto the marsh. It is difficult to locate the source of this pollution, whether it is from the factory discharge, the Orangetown sewer pipe, coming in from the river itself, or a combination of all three.

Also, because of the life history of the crab, we feel the effects here of trouble crabs may encounter elsewhere along the coast. Adult crabs have a pair of swimmer fins and may travel as much as a mile at a time with the tide. Egg-bearing females head out to deeper, saltier water and even onto the continental shelf to hatch the young which then migrate back into the estuarial shallows, so that when crabs get scarce around the Piermont marsh, it does not necessarily mean the source of the problem is local.

Recreational crabbing is great fun, not only for the crabs you will catch. Going crabbing will take you into the marsh and along the river edge and let you see the fantastic variety of plant and animal life that lives here, producing more food per acre than some of the best cultivated farmland. Over a period of time, you will also become aware of the local state of the environment and hopefully seek to maintain it for future generations.■

PCA table staffers at the Bluegrass Fair: Bob Heitman, Liz Barnes, Tom Mitchell

Underwater rescue demonstration by the Piermont Fire Department at the Small Craft Association festival

MAR. 1980

The Ecological Perspective

by Grace Meyer

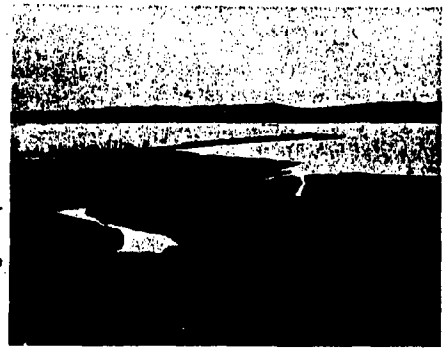
The Piermont Marsh just missed getting national recognition at the close of last year. It had been selected, along with four other marshes in the Hudson River, to be a possible estuarine sanctuary. The final selection was made by the Federal Coastal Zone Management group and other members of a Steering Committee. The Hudson River marshes were in competition with two proposals from Long Island. The Peconic/Flanders Bays Area on Long Island was chosen. One reason given for the rejection of the Hudson River marshes was their high level of pollution. The Estuarine Sanctuary Program is interested in more pristine areas.

There are currently seven estuarine sanctuaries in the United States, but none in the Northeast. It was the job of this Committee to select the most appropriate site. Once selected, federal money is available for acquisition on a matching funds basis, plus additional money each year for maintenance and research.

The Center for the Hudson River Valley in Poughkeepsie learned of this program and got together the proposal for the Hudson River marshes. Members of Piermont's Conservation Advisory Commission and Village officials were very pleased that the Piermont marsh was chosen to be included in their proposal. Grace Meyer attended several meetings expressing Piermont's interest in the program. Then on December 10 both she and Mayor Bryan met with the Steering Committee at Bear Mountain to discuss the project further and answer any questions they had about the Piermont marsh area.

The Committee's decision was made several days later, with great difficulty. They had to stay within the guidelines of the federal program, yet recognized the importance of the Hudson River marsh system. As a result, the following resolutions were made by the entire Committee:

1. That the Hudson River marshes be given priority for acquisition under applicable state and federal programs;



View of the Piermont Marsh and Sparkill Creek

2. That secondary status for the Hudson as an estuarine sanctuary under the federal program be pursued;
3. That state legislation establishing a special Hudson River marsh complex sanctuary with the same objective and purposes as described for the federal program be enacted in 1980.

So, even though this round was lost, it looks like it may have been just the start of a concerted effort to seriously look at the Hudson River marshes. A program like this is so important, not only for preservation but also for the much-needed research that would result. While isolated research has been done on several of the marshes along the river, there is a great need to study the interrelationships of these marshes and their functions in the Hudson River ecosystem as a whole.

The Piermont CAC intends to keep in close contact with the many fine people involved in this project: Fran Dunwell and Eric Kiviat from the Center for the Hudson River Valley, Tom Whyatt, Chairman of Management Committee for the Hudson River and J. Winthrop Aldrich, Special Assistant to the Commissioner of the State Department of Environmental Conservation, just to mention a few. Having local, state and now federal interest in the Piermont marsh emphasizes the point made in the PIERMONT NEWSLETTER a year and a half ago -- the extreme importance of that swampy-looking piece of land that just happens to be in our backyard -- the Piermont marsh.

CITIZENS' ADVISORY COMMITTEE SEEKS HUD FUNDS

by Bob Heitman

Piermont -- a village steeped in history, a mixture of varied age and ethnic groups, a place of lifelong residents and many newcomers, an active, caring citizenry -- a good place to live.

And yet, in spite of this, there are numerous things that can and should be done in our village to further improve and enhance the quality of our lifestyles. Two major items are required: a desire and willingness of people to work together (which we have) and the money to fund projects that are needed or desired (which we don't have)!

Obviously, in our already highly-taxed community, further taxation is not a pleasant thought. But, there is another way!

About five years ago, the federal government created a program under the aegis of the Housing and Urban Development Department (HUD) to prompt local governing bodies to get involved in worthwhile projects, furnishing the funds to accomplish these.

If you're like me, most likely you have heard the acronym HUD many times without ever really knowing about its many and varied worthwhile aims. The following is a partial listing of some of the areas in which HUD funds can be used on the local level:

1. Acquisition, construction, reconstruction or installation of
   a. Neighborhood facilities and senior centers
   b. Historic properties
   c. Utilities, streets, street lights, water and sewer facilities
   d. Pedestrian malls and walkways
   e. Parks, playgrounds and other recreational facilities
   f. Flood and drainage control
   g. Parking facilities
2. Acquisition of real property which is
   a. Blighted, deteriorated or undeveloped
   b. Appropriate for rehabilitation or conservation activities
   c. Needed for the provision of eligible public works
3. Special projects to remove barriers restrictive to the mobility of elderly and handicapped people
4. Provision of public services not otherwise available in areas such as facilities concerned with childcare, health, drug abuse, education, welfare and recreation

The above listing is far from complete, but gives you a general idea of the far-reaching scope of programs available through HUD.

Now, down to the nitty-gritty. Believe it or not, folks, our village has been an area frontrunner in applying for and getting HUD funds since the program was first created.

This program, like most involving the federal government, requires much planning and paperwork. Without going into all the gory details of how funds are acquired, I'll try to show how it works in Piermont.

First, ideas and/or requests for projects start with us, the citizenry, by submitting them to the Village Board. The Village Board has been required by Uncle Sam to create a Citizens' Advisory Committee, composed of a cross-section of local citizens, to act as a watchdog, clearing house and advisor to the Village Board. It is responsible for recommending eligible activities for the HUD funds.

Once a program has been agreed upon for a given year, the village submits its request to the county consortium (composed of 15 member towns and villages within Rockland County) and hopefully, after much discussion and bargaining, the request is sent to HUD, monies are allocated and filter down for local use.

All right, you ask, what has been done so far in Piermont with HUD money? In 1976, $100,000 was received for Piermont's sewer project. 1978 saw an additional $20,000 for completion of the sewer project plus rehabilitation of six homes for eligible families in the village.

1980 brings a much-needed project to fruition, the rehabilitation of the Community Center, which initially involves installing new thermopane windows on the east side of the building and a complete redesign and refurbishing of the grounds and walkways on the sloping property adjacent to the center, creating a new parklike recreational area. (Drop by the Village Hall and take a look at the plans.)

As to the future, the Advisory Committee is currently considering projects for 1981 and 1982, including:

1. Rehabilitation of Kane Park
2. Access to the Sparkill Creek for small craft launching
3. New windows for the west side of the Community Center and a new gym floor.

A new book by the Piermont author, Austin Ferguson, Random Track to Peking, may be had from CLAUSLAND BOOKSHOP. A previous book, Jet Stream, came from the same author.

HELEN SKJERDING, Licensed Real Estate Broker reports a very busy season in her "Hudson River View Properties" business, and welcomes your listings and inquiries. For appointment call 358-0451 or 359-1111.

New, at SJOSTROM SILVERSMITH on Main Street, are handmade sterling silver chains from 15" to 30" long; and, as always, handmade pieces of silver and gold, set with ivory and semiprecious stones.

ELISE PICARD-GASTON is happy to announce that all of her designs are now being sold through the Piermont Exchange. She will be devoting all of her time to designing and manufacturing. Elise also wishes to thank everyone who had endured the frustration of never finding her in, and hopes all will enjoy the wonderful new look The Exchange has given her.■

PEOPLE

WOODY RETIRES

William Lynch, better known as Woody to most Piermonters, will retire from the South Orangetown School District's Tappan Zee Elementary School on September 1. Woody has been custodian of TZE since it opened 10 years ago and was custodian at the old Sparkill school for 22 years before that. Woody is a veteran of WW II and attended Pace University for two years. Woody first joined the school system in 1947 before it was centralized. He says he was offered the job by Mr. Barone, but he wasn't sure if he would be satisfied with the job if he accepted it. Mr. Barone told him to try it for a while and that is just what Woody did, except "for a while" has lasted for 32 years.

Woody's stay has been a most memorable and enjoyable one over the years, but he almost didn't last the first year of employment. His first year, 1947, was when Piermont received its share of the "Big Snow of '47," with some 26 inches deposited on the ground. He says that this was the only time that he ever had any serious reservations about the job. His love for the children has made his stay a most pleasurable one.

Woody's love of children also reached out into the community with his involvement in many other activities throughout the years. He was one of the founders of Piermont's T-shirt League, of which he remained active with for 16 years. He was also director of St. John's Church C.Y.O. program for 18 years and is still active in the Church Council.

The political system of Piermont is no stranger to Woody either. He was Democratic Committeeman and Chairman for 15 years, and also served as Trustee for 10 years on the Village Board.

If all this hasn't been enough, he is an active member of the V.F.W., Knights of Columbus and Piermont's Fire Department.

When asked what he will do now that he will be receiving a pension, he says that he would like to travel to places such as Ireland and California. He also wants to catch up on many other things that he never had a chance to do in his very active life.

Thank you, Woody, for such devotion over the years in the many activities you have been involved with and we hope that your retirement is a long and happy one.■

NEW ARRIVAL

Welcome to PierMont, Kate Louise, born June 7 to Gene and Nancy Weinberg [Sjoftrom Silversmith].■

JULY 1979

The Ecological Perspective

By Mary Evensen

Among Piermont's many pleasures is the abundance of local wildlife. Birds are most commonly observed, and one occasionally sees the larger mammals such as deer, foxes, raccoons and skunks, but there are also many small mammals which are rarely seen. In spite of their inconspicuous lives, they play important roles in the local ecology.

The short-tailed shrew is slate gray and looks much like a stubby-tailed mouse. It is quite a ferocious creature for its size, having an almost insatiable appetite. Although it generally feeds on ground insects and earthworms, it can kill mice and other small vertebrates. It is the only mammal to have poisonous saliva.

The common shrew is much smaller, weighing only a fraction of an ounce, and is a dull brown color. Its diet includes invertebrates and carrion. Both shrews are common in wooded areas. They make runways under the leaf litter where there is an abundance of food. Shrews are active at all times of the day throughout the year. Because of their high metabolic rate they must feed frequently, especially the common shrew, which can starve to death in a few hours.

Shrews breed several times a year, with up to eight young in a litter. The babies grow rapidly and are on their own in a month. Shrews have active lives but rarely survive into their second winter.

Moles are related to shrews, differing mainly in their larger size and specializations for underground living. The starnosed mole is named for the circle of tentacles on the end of its nose. It inhabits wet areas and eats invertebrates, mainly earthworms. Moles breed in the spring and have three to five young per litter. Very little is known about the social life of these animals, but pairs may spend the winter together.

Bats are among the most beneficial mammals. There are several species that occur locally, somewhat unimaginatively named little brown bat, big brown bat, pygmy bat and red bat. All our bats are insectivorous and may consume up to a quarter of their weight each night. Bats are inactive during the day, roosting in crevices, caves, trees, attics or abandoned buildings. At twilight they emerge and begin to hunt. They use a form of sonar, emitting a series of high-pitched sounds which are bounced back from objects in their path. This allows them to track insects and avoid obstacles. They either catch the insects in the mouth or scoop them out of the air with the wing membranes. The prey is usually eaten in flight.

Because their food supply is cut off in the fall, bats must either hibernate or migrate. Those that hibernate build up fat reserves in the late summer and early fall and gather in small groups. They undergo extensive metabolic changes which are characteristic of true hibernators and rouse when the first warm days of spring bring out the insects again. Migrating bats travel south in the late summer and return in the spring.

Typically bats only have one offspring per year. Young bats are fairly well developed at birth and grow rapidly. They occasionally are carried by their mother, clinging to the fur on her underside, but usually remain in the roost while she is off hunting. In communal roosts the females recognize their own young by sound. So far as is known, males play no part in raising the young.

The most visible local mammals are the members of the squirrel family. The gray squirrels are the most common; they at least pass through every yard. Other squirrels have more specific requirements. Red

squirrels usually live in pine trees, chipmunks prefer rocky areas and woodchucks are generally found in grassy spots (or in gardens). Unfortunately the most appealing of our squirrels, the flying squirrel, is nocturnal and therefore rarely seen. They live in hollow trees and glide from branch to branch, using flaps of skin that stretch between their front and back legs.

Most squirrels are basically vegetarian but occasionally include insects or small animals in their diet. Squirrels give birth in the spring and may have another litter in the summer if the food supply is plentiful.

When rats and mice are mentioned, the house mouse, Norway rat and black rat usually come to mind. These animals are not native species, they came over from Europe with the early settlers and have been a nuisance ever since. Our native rats and mice are more engaging creatures. The most common mice are the deer mouse and the meadow vole. Deer mice are handsome little animals with glossy dark fur on the back and white underside and feet. They have prominent ears and large dark eyes. Their diet consists mainly of seeds, but they also eat insects. They breed throughout the summer, producing as many as four litters a year.

Voles are about the same size as mice but are more compactly built with short ears and a short tail. The most common one locally is the meadow vole. These animals always live in grassy areas making their homes out of cut grass and grass also forming an important part of their diet. They are prolific breeders, capable of producing litters every three weeks throughout the summer months. Voles undergo population cycles and sometimes are very abundant.

The muskrat, despite its large size and name, is closely related to the voles. The fur of the muskrat is dark brown and thick, insulating the animal from the cold water. Muskrats thrive in marshes, eating the roots, buds and young stems of aquatic vegetation and building their houses from the unpalatable parts. Muskrats usually have two or three litters a year with six to eight young per litter. The young do not remain with their parents but strike off on their own when they are about six weeks old. There is very little suitable habitat here except for the marsh and creek so many perish while looking for a homesite.

The mammals discussed here are not all that are found in Piermont, but they are the most common ones. There are other small mammals and many larger ones such as the ones mentioned in the beginning paragraph. These animals have been studied more extensively and books about them are available at the Library.■

Senior News

"VIAL OF LIFE"

The free "Vial-of-Life" program could save your life--if you are 60 or over. Al Puryea, Assistant Captain of Piermont Fire Department's Ambulance Corps, urges all senior citizens to pick up their "vial" at the Piermont Village Hall, Piermont Liquor Store or at his home, 663 Piermont Ave. at the foot of Bay Street. The form inside the vial is simple to fill out--name, address and telephone number of senior citizen, next of kin, who to call in case of emergency, and doctor, along with any pertinent medical information (i.e. heart condition, allergies, etc.). After the form is filled out, it is to be placed inside the vial, stopper replaced and put inside refrigerator in upper right-hand corner. In that way, if a person is unconscious or unable to answer questions, the Ambulance Corps will have the answers necessary to aid in emergency treatment. All information is kept confidential and never leaves the home. This program was originally started in Minnesota by state police. District 1 in Rockland County is promoting it statewide, after a successful pilot project was completed in Spring Hill in northern Spring Valley.

Notes Around the Village

FIRE DEPARTMENT ELECTS OFFICERS FOR 1979

Empire Hose Co. #1 Officers:

President	L. Goswick
Vice President	H. Brawner
Rec. Secretary	G. Bryan
Financial Secretary	A. Lynch
Directors	L. Pagliaroli, E. Scott, R. Codello

Piermont Fire Dept. Line Officers:

Chief	A. R. Bartley
1st Asst. Chief	C. Pagnozzi
2nd Asst. Chief	F. Taulman
Foreman	K. Fagan
Asst. Foreman	D. Hardy, Jr.
Captain	H. Aubut
Asst. Captain	A. Puryea
Lieutenant	J. B. Alise
Asst. Lieutenant	J. Mercurio
Chief Chauffeur	A. Sisolak
Commissioners	L. Goswick, A. Lynch

Reminders from the Police Department

* An engraving tool to be used for identifying your valuables is available--call the Police Dept. to borrow it.

* When your vacation time comes, notify the Police Dept. when you'll be away. Simply call 359-0240 or stop in the station and fill out a card.

* Curfew means that children under 16 should not be on the streets, parks, docks, etc. after 9:30 p.m. unless accompanied by parent or guardian.

* Mini-bikes and mopeds are illegal unless properly registered and insured. They are completely prohibited on Fire Roads.

And from the DPW. . .

* Do not put out garbage in flimsy plastic bags and do not put garbage at the curb more than 12 hours ahead of collection time.

* Every pound of newspaper and glass that you recycle helps two ways: it saves Village labor costs and it enables the Fire Department and Lions Club to undertake projects which benefit the Village.

Who to thank department:

* The Oakleys and Bullocks for the lovely garden on the wall along South Piermont Avenue.

* Sawnie and Alise Gaston for the attractive fence which screens equipment at the Village Garage.

* Phyllis Brunson for the improvements in the kitchen at the Community Center.

* The coaches in the T-Shirt League for their caring abour our children.

* Clevepak for use of their parking lot for overflow during special events, and during the Fire Department carnival.

BLOOD PRESSURE CLINIC

Some members of Piermont Fire Department Ambulance Corps will be trained by Rockland County Health Department to run a Blood Pressure Clinic in Piermont. The Clinic will be on Saturday afternoons. Dates to be announced. Records will be kept at Rockland County Health Complex. After testing, follow-up letters will be sent with any suggested treatment that might be necessary. This will be a free service to all Piermont residents.

See "VIAL-OF-LIFE" under the Seniors' column.■

NEW DEVELOPMENTS IN TRUCKING CONTROVERSY By Julio Alonso, III

A new ruling by State Supreme Court Justice Theodore A. Kelly has caused further controversy in the lawsuit against the Piermont Zoning Board of Appeals. Justice Kelly ruled in March that the Zoning Board must reconsider variances granted to Rene's Mini Coffee Shop and the

TOWN OF RED HOOK

CZM
REC'D.
1982 AUG -2 AM 10 16

107 SOUTH BROADWAY, RED HOOK, N. Y. 12571 TEL. (914) 758-6250

MAIL ROOM

SUPERVISOR
SAMUEL F. LORE
COUNCILMEN
ROBERT GREIG
HERBERT DAY
DWIGHT WILLIAMS
G. CARL PACK
TOWN JUSTICES
ELMORE FRALEIGH
RICHARD GRIFFITHS
TOWN CLERK &
TAX COLLECTOR
MARGARET DOTY
SUPT. OF HIGHWAYS
GEORGE H. HILDENBRAND
ASSESSOR
RICHARD TROTTI

July 28, 1982

Dear Dr. Richard Podgorny:

RE: TIVOLI BAY ESTUARINE SANCTUARY

We note that in addition to the approximately 1,436 acres currently owned by the state, it is planned to purchase an additional 45 acres at the north end of Tivoli Bay to be maintained as a buffer zone for the protection of the wetlands. Since these 45 acres would be a protective
17-1 buffer zone, the Town of Red Hook sees no need for fee title acquisition of this land. The town believes that utilizing a conservation easement mechanism would enable the state to protect the sanctuary at less cost to the state and would not further erode the town tax base.
In addition to the tax money already lost to the town with
17-2 the acquisition of the 1,436 acres, the acquisition of the 45 acres will cost another $780 per year.

Sincerely,

Samuel F. Lore
Supervisor

17-1 In the process of land acquisition for the proposed Estuarine Sanctuary, the negotiating State agencies (DEC and OPRHP) will consider, on a case-by-case basis, all available techniques including fee simple acquisition, conservation easements, and reserved life estates. In each case, the State will use the most appropriate instrument.

17-2 Bill No. 11814 was introduced in the New York State Assembly on March 30, 1982. If passed, the Bill would require State agencies owning lands in New York to make payments in lieu of taxes. This Bill, at the time of printing this FEIS, is reportedly still in Committee. Payments in lieu of taxes would be beneficial to local communities in reducing the burden of tax exemption of large State land holdings.

RED HOOK CENTRAL SCHOOL DISTRICT
Mill Road ■ Red Hook, New York 12571 ■ Telephone 914 / 758-2241
Carl W. Thompson, Superintendent of Schools ■ Rosemarie Pugliese, Business Manager

July 28, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Re: Tivoli Bay Esturine Sanctuary
Tivoli, New York
Dutchess County

Dear Dr. Podgorny:

It has come to our attention that the State of New York plans to purchase 45 acres of land at the northern end of Tivoli Bay to be maintained as a buffer zone for the protection of the 1,436 acres of wetlands the State purchased a year ago.

Since additional acreage would serve only as a protective buffer zone, the Red Hook Central School District sees no need for fee title acquisition of this land. The School District supports the contention that the
18-1 utilization of a conservation easement mechanism would enable the State of New York to provide the necessary protection of the sanctuary which would be at less cost to the State and would not further erode the tax base of the Town and School District.

We urge your careful consideration of this matter.

Thank you for your cooperation.

Very truly yours,

Carl W. Thompson

Carl W. Thompson, Ed.D.
Superintendent of Schools

cc: Dr. John Vosburgh, President, Board of Education
U.S. Department of Commerce, Washington, D.C.

18-1 Please see response #17-1.

The Legislature of Rockland County

County Office Building
New City, New York 10956

JOHN T. GRANT
Chairman
VICTORIA K. SEIGERMAN
Clerk

914-425-5000
914-425-5100

MEMORANDUM

TO: Barbara Porta, Executive Director
R.C. Environmental Management Council

FROM: Ms. Victoria K. Seigerman, Clerk to the Legislature

DATE: July 15, 1982

Attached herewith please find the following resolution (s) adopted by the Legislature of Rockland County at its meeting on July 13, 1982, which pertains to your office.

19-1 RES. NO. 492 - Legislature of Rockland County States Its Approval and Endorses the Designation of Piermont Marsh Area and Iona Marsh Area, Comprised of Wetlands, Shallows and Shorelands to Be Included in the Establishment of the Hudson River Estuarine Sanctuary.

VICTORIA K. SEIGERMAN

VKS:CHB
enclosure

cc: Hon. John T. Grant
N.Y.S. Dept. of Environmental Conservation
[redacted]

19-1 Comments accepted. No response necessary.

IIE

New Business
Introduced by:
Hon. John F. Meehan

Referral No.
July 13, 1982

RESOLUTION NO. 492 OF 1982
LEGISLATURE OF ROCKLAND COUNTY STATES ITS APPROVAL AND ENDORSES THE DESIGNATION OF PIERMONT MARSH AREA AND IONA MARSH AREA, COMPRISED OF WETLANDS, SHALLOWS AND SHORELANDS TO BE INCLUDED IN THE ESTABLISHMENT OF THE HUDSON RIVER ESTUARINE SANCTUARY.

Meehan/Colman, unanimous

WHEREAS, the Hudson River Estuary supports an extremely valuable fishery resource and is a biological and esthetic treasure used and enjoyed by millions of people, and

WHEREAS, *an estuarine sanctuary on the Hudson River would be a valuable tool* for enhancing the management of the Hudson River and the Hudson River Estuary ecosystem which is part of New York's coastal zone, and

WHEREAS, four natural areas have been proposed for inclusion in the Sanctuary and which includes Piermont Marsh Area and Iona Marsh Area located on Rockland County's shoreline, Tivoli Bay in Dutchess County and Stockport Flats in Columbia County, and

WHEREAS, these four sites have been deemed appropriate for purposes of research and education, as they contain extensive high quality tidal marshes, comparable *vegetation types, adjoining tidal shallows and forested upland margins, and are productive* ecological communities representative of the region, and

WHEREAS, the New York State Department of Environmental Conservation submitted an acquisition grant application to the National Oceanic and Atmospheric Administration (NOAA) Office of Coastal Zone Management for funds and services to purchase and establish a 4,130 acre sanctuary, and prepared an Environmental Impact Statement on the proposed sanctuary, and

WHEREAS, the Environmental Management Council of Rockland County supports the proposed designation and acquisition of these sites, now, therefore, be it

RESOLVED, that the Legislature of Rockland County hereby declares its unqualified recognition of the beneficial ecological factors of its Hudson Shoreline, and be it further

RESOLVED, that the Legislature of Rockland County approves of and endorses the designation of Piermont Marsh Area and Iona Marsh Area, comprised of wetlands, 19-2 shallows and shorelands, to be included in the establishment of the Hudson River Estuarine Sanctuary, and be it further

19-2 Comments accepted. No response necessary.

New Business
Introduced by:
Hon. John F. Meehan

Referral No.
July 13, 1982

19-3 RESOLVED, that the Clerk to the Legislature of Rockland County be and she hereby is directed to send a copy of this resolution to the Rockland County Environmental Management Council; the New York State Department of Environmental Conservation and the National Oceanic and Atomospheric Administration (NOAA) Office of Coastal Zone Management..

MLP/mbr

19-3 NOAA received a copy of this resolution on July 19, 1982.

cooperative and encouraging partner in recognizing the importance of the Marsh and the need to provide long term protection and management.

In 1979 the EMC and the County Planning Board hosted a public meeting with the NY Department of State on determining Geographic Areas of Particular Concern within the lower Hudson River Estuary. Recommendations were then made for specific site locations to be included in the Estuarine Proposal. One of these was Grassy Point Marsh in Stony Point, an endangered tidal marsh of 120 acres and important, ecologically, for fish spawning and feeding grounds. The Hudson River Study had included Grassy Point for consideration but deleted the site in the final acquisition recommendation.

We do not wish to see the Grassy Point Marsh forgotten and possibly fall prey to further infringement, pollution, and possibly, destruction. We suggest that Grassy Point - and other viable GAPCs that were previously recommended - be
20-3 listed in the DEIS and FEIS as areas for study under the research and education programs of the Proposal. Grassy Point Marsh has been an important biological study area for schools, Project L.O.S.T., and individual scientists because of its location and as a laboratory of natural resources. By listing it in the Proposal, it might be reconsidered in the future for inclusion in the Sanctuary.

- Barbara Porta, Director
Rockland County
Environmental Management Council

July 19, 1982

20-3 The Grassy Point (Haverstraw marshes were considered during the site selection process for the Hudson River Estuarine Sanctuary. In December 1979 a representative from OCZM flew the Hudson River with members of New York's site selection committee. OCZM discouraged the inclusion of the Grassy Point site because of industrialization. Later, Croton marshes and Constitution Island Marsh were also eliminated from the Hudson River proposal because of industrialization and local pollution. All of these areas are important for research and education and can be studied in comparison with the currently proposed sanctuary sites. However, an Estuarine Sanctuary should comprise areas of high environmental quality to act as scientific "control" areas for comparison with areas that have been modified more by human activities. NOAA appreciates local concern about the future of the Grassy Point marshes. This area is under study by DEC for potential inclusion in the State's wetland acquisition program.

rockland county environmental management council

rockland county health complex bldg D room 173 pomona new york 10970

Proposed Hudson River Estuarine Sanctuary

Piermont Marsh, Iona Island Marsh,
(Tivoli, Stockport) & DEIS

Public Hearing, July 19, 1982 - Piermont NY, 7:00 PM

COMMENTS SUBMITTED BY BARBARA PORTA, DIRECTOR EMC
(Resolution by Environmental Management Council
is attached)

The Rockland County Environmental Management Council has long been an enthusiastic supporter of coastal zone management, and more particularly for the protection and management of New York's Hudson River Estuary.

We commend the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, federal and state Offices of Coastal Zone Management, and, the NY State Department of Environmental Conservation for their persistance and dedication in making estuarine sanctuaries a reality. We are also indebted to the NY State Legislature and Governor for their past support of the State Coastal Management Program.

The EMC enthusiastically endorses the proposal for a Hudson River Estuarine Sanctuary, and approves of the specific site locations which include Piermont Marsh and Iona Island Marsh in Rockland County. We are pleased that
20-1 the Rockland County Legislature endorsed the Proposal on July 13 and last Friday - July 16 - the 12th Division of the Soil Conservation District Association also endorsed the Sanctuary Proposal. Resolutions of these endorsements have been sent to the appropriate departments and agencies.

Rockland County is unique in that, though small in size, the Hudson River shoreline borders the entire eastern boundary, the longest segment of its triangular shape. Rapid land use development during the past twenty years contributed to the doubling of Rockland's population and was a direct result of the
20-2 construction of Tappan Zee Bridge and Palisades Interstate Parkway. From Bear Mountain Circle to Sneden's Landing in Palisades, the Hudson is now lined with energy plants, manufacturing, dye works, yacht basins, condominiums, parks, and private homes. During the rapid growth period, conservation groups expressed their concerns for the disruption of and the environmental impact to the tidal wetlands, the shallows, and the ecology of these biologically sensitive areas. It must be stated that growth in the county has been desireable, and will continue to take place, but protection is needed for the survival of these important 'living' science communities.

The Piermont Marsh has long been an important site for research and education on every kind of flora and fauna, water quality, geology and other areas of scientific study for many years. The Village of Piermont has been a

telephone (914) 354-0200 ext 2537

20-1 Comments accepted. No response necessary.

20-2 Comments accepted. No response necessary.

rockland county health complex bldg D room 173 pomona new york 10970

rockland county
environmental
management
council

RESOLUTION # 3-82 July 13, 1982

The Environmental Management Council of Rockland County Endorses Hudson River Estuarine Sanctuary locations which include Piermont Marsh Area and Iona Island Marsh Area

WHEREAS, the Hudson River Estuary supports an extremely valuable fishery resource and is a biological and esthetic treasure used and enjoyed by millions of people, and

WHEREAS, an estuarine sanctuary on the Hudson River would be a valuable tool for enhancing the management of the Hudson River and the Hudson River Estuary ecosystem which is part of New York's coastal zone, and

WHEREAS, four natural areas have been proposed for inclusion in the Sanctuary and which includes Piermont Marsh Area and Iona Marsh Area located on Rockland County's shoreline, Tivoli Bay in Dutchess County and Stockport Flats in Columbia County, and

WHEREAS, these four sites have been deemed appropriate for purposes of research and education, as they contain extensive high quality tidal marshes, comparable vegetation types, adjoining tidal shallows and forested upland margins, and are productive ecological communities representative of the region, and

WHEREAS, the NYS Department of Environmental Conservation submitted an acquisition grant application to the National Oceanic and Atmospheric Administration (NOAA) Office of Coastal Zone Management for funds and services to purchase and establish a 4,130 acre sanctuary, and prepared an Environmental Impact Statement on the proposed sanctuary, and

WHEREAS, the Environmental Management Council of Rockland County supports and endorses the proposed designation anacquisition of these sites, now, therefore, be it

RESOLVED, that the EMC urges the Legislature of Rockland County to declare its unqualified recognition of the beneficial ecological factors of its Hudson River Shoreline, and be it further

20-4 RESOLVED, that EMC urges the Legislature of Rockland County to approve and endorse the designation of Piermont Marsh Area and Iona Marsh Area, comprised of wetlands, shallows and shorelands, to be included in the establishment of the Hudson River Estuarine Sanctuary.

telephone (914) 354-0200 ext 2537

20-4 Comments accepted. No response necessary.

VILLAGE OF TIVOLI

NEW YORK
12583
INCORPORATED 1872

July 29, 1982

Dr. Richard J. Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven St. N.W.
Washington, D.C. 20235

Re: Draft Environmental Impact Statement for Hudson River Estuarine Sanctuary

I would like to comment on the socioeconomic effects raised in the Environmental Impact Statement for the Estuarine Sanctuary.

Since the Village of Tivoli would be greatly affected by any further land acquisition for the proposed Estuarine Sanctuary in the Tivoli North
21-1 Bay area, it is my opinion that the significant loss of tax revenue to the Village makes fee title acquisition of property undesirable. This is especially true in the case of a Village approximately one square mile in area.

The property in question within our Village limits is presently in the ownership of Mr. Jean de Castilla de Delley, one of our most significant
21-2 landowners and taxpayers. Since public access (with the exception of Magdalen Island) is not involved in such an acquisition of land, but which would merely serve as a buffer for the Sanctuary, it is far more reasonable and certainly less economically disruptive that conservation easements be utilized. This approach would achieve the same goal, yet alleviate the tax burden that would otherwise result for the residents of the Village of Tivoli.

Edward Neese Jr.
Mayor, Village of Tivoli

21-1 Please see response #17-2.

21-2 Please see response #17-1.

COUNTY OF ULSTER

244 FAIR STREET
BOX 1800
KINGSTON, NEW YORK 12401

CZM
REC'D.
1982 AUG -2 AM 10:32
MAIL ROOM

ENVIRONMENTAL MANAGEMENT COUNCIL

914 - 331-9300
Ext. 497

July 13, 1982

Dr. Richard J. Podgorny
Sanctuary Projects Manager
Office Of Coastal Zone Management
3300 Whitehaven St. N.W.
Washington D. C. 20235

Dear Dr. Podgorny;

The Ulster County Environmental Management Council received from your office the Draft Environmental Impact Statement on the proposed Hudson River National Estuarine Sanctuary. On June 23rd the full Council heard a presentation on the proposed Sanctuary and on July 7th the Council's Executive Board passed the following resolution:

WHEREAS the Ulster County Environmental Management Council has reviewed the Draft Environmental Impact Statement for the Proposed Hudson River Estuarine Sanctuary, and

WHEREAS we have found it to be beneficial to the interests of the residents of New York State and particularly to the people of the Hudson Valley, in that it offers an opportunity to enhance to research and educational activities along the estuary,

22-1 THEREFORE BE IT RESOLVED that the Executive Board of the Ulster County Environmental Management Council endorses the proposed Hudson River National Estuarine Sanctuary.

Sincerely,

David B. Straus
Chairman

22-1 Comment accepted. No response necessary.

160

Westchester County

SOIL AND WATER
CONSERVATION DISTRICT

FRED ZWICK
Chairman

SUSAN WEISMAN
District Manager

July 19, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
330 White Haven Street, N.W.
Washington, D. C. 20235

Dear Dr. Podgorny:

23-1 Please be advised that the attached Resolution in support of the four Hudson River estuarine sanctuary areas was adopted by Division XII of the New York Soil Conservation Districts Association at its July 16, 1982 meeting.

If you have any questions on this matter, please feel free to contact our office at (914) 682-7612.

Sincerely,

Fred D. Zwick
Division XII Director

FZ/ST/dcb
enclosure

23-1 Comments accepted. No response necessary.

216 Central Avenue • White Plains, N.Y. 10606 • 914 682-7612

DIVISION XII

NEW YORK SOIL CONSERVATION DISTRICTS ASSOCATION

JULY 16, 1982

RESOLUTION

WHEREAS, the Hudson River Estuary is an important biological and ecological resource within the lower Hudson region, and

WHEREAS, there are four specific locations of unspoiled tidal wetlands, shallows and adjacent uplands comprising approximately 4,000 acres, and

WHEREAS, these wetlands, shallows and uplands are unique environmental assets, and would provide an area for environmental research and education, and

WHEREAS, this area has been proposed as an estuarine sanctuary by the U. S. Office of Coastal Zone Management of the National Oceanic and Atmospheric Administration, and

WHEREAS, the New York State Department of Environmental Conservation has submitted an application for acquisition of the four locations - Piermont Marsh area and Iona Island Marsh area (Rockland County), Tivoli Bays (Dutchess County) and Stockport Flats (Columbia County), now therefore, be it

23-2 RESOLVED, that the Division XII of the New York Soil Conservation Districts Association endorses the Hudson River Estuarine Sanctuary Proposal, and be it further

23-3 RESOLVED, that a copy of this resolution be sent to the New York Soil Conservation Districts Association, the New York State Department of Environmental Conservation, the County Chairman/Executive of Rockland, Dutchess and Columbia Counties, and to the National Oceanic and Atmospheric Commission of the U. S. Coastal Zone Management Division.

23-2 comments accepted. No response necessary.

23-3 NOAA received a copy of this resolution on July 27, 1982.

COMMENTS AND RESPONSES

3. ENVIRONMENTAL ORGANIZATIONS

June 25, 1982

Dr. Richard J. Podgorny
Sanctuary Projects Manager
Office of Coastal Zone Management
3300 Whitehaven St. N.W.
Washington, DC 20235

Dear Dr. Podgorny:

24-1 At its annual June meeting the John Burroughs Natural History Society reviewed and endorsed the Hudson River National Estuarine Sanctuary proposal.

24-2 We are particularly pleased that there will be an enhanced public education program dealing with the natural values of the Hudson estuary. The Society offers its cooperation in the development of this program.

Sincerely,

Anne Altshuler

Anne Altshuler, President
Krumville Road
Olive Bridge NY 12461

24-1 Comments accepted. No response necessary.

24-2 Comments accepted. No response necessary.

Columbia County
Environmental Management Council
71 North 3rd Street
Hudson, New York 12534

July 21, 1982

Dr. Richard J. Podgorny
U.S. Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

I am pleased to provide a copy of the Council comments on the proposed Hudson River Estuarine Sanctuary presented at the public hearing held on July 21, 1982 at the Stockport Town Hall.

25-1 The reasons for the Council's support and a recommendation to pass a resolution in support of the sanctuary were transmitted to the Columbia County Board of Supervisors Planning and Community Affairs Committee at their meeting on July 15, 1982. This committee voted to recommend passage of a Board of Supervisors resolution supporting the sanctuary for action at the August 14, 1982 meeting. Unfortunately, this action will occur after the August 2, 1982 deadline. However, I believe that it is important that you be aware of that potential support. We will forward a copy of any Board of Supervisors resolution to you in any event.

Thank you for the opportunity to comment on this important proposal.

Sincerely,

Roland R. Vosburgh
Planner

for Frances Y. Szasz, Chairman

RRV:gg

25-1 Comments accepted. No response necessary.

STATEMENT ON THE HUDSON RIVER

ESTUARINE SANCTUARY

My name is Roland R. Vosburgh. I am a Planner working for the Columbia County Development and Planning Department. I am making this statement on behalf of the Columbia County Environmental Management Council. The Council is a duly appointed body of volunteer citizens who are charged with advising the Columbia County Board of Supervisors on environmental matters affecting Columbia County.

25-2 The Columbia County Environmental Management Council strongly supports the creation of the Hudson River Estuarine Sanctuary comprised of four separate Hudson River estuarine ecosystems. While supporting the entire proposal, one of the four sites, the Stockport Marshes, is located in Columbia County and, therefore, the Council gave particular attention in its review to the potential impacts of the inclusion of this area for Columbia County.

25-3 A careful review of the draft environmental impact statement for the sanctuary has caused the Council to conclude that there will be no adverse environmental or societal impacts for Columbia County. Significant positive benefits will be realized as follows:

(1) Protection of this valuable and productive environment from unwise development. The Council agrees with the sanctuary objectives of scientific research and education. The only way to assure that these unique ecosystems are available for research and public education and recreation is to provide the long term protection and status which sanctuary designation will provide. Public education and environmental awareness will be enhanced by the results of the research program.

(2) Preservation of open space and assurance of public access to the estuary and the Hudson River. The Council is particularly pleased that public use of the Stockport Marshes for traditional and compatible uses such as hunting, fishing, trapping, nature study, and low level forms of recreation is to be allowed. The Council supports the concept of compatible multiple use and without this assurance the Council would not have supported the proposal.

(3) Creation of a formal management plan with input from a local sanctuary advisory committee. A significant feature of the proposal is that four local sanctuary advisory committees will be named which will guarantee local representation and input to be used for sanctuary management. In addition, the Council is pleased that the various state agencies with jurisdiction in the sanctuary will be required to adhere to the approved management plan.

25-4 In summary, the Council is pleased and honored that the Stockport Marshes of Columbia County were judged to be important and unique enough to be included in this proposal. Inclusion of the Stockport Marshes is consistent with Council objectives to protect valuable ecosystems from unwise development. The Council believes that this proposal is not a special interest issue with appeal only to scientists or sportsmen, but rather will provide widespread benefits for the residents of Columbia County, the Hudson Valley and New York State and that it deserves the public's full support. Therefore, the Council recommends that the Federal Office of Coastal Zone Management review this application favorably and approve the creation of the Hudson River Estuarine Sanctuary.

25-2 Comments accepted. No response necessary.

25-3 Comments accepted. No response necessary.

25-4 Comments accepted. No response necessary.

ALAN DEVOE BIRD CLUB

CHATHAM NEW YORK 12037

July 21, 1982

The Alan Devoe Bird Club was incorporated in 1957 as a non-profit organization in Columbia County. Since then, club members have made many visits to the Stockport Flats area, sometimes for the purpose of censusing migratory and resident bird populations, sometimes for the purpose of teaching field identification to both old and young observers, and sometimes simply for enjoyment of the area.

26-1 Over the years, the wide diversity of both plant and animal life at Stockport has become more and more apparent to the bird club members. Equally apparent has become the interconnection between the health and vitality of the Hudson River and the health and vitality of its tidal marshes. These observations must indeed be shared by the birders who have visited the Stockport Flats ~~with~~ the canoeists, hunters and fishermen who have found the area a resource meeting their own interests and needs.

26-2 A few years ago, local groups expressed their opposition to a plan of the U.S. Army Corps of Engineers to use Seward's Island as a fill area for a river dredging operation. Local voices were ineffective in protecting a valued island. Just this week the Corps of Engineers announced a plan to loosen its protection of national wetlands; the rules changes the Corps proposes would exempt millions of acres of wetland from current regulations that require individual permits for any dredging and filling that would effect the wetlands. If local voices were ineffective earlier in protecting our river habitats, what can we expect in the future? The ~~acquisition~~ by the State of New York of the ~~land~~ areas proposed for inclusion in the Hudson River Estuarine Sanctuary would ~~bring~~ the protection of our land closer to us, and the appointment proposed of a locally constituted advisory committee for the overseeing of the proposed sanctuary ~~should already give the most hesitant among us the security~~ to cast a yes vote for the sanctuary plan.

The Alan Devoe Bird Club owns nearly 140-acres of wildlife sanctuary in northern Columbia County which it makes open to the public year-round, free of charge. Thus, ADBC members are familiar with both responsibilities and rewards of sanctuary development and ongoing life. The club's membership is drawn from Columbia, Rensselaer, Albany, Greene and Dutchess counties.

26-3 The membership of the Alan Devoe Bird Club supports the establishment of the Hudson River Estuarine Sanctuary in the State of New York.

Kate Dunham

Kate Dunham,
Representing the Alan Devoe Bird Club.

26-1 Comments accepted. It has been said that tidal marshes "track" the ecology of the estuary. Tidal marshes are valuable as indicators of the environmental health of the estuary, and as study sites for monitoring this health. The marshes are also useful as an educational "key" to the estuary - they are more comprehensible and easier for the public to appreciate because of their smaller size and the greater visibility of their plants and animals than of the plants and animals in the deeper waters.

26-2 Comments accepted. No response necessary.

26-3 Comments accepted. No response necessary.

GREENE COUNTY ENVIRONMENTAL MANAGEMENT COUNCIL
Mountain Avenue, Cairo, New York 12413 • Telephone 622-3251 • 943-9119

By hand
July 21, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
330 Whitehaven Street, NW
Washington, DC 20235

RE: Draft Environmental Impact Statement on Hudson River Estuarine Sanctuary

Dear Dr. Podgorny:

27-1 The Greene County Environmental Management Council would like to express its support for the proposed Estuarine Sanctuary Grant Award for the Hudson River Estuarine Sanctuary. While not contained within Greene County, the Sanctuary at Stockport Flats is on the County's border and being located opposite two state-
27-2 owned public boat launch sites is readily accessible to Greene County residents. We endorse the emphasis on research and education programs during spring and
27-3 summer (pg. 66) to ensure that conflicts with hunting and trapping use of the site are kept at a minimum. While Greene County contains nearly 80,000 acres of forested lands in the Catskill Forest Preserve, very little of its tidal wetlands along the Hudson are available for public use or are slated for preservation as are the Stockport Flats.

27-4 Our one main comment on the DEIS is that no mention is made of the fate of a number of existing seasonal residences located on the "unamed island" portion of the proposed sanctuary, although it is stated on page 81 that there are no residences in the areas proposed for inclusion. This oversight should be clarified.

27-5 If appropriate, the Greene County Environmental Management Council would like to request representation on the Stockport Flats Advisory Committee for the development of a sanctuary management plan.

Sincerely,

Carl D. Hedley
Chairman

CDH:mc
cc: Columbia County EMC
Greene County Federal Sportmens Clubs
Hudsonian Limited
Joyce Wood, US Dept. of Commerce

27-1 Comments accepted. No response necessary.

27-2 Comments accepted. The State-owned public boat launch sites mentioned are at Coxsackie and Athens.

27-3 Concerning resolution of potential conflicts between research and hunting and trapping, please see General Response B.

27-4 There are about 5 seasonally-occupied cabins on the "unnamed island." These cabins or "camps" are believed to be there without the landowner's permission. A preliminary title search indicates overlapping claims to this island (New York State Office of General Services, and Mr. Porter Fearey, Jr.) and it has not yet been determined exactly where the ownership boundary is. The question of ownership, acquisition, and the future of the cabins will be further addressed in the Sanctuary Management Plan.

27-5 Nominations for the Sanctuary Advisory Committee, with documentation, should be sent to Mr. Edward Radle, NYS DEC, 50 Wolf Rd., Albany, NY 12233

Heritage Task Force for the Hudson River Valley, Inc.

N.Y.S. Department of Environmental Conservation
Region 3 Headquarters
21 South Putt Corners Road
New Paltz, New York 12561 Telephone: 914-255-9187

MEMBERS
DR. MICHAEL H. ROSENTHAL
Chairman
MURIEL TOBIN BYRNES
Vice-Chairman

ASSOCIATE MEMBERS

July 14, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N. W.
Washington, D. C. 20235

Dear Dr. Podgorny:

28-1 The Heritage Task Force supports the formation of the Hudson River Estuarine Sanctuary. Created in 1980 by the Commissioner of the Department of Environmental Conservation at the direction of Governor Carey, the Task Force mandate is to preserve, protect, and enhance the natural, scenic, historic, cultural, and recreational resources of the Mid-Hudson Valley and to serve as a liason between local and State government.

28-2 The Hudson River Estuarine Sanctuary would serve in part to protect natural, scenic, and recreational resources of importance on a local, state, and national level. Its function as a research and educational facility is important to increasing our understanding of the river as communities return their attention to the waterway that was central to the development of this region.

28-3 The use of citizens' advisory groups representing local government and sanctuary user groups in the management of each sanctuary area conforms with the Task Force goals of stimulating local participation in resource preservation as a key to continuing public support. The Task Force agrees with the conclusions of the DEIS that the major impacts from designation will be positive and will be of lasting benefit to the region and the State.

Sincerely,

Loretta M. Simon
Principal Consultant

LS:ls
cc: Joyce M. T. Wood, Director

28-1 Comments accepted. No response necessary.

28-2 The comment on the return of attention to the Hudson is appropriate. The Hudson River Estuary was the focus of life in the valley for centuries. With renewed interest in the waterway for tourism, drinking water, and other uses, it is particularly important to better understand the estuary's workings both at the level of general public appreciation and at the level of scientific knowledge.

28-3 Comments accepted. No response necessary.

THE HUDSON RIVER CONSERVATION SOCIETY, Inc.
Founded 1936
Box 25, Barrytown, New York, 12507

July 11th, 1982

Dr. Richard Podgorny
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny,

At the Annual Membership Meeting of the Hudson River Conservation Society, Inc. held in Cold Spring, N.Y., on June 26, 1982, the following Resolution was unanimously adopted:

29-1 "WHEREAS, the New York State Department of Environmental Conservation has requested of the Federal Office of Coastal Zone Management National Estuarine Sanctuary designation for certain areas along the Hudson River, and, WHEREAS, this designation would enhance estuarine research and education in the Hudson Valley, Therefore, BE IT RESOLVED, that the Society supports the programs of the Federal Office of Coastal Zone Management within the National Oceanic and Atmospheric Administration, and more particularly strongly endorses the joint efforts of that Office and agencies of the State of New York to establish, as proposed, a Hudson River element with the National Estuarine Sanctuary System."

Sincerely,

Mrs. John MacD. Graham
Secretary

BCC = JWA

29-1 Comments accepted. No response necessary.

Hudson River Environmental Society, Inc.

CZM
REC'D.

1982 AUG -2 AM 10 45

MAIL ROOM

~~675 West 252nd Street~~
~~Bronx, New York 10471~~
P.O. Box 535
New Paltz, N.Y. 12561

July 30, 1982

Dr Richard Podgorny
Sanctuary Project Mgr.
Office of Coastal Zone Mgt.
3300 Whitehaven St. N.W
Washington, D.C. 20235

Dear Dr Podgorny:

This will confirm the
30-1 Society's position in support of the Estuarine
Sanctuary Program as expressed at the July 20th
hearing at Red Hook, N.Y..

Our only reservations are that the program
should be conducted so that no current users
30-2 of the resource be denied the right to continue
their enjoyment providing it does not damage
the rights of others or destroy the base of the
30-3 program. Further we would like to see the
Constitution Island marsh included in the
program as it would provide an ideal med-

30-1 Comments accepted. No response necessary.

30-2 Please see General Response A regarding multiple use.

30-3 Please see response 20-3.

point between Iona and Pinole Bays. We are recognize the problems inherent with the use of this wetland due to the cadmium damage but feel this can be overcome.

Finally more of an effort should be made to draw in some different outside groups
30-4 to back up the need. Our organization would be willing to assist in this effort if requested.

Sincerely Yours

Warren H. McKeon

H.R.E.S. INC.
Warren H. McKeon, Exec. Dir.
P.O. Box 535
New Paltz, N.Y. 12561

30-4 Comments accepted. No response necessary.

hudson river heritage

July 6, 1982

Dr. Richard J. Podgorny
Sanctuary Projects Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny,

I am writing to you in support of the proposal submitted by the
31-1 U.S. Department of Commerce and the State of New York to establish a Hudson River Estuarine Sanctuary, as described in the draft E.I.S. of June, 1982.

Hudson River Heritage, Inc. is a 150 member organization committed to environmental protection and historic preservation in this region. We are strongly supportive of this application to establish
31-2 an Estuarine Sanctuary in the Hudson, feeling that it advances our goals, and that our goals of historic preservation in the region are fully consistent with the Sanctuary's announced objectives. We feel that the Management Plan for the Sanctuary, when written, should address historic preservation as a factor. Historic preservation and protection of the environment have been closely allied interests in this region, and we feel that the Sanctuary can serve as a positive force in the further development of that very effective alliance.

Sincerely yours,

Kay T. Verrilli

Kay T. Verrilli
Vice-President

31-1 Comments accepted. No response necessary.

31-2 Historic preservation will be addressed in the sanctuary's management plan.

hudson river heritage inc., box 287, rhinebeck, new york 12572

Hudson
River
Shorelands
Task Force
(914) 876-7484 BOX 29, RED HOOK, N.Y. 12571

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July 30, 1982

Dr. Richard J. Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street NW
Washington DC 20235

Re: Draft Environmental Impact Statement for the Hudson River Estuarine Sanctuary

Dear Dr. Podgorny,

The Hudson River Shorelands Task Force is a not-for-profit organization which works very closely with affected property owners and local government officials to manage over 20,000 acres of land on the east bank of the Hudson River that is listed on the National Register of Historic Places.

The Tivoli Bay and adjacent Ward Manor properties are being considered for the Hudson River Estuarine Sanctuary. The Hudson River Shorelands Task Force supports the Estuarine Sanctuary designation for the Tivoli Bay property; however, in reviewing the
32-1 draft environmental impact statement (EIS) we have noted several serious problems -- as follows:

32-1 Comments accepted. No response necessary.

Page 71 I. Archaeological Resources

The date for Native American utilization of this area may extend as far back as 10,000 years, not 5,000 years. A substantial amount of "pot hunting" (non-scientific destruction of archaeological information) has taken place and continues today throughout
32-2 the Tivoli Bay properties, specifically Cruger and Magdalen Islands. The EIS has to reference the appropriate state and federal laws which protect these

32-2 New York State Education Law, Section 233, Parts 4 and 5 have been incorporated in this FEIS.

cont.

resources and insure that future expenditures of state and federal monies will not adversely impact these National Register Archaeological Sites. New York State Education Law, Section 233, Parts 4 and 5, should be referenced in the report:

> "4. Except as otherwise provided in subdivision three of this section, no person shall appropriate, excavate, injure or destroy any object of archaeological and paleontological interest, situated on or under lands owned by the state of New York, without the written permission of the commissioner of education. A violation of this provision shall consitute a misdemeanor. The discovery of such objects shall be forthwith reported to the commissioner by the state department or agency having jurisdiction over such lands.
>
> 5. Permits for the excavation or gathering of archaeological and paleontological objects upon the lands under their respective jurisdictions may be granted by the heads of state departments or other state agencies to persons authorized by the commissioner ofeducation for the purposes of the state museum and state science service, with a view to the preservation of any such objects worthy of permanent preservation and, in all cases, to the acquisition and dissemination of knowledge relating thereto."
>
> L.1947, c.820; amended L.1958, c.121, eff. March 6, 1958.

32-3 Due to the fact that significant archaeological sites are located throughout the Tivoli Bay property and that the property is listed on the National Register of Historic Place, the EIS writers should contact the following state archaeologists:

Phil Lord, NYS Museum, Albany
Bruce Fullem, NYS Dept. of Parks, Recreation & Historic Preservation
Louise Basa, NYS Dept. of Environmental Conservation, Albany

to establish management procedures that can be incorporated into the final EIS.

cont.

32-3 Comments accepted. There was not sufficient time to contact these persons from when your comments were received and the time this FEIS went to print. However, these persons will be contacted when the management plan is formulated.

Page 82 C. Unavoidable Adverse Environmental or Socioeconomic Effects

32-4 It appears inappropriate to discuss proposed sanctuary acquisitions in terms of only fee title acquisition of property. Both the Village of Tivoli and the Town of Red Hook have taken a significant loss of tax base this past year with the Ward Manor Property being taken over by the State. This loss of tax base is further aggravated by a plan to acquire more land for the State from an adjacent property owner. It is explained in the draft EIS that except for Magdalen Island the additional acreage to be acquired is not for public access, but is to function as a buffer for the Estuarine Sanctuary. A buffer could be established with a conservation easement that would cost the federal or state taxpayer less and provide the same buffer protection, while keeping the land on the tax rolls. The mechanism of utilizing a conservation easement would substantially reduce the socioeconomic effects noted in the draft EIS. Alternatives to fee title acquisitions must be addressed in the final EIS.

Please advise me as to how these comments will be incorporated into the final EIS.

Sincerely,

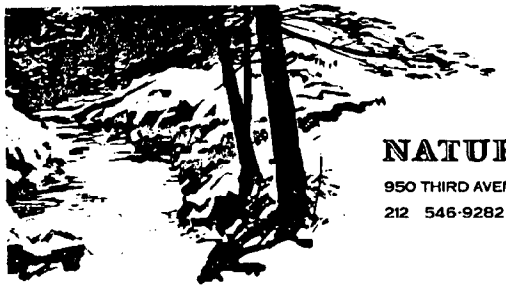
Robbe P. Stimson
Executive Director

RPS:js

cc: J. Winthrop Aldrich, Dept. of Environmental Conservation
Marcella Appell, Red Hook Zoning Board
Bruce Fullem, Parks, Recreation & Historic Preservation
Robert Greig, Red Hook Town Board
Paul Keller, Regional Director, DEC
Erik Kiviat, Hudsonia
Phil Lord, NYS Musuem
Samuel Lore, Red Hook Town Supervisor
Sally Mazzarella, Chairman, Hudson River Shorelands Task Force
Edward Neese, Village of Tivoli Mayor
Michael Rosenthal, Heritage Task Force for the Hudson River
Richard Wiles, Tivoli Planning Board

32-3 (cont.) Sanctuary designation will protect the archaeological resources as well as the natural resources of the site, and also facilitate further study of archeology. Location and extent of archaeological material will be taken into account in planning for any development or improvements to trails, roads, parking areas, and the like.

32-4 Please see responses 17-1 and 17-2.



NATURAL AREA COUNCIL

950 THIRD AVENUE, NEW YORK, N.Y. 10022
212 546-9282

RICHARD H. POUGH, *President*

July 23, 1982

Dr. Richard J. Podgorny
U.S. Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

33-1 I appreciate being sent a copy of the Draft Environmental Impact Statement on the proposed Hudson River National Estuarine Sanctuary and congratulate those who prepared it on an excellent job.

33-2 In my opinion the need for an ongoing research program along the Hudson should be stressed. We really know very little about the unique low salinity ecosystems that occur along the Hudson.

33-3 It is to be hoped that the two southern marshes can continue as no-hunting areas and that the ban on lead shot can be continued on the two northern marshes.

33-4 We certainly need more data on how best to handle the problems that arise relative to the handling of dredging spoil and additional marinas.

Having been one of the original members of the Corps of Engineers Environmental Advisory Board and currently a trustee of the Sapelo Island Research Foundation of Georgia, I have had some experience with these problems.

Yours sincerely,

R. H. Pough

Richard H. Pough

33-1 Comments accepted. No response necessary.

33-2 Please see General Response A regarding the sanctuary's focus on research.

33-3 Please see General Response B regarding hunting in the southern sanctuary marshes.

The lead shot ban is not specific to the proposed Estuarine Sanctuary sites at Stockport and Tivoli, but rather applies to a long stretch of river that contains these two sites.

33-4 These issues will be considered when the management plan is formulated.

Natural Resources Defense Council, Inc.

122 EAST 42ND STREET
NEW YORK, N.Y. 10168

212 949-0049

Washington Office
1725 I STREET, N.W.
SUITE 600
WASHINGTON, D.C. 20006
202 223-8210

Western Office
25 KEARNY STREET
SAN FRANCISCO, CALIF. 94108
415 421-6561

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July 30, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

The Natural Resources Defense Council (NRDC) strongly supports the establishment of the Hudson River Estuarine Sanctuary at Stockport Flats, Tivoli Bays, Iona Island, and Piermont Marsh. 34-1 These sanctuary sites are excellent representatives of the variety of shallows and wetlands in the Hudson River estuary.

The $375,000 in Federal matching funds made available through the Estuarine Santuary Program are necessary to enable the state to complete acquisition of the Stockport Flats, Tivoli Bays, and Piermont Marsh sites, and continued funding should be guaran- 34-2 teed to allow the state to set up a competent management program. NRDC endorses the Hudson River Estuarine Sanctuary program's efforts to encourage and coordinate scientific research and educational activities on its lands and attract funding for estuarine research essential to the restoration and maintenance of the river's natural systems. Having read the Draft Environmental Impact Statement (DEIS), we have several concerns.

The lines of authority in the DEIS's sanctuary management structure are too vague. While DEC is to "administer the... sanctuary and...be directly responsible for the content and structure of the sanctuary's management," the other four agencies represented on the Steering Committee (Office of Parks, Recreation, and Historic Preservation; Palisades Interstate Park Commission; Office of General Services; and Department of State) will also "exercise prerogatives and make decisions regarding the lands to which they hold title." * NRDC believes that the 34-3 sanctuary's purpose will be best served if all authority over sanctuary lands were vested in a single agency, DEC. In any event, specific, binding guidelines for management of the sanctuary should be promulgated as soon as possible.

* (DEIS pp. 14-15)

New England Office: 17 ERIE DRIVE · NATICK, MA. 01760 · 617 655-2656
Public Lands Institute: 1657 PENNSYLVANIA STREET · DENVER, CO. 80203 · 303 831-7101

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34-1 Comments accepted. No response necessary.

34-2 Comments accepted. No response necessary.

34-3 NYS Department of Environmental Conservation is the State's lead agency for this project and as such is ultimately responsible for all activities within the sanctuary. Single agency land ownership is not possible at this time. However, all participating State agencies have joined together, via their Memorandum of Understanding (see appendix 8), and committed their support to achieving the sanctuary's goals and objectives.

Additionally, the management plan will clearly state guidelines for management of the sanctuary.

The sanctuary management program as explained in the DEIS will endeavor to accommodate traditional uses of the sanctuary lands including hunting, fishing, trapping and other recreational and economic activities. It should be made clear in the FEIS that when irreconcilable conflict occurs between scientific and educational activities and

34-4 other uses, they will be resolved in favor of the scientific and educational activities. This caveat is in accordance with the Estuarine Sanctuary Guidelines: "All additional uses of the sanctuary are clearly secondary to the primary purposes and uses, which are long-term maintenance of the ecosystem for scientific and educational uses. Noncompatible uses... will be prohibited." (15 CFR §921.5)

Where access to sanctuary lands is improved or expanded, the sanctuary manager should take special care to

34-5 monitor the number of visitors and its effect on the sanctuary. If increased use has detrimental impacts, steps should be taken to regulate activities and, if necessary, to limit the number of visitors to the sanctuary.

The DEIS states that the chairpeople of the three

34-6 local Sanctuary Advisory Committees will meet with the Steering Committee. NRDC believes that these meetings should be made mandatory and regular. This goal can best be accomplished by appointing the three local committee chairpeople to the Steering Committee as voting members able to attend and contribute to all meetings.

NRDC appreciates this opportunity to comment on the

34-7 DEIS and looks forward to the completion of the FEIS and the swift establishment of the Hudson River Sanctuary.

Sincerely,

Robert M. Klingon

Robert M. Klingon

RMK/tw

34-4 Please see General Response A regarding multiple uses and non-compatible uses.

34-5 This issue will be given due consideration during the formulation of the management plan.

34-6 DEC will prepare a schedule of meetings after designation of the sanctuary.

The Sanctuary Advisory Committee, is advisory only, and will represent local government, user groups, conservation organizations, researchers, educators, sportsmen, funding organizations and adjoining land owners. The purpose of the Sanctuary Advisory Committee is to achieve coordination among the public and private groups participating in the sanctuary program, and to assist and advise the Sanctuary Steering Committee.

34-7 Comments accepted. No response necessary.

Lower Hudson Chapter
of
The Nature Conservancy

David L. Weld
Executive Director

RFD 2 Chestnut Ridge Road
Mount Kisco, N.Y. 10549
Telephone (914) 666-5365

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Mrs. Rodman K. Tilt, Jr.
Mr. Gary H. Toennissen
Mr. Edward Zimmerman

June 15, 1982

Dr Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, NW
Washington, DC 20235

Dear Dr Podgorny,

I have just finished reading the DEIS for the Hudson River Estuarine Sanctuary and find it to be a well thought out and complete document.

As The Nature Conservancy is an organization committed to the preservation of areas such as those mentioned in this 35-1 study, I, for one, certainly urge the granting of monies to help protect these unique ecological areas before it is too late.

Sincerely,

David L Weld
Executive Director
DLW/mm

cc : Joyce M T Wood

35-1 Comments accepted. No response necessary.

The Nature Conservancy

New York Field Office
36 West 44th Street, Room 307, New York, New York 10036
(212) 869-9532
1736 Western Avenue Albany, New York 12203
(518) 869-6959

July 21, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

The DEIS for the Hudson River Estuarine Sanctuary has been reviewed by The Nature Conservancy's New York Field Office and Eastern New York Chapter. While we find the document to be very thorough, the following comments could aid in its improvement.

With respect to the management summary, we feel that there should be greater focus on the rare species that are listed in the EIS and we are therefore making the following recommendations:

36-1 1. The Botany Office of the New York State Museum (NYSM) is the state agency best qualified to deal with rare plants. We, therefore, feel that they should be represented on the Steering committee.

36-2 2. While we agree that DEC is the obvious agency to be responsible for the sanctuary's management plan, and it is qualified to deal with the management of the rare animals listed in the EIS, it is our feeling that the management and research of the rare plants should be handled by the NYSM. If they are given that responsibility they must, of course, also be given the necessary funding to carry out that mission.

36-3 3. While the advisory committee, which is made up of citizen groups, is important for the entire program, biological experts should be represented on this committee to advise on the subject of rare species.

36-4 In terms of research needed, it is clear that the several listed rare plants need to be searched for and their locations determined before any management plans can be formulated. This should be given priority so that other plans will not adversely affect these rare species.

National Office, 1800 North Kent Street, Arlington, Virginia 22209

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36-1 The Botany Office of the New York State Museum was consulted during the preparation of the DEIS. Further interaction between the State Museum and the Sanctuary Steering Committee is appropriate, and the mechanism for this cooperation will be addressed in the Sanctuary Management Plan.

36-2 Same response as 36-1.

36-3 Each local subcommittee of the Sanctuary Advisory Committee has a position for a representative of the scientific community (Scientific Researcher, see p. 16 of the DEIS). Additional input from scientists is welcome.

36-4 Comments accepted. The management plan will be drafted in September 1982, and refined afterwards.

Other comments:

36-5 P. 21 - we would urge that no specimens of the rare plants listed here be collected without permission of the New York State Botanist.

36-6 P. 31 - when discussing the terrestrial buffer zone and access at Stockport, the primary consideration should be protection of rare species while also affording some protection for the main marsh and still allowing access and a reasonable size management unit.

36-7 P. 50 - Table 5. Plants of the Proposed Sanctuary Sites... to provide more complete information, this table should include the dates of the most recent sitings of the rare plants. Since many of these records are historical and have not been updated, the distinction of historical vs. current needs to be clearly defined.

36-8 The overall impacts of designation will indeed be positive if the necessary precautions are taken to protect the rare species in the sanctuary. Emphasis should be placed on the Plantago cordata because the locations of its populations are known.

36-9 We appreciate the opportunity to review the DEIS. The Nature Conservancy stands ready to assist the NYS Department of Environmental Conservation and the NYS Museum now and in the future. Moreover, we would be delighted to serve as a representative on the Steering committee if deemed necessary or appropriate.

Sincerely,

Beth Yanuck-Platt

Beth Yanuck-Platt
Preserve Selection & Design
New York Field Office

Anne E. Williams
Executive Director
Eastern New York Chapter

cc: Joyce M. T. Wood
Director, Office of Ecology and Conservation
Room 5813
U. S. Department of Commerce
Washington, D.C. 20230

36-4 (cont.) Locating rare plants can be an extremely time-consuming task and the management plan will have to be flexible enough to accomodate additional knowledge as this type of field work is accomplished. Available information on known localities of rare plants or animals will be taken into consideration in the management plan so that road and trail maintenance, boardwalk siting, and other activities can be kept out of these sensitive areas.

36-5 The New York State Botanist will be consulted concerning collections of rare plants listed in Table 5, p. 50 of the DEIS. Very little need, if any, for collection of these species is anticipated in the Sanctuary Program.

36-6 Comments on buffer zone and access accepted.

36-7 Additions, corrections, and refinements to the DEIS plant species lists are welcome. These lists are intended to be suggestive and of course are not complete because certain types of field work remain to be done after sanctuary designation.

36-8 Heartleaf plantain (Plantago cordata) will be considered in the management plan.

36-9 Comments accepted. No response necessary.

July 25, 1982

Mr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Mr. Podgorny:

I would like to take this opportunity to offer comment on the Draft Environmental Impact Statement of the Hudson River Estuarine Sanctuary Program.

Since its creation in the early 70's, the Town of Red Hook Environmental Conservation Commission has recognized that the Tivoli Bays area is our town's most valuable natural resource area. These freshwater tidal wetlands offer a diversity of animal and plant life that makes the bays an
37-1 ideal place for hunting, trapping, fishing, birdwatching, canoeing and hiking as well as for research and education. Over the years, we have come to realize that this area is important on a state and federal level because of its unique qualities. For almost a decade, we have supported state acquisition of the Tivoli North Bay and we are pleased that this acquisition has become a reality. Now, we would like to support the federal interest in this area as it has been expressed through the Estuarine Sanctuary Proposal from the Commerce Department's Office of Coastal Zone Management. The Tivoli Bays are certainly an appropriate sanctuary site. This healthy estuarine system can provide an excellent setting for the research and education that are such an integral part of the Coastal Zone Management Program.

I would like to comment on a few aspects of the Draft statement. First, the creation of a Sanctuary Advisory Committee is commendable. Public participation in the management of this sanctuary is essential, particularly in light of the numerous and diverse groups and individuals that have an interest in
37-2 this area. Our Commission has and will continue to take the position that people from the local area who are most familiar with this site can offer valuable insight into its management. Every attempt should be made to make this advisory group a viable, active group--not just a committee that exists on paper to fulfill public participation guidelines.

We have noted that the Draft Statement emphasizes that traditional uses of the area will not be changed to the extent that they are compatible with the sanctuary's goals of research and education. While this proposal deserves merit, we feel that the
37-3 potential for conflict among users is quite strong. We hope that in formulating the management plan for the sanctuary, the Department of Environmental Conservation will address this issue by striving to minimize potential conflicts while insuring that no one individual's or group's use of the area will be unduly restricted. This is no easy task! It will require some very creative management techniques. If the Department can success-

37-1 Comments accepted. No response necessary.

37-2 Comments accepted. This committee will be valuable in providing recommendations to DEC and the Sanctuary Steering Committee for resolution of conflicts in the use of the proposed sanctuary.

37-3 Comments accepted. There will be many opportunities to reduce potential conflicts through the scheduling of research and education activities, through good public relations and public participation in the research program, through the design and location of trails, roads, parking lots, the boardwalk at Tivoli, placement of scientific equipment, management of

fully address this problem, then the management plan has the potential for enhancing rather than impeding the use of the property by all interested groups and individuals.

One particularly appealing aspect of the proposal is that it will increase public access to the Hudson River. In recent years, access to the river has declined significantly. Without sufficient points of access, the river is no longer a resource that belongs to the people. In view of the possibility that ConRail will close off railroad service roads to the public, the question of access becomes even more pressing. The increased access proposed in this plan would be an important advantage for all users.

37-4

The designation of the Tivoli Bays area as an estuarine sanctuary will clearly have a positive environmental impact on this site. Much needed funds will be provided for management and facilities development. Research and educational use of the site will be greatly expanded and coordinated while traditional uses continue. Finally, an additional level of protection would be provided for the area. There may be times I suspect when those of us who have known this property so well for so long will wish we had kept it to ourselves. Yet, the unique sense of place that makes us care so deeply for this area is something that should be enjoyed by as many people as possible in as many ways as possible without diminishing the integrity of the property. Thoughtful, intelligent management with meaningful citizen participation can help to insure this.

37-5

Thank you for this opportunity to offer comments. If I may be of any further assistance, please feel free to contact me.

Sincerely,

Connie Bard Fowle

Connie Bard Fowle
Red Hook Conservation Commission
42 Prince Street
Red Hook, NY 12571

37-3 (cont.) vegetation, and other aspects of the operation of the proposed sanctuary. It is anticipated that the Advisory Committee through its knowledge of the sites and the local user groups will be extremely helpful in the design of sanctuary programs. Furthermore, the committee will also have an opportunity to assist in assessing research and education needs, and to assist in obtaining funds for research and education projects. Creative management is indeed necessary, and welcome. The Advisory Committee will help in meeting the challenges of environmental problems, protection of resources, public relations and communications, and funding.

37-4 Comments accepted. Concerning the railroad service roads and access points at Tivoli, DEC has been informed by Consolidated Rail Corporation that the railroad service roads will be closed off to vehicle access in the near future, but no date was provided. This closure will enhance DEC's capability to regulate use of the state lands when such regulation is needed. The closure also necessitates providing alternative access points for public use of the North Bay marsh for research, hunting, fishing, and other forms of recreation. The location of these alternative access points has not been definitely decided yet, but the access roads will follow existing old roads or trails to points in the marsh or shallows formerly used for boat access. The development will be limited to dirt-ramp, hand-carry launching of canoes, duck-boats, and similar sized craft. Users of these landings will be able to drive their vehicles to, or close to the landings, put their boat in, take their vehicle to parking lots at locations away from the edges of the wetlands where esthetic disturbance from vehicles is minimal. The potential impact on private adjoining landowners is under consideration in the siting of these access facilities. The use of cars or trucks will be restricted to the access roads and parking areas.

37-5 Commnets accepted. No response necessary.

Rockland Audubon Society, Inc.
P.O. Box 404, New City, N. Y. 10956
Organized 1947
A chapter of National Audubon Society, Inc.

RECD
1982 AUG -2 AM 10 21
MAIL ROOM

July 30, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

RE: DEIS, Hudson River
Estuarine Sanctuary

Dear Mr. Podgorny:

As affirmed by several Rockland Audubon Society (RAS) members at the two public information meetings held in 1981 at Lamont Doherty (re Piermont Marsh) and at Stony Point Battlefield
38-1 Museum (re Iona Island), RAS gives its full support to inclusion of Iona Island and Piermont Marsh in the National Estuarine Sanctuary System. We particularly endorse the use of those two areas for research and education, and hope that any use to which they will be put will be of a "passive" nature and will not affect fragile ecosystems existing at either location. Of special concern are such varieties as the prickly pear on Iona (to which I'll refer later in this letter) which may suffer under the feet and acquisitive hands of human invaders. Hopefully,
38-2 such flora and fauna can be adequately protected. We are pleased that hunting and trapping will not be permitted at either location, as current protection of the Palisades Interstate Park Commission mandates.

RAS has long experience with these two areas and has conducted numerous field trips, both bird and botanical, to both over the 35 years that we've been in existence.

As stated on previous occasions, our resource people
38-3 are available, perhaps through the proposed Sanctuary Advisory Committee, so that their expertise and long experience with Iona and Piermont may be tapped. Robert Deed's extensive records were used in preparation of your DEIS of June 1982, and we would certainly propose his name for membership in the Advisory Committee, as well as the names of Wesley Hennessy and Peter Derven.

We have a few small additions we would like to make for your final EIS:

(1) The name of Robert Deed (Nyack, N.Y.) should be added to "Individuals who provided information", pp. 88-89

(2) Robert Deed's extensive work Birds of Rockland
38-4 County N.Y. and the Hudson Highlands, 1874-1976, 220 pp. should be listed so that people know of its existence. It is available in all Rockland public libraries, at Trailside

38-1 Comments accepted. No response necessary.

38-2 Please see General Responses A and B.

38-3 Comments accepted. Nominations for this committee should be sent to Mr. Edward Radle, NYS DEC, 50 Wolf Road, Albany, NY 12233.

38-4 These have been included in this FEIS.

Nature Museum, the State Museum in Albany, and the Museum of Natural History in New York City.

38-5 (3) One plant species seems to be missing from your listing for Iona Island: Prickly Pear Cactus (Opuntia humifusa) is rather abundant atop a southeastern slope. For future use, a book was written which we are trying to track down: Plants (or Flora?) of Iona Island, by a Harry Layre (name spelling uncertain). If you wish, we shall let you know further when we locate it. Let us know.

38-6 (4) I see from the list of agencies, groups, etc. that received copies of the DEIS, Rockland Audubon is listed. We did not receive a copy at our mailing address, though three of our individual members did. May we receive a copy of the final EIS when it is completed, plus any other relevant information on this project, at the address on our letterhead?

38-7 (5) I see also that another Rockland organization with long experience in conservation was inadvertently omitted, perhaps they have so notified you: the Rockland County Conservation Association. Several of their mambers have been present at your hearings and meetings on this subject.

38-8 We are delighted that these valuable areas have been designated for protection and certainly hops that all will go as planned.

Sincerely,

Judith Kessler
President

38-5 Comments accepted. NOAA would appreciate this information.

38-6 The address on your letterhead has been added to our FEIS mailing list.

38-7 Three members of the Rockland County Conservation Association attended the public hearings, according to our records. Those persons will receive copies of the FEIS.

38-8 Comments accepted. No response necessary.

SCENIC
HUDSON INC
9 VASSAR STREET · POUGHKEEPSIE, NY · 12601 (914) 473-4440

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July 1, 1982

Dr. Richard J. Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
White Haven Street, NW
Washington, D. C. 20235

Dear Dr. Podgorny:

RE: Hudson River Estuarine Sanctuary

39-1 I am writing on behalf of Scenic Hudson and its 12,000 members to express our strong and unequivocal support for the funding proposal for the Hudson River National Estuarine Sanctuary.

Scenic Hudson has been concerned about the future and long-term management arrangements for these marshes for over five years. What makes the above captioned proposal unique is the diversity of the marshes in question and the opportunity which the grant would offer for developing creative approaches towards the varied uses of these lovely natural areas. There is also much renewed interest in the Hudson River both locally and nationally. The proposed study would thus constitute a fine and much needed complementary effort to others being carried out.

39-2

39-3 As you can see, Scenic Hudson is very strongly in favor of the program and we hope that you will be able to approve the grant request.

Sincerely,

Klara B. Sauer

Klara B. Sauer
Executive Director

39-1 Comments accepted. No response necessary.

39-2 Comments accepted. No response necessary.

39-3 Comments accepted. No response necessary.

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Executive Director
Klara B. Sauer

40-1 Scenic Hudson supports establishment of the Estuarine Sanctuary Program for the Tivoli Bay area as one of the four most natural areas of the highest quality tidal wetland complexes in the Hudson River Valley.

40-2 The Hudson River marshes are an extremely important resource serving as a natural control against which changes in other estuaries can be measured, and aiding in evaluation of the impacts of human activities on estuarine ecosystems.

40-3 In reviewing the draft EIS we would like to state that we feel the research ~~pro~~portion of the proposed study is of particular importance. It would help to coordinate and unify Hudson River research as well as share information with all levels of government and the private sector with a goal toward wise resource management.

We would suggest that as little woodcutting as possible be done within the Tivoli Bay site.

40-4 It is valuable to research to have existing forest areas remain to provide comparisons for harvested forest areas.

40-5 Designation of the sanctuary and acquisition of lands would provide additional public access to the riverfront for recreation and enjoyment.

The one ~~item~~ item that appears to remain constant throughout the report is that the greatest benefit of this sanctuary would be the long-term protection of the natural resources of the tidal wetlands; an area for people to use for aesthetic and recreational enjoyment as well as for scientific and educational purposes.

40-6 It is a pleasure to be supportive of a proposal where state agencies such as the Department of Environmental Conservation the Office of Parks and Recreation and the landowners have been able to achieve an agreement and have so stated that no significant change in land use will occur.

40-1 Comments accepted. No response necessary.

40-2 Comments accepted. One of the most important roles of the proposed Estuarine Sanctuary is to serve as a scientific "control area" against which changes in other areas may be measured. The advantages of permanent protection for the proposed sanctuary sites include comparisons with areas subject to greater stresses from human modification, and the potential for scientists to establish long-term monitoring and research projects with the knowledge that their study areas will not be turned into parking lots or spoil disposal areas in 10 or 20 years. Clearly, these assurances of permanency also benefit other users of the sites - particularly the sportsmen. Pollution and other changes in habitats are damaging to sportsmen and scientists alike. The four proposed sanctuary sites have withstood the stresses of 20th century culture and remain in good condition to support natural vegetation and wildlife, for study and for use.

40-3 Comments accepted. Estuarine Sanctuary research would address problems of practical importance in coastal management. For example, how can "weeds" that compete with native plants and animals be reduced in abundance without injuring other kinds of life? How fast do Hudson River shorelines erode, and what contribution do vessel wakes make to this erosion? Could natural or artificial marshes help to slow shoreline erosion? How can dredge spoil be disposed of without damaging habitats? What effects do human activities have upon populations of fish and wildlife, and how can fish and wildlife resources be maintained and harvested in the face of increasing human impact upon estuaries?

Where there has been hunting and fishing, hunting and fishing will continue.

American sportsmen have always been some of our best conservationists. Here is
40-7 an opportunity to expand ~~our~~ the research network to those who routinely observe the lands.

The beauty of a program such as this is that it is an opportunity for preser-
40-8 vationists, conservationists and sportsmen to join together to save the land ~~for~~ for future generations ~~all these activities~~ to fight the common enemy of pollutants and development of an area so beneficial to all of mankind.

Patricia W. Weber
Community Liaison

40-3 (cont.) What has caused the ups and downs in wild-rice in the Hudson over the last two decades? How can this valuable wildlife food plant be encouraged? How do tidal wetlands affect water quality in the estuary, and can this function be modified to advantage in maintaining high quality? What techniques can be used for wetland research with minimal damage to the wetlands themselves? What role does land vegetation play in protecting water quality and wildlife of the estuary? The answers to these questions, as they become available, will be extremely useful in planning use and development of the Hudson River Estuary and other estuaries and wetlands.

40-4 An unharvested forest buffer zone at the Tivoli Bays site would make this area more useful for study of the effects of timber and fuelwood harvest upon forests and wetlands elsewhere in the Hudson Valley. There is no lowland riverside forest protected specifically for research anywhere on the Hudson River Estuary. The forest is also important as a buffer for the wetlands and shallows, by slowing the movement of water, nutrients, and soil material down the slopes and into the waters. That is why sites were chosen for the proposed sanctuary that are bordered by forests.

40-5 Comments accepted. Public access to the riverfront is very limited along the Hudson. The proposed Estuarine Sanctuary would help to protect existing access, and would in some cases improve access or create new or better access points.

40-6 Comments accepted. No response necessary.

40-7 Comments accepted. Sportsmen and non-sportsmen have worked together, for example, to facilitate the DEC's acquisition of lands at Tivoli. The Estuarine Sanctuary would provide a forum for sportsmen and non-sportsmen to work together in education and research projects that would improve our understanding and ability to manage the Hudson River Estuary for all citizens.

40-8 Comments accepted. No response necessary.

SCENIC HUDSON INC
9 VASSAR STREET · POUGHKEEPSIE, NY· 12601 (914)473-4440

July 21, 1982

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HUDSON RIVER ESTUARINE SANCTUARY AT STOCKPORT FLATS

Comments

Scenic Hudson is a non-profit environmental organization with a membership of 12,000, concerned with the development and enhancement of the Hudson River Valley, its River and the shorelands.

We support the establishment of the Estuarine Sanctuary Program and the inclusion of the Stockport Flats as one of four of the most healthy, productive, unspoiled estuarine areas within the Hudson River Valley. It is an area against which changes in other estuaries can be measured and aides in evaluation of impacts of human activities on estuarine ecosystems.

41-1

Throughout the report the purpose of the program is restated again and again: To manage and to maintain the Stockport Flats, Tivoli Bays, Iona Island Marsh and Piermont Marsh areas as they are now and to encourage research and public education on the little-studied tidal river wetlands. To continue existing uses of the sites, including the continuation of hunting, fishing and trapping where hunting, fishing and trapping is presently permitted.

41-2

Much concern has been expressed over the use of the word "sanctuary" as part of the title for program.

41-3

The dictionary defines sanctuary as a holy place, one of refuge or protection.

Some have interpreted this to mean exclusion. ~~Exclusion of the hunter or trapper to the~~ students and general public word "sanctuary" should mean that an area so designated is ~~only~~ special. *There is a reason for its protection.*

41-1 Comments accepted. Please see response 40-2.

41-2 Comments accepted. No response necessary.

41-3 Please see General Response A regarding use of the word "sanctuary".

To the hunter it would mean the preservation of an endangered land and with it the natural inhabitants of the land.

The majority of American sportsmen have been known to be some of our best conservationists.

Every hunter knows that the reason for licensing and rules of law and order regarding numbers of kill and seasons for hunting is to insure that the sport will remain.

With the numbers of human beings inhabiting the earth constantly increasing and with it the need for space to live on, some of the land we must keep. It is not our right to use it all. We must provide for ~~future generations~~ our children and our children's children.

Therefore, all must abide by the law/so/governing/ that the land may survive. We support the acquisition of land & development of facilities to provide better public access to the Stockport Flats

The DEIS management plan calls for full consultation of the Sanctuary Steering Committee, the land owning agencies, the Sanctuary Advisory Committee and the public.

41-4 We support this concept to the fullest. It behoves us all to continue to participate as a part of the democratic process.

41-5 The beauty of a program such as this is that it is an opportunity for preservationists, conservationists and sportsmen to join together to save the land for future generations. It is a sharing of values which permits us to fight the common enemy of pollutants/and development of an area so beneficial to all of mankind.

Patricia W. [illegible]
Community [illegible]

41-4 Comments accepted. No response necessary.

41-5 Comments accepted. No response necessary.

SIERRA CLUB ATLANTIC CHAPTER

198 Morton Avenue Albany, New York 12202 (518) 462-9812

July 21, 1982

Dr. Richard J. Podgorny
US Office of Coastal Zone Management
3300 Whitehaven St., NW
Washington, DC 20235

Re: Proposed Hudson River National Estuarine Sanctuary

Dear Dr. Podgorny:

42-1 We have reviewed the proposal and draft environmental impact statement for a Hudson River National Estuarine Sanctuary. We strongly support the program and hope it will be approved and implemented as soon as possible.

42-2 The Atlantic Chapter of the Sierra Club together with its local groups, especially the Mid-Hudson Group based in Poughkeepsie, is interested in becoming involved as you develop a more detailed management plan and programming for the area. For instance, our Inner-City Outings Program might be willing to bring city children and young adults to the area for environmental education programs.

42-3 With the successful implementation of this program we hope you will once again turn attention to the proposed sanctuary at Peconic Bay on Eastern Long Island. This special habitat and uniquely preserved area deserves formal designation and protection as a scientific study area and educational preserve.

Sincerely,

Samuel H. Sage
Executive Director

SHS:CD
cc: Senator Moynihan
Senator D'Amato
Congressman Fish
Congressman Soloman
Congressman Gilman
Commissioner Flacke
Secretary Patterson
Assemblyman Hinchey
Senator Dunne

42-1 Comments accepted. No response necessary.

42-2 Comments accepted. NOAA and DEC encourage your participation.

42-3 Please see responses 5-1 and 5-11.

SIERRA CLUB

MID-HUDSON GROUP — ATLANTIC CHAPTER
BOX 1012 POUGHKEEPSIE, NEW YORK 12602

July 3, 1982

Dr. Rick Podgorny
Sanctuary Projects Manager
Office of Coastal Zone Management
3300 Whitehaven St. N.W.
Washington, D.C. 20235

SUBJECT: Hudson River Estuarine Sanctuary

Dear Dr. Podgorny:

The Executive Committee of the Mid-Hudson Group of the Sierra Club has reviewed the Draft Environmental Impact Statement for the proposed Hudson River National Estuarine Sanctuary that your office forwarded to us.

We heartily endorse the concept of the Sanctuary as outlined in the DEIS and are especially enthusiastic about the emphasis that will be placed on improved co-
43-1 ordination among estuarine educational efforts within the valley. The Sierra Club has long been involved in public education to the values of environmental resources and we look forward to participating in this regard.

Sincerely,

Paul Lowy, Chairman
Mid-Hudson Group
Atlantic Chapter
Sierra Club

pl:jlk

cc: Ms. Joyce Wood
Nat.Oc. & At.Ad.

43-1 Comments accepted. No response necessary.

JOHN F. O'NEILL
4 PLATT STREET
POUGHKEEPSIE, NEW YORK 12601

July 29, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N. W.
Washington, D. C. 20235

RE: Proposed ESTUARINE SANCTUARY AWARD
For A HUDSON RIVER ESTUARINE SANCTUARY

Dear Dr. Podgorny:

In accordance with the notification letter of June 10, 1982 from Joyce M. T. Wood and verbal instructions received at the Public Hearing in Red Hook, N. Y. on July 20, 1982 concerning the above, I am sending this letter to reach you by Aug. 2, 1982. As Legislative Chairman of the Mid-Hudson Chapter of Trout Unlimited, I attended the above Public Hearing and have reported back to the Chapter Officers. Because of the vagueness of the
44-1 Draft Environmental Impact Statement, and the lack of time to have a full membership meeting, it is felt that no position on the Statement can be taken at this time.

It is the general consensus of those of us that have discussed the matter that, as an organization interested in improving the environment, we would support estuarine areas on the Hudson to be used for long term scientific studies for developing programs for better use and management of the Hudson and the coastal areas
44-2 which it affects. Unfortunately, we have not had sufficient notice to investigate the matter. In addition, like many of the Sportsmen organizations who spoke at the Public Hearings, we are
44-3 concerned with the word "Sanctuary". You stated that there is a definition of the word in P.L.92-583. Unfortunately, we have not been able to find that definition. It most certainly must be made clear what is meant by the word in the Final Impact Statement, in such a way that it is binding on the authorities who will be managing these areas. If the word is merely an excuse to prohibit Hunting and Fishing in these areas, our organzation would have to be opposed to it.

There is also a general agreement that these areas would really be used for worthwhile scientific projects to increase our knowledge of the Hudson and the fish and animals which inhabit it and its shores. There have been so many projects voted in the last thirty years that have turned into useless "boondoggles" it has made many true conservationist organizations wary.

44-4 Aside from the above observations, our Chapter feels it can take no more decisive stand until more information is made available.

Very truly yours,

John F. O'Neill
Legislative Chairman
Mid-Hudson Trout Unlimited

44-1 The DEIS clearly states the proposed action.

44-2 As early as December 1979, a public meeting regarding site selection was held in New Paltz, NY. In the summer of 1981, DEC held a series of four public information workshops near each site. These workshops were both announced and reported on in local newspapers. Since January 1982 there have been several news stories about the sanctuary proposal in the Poughkeepsie Journal and other Hudson Valley newspapers.

Two Federal Register Notices, in March and June 1982, announced the project

Approximately 800 DEIS's were distributed to local and national interest groups, most to groups and individuals in the Hudson Valley. Like all interested parties, Trant Unlimited was sent a copy of the DEIS in the third week of May (see p. 94 of the DEIS) to Ed Ostapczuk, Shokan, NY 12481.

NOAA feels that every reasonable effort was made to notify interested persons, in a timely manner, of the project. Your name has been added to our mailing list.

44-2 (cont.) During an informal question and answer session following the public hearing, you were given the following reponse (as transcribed from the hearing's tape recording):

"You're concern about the word sanctuary is shared by many across the country. People don't like the word. We, at the office, also anticipate from past experience, that people, as you say, go to the dictionary and quote us Webster. Clearly, the definition of the word sanctuary, as defined by the Congressional Act, is different than the one that is in the dictionary. Basically, on the establishment of the Hudson sanctuaries sites as outdoor field laboratories and their compatible uses, I think the DEIS states time and again the words "compatible uses", specifically hunting, specifically fishing, specifically trapping. I know we could go so far to say that this would not be called a "sanctuary". Its a Congressional Act. That's the language the Congress choose to have it called."

44-3 Please see General Response A regarding the use of the word "sanctuary"

44-4 Comments accepted. No response necessary.

COMMENTS AND RESPONSES

4. RESEARCH ORGANIZATIONS

BARD
A College of the Liberal Arts and Sciences

Office of the Executive Vice President

July 19, 1982

Dr. Richard J. Podgorny
Sanctuary Products Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

I am writing in support of the application of the State of New York and the U.S. Department of Commerce for an Estuarine Sanctuary grant as expressed in the draft E.I.S. issued in June, 1982. The College, which borders on the Tivoli Bays, is solidly supportive of this proposal and urges its implementation. The proposed Estuarine Sanctuary will provide enhanced opportunity for educational activities, protection of vitally important tidal wetlands, and needed recreation for this region. We have full confidence in the wisdom of this proposal, as expressed in the draft E.I.S. and we therefore recommend its approval.

Sincerely,

Dimitri B. Papadimitriou
Executive Vice President

DBP/sh

(020)

198

45-1 Comments accepted. No response necessary.

Lamont-Doherty Geological Observatory | Palisades, N.Y. 10964
of Columbia University

July 6, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N. W.
Washington, D. C. 20235

Dear Dr. Podgorny:

46-1 I am writing regarding the proposed Hudson River National Estuarine Sanctuary. The Lamont-Doherty Geological Observatory is a large, not-for-profit- research institute devoted to the marine and earth sciences. We support the formation of the HRNES.

However, we make infrequent use of the docking facilities at the end of the Erie Pier when our research ship the R/V Conrad returns to port. Through an arrangement with the Town of Piermont,
46-2 we have been granted free use of the dock, which was constructed by us some years ago. It is the only accessible pier within reasonable distance of the Observatory, which is located as shown in Figure 9, p.39 in the text of the draft environmental statement.

The Observatory wishes to retain use of the Erie Pier access and dock facilities. We have no objection to use of the dock facility by vessels conducting research under HRNES, provided there is no interference with our normal usage.

Yours sincerely,

Barry Raleigh
Director

CC: Mr. Landriau

46-1 Comments accepted. No response necessary.

46-2 The Erie Pier is owned by the Village of Piermont and by the industries located at the base of the pier. The docking facilities used by Lamont-Doherty are on the Village parcel. Your institution's desire for continued unobstructed use of these facilities will be addressed in the sanctuary management plan. Scientists at Lamont-Doherty are encouraged to become involved in research in the proposed sanctuary, as appropriate.

QUEENS COLLEGE
of THE CITY UNIVERSITY OF NEW YORK
FLUSHING • NEW YORK 11367

DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES

TELEPHONE: 212-520-7267

23 June 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

I have several comments concerning the proposed Hudson River Estuarine Sanctuary as expressed in the Draft Environmental Impact Statement.

Page 29 of the statement notes that the splendid Constitution Island marsh be dropped from consideration because "of a localized polution problem". As a matter of fact, the problem in confined to Factory Cove north of the marsh. The marsh itself is in rather good shape and may, in fact, be the most representative (and breath-taking beautiful) marsh on the estuary. I deplore its ommision.

47-1

The Con Hook marsh is an unusual anomaly and, I believe, also belongs in the Estuarine Sanctuary. The island itself appears to possess interesting archaeology.

Otherwise, my compliments to the comilers of this statement.

47-2 They did a fine job.

Sincerely,

Walter S. Newman
Professor

cc. Joyce M.M. Wood, Director
Office of Ecology and Conservation
NOAA
Washington, D.C. 20230

47-1 Although most of the cadmium contamination at Constitution Island is in Foundry Cove (the north end of the site), cadmium has moved southward well into the central marsh. Con Hook marsh was also considered during the site selection process, but was not included in the current proposal because of its small size. Both these areas, and many other Hudson River Estuary sites, deserve permanent protection and research. Under the proposed Estuarine Sanctuary program, research and public education can be encouraged at non-sanctuary sites along with the primary focus on the four proposed sites. The four sites proposed are representative of the estuary, do not duplicate one another, and comprise a manageable and valuable complex for expanded research and education efforts. This does not diminish the importance of the Hudson's other wetlands.

Also, please see response 20-3.

47-2 Comments accepted. Thank you.

16 July 1982

Dr. Richard J. Podgorny
US Office of Coastal Zone Management
3300 Whitehaven Street, NW
Washington, DC 20235

Dear Dr. Podgorny:

We have been asked to comment on the Draft Environmental Impact Statement for the proposed Hudson River Estuarine Sanctuary. While we certainly support the concept of such a program for this area, the document evidences that little has been accomplished in defining the management, education, and research plans that would make the sanctuary a living, breathing entity. The expected paucity of funds to support development of new educational and research programs for the Sanctuary requires that these programs rely on creative collaboration with existing programs of similar types, using the several marshes as field sites. A management plan should spell out these collaborative arrangements.

48-1 I understood the preparation of management, research and education plans to be among the purposes of the pre-acquisition grant. Without these, the proposed sanctuary remains a concept--which is what is presented in this DEIS. I suggest that the Steering Committee develop such plans in the FEIS.

I would be happy to elaborate on these thoughts if you so desire.

Sincerely,

William M. Wise
Assistant Director for Programs

48-1 Management, research and education programs will be defined in the sanctuary management plan, to be drafted in fall 1982. The proposed sanctuary program would emphasize the kind of creative collaboration with existing and other new programs that you mention, and this will indeed be addressed in the management plan. Preparation of drafts of all of these plans (collectively considered as the sanctuary management plan) is part of the Pre-Acquisition planning, and it is underway.

NEW YORK UNIVERSITY MEDICAL CENTER
A private university in the public service

Institute of Environmental Medicine

550 FIRST AVENUE, NEW YORK, N.Y. 10016
AREA 212 340 7300 ext 885-5231 or 914-351-5355

ANTHONY I. LANZA RESEARCH LABORATORIES AT UNIVERSITY VALLEY
LONG MEADOW ROAD, STERLING FOREST, TUXEDO, N.Y. 10987
MAIL AND TELEPHONE ADDRESS: 550 FIRST AVENUE, NEW YORK, N.Y. 10016

June 23, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

I wish to thank you for the copy of the Draft Environmental Impact Statement on the Hudson River Estuarine Sanctuary. This letter contains my comments in regard to the statement and the Grant Proposal.

49-1 The concept and plan for this sanctuary are excellent. As noted in the draft, a number of organizations have been doing research on the river over the years, but no stable base or overall plan has existed to focus these efforts. I believe the sanctuary program should resolve that question, and it has my full support.

49-2 There are a few points in the Draft Environmental Impact Statement which are potentially misleading. In selecting the sites for the sanctuary, locations with known local pollution problems were ruled out, e.g., the Constitution Island march. The selected sites have then been designated as unspoiled, and are proposed as sites for "baseline" studies. It must be noted that the entire estuary has been exposed to a number of contaminants and all sediments are at a "baseline" of current contamination. None of the areas chosen can be expected to be free of hydrocarbons, PCBs of toxic elements. For this reason the baseline studies will be done on more or less contaminated sites which are not truly "unspoiled" or pristine. It is true that changes can be observed versus time, but these may be improvements as contamination decreases.

49-3 This aspect of the statement and the proposal would have been clearer if the scientific literature on the river were fully covered and less of the gray literature was used. No data is given covering sediment studies in the estuary and particularly at the sites selected. It would be difficult to study ecological effects of contamination if the areas were truly unspoiled. It would be helpful to have some published data rather than anecdotal information on this aspect of the proposal.

49-4 Past experience has shown that access can be obtained for research and/or recreational uses at many locations along the estuary. Some of the proposed studies will require continued access to locations outside of the sanctuary sites. This should not be a problem.

SESQUI CENTEN NIAL 1857 CELE 1981 BRATION

49-1 Comments accepted. No response necessary.

49-2 The four sites selected were judged as having the best overall environmental quality of large marshes on the Hudson River Estuary, taking into account a number of criteria including the lack of any known local contamination problems. It is true that the entire estuary has environmental contamination from PCB and other substances. But this is also true of all of the larger estuaries on the Atlantic Coast's Virginian Biogeographic Region, although the specific pollutants vary from estuary to estuary. No really unpolluted baseline exists in these types of ecosystems. The best that is available is the areas that are relatively unspoiled, such as the high-quality natural areas at Stockport, Tivoli, Iona and Piermont. It is necessary to use areas like this for comparison with other sites - in the Hudson River Estuary and in other estuaries - that have been relatively more modified by human activities.

49-3 Data from sediment studies at the proposed sites and at other Hudson River sites will be discussed in the sanctuary management plan.

49-4 Comments accepted. No response necessary.

Dr. Richard Podgorny (continued)

However, the concept of multiple uses has a serious impact on research studies. Our past experience indicates that field sites, equipment and implanted organisms are subjected to vandalism if the public has access to research areas. Successful completion of research in such a case is extremely difficult and in some cases impossible. I believe that some arrangement is necessary and should be possible to prevent this problem in the controlled sanctuary sites.

49-5

I believe the locations chosen are excellent and will encourage cooperation of the various research groups in future efforts.

49-6

Very truly yours,

Theo. J. Kneip, Ph.D.
Deputy Director
Laboratory for Environmental Studies

TJK/emcc

cc: Joyce M. T. Wood

49-5 It is expected with cooperation from sportsmen and other users of the proposed sanctuary sites that potential theft and vandalism problems with research equipment and materials will be reduced as the sanctuary sites become established as research areas. Improved communication with the general public, and the use of students and local residents as assistants and guides in certain types of research, should help improve public relations. There is a need to study the impacts of uses of these sites (for example, hunting, trapping, educational activities) upon the sediments, plants and animals of the tidal wetlands, and such studies could not be done if the public were excluded from the sites. It is not the presence of the general public per se, but the quality of public relations and the sense of stewardship of the users that influence the safety of research equipment and materials.

49-6 Comments accepted.

COMMENTS AND RESPONSES

5. FISH AND GAME CLUBS

Federation of Dutchess County Fish and Game Clubs, Inc.
P.O. Box 3201, Poughkeepsie, N.Y. 12603

July 29, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Wash. D.C. 20235

Dear Sir:

50-1 We, the six thousand members of the Federation of Dutchess County Fish & Game Clubs, Inc., do hereby take exception and a position of non-support to the Environmental Impact Report on Tivoli Bay as presented.

50-2 While we favor and are in support of the protection of the environment and the estuary, the lack of priority for multiple use is our major concern. We feel the sportsmen were instrumental in the drive to purchase the Tivoli Bay area. Therefore our assessment is that the sportsmen are the potential losers in the Plan as presented.

50-3 We feel that Hunting, Fishing, Trapping and Bird-Watching should have the prime priority, and that Research and Education be implemented only if it did not impact the previously mentioned activities.

50-4 We feel that the matching grants by the Federal Government are insignificant to the overall purchase price and that the potential loss of multiple use too dear a price for the implimentation of this program.

Respectfully yours

Anthony Sikorski
ANTHONY SIKORSKI
President

cc: Joyce M. T. Wood
Director
Office of Ecology and Conservation

PS: It is our recommendation that we, the members of the Federation of Dutchess County Fish & Game Clubs, Inc., be represented on the Steering Committee.

50-1 Comments accepted. No response necessary.

50-2 DEC is preparing a management plan specifically for the Tivoli site which provides for hunting of waterfowl and upland game, fur trapping, fishing, bird watching and other forms of nature study, education and research, and other activities. While the Estuarine Sanctuary program emphasizes research and education, the size and diversity of habitats at the Tivoli site allows opportunities for a mixture of many kinds of uses with relatively little opportunity for conflicts. The management plan will address areas of potential conflict and incorporate regulations designed to reduce these conflicts. This applies to the reduction of interference to consumptive uses as well as the reduction of interference to research.

50-3 Please see General Response A regarding multiple use, and the primary purpose of the sanctuary.

50-4 The acquisition of land from Central Hudson Gas & Electric Corporation by DEC in 1981 cost $750,000, of which 50% was Federal Land and Water Conservation Fund money and 50% was New York State Environmental Quality Bond Act money, the latter equally divided between Unique Areas and Tidal Wetlands funds categories. The State Office of General Services (OGS) is turning over their lands in North Bay to DEC at no cost to DEC. The acquisition by DEC of a small parcel at the north end of North Bay is in negotiation, and the exact boundaries and cost of this parcel have not been decided.

50-4
(Cont) Of the $350,000 in Federal (OCZM) funds applied for by New York for the proposed Hudson River Estuarine Sanctuary, money will be spent at all four of the Hudson River sites for lands, facilities, and other aspects of the proposed sanctuary's research and education program as described in the DEIS. Some of this money will be spent on an addition to the Existing Bard College Field Station on South Bay to provide a research facility where scientists from outside the college can work on estuarine sanctuary research projects in the Tivoli Bays and also in the other three sanctuary sites. Some of the money will be spent on a partial renovation of the Bear Mountain Trailside Museums complex near the Iona Island Marsh, for the sanctuary's primary public education facility. This facility accomodates more than one-half million visitors per year, who will be able to enjoy and learn from exhibits on the Hudson River Estuary and the Iona Island Marsh. Other funds will be spent on educational brochures, signs, equipment, and other materials for public education and research. The Federal Operations Grants of $50,000 per year for five years will pay for the salary of an Estuarine Sanctuary Manager, and for other maintenance costs of the sanctuary. Both the $375,000 Acquisition Grant and the$50,000 per year Operations Grants will be

50-4
(Cont) matched by an equal value of state agency goods and services and also by some land acquisition funds from the Environmental Quality Bond Act for acquisition at the Stockport site. Thus, the Estuarine Sanctuary grant funds would be distributed among the four proposed sanctuary sites. It is also expected that the Federal funds and the State's match will act as "seed money" to stimulate grants from other public and private sources to fund specific research projects in the proposed sanctuary.

The Federated Sportsman's Clubs of Ulster County, Inc.

34 EAST ROAD - HIGH FALLS, N. Y. 12440
Office: 338-4070 Res: 687-9267

A 8000 Member Organization

Algonquin Bowmen
Bushkill Rod & Gun Club
Dwaarkill Rod & Gun Club
East Kingston Rod & Gun Club
Eight Sportsmen Inc.
Esopus Township Sportsmen's Club
Gardiner Rod & Gun Club
Highwoods Sportsmen's Club, Inc.
High Point Mt. Sportsmen's Assoc.
Homowak Fish & Game Assoc.
Lackawack Fish & Game Assoc.
Lake Hill Sportsmen's Club
Lake Katrine Rod & Gun Club
Landowners Sportsmen Assoc. Inc.
Lloyd Rod & Gun Club
Marakill Rod & Gun Club
Marbletown Sportsmen's Club
Modena Rod & Gun Club
Morgan Hill Game Assoc.
New Paltz Rod & Gun Club
Peterskill Sportsmen's Club
Phoenicia Fish & Game Assoc.
Plattekill Rod & Gun
Plutarch Sportsmen's Club
Remington Sportsmen's Club
Ridge-Runners Rod & Gun Club
Rondout Valley Rod & Gun Club
Rosendale Sportsmen's Assoc.
Ruby Rod & Gun Club
Saugerties Fish & Game Club
Shokan Archers & Landowners' Assoc.
Southside Rod & Gun Club
Ulster Heights Rod & Gun Club
Ulster County Trappers
Upper Esopus Fish & Game Assoc
Vly Sportsmen's Assoc.
Walker Valley Sportsmen's Assoc.
Wallkill Rod & Gun Club
Wawarsing Sportsmen's Association
West Esopus Landowners' Assoc.
Glasco Gun Club
Mid-Hudson Water Fowl Assoc.

July 21, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven St N.W.
Washington, D.C. 20235

Dear Dr Podgorny:

The meeting held on July 20'82, at Red Hook, N.Y on Hudson River Estuarine Sanctuary on Tivoli Bay

51-1 The Federated Sportsmen's Clubs of Ulster County and the N.Y.State Brotherhood of Sportsmen have made Public Statements against the word SANCTUARY being us in the Title of this Program

The Iona, Piermont, part of this Program does no
51-2 allow Hunting and the word SANCTUARY can some day app to Tivoli Bay the same way

We realize The Act was passed by Washington in t early 70's, but feel a sub title on certain areas lik Tivoli Bay, and Stockport could be named (Hudson Rive Estuarine, Fish and Game, Educational, and Reserch Management Centers.)

51-3

By using a Sub Title such as this it would creat a feeling from Sportsmen and others of being part of the total Program

51-4 At present Sportsmen feel at any time in the fu they can be left out of the Program.

This feeling was expressed by 70 to 90% of the people speaking that evening

The word fish and game give the Sportsmen a tru feeling that their rights are not being placed on a fine line and some day could be taken away

The word wildlife could replace game, but sport in general feel more secure with the word game, beca hunting is associated with that word

51-1 Please see General Response A regarding the use of the word "sanctuary."

51-2 Same response as 51-1.

51-3 The idea of a "subtitle" is appropriate and will be given due consideration. Particularly at the Tivoli Bays site, where the area is used for harvest of fish, game, and fur, for historic, archeologic and biologic preservation, and for an Experimental Ecological Reserve, "subtitles" would be appropriate on signs and literature in the proposed Estuarine Sanctuary.

51-4 The Estuarine Sanctuary proposal calls for the establishment of Sanctuary Advisory Committees. The purpose of these committees is to achieve coordination among the public and private groups participating in the sanctuary program, and to assist and advise the Sanctuary Steering Committee. It would be entirely appropriate for sportsmen to send their representatives to serve on each of the advisory committees. Nominations for the Sanctuary Advisory Committee should be sent to Mr. Edward Radle, NYS DEC, 50 Wolf Road, Albany, N.Y. 12233.

Over the years Sportsmen have become very concerned with how Govern-
51-5 ment and elected officials have tried to pass laws against our rights We feel by naming a Sub Title such as suggested above would be showing the Sportsmen you are extending your hand and we will extend ours to helping to make this program work for all, not just a few.

Sportingly yours

Frederick G. Faerber III
Pres.

51-5 Comments accepted. Please see response 51-3 and General Response A.

Sponsored by

FEDERATION OF SPORTSMEN'S CLUBS OF SULLIVAN COUNTY, Inc.

Member of New York State Conservation Council

Hurtsboro, N.Y. 12790
July 30, 1982 P.O. Box 502

Dr. Richard Pouzarny

Dear Sir.

52-1 This is letter of suport of the Hudson River estuarie sanctuary sites .

The Federation of sportmens club belive tnat is near time the might Hudson river is cleaned up both for Hunting, fishing

52-2 and recreation also for trapping. If in any way we cane be of further help in this projecM please be free to call on us.

52-3 Will your please sent us the final report on this matter

Federation of Sport's Clubs
of Sullivan County, Inc.
arthur E. Blakesley
Arthur E. Blakesley
Fish Chairmen.

52-1 Comments accepted. No response necessary.

52-2 Comments accepted. Please see response 51-4.

52-3 A copy of this FEIS has been mailed to you.

COMMENTS AND RESPONSES

6. INDUSTRIES AND PRIVATE INDIVIDUALS

CONRAIL

July 26, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

The Consolidated Rail Corporation has reviewed the draft environmental impact statement on the proposed Hudson River National Estuarine Sanctuary. Conrail takes no
53-1 exception to the report and will cooperate fully when the project is finalized. Sufficient time is requested to review specific plans to ascertain the impact on continued safe operation of our railroad. Additionally, Conrail expects fair market value for any property appro-
53-2 priated for this project.

Thank you for the opportunity to review this draft proposal.

Very truly yours,

J. M. Samuels, Ph D
Assistant Vice-President, Industrial Engineering

Room 601, 6 Penn Center Plaza
Philadelphia, PA 19104

cc: Joyce M. T. Wood
Director, Office of Ecology and Conservation
Room 5813, US Department of Commerce
Washington, D.C. 20230

CONSOLIDATED RAIL CORPORATION

53-1 Comments accepted. No response necessary.

53-2 In the process of land acquisition for the proposed Estuarine Sanctuary, the negotiating agencies (DEC, OPRHP) will consider, on a case-by-case basis, all available techniques including fee simple acquisition, conservation easements, and reserved life estates. In each case, the most appropriate technique will be used. Fair market value is the rule for any property appropriated.

TIVOLI PROPERTIES,
P. O. BOX 172, DOCK ROAD
TIVOLI, NEW YORK 12583 — (914) 757

Dr. Richard J. Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, NW
Washington, D.C. 20235

RE: Draft Environment Impact Statement, Hudson River Estuarine Sanctuary.

Dear Dr. Podgorny:

It was great pleasure to meet you just before the hearing in Red Hook on July 20th, 1982 regarding the Draft Environmental Impact Statement for the Hudson River Estuarine Sanctuary.

54-1 To develop further the statement I made at the hearing I would like to add that Tivoli Farms, consists of approximately 500 acres and employs 29 full-time employees. The horse breeding operation has been increased during a three year effort on the part of the Corporation to restore the main house, establish barn facilities and reclaim 400 acres of land.

The Tivoli Mansion which was formerly known as Callendar House is an 18th Century Building built by the Livingston family. The mansion and its environment included a refined landscape with several vistas over the Tivoli Bay area and the Hudson River. Any action effecting the integrity of the buildings, landscape and the land would significantly impact the properties real estate value and the security of the horse breeding operation.

54-2 Having reviewed the above mentioned Estuarine Sanctuary EIS, I would like to make reference to the recent aquisition by the State of New York of 1,436 acres adjacent to the Tivoli Farms property. As a result of discussions with local governments, (Village Town and County), over the need of the State to further acquire 45 plus acres of additional property, the response has indicated that the local community will not condole any further reduction of their tax base.

54-1 Comments accepted. No response necessary.

54-2 Please see responses 17-1 and 17-2

In general the agencies negotiating for land acquisition for the Hudson River Estuarine Sanctuary will consider all available land preservation techniques, including fee simple acquisition, conservation easements, reserved life estates, and sale or transfer of development rights. This case is complicated by the fact that the relevant agency (the DEC) has been involved in negotiations for this parcel within the framework of the Tivoli Bays State-lands acquisition program, which predates the consideration of the Estuarine Sanctuary (see Part II, A,3,b, "Tivoli").

TIVOLI PROPERTIES, INC.
P. O. BOX 172, DOCK ROAD
TIVOLI, NEW YORK 12583 — (914) 757-4126

54-3 Please note the attached Resolution #314-1981 which shows the support of County Gaernment to a negotiable settlement that will not impact the tax base of the area.

It is my recollection that the proposed additional fee title acquisition of 45 acres of our land, with the exception of Magdalen Island is to be acquired as a protective buffer for the Estuarine Sanctuary.

My understanding of land preservation mechanisn leads me to recognise conservational casement as a tool which would maintain the property on the tax rolls and protect wet lands area from any future development. It is imperative for the success of the horse breeding operation that the security of my land is insured by the same buffer area.

54-4 It concerns me that the State and Federal Government would utilize our tax money to acquire land through eminent domain which is so much nore expensive than the purchase of my developed rights through a Conservation Easement. I view this preservation alternative as the most cost effective investment for the protection of the buffer area to a significant wet land and historic landscape. I feel that this alternative should be addressed in the final environmental impact statement as discussed on Page 82 Item C -Unavoidable Adverse Environmental or Socieconomic Effects.

54-5 Another point dealing with the security of my horse breeding operation is to be noted in the third paragraph on Page 13, which discusses two public access points from the Ward Manor property to Cruger Island Road and from Stony Creek. Following the opening of these two additonal accesses, the State should close the RR service road to unauthorized motor vehicles between Cruger Island and Tivoli Dock area. This will facilitate better management and control of the area.

54-3 Comments accepted. The needs and wishes of local municipalities will certainly be weighed heavily in any decision regarding the specific means for protecting the proposed Estuarine Sanctuary.

54-4 Please see responses 17-1, 17-2, and 53-2. Reference to the use of conservation easements as an alternative method to acquire land is made at numerous places throughout the DEIS, and in the National Estuarine Sanctuary Guidelines. The brief period of time remaining from receiving your comments to the date the FEIS was sent to the printer, did not allow for the presentation of an accurate example of comparison of values and costs of the various methods of appropriating land. However, additional language has been added to Item C.

54-5 This issue will be given due consideration during the formulation of the sanctuary's management plan.

The railroad service road is Conrail property. Conrail had indicated it intends to close this road to the public.

TIVOLI PROPERTIES, INC.
P. O. BOX 172, DOCK ROAD
TIVOLI, NEW YORK 12583 — (914) 757-4126

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TIVOLI PROPERTIES, INC.
P. O. BOX 172, DOCK ROAD
TIVOLI, NEW YORK 12583 — (914) 757-4126

54-6 I fully realize that this proposal for $375,000. grant by the Federal Government is to be primarily used for the proposed control of my lands which is listed on the National Register of Historic places.

54-7 I would like to be assured that the expenditures of these Federal or State(NEPA, SEQR) funds would not adversely impact my property as well as the surrounding community. Should my concern be incorporated in the finale EIS, I will continue to support the concepts of the Hudson River Estuarine Sanctuary Proposal and negotiate a mutually agreeable settlement.

Sincerely yours,

Jean de Castella de Delley
President

JCD/dvg

CC: Comm Robert Flack, Dept. of Environmental Conservation
Paul Keller, Regional Director, DEC, New Paltz, New York
Lucille P. Pattison, County Executive
Samuel Lore, Red Hook Town Supervisor
Sally Mazzarella, Chairperson, Hudson River Shorelands Task Force
Edward A. Neese, Jr. Village of Tivoli Mayor.

54-6 Comments accepted. No response necessary.

54-7 Please see General Response A regarding the purpose and impact of the proposed sanctuary. NOAA understands, that at the time of this FEIS printing, that NYS DEC is preparing an offer to present to you. Additional language regarding conservation easements has been incorporated in this FEIS.

Your concern in the above sense is duly noted. Thank you for your expression of conditional support for the Hudson River Estuarine Sanctuary proposal.

RESOLUTION NO. 314 1981

RE: MEMORIALIZING THE D.E.C. TO RENEGOTIATE THE PROPOSED TAKING LINE WITH MR. JEAN DE CASTELLA

Legislators Quinn, White and Sipperley offer the following and move its adoption:

WHEREAS, it appears that the State of New York and the Department of Environmental Conservation intends to condemn certain land bordering the Tivoli North Bay presently owned by Mr. Jean deCastilla, doing business as, "Tivoli Farms", and

WHEREAS, it is advantageous to all County taxpayers to keep as much property on the tax rolls as possible, and

WHEREAS, Mr. Jean deCastilla has invested large sums of money and much labor in developing an old Hudson River Estate into a working farm which now gainfully employs a number of people who might otherwise be unable to find work, and

WHEREAS, Tivoli Farms is used for the purpose of breeding horses and advancing the horse industry within the State of New York, and

WHEREAS, the land in question is marginal land consisting of rough terrain and marshes and Mr. Jean deCastilla has no intention of developing such land, now, therefore, be it

RESOLVED, that the Dutchess County Legislature does hereby memorialize the State of New York and the Department of Environmental Conservation not to condemn the aforesaid land owned by Mr. Jean deCastilla bordering the Tivoli North Bay and, instead, to renegotiate with Mr. Jean deCastilla an agreement whereby the land in question would not be developed and would remain in its present state for the mutual benefit of both the owners of Tivoli Farms and the people of the County and State.

APPROVED

Lucille P Pattison

LUCILLE P. PATTISON
County Executive

Date 6-9 19 81

/lb
5-28-81
Amended in Committee 6-4 81

STATE OF NEW YORK)
COUNTY OF DUTCHESS) ss.:

This is to certify that I, the undersigned, Clerk of the Legislature of the County of Dutchess, have compared the foregoing resolution with the original resolution now on file in the office of said clerk, and which was adopted by said Legislature on the 8th day of June 1981, and that the same is a true and correct transcript of said original resolution and of the whole thereof.

IN WITNESS WHEREOF I have hereunto set my hand and seal of said Legislature this day of 19

JUN 8 1981

Joan A Traver

CLERK OF THE LEGISLATURE

BR-3

RAYMOND BEECHER
RR 1 BOX 10A BEECHER RD
COXSACKIE, NEW YORK 12051

July 10, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D. C. 20235

Dear Sir:

55-1 The West Shore Property Owners, an informal group of families residing along the west bank of the Hudson in Greene County has demonstrated a sustained interest in this section of the Hudson River. The proposed Hudson River Estuarine Sanctuary which includes Stockport Flats receives its unqualified support. It would like to be kept informed of subsequent developments leading, hopefully, to the proper management of these tidal flats.

55-2 The Draft Environmental Impact Statement is a comprehensive, technical document. It is a document somewhat difficult for the average layman to constructively criticize. It certainly details the problem and sets up immediate and longer range solutions which will prevent the continued deterioration of this estuarine ecosystem. The effort should not be delayed. Our group particularly likes the idea of using the sites for field work for educational groups. The cost for the entire project is moderate.

55-3 The Citizens Advisory Committee need not be limited to members from those counties in which the tidal flats are located. For example, the Stockport Flats is equally important to individuals in Greene County opposite Columbia.

It should be noted that if Mr. E. Porter Fearery, Jr. claims so much of the disputed Stockport Flats, he should have been paying taxes on an additional 50 or more acres.

In closing we commend the completeness of the report, one which points out both positive and negative aspects. It certainly spells out a reasonable management plan with limited cost to the taxpayer.

Yours truly,

WEST SHORE PROPERTY OWNERS

Raymond Beecher, Secretary

55-1 Comments accepted. Your name has been included on this project's mailing list.

55-2 Comments accepted. No response necessary.

55-3 Comments accepted. Please see response 27-5.

TWINING 9-8615

OFFICES OF
IRVING DOMNITCH
BUILDER

80-15 Forty-First Avenue, Elmhurst, N.Y. 11373

June 21, 1982

New York State Dept. of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561

Attention: Edward Radle
Hudson River Program Coordinator

Gentlemen:

I have just received notification that the State would like to negotiate an acquisition by easement or in fee simple for a portion of my
56-1 property along the Hudson River. I wish to notify one and all that I am not surrendering nor am I interested in selling this property to the State or the Federal government. Should any action be taken against me, I will contest it and go to court as I feel this whole matter is being handled unfairly.

At one time years ago I received a notice from New York State asking me to permit a contractor who was dredging the Hudson River to dump silt on my property. Wanting to be a good citizen I agreed to this, and the end result was that I lost my ingress and egress. My understanding at the time was that the peninsula created by this dumping would then belong to me as it was then the only way to get to the Hudson River from my property. Since that time I have received notification from the State that they are contesting some of my ownership of the peninsula. I have spent a great deal of money trying to clarify this situation and even now am in the process of once again surveying the property and most particularly, some of the water frontage.

I have been the sole owner of this Stockport property for many years (this was formerly the Empire Brick Company and the brick kilns are still

56-1 The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) has said that in the specific case of the properties at the Stockport site which are identified as parcels 1, 2, 3 and 4 on p. 7 of the DEIS, OPRHP would acquire these parcels only through willing-seller negotiations. Parcels 2 and 3, owned by Mr. Domnitch, have been left in the proposal (FEIS) because, even though Mr. Domnitch has stated his lack of willingness to sell, it is possible that in the future Mr. Domnitch might change his mind about selling, or that a future owner of the property might decide to sell to OPRHP.

TWINING 9-8615

OFFICES OF
IRVING DOMNITCH
BUILDER

80-15 Forty-First Avenue, Elmhurst, N.Y. 11373

there plus there was established usage by barges coming in and out to the brickyard for over 50 years). I have kept the property vacant, purchased adjacent land (the Holmes Farm, etc.), paid for surveys, spent money for seed, posted the property, paid all taxes promptly and I have not, in anyway, destroyed the ecological or environmental balance of the area.

Having now heard how my dealings with the State have proceed thus far, I feel you will understand my negative reaction to the proposal contained in your letter of June 9, 1982.

Respectfully yours,

Irving Domnitch

ID/mj
encls.

cc: President Ronald Reagan
Governor Hugh Carey
Republican National Committee
Republican Inner Circle
Arthur J. Kremer, Chairman of the Ways and Means Committee, The State Assembly
Dr. Richard Podgorny, Sanctuary Project Manager
Office of Coastal Zone Management
Joyce M. T. Wood, Director
Office of Ecology and Conservation
United States Dept. of Commerce

New York State Department of Environmental Conservation
21 South Putt Corners Road, New Paltz, New York 12561-1696
914-255-5453

Robert F. Flacke
Commissioner

June 9, 1982

Mr. and Mrs. Irving Domnitch
80-15 Forty-first Avenue
Elmhurst, NY 11373

Dear Mr. and Mrs. Domnitch:

The New York State Department of Environmental Conservation is acting as lead agency in establishing sanctuaries along the Hudson River as part of the National Estuarine Sanctuaries Program. This sanctuaries program seeks to preserve outstanding examples of estuarine environments in the approximately 20 bio-geographic regions of the United States. The areas set aside will have national significance for education and research in these extremely valuable but threatened ecological resources as well as preserving them so that they can continue to perform their vital role in the estuary. Enclosed for your information is the U.S. Department of Commerce brochure on the program.

There are a total of four separate areas proposed for inclusion in this estuarine sanctuary: Piermont Marsh, Iona Island Marsh, Tivoli Bays, and Stockport Flats Marsh. The bulk of the land to be dedicated as a sanctuary is owned by the State of New York. The State agency presently exercising jurisdiction will continue so there should be no significant changes. Coordinated Management, Research, and Education Plans for the sanctuary will be developed in the months ahead. However, in general, activities currently allowed in these areas will continue. Once the general areas for inclusion within the sanctuary were identified, program goals and the need to establish manageable units dictated the actual boundaries selected. Our records indicate that you own property within the proposed sanctuary boundary; a map of the sanctuary, with your property highlighted, is enclosed. Although private inholdings within the sanctuary are not incompatible, the State would like to negotiate an acquisition by easement or in fee simple for the indicated property.

A Draft Environmental Impact Statement that will provide extensive information on this proposed action is now in preparation, and will be distributed about mid-June 1982. Public hearings on the DEIS will be held on July 19, 20, and 21, 1982 at times and places to be announced. Your name has been placed on the mailing list to receive the DEIS and Hearing Notice. If you do not receive this by late June, please contact me and I will see that you are provided copies.

I will be contacting you in the near future to discuss possible acquisition of the indicated property, and to provide you with any further information you wish on the program.

Sincerely,

Edward Radle

Edward Radle
Hudson River Program Coordinator
518-457-6178

ER:sp
Enclosure

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Washington, D.C. 20230

OFFICE OF THE ADMINISTRATOR

June 10, 1982

Dear Reviewer:

In accordance with the provisions of Section 102(2)(C) of the National Environmental Policy Act of 1969, we are enclosing for your review and consideration the draft environmental impact statement prepared by the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, Department of Commerce, on the proposed Hudson River National Estuarine Sanctuary.

Any written comments or questions you may have should be submitted to the contact person identified below by August 2, 1982. Also, one copy of your comments should be sent to me in Room 5813, U.S. Department of Commerce, Washington, D.C. 20230.

CONTACT PERSON

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235
Telephone: 202/634-4236

Thank you for your cooperation in this matter.

Sincerely,

Joyce M. T. Wood

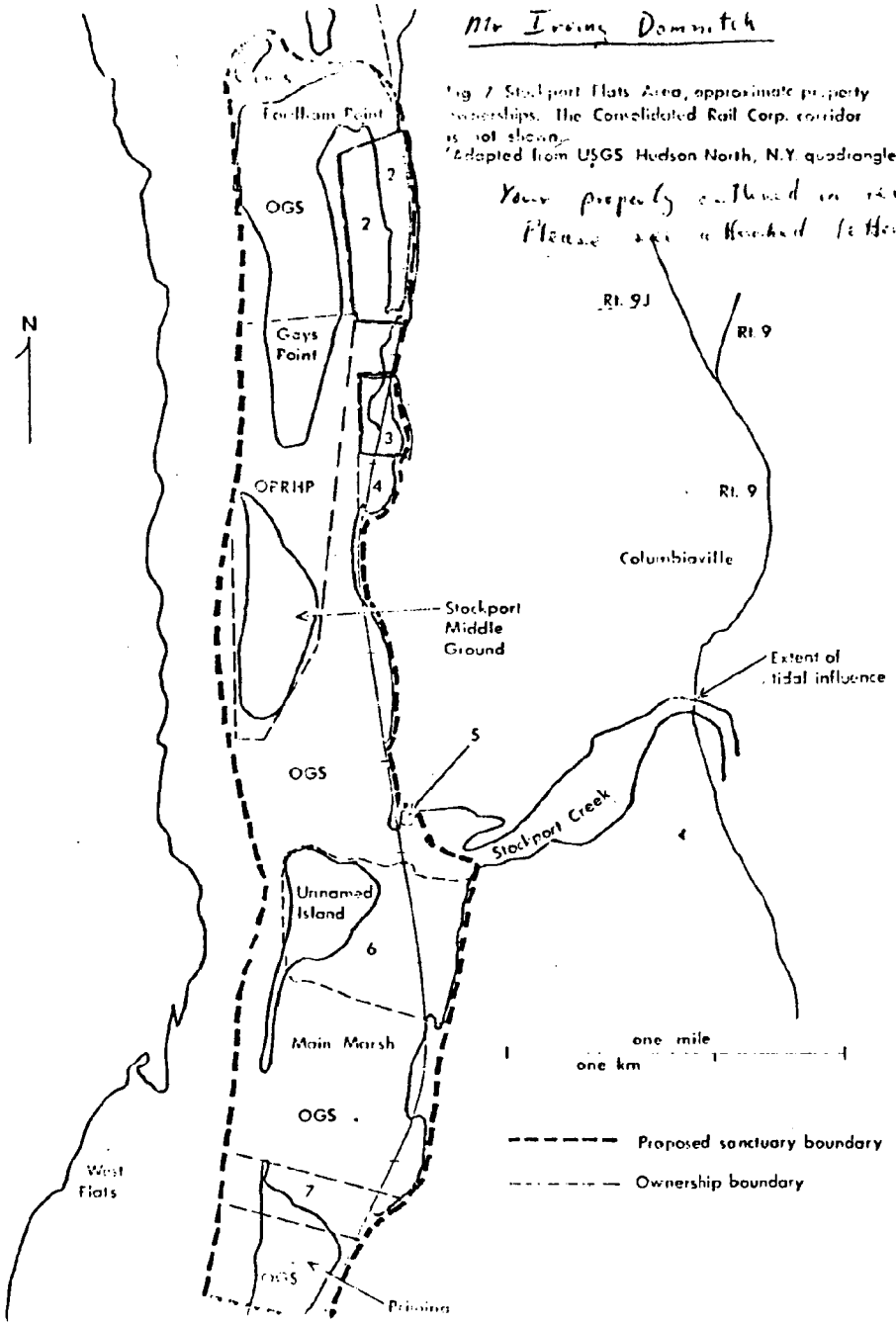
Joyce M. T. Wood
Director
Office of Ecology and Conservation

Enclosures

Mr Irving Domnitch

Fig. 7 Stockport Flats Area, approximate property ownerships. The Consolidated Rail Corp. corridor is not shown.
(Adapted from USGS Hudson North, N.Y. quadrangle.)

Your property outlined in red
Please see attached letter



223 Fellows Avenue
Syracuse, NY 13210
July 26, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

I wish to submit my comments concerning the Draft Environmental Impact Statement for the Hudson River Estuarine Sanctuary program.

57-1 As both a private citizen and a professional aquatic biologist, I strongly favor the proposed sanctuary program. I grew up in, and often return to, Rhinebeck, NY, which is near one of the sanctuary sites, Tivoli Bays. I used to camp and swim near Crugers Island at this site and loved exploring the marshes and woodlands there. As a private citizen, I would like to be able to continue this activity with my

57-2 family when I vacation in the area. My enjoyment of Tivoli Bays would be enhanced by the creation of a sanctuary program with interpretive services. A sanctuary program would ensure that this marshland would remain in its undeveloped state.

As an aquatic biologist, I believe that creation of a sanctuaries program in these unique freshwater and brackish tidal areas would foster scientific research which would be of both local and national importance. Scientific interest in Hudson River studies is increasing, as shown by creation of Hudson River programs at local colleges (notably the renovation of a laboratory at Norrie Point by Dutchess Community College,

57-3 and the research conducted at Marist College, Bard College, and SUNY at New Paltz) and the Hudson River Foundation for Science and Environmental Research (which will fund about $1 million each year in Hudson River research). Encouragement of Hudson River research by the sanctuaries program can lead to practical benefits for the Hudson River sport and commercial fishery as well as enhancement of our knowledge in many areas of aquatic biology. The presence of sanctuaries will encourage the type of long-term research interest which is crucial for elucidation of ecosystem structure and function.

Thank you for this opportunity to contribute my voice in support of this valuable program.

Sincerely yours,

Richard H. Sugatt, Ph.D.

copy: Joyce M.T. Wood

57-1 Comments accepted. No response necessary.

57-2 Camping and swimming will be addressed in the DEC's site management plan for the Tivoli Bays area of which Cruger Island is a part. The policies on these activities have not been finalized yet.

57-3 Comments accepted. No response necessary.

July 29, 1982

Dear Dr. Podgorny,

As one of the several people who attended the July 20 meeting on the proposed estuarine sanctuary at the Tivoli North Bay, I feel it important that I make a comment.

I spent the first thirteen years of my life living in Tivoli and as a young boy spent many a day in the North Bay or as us kids called it, the cove. We built forts, boats, rafts, fished, trapped, and hiked all around the North Bay. I have hunted in those coves for the last fourteen years on opening day of duck season and spend several other days during both parts of the duck season, there. It was these days outdoors as a kid that caused my career path towards Environmental Conservation, in which I have an A.A.S. degree.

It is my belief that the estuarine sanctuary at Tivoli be protected, but at no time should the conditions as laid out be included. My family heritage in the Hudson Valley dates back into the Sixteen Hundreds where some of my Dutch relatives lived and married Mohawk Indians, and in our family Bible passed down from generations, it mentions how our families used the wetlands along the Hudson to survive.

It is my opinion that as long as there is the possibility that the coves be closed to others who are not studying the area. I cannot

support the project.

I truly believe that the area be managed, but I have very serious doubts about New York State D.E.C.. You see part of my college training included an internship with the D.E.C. (Dept of Conservation) and then as now their regional management teams continue to provide a very limited ~~as~~ service to their constituents. When the D.E.C. started aquiring the land around the Tivoli North Bay the local papers carried articles on how plans were being made for a management, multiple use area, guaranteeing the taxpayers continued use of all areas of the newly acquired land. Now the state ~~have~~ has geared its decision towards a different route, and it is this change in priorities that has upset many people.

58-1 It is my belief that as long as taxpayers money be used by the state and federal government on projects such as the proposed Estuarine Sanctuary at North Bay, Tivoli, that guarantees be made to all people for continual use especially those who have traditional uses for the area.

I also believe that the D.E.C in New York not be the final word on the planning and management program for such a project, both environmentalist and sportsmen should be included.

Sincerely yours
Ray A. Van Hasen Jr.

58-1 Please see General Response A regarding multiple uses in the proposed sanctuary.

Also, please see responses 34-3, and 27-5.

COMMENTS AND RESPONSES

7. PUBLIC HEARINGS

Based on public requests and remarks received at the Public Hearings, transcripts have been prepared of each speaker's remarks and are presented on the following pages. Introductory remarks by the Hearing Officer and the State's representative, and the narrative of the slide/tape presentations have not been included to save space; however, these can be made available on written request to NOAA.

July 19, 1982 10:15 a.m. - 10:37 a.m. 2 speakers 9 persons present

The Cliff House at Bear Mountain State Park - Piermont, N.Y.

Persons present :

1. Richard J. Podgory - Public Hearing Officer
2. Edward Radle
3. Erick Kiviat
4. Jim Stapleton
5. David P. McCoy - speaker
6. Fred Slater - speaker
7. Harold Hoffman
8. John Winthrop Aldrich
9. Charles L. Keene

Transcript of Comments
Public Hearing
July 19, 1982 10:15 a.m.
The Cliff House at Bear Mountain State Park, N.Y.

David P. McCoy - Palisades Interstate Park Commission

"Thank you Dr. Podgorny. I'd like to introduce myself, I am David McCoy, I'm with the PIPC and I'm here representing Mr. Nash Castro, our General Manager who unfortunately couldn't be here and he wished me to welcome you all. All he wished me to say that we're glad to have you here at Piermont, and glad to have you here in the vicinity of the Iona Island Marsh; one of the marshes scheduled for inclusion on the National Estuarine Sanctuary. The other marsh that we're vitally interested in here at Bear Mountain is the Piermont Marsh, a substantial portion of which we also own.

59-1 I have just one or two brief comments and the first being, is that, we are in total support of the National Estuarine Sanctuary and we welcome the inclusion of the Iona Island Marsh and the Piermont Marsh into this program.

The second being, that we will work as best we can with National Estuarine Sanctuary Committee and with all other people involved so that we may go ahead and protect these marshes for the research/education and all other aspects of the National Estuarine Sanctuary Program. Thank you."

Fred Slater - New York State Fish and Wildlife Management Board

"I'm here on behalf of the Chairman of the Board of the FWMA and I'd like
60-1 to read a letter that Mr. Nuzzolese has written to the Sanctuary Project Manager. It indicates their attitude towards the projectand some of their concern.
SEE LETTER SUBMITTED

59-1 Comments accepted. No response necessary.

60-1 Please see comments and responses 13-1 to 13-5.

July 19, 1982 7:15 p.m. - 8:46 p.m. 15 speakers 26 persons present

The Piermont Village Hall - Piermont, N.Y.

Persons present:

1. Richard J. Podgorny - Public Hearing Officer
2. Edward Radle
3. Erik Kiviat
4. John Winthrop Aldrich
5. Barbara Porter - speaker
6. Eleanor Burlingham - speaker
7. James W. Morton - speaker
8. Kathryn Smith - speaker
9. Alan Gussow - speaker
10. Dennis Haight - speaker
11 Lois E. Jessup - speaker
12. Fred Slater - speaker
13. William Goswich - speaker
14. Grace Meyer - speaker
15. Bill Herguth - speaker
16. Robert B. Ewald - speaker
17. Theodore B. Merrill Jr. - speaker
18. Betsy Pugh - speaker
19. Tom Mitchell - speaker
20. Mike Slender
21. Roberta McVeigh
22. Mrs. W. E. Lenz
23. Christine Marie Teisl
24. Don Crocker
25. Paul Keller
26. Jim Stapleton

Transcript of Comments
Public Hearing
July 19, 1982 7:15 p.m.
The Piermont Village Hall, N.Y.

Barbara Porta - Executive Director of the Rockland County Environmental Management Council - Pomona, N.Y.

61-1 I do have a prepared statement which I'll read. That seems like the best way to do it.

SEE LETTER SUBMITTED

61-1 Please see comments and responses 20-1 to 20-4.

Eleanor Burlingham - E.M.C., R.C.C.A., S. & W. D., Suffern, NY

"Mr. Chairman before I make my comments I'd like to explain where I come from. I have lived in Rockland County since 1945 and I am a County tax payer, but I live way over in the west where we dearly wish the State of New York would take a great interest, which we find missing in the Paysaic System. And we really need environmental and conservation help upon those two rivers.

62-1 I am very, very thrilled about the proposal to save the Piermont Marsh and the one at Iona Island. However, I wish to point out that Rockland County is unusual in many ways. One is that the local conservation association is the oldest in New York State, dating back to the same time as the Museum of Science in Buffalo in the late 20's and early 30's. And this group has been beating the drums years for things like this. And as long as you have money to spend on education, there'd be no better use of it than to help these groups that are many in the county, not just the Conservation Association, but many groups who whould like this education from you particularly, for example in the case of Grassy Point. We know enough to know that there is pollution from the gypsun company, there is pollution from Kay-Freeze Chemicals. There probably is pollution from where the power station in Haverstraw that cuts through the brook there to go out to the Hudson; but we really need your help if we want to save these areas. And unless we're educated we can't do it. Thank you.

62-1 Comments accepted. No response necessary.

James W. Morton - New York State Department of State, Albany, N.Y.

My name is Jim Morton and I am here presenting testimony on behalf of the New York State Department of State, which is the State's lead agency for the New York Coastal Management Program.

I worked as a coastal resource specialist for the Department for the past five years and my involvement in the Sanctuary Program began as early as 1979, when OCZM, Federal Office of Coastal Zone Management first approached us seeking candidate sites for possible inclusion in the Sanctuary Program. Since that time I have been directly involved in two major sanctuary proposals: The Paconic Bays system, the other, the Hudson River Marsh areas.

As you learned in the slide show, the Sanctuary Program was established under the Federal Office of Coastal Zone Management Act of 1972. And it was created in response to a National study, an estuarine study, which document the awesome and rapid destruction of our Nation's estuaries. The expressed purpose of the Sanctuary Program is to preserve estuaries which are still in reasonably natural conditions so that we can conduct long term studies and education programs to establish the kinds of information needed to solve coastal management problems. Because of our responsibility for implementing the State's Coastal Management Program, the Department of State, therefore, has a keen interest in the establishement of the Hudson River Estuarine Sanctuary.

As you know, many of us at state and local levels have had to grapple with difficult and complex questions such as whether a project will cause significant and major impact on a wetland, or where we can safely dispose of PCB laden dredge spoils. We often find overselves in a position of having to make decisions without sufficient information. So, we feel that the creation of the sanctuary will be a major step in providing the opportunities to gather the information we need to solve these problems.

The four marsh areas include in the proposal provide an ideal array of wetland systems which exist along the 120 mile tidal stretch of the Hudson River that we're stucyng. In these areas studies can be undertaken to address such questions as: 1) just how vulnerable or resilient are our wetlands, 2) to what extent should we try to clean up a contaminated marsh as opposed to letting it clean itself up; 3) What is happening to the toxic materials such as PCB's known to be in the sediments; will they remain safely trapped in the sediment or will they be remobilized into the environment through natural biological and hydrologic processes? Answers to questions such as these will help direct the State's coastal management efforts.

63-1 This program will also help to increase public awareness and appreciation of an estuarine ecosystem. "Hands-on" learning experiences will be available at the Trailside Museum and at self-guiding nature trails at the other marsh sites. Excellent research facilities will be created at Tivoli Bays. Through improved access to these marsh areas, a larger constituency will be built to help assure the protection and wise management of these natural systems.

63-1 Comments accepted. No response necessary.

Lastly, the Department of State favors this project because it will
63-2 provide an excellent opportunity for collaborative decision-making in the management of these four marsh areas. We have already experienced the excellent cooperation of several State agencies represented on the Steering Committee which helped develop this proposal. We have consulted with local government officials, user groups, environmentalists, educators and scientists and they will all be represented on each of the four Sanctuary Committees. They will have a say on how the Sanctuary is to be managed once it is established. This cooperative approach involving local officials, private interest groups as well as other State agencies, reflects the strategy that we at the Department of State used in developing the State Coastal Management Program. As you know, the accommadation of these diverse interests is essential to building a consensus on how the Program should be structured and implemented.

The Department of State, therefore strongly endorses the creation of
63-3 the Hudson River Estuarine Sanctuary. We look forward to our continued participation on the Steering Committee as a means of providing our support and helping to assure the coordinated implementation of both the Estuarine Santuary and Coastal Management Program. Thank you.

Kathryn Smith - Member of the Piermont Village Board

I am a member of the Village Board here at Piermont and I'm a resident of the village and I would like to speak as a private individual, as well as a representative of the people of Piermont.

I have several concerns. One is whether or not this project will prevent the Village government from execising its responsibilities as it
64-1 sees those responsibilities. Specifically, I am speaking about things like parking on the pier; perhaps we might want to install a boat launch on the pier, a muncipal boat yard; we have other concerns such as a sewer out fall line on the south side of the pier, which sometimes seems to be malfunctioning, and thats a great concern of us. Perhaps we can get some help this way.

Other concerns are sunken barges. There are a couple on the south side of the pier. There is one in very dangerous position on the north
64-2 side of the pier. We have not been able to get it removed and this has been going on for years and years. We have other sunken barges in the past that we've been able to get rid of.

We're concerned about the Sparkill Creek. The mud-flats on the south side of the creek are such that you can not get from the creek to the river
64-3 except at the highest of tides. If we have the resources we might want to dredge that area and we are concerned that we might be prevented from doing so, if this project goes through. With regard to the management plan called for in the Draft that I read, I would strongly urge that where you identify, for example you want the expertise of a commercial fisherman, you will select somebody from the Village. The same with a scientist. The same with a conservationist, etc. There is a list in your Draft.

63-2 Comments accepted. No response necessary.

63-3 Comments accepted. No response necessary.

64-1 The Erie Pier is owned by the Village of Piermont. The Pier is used for parking now, and there is no conflict between this parking and the proposed sanctuary. In fact, the pier would serve as a point of access to the Piermont Marsh site. The Village Board has indicated interest in developing a marina on the north side of the pier. Development of such a facility would be subject to existing laws, particularly the State Environmental Quality Review Act, Stream Protection Act, possibly the Tidal Wetlands Act and Section 404 of the Federal Clean Water Act. The purpose of these laws is to ensure that development is harmonious with natural resource values. If the Village applies for State and Federal permits for a marina, the compatibility of the proposed Estuarine Sanctuary and the proposed marina will be considered by the regulatory agencies. It is likely that agreement could be reached on a marina design which would not adversely affect the Piermont Marsh.

64-2 The derelict barges south of the pier are within the proposed sanctuary boundary. The relation of these barges to the proposed sanctuary is under study. At the present time there is no evidence that these barges would be harmful to the sanctuary, or that their removal would cause damage to Piermont Marsh. The removal of the barge north of the pier would not be harmful.

64-3 It is natural for the mouth of a stream like Sparkill Creek to shoal. Furthermore, small craft use of the creek mouth at lower stages of the tide is restricted not only by silt deposits where the creek crosses

64-3 (Cont) the marsh, but also by hard bottom at the western margin of the marsh. It is not possible to say without further study whether dredging of the creek mouth would be compatible with the proposed Estuarine Sanctuary. A dredging proposal would have to be reviewed along with information on the dredging history of the creek. Preliminary information from the U.S. Army Engineers indicates that no permits were issued for dredging the creek mouth for the last 20 years or more; the creek mouth has apparently been in a more-or-less natural state for at least that length of time. The tidal mouth of the creek is reported to be important habitat for the blue crab, as well as for wintering waterfow.

The Estuarine Sanctuary proposal calls for a Rockland County Sanctuary Advisory Subcommittee to handle public input and communications for the Piermont and Iona Island sites. It would be entirely appropriate for some of the user group representatives to this subcommittee to be Piermont residents. Nominations for the Sanctuary Advisory Committee, with documentation, should be submitted to Mr. Edward Radle, NYS DEC, 50 Wolf Road, Albany, N.Y. 12233.

64-4 Last, but not least, I would urge or request, perhaps a better word, that DEC and the other State, perhaps New York State is what I should be addressing with so many agencies, I don't know who I should be addresing, that they pay a fee in lieu of taxes, I'm talking Village taxes only, I'm not speaking for the school district or the Town of Orange Town, this Village has a very small tax base. I noticed in your Draft you say that the loss is very little in taxes. We would appreciate, it would be very nice to make up that little bit. Thank you very much.

Alan Gussow - Congers, N.Y.

I have a few notes. I should say for the record that I was a member of the consultant to the study that Raymond Parish, Pine and Wiener did relative to designation of certain areas have scenic and historic and ecologic significance a few years ago.

I am here speaking as an individual.

It is always intimidating when Eleanor Burlingham comes up a little earlier because she goes back much further than most people here in Rockland County. I can at least say that I remember about 20 years ago walking with my sons, young then, along the edge of the Piermont Marsh and while they were looking for tiger tail swallow butterflies I was drawing scenery. I am an artist by profession. I probably should have said that first off. And I later did a very large painting called "Mid-Summer Marsh in Distances" which had reproduced widely, shown in galleries in New York and was really a very significant work for me. So, I have a long standing and abiding affection for the Marsh.

It also happens in 1966, when Holiday Magazine did a very extensive story on the Hudson River, they had Iona Island and a steam boat on the cover and very kindly they wanted to picture me doing some sketching. There was no question that it would be that Piermont Marsh where I would chose to be, and where in fact they did a number of pictures.

So that, my sense is that you've struck an area maybe is not only important to us as individuals, but its likely to emerge because it is not widely appreciated in one sense, but I think its an extra-ordinary area of great beauty.

In terms of the notes I've made, the first thing I would say that I would praise the pinciple that at least one representative of each estuarine sanctuaries be preserved. I think the idea of seeking out things to preserve them because of their uniqueness and their importance is a very good principle.

In the past when people thought about the Hudson River, they very quickly seemed to go right past the Piermont Marsh, they also go right past Iona Island, and it was always the Hudson Highlands. It was always the dramatic element, much like Yosemite and the Grand Canyon it was kind of a geologic freak that lurred people and that was designated as worthy of

64-4 The parcel at the north end of Piermont Marsh now owned by DEC was apparently exempt from taxes when owned by Continental Group. If DEC acquires the two small pritave parcels (#10 and 11 on DEIS p. 10), there would be some loss of taxes to the Village of Piermont. A bill (11814, introduced in Assembly March 30, 1982) is in committee in the New York State Legislature that would require State agencies owning lands to make payments in lieu of taxes to the local communities.

study, worthy of response, and worthy of appreciation. I don't think that 15 or 20 years ago, you would have had that kind of public support for the acquisition of these kinds of places.

Now I have two concerns.

The first has to do with the word management. Because when I see the word management and its written right into this EIS, I get concerned about
65-1 human intervention. The first responsibility is not to design strategy for restructuring the visual and ecological environment. It seems to me that the first presumption should be to identify quality where quality exists and to accept the idea that intervention does'nt begin with management strategies, it begins by looking and appreciating. So that on a general concern that I would not want management to suggest lack of humility and a kind of comming in and rearranging of things, and what I would term excessive management.

I think the report reads very well. I frankly am reassured. So I'm
65-2 making the statement more for the record then I am out of legitimate concern. I think it ought to be at least through out that management is not necessarily what we've talking about. At least lets say we're looking for enlighment.

The second has to do with the true appreciation for one of the stated objectives. The report in its summary statement, and I'm quoting at this point - it says to increase public knowledge and awareness of the complex nature of estuarine ecosystems, the values and benefits to man and nature and the _____. The words that come out to me as I read them is to increase awareness and values. A woman who has written widely on environmental issues, Edith Cobb, once wrote that all knowledge begins in sensory experience. And I'm concerned that we'll confuse data with knowledge. That we're going to confuse data with experience. The public does not only need information. And I am aware that it is important to get baselines to get data to come in a scientific way and study this. But it also needs to, the public that is, needs to experience these places and to really know them. And maybe its self interest, but I'm not arguing narrowly for myself, more for what I feel a part of, is here precisely that poets, artists, writters and others to play a very vital role. So I would like to make a
65-3 scientific suggestion, that part of the grant funds, and I am thinking of a very modest amount to be sure, might be provided to artists, poets, dancers, and film makers, photographers and folk singers, persons who do not necessarily experience more than the average person but nevertheless have a gift of communication what everybody feels.

It seems to me that these estuaries are too important to be viewed merely as outdoor laboratories for scientific research, but most of all they ought to be responded to. So that as I read through all of these reports, what I see lacking is the recognition of how you going to communicate the important human value and human awareness which is part of the stated objectives. What I am asking is a little lifting of ones eyes and saying that maybe we can use either in the local schools, the local community college, or other groups, there are other people out there who can help you achieve the goals which I think are very noteworthy and very desirable. Thank you.

65-1 The term "management" as used in the DEIS and other National Estuarine Sanctuary Program documents is very broad, and includes the "hands-off" option as a form of management. In fact, Estuarine Sanctuary management stresses maintaining sanctuary sites in as near-natural a condition as possible. There are no plans for any facilities in or on the edge of the Piermont or Iona Island marshes; no boardwalks or buildings or parking lots. Anticipated development at the Piermont site is presently limited to signs and possibly a small outdoor display back from the edge of the marsh, if this is determined to be acceptable to the park staff from the viewpoint of esthetics and security. Development at Iona Island centers around a partial renovation of the Bear Mountain Trailside Museums complex to house estuarine exhibits, including an outdoor exhibit at "Geology Point" which overlooks the river near the Bear Mountain docks; there would be no development in or on the edge of the Iona Island marsh. A boardwalk is being planned for the Tivoli Bays site, and will be largely restricted to the margin of the marsh in a location that is determined to be suitable from the viewpoint of esthetics, engineering design, and minimal disturbance to wildlife and to the ecosystems. There will be no other construction in or on the edge of the Tivoli Bays marshes, although improvements to existing trails and roads (off the wetlands) are planned, as are several small primitive parking lots in areas that are not visible from the marshes). An addition to the existing Bard College Field Station located 100 yards inland from the edge of Tivoli South Bay is planned for an Estuarine Sanctuary research center; this site is also screened by trees from the bay. No construction is planned for the Stockport site, but consideration is being given to an overpass or underpass for safe crossing of the railroad tracks.

65-2 Comments accepted. No response necessary.

65-3 Consideration will be given to your idea of providing small grants to artists to aid in expressing or interpreting the proposed Estuarine Sanctuary to the general public. Perhaps also funding could be available from sources outside the program for this purpose.

Dennis Haight - Sparkill, N.Y.

Well, I'd just like to say that the best manager I've seen as a results
66-1 of that marsh out there is mother nature. I would like to note for the record one concern, that nowhere in this environmental statement is there
66-2 any specific, shall I say, techniques in terms of research and education. It's a very ecologically sensitive area. Everybody here is aware of that and I'm afraid right now that as a result of this draft statement that man's intrusion will interrupt these baseline ecological studies that they plan on doing.

I hope that somewhere in the final statement that specific techniques, in terms of education and research might be shown to us that are people concerned. Thank you.

Lois E. Jessup - Rockland Co. Conservation Association, Monsey, N.Y.

I am the President of the Rockland County Conservation Association that Elenor Burlingham was telling you the history of, and she was president before me for many years.

I was quite shocked today when I was looking at a copy of this report
67-1 to find that our organization was not listed as an interested organization and I'm sure there are many people in this room that can tell you that we've sure been interested. (And where is Paul Keller - I told him) we have been interested right from the very beginning.

I also worked on the Hudson River study that Alan Gussow mentioned.

One of the things that I am concerned about - I am going to go a step further to the areas surrounding the marsh. How are we going to teach people in those surrounding areas to do the things that are going to preserve the marsh? Because, how much control are we going to have over what, certainly not Piermont we would expect Piermont to do anything, but Iona Island is protected I expect because of the Park. How protected are some of these areas from what might happen to them by somebody deciding to put a big factory near the marsh, this kind of thing?

I think that it is going to be not only the idea that we educate people that use the marsh, enjoy the marsh, look at its beauty and feel for the marsh, but its also going to be a job to be sure that the people in the area understand when they do something, like a sewer out fall, or whatever it is, what effect can it have on the marsh? and what will happen to the marsh if they do that.

I would like to see some of the money used for this kind of thing, not necessarily all for just deciding what plants are in the marsh, what fish
67-2 are hatched there, or what is going to be very important. This county grows and grows by leaps and bounds. We suddenly find out these awful things are happening on us before we even know it. And so it's going to take somebody with alot of knowing whats going on in various villages and towns in our county to know how the two marshes within our county are to be affected.

66-1 Please see response 65-1 regarding management, and General Response A.

66-2 Concerning techniques for education and research: the DEIS focuses on the impacts of Estuarine Sanctuary designation, not on the details of operating the sanctuary. Lists of potential research and education activities are included in the DEIS as examples of the types of uses the sanctuary is intended for. A more detailed plan for research, environmental monitoring, and public education will be proposed in the draft sanctuary management plan. This draft management plan will be available for your review and input. Persons like yourself who are thoroughly familiar with one or more of the proposed sanctuary sites may be able to suggest specific non-damaging techniques that could be used to help attain the objectives of the proposed sanctuary.

67-1 The Rockland County Conservation Association has been added to the list of interested organizations.

67-2 Public education and interpretive projects will be described in the sanctuary's management plan.

Perhaps by boating, you know just the mere fact that perhaps that people are misusing their boats as they go around. All kinds of things where the public will have to be educated in order to preserve thse places.

We, naturally, are for preserving them in anyway that we possibly can. So, I'd like to see our name in here somewhere.

67-3 And our last this is that I think that since two of the marshes are in Rockland County that we ought to have pretty good representation on this committee from Rockland County. Thank you.

67-3 Please see response 27-5.

Fred Slater - New York State Fish and Wildlife Management Board

68-1 I'm representing the Region 3 Fish and Wildlife Management Board Chairman, Peter Nuzzolese, who was unable to make it and asked me to read this letter, the Board's letter, to Mr. Podgorny. SEE SUBMITTED LETTER

68-1 Please see comments and responses 11-1 to 11-5.

William Goswick - Mayor, Village of Piermont

I am William Goswick, Mayor of the Village of Piermont.

One of the major concerns that I have, not with the estuary itelf, is expansion of the county sewer plant. At a recent meeting that I was at their intentions are to expand that at least two times the size it is now. Right now there are 25 million gallons of water going into that Hudson a day, in a 24 hour period. The Town of Orangetown and the county tried to assure me that they're not contributing to the slumping problem that we're having on the north side of the pier. I don't beilieve it, and I'm sure they don't believe it themselves. 25 million gallons of water going through a pipe with terriffic turbulance out at the end of it and its even with the end of the pier and if they do any expansion over there at all-before that they should be made to extend that pipeline near the channel were all of that will be taken downstream or up stream - just get it out of Piermont. That's all I want to say.

Another concern, most of my concerns have been taken care of, I was a little worried about the whole project, I've gotten information since that
69-1 things won't change; they will stay basically as they are. I've hunted out there. I've trapped out there in the marsh. I'm a commercial fisherman from the time I was 12 until I had sense enough to get away from the hard work a few years back. And one of the reasons I gave it up was because of the ban on striped bass.

One of the things, I think all these agencies should get together is to go after these big people that are ruining our river. They're putting all that junk in there and we can't do anything with it.

69-1 Comments accepted. No response necessary.

I eat striped bass out of the river every year, and I look pretty healthy - I might not feel it, but I look. If something could be done to clean it up, get rid of the PCB's and any other contaminants in there, were that people could eat the striped bass out of the river and the commercial fishermen could thrive much better on it - in other words, they would make a lot more money than they do right now, cause they really have to work for every penny they make.

We have talked in the Village for quite a number of years of the possibility of a marina on the north end, but I wouldn't want to see that
69-2 idea scrapped mainly becuase we just went through a 11 year tax suit with these two factories over here and we went to the cleaners on it. They come out on the good end of it and our taxes went up 17.4%, 10% was due to the fact of winning the law suit. Now, we have to get some kind of tax money into this village or some type of revenue if we're going to survive. I've been here since I've been 8 years old, and I'm going to say here a few more - I'm not going to tell you how old I am, but I'd like to stay here the rest of my life and I live on the river, and I've been involved in it from 8 years unil now. Thank you.

69-2 Please see response 17-2.

Grace Meyer - Director, Piermont Library

I am the Director of the Piermont Public Library and a former Piermont Conservation Association Commission member and former trustee of the Villiage.

When I first started getting interested in the marsh and doing research on it for an article I was doing for the Piermont Newsletter I realized that there really wasn't that much available because a lot of it was done
70-1 by private institutes that really it was hard to know that they had done research in time, to gather all this information and get it together for a clear picture of what is going on in the Hudson River; that's when I really saw a need for some concerted effort to gather all this information together and make it available to all those people who are interested to learn about the Hudson. And I was very excited to read the DEIS and thought it was an excellent job. And an excellent start on the work that needs to be done.

70-1 Comments accepted. No response necessary.

The other comment, several years ago when the Hudson River was being considered for the Estuarine Sanctuary Program, I was on the Village Board and the current Mayor, Mayor Brant and myself, attended several these meetings where we were very interested in getting Piermont Marsh included in the Program.

The Village Board at that time, was quite supportive of Piermont being
70-2 in the Program. And I was very happy to see when it was included and hope that it goes through. And I would like to help in any way I can. Thank you.

70-2 Comments accepted. No response necessary.

Bill Herguth - Conservation Advisory Commission, Piermont, N.Y.

My family has been on the River for four generations. My great grandfather was an oysterman from Yonkers. The oysters died from pollution. The rest of my ancestors just walked around the marsh. They did fishing and whatever there was to do out there. They taught me that one of the most valuable things about the marsh was its natural protective system - that only the winter could one navigate and negotiate the mud, which is a very valuable asset of the marsh, because its protected it for hundreds of years. It can't be manuvered in the summertime, you'd sink.

71-1 My concern is catwalks. I fear that public access such as catwalks would do a great deal of harm. It may bring revenue to Piermont if you put toll booths on catwalks. I don't think anybody would do that, but I really feel, that speaking myself, but just for the marsh - that to allow catwalks would be very detrimental to the marsh and what lives there. If someone would want to go to the marsh they can do so by boat or in the winter time. They could walk across it when the ice is frozen. Its quite safe and there's less mosquitos.

I think that the education would be of Hudsonia is very important. Being an old timer of Piermont, we were always taught to stay away from the marsh because there were snakes, the mud, mosquitos, muskrat traps, snapping turtles, a great deal of mishaps out in the marsh for some reason or other. One of my ancestors fell down out there and caught pneumonia and died. That doesn't happen to everyone. I lose my point.

My concern would be to going to view it and lovely pictures of the marsh, they were fantastic, and I think they were done without catwalks because there are no catalks. The need for catwalks doesn't seem to be
71-2 warranted for the situation, but education surely does. We were taught to burn down the marsh with kerosene and laterns due to the mosquito infestation and all it did was make it worse because it killed off the birds and chased them away and the mosquitos of the marsh would come right back and we'd have another rash of mosquitos without the birds to eat them, and the fish and a number of other things.

It's natural protective system. My concern is the catwalks. I think that should be evaluated. Thank you. (catwalk = boardwalk)

Robert B. Ewald - Pine Bush, N.Y.

I represent a diverse point ofview. First of all Fred Slater has
72-1 spoken vividly by to the sportsmen's point of view. I know that throughout the Draft that the traditional uses has been emphasized. However, in looking at research, and listening to the Mayor, and listing to Fred, there appears to be a conflict and I want to bring this point to your attention, that the use of the Piermont swamp itself by sportmen has been mistated in the study, unless the Mayor, Fred, and the sportsmen that hunted and fished here are in error themselves.

71-1 Concerning catwalks (boardwalks), there are no plans for boardwalks at Piermont Marsh, only at the Tivoli site. Please see response 65-1.

71-2 Educational projects will be described in the sanctuary management plan. Information, such as the example you presented regarding the impact of human activity on food web relationships, will be prepared as part of the public educational materials to be developed for the Hudson River estuarine sanctuary sites.

72-1 Please see responses 11-1 to 11-5, and 13-1 to 13-5.

That brings the second point, and that is lets not overlook the folk-law part of these areas that are going to be taken understudy. To squash them, that the folklaw is an important aspect of these marsh lands that I guess that take, that shows the riches of the uplands are nurtured in the marshes.

So please when speaking from a sportsmen point of view, look deeply into the present use, the traditional use of the hunting, fishing and trapping, because it is my feeling that in those uses, which include the catching of herring in springtime further up, not so much here, I'm not
72-2 familiar with what happents to our herrings here, there is an ethic , a sportsmen ethic, a group of people that develop between themselves and God and nature, a right and a wrong that no matter what we do in education, and I'm an educator, you just can't duplicate. The sportsmen ethic, the land ethic as 3 people you may remember, John Burrows, John Muir, and Alex Leopold emphasized in their writing. This ethic is the thing that I think we really have to pin down. If we acquire these sanctuaries, and I don't use the term in any derogatory way, "sanctuary of ethics" I think we will have accomplished a great deal.

The DEIS says hunting was banned and that's its nonexistant here - I quote the Mayor, Mr. Slater, Mr. Nuzzolese, gentlement from Rockland County who does hunt with retriever and duck boat and he said when we discussed this at the FWM he couldn't believe that statement was valid.

I came here earlier, but I was late, because I was talking with people on the main street as to what goes on in your town and none of them were
72-3 inebriated, they were all sober individuals, sportsmen a few said they didn't like the hunting and fishing, and few said they took lettuce down and fed the rabbits, on the Piermont pier, but waterfowl hunting and muskrat trapping is something that exists. I think we are being misquoted and misguided when we are told it does not exist.

72-2 Comments accepted. No response necessary.

72-3 Response same as 72-1.

Theordore B. Merrill, Jr., Piermont, N.Y.

I am a resident of Piermont and a member of the Board in Clearwater, I am not speaking for Clearwater.

I would just like to say a couple of things about sanctuaries.

I think some sanctuaries are necessary. I don't think that a square mile or two of river front free from firearms is bad at all. And I had to
73-1 say that simply because I almost had my head blown off by a hard bullet last year while I was canoeing. And I don't think firearms mix with parks on two sides. I sympathize with the hunters, passive hunting yes, firearms not in this area. If it is a sanctuary, it is a sanctuary without firearms, with all due respect to the hunters. Times have changed, populations are up. There are a lot of people out there in the marsh, you can't see them in 8 foot grass. And I'm lucky to have my head.

73-1 Please see General Response B regarding existing policies and laws affecting hunting and shooting at Piermont Marsh.

Betsy Pugh - R.C.C.A., Spring Valley, N.Y.

Just a couple of things I wanted to bring to your attention, ladies and gentlemen.

First of all, the report is excellent. We're tickled to death to have two of these marshes in Rockland County.

74-1 We wonder if perhaps there had been a member from Rockland County on the Steering Committee, if indeed Grassy Point Marsh might have also been included.

I have to keep repeating what other people have said because to me it is terribly important. We worked on this, again I have to go back in history since 1974, when the Environemtnal Management Council worked closely with the Stony Point Advisory Council (CAC) about having Grassy Point bought by environmental bond money. Remember there used to be money in the 70's? Tivoli Marsh won out. How could Grassy Point win out? No way. We worked desparately. We worked on the rating sheet. We went to DEC headquarters and at the time we found out that perhaps there was some misunderstanding as to what we considered the Grassy Point Marh. The part that we wanted was in the Township of Stony Point, 80 acres. The part that we wanted didn't have to take the picture toward U.S. Gypsium, you could take it exactly 180° around and look up to where the brook comes down and where there is a town park. So that you have this, 80 acres plus this town park, and you have the estuary. We canoed it along with DEC members, we submitted all of the evidence, whatever was required. But we didn't win out over Tivoli Marsh and at that point there was no more money. Again, I put in a plea. I want to say that since 1974 there have been exactly the kinds of programs you're talking about. Science programs, project LOST, Federal funds have been given to extension programs and summer programs for disadvantaged youth, and more recently CETA funds have been used there for study.

Again I stress the fact that this is a densely populated area. The more marshes we can save the better.

The reason why Grassy Point Marsh is not being considered in because it lacks some of the amenities. It's true that the Haverstraw treatment plant is right there. Look the other way! After all they have been giving extra treatment to that water. It's true that Kay-Freeze is there. And Kay-Freeze is indeed polluting the place, and if it is we should know it, we should be told. The Rockland County Conservation Association wishes to be told that the most recent evidence is that the marsh is being polluted and we want to work on that, even if we never get it to be accepted into this program. We're supposed to be watch dogs of that. So, please tell us, not just yes, but we really want the evidence. Do give this some though and I guess the rating sheets are in the DEC headquarters.

The other thing I want to talk about is the trapping. Zippy Fleischer, who cannot be here tonight, she is member of the west branch conservation
74-2 association and also the Rockland County Association. She has submitted some information on trapping. She is totally opposed to trapping. I have to be half way. One page 65 it mentions that hunting is not allowed in any of the PIPC property, but it seems to me that if we are going to allow trapping,

74-1 Please see response 20-3.

74-2 Please see General Responses A and B, and responses 11-1 to 11-5, and 13-1 to 13-5 regarding trapping and multiple uses.

and trapping is truly a traditional industry of our marshes, that the least we can do is to have traps that are humane. It talks about using leg hold traps; how could we call it a sanctuary when you allow leg traps? I know there's talk about domesticated animals shouldn't be wandering around sanctuaries. As I understand it, only trapping would be allowed in the other two marshes.

74-3 But I do not put in a plea that a sanctuary use humane methods for trapping. Thank you very much.

74-3 Comments accepted. This issue will receive due consideration during the formulation of the sanctuary management plan.

Tom Mitchell, Sparkill, N.Y.

My name is Tom Michell and I am a member of the Conservation group at Piermont. I speak as a person who uses the marsh for individual recreation.

I did want to make a comment on the hunting question, having been out in the marsh quite a bit. I think the term folklaw was a good term because
75-1 while hunting and trapping exist, it is not permitted as far as I know. There was a discussion that came up in a conservation commission there had been a notion to suggest making a small sanctuary on the north side of the pier and an old timer from Piermont was upset about creeping sanctuarism. Following the discussion it was clarified that if indeed since that part of the pier is in the Villiage hands handguns, firearms, are not permitted on the pier. The only firearms I've seen since then are in the police cars. And to see the duck blinds here and there are fewer, but some traps for muskrats. You'll see, so it exists. There's no enforcement of it and the I think that these exist at a very low level. It really hasn't been a problem up til now. And perhaps some consideration should be given to trying to set up some kind of permit system that could keep track of how heavy this activity was.

75-1 Please see General Response B regarding hunting and trapping at Piermont Marshes.

I don't think we want firearms on the pier at this point because there is so many people out there. That's a question because that's a situation that exists, I don't believe its permitted and I don't think its going to be a situation will change unless someone were out there saying no.

I very much like the Draft statement. It's an excellent document.

I want to submit to you, I'm not a speaker, but I do a little more
75-2 writing. This is an article on the crabs, which I haven't noticed too many of them out there this year and that was part of this discussion and its a couple of years old, on the decline of the crabs. I think crabbing is a very important recreation to Piermont. It would be very good for us to have some study on what's happening with the Crab population. Thank you.

75-2 Comments accepted. The population dynamics of the blue crab at Piermont would be a suitable subject for research in the proposed Estuarine Sanctuary. Crabbing is an important recreational and commercial activity on the Hudson River. Juvenile blue crabs have been found in Piermont Marsh, and the marsh could have some importance as a nursery area.

July 20, 1982 7:15 p.m. - 8:47 p.m. 19 speakers 35 present

Red Hook Village Hall

Persons present

1. Richard J. Podgorny - Public Hearing Officer
2. Edward Radle
3. Erik Kiviat
4. John Winthrop Aldrich
5. Warren H. McKeon - speaker
6. Jean de Castella de Delley - speaker
7. Fred Slater - speaker
8. James Morton - speaker
9. John F. O'Neil - speaker
10. Robbe P. Stimson - speaker
11. Michael Rosenthal - speaker
12. Anthony W. Sikorski - speaker
13. LeRoy Fein - speaker (2 times)
14. Pat Weber - speaker
15. Ralph Johnson - speaker
16. Harry Ferris - speaker
17. Connie Bard Fowle - speaker
18. Sam Lore - speaker
19. Janet Graham - speaker (2 times)
20. Frederick G. Faerber - speaker
21. Bartholomew C. Stuart - speaker
22. Dennis Kysp
23. Joseph Steeley
24. James Veatch
25. Patricia A. Magee
26. Virginia Karl
27. Russell Blair
28. Bill Sherrod
29. Mrs. Sharon Sherrod
30. Ray A. Van Hoesen, Jr.
31. Marvin Cole
32. Marcella Appell
33. Nancy Zeising
34. Larry Lee Holt
35. Jim Hosie

Transcript of Comments
Public Hearing
July 20, 1982, 7:15 p.m.
Red Hook Village Hall, Red Hook, N.Y.

Warren H. McKeon - Hudson River Environmental Society, New Paltz, N.Y.

I represent the Hudson River Environmental Society and want to give a brief description of what our society consists of. We are a non-profit membership organization dedicated to the collection and dissemination to
76-1 the general public unbiased research information concerning the Hudson River ecosystem. Our position, in general, is that we favor the Estuarine Sanctuary Program. We have about 100 members from all streches of the River. We have some reservations, in that we do not want to see any of the likes of any individuals or organizations who are currently involved in the
76-2 usuage of the wetlands infringed upon. We would prefer to see that the Sanctuary Program itself has some expression that gives that impression to the general public.

The only other comment that we have is the fact that we were sort of dismayed that the Constitution Island marsh was not included in the
76-3 Estuarine Sanctuary Program. I am intimately familiar with all these marshes up and down the Hudson, some 37 of them and Constitution Island Marsh I realize its had damage to its system, a battery company dumped cadminum on the wetland, but it has a lot of interesting and unique features that I think deserve attention.

The research program for those wetlands is very important and should go forward and the people involved I think are dedicated enough so that they will not restrict the uses to other types of activities. Thank you.

Jean de Castella de Delley - Tivoli, N.Y.

The only thing I want to say basically that I am concerned that the purpose of these estuarine sanctuaries at Tivoli is not to be achieved by - have been proposed to me -as the discussion is open and I would like to see
77-1 it probably more concerted - conservation easement being used as a way to acquire - and not affect the community the way the already purchase of central Hudson property has affect Red Hook and Tivoli by losing large amounts of taxes. Thank you.

Fred Slater - NYS - FWMA BD, New Paltz, N.Y.

I am here to represent or substitute for the Chairman of the Fish and
78-1 Wildlife Management Board and read a letter. What we've been doing is, during the letter, address the concerns of basically each individual marsh. I have been at the other two hearings, and this mainly concerns the Tivoli and Stockport. This addressed to Mr. Podgorny and it says:
SEE LETTER SUBMITTED

76-1 Comments accepted. No response necessary.

76-2 Please see General Response A regarding multiple use of the sanctuary. An expanded research and education program of the proposed Estuarine Sanctuary would not infringe upon any traditional legal use of the wetlands. With proper planning, there is space and time enough for research and education to coexist with birdwatching, recreational boating, hunting, fishing and other traditional uses of the sites. Furthermore, these traditional recreational and educational uses will benefit from the permanent protection granted the marshes by the Estuarine Sanctuary program. Also, research under the proposed program could provide information leading to more effective management and protection of natural resources, and public education would inform the general public of the ecological values of the marshes in their natural condition.

76-3 Constitution Island Marsh was included in an earlier version of the Estuarine Sanctuary proposal. At that time, OCZM discouraged New York State from including Constitution Island Marsh because of the local polution problem (cadmium). However, Constitution can and should be a useful adjunct area for research on the effects of cadmium upon the ecosystem and the plants and animals, and for comparison with the wetlands included within the sanctuary boundaries. The National Audubon Society has expanded their program of education and research at Constitution, and there is opportunity for interaction between Audubon and the Estuarine Sanctuary. For example, Audubon is planning to build a boardwalk at Constitution; Audubon and the Estuarine Sanctuary staff can share information leading to better engineering design for ice-resistance, and also information for minimizing impact on wildlife in the marsh.

77-1 In the process of land acquisition for the proposed Estuarine Sanctuary, the negotiating agencies (DEC, OPRHP) will consider, on a case-by-case basis, all available techniques including fee simple acquisition, conservation easements, and reserved life estates. In each case, the most appropriate technique will be used. Also, please see comments and responses 54-1 to 54-7.

78-1 Please see comments and responses 12-1 to 12-5.

James Morton - NYS - Department of State, Albany, N.Y.

SEE LETTER SUBMITTED AT PIERMONT HEARING

John F. O'Neil - Trout Unlimited, Poughkeepsie, N.Y.

I am here representing Trout Unlimited, but unfortunately it was unknown to us all of the comments had to be in to you by August 2nd. This
79-1 is now 8:00 on July 20th and in order for us to get any comments into you they would have to be mailed before 5:00 on Friday July 30th. It makes a hearing like this almost a farse. Because its almost impossible for a group of citizens to take that time in less than 10 days and come up whether they are going to decide to support or reject it. I can only speak for myself, but I don't understand how the Department of State of New York State could support this with giving their own citizens only 10 days to reply to you. That's not fair. I don't know whether its good or bad. I do know we have got the time, we don't even have a meeting until August 10th.

I happen to see the legal notice in the Poughkeepsie Journal and we
79-2 brought it up at our last meeting, our July meeting. We never though we'd have such a short period of time to even arrive at any conclusion. I don't understand how the Department of State got all this information so that they could support it. They haven't notified us.

Is there anyone else here, did any body receive any information about this?

(Response from Fred Faerber: We've been working on this for over a year. I don't know where Trout Unlimited has been, we've been here. I got all the information from that book).

79-3 Why isn't it disseminated to the public earlier?

If you could see the number of people here tonight and that's going to be representing Dutchess County, this is the only hearing in Dutchess County
79-4 for the whole project. To me its unfair. That the only thing I can say and I'll try to rush comments in the mail by July 30th

Robbe P. Stimson - Executive Director, Hudson River Shorelands Task Force, Red Hook, N.Y.

I am Robbe Stimson, executive director of the Hudson River Shorelands Tasks Force. It's a organization that represents the interests of local governments that happen to be within the 18 mile national register property, going from southern Columbia County down to Hyde Park. We're funded with non-for profit money, private sector money, and I reviewed this application this afternoon and I have the following comments.

I will submit this in writing next week. Our concern is the land use controls as well as the general interest of local government, private property owners, and coastal resources within the area.

79-1 Please see comments and responses 44-1 to 44-4.

79-2 Same response as 79-1.

79-3 Same response as 79-1.

79-4 Same response as 79-1.

On page 71, Item i - There is a discussion on archaeological resources in the district. Estuaries primarily created a very easily obtainable food
80-1 resources for over 10,000 years. I do feel that due to the fact the property is on the national register that under NEPA and _____. The expenditure of any Federal/State Funds should assess any type of impact on archaeological resources. I do feel that there should be more extensive definition of the resources that are located within these upland areas that are being incorporated into the estuarine program as well as safeguards for these resources, terms of any type of development in the as well as safeguards for these resources in terms of any type of development in the future.

My written comments, I will submit a bibliography of other reports that deal with this type of issues for your staff to work on.

Another, page 82 - Item C Unadvoidable Adverse Environmental or Socio-economic Impacts throughout the entire DEIS discussion about land acquisition,
80-2 by the State of Tivoli Bays area which took a substantial amount of land off the tax rolls and we do feel there maybe other more innovative alternatives mechanisms, that would be less expensive to the tax payer than actual land acquisition and would be able to create the same type of safeguards, and maintain the property on the tax rolls. One example, just one example would be conservation easements and I do feel in a DEIS that this type of alternative could be addressed, very seriously. Presently the State of New York is in negotiations with an adjacent property owner in the Tivoli Bay area and we would like to see more flexibility, not only in that negotiation, but also in this type of written document that may be referred to in the future.

Another point was p. 13 - dealing with public access. There have been concerns on the part of the adjacent private property owner that the new
80-3 roads coming into the property to obtain more access for the sportsmen and naturalist will be using the area will create adverse impacts on the adjacent horse racing activity. One of the things we would like to see considered in the EIS is the possibility of the creation of those 2 accesses with some consideration given to limiting vehicle access on the railroad maintenance road. I think this would facilitate better control on part of the management interests for this property in the future and certainly at a reduced expense.

That's all. Thank you very much. I'll get those comments to you in the future.

Michael Rosenthal - Bard College, Annandale, N.Y.

I am representing Bard College at which I am a faculty member and an administrator and also representing the views of the Dutchess County Environmental Management Council, of which I serve as Chairman.

I'll take some comments separately from the college and the EMC.

The college in the nearest neighbor to the Tivoli Bays, our lands actually borders on South Bay and adjacent to land on North Bay. We've always felt the Bays are very important to us for both education and recreation, and research. Our students wander of those lands and have been very much concerned. We are very concerned with their usuage. We are satisfied

80-1 Please see comments and responses 32-1 to 32-4.

80-2 Same response as 80-1.

80-3 Please see response 37-4.

with DEIS in general. We feel it is consistent with our goals and appropriate
81-1 goals of land management. The college is supportive of the continued use of the lands for sportmen, hunting, fishing and traping, as long as the law is appropriately maintained since we do have a concern for our students wander across land. The conclusion is therefore that the college is supportive of the Federal program and is quite pleased at the mechanism by which the Federal and State will interact in the Program.

The Environmental Management Council has long been interested in the Tivoli Bays. We have an ongoing project in which we register significant
81-2 areas of Dutchess County. And the Tivoli Bays for a variety of reasons are high on our list of important significant areas. We find that this is one of the most valuable sites in the County and tremendously worthy of protection of all sorts. Again, the EMC is happy with the DEIS. We have no serious arguments with any aspect of it.

We too are happy with the mechanism by which the Federal monies are passed on to the State and the cooperative arrangements with the State and local interests to manage the properties.

I should also add that the EMC has long in Dutchess County been a very
81-3 successful coalition of both traditional environmental interests and sportsmen's interests. We have sportsmen who are very active on our council and we too feel very very good about maintenance of current hunting, fishing, and trapping in the Tivoli Bays. We have no desire to see that the future success of environemental protection in New York State, in particular this region, depends very strongly on continued cooperation between those that consider themselves traditional environmentalists and those who consider themselves primarily sportsmen.

Anthony W. Sikorski - Federation of Dutchess County Fish and Game Clubs, Pok, N.Y.

From what I have been hearing tonight and the presentations received, it seems almost unAmerican to talk about anything that is against the
82-1 ecology, but in reviewing your document I find it unacceptable in the manner that it is presented. The reason for this is there are no assurance of multiple use that have been our right for a significant period of time. I reviewed the supposed matching grants between the Federal and State agencies and am concerned that the citizens of the State of New York, and I have been led to believe, spent somewhere in the neighborhood in the course of the year about 3 million dollars for the Tivoli Bay facility. Here what we've talking about in excluding the the 50,000, when this program gets in
82-2 place, if it does get in place, really dividing it up among the four systms around 18,000. Just bothers me. To quote your publication, it says, I'm quoting the statements made here, there will be nothing changed with Tivoli Bay, but only to the surrounding facilities and buildings at Bard and the Museum. The thing that I'm concerned about is, you talk about multiple use, it's only encouraged if its compatible with the proposed sanctuary research, and educational program. A number of people have said this over and over again, but there is no assurance, either by the Federal government or the State that those of us who use the facility will always have this opportunity.

81-1 Comments accepted. No response necessary.

81-2 Comments accepted. No response necessary.

81-3 Comments accepted. Please see General Response A regarding multiple uses in the sanctuary.

82-1 Please see General Response A regarding multiple use in the sanctuary.

82-2 Please see comments and responses 50-1 to 50-4.

A number of organizations have stood up and said that they support the continued use, but as long as this document always reserves the right to me its sounds like it was written by a Philadelphia lawyer, gives you the escape clause and it always puts us in a position where we are always subject to your organization and the DEC.

What I'm also proposing is that the Dutchess County Federation of Fish
82-3 and Game become a member of the five organizations that control this opportunities. So we have imput and opportunity to protect the rights of the sportsmen as they stand today. And you'll receive a more in depth comment at a later date. I didn't come with a prepared statement because I'm going to give you an opportunity to present your program tonight.

With that I'll sit down.

Janet Graham - Hudson River Conservation Society, Inc. Barrytown, N.Y., and the Hudson River Heritage, Inc.

Dr. Podgorny this resolution has already been mailed to your office in
83-1 Washington, but I'd like to have it entered in the Record on behalf of the Hudson River Conservation Society, Inc., a non profit organization founded in 1936, approximately 130 members.
SEE LETTER SUBMITTED

Frederick Faerber - NYS Brotherhood of Sportsmen Federated Sportsmen Clubs of Ulster, High Falls, N.Y.

Yes, we was probably one of the first groups supportive of your program. Which you have decided to leave sanctuary in the program. We can't tolerate
84-1 sanctuary. We can not support Federal grants, State grants, as longs as sanctuary is left in the program. Sanctuary (the word) has to come out. Because the word basically it says is that hunting, fishing and trapping would not be part of the sanctuary.

That's why we're concerned about that word. The word makes the whole thing wrong. Now we can support it-we understand land management, we understand education, we can get along with all those thing except the word sanctuary.

And we will do whatever is necessary to cause rumbles in Washington, as high up as we must go, to fight the word sanctuary.

I'd like to speak on the slide presentation, propaganda is nice, lets
84-2 tell it like it is. Lets put a slide in there about waterchestnuts and what its doing to the estuary in general, and lets take another slide and discuss fur trapping brings in the Hudson Valley, especially Tivoli Bay. It brings in a considerable amount of money.

82-3 A Sanctuary Advisory Committee will be constituted by DEC, with a committee for Dutchess County (Tivoli site). Nominations for this committee should be sent to Mr. Edward Radle, NYS DEC, 50 Wolf Road, Albany, NY 12233. See p. 15 of the DEIS.

83-1 Please see comments and response 29-1.

84-1 Please see General Response A regarding the use of the word "sanctuary."

84-2 Thank you for your suggestions on the slide presentation. Both water-chestnut and muskrat trapping are important concerns in public education. Water-chestnut is an introduced pest plant that interferes locally with boating and with the natural growth of more valuable waterfowl food plants. The ecology of water-chestnut in the Hudson River Estuary, and the potential for developing biologically safe means of reducing its abundance, are important subjects for research in the proposed Estuarine Sanctuary. Trapping and sale of pelts of muskrat, mink, and other furbearers are important activities and significant sources of income for many persons in the Hudson Valley. The health of the populations of muskrats and other furbearers in the estuary is also an important subject for potential research in the proposed Estuarine Sanctuary. The primary objective of the proposed sanctuary is scientific research, and the sanctuary designation would help in attracting research grants and qualified scientists to address resource management problems such as water-chestnut, and muskrat numbers, as well as many other questions in coastal management. This research would be very valuable to the people of the Hudson Valley and also the rest of the Atlantic Coast.

Another part is, if we're going to teach, things, if we're going to
84-3 teach education, we should teach people-at college level, at least, not to roam around just because they think its a free land. They have to abide by laws, they have to abide by poster signs just like the hunter and fishermen and trapper have to abide. And this has to be taught at high school level, grade level, at the college level, then it gets out in the environment because people just think they can walk around free. That's not what this ballgame is all about.

The word sanctuary has to come out.

Bartholomew C. Stuart - Kingston, N.Y.

The only question I got to ask a question about everytime New York State
85-1 does it they like to come up with some restrictive rules. We've got a fond example where the Palisades took over a piece of land and booted off the hunters. They were hunting up there for years. I'm afraid this will happen if you use the work sanctuary.

I think we should still be allowed to use and not have so many rules and regulations that will strangle us.

But biology itself is always changing. And what they're proposing to
85-2 do is that you want to keep things still, which won't happen.

As far as I'm concerned there should be some rules and regulations,
85-3 there should be a lot more freedom of access to be used by all people.

LeRoy Fein - Poughkeepsie, N.Y.

I think you might want to note there right in the very beginning, it
86-1 says "sanctuary grant award." You'd have to get that title changed before - I don't know if you agree with me - the "sanctuary" is right in there. Thats the title of the grant.

Some people may not realize it. Maybe we just need to have more hearings.

I'm basically here to bring up a pet peeve, for about five years I have attended numerous state DEC hearings on this or that, the Hudson Valley or the Hudson River. Incidentally, I am coordinator of the Hudson Valley Flood Group. We are about 40 years old, but I am speaking for myself.

I attended hearings at Bear Mountain, Poughkeepsie and at New Paltz and brough up the fact that, as far as I know to this date, there is still raw sewage going into the Hudson River at Rhinecliff. And I brought this
86-2 to the State's attention and it was verified to me in writing by the DEC in the White Plains Office and this has been going on for many, many, many years. And that I guess the answer from the State DEC is for a monumental sewage treatment plant for the Town of Rhinbeck and I bring this to your attention cause I have received no answer. The person contact for the State has informed me about two weeks ago that as far as he knows, this is still going on, this dumping of the raw sewage into the Hudson. It is a problem with the geology here, being on limestone or whatever.

84-3 Comments accepted. You are correct that young people, including college students, are subject to the same laws and regulations governing the use of the State lands as are other persons. However, at the present time, the Tivoli Bays State lands are open to largely unrestricted use for most purposes, including walking. There is a small area (about 10 acres) that is posted as a restricted area. This area is located adjacent to some of the Bard College dormitories and acts as a buffer zone between the State lands and the college. At Tivoli Bays, and elsewhere, enforcement of regulations will not favor any user group over any other group-enforcement will be fair to all persons using the area.

85-1 Hunters will be able to continue hunting where hunting is currently permitted on the proposed Estuarine Sanctuary sites. Some additional regulations for the Tivoli site are being developed by the DEC in their site management plan. This plan was required by DEC's recent land acquisition at the site, and the plan will be written and implemented whether or not the Estuarine Sanctuary is designated. The Tivoli site requires more careful management precisely because DEC will allow the continuation of traditional uses of the property including hunting, fishing, and trapping, and because of the variety of uses and the numbers of people involved at Tivoli.

85-2 The proposed Sanctuary's general management plan would have a degree of flexibility to accomodate the changing biology of the sites that you mention, and the same will be true of DEC's site management plan for the Tivoli Bays. For example, if an endangered species takes up residence on a site, it might be necessary to close a small portion of the site in Winter or Spring to protect that species from disturbance.

85-3 Access to the sites will be open to the public as much as possible. There have to be some restrictions to protect natural resources and reduce potential conflicts among different types of users. At the Iona Island Marsh, a permit is required to do research in the marsh and public access is generally restricted to the causeway, the bicycle path, and to the shallow waters (by boat). At Tivoli Bays, when alternative access points are developed and the railroad service roads are closed (by ConRail), access will be regulated to some extent by the amount of parking space available; this will be done to avoid concentrating large numbers of people in small portions of the site.

86-1 Please see General Response A regarding the use of the word "sanctuary."

86-2 The issue of effective sewage treatment at Rhinecliff is not directly within the scope of this EIS. However, it is possible that research at the proposed Estuarine Sanctuary could address questions such as the capacity of the Hudson River Estuary to assimilate treated sewage, and the most ecologically appropriate form and degree of treatment for the protection of the estuary.

I think that this is like this is third base and before you get to third base have to get to base second base, before you get to second you got to get to first.

86-3 I believe that this one situation should be cleared up, although I am for this estuary plan and I just want you to know that I am concerned about the Hudson. I think a lot of the comments brought up here tonight were educational in away. And yet, I have to agree with Mr. O'Neil, Poughkeepsie, that, if this is the first time that this has been put in the hands of the
86-4 organizations, it really doesn't especially in the summer time, give much time for anybody to call a meeting, read this thing over and make a statement. Thats the reason why I have to speak for myself, not for my organization.

But I can see your plans, but I guess you have to understand some of our views, on entire organization making a committment.

86-5 It's obviously true that the word sanctuary stays in, that hunting would be barred. Hunting and rifles.

(The following remarks were presented simultaneously.)

(Fred Faerber)

(I looked up the word and it doesn't "say anything about hunting". Instead of going off half cocked, you should make sure that we know what we're taking about tonight before we start making comments.)

Plus, we might throw out a good thing away real quick. I know in the Flood Group, I know many times that monies was lost through Congress because people jumped the gun and statred getting mad about this project and then Congress took the money away.

(If we had a letter from the President saying hunting was ok. (Fred Faerber)

I don't you, you can write the President.

(How do you get the answer?)

(How are you going to get the answer about the word Sanctuary tonight?)

Think his said more or less.....

86-6 (You got to get it from the government. You said don't knock it out, and we'll get the answer tonight, just as what the State means as sanctuary. What do they mean? They're not going to answer any questions. Now how can (John O'Neil)

(We will answer questions at the end of the Hearing.) (Richard Podgorny)

86-3 Comments accepted. No response necessary.

86-4 Please see response 44-2.

86-5 Same response as 86-1. Also, please see response 85-1.

86-6 Please see General Response A regarding use of the word "sanctuary."

Pat Weber - Scenic Hudson, Inc. Poughkeepsie, N.Y.

I am here representing Scenic Hudson, a non profit organization, 12,000 members and we're concerned with the development and enhancement of the Valley.

87-1 SEE LETTER SUBMITTED

We would like to support the establishment of the Estuarine Sanctuary

87-2 Program.

Ralph Johnson - Mid-Hudson Waterfowl Association, Kingston, N.Y.

I represent the Mid-Hudson Waterfowl Association, Kingston, N.Y.

I attended open hearings, just a year ago at Bard College, that's when I first received the National Estuarine Sanctuary Program copies here. And I have to go along with the gentlemen from the Dutchess Sportsmen Association.

Sanctuary utilization, the very last sentence there, also multiple

88-1 uses can take place in a sanctuary as long as the activities do not detract from their research and educational uses. And to take this one step further, on page 66 in the booklet I just received, the Hudson River estuary including Tivoli and Stockport was restricted to the use of steel shot for water fowl hunting for the first time during the 1981 season. This rule is based on a finding of ingested lead shot in approximately 10% of ducks bagged in the

88-2 upper estuary. Steel shot use should reduce the incidence of lead poisoning in ducks when ingesting lead pellets while feeding on organisms in the mud.

Now, I don't like to bring this up, but we have a class action suit against DEC, the Department of the Interior. They have never proved this shot ingestion fatality. They did'nt do the proper tests, village drainage or anything like that. 10% issue, the studies we have, the studies they had, incidentally, we gave them the gizzards to use for their own study.

It looks to me like between last year and this year, that the DEC on the State, as you may, and Federal government got in bed together on drafting

88-3 this impact statement. You write half and we'll write the other half. And we'll just let it go at that.

Its just that, I know we've called county officials that were in charge of pollutants on the other side of the river, and far as I'm up to date on, nothing has been done about the river.

To no avail, we've screamed and yelled and tried everything, except get the camera crews there.

I guess what I'm trying to say is I don't have much faith in this,

88-4 where they say, as long as it does not detract from the research and educational uses, which could be brought up at any time and barr everybody, not only the hunter and fishermen, but the birdwatcher, the boaters - anytime at the drop of a hat they could say - look it - you had it.

87-1 Please see comments and responses 40-1 to 40-8.

87-2 Comments accepted. No response necessary.

88-1 Please see General Response A regarding multiple uses and priority uses of the sanctuary. It is true that the Estuarine Sanctuary guidelines give first priorities to research and education. However, DEC as lead agency in New York's proposal is strongly committed to the continuation of hunting, trapping, fishing and crabbing in those areas of the proposed sites where these activities are currently permitted. Hunting and other consumptive uses will continue in the Hudson River Estuary Sanctuary if the sanctuary is designated. There is plenty of space in the proposed sanctuary for the coexistence of multiple uses, including consumptive uses. Furthermore, most of the lands in existing Estuarine Sanctuaries in other States is open to consumptive uses, and these uses (including hunting, commercial and recreational fishing and shellfishing, and fur trapping) generally reflect the patterns of traditional uses existing before sanctuary designation.

88-2 The steel shot zones for waterfowl hunting in New York were established by DEC independently from the Estuarine Sanctuary proposal. There is ample evidence from analyses of gizzard contents of waterfowl on the Hudson River Estuary, and from other studies of the relationship of lead shot to waterfowl health, to support the designation of the upper Hudson Estuary as a steel shot zone. The relationship between lead shot, wetland sediments, shot pellets and tissue lead levels in waterfowl and other animals is an appropriate research topic for the proposed Estuarine Sanctuary. Lead is toxic, potentially, to all animals (not just waterfowl). There has been little research on the effects of lead shot on other kinds of animals.

Harry Ferris - Federation of Dutchess County, Fish and Game, Staatsburg, N.Y.

89-1 I am opposed to this thing the way its written. The basic plan is good. But again it says recreational uses will be permitted if they don't interfere with the other programs. And this is not what we want. All it takes is one liberal judge, one cort ruling because its not spelled out in here. The one liberal judge that makes a court ruling and that's it. The region is closed, whether its the bird watcher, the wild flower picker, the hunter, the fishermen, whomever it may be. An I feel if this thing is going to go through, its got to be spelled out where everybody knows where the whole thing stands.

89-2 I didn't come prepared to make a statement. I come to listen. As far as I can see right now we can't take the word of DEC; their credibility is gone, as far as I'm concerned. There is nobody there in the Federal government in this thing who has any credibility to say that all these rights will remain.

89-3 So, I think it has to be down in black and white. And I think the rest of the sportsmen will agree with me, I think the bird clubs, everybody that's going to utilize this thing has the same feeling.

89-4 That's about the only statement I have to make onto it. I think you better go back and sort of rewrite it.

Connie Bard Fowle - Town of Red Hook, Environmental Conservation Commission, Red Hook, N.Y.

I am here representing the Town of Red Hook Environmental Conservation Commission, an advisory council to local governments.

Since its creation in the early 70's, we have recognized that the Tivoli Bays area is our town's most valuable natural resource area.

Its an ideal place for hunting, trapping, fishing, bird watching and hiking as well as for research and education. Over the years we have come to realize that this area is important on a State and Federal level because of its unique qualities. For almost a decade we have supported State acquisition of Tivoli North Bay, and we're please this acquisition has become a reality.

90-1 Now we would like to support the Federal interest in this area as it has been expressed through the Estuarine Sanctuary Proposed from the Commerce's Department Office of Coastal Zone Management.

The Tivoli Bays are certainly an appropriate sanctuary site. It's healthy estuarine system can provide an excellent setting for the research and education that are such an intergral part of the Coastal Zone Management Program.

I would like to comment on a few aspects of the draft environmental impact statement.

89-1 Please see General Response A.

89-2 Concerning the credibility of DEC as the lead agency in the Estuarine Sanctuary proposal:, provision is made in the Federal Estuarine Sanctuary guidelines for citizens or organizations which are concerned about improper use or restriction to petition the State management agency, and if necessary the Federal Office of Coastal Zone Management directly, for review of the management program. In Section 921.31, the public is assured that approved boundaries and management policy, including permissible and prohibited uses, may only be changed after public notice and public review and participation. In this respect, the EIS is a contract between the State and Federal governments regarding the future use of the sanctuary lands.

89-3 Same response as 89-1.

89-4 Please see all responses to all comments.

90-1 Comments accepted. No response necessary.

First, the creation of a Sanctuary Advisory Committee is commendable. Public participation in the management of the sanctuary is essential, particularly in light of the numerous and diverse groups and individuals that have an interest in this area.

Our Commission will continue to take a position that people from the local area, who are most familiar with this site can offer valuable insight into its management. Every attempt should be made to make this Advisory group a viable active group, not just a committee that exists on paper to fulfill public particpation guidelines.

We have noted that the draft EIS emphasizes the traditional uses of this area, will not be changed to the extent that they are compatible with the sanctuary's goals of research and education. While this proposal
90-2 deserves merit, we feel that the potential for conflict among users is quite strong. We hope that in formulating the management plan for the sanctuary, the DEC will address the issue by striving to minimize the potential conflicts while ensuring that no one individual, or groups, use of the area will be unduly restricted. This is no easy task. And will require some creative management techniques. If DEC can successfully address this problem, then the management plan has the potential of enhancing rather than impeding the uses of the property by all interests.

One particularly appealing aspect of the proposal is that it will increase public access to the Hudson. Recent years, access to the River has declined significantly; without sufficient points of access, the river is no longer a resource that belongs to the people.

In view of the possibility that Con-Rail would close off railroad service roads to the public, the question of access becomes even more
90-3 pressing. The increased access proposed in the plan would be an important advantage for all users.

The designation of the Tivoli Bays area as an Estuarine Sanctuary,
90-4 clearly would have a positive impact on this site. Much need funds would be provided for management and facilities development.

The research and educational use of the site will be greatly expanded and encouraged while traditional uses will continue.

In addition, environmental protection will be provided through this designation. There may be times, I suspect, that those of us who know this property so well for so long will wish we had kept it to ourselves, yet the unique sense of this place is so deep that this area should be enjoyed by as many people as possible and as many ways as possible without detracting from the integrity of the property.

Thoughtful, intelligent management with meaningful citizen participation can help to ensure this.

90-2 Comments accepted. This committee will be valuable in providing recommendations to DEC and the Sanctuary Steering Committee for resolution of conflicts in the use of the proposed sanctuary.

Also, please see response 37-3.

90-3 Some of the Federal Estuarine Sanctuary funds would be used to improve access to the proposed sanctuary sites for research and education, and these improvements will also have immediate benefits to sportsmen and other sanctuary users who need better access to these areas by boat, on foot, or by car.

Also, please see response 37-4.

90-4 Comments accepted. No response necessary.

Janet Graham - Hudson River Heritage, Inc., Barrytown, N.Y.

I speak as President of Hudson River Heritage, which was formed to protect the environment both architectual and ecological within a limited area along the Hudson River, particularly including Tivoli Bays.

And I would like to put the society on record as supporting the draft
91-1 statement.

Sam Lore - Supervisor, Red Hook, N.Y.

I would like to say a few words.

I am supervisor for the Town of Red Hook. I just want you people to
92-1 know, this is all on the expense of our tax base. We get nothing. As a matter of fact, from Bard College all the way up to Tivoli is all tax exempt in the Town of Red Hook. And I think we should be, between the State and Federal governments, spending thousands of dollars that we should be reimbursed in some sort of taxes for this Tivoli Bay area.

Larry Hoigt - Red Hook Rod and Gun Club, Red Hook, N.Y.

I represent the Red Hook Rod and Gun Club and I would like to go on
93-1 record that we are against the word sanctuary.

Jim Hosie - Viola Rod and Gun Club, Poughkeepsie, N.Y.

Our club is opposed to that fact that you seem to be omitting that
94-1 sportmen have a right to be there, or they could be deleted in the near future.

Le Roy Fein - (more comments)

We can speak until all spoken. You see, that's what it says.

There was a hearing conducted, I believe by the Army Corps of Engineers on at Poughkeepsie about six months ago concerning the proposal dredging project near Hudson Falls. And we're talking about run off of whatever and the officials at that meeting didn't seem to know anything about the existing former Shots landfill dump at Poughkeepsie which has been proven to have PCB's in it, which flows into the Hudson River.

They were talking about dredging the river and that was stalemated. I brought up to the Hearing advisor's attention the fact that the PBC's were going to be buried in a PCB landfill dump near Hudson Falls, which is near the Banks of the Hudson River. One of the answers that I got. They did admit that the PCB's, there maybe a minimal runoff into the river and I bring this up as whatever kind of concern you want to accept it as, because if they're going to go to all that trouble of removing most of the PCB and putting them into the landfill there adjacent to the river and admitting that there will be some runoff, however minimal, they didn't describe what

91-1 Comments accepted. No response necessary.

91-2 A Bill (11814) was introduced in the State Assembly on March 30, 1982, which would require State agencies owning lands in New York to make payments in lieu of taxes. This Bill, at the time of this FEIS printing, was reportedly still in Committee. Payments in lieu of taxes would be beneficial to local communities in reducing the burden of tax exemption of large State land holdings.

Although it is not possible to put dollar values on uses of the proposed sanctuary sites right now, it is clear that the existence of accessible reserves for public use for hunting, research, and other activities has economic benefits to the local communities. Sportsmen and non-sportsmen buy equipment such as guns, fishing tackle, traps, binoculars, books, outdoor clothing, and supplies such as gasoline. Scientists using the proposed sanctuary will need gasoline, meals, lodging in some cases, and other supplies. Some of these goods and services will be purchased in the local communities. Protection of the wetlands from environmental damage will maintain the economic values of the wetlands and their associated environments in maintaining good water quality in the estuary, maintaining the natural beauty of the countryside, and helping to maintain wildlife and fish that migrate in and out of the proposed sanctuary sites. Scientists and economists are beginning to assess the economic values of this "free work of nature" and they are finding that it can add up to large amounts of dollars in some areas. Perhaps, this type of econimic study can be done in the proposed Hudson River Estuarine Sanctuary as well.

93-1 Please see General Response A regarding use of the word "sanctuary."

94-1 Please see General Response A and other responses to fish and game clubs. The sportsmen do indeed have a right to use the areas where consumptive activities are currently permitted, along with the rights of other user groups for other activities. The EIS and the Sanctuary Management Plan (in preparation) will help to assure these rights.

they meant by minimal and the fact that the Shoats stuff is still under investigation and experts are determined that tere are PBC's that this still be a concern.

I still want to make known I'm for this sanctuary project, estuary project. I don't know how the name could be changed at this late date. I think that, on a wild guess, you would lose the grant because if the time and you have to change the name. And that there. I understand there is a citizen's advisory group out of the DEC in New Paltz and if you contact
95-1 them, Paul Keller, I believe that you can be placed on that citizens committee which also includes certain names of private firms.

I'm sure that, you know, we talked about Nixon and his 18 minutes of missing tapes. I'm sure that you yourself, sir, are for this project. And I'm sure that there isn't anybody that's going to question you whether any 18 minutes segment of this meeting is going to be left out. We have no control over what you're going to put in, or what you're going to get from your tape recorder.

Personally, and I have spoken it Milbrook at New Paltz, DEC meeting, and I have been highly critical over the fact there was not a secretary taking notes. I believe that with all the money that New York spends, we're talking about legal stuff, and what people are saying and you are actually playing the role of secretary. That shouldn't be your job, sir; it really shouldn't.

I really believe that there is enough money, and you're not with the DEC, right? (No, I'm with the Federal Government) Right. (But do I hear you making a request for a written transcript) No, I believe that future
95-2 hearings, and you can write this down, do whatever you want with it, but there should be a recording secretary. A secretary who's going to record the minutes, all the minutes of the meetings, so that its put in this transcript. Because how can we know that my comments or Mr. O'Neills, the gentlement here from Ulster County are not going to be left out?

You're going to put the important, what you think the important things in; you may think its important, maybe.

(Fred Faerber: "I'm going to write him a letter - I'm going to put it in writing.")

I'll bet you 10 to 1 he's going to leave that part out.

(Fred Faerber: Oh, I wouldn't doubt it.")

Sure. Ok. So thats my comments. I just trying to take the work, not only take the work load off of you, but I am strongly, encouraging, not only you, but the DEC start having these secretaries.
Thank you.

95-1 The Sanctuary Advisory Committee is described on p. 15-16 of the DEIS. Members will be appointed by DEC. Nominations (including documentation) should be sent to Mr. Edward Radle, NYS DEC, 50 Wolf Road, Albany, NY 12233. The committee will act as a channel of communications between the public and the State agencies involved in this program. The committee will make recommendations on the use and management of the sanctuary, as well as recommendations on research and education activities; it will also assist in fund-raising. The local subcommittee for the Tivoli Bays site will be the same as the management advisory committee being constituted by DEC in conjunction with DEC's site management plan.

95-2 Each speaker's comments, from each of four public hearings, have been transcribed and are included here.

July 21, 1982 7:15 p.m. - 8:32 p.m. 15 speakers 42 present

Stockport Town Hall in Stottville, N.Y.

Persons Present:

1. Richard J. Podgorny - Public Hearing Officer
2. Edward Raddle
3. Erik Kiviat
4. John Winthrop Aldrich
5. John P. Barrett
6. Joyce Sourusaitis (Mrs. Algis)
7. Jim Morton - speaker
8. Richard A. Brady - speaker
9. Donald R. Hilton - speaker
10. Gerald D. Hilton - speaker
11. Joel W. Meltz, Sr.
12. Sigrin Newell - speaker
13. Kate Dunham - speaker
14. Larry Biegel - speaker
15. John Mylod - speaker
16. Bob Mac Giffert - speaker
17. Robert B. Ewald - speaker
18. Donald Lynk - speaker
19. Ms. Patricia Weber - speaker
20. Roland R. Vosburgh - speaker
21. John Rossi
22. Mr. John Mac Giffert
23. Mrs. John Mac Giffert
24. George B. Wolfe
25. Scott Longe
26. Alfred Hilton - speaker
27. Anna Hilton
28. Jane Hilton
29. Nancy Pierson
30. Joan S. Hilton
31. Joel W. Meltz, Jr.
32. Janet Meltz
33. Peter T. Gregory
34. Harry E. Earle
35. Matt Kusewich
36. Doug Hindle
37. Don Hamm
38. John Leach
39. Robert T. Leach
40. Donald Taube
41. David K. Wolfe
42. Terry M. Norsic

Transcript of Comments Public Hearing
July 21, 1982
7:15 p.m.
Stockport Town Hall at Stottsville, N.Y.

Roland R. Vosburgh - Columbia County Environmental Management Council
Hudson, N.Y.

96-1 My name is Roland Vosburgh and I am a planner working for the Columbia County Department of Development and Planning and I am making a statement on behalf of Columbia County Environmental Management Council. The EMC is a duly appointed group of citizens, volunteers, who are charged with advising Columbia County supervisors on environmental matters that effect Columbia County. SEE LETTER SUBMITTED.

96-1 Please see comments and responses 25-1 to 25-4.

James Morton - NYS Department of State Albany, N.Y.

97-1 SEE LETTER SUBMITTED AT PIERMONT/RED HOOK HEARINGS

97-1 Please see comments and responses 63-1 to 63-3

Richard A. Brady - Heritage Task Force of Hudson River Valley
Hudson, N.Y.

98-1 My name is Richard A. Brady and I am a Commissioner of Public Works for Columbia County and I am an appointed member to the Heritage Task Force of the Hudson River Valley. I like to read a letter on our stationery from our principal consultant, Loretta M. Simson, to Dr. Podgorny. SEE LETTER SUBMITTED.

98-1 Please see comments and responses 28-1 to 28-3.

Donald Hilton - Copake, N.Y.

I don't have a prepared statement, just some notes I put down. I guess mainly because I'm a local Stockport Columbiaville boy. I went to a one-room school house and I happen to be a duck hunter. I don't have everything typed up ahead of time. If its alright if I go through what I have here without being prepared.

I will make it clear to everyone here, I am not representing any organization, I am an ex-member Chairman of The Board Columbia County Federation of Sportsmen, ex-member Waterfront Representatives for the Columbia County Federation of Sportsmen, Charter member of Sportsmen Club, and _____Rod and Hunting Club.

99-1 How I stand on this, I'll make myself clear before we start. I am about 150% against it. Mainly, these are my reasons: an unprepared statement.

Week ago Saturday I cruised up and down the river, brother and a few other relatives, went past the middle grounds, Grays Point. I think the Peconic Parks Commission is taking this land over. What have you done with it? They claim they don't have money to fix it up. There is absolutely nothing been done whatsoever.

Another thing is, mentioned in the beginning here, so much of this land is supposed to be sanctuary. First of all the name sanctuary... I am not against any advancement, development, saving stuff for the future. But the Hudson River still has the PCB's and I think that's the poly-chlorinated biphenyls, mirex. I think if we're going to spend $375,000 of our money, and $375,000 of Federal money, which is also our money- I think we ought to clean up the river first. It seems to me that its more or less the horses tail wagging the horse. I think we ought to get first things first. And again I'll say this is my personal thing.

I noticed the hunting fees, my wife and I both hunt, sportsman license last year was $15.50, correct me if I'm wrong, I think this year $23.50. I know of no sportsmen's group in Columbia County, anyplace in New York State, at least I haven't heard of it they're not against it they was for the raise. Because the State needs more money. We don't have the money. And I think when we get right down to it, we can watch moving pictures, we can watch anything we want, we get right down to it we're talking about dollar bills, too. If you don't have it, you don't have it.

99-2 Another thing is, I have hunted the Stockport Flats, this will be my 42nd year. Anyone from aroung Stockport knows that railroad down there is a dangerous place. Now you're talking about putting a boat launch down there. I have not heard anybody here from Con-Rail, but the State evidently has got the permission that nobody seems to know about. That launch down there for the past few years does belong to Con-Rail.

Another thing is, I am against the Stockport Flats Sanctuary. We're going to encourage more people to be walking across that car bridge, the railroad bridge, we always refer to it as a car bridge. I lost one dear friend on the car bridge, I think there's quite a few other ones had been killed going across it.

99-1 Comments accepted. No response necessary.

99-2 Regarding safe access to the Stockport Flats site: Access is now either by boat, or by foot across the railroad bridge. The possibility of constructing an overpass or underpass for pedestrian access across the railroad will be explored with Consolidated Rail Corporation; this might be funded from the Estuarine Sanctuary grants. Whether or not it will be possible to build a walkway, permanent boat access is needed close to the site. DEC will negotiate with ConRail to acquire the parking area and unimproved boat landing at the former site of Stockport Station, on the north side of the mouth of Stockport Creek east of the tracks (parcel #5, DEIS p.7). DEC will also examine the possibility of boat access from the Barrett property on the south side of the creek, a possibility that the Barretts suggested informally after the Stockport hearing (see parcel #12, DEIS p.7). Both of these sites are inside (east of) the railroad, and the area around the railroad bridge is very shallow at low tide. However, hunters, fishermen, and other users have been launching boats here for years for access to Stockport Flats and nearby areas. The need for dredging is not anticipated. Dredging could have negative effects on fish and plant populations in the area. Additional boat access is available at improved public landings at Athens, Coxsackie, and Hudson, all within about two miles of Stockport Flats.

Not to get off the subject, we went through almost the same thing in parallel with the steel shot on the Hudson River. We don't study what other people have done. We got a steel shot gun act, this is the law--we obey it. I obey it, my wife hunts with me, she obeys it. Maryland and Delaware they had steel shot, they abandoned all this money to study the gizzards of ducks and everything else. Why don't they find out why Maryland and Delaware eliminated the project.

99-3 Another thing I seen here in your picture, and this may sound like nit picken, I'm sorry if it does. It said wild rice on Stockport Flats-I hunted down there this year, I see somebody down there laughing I don't know who it is - you hunt Stockport Flats? What wild rice? Where did you take that picture? I seen a couple, maybe 3 or 4. This is the reason I am against it.

I think its a dangerous thing, the money should be spent other places, and I'd like to say there are people here and I have nothing and I don't mean to put anybody down, its not my intent. They have their prepared statements and I don't have one, maybe one from a rod and gun club, Calconi's here, maybe he has a prepared statement.

But I think if we had more people that would get up and speak as they feel, that I think the money is going to the wrong place. Thank you very much.

Gerald Hilton - Hudson, N.Y.

The whole think is this. The property owners down in Stockport Creek, there's a lot of camps down there. And they're talking about a boat launch by the railroad track. Well this isn't going to go over. So, there's properties on the railroad tracks up. And the way this looks to me you're proposing that you're going to move, move, more like Afganistan. And you are going to take all this property. Now this is what I want to know, is this going to be true, is everything down here
100-1 now, or are you going to move on and take more property? This is the question I want to find out. Are these boundaries going to expand in the future? How far are they going to go with this? I mean they go so many thousands, and all of a sudden we'll be pushed right out, and you'd take over without even firing a shot. That's the whole thing. That's my only question right there.

Mr. Joel Meltz, Sr. - Hudson, N.Y.

101-1 I feel about the same ways Mr. Hilton does.

Sigrin Newell - The Nature Conservancy, Albany, N.Y.

My name is Sigrin Newell, I am the chairman of the New York Chapter of the Nature Conservancy. Tonight I speak both for our local chapter and our State field office.

99-3 The Slide referred to shows wild-rice at Stockport Flats. In 1980 and 1981, when field work was done for the Estuarine Sanctuary proposal, extensive stands of wild-rice were found in the southern half of the "main marsh" at Stockport Flats (see DEIS p. 36) as well as in the Stockport Creek mouth. According to the reports of botanists, wild-rice was abundant in the upper Hudson River Estuary in the 1930s and 1940s. Since then there has been a decline followed by an increase in the wild-rice population of the estuary. Wild-rice is one of the important features of the Stockport site from a research point of view, because wild-rice is one of the most productive tidal marsh plants known, and a very important food for muskrats, ducks, rails, and other birds. The reasons for the great changes in wild-rice abundance in the Hudson are not understood.

100-1 There are no plans for the sanctuary boundaries to expand farther into the mouth of Stockport Creek. However, if property owners there are willing to sell, the Estuarine Sanctuary Steering Committee would consider acquisition in fee simple or by easement. Since the DEIS was written, the Barretts have expressed interest in selling their property on the south side of Stockport Creek, and this possibility is under study by DEC.

101-1 No response necessary.

The Nature Conservancy is an organization nationally which is dedicated to protecting America's wild lands, so there will be wild lands in the future. And locally, the Nature Conservancy Eastern New York Chapter has various preserves. We have about 27 preserves from the Capital district and down into your area.

Our basic concern is protecting rare and endangered plants. And since
102-1 you saw in Erik Kiviat's projections, there are some rare and endangered plants in the area we are concerned that they should be protected.

So the Nature Conservancy has turned in a written statement to the
102-2 preparers of the plan about our specific detail technical comments.

For tonight I'd like to say for the Nature Conservancy is in favor of having the estuarine sanctuary system because we think it's important that
102-3 people experience outdoors in a way that makes them want to preserve them for the future. And this seems to be a very well put together design in which people can do exactly that.

It doesn't interfer with the basic rights of hunters and other people who have been using the land traditionally for their purposes. And it does make it possible to be sure that the land will be protected and that more people, who can learn about the land, will be able to be on it.

Since the State already owns most of the land which is being proposed
102-4 within this system, it will cost the taxpayers very little money, and we think that's a very important thing. It would be giving a new focus to land which is already part of the State system.

So, in general, I think I would just like to say that the Nature Conservancy does feel that protecting land is important and that this is a good way
102-5 of doing it with the cooperation of the local people who will be serving on these various advisory committees and will be able to put their input into the whole planning process. Thank you.

Kate Dunham - Alan Devoe Bird Club, Chatham, N.Y.

103-0 I represent the Alan Devoe Bird Club. SEE LETTER SUBMITTED.

Larry Biegel - Greene County Environmental Management Council
Cairo, N.Y.

I live across the county in Greene County in Cornwallville. I spend quite a bit of time slopping around the Stockport swamps there. I didn't read the whole environmental impact statement, but I read most of it.

102-1 Comments accepted. The Estuarine Sanctuary proposal offers a special opportunity for the conservation of rare plants in the Hudson River Estuary. These plants need protection so that their populations will be available for scientific research, esthetic enjoyment, and any potential usefulness to humanity. Many valuable drugs and other substances have been discovered in wild plants, and it is important to conserve rare species for these potential resources. Rare species also are important elements in natural diversity and in the genetic resources for future evolution. Some of the noteworthy rare plants of the proposed sanctuary sites are listed in DEIS p. 50.

102-2 Please see comments and responses 36-1 to 36-9.

102-3 Comments accepted. No response necessary.

102-4 One of the incentives to selection of the four proposed sanctuary sites, in addition to their superb environmental quality, was the fact that most of the land is already in State ownership. Thus an Estuarine Sanctuary can be established that does not involve removing large additional parcels from the tax rolls. Even though much of the land is already State-owned, the establishment of the Hudson River Estuarine Sanctuary would create a new focus and a new program that emphasizes research and education - both needed in the Hudson River estuarine wetlands.

102-5 Comments accepted. No response necessary

103-0 Please see comments and responses 26-1 to 26-3.

First of all, I would like to say on my own behalf as a hunter, fishermen and trapper and birdwatcher, I do all of those. I am in favor of this proposal. I would not be in favor of this proposal if it would
103-1 try and stop hunting and fishing, but I'm not so worried about that. In Green County we have over 80,000 acres, owned by the Department of Environmental Conservation. And they are the people who would be administering this sanctuary program. And you can hunt on every single acre of that, so I don't see any problem.

I also have a statement from the Green County Environmental Management
103-2 Council, who I sometimes work with. I'd like to read.
SEE LETTER SUBMITTED.

103-1 Comments accepted. No response necessary.

103-2 Please see comments and responses 27-1 to 27-5.

John Mylod - Hudson River Sloop Clearwater
Poughkeepsie, N.Y.

My name is John Mylod and I am the Director of Clearwater, and I am a member of the States' Hudson River Fishery Management Advisory Committee, and I'm also a commercial shad fisherman out of the Poughkeepsie area.

And I'd like to make some written comments later on for submission to the record.

I think there was a comment earlier by Mr. Vosburgh that interested me especially in terms of special interests. We all are here for various special interests, whether its commercial fishing and the value that these habitats play in the development of the fish and spawning and nursery
104-1 of those fish, hunting and fishing and bird watching and research. But I think that in terms of the excellent DEIS, which I think should be proceeded within terms of the way its outlined here, is the key about protection.

What we have here is four discrete marshes from the Piermont area to Stockport Flats is an opportunity to preserve these four areas. I think that's critical at a time that the Army Corps of Engineers is beginning to change some of its priorities,--in the West--area where 220 acres--what happens there. Changes in the permit process all these could lead to the ultimate destruction of these very vital critical wetland areas of the Hudson. I think that the important areas is the notion of protection, not only of the wetland areas, but the shallows area of the river. The shallows are very important, very important for the productivity of the area for the spawning, important for fish like striped bass and shad.

I think the other point I'd like to make too is that this Hudson River is really not just here, its a national river, its a regional river. What we do to the Hudson in general, we do to the whole coastal zone.

I think in terms of productivity, its critical that it be preserved.

104-1 Comments accepted. No response necessary.

I would like to make one final comment, something that someone said earlier in terms of spending money unnecessarily for these marshes. I certainly support the notion of cleaning up the Hudson River, in terms of PCB problems. It is more important to know that 18 million dollars is available to start cleaning up the PCB's in the Hudson River right now. If the Environmental Protection Agency in Washington would release those funds that were appropriated by Congress, DEC has a program to clean up the river by dredging the hot spots above Troy. I think that if we all in this room lean on our elected officials and get them to move, its critical to the restoration of commercial and sport shad fishing. Thank you.

Bob Mac Giffert - Hudson, N.Y.

105-1 I just had one question, page 13 talks about the boat launch site by Con-Rail. It says in the next paragraph that future acquisition planned along the Creek, what are they thinking about, another access for boat launch or fishing. I was wondering specifically they plan on putting this in along the fronts of the Creek, they must have some area in mind or they wouldn't have put in this book here. Where along the Creek do they plan on putting this in?

105-1 An additional or alternative boat landing might be desirable on Stockport Creek. No specific location has been chosen, and this will depend on the availibility of property. The possibility of using the Barrett property for a landing is under study.

Robert B. Ewald - FWMA - Region 3, Pine Bush, N.Y.

106-1 SEE LETTER SUBMITTED AT PIERMONT/RED HOOK HEARING

Pursuing this point I was not available for the Iona Island Hearing.
106-2 It was one that I was not available for and as much I did not know it was going to exist and it had not been published as part of the original DEIS. This is the type of thing which the sportsmen has to always feel a little uneasy about. Granted that Iona Island under PIP control is something in terms of hunting & trapping, something we really look at. But in terms of a boat ramp for striped bass recreational fishing, or a recreational fishing for shad, I think that its something I'd like to have entered into the record, and this is the 4th of four hearings.

The sportsmen would like to have an answer to that question. The
106-3 ramps are there, why can't they be used? There's adequate access once the causeway is made strong enough to support vehicles. There are boat launching ramps which I don't think would interfer with the pristine status that the PIP hopes to include for educational purposes. Thank you.

106-1 Please see comments and responses 12-1 to 12-5.

106-2 Both the Bear Mountain (Iona Island) hearing and the Piermont hearing were set up for comments on either of those two proposed sites. The Bear Mountain hearing was scheduled as a convenience to residents of the Town of Stony Point; the information was not relayed to Washington in time to be announced in the DEIS. However, all comments received at any of the four hearings are summarized here in the FEIS, it doesn't matter which hearing comments were presented at.

106-3 Regarding public use of boat ramps at Iona Island: There are no boat ramps at Iona Island. The periphery of the land is fenced.

Donald Lynk - Columbia County Sportsmen Federation
Hudson, N.Y.

I just came more for information than anything on the controversy on the Stockport purchase.

I am the delegate for Columbia County for region 4. also the word sanctuary and if there will be the continuance of hunting
107-1 and fishing and trapping.

I'm also President of Columbia County Sportsmen Federation.

I don't have any prepared statement, there may be some questions I have. I didn't have the time.

107-1 Please see General Response A regarding multiple uses, and use of the word "sanctuary."

Patricia W. Weber - Scenic Hudson, Inc., Poughkeepsie, N.Y.

I'm representing scenic Hudson, Inc. Scenic Hudson is a non-profit environmental organization with a membership of approximately 12,000 persons. We are concerned for the development and enchancement of the Hudson River Valley, its river and shorelands.

108-1 We support the establishment of the estuarine sanctuary program and using both Federal and State Funds, and the inclusion of the Stockport
108-2 Flats. SEE LETTER SUBMITTED.

108-1 Comments accepted. No response necessary.

108-2 Please see comments and responses 41-1 to 41-5.

Roland R. Vosburg - (more comments)

The recommendations of the county EMC is gone to Columbia County supervisors through the Planning and Community Affairs Committee, they met on July 15th and voted to recommend that the full board supervisors
109-1 support this proposal. So we have an indication that there is supervisors' support. The only unfortunate situation is that the Board Supervisors won't be meeting until August 14, and I understand the deadline for comments is the 2nd. You will be receiving a copy of any resolution they pass even though its after August 2nd. I wanted you to know that.

109-1 Comments accepted. No response necessary.

question for the record - Alfred Hilton

Is that boat launch that goes in down at Con-Rail, do they plan on
110-1 dredging the creek or the river, or are they just going to carry the boats through the mud because there is no water there?

110-1 Please see response 99-2.

ADDITIONAL COMMENTS

The following comments were received while the FEIS was at the printers. There was not enough time and space remaining to provide responses.

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION ONE
Leo W. O'Brien Federal Building
Ninth Floor
Albany, New York
12207

1982 AUG 12 AM 8:27

August 9, 1982

IN REPLY REFER TO:
HB-NY

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

Thank you for the opportunity to comment on this Draft Environmental Impact Statement for the proposed Estuarine Sanctuary on the Hudson River. We have consulted with the New York State Department of Transportation and have no comments to offer at this time. The New York State Department of Transportation has informed us that they also have no comment on the proposed action.

Again, we appreciate the opportunity to review this DEIS. Please keep us advised if conditions change.

Sincerely yours,

Victor E. Taylor
Division Administrator

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

1982 AUG -9 PM 2:13

Robert F. Flacke
Commissioner

July 28, 1982

Dr. Richard Podgorny
Sanctuary Project Manager
Office of Coastal Zone Management
3300 Whitehaven Street
Washington, D. C. 20235

Re: Draft Environmental Impact Statement
Hudson River Estuarine Sanctuary

Dear Dr. Podgorny:

My staff has completed a review of the Draft Environmental Impact Statement for the proposed Estuarine Sanctuary grant award for Hudson River Estuarine Sanctuary in the State of New York.

As I am sure you are aware, much of these proposed areas have traditionally been utilized for fishing, both recreational and commercial. In the cases of Piermont Marsh and Iona Island Marsh, shellfishing for blue crab primarily on a recreational basis has also been a long-standing use. Certain sites within the boundaries of the proposed sanctuary areas are also periodically visited by sampling crews for the purpose of monitoring Hudson Estuary fish populations. It is of considerable concern that these uses of the proposed sanctuary areas be continued with minimal additional constraints. Perhaps the sanctuary designation implies a more aggressive regulation than would be desirable in relation to these activities.

The fact that each Hudson Estuary site proposed for inclusion in the Estuarine Sanctuary Program currently supports high quality vegetative and faunal communities, is indisputable. However, the Draft Environmental Impact Statement makes frequent reference to proposed sanctuary areas as "essentially undisturbed" or "nearly pristine". The impact of mans' activity; dredging, construction of railroad causeways, development of shipping facilities, among others is clearly evident and has significantly altered characteristics of each site from their original state. Perhaps a more accurate description of the characters of the sites would benefit unfamiliar readers.

In addition to the above general comments, I would also offer the following specific comments:

page 5 - final paragraph refers to a "large" shortnose sturgeon Acipenser brevirostrum population. This species is currently listed as endangered by both the U. S. Department of Interior and New York State. Until such time

as a review of the population status of shortnose sturgeon relative to the Hudson River has been completed, this species should receive all due consideration as an endangered species. "Uncommon" might be a more accurate characterization of the occurrence of shortnose sturgeon in the Hudson Estuary.

page 21 - second paragraph makes reference to the participants in the establishment of the Hudson River Foundation for Science and Environmental Research Inc. The Power Authority of the State of New York should be included among contributions to the endowment fund.

page 29 - fourth paragraph refers to the surface area of the Hudson Estuary as approximately 82,000 acres. DEC staff has determined a surface area approximately 25 percent smaller.

I wish to thank you for an opportunity to review and comment on this proposal. Should you have any questions, please do not hesitate to contact me.

Sincerely,

Bruce D. Shupp
Chief, Bureau of Fisheries

State University of New York

College at New Paltz
New Paltz, New York 12561

1982 AUG -9 PM 2:57

August 3, 1982

Dr. Richard J. Podgorny
U.S. Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Dear Dr. Podgorny:

After carefully reviewing the Draft E.I.S. regarding the Hudson River Estuarine Sanctuary proposal, I applaud the U.S. Dept. of Commerce, NOAA, Office of CZM and the State of New York DEC for their efforts and for the succinct, yet thorough preparation of this document.

I have nothing to add to the document. I would only say that the establishment of this estuarine sanctuary would be only positive, no groups of the private sector would experience any hardships and the educational aspects should be most beneficial to private citizens, nature clubs and educational institutions in the Mid-Hudson area.

Sincerely,

Selden J. Spencer
Professor of Biology

SJS:vla

PART VIII: APPENDICES

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Appendix 1. Bibliography and literature cited. The annotations S (Stockport), T (Tivoli), I (Iona), and P (Piermont) indicate references specifically treating the indicated sites.

Aldrich, J. W. 1979. A brief account of Cruger's Island, Magdalen Island, the North Bay, and adjoining uplands. Year Book Dutchess County Historical Society 64:72-86. T

Anonymous. nd. Bear Mountain Trailside Museums, Nature Trails & Zoo. Trailside Museums, Bear Mountain NY. 10 p. brochure. I

_____. 1968. The Bear Mountain Trailside Museums and Nature Trails. Palisades Interstate Park Commission. Trailside Museums, Bear Mountain NY. 10 p. brochure. I

_____. 1975. Hudson River Recreationway: Master Development Plan for Gays Point, Stockport Middle Ground Islands and Middle Ground Flats. New York State Office of Parks and Recreation. 7 p. unpubl. rept. S

_____. 1977? Bear Mountain Trailside Museums, Nature Trails & Zoo. Palisades Interstate Park Commission. Bear Mountain State Park, NY. 12 p. brochure. I

_____. 1979. 2 river island parksites planned. Hudson Register-Star, 19 July: A1, back page. S

_____. 1980a. The Tivoli Bays. Hudson River Heritage News 5(2):4-5. T

_____. 1980b. Bear Mountain State Park. Iona Island - Program of utilization. New York State Office of Parks and Recreation. 26 p. unpubl. rept. I

_____. 1981. Tidal marsh saved. Land Lines (Lower Hudson Chap. Nature Conservancy), spring:1.P

Arbib, R. S., Jr., O.S. Pettingill, Jr. and S. H. Spofford. 1966. Enjoying birds around New York City. Houghton Mifflin Co., Boston. 171 p. T, I, P

Averill, S. P., R. R. Pardi, W. S. Newman and R. J. Dineen. nda. Late Wisconsin - Holocene history of the lower Hudson region: new evidence from the Hackensack and Hudson River valleys. Pp. 160-186 in Warren Manspeizer, ed. Field Studies of New Jersey Geology and Guide to Field Trips: 52nd Annual Meeting of the New York State Geological Association. I, P

Barlow, M. 1981. Company giving pier to Piermont. Bird's-eye view of Piermont Marsh. West Nyack Journal-News, 4 Jan.:A1, back p. P

Beauchamp, W. M. 1900. Aboriginal occupation of New York. New York State Museum Bulletin 32, 187 p. S, T, I

Boyle, R. H. 1969. The Hudson River; a natural and unnatural history. W. W. Norton, NY. 304 p. S, T, P

Brown, D. 1981. Tivoli Bay to be kept for nature. Albany Times-Union, 2 Aug. T

Buckley, E. H. and S. S. Ristich. 1976. Distribution of rooted vegetation in the brackish marshes and shallows of the Hudson River Estuary. Paper 20, 30 p. in Fourth Symposium on Hudson River Ecology. Hudson River Environmental Society, Bronx NY.

Burmeister, W. F. 1974. Appalachian waters 2: the Hudson River and its tributaries. Appalachian Books, Oakton VA. 488 p. S, T, I, P

Butler, J.R., E. S. Custer, Jr., and W. A. White. 1975. Potential geological Natural Landmarks Piedmont Region, eastern United States. Dept. Geology, University of North Carolina, Chapel Hill, NC. 240 p. P

Carr, W. H. 1940. Birds of Bear Mountain Park; A check-list. Bear Mountain Trailside Museum, 31 p.

Cinquemani, L. J., W. S. Newman, J. A. Sperling, L. F. Marcus and R. R. Pardi. In press. Holocene sea level changes and vertical movements along the East Coast of the United States: a preliminary report. (Dept. Earth and Environmental Sciences, Queens College, Flushing, NY.) I

Clarke & Rapuano, Inc. 1976. Iona Island Bear Mountain State Park entrance road environmental assessment design feasibility. Palisades Interstate Park Commission. 90 p. + maps. I

Coastal Zone Management Study Program. 1977a. Final report on Geographic Areas of Particular Concern (GAPC) recommendations. (Task 7.3). New York Department of Environmental Conservation, Division of Land Resources and Forest Management, Coastal Zone Management Study Program, Albany, NY. S, T, I, P

_____. 1977b. Final report on significant coastal related fish and wildlife habitats of New York State (Task 7.3). New York State Department of Environmental Conservation, Division of Land Resources and Forest Management, Coastal Zone Managment Study Program, Albany, NY. S, T, I, P

Connor, J. 1978. Osprey trapped by water chestnut. Auk 95:610-611. T

Craig, R. J., M. W. Klemens, and S. S. Craig. 1980. The northeastern range limit of the eastern mud turtle Kinosternon s. subrubrum (Lacepede). Journal of Herpetology 14(3):295-297.

Dalmas, J. 1980. Eye on Iona. Of an isolated island in the Hudson. West Nyack Journal-News, 12 Oct.:3M-4M. I

Deed, R. F. 1959. Birds of Rockland County and the Hudson Highlands. 44 p. Rockland Audubon Society, West Nyack, NY. I, P

_____. 1968. Supplement to Birds of Rockland County and the Hudson Highlands. 27 p. Rockland Audubon Society, West Nyack, NY. I, P

_____. Birds of Rockland County N.Y. and the Hudson Highlands, 1844-1976, 220 p.

_____. 1976. Rockland County's on-again, off-again resting places for shorebirds. Linnaean News-Letter 29(7): 1-3. I, P

_____. 1981a. The endless change in a local checklist. Linnaean News-Letter 34(7-8):1-2. I, P

_____. 1981b. The Piermont Pier and marsh. The Observer 34(2):1-2. P

Dovel, W.L. 1981. The Endangered Shortnose Sturgeon of the Hudson Estuary; Its Life History and Vulnerability to the Activities of Man. Final Report. Federal Energy Regulatory Commission Contract No. DE-AC 39-79 RC-10074. 139 pages.

Drennan, S. R. 1981. Where to find birds in New York State; the top 500 sites. Syracuse University Press, 499 p. S, T, I, P

Duch, T. M. 1976. Aspects of the feeding habits of Viviparus georgianus. Nautilus 90(1):7-10. T

Dutchess County Environmental Management Council Significant Areas Committee. In press. Significant areas. In Natural Resources of Dutchess County, New York. Dutchess County Department of Planning, Poughkeepsie, NY. T

Faulds, C. A., ed. 1969. The Piermont study. Rockland Community College (Suffern, NY) and the Hudson River Valley Commission. np. P

Ferren, W. R., Jr., and A. E. Schuyler. 1980. Intertidal vascular plants of river systems near Philadelphia. Proceedings of the Academy of Natural Sciences of Philadelphia 132:86-120.

Fitzpatrick, J. F., Jr. and J. F. Pickett, Sr. 1980. A new crawfish of the genus Orconectes from eastern New York (Decapoda: Cambaridae). Proceedings of the Biological Society of Washington 93:373-382. S

Foley, D. D. and R. W. Taber. 1951. Lower Hudson waterfowl investigation. Pittman-Robertson Project 47-R. New York State Conservation Department, Albany, NY. 796 p. S, T, I, P

Funk, 1967. The Hudson; archeological sites. A report on archeological resources in the Hudson River Valley. State of New York Hudson River Valley Commission, Iona Island, Bear Mountain, NY. 19 p. S, T, I

_____. 1976. Recent contributions to Hudson Valley prehistory. New York State Museum Memoir 2, 325 p. S, T, I

Garlinghouse, H. M. 1976. William Seward Teator (1860-1930). Nautilus 90(4):148-149. T

Gleason, H. A. and A. Cronquist. 1963. Manual of vascular plants of northeastern United States and adjacent Canada. Van Nostrand, Princeton, NJ. 861 p.

Goldhammer, A. 1981. Canoeing the Hudson's marshes. Clearwater Navigator 12(6): 4-6

Goldring, W. 1943. Geology of the Coxsackie quadrangle, New York; with a chapter on glacial geology by J. H. Cook. New York State Museum Bulletin 322, 374 p. + maps. S

Griscom, L. 1933. The birds of Dutchess County, New York. Transactions of the Linnaean Society of New York 3, 184 p. T

Hall, A. J. 1978. The Hudson: "That river's alive". National Geographic 153(1):62-89. T, P

Hickey, J. J. 1969. Peregrine falcon populations; their biology and decline. University of Wisconsin Press, Madison. 596 p. I, P

Hudson River Research Council. 1980. Results of Hudson River Field Weeks April 1977 and August 1978. Water temperature, conductivity, dissolved oxygen, and total suspended solids at spring high flow and summer low flow. HRRC, Bronx, NY. 50 p. S, T, P

Jorgenson, S. E. 1980. Some international values of wetlands. Parks 5(3):5-8

Key, M. C. 1981. Fulvous whistling duck. Wings over Dutchess 22(5):8. T

Kiviat, E. 1973. Down along the cove. Bard Review, spring:21-23. T

_____. 1974. A fresh-water tidal marsh on the Hudson, Tivoli North Bay. Paper 14, 33 p. in Third Symposium on Hudson River Ecology. Hudson River Environmental Society, Bronx, NY. T

____. 1976a. Goldenclub, a threatened plant in the tidal Hudson River. Paper 21, 13 p. in Fourth Symposium on Hudson River Ecology. Hudson River Environmental Society, Bronx, NY. S, T

____. 1976b. (Notes on Hudson River Tidal Marsh Workshop, 2 June 1976 at Bard College, sponsored by Hudson River Environmental Society). Currents (HRES) 6(2): 1, (3): 3-4.

____. 1977. Reptiles and amphibians of the Hudson Estuary. North River Navigator (Hudson River Sloop Clearwater) 8(9):4-5.

____. 1978. Hudson River east bank natural areas, Clermont to Norrie. Nature Conservancy, Arlington, VA 115 p. T

____. 1979a. Hudson Estuary shore zone: ecology and management. Master's thesis (unpubl.), State University College at New Paltz, NY. 159 p. T, I, P

____. 1979b. Cattail marshes, birds, good water, and people. Dutchess Life 8:13. T

____. 1980a. A Hudson River tidemarsh snapping turtle population. Transactions of the Northeast section, Wildlife Society 37:158-158. T

____. 1980b. Low tides and turtle trails. Hudson Valley 9(5):27-29.T

____. 1981a. Hudson River Estuary shore zone annotated natural history bibliography with index. Scenic Hudson, Poughkeepsie, NY. 76 p. S, T, I, P

____. 1981b. Profile of the Hudson. Hudson Valley 9(9):24-28. T, I, P

____. 1981c. Profile of the Hudson: the air. Hudson Valley 9(12):39-41. T

____. 1981d. A Hudson River fresh - tidal marsh: management planning. Restoration and Management Notes 1(1): 14-15. T

____. 1982. Eastern bluebird remote natural nest sites. Kingbird 32(1): 6-8.1

____. and F. Dunwell. 1981. The marshes stand watch. Hudson Valley 10(5): 33-37. S, T, I, P

Lehr, J. H. 1967a. The plants of Iona Island; a field report. Sarracenia (New York Botanical Garden) 11:35-38. I

____. 1967b. The marshes at Piermont, New York; a field report. Sarracenia (New York Botanical Garden) 11:31-34. P

McKeon, W. Ca. 1974. An appraisal of the current status of marshes or wetland areas along the Hudson River. Hudson River Environmental Society, Bronx, NY. 7 p. unpubl. ms. T, I, P

McVaugh, R. 1958. Flora of the Columbia County area, New York. New York State Museum and Science Service Bulletins 360-360A. 433 p. S, T

Merrill, T. B. 1981. Piermont double donation "worth a celebration". Clearwater Navigator (Hudson River Sloop Clearwater), April:3. P

Meyer, G. 1980. The ecological perspective. Piermont Newsletter 14(1):7. P

Mitchell, R. S., C. J. Sheviak and J. K. Dean. 1980. Rare and endangered vascular plant species in New York State. New York State Museum, Albany. 38 p. T, I

Muenscher, W. C. 1935. Aquatic vegetation of the Mohawk watershed. Supplement, 24th Annual Report of the New York State Conservation Department, Biological Survey 9 (Mohawk-Hudson Watershed):228-249. S

____. 1937. Aquatic vegetation of the lower Hudson area. Supplement, 26th Annual Report of the New York State Conservation Department, Biological Survey 11 (Lower Hudson Watershed):231-248. S, T, I, P

Muenscher, W. C. 1944. Aquatic plants of the United States. Cornell University Press, Ithaca, NY. 374 p. T

Mylod, J. 1969. Biography of a river; the people and legends of the Hudson Valley. Bonanza Books, New York. 244 p. I

Newman, W. S. 1973. Iona Island - the last fifteen millenia. Communicator (Journal of the New York State Outdoor Education Association) 5(1):28-30. I

____, D. H. Thurber, H. S. Zeiss, A. Rokach and L. Musich. 1969. Late Quaternary geology of the Hudson River estuary: a preliminary report. Transactions of the New York Academy of Science, Series 2, 31(5):548-570. I

New York State Department of Environmental Conservation and United States Fish and Wildlife Service. 1978. Hudson River fish and wildlife report; Hudson River Level B Study. NYS DEC, Albany NY.

Nicholas, G. L. 1900. The swallow-tailed kite at Piermont, New York. Auk 17:386. P

Nordstrom, C. 1973. Frontier elements in a Hudson River village. Kennikat Press, Port Washington, NY. P

Oceanic Society. 1980. Hudson River Fishery Management Program Study. A Report to the New York State Department of Environmental Conservation.

(Orth, J. C.) (Ca. 1965.) Vertebrates of Iona Island and vicinity. Bear Mountain State Park Trailside Museums. 17 p. I

Pink, E. and O. Waterman. 1967. Birds of Dutchess County 1933-1964. Ralph T. Waterman Bird Club, Dutchess County, NY. 124 p. T

____ and ____. 1980. Birds of Dutchess County 1964-1979. Ralph T. Waterman Bird Club, Dutchess County, NY. 93 p. T

Raymond, Parish, Pine and Weiner, Inc., and A. Gussow. 1979. Hudson River Valley Study. New York State Department of Environmental Conservation, New Paltz, NY. 180 p. T, I, P

Ritchie, W. A. 1958. An introduction to Hudson Valley prehistory. New York State Museum Science Service Bulletin 367, 112 p. T

Rockland County Planning Board. 1974. Piermont community development goals and Erie Pier assessment. Piermont Planning Commission, Village Hall, Piermont NY. 22 p. P

Romero, A. B., et al. 1977. Where to bird in Dutchess County. Ralph T. Waterman Bird Club, Moores Mills, Pleasant Valley, NY. T

Rosenthal, M. 1977. Monitoring prevents creek deterioration. New York State Association of Conservation Councils 3(4):4-5. T

____. 1977-present. The Sawkill Newsletter. Bard College, Annandale-on-Hudson, NY. Monthly.

Rubinstein, L. C. 1969. Historic resources of the Hudson: a preliminary inventory January 1969. Hudson River Valley Commission. 96 p. I

Saratoga Capital District State Park and Recreation Commission. nd. Hudson River Islands State Park. Master Plan. Gays Point. Stockport Middle Ground. Middle Ground Flats. Unpubl. rept.

Schuyler, A. E. 1975. Scirpus cylindricus: an ecologically restricted eastern North American tuberous bulrush. Bartonia (43):29-37. I, P

Sheppard, J. D. 1976. Valuation of the Hudson River Fishery Resources: Past, Present and Future. New York State Department of Environmental Conservation 51 p.

Smith, D. G. 1981. A note on the morphological variability of Orconectes kinderhookensis (Decapoda: Cambaridae) from the Hudson River system in New York. Journal of Crustacean Biology 1(3):389-391.S

Smith, S. J., J. A. Wilcox, and E. M. Reilly, Jr. (1967?). The Hudson; biological resources. A report on areas of biological significance in the Hudson River Valley. State of New York Hudson River Valley Commission, Iona Island, Bear Mountain, NY. 43 p. S, T, I, P

Stapleton, J. and E. Kiviat. 1979. Rights of birds and rights of way; vegetation management on a railroad causeway and its effects on breeding birds. American Birds 33(1):7-10. T

Stone, W. B., E. Kiviat and S. Butkas. 1980. Toxicants in snapping turtles. New York Fish and Game Journal 27(1):39-50. T, I, P

Svenson, H. K. 1935. Plants from the estuary of the Hudson River. Torreya 35(5):117-125. T

Tate, J., Jr. 1981. The Blue List for 1981. American Birds 35(1): 3-10.

Tauber, G., ed. 1976? Conference on the enhancement of environmental research in the Hudson Bain region. 16-18 June 1976 at Bard College. Report of the Bard Conference: Proceedings of a Conference on the enhancement of environmental research in the Hudson Basin region. State of New York Department of Environmental Conservation, Albany, NY. 63 p.

Teator, W. S. 1890. Collecting land shells in eastern New York. Nautilus 3(10):109-110; (11):129-132. T

Torrey, R. H. 1931. Trip of August 2. Torreya 31:153-154. I (plants)

____. 1932. Lichen observations on winter walks of the Club. Torreya 32:45-47. I

Webster, W., ed. 1971. New York walk book. 4th ed. With an introduction to the geology of the region by C. J. Schuberth. New York - New Jersey Trail Conference and American Geographical Society. Doubleday/Natural History Press, Garden City, NY. 326 p. + 23 maps. I, P

Weinstein, L. H., ed. 1977. An atlas of the biologic resources of the Hudson Estuary. Boyce Thompson Institute for Plant Research, Yonkers (now Ithaca), NY. 105 p. I, P

Wilkie, R. W. The illustrated Hudson River Pilot; being a smallcraft sailor's pictorial guide to the tidewater Hudson Albany to New York. Three City Press, Albany, NY. 183 p. S, T, I, P

Williams, S. C., H. J. Simpson, C. R. Olsen and R. F. Bopp. 1978. Sources of heavy metals in sediments of the Hudson River. Marine Chemistry 6(1978): 195-213. P

Worley, I. A. 1974. Natural landmark brief. Iona Island Marsh, Rockland County, New York. unpubl. rept.

APPENDIX 2

Existing Jurisdiction Involving the Proposed Hudson River Estuarine Sanctuary

Appendix 2. Existing Jurisdiction Involving the Proposed Hudson River Estuarine Sanctuary

AGENCY	JURISDICTION	LEGISLATION (if any)
Federal:		
Army Corps of Engineers	dredging, filling, dumping, hazards to navigation, wetlands in river and larger tributaries	Sec. 404 of Clean Water Act, Rivers & Harbors Act, Section 10, as amended
Dept. of Commerce: Office of Coastal Zone Management	oversight of National Estuarine Sanctuary Program	Coastal Zone Management Act, as amended
National Marine Fisheries Service	marine fishery resources, endangered species, marine mammals	Fishing Conservation and Management Act of 1976, Fish and Wildlife Coordination Act of 1934, Endangered Species Act of 1972, Commercial Fisheries Research and Development Act of 1964, Anadromous Fish Conservation Act of 1965, all as amended
Sea Grant Program	research, education, and conservation in the coastal zone	Public Law 94461
Dept. of the Interior: Fish & Wildlife Service	migratory birds, endangered species, marine mammals, interstate commerce of organisms	Migratory Bird Treaty Act, Endangered Species Conservation Act, Lacey Act, Marine Mammal Protection Act, all as amended
National Park Service	Natl. Register of Historic Places, Natl. Natural Landmarks, Natl. Trust for Historic Preservation	Historic Preservation Act, as amended
Dept. of Transportation: Coast Guard	maintenance of navigable waters, shipping, small craft, aids to navigation search and rescue	14 USC 2, Primary Responsibilities of the Coast Guard

AGENCY	JURISDICTION	LEGISLATION (if any)
State (cont.):		
Environmental Protection Agency	air and water quality guidelines, solid waste and toxic materials guidelines, spills noise pollution, PCB reclamation demonstration, environmental review of projects	Clean Air Act, Clean Water Act, TOSCA, RCRA, FIFRA, Superfund, NEPA, all as amended
Nuclear Regulatory Commission	oversight over operation Indian Point power plants	Energy Reorganization Act
Consolidated Rail Corporation	right-of-way improvement and maintenance	
State:		
Department of Environmental Conservation	lead agency in Hudson River Estuarine Sanctuary Program, landowner at Tivoli Bays & Piermont, fish & game, protected animals, collecting and marking licenses, freshwater and tidal wetlands, water and air quality solid water & toxic substances pesticides, mining, scenic areas, project review. The Heritage Task Force for the Hudson River Valley, Inc.	Environmental Conservation Law and regulations promulgated thereunder (as amended) including the Fish & Wildlife Law, Water Resources Law, Freshwater Wetlands Act, Tidal Wetlands Act, Resource Conservation and Recovery Act, and Wild, Scenic, and Recreational River System, State Environmental Quality Act
Department of Commerce	tourism developement	Tourist Promotion Act
Department of Health	food quality (e.g., fish)	Public Health Law
Department of State	cooperating agency in Hudson River Estuarine Sanctuary Program, coastal management	Waterfront Revitalization & Coastal Resources Act

AGENCY	JURISDICTION	LEGISLATION
State (cont.):		
Department of Transportation	navigation channel, spoil disposal, roads, bridges	Transportation Law
Office of General Services	cooperating agency in Hudson River Estuarine Sanctuary Program, landowner at Stockport and Tivoli	Public Lands Law, Art. 6
Office of Parks, Recreation and Historic Preservation	cooperating agency in Hudson River Estuarine Sanctuary Program, landowner at Stockport, park land management, historic preservation, promotion and regulation of pleasure boating	Parks, Recreation, and Historic Preservation Law, as amended
Palisades Interstate Parks Commission	cooperating ageny in Hudson River Estuarine Sanctuary Program, landowner at Piermont & Iona, management of the interstate park	Parks, Recreation and and Historic Preservation Law, as amended
State Energy Office	energy policy	Energy Law, as amended
Public Service	energy facility siting and regulations	Public Service Law
County:		
Departments of Health	facility safety and sanitation, water supply, landfills, pest control	General Municipal Law, NYCR&R, as amended laws of various counties
Environmental Management Councils	advice to legislatures, natural resource inventories, public information	General Municipal Law (as above)
Highway Departments	county roads	(as above)

AGENCY	JURISDICTION	LEGISLATION
County (cont.):		
Planning Departments	review of Federal spending (A-95), planning recommendations and coordination of planning activities	(as above)
Town:		
Planning, Zoning, and Conservation Boards & Commissions	planning, zoning, advice to town boards on environmental issues, natural resource inventories, conformance to existing laws	(as above) also town ordinances including zoning ordinances*
Highway Departments	maintenance of town roads and town landfills	
Village:		
Piermont	owner of pier, portion of marsh within its jurisdiction	See under Town
Tivoli	small portion of Tivoli Bay within its jurisdiction	See under Town

*Zoning classifications for the four Proposed Estuarine Sanctuary areas:

Piermont - Village of Piermont - - - Use by special permit from Village
Town of Orangetown - - - Residential, 2 acre minimum

Iona - wholly within the Palisades Interstate Park

Tivoli - Town of Red Hook - - - Agricultural (uplands), Land Conservation (wetlands and Cruger Island)
Village of Tivoli

Stockport - no zoning ordinances

APPENDIX 3

List of Fishes Reported From the Proposed Estuarine Sanctuary on the Hudson River, New York

Appendix 3. List of fishes reported from the proposed Estuarine Sanctuary sites on the Hudson River, New York. Letters in the Ecological Classification column refer to the relationship of the fish to the estuary following McHugh (10): A=Freshwater fishes that enter brackish water, B=Truly estuarine species, C=Anadromous/ catadromous species, D=Seasonal adult marine species, E=Estuarine nursery species, and F=Adventitious marine species. Numbers listed under the proposed sanctuary areas indicate presence of the species in that area and the source of the data; only one source is listed although several sources may have reported that species.

Common name	Scientific name	Ecological Classification (EC)	Sites S	T	I	P
PETROMYZONTIDAE						
American brook lamprey	Lampetra appendix	A		1		
Sea lamprey	Petromyzon marinus	C		1		
ANGUILLIDAE						
American eel	Anguilla rostrata	C	8	1	2	5
CLUPEIDAE						
Blueback herring	Alosa aestivalis	C		1	2	4
Alewife	A. pseudoharengus	C	9	1		
American shad	A. sapidissima	C	9	2		7
Menhaden	Brevoortia tyrannus	E				7
ENGRAULIDAE						
Bay anchovy	Anchoa mitchilli	B				7
SALMONIDAE						
Rainbow trout	Salmo gairdneri	A		1		
Brown trout	S. trutta	A	9	1		
Brook trout	Salvelinus fontinalis	A		1		
OSMERIDAE						
Rainbow smelt	Osmerus mordax	C	9	1		
UMBRIDAE						
Central mudminnow	Umbra limi	A		1		
Eastern mudminnow	U. pygmaea	A				5
ESOCIDAE						
Redfin pickerel	Esox americanus	A	3	1	2	6
Northern pike	E. lucius	A	9			
Chain pickerel	E. niger	A		1		

Common name	Scientific name		Sites S	T	I	P	
CYPRINIDAE							
Goldfish	Carassius auratus	A	4	1	2		11
Carp	Cyprinus carpio	A	8	1	2		
Cutlips minnow	Exoglossum maxillingua	A		1			
Eastern silvery minnow	Hybognathus regius	A	3	1			
Golden shiner	Notemigonus crysoleucas	A	3	1	2	7	
Satinfin shiner	Notropis analostanus	A		1			
Bridle shiner	N. bifrenatus	A	3	1			
Common shiner	N. cornutus	A	3	1			
Spottail shiner	N. hudsonius	A	8	1	8	7	
Spotfin shiner	N. spilopterus	A	3				
Blacknose dace	Rhinichthys atratulus	A		1		5	
Creek chub	Semotilus atromaculatus	A		1			
Fallfish	S. corporalis	A	3	1			
CATOSTOMIDAE							
White sucker	Catostomus commersoni	A	4	1	2	5	
Creek chubsucker	Erimyzon oblongus	A				6	
Northern hogsucker	Hypentelium nigricans	A	3	1			
ICTALURIDAE							
White catfish	Ictalurus catus	A	4	1			
Yellow bullhead	I. natalis	A				2	
Brown bullhead	I. nebulosus	A	4	1	2		
GADIDAE							
Atlantic tomcod	Microgadus tomcod	B			2	7	
FUNDULIDAE							
Banded killifish	Fundulus diaphanus	A	8	8	1	7	
Mummichog	F. heteroclitus	B	8	1	8	8	
ATHERINIDAE							
Tidewater silversides	Menidia beryllina	E				7	
Waxen siversides	M. menidia	E				7	
GASTEROSTEIDAE							
Fourspine stickleback	Apeltes quadracus	B	8	1	8	7	
Threespine stickleback	Gasterosteus aculeatus	B			2		

Common name	Scientific name		Sites S	T	I	P
SYNGNATHIDAE						
Northern pipefish	Syngnathus fuscus	D				7
PERCICHTHYIDAE						
White perch	Morone americana	B	9	1	8	8
Striped bass	M. saxatilis	C	4	1	8	7
CENTRARCHIDAE						
Rock bass	Ambloplites rupestris	A		1		
Bluespotted sunfish	Enneacanthus gloriosus	A			2	
Redbreast sunfish	Lepomis auritus	A	3	1	8	8
Pumpkinseed	L. gibbosus	A	3	1	2	6
Warmouth	L. gulosus	A		1		
Bluegill	L. macrochirus	A	9	1		7
Smallmouth bass	Micropterus dolomieui	A	9	1		
Largemouth bass	M. salmoides	A	4	1	2	7
Black crappie	Pomoxis nigromaculatus	A		1		
PERCIDAE						
Tessellated darter	Etheostoma olmstedi	A	3	1	2	5
Yellow perch	Perca flavescens	A	3	1	8	
POMATOMIDAE						
Bluefish	Pomotomus saltatrix	E				7
ACIPERSERIDAE						
Shortnose Sturgeon	Acipenser brevirostrum	C	S	T	I	P
SCIAENIDAE						
Weakfish	Cynoscion regalis	E				7

SOURCES

1. Kiviat, E. In press. Natural history of the fish fauna of Tivoli Bays. Hudson River Fisheries Symposium, Hudson River Environmental Society. (Includes a few species found in nontidal waters close to the proposed site.

2. Orth, J. D. ca. 1965. Vertebrates of Iona Island and vicinity. Bear Mountain State Park Trailside Museums. 17 p.

3. Greeley, J. R. 1937. Fishes of the area with annotated list, pp. 45-85. In. Anonymous. A biological survey of the lower Hudson watershed. In. Anonymous. A biological survey of the lower Hudson watershed. Supplement to 26th Annual Report, New York Conservation Department, Part II.

4. New York State Department of Environmental Conservation, 1971 Stream Survey.

5. New York State Department of Environmental Conservation, Sparkill Creek Stream Surveys.

6. Bailey, R. M. 1936. Stream survey records. New York State Department of Environmental Conservation.

7. Smith, C. L. Stream survey records, American Museum of Natural History.

8. Hudsonia Limited. Miscellaneous collections, 1981 and 1982.

9. Observations by Everett Nack (Claverack, New York), Salvatore Cozzolino (Department of Environmental Conservation), or Louis Gerrain (DEC).

10. McHugh, J. L. 1967. Estuarine Nekton, pp 581-620. In. G. H. Lauff (Ed.) Estuaries. AAAS Publ. No. 83, Washington, D.C.

11. Letter from Ruth Rehfus (National Marine Fisheries Service) to Richard B. Mieremet, dated June 4, 1982.

12. Tom Lake, personal communication.

13. Texas Instruments, Inc., beach seine survey, beach 99 (Cruger Island).

APPENDIX 4

Birds Reported In or Close to Proposed Sanctuary Sites

Appendix 4. Birds reported in or close to proposed sanctuary sites. Sources of data are listed at end of this appendix.

Common name	Scientific name	Sites			
		S	T	I	P
Common loon	Gavia immer	S	T	I	P
Red-throated loon	G. stellata	s	T	I	P
Red-necked grebe	Podiceps grisegena	S	T	I	
Horned grebe	P. auritus	S	T	I	P
Pied-billed grebe	Podilymbus podiceps	s	T	I	P
Gannet	Morus bassanus		T		
Great cormorant	Phalacrocorax carbo				P
Double-crested cormorant	P. auritus	s	T	I	P
Great blue heron	Ardea herodias	S	T	I	P
Green heron	Butorides striatus	s	T	I	P
Little blue heron	Florida caerulea		T	I	P
Cattle egret	Bubulcus ibis				
Great egret	Casmerodius albus	s	T	I	P
Snowy egret	Egretta thula		T	I	P
Louisiana heron	Hydranassa tricolor				P
Black-crowned night heron	Nycticorax nycticorax	s	T	I	P
Yellow-crowned night heron	Nyctanassa violacea				P
Least bittern	Ixobrychus exilis		T	I	P
American bittern	Botaurus lentiginosus	S	T	I	P
Glossy ibis	Plegadis falcinellus		T		P
Mute swan	Cygnus olor	S		I	P
Whistling swan	Olor columbianus		T		
Canada goose	Branta canadensis	S	T	I	P
Brant	B. bernicla	s	T	I	P
White-fronted goose	Anser albifrons				P
Snow goose	Chen caerulescens	S	T	I	P
Fulvous whistling duck	Dendrocygna bicolor		T		
Mallard	Anas platyrhynchos	S	T	I	P
Black duck	A. rubripes	S	T	I	P
Gadwall	A. strepera	S	T	I	P
Pintail	A. acuta	S	T	I	P
Green-winged teal	A. crecca crecca	S			
American green-winged teal	A. crecca carolinensis	S	T	I	P
Blue-winged teal	A. discors	S	T	I	P
European wigeon	A. penelope		T		
American wigeon	A. americana	S	T	I	P
Northern shoveler	A. clypeata	S	T		
Wood duck	Aix sponsa	S	T	I	
Redhead	Aythya americana	s	T	I	
Ring-necked duck	A. collaris	s	T	I	P
Canvasback	A. valisineria	S	T	I	P
Greater scaup	A. marila	s	T	I	P
Lesser scaup	A. affinis	S	T	I	P
Common goldeneye	Bucephala clangula	S	T	I	P
Bufflehead	B. albeola	s	T	I	P
Oldsquaw	Clangula hyemalis	s	T	I	P
White-winged scoter	Melanitta deglandi	s	T	I	P

Common name	Scientific name	S	T	I	P
Surf scoter	*M. perspicillata*	s	T	I	P
Black scoter	*M. nigra*	s	T	I	
Ruddy duck	*Oxyura jamaicensis*		T	I	P
Hooded merganser	*Lophodytes cucullatus*	S	T	I	P
Common merganser	*Mergus merganser*	S	T	I	P
Red-breasted merganser	*M. serrator*	s	T	I	P
Turkey vulture	*Cathartes aura*	S	T	I	P
Goshawk	*Accipiter gentilis*	S	T	I	P
Sharp-shinned hawk	*A. striatus*	s	T	I	P
Cooper's hawk	*A. cooperii*	S	T	I	P
Red-tailed hawk	*Buteo jamaicensis*	S	T	I	P
Red-shouldered hawk	*B. lineatus*	S	T	I	P
Broad-winged hawk	*B. platypterus*	s	T	I	P
Rough-legged hawk	*B. lagopus*	s	T	I	P
Golden eagle	*Aquila chrysaetos*		T	I	P
Bald eagle	*Haliaeetus leucocephalus*	S	T	I	P
Marsh hawk	*Circus cyaneus*	S	T	I	P
Osprey	*Pandion haliaetus*	S	T	I	P
Gyrfalcon	*Falco rusticolus*		T		
Peregrine falcon	*F. peregrinus*		T	I	P
Merlin	*F. columbarius*		T	I	P
American kestrel	*F. sparverius*	S	T	I	P
Ruffed grouse	*Bonasa umbellus*	S	T	I	
Ring-necked pheasant	*Phasianus colchicus*	s	T	I	P
Gray partridge	*Perdix perdix*		T		
King rail	*Rallus elegans*	s	T	I	P
Clapper rail	*R. longirostris*				P
Virginia rail	*R. limicola*	s	T	I	P
Sora	*Porzana carolina*	s	T	I	P
Common gallinule	*Gallinula chloropus*	s	T	I	P
American coot	*Fulica americana*	s	T	I	P
Semipalmated plover	*Charadrius semipalmatus*		T		P
Killdeer	*C. vociferus*	S	T	I	P
American golden plover	*Pluvialis dominica*		T		
Black-bellied plover	*P. squatarola*		T		P
Ruddy turnstone	*Arenaria interpres*		T		P
American woodcock	*Philohela minor*	S	T	I	P
Common snipe	*Capella gallinago*	s	T	I	P
Upland sandpiper	*Bartramia longicauda*			I	P
Spotted sandpiper	*Actitis macularia*	S	T	I	P
Solitary sandpiper	*Tringa solitaria*	s	T		P
Willet	*Catoptrophorus semipalmatus*				P
Greater yellowlegs	*Tringa melanoleuca*	S	T	I	P
Lesser yellowlegs	*T. flavipes*	S	T	I	P
Red knot	*Calidris canutus*				P
Pectoral sandpiper	*C. melanotos*	S	T		P
White-rumped sandpiper	*C. fuscicollis*				P
Least sandpiper	*C. minutilla*	s	T		P

Common name	Scientific name	S	T	I	P
Dunlin	C. alpina	S	T		P
Short-billed dowitcher	Limnodromus griseus		T		P
Long-billed dowitcher	L. scolopaceus				P
Semiplamated sandpiper	Calidris pusillus		T		P
Western sandpiper	C. mauri				P
Sanderling	C. alba		T		P
Northern phalarope	Lobipes lobatus			I	P
Glaucous gull	Larus hyperboreus	s		I	P
Iceland gull	L. glaucoides	s		I	
Great black-backed gull	L. marinus	S	T	I	P
Herring gull	L. argentatus	S	T	I	P
Ring-billed gull	L. delawarensis	S	T	I	P
Laughing gull	L. atricilla		T	I	P
Bonaparte's gull	L. philadelphia	s	T	I	P
Black-legged kittiwake	Rissa tridactyla		T		
Forster's tern	Sterna forsteri				P
Common tern	S. hirundo	s	T	I	P
Roseate tern	S. dougallii				P
Sooty tern	S. fuscata			I	P
Least tern	S. albifrons				P
Royal tern	S. maximus	S			P
Sandwich tern	S. sandvicensis				P
Caspian tern	S. caspia		T		P
Black tern	Chlidonias niger	s	T	I	P
Rock dove	Columbia livia	S	T	I	P
Mourning dove	Zenaida macroura	S	T	I	P
Monk parakeet	Myiopsitta monachus				P
Yellow-billed cuckoo	Coccyzus americanus	s	T	I	P
Black-billed cuckoo	C. erythrophthalmus	s	T	I	P
Barn owl	Tyto alba	s	T		
Screech owl	Otus asio	s	T	I	P
Great horned owl	Bubo virginianus	S	T	I	
Snowy owl	Nyctea scandiaca				P
Barred owl	Strix varia		T	I	
Long-eared owl	Asio otus		T		P
Short-eared owl	A. flammeus	s			P
Saw-whet owl	Aegolius acadicus	s	T		
Whip-poor-will	Caprimulgus vociferus	s	T	I	P
Common nighthawk	Chordeiles minor	s	T	I	P
Chimney swift	Chaetura pelagica	S	T	I	P
Ruby-throated hummingbird	Archilochus colubris	s	T	I	P
Belted kingfisher	Megaceryle alcyon	S	T	I	P
Common flicker	Colaptes auratus	S	T	I	P
Pileated woodpecker	Dryocopus pileatus	s	T	I	P
Red-bellied woodpecker	Melanerpes carolinus	s	T		P
Red-headed woodpecker	M. erythrocephalus		T		
Yellow-bellied sapsucker	Sphyrapicus varius		T	I	P
Hairy woodpecker	Picoides villosus	s	T	I	P

Common name	Scientific name	S	T	I	P
Downy woodpecker	*P. pubescens*	S	T	I	P
Black-backed three-toed woodpecker	*P. arcticus*		T		
Eastern kingbird	*Tyrannus tyrannus*	S	T	I	P
Western kingbird	*T. verticalis*		T		
Great crested flycatcher	*Myiarchus crinitus*	s	T	I	P
Eastern phoebe	*Sayornis phoebe*	S	T	I	P
Yellow-bellied flycatcher	*Empidonax flaviventris*		T	I	
Acadian flycatcher	*E. virescens*		T		
Willow flycatcher	*E. traillii*	s	T	I	P
Alder flycatcher	*E. alnorum*				P
Least flycatcher	*E. minimus*	s	T	I	P
Eastern wood pewee	*Contopus virens*	s	T	I	P
Olive-sided flycatcher	*Nuttallornis borealis*		T	I	
Horned lark	*Eremophila alpestris*	s	T	I	P
Tree swallow	*Iridoprocne bicolor*	S	T	I	P
Bank swallow	*Riparia riparia*	S	T	I	
Rough-winged swallow	*Stelgidopteryx ruficollis*	s	T	I	P
Barn swallow	*Hirundo rustica*	S	T	I	P
Cliff swallow	*Petrochelidon pyrrhonota*	s	T	I	P
Purple martin	*Progne subis*	s	T	I	P
Blue jay	*Cyanocitta cristata*	S	T	I	P
Common raven	*Corvus corax*		T	I	
Common crow	*C. brachyrhynchos*	S	T	I	P
Fish crow	*C. ossifragus*	s	T	I	P
Black-capped chickadee	*Parus atricapillus*	S	T	I	P
Boreal chickadee	*P. hudsonicus*		T		P
Tufted titmouse	*P. bicolor*	S	T	I	P
White-breasted nuthatch	*Sitta carolinensis*	S	T	I	P
Red-breasted nuthatch	*S. canadensis*	s	T	I	P
Brown creeper	*Certhia familiaris*	S	T	I	P
House wren	*Troglodytes aedon*	s	T	I	P
Winter wren	*T. troglodytes*	S	T	I	P
Carolina wren	*Throyothorus ludovicianus*	s	T		P
Long-billed marsh wren	*Cistothorus palustris*	S	T	I	P
Short-billed marsh wren	*Cistothorus platensis*				P
Mockingbird	*Mimus polyglottos*	s	T	I	P
Gray catbird	*Dumetella carolinensis*	S	T	I	P
Brown thrasher	*Toxostoma rufum*	s	T	I	P
American robin	*Turdus migratorius*	S	T	I	P
Wood thrush	*Catharus mustelina*	s	T	I	P
Hermit thrush	*C. guttata*	s	T	I	P
Swainson's thrush	*C. ustulata*	s	T	I	P
Gray-cheeked thrush	*C. minima*		T	I	
Veery	*C. fuscescens*	s	T	I	P
Eastern bluebird	*Sialia sialis*		T	I	P
Blue-gray gnatcatcher	*Polioptila caerulea*	S	T	I	P
Golden-crowned kinglet	*Regulus satrapa*	s	T	I	P
Ruby-crowned kinglet	*R. calendula*	s	T	I	P
Water pipit	*Anthus spinoletta*	s	T	I	P
Cedar waxwing	*Bombycilla cedrorum*	s	T	I	P

Common name	Scientific name	S	T	I	P
Northern shrike	Lanius excubitor		T		P
Loggerhead shrike	L. ludovicianus		T		P
Starling	Sturnus vulgaris	S	T	I	P
White-eyed vireo	Vireo griseus		T	I	
Yellow-throated vireo	V. flavifrons	s	T	I	P
Solitary vireo	V. solitarius	s	T	I	P
Red-eyed vireo	V. olivaceus	s	T	I	P
Philadelphia vireo	V. philadelphicus		T		P
Warbling vireo	V. gilvus	s	T		P
Black-and-white warbler	Mniotilta varia	s	T	I	P
Prothonotary warbler	Protonotaria citrea		T		P
Worm-eating warbler	Helmitheros vermivorus		T	I	P
Golden-winged warbler	Vermivora chrysoptera		T	I	
Blue-winged warbler	V. pinus		T	I	P
Tennessee warbler	V. peregrina		T	I	P
Orange-crowned warbler	V. celata		T		P
Nashville warbler	V. ruficapilla		T	I	P
Northern parula	Parula americana		T	I	P
Yellow warbler	Dendroica petechia	s	T	I	P
Magnolia warbler	D. magnolia	s	T	I	P
Cape May warbler	D. tigrina	s	T	I	
Black-throated blue warbler	D. caerulescens	s	T	I	P
Yellow-rumped warbler	D. coronata	s	T	I	P
Black-throated green warbler	D. virens	s	T	I	P
Cerulean warbler	D. cerulea	s	T	I	
Blackburnian warbler	D. fusca	s	T	I	P
Yellow-throated warbler	D. dominica		T		
Chestnut-sided warbler	D. pensylvanica	s	T	I	P
Bay-breasted warbler	D. castanea	s	T	I	P
Blackpoll warbler	D. striata	s	T	I	P
Pine warbler	D. pinus	s	T	I	
Prairie warbler	D. discolor	s	T	I	P
Ovenbird	Seiurus aurocapillus	s	T	I	P
Northern waterthrush	S. noveboracensis	s	T	I	P
Louisiana waterthrush	S. motacilla	s	T	I	P
Kentucky warbler	Oporonis formosus		T		P
Connecticut warbler	O. agilis		T		
Mourning warbler	O. philadelphia		T		
Common yellowthroat	Geothlypis trichas	S	T	I	P
Yellow-breasted chat	Icteria virens		T	I	P
Hooded warbler	Wilsonia citrina		T	I	P
Wilson's warbler	W. pusilla	s	T	I	P
Canada warbler	W. canadensis	s	T	I	P
American redstart	Setophaga ruticilla	s	T	I	P
House sparrow	Passer domesticus	s	T	I	P
Bobolink	Dolichonyx oryzivorus	s	T	I	P
Eastern meadowlark	Sturnella magna	s	T	I	P
Yellow-headed blackbird	Xanthocephalus xanthocephalus		T		

Common name	Scientific name	S	T	I	P
Red-winged blackbird	Agelaius phoeniceus	S	T	I	P
Orchard oriole	Icterus spurius	s	T		P
Northern oriole	I. galbula	S	T	I	P
Rusty blackbird	Euphagus carolina	s	T	I	P
Common grackle	Quiscalus quiscula	S	T	I	P
Brown-headed cowbird	Molothrus aler	S	T	I	P
Scarlet tanager	Piranga olivacea	s	T	I	P
Summer tanager	P. rubra		T		
Cardinal	Cardinalis cardinalis	S	T	I	P
Rose-breasted grosbeak	Pheucticus ludovicianus	s	T	I	P
Blue grosbeak	Guiraca caerulea		T		
Indigo bunting	Passerina cyanea	s	T	I	P
Evening grosbeak	Hesperiphona vespertina	s	T	I	P
Purple finch	Carpodacus purpureus	S	T	I	P
House finch	C. mexicanus	S	T		P
Pine grosbeak	Pinicola enucleator		T	I	P
Hoary redpoll	Acanthis hornemanni		T		
Common redpoll	A. flammea	s	T	I	P
Pine siskin	Carduelis pinus	s	T	I	P
American goldfinch	C. tristis	S	T	I	P
Red crossbill	Loxia curvirostra		T		
White-winged crossbill	L. leucoptera		T	I	
Rofous-sided towhee	Pipilo erythrophthalmus	S	T	I	P
Savannah sparrow	Passerculus sandwichensis	s	T	I	P
Grasshopper sparrow	Ammodramus savannarum		T		P
Henslow's sparrow	A. henslowii		T		
Sharp-tailed sparrow	Ammospiza caudacuta		T		P
Seaside sparrow	A. maritima				P
Vesper sparrow	Pooecetes gramineus		T	I	P
Lark sparrow	Chondestes grammacus				P
Dark-eyed junco	Junco hyemalis	S	T	I	P
Tree sparrow	Spizella arborea	S	T	I	P
Chipping sparrow	S. passerina	s	T	I	P
Field sparrow	S. pusilla	s	T	I	P
White-crowned sparrow	Zonotrichia leucophrys	s	T	I	P
White-throated sparrow	Z. albicollis	s	T	I	P
Fox sparrow	Passerella iliaca	s	T	I	P
Lincoln's sparrow	Melospiza lincolnii	s	T	I	P
Swamp sparrow	M. georgiana	S	T	I	P
Song sparrow	M. melodia	S	T	I	P
Lapland longspur	Calcarius lapponicus		T		
Chestnut-collard longspur	C. ornatus		T		
Snow bunting	Plectrophenax nivalis	S	T	I	P

a) Sources of data:

Stockport: Richard Guthrie, William Cook and Erik Kiviat. S (upper case) indicates sight record of the site; s (lower case) indicates species likely to occur based on records from nearby areas.

Tivoli: from Kiviat (1978) (includes a few species recorded from areas near, but not within, the proposed sanctuary boundaries); and Richard Gunthrie.

Iona: from Orth (1965).

Piermont: Robert Deed, includes species of land birds observed within about 50 yards of the landward edge of the marsh (landward boundary of the proposed sanctuary site); all sight records. Short-billed marsh wren datum from Joseph Hickey field notes.

APPENDIX 5

Selected Data From New York Mid-Winter
Aerial Waterfowl Survey

Appendix 5. Selected Data from New York Mid-Winter Aerial Waterfowl Survey (Hudson Estuary only).[a]

Common name	Scientific name	1978-1982 Counts Average (Range)
Mute swan	Cygnus olor	42(0-77)
Canada goose	Branta canadensis	251(150-401)
Mallard	Anas platyrhynchos	464(0-896)
Black duck	A. rubripes	829(25-2172)
Canvasback	Aythya valisineria	886(0-3585)
Scaups	Aythya	7(0-15)
Common goldeneye	Bucephala clangula	19(0-85)
Mergansers	Mergus	230(84-550)
Unidentified		12(0-60)
	Total (all species)	2740(259-7841)

a) New York State Department of Environmental Conservation data.

APPENDIX 6

Tidal Vascular Plants of the Proposed Sanctuary Sites

Appendix 6. Tidal wetlands and shallows vascular plants of the sites. Sources of data are listed at end of this appendix.

Family Common name	Scientific name	Sites S	T	I	P
ACERACEAE					
Boxelder	Acer negundo	S	T		
Red maple	A. rubrum		T	I	
Silver maple	A. saccharinum	S	T		
ALISMATACEAE					
Water-plantain	Alisma sp.		T		
Water-plantain	A. subcordatum			I	
Arrowhead	Sagittaria eatoni	S	T	I	
Broadleaf arrowhead	S. latifolia	S	T		
Stiff arrowhead	S. rigida	S	T		
Arrowhead	S. spatulata	S			
Subulate arrowhead	S. subulata	S	T	I	
AMARANTHACEAE					
Tidewater-hemp	Amaranthus cannabinus	S	T	I	P
ANACARDIACEAE					
Smoke tree	Continus coggygria		T		
Poison ivy	Rhus radicans		T		
Poison sumac	Rhus vernix			I	
AQUIFOLIACEAE					
Winterberry	Ilex verticillata		T	I	
ARACEAE					
Sweet flag	Acorus calamus	S	T		
Jack-in-the-pulpit	Arisaema triphyllum		T		
Goldenclub	Orontium aquaticum	S	T		
Arrow arum	Peltandra virginica	S	T	I	P
Skunk cabbage	Symplocarpus foetidus	S	T	I	
Swamp milkweed	Asclepias incarnata		T	I	
BALSAMINACEAE					
Jewelweed	Impatiens biflora		T	I	P

Family Common name	Scientific name	Sites S	T	I	P
BETULACEAE					
Speckled alder	Alnus rugosa			I	
Smooth alder	A. serrulata		T	I	
Yellow birch	Betula lutea		T		
Gray birch	B. populifolia		T		
American hornbeam	Carpinus caroliniana		T		
Hazel	Corylus sp.		T		
Hop hornbeam	Ostrya virginiana		T		
BORAGINACEAE					
Forget-me-not	Myosotis sp.			I	
CAESALPINIACEAE					
Wild senna	Cassia hebecarpa	S			
CALLITRICHACEAE					
Water starwort	Callitriche verna		T		
CAPRIFOLIACEAE					
Bell's honeysuckle	Lonicera x. bella	S	T		
Elderberry	Sambucus canadensis	S	T	I	
Arrow-wood	Viburnum dentatum		T	I	
Nannyberry	V. lentago		T		
CARYOPHYLLACEAE					
Water chickweed	Stellaria aquatica		T		
CELASTRACEAE					
Bittersweet	Celastrus scandens		T		
CERATOPHYLLACEAE					
Coontail	Ceratophyllum demersum	S	T	I	
CLETHRACEAE					
Sweet pepperbush	Clethra alnifolia			I	
COMMELINACEAE					
Dayflower	Commelina communis		T		

Family Common name	Scientific name	Sites S	T	I	P
CHENOPODIACEAE					
Spearscale	Atriplex patula				P
COMPOSITAE					
Giant ragweed	Ambrosia trifida		T		
Aster	Aster puniceus		T		
Aster	A. subulatus				P
Beggar-ticks	Bidens bidentoides	S	T	I	
Bur-marigold	B. cernua	S	T		
Eaton's bur-marigold	B. eatoni		T		
Beggar-ticks	B. frondosa		T		
Estuary beggar-ticks	Bidens hyperborea		T		
Beggar-ticks	B. laevis		T		
Fireweed	Erechtites hieracifolia				P
Fleabane	Erigeron philadelphicus		T		
Joe Pye-weed	Eupatorium maculatum		T		
Boneset	E. perfoliatum	S	T		
Sneezeweed	Helenium autumnale	S	T		
Marsh elder	Iva frutescens				P
Climbing hempweed	Mikania scandens		T	I	
Marsh fleabane	Pluchea purpurascens			I	P
Greenhead coneflower	Rudbeckia laciniata		T		
Groundsel	Senecio aureus		T		
Goldenrod	Solidago sp.	S			
Goldenrod	S. sempervirens				P
Cocklebur	Xanthium strumarium	S			
CONVOLVULACEAE					
Bindweed	Convolvulvus sepium		T		
Dodder	Cuscuta cephalanthi			I	
Dodder	C. gronovii		T		
CORNACEAE					
Silky dogwood	Cornus amomum	S	T	I	
Gray dogwood	C. racemosa		T		
Red-osier dogwood	C. stolonifera		T		
CRASSULACEAE					
Ditch stonecrop	Penthorum sedoides		T		

Family Common name	Scientific name	Sites S	T	I	P
CRUCIFERAE					
Garlic-mustard	Alliaria officinalis		T		
Wintercress	Barbarea vulgaris		T		
Bittercress	Cardamine pensylvanica		T		
Cuckoo flower	C. pratense		T		
Dame's rocket	Hesperis matronalis		T		
Marshcress	Rorippa islandica		T		
CUCURBITACEAE					
Balsam-apple	Echinocystis lobata	S			
Bur-cucumber	Sicyos angulatus	S			
CUPRESSACEAE					
Arborvitae	Thuja occidentalis		T		
CYPERACEAE					
Sedge	Carex grayii		T		
Sedge	C. stipata		T		
Tussock sedge	C. stricta		T		
Galingale	Cyperus rivularis		T		
Galingale	C. strigosus		T		
Three-way sedge	Dulichium arundinaceum		T		
Spikerush	Eleocharis acicularis	S			
Spikerush	E. ovata	S	T		
Spikerush	E. diandra	S	T	I	
Spikerush	E. palustris	S	T		
Bulrush	Scirpus acutus	S			
Threesquare	S. americanus	S	T	I	P
Bulrush	S. atrovirens		T		
Cylindrical bulrush	S. cylindricus			I	P
River bulrush	S. fluviatilis	S	T		P
Bulrush	S. maritimus				P
Threesquare	S. olneyi			I	P
Salt marsh bulrush	S. robustus			I	P
Bluntscale bulrush	S. smithii	S	T	I	
Bulrush	S. validus	S	T	I	P
DIOSCOREACEAE					
Wild yam	Dioscorea villosa		T		
ELATINACEAE					
Waterwort	Elatine americana	S	T		

Family Common name	Scientific name	Sites S	T	I	P
EQUISETACEAE					
Field horsetail	Equisetum arvense		T		
Horsetail	Equisetum fluviatile		T		
ERICACEAE					
Highbush blueberry	Vaccinium corymbosum		T		
ERIOCAULACEAE					
Pipewort	Eriocaulon parkeri		T		
FABACEAE					
False-indigo	Amorpha fruticosa		T		
Hog-peanut	Amphicarpa bracteata		T		
Groundnut	Apios americana		T		
Wild pea	Lathyrus palustris		T		
FAGACEAE					
Swamp white oak	Quercus bicolor		T		
GENTIANACEAE					
Closed gentian	Gentiana andrewsii		T		
Floating heart	Nymphoides cordata		T		
GRAMINEAE					
Redtop	Agrostis alba				P
Wood-reed	Cinna arundinacea		T		
Saltgrass	Distichlis spicata				P
Barnyard grass	Echinochloa crusgalli		T		
Water-millet	E. walteri		T	I	P
Wild-rye	Elymus virginicus		T		
Rice cutgrass	Leersia oryzoides		T		
White grass	L. virginica	S	T		
Panic grass	Panicum capillare	S			
Panic grass	P. dichotomiflorum	S	T		
Panic grass	P. virgatum				P
Common reed	Phragmites communis	S	T	I	P
Saltwater cordgrass	Spartina alterniflora				P
Tall cordgrass	S. cynosuroides				
Saltmeadow cordgrass	S. patens				P

Family Common name	Scientific name	Sites S	T	I	P
Freshwater cordgrass	S. pectinata	S	T		P
Wild-rice	Zizania aquatica	S	T	I	P
HALORAGACEAE					
Watermilfoil	Myriophyllum sp.	S		I	
Watermilfoil	M. humile		T		
Eurasian watermilfoil	M. spicatum	S	T	I	
HYDROCARYACEAE					
Water-chestnut	Trapa natans	S	T	I	
Waterweed	Elodea canadensis	S	T	I	
Waterweed	E. nuttallii	S	T	I	
Water-celery	Vallisneria americana	S	T	I	P
IRIDACEAE					
Yellow iris	Iris pseudacorus		T	I	
Blue flag	I. versicolor		T	I	
ISOETACEAE					
Quillwort	Isoetes riparia		T		
JUNCACEAE					
Rush	Juncus brachycephalus		T		
Black-grass	J. gerardi				P
Path rush	J. tenuis		T		
LABIATAE					
Stoneroot	Collinsonia canadensis		T		
Bugleweed	Lycopus americanus		T		
Bugleweed	L. europaeus		T		
Field mint	Mentha arvensis		T		
Skullcap	Scutellaria galericulata			I	
Skullcap	S. lateriflora		T		
Hedge-nettle	Stachys palustris		T		
Wood sage	Teucrium canadense				P

Family Common name	Scientific name	Sites S	T	I	P
LAURACEAE					
Spicebush	Lindera benzoin	S	T		
LEMNACEAE					
Common duckweed	Lemna minor	S	T	I	P
Great duckweed	Spirodela polyrhiza	S	T		
LENTIBULARIACEAE					
Bladderwort	Utricularia vulgaris	S		I	
LILIACEAE					
Day-lily	Hemerocallis fulva		T		
Canada lily	Lilum canadense		T		
Greenbrier	Smilax herbacea		T		
Greenbrier	S. hispida		T		
LOBELIACEAE					
Cardinal flower	Lobelia cardinalis		T	I	
Great blue lobelia	L. siphilitica		T		
LYTHRACEAE					
Purple loosestrife	Lythrum salicaria	S	T	I	P
MALVACEAE					
Swamp rose mallow	Hibiscus palustris		T	I	P
MORACEAE					
Hops	Humulus lupulus		T		
NAJADACEAE					
Naiad	Najas flexilis	S	T	I	
Naiad	N. guadalupensis	S			
Naiad	N. minor	S	T		
Muenscher's naiad	N. muenscheri	S	T	I	
Curlyleaf pondweed	Potamogeton crispus		T	I	
Pondweed	P. epihydrus	S	T		
Leafy pondweed	P. foliosus	S	T	I	

Family Common name	Scientific name	Sites S	T	I	P
Long-leaved pondweed	*P. nodosus*	S	T		
Sago pondweed	*P. pectinatus*	S		I	P
Pondweed	*P. perfoliatus*	S	T	I	P
Pondweed	*P. pusillus*	S			
Pondweed	*P. richardsonii*	S	T	I	
Flat-stemmed pondweed	*P. zosteriformis*	S	T		
Horned pondweed	*Zannichellia palustris*	S	T	I	
NYMPHAEACEAE					
Spatterdock	*Nuphar advena*	S	T	I	
White water-lily	*Nymphaea sp.*		T		
OLEACEAE					
Ash	*Fraxinus sp.*			I	
Black ash	*F. nigra*	S?	T		
Red ash	*F. pennsylvanica*	S	T		
ONAGRACEAE					
Willow herb	*Epilobium glandulosum*				P
Water-purslane	*Ludwigia palustris*	S	T		
Evening-primrose	*Oenothera sp.*	S			
ORCHIDACEAE					
Helleborine	*Epipactis helleborine*		T		
OSMUNDACEAE					
Cinnamon fern	*Osmunda cinnamomea*			I	
Interrupted fern	*O. claytoniana*			I	
Royal fern	*O. regalis*		T	I	
PINACEAE					
White pine	*Pinus strobus*		T		
PLANTAGINACEAE					
Heartleaf plantain	*Plantago cordata*	S	T		
PLATANACEAE					
Sycamore	*Platanus occidentalis*	S			

Family Common name	Scientific name	Sites S	T	I	P
POLYGONACEAE					
Tearthumb	Polygonum arifolium		T	I	P
Smartweed	P. caespitosum		T		
Japanese knotweed	P. cuspidatum	S			
Seabeach knotweed	P. glaucum				P
Water-pepper	P. hydropiper		T		
Swamp smartweed	P. hydropiperoides			I	
Dotted smartweed	P. punctatum	S	T	I	P
Tearthumb	P. sagittatum	S	T	I	
Jumpseed	P. virginianum		T		
Dock	Rumex mexicanus			I	
Water dock	R. verticillatus		T		
POLYPODIACEAE					
Ostrich fern	Matteuccia struthiopteris	S			
Sensitive fern	Onoclea sensibilis	S	T	I	
Marsh fern	Thelypteris palustris			I	P
PONTEDERIACEAE					
Mud-plantain	Heteranthera reniformis	S	T		
Pickerel-weed	Pontederia cordata	S	T	I	
Water star-grass	Zosterella dubia	S	T	I	
PORTULACACEAE					
Spring beauty	Claytonia virginica		T		
PRIMULACEAE					
Fringed loosestrife	Lysimachia ciliata		T		
Moneywort	L. nummularia		T		
Water pimpernel	Samolus parviflorus			I	P
RANUNCULACEAE					
Marsh-marigold	Caltha palustris	S	T		
Virgin's bower	Clematis virginiana	S	T		
Crowfoot	Ranunculus abortivus		T		
Cursed crowfoot	R. sceleratus		T		
Buttercup	R. septentrionalis	S	T		
Tall meadow-rue	Thalictrum polygamum	S	T		

Family Common name	Scientific name	Sites S	T	I	P
RHAMNACEAE					
Buckthorn	Rhamnus cathartica		T		
ROSACEAE					
Ninebark	Physocarpus opulifolius		T		
Swamp-rose	Rosa palustris		T	I	
Meadowsweet	Spiraea latifolia			I	
Hardhack	S. tomentosa				
RUBIACEAE					
Buttonbush	Cephalanthus occidentalis		T	I	
Bedstraw	Galium trifidum		T		
Bedstraw	G. palustre		T		
SALICACEAE					
Cottonwood	Populus deltoides	S		I	P
Quaking aspen	P. tremuloides		T		
Willow	Salix sp.	S	T	I	
Crack willow	S. fragilis		T	I	
Black willow	S. nigra			I	
Basket willow	S. purpurea			I	
Heart-leaved willow	S. rigida		T		
SCROPHULARIACEAE					
Turtlehead	Chelone glabra		T		
Mudwort	Limosella subulata	S	T		
False-pimpernel	Lindernia dubia	S	T		
Nuttall's micranthemum	Micranthemum micranthemoides		T		
Monkeyflower	Mimulus ringens		T		
SOLANACEAE					
Climbing nightshade	Solanum dulcamara		T		
SPARGANIACEAE					
Burreed	Sparganium americanum		T		
Big burreed	S. eurycarpum	S	T		

Family Common name	Scientific name	Sites S	T	I	P
TILLIACEAE					
Narrowleaf cattail	Typha angustifolia	S	T	I	P
Broadleaf cattail	T. latifolia	S	T	I	p
Hybrid cattail	T. x. glauca	S	T	I	
TYPHACEAE					
Basswood	Tilia americana	S	T		
ULMACEAE					
Elm	Ulmus sp.			I	
American elm	U. americana	S			
UMBELLIFERAE					
Angelica	Angelica atropurpurea		T		
Bulb-bearing water-hemlock	Cicuta bulbifera		T	I	
Water-hemlock	C. maculata		T		
Lilaeopsis	Lilaeopsis chinensis				P
Mock bishop weed	Ptilimnium capillaceum				P
Water-parsnip	Sium suave	S	T	I	P
URTICACEAE					
False nettle	Boehmeria cylindrica		T	I	
Wood nettle	Laportea canadensis	S	T		
Clearweed	Pilea fontana			I	
Clearweed	P. pumila		T		
VIOLACEAE					
Blue violet	Viola sp.		T		
VITACEAE					
Virginia-creeper	Parthenocissus quinquefolia	S	T		

Sources of information: Buckley & Ristich (1976), Foley & Taber (1951), Kiviat (1978) and unpublished data, Lehr (1967a, b), McVaugh (1958), Muenscher (1935, 1937), John C. Orth (unpublished data at Bear Mountain State Park Trailside Museums), Schuyler 1975 and Torrey (1931). These records span approximately the last 50 years. Nomenclature has been adjusted to conform with Gleason & Cronquist (1963) where practicable.

APPENDIX 7

National Estuarine Sanctuary Guidelines

1974 and 1977

federal register

TUESDAY, JUNE 4, 1974

WASHINGTON, D.C.

Volume 39 ■ Number 108

PART IV

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

■

Estuarine Sanctuary Guidelines

Title 15—Commerce and Foreign Trade

CHAPTER IX—NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE

PART 921—ESTURAINE SANCTUARY GUIDELINES

The National Oceanic and Atmospheric Administration (NOAA) on March 7, 1974, proposed guidelines (15 CFR Part 921) pursuant to section 312 of the Coastal Zone Management Act of 1972 (Pub. L. 92-583, 86 Stat. 1280), hereinafter referred to as the "Act," for the purpose of establishing the policy and procedures for the nomination, selection and management of estuarine sanctuaries.

Written comments were to be submitted to the Office of Coastal Environment (now the Office of Coastal Zone Management), National Oceanic and Atmospheric Administration, before April 8, 1974, and consideration has been given those comments.

The Act recognizes that the coastal zone is rich in a variety of natural, commercial, recreational, industrial and esthetic resources of immediate and potential value to the present and future well-being of the nation. States are encouraged to develop and implement management programs to achieve wise use of the resources of the coastal zone, and the Act authorizes Federal grants to the States for these purposes (sections 305 and 306).

In addition, under section 312 of the Act, the Secretary of Commerce is authorized to make available to a coastal State grants of up to 50 per centum of the cost of acquisition, development and operation of estuarine sanctuaries. The guidelines contained in this part are for grants under section 312.

In general, section 312 provides that grants may be awarded to States on a matching basis to acquire, develop and operate natural areas as estuarine sanctuaries in order that scientists and students may be provided the opportunity to examine over a period of time ecological relationships within the area. The purpose of these guidelines is to establish the rules and regulations for implementation of this program.

The National Oceanic and Atmospheric Administration is publishing herewith the final regulations describing the procedures for applications to receive grants for estuarine sanctuaries under section 312 of the Act. The final regulations and criteria were revised from the proposed guidelines based on the comments received. A total of fifty (50) States, agencies, organizations and individuals submitted responses to the proposed section 312 guidelines published in the FEDERAL REGISTER on March 7, 1974. Of those responses received, eight (8) offered no comment or were wholly favorable as to the nature and content of the guidelines as originally proposed. Forty-two (42) commentators submitted suggestions concerning the proposed section 312 guidelines.

The following summary analyzes key comments received on various sections of the proposed regulations and presents the rationale for the responses made.

Section 921.2 *Definitions.* Three comments requested that the term "estuary" be defined. Although the term is defined in the Act and also in the regulations dealing with Coastal Zone Management Program Development Grants (Part 920 of this chapter) published November 29, 1973, it has been added to these regulations and broadened slightly to include marine lagoons with restricted freshwater input such as might occur along the south Texas coast.

Two other comments requested that the "primary purpose" referred to in § 921.2(b) be clearly defined. Although elaborated upon in § 921.3(a), for the purpose of clarity this change has been made.

Section 921.3 *Objectives and Implementation.* Several comments suggested that the estuarine sanctuary program objectives were too narrowly defined and specifically that they should be broadened to include the acquisition and preservation of unique or endangered estuaries for wildlife or ecological reasons. Although the Act (section 302) declares it the nation's policy to preserve, protect, develop, and where possible, to restore or enhance coastal resources, this is perceived to be achievable through State actions pursuant to sections 305 and 305. While it is recognized that the creation of an estuarine sanctuary may in fact serve to preserve or protect an area or biological community, the legislative history of section 312 clearly indicates the estuarine sanctuary program was not intended to duplicate existing broad purpose Federal preservation programs, such as might be accommodated by use of the Land and Water Conservation Fund Act. Instead, both in the Act as well as its legislative history, the objective is defined as preserving representative estuarine areas for long-term research and educational uses.

Three other comments suggested the objectives of the program should be enlarged to include the restoration of environmentally degraded areas. This, too, is perceived to be a State requirement separate from section 312. In addition, adequate authority for restoring degraded water areas now exists (for example, Pub. L. 92-500 in addition to sections 302, 305 and 306 of the Act). No significant additional benefit would appear to result from declaring an area an estuarine sanctuary for the purposes of restoration.

A few comments indicated that the examples of sanctuary use were too heavily weighted toward scientific uses to the exclusion of educational uses. Public education concerning the value and benefits of, and the nature of conflict within the coastal zone, will be essential to the success of a coastal zone management program. The section has been changed to reflect an appropriate concern for educational use.

Some commentators suggested changes in or additions to the specific examples of sanctuary uses and purposes. These examples were taken from the Senate and House Committee Reports and are considered sufficient to reflect the kinds of uses intended within an estuarine sanctuary.

Several comments were received pertaining to § 921.3(c) involving the restrictions against overemphasis of destructive or manipulative research. Ten comments indicated that the section was too weak and would not provide sufficient long-term protection for the sanctuary ecosystem. Several commentators specifically recommended deleting the words "would not normally be permitted" and inserting in their place "will not be permitted." In contrast, three respondents indicated that the potential use of estuarine sanctuaries for manipulative or destructive research was too restricted, and that these uses should be generally permitted if not encouraged.

The legislative history of section 312 clearly indicates that the intent of the estuarine sanctuary program should be to preserve representative estuarine areas so that they may provide long-term (virtually permanent) scientific and educational use. The uses perceived are compatible with what has been defined as "research natural areas." In an era of rapidly degrading estuarine environments, the estuarine sanctuary program will ensure that a representative series of natural areas will be available for scientific or educational uses dependent on that natural character, for example, for baseline studies, for use in understanding the functioning of natural ecological systems, for controls against which the impacts of development in other areas might be compared, and as interpretive centers for educational purposes. Any use, research or otherwise, which would destroy or detract from the natural system, would be inappropriate under this program.

In general, the necessity of or benefit from permitting manipulative or destructive research within an estuarine sanctuary is unclear. While there is a legitimate need for such kinds of research, ample opportunity for manipulative or destructive research to assess directly man's impact or stresses on the estuarine environment exists now without the need for creation or use of an estuarine sanctuary for this purpose. In contrast, a clear need exists for natural areas to serve as controls for manipulative research or research on altered systems.

The section on manipulative research has been changed to reflect the concern for continued maintenance of the area as a natural system. However, the modifier "normally" has been retained because, within these limits, it is not felt necessary to preclude all such uses; the occasion may rarely arise when because of a thoroughly demonstrated direct benefit, such research may be permitted.

Several comments suggested that the program should include degraded estuarine systems, rather than be limited to areas which are "relatively undisturbed by human activities." Such areas would permit research efforts designed to restore an estuarine area. As indicated

above, an ample legislative mandate to restore environmentally degraded areas already exists; the benefits to be derived from declaring such areas estuarine sanctuaries would be marginal. Indeed, it would appear that if restoration efforts cannot occur without estuarine sanctuary designation, then, given the limited resources of this program, such efforts would not be feasible.

A few commentators suggested that the phrase (§ 921.3(e)) "if sufficient permanence and control by the State can be assured, the acquisition of a sanctuary may involve less than the acquisition of a fee simple interest" be more clearly defined. Explanatory language has been added to that section.

Section 921.4 *Zoogeographic Classification.* Because the classification scheme utilized plants as well as animals, two commentators suggested that zoogeographic be changed to biogeographic. This change is reflected in the final regulations.

One comment suggested that selection of sanctuaries should depend on the pressures and threats being brought to bear upon the natural areas involved even if this meant selecting several sanctuaries from one classification and none from another.

The legislative history of section 312 clearly shows the intent to select estuarine sanctuaries on a rational basis which would reflect regional differentiation and a variety of ecosystems. The biogeographic classification system, which reflects geographic, hydrographic, and biologic differences, fulfills that intention. A scheme which would abandon that system, or another similar one, and would not fulfill the requirements of providing regional differentiation and a variety of ecosystems, would not be consistent with the intended purpose of the Act.

A few comments received suggested that the biogeographic classification scheme be enlarged by the addition of a new class reflecting an area or State of special concern or interest to the respondent. (No two commentators suggested the same area.) It is felt that adequate national representation is provided by the biogeographic scheme proposed, and that the changes offered were in most cases examples of sub-categories that might be utilized.

One comment suggested a specific change in the definition of the "Great Lakes" category. Portions of that suggestion have been incorporated into the final rules.

Two commentators requested assurance that sub-categories of the biogeographic scheme will in fact be utilized. The final language substitutes "will be developed and utilized" for "may be developed and utilized."

Section 921.5 *Multiple Use.* Several comments were received pertaining to the multiple use concept. Three commentators suggested that the multiple use directive was contrary to or absent from the Act and should be omitted. Ten respondents felt the concept should be more explicitly defined and restricted so that the primary purpose of the sanctuary would be more clearly protected. In contrast, two commentators felt that the definition might prove too restrictive and should be broadened. Several commentators suggested that examples of anticipated multiple use might be appropriate.

While recognizing that it is not always possible to accommodate more than a single use in an environmentally sensitive area, it is not the intention to unnecessarily preclude the uses of sanctuary areas where they are clearly compatible with and do not detract from the long-term protection of the ecosystem for scientific and educational purposes. The language of § 921.5 has been changed accordingly.

Section 921.6 *Relationship to Other Provisions of the Act and to Marine Sanctuaries.* Several comments were received which commended and stressed the need for close coordination between the development of State coastal zone management programs, especially and land and water use controls, and the estuarine sanctuary program.

The relationship between the two programs is emphasized: estuarine sanctuaries should provide benefit—both short-term and long-term—to coastal zone management decision-makers; and State coastal zone management programs must provide necessary protection for estuarine sanctuaries. This necessary coordination is discussed not only in the estuarine sanctuary regulations, but will also be addressed in an appropriate fashion in guidelines and rules for Coastal Zone Management Program Approval Criteria and Administrative Grants.

Three commentators discussed the need for swift action by both State and Federal governments to establish and acquire estuarine sanctuaries. The Office of Coastal Zone Management intends to pursue the program as swiftly as available manpower restraints will permit.

A few comments sought reassurance that the estuarine sanctuaries program will in fact be coordinated with the Marine Sanctuaries Program (Title III, Pub. L. 92-532). The guidelines have been changed to reflect that both programs will be administered by the same office.

SUBPART B—APPLICATION FOR GRANTS

Section 921.10 *General.* One reviewer indicated uncertainty about which State agency may submit applications for grants under section 312. Although individual States may vary in the choice of individual agencies to apply for an estuarine sanctuary, because of the necessity for coordination with the State coastal zone management program the entity within the State which is the certified contact with the Office of Coastal Zone Management, NOAA, responsible for the administration of the coastal zone management program must endorse or approve an estuarine sanctuary application.

Appropriate language has been included to ensure this coordination.

Section 921.11 *Initial Application for Acquisition, Development and Operation Grants.* Two comments requested that the source and nature of acceptable matching funds should be explicitly identified.

OMB Circular A-102 generally defines and identifies legitimate "match" for Federal grant projects. In general, reference should be made to that document. However, the section has been expanded in response to some specific and frequent questions.

Two comments stressed the need for increased availability of research funds to adequately utilize the potential of estuarine sanctuaries. While not an appropriate function of the estuarine sanctuary program, the Office of Coastal Zone Management is discussing the necessity of adequate funding with appropriate agencies.

One comment suggested that the term "legal description" of the sanctuary (§ 921.11(a)) is not appropriate for all categories of information requested. The word "legal" has been omitted.

Three reviewers indicated that the Act provides no basis for consideration of socio-economic impacts (§ 921.11(i)) and that this criterion seemed inappropriate to selecting estuarine sanctuaries. Apparently these reviewers misunderstood the intention of this requirement. The information in this section is necessary for preparation of an environmental impact statement which will be prepared pursuant to NEPA. Although required in the application, such information is not a part of the selection criteria, which are addressed in Subpart C, § 921.20.

One similar comment was received with regard to consideration of existing and potential uses and conflicts (§ 921.11(h)). This item is also discussed under selection criteria (§ 921.20(h)). It is intended that this criterion will only be considered when choosing between two or more sanctuary applications within the same biogeographic category which are of otherwise equal merit.

One comment drew attention to an apparent typographic error in § 921.11 (m) where the term "marine estuaries" seems out of context. This has been corrected.

Two commentators suggested that public hearings should be required in the development of an estuarine sanctuary application. Although such a hearing is deemed desirable by the Office of Coastal Zone Management, it would not always seem to be necessary. The language in § 920.11(l) has been changed to reflect the sincere concern for the adequate involvement of the public, which is also addressed under a new § 920.21.

One respondent suggested that a new section be added requiring the applicant to discuss alternative methods of acquisition or control of the area, including the designation of a marine sanctuary, in place of establishing an estuarine sanctuary. A new section (§ 920.11(n)) has been added for this purpose.

Section 921.12 *Subsequent Application for Development and Operation Grants.* Three commentators expressed concern that the intent of § 921.12 be more clearly expressed. Appropriate changes have been made.

One comment was made that a provision should be included to use existing Federally owned land for the purpose of the estuarine sanctuary program. A section has been added for that purpose.

Section 921.20 *Criteria for Selection.* One comment suggested that the consideration of conflict with existing or potential competing uses should not be included as a selection criterion. As discussed above, this criterion is considered appropriate.

Another reviewer suggested the addition of a new criterion, consideration of "the need to protect a particular estuary from harmful development." As discussed earlier, this criterion is not considered appropriate. Such a basis for determining selection would lead to a reactionary, random series of estuarine sanctuaries, rather than the rationally chosen representative series mandated in the legislative history.

Two reviewers commented that the limitation on the Federal share ($2,000,000 for each sanctuary) was too low and would severely restrict the usefulness of the program. However, this limitation is provided by the Act.

Another commentator suggested that § 921.20(g) was unnecessarily restrictive in that it might prevent selecting an estuarine sanctuary in an area adjacent to existing preserved lands where the conjunction might be mutually beneficial. The language of § 921.20(g) does not preclude such action, but has been changed to specifically permit this possibility.

Two commentators inquired whether the reference to a "draft" environmental impact statement (§ 921.20, last paragraph) indicated an intention to avoid further compliance with NEPA. It is the firm intention of the Office of Coastal Zone Management to fully comply in all respects with NEPA. The word "draft" has been struck.

Three reviewers addressed the problems of providing adequate public participation in the review and selection process. In addition to the change in § 920.11(1), a new section has been added to address this issue.

SUBPART D—OPERATION

Section 921.30 *General.* One commentator suggested that during contract negotiations, there should be a meeting between the applicant agency and proposed sanctuary management team, and representatives of the Office of Coastal Zone Management. The general provisions have been broadened to provide for this suggestion.

Two comments were submitted which urged that some discretion be exercised in the use and access to the sanctuary by scientists and students. Two other comments were received which requested specific protection for use by the general public. The guidelines have been changed to include these suggestions.

One comment was received suggesting language to clarify § 921.30(g). This was incorporated into the guidelines.

Two commentators expressed concern for enforcement capabilities and activities to ensure protection of the estuarine sanctuaries. A new section has been added which addresses this issue.

Finally, one suggestion was received that a vehicle for change in the management policy or research programs should be provided. A new section has been added for that purpose.

Accordingly, having considered the comments received and other relevant information, the Secretary concludes by adopting the final regulations describing the procedure for applications to receive estuarine sanctuary grants under section 312 of the Act, as modified and set forth below.

Effective date: June 3, 1974.

Dated: May 31, 1974.

ROBERT M. WHITE,
Administrator.

Subpart A—General

Sec.

921.1 Policy and objectives.
921.2 Definitions.
921.3 Objectives and implementation of the program.
921.4 Biogeographic classification.
921.5 Multiple use.
921.6 Relationship to other provisions of the Act and to marine sanctuaries.

Subpart B—Application for Grants

921.10 General.
921.11 Application for initial acquisition, development and operation grants.
921.12 Application for subsequent development and operation grants.
921.13 Federally owned lands.

Subpart C—Selection Criteria

921.20 Criteria for selection.
921.21 Public participation.

Subpart D—Operation

921.30 General.
921.31 Changes in the sanctuary boundary, management policy or research program.
921.32 Program review.

AUTHORITY: Sec. 312 of the Coastal Zone Management Act of 1972 (Pub. L. 92-583, 86 Stat. 1280).

Subpart A—General

§ 921.1 *Policy and Objectives.*

The estuarine sanctuaries program will provide grants to States on a matching basis to acquire, develop and operate natural areas as estuarine sanctuaries in order that scientists and students may be provided the opportunity to examine over a period of time the ecological relationships within the area. The purpose of these guidelines is to establish the rules and regulations for implementation of the program.

§ 921.2 Definitions.

(a) In addition to the definitions found in the Act and in the regulations dealing with Coastal Zone Management Program Development Grants published November 29, 1973 (Part 920 of this chapter) the term "estuarine sanctuary" as defined in the Act, means a research area which may include any part or all of an estuary, adjoining transitional areas, and adjacent uplands, constituting to the extent feasible a natural unit, set aside to provide scientists and students the opportunity to examine over a period of time the ecological relationships within the area.

(b) For the purposes of this section, "estuary" means that part of a river or stream or other body of water having unimpared connection with the open sea where the seawater is measurably diluted with freshwater derived from land drainage. The term includes estuary-type areas of the Great Lakes as well as lagoons in more arid coastal regions.

(c) The term "multiple use" as used in this section shall mean the simultaneous utilization of an area or resource for a variety of compatible purposes or to provide more than one benefit. The term implies the long-term, continued uses of such resources in such a fashion that other uses will not interfere with, diminish or prevent the primary purpose, which is the long-term protection of the area for scientific and educational use.

§ 921.3 Objectives and implementation of the program.

(a) General. The purpose of the estuarine sanctuaries program is to create natural field laboratories in which to gather data and make studies of the natural and human processes occurring within the estuaries of the coastal zone. This shall be accomplished by the establishment of a series of estuarine sanctuaries which will be designated so that at least one representative of each type of estuarine ecosystem will endure into the future for scientific and educational purposes. The primary use of estuarine sanctuaries shall be for research and educational purposes, especially to provide some of the information essential to coastal zone management decision-making. Specific examples of such purposes and uses include but are not limited to:

(1) To gain a thorough understanding of the ecological relationships within the estuarine environment.

(2) To make baseline ecological measurements.

(3) To monitor significant or vital changes in the estuarine environment.

(4) To assess the effects of man's stresses on the ecosystem and to forecast and mitigate possible deterioration from human activities.

(5) To provide a vehicle for increasing public knowledge and awareness of the complex nature of estuarine systems, their values and benefits to man and nature, and the problems which confront them.

(b) The emphasis within the program will be on the designation as estuarine sanctuaries of areas which will serve as natural field laboratories for studies and investigations over an extended period. The area chosen as an estuarine sanctuary shall, to the extent feasible, include water and land masses constituting a natural ecological unit.

(c) In order that the estuarine sanctuary will be available for future studies, research involving the destruction of any portion of an estuarine sanctuary which would permanently alter the nature of the ecosystem shall not normally be

permitted. In the unusual circumstances where permitted, manipulative field research shall be carefully controlled. No experiment which involves manipulative research shall be initiated until the termination date is specified and evidence given that the environment will be returned to its condition which existed prior to the experiment.

(d) It is anticipated that most of the areas selected as sanctuaries will be relatively undisturbed by human activities at the time of acquisition. Therefore, most of the areas selected will be areas with a minimum of development, industry or habitation.

(e) If sufficient permanence and control by the State can be assured, the acquisition of a sanctuary may involve less than the acquisition of a fee simple interest. Such interest may be, for example, the acquisition of a conservation easement, "development rights", or other partial interest sufficient to assure the protection of the natural system. Leasing, which would not assure permanent protection of the system, would not be an acceptable alternative.

§ 921.4 Biogeographic classification.

(a) It is intended that estuarine sanctuaries should not be chosen at random, but should reflect regional differentiation and a variety of ecosystems so as to cover all significant variations. To ensure adequate representation of all estuarine types reflecting regional differentiation and a variety of ecosystems; selections will be made by the Secretary from the following biogeographic classifications:

1. *Acadian.* Northeast Atlantic coast south to Cape Cod, glaciated shoreline subject to winter icing; well developed algal flora; boreal biota.

2. *Virginian.* Middle Atlantic coast from Cape Cod to Cape Hatteras; lowland streams, coastal marshes and muddy bottoms; characteristics transitional between 1 and 3; biota primarily temperate with some boreal representatives.

3. *Carolinian.* South Atlantic coast, from Cape Hatteras to Cape Kennedy; extensive marshes and swamps; waters turbid and productive; biota temperate with seasonal tropical elements.

4. *West Indian.* South Florida coast from Cape Kennedy to Cedar Key; and Caribbean Islands; shoreland low-lying limestone; calcareous sands, marls and coral reefs; coastal marshes and mangroves; tropical biota.

5. *Louisianian.* Northern Gulf of Mexico, from Cedar Key to Mexico; characteristics of 3, with components of 4; strongly influenced by terrigenous factors; biota primarily temperate.

6. *Californian.* South Pacific coast from Mexico to Cape Mendocino; shoreland influenced by coastal mountains; rocky coasts with reduced fresh-water runoff; general absence of marshes and swamps; biota temperate.

7. *Columbian.* North Pacific coast from Cape Mendocino to Canada; mountainsous shoreland; rocky coasts; extensive algal communities; biota primarily temperate with some boreal.

8. *Fiordic.* South coast Alaska and Aleutians; precipitous mountains; deep estuaries, some with glaciers; shoreline heavily indented and subject to winter icing; biota boreal to sub-Arctic.

9. *Subarctic.* West and north coasts of Alaska; ice stressed coasts; biota Arctic and sub-Arctic.

10. *Insular.* Larger islands, sometimes with precipitous mountains; considerable wave action; frequently with endemic species; larger island groups primarily with tropical biota.

11. *Great Lakes.* Great Lakes of North America; bluff-dune or rocky, glaciated shoreline; limited wetlands; freshwater only; biota a mixture of boreal and temperate species with anadromous species and some marine invaders.

(b) Various sub-categories will be developed and utilized as appropriate.

§ 921.5 Multiple use.

(a) While the primary purpose of estuarine sanctuaries is to provide long-term protection for natural areas so that they may be used for scientific and educational purposes, multiple use of estuarine sanctuaries will be encouraged to the extent that such use is compatible with this primary sanctuary purpose. The capacity of a given sanctuary to accommodate additional uses, and the kinds and intensity of such use, will be determined on a case by case basis. While it is anticipated that compatible uses may generally include activities such as low intensity recreation, fishing, hunting, and wildlife observation, it is recognized that the exclusive use of an area for scientific or educational purposes may provide the optimum benefit to coastal zone management and resource use and may on occasion be necessary.

(b) There shall be no effort to balance or optimize uses of an estuarine sanctuary on economic or other bases. All additional uses of the sanctuary are clearly secondary to the primary purpose and uses, which are long-term maintenance of the ecosystem for scientific and educational uses. Non-compatible uses, including those uses which would cause significant short or long-term ecological change or would otherwise detract from or restrict the use of the sanctuary as a natural field laboratory, will be prohibited.

§ 921.6 Relationship to other provisions of the act and to marine sanctuaries.

(a) The estuarine sanctuary program must interact with the overall coastal zone management program in two ways: (1) the intended research use of the sanctuary should provide relevant data and conclusions of assistance to coastal zone management decision-making, and (2) when developed, the State's coastal zone management program must recognize and be designed to protect the estuarine sanctuary; appropriate land and water use regulations and planning considerations must apply to adjacent lands. Although estuarine sanctuaries should be incorporated into the State coastal zone management program, their designation need not await the development and approval of the management program where operation of the estuarine sanctuary would aid in the development of a program.

(b) The estuarine sanctuaries program will be conducted in close cooperation with the marine sanctuaries program (Title III of the Marine Protection, Research Act of 1972, Pub. L. 92-532, which is also administered by the Office of Coastal Zone Management, NOAA) which recognizes that certain areas of the ocean waters, as far seaward as the outer edge of the Continental Shelf, or other coastal waters where the tide ebbs and flows, or of the Great Lakes and their connecting waters, need to be preserved or restored for their conservation, recreational, ecologic or esthetic values. It is anticipated that the Secretary on occasion may establish marine sanctuaries to complement the designation by States of estuarine sanctuaries, where this may be mutually beneficial.

Subpart B—Application for Grants

§ 921.10 General.

Section 312 authorizes Federal grants to coastal States so that the States may establish sanctuaries according to regulations promulgated by the Secretary. Coastal States may file applications for grants with the Director, Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Rockville, Maryland 20852. That agency which has been certified to the Office of Coastal Zone Management as the entity responsible for administration of the State coastal zone management program may either submit an application directly, or must endorse and approve applications submitted by other agencies within the State.

§ 921.11 Application for initial acquisition, development and operation grants.

(a) Grants may be awarded on a matching basis to cover the costs of acquisition, development and operation of estuarine sanctuaries. States may use donations of land or money to satisfy all or part of the matching cost requirements.

(b) In general, lands acquired pursuant to this section, including State owned lands but not State owned submerged lands or bay bottoms, that occur within the proposed sanctuary boundaries are legitimate costs and their fair market value may be included as match. However, the value of lands donated to or by the State for inclusion in the sanctuary may only be used to match other costs of land acquisition. In the event that lands already exist in a protected status their value cannot be used as match for sanctuary development and operation grants, which will require their own matching funds.

(c) Development and operation costs may include the administrative expenses necessary to monitor the sanctuary, to ensure its continued viability and to protect the integrity of the ecosystem. Research will not normally be funded by Section 312 grants. It is anticipated that other sources of Federal, State and

private funds will be available for research in estuarine sanctuaries.

(d) Initial applications should contain the following information:

(1) Description of the proposed sanctuary include location, boundaries, size and cost of acquisition, operation and development. A map should be included, as well as an aerial photograph, if available.

(2) Classification of the proposed sanctuary according to the biogeographic scheme set forth in § 921.4.

(3) Description of the major physical, geographic and biological characteristics and resources of the proposed sanctuary.

(4) Identification of ownership patterns; proportion of land already in the public domain.

(5) Description of intended research uses, potential research organizations or agencies and benefits to the overall coastal zone management program.

(6) Demonstration of necessary authority to acquire or control and manage the sanctuary.

(7) Description of proposed management techniques, including the management agency, principles and proposed budget including both State and Federal shares.

(8) Description of existing and potential uses of and conflicts within the area if it were not declared an estuarine sanctuary; potential use, use restrictions and conflicts if the sanctuary is established.

(i) Assessment of the environmental and socio-economic impacts of declaring the area an estuarine sanctuary, including the economic impact of such a designation on the surrounding community and its tax base.

(9) Description of planned or anticipated land and water use and controls for contiguous lands surrounding the proposed sanctuary (including if appropriate an analysis of the desirability of creating a marine sanctuary in adjacent areas).

(10) List of protected sites, either within the estuarine sanctuaries program or within other Federal, State or private programs, which are located in the same regional or biogeographic classification.

(i) It is essential that the opportunity be provided for public involvement and input in the development of the sanctuary proposal and application. Where the application is controversial or where controversial issues are addressed, the State should provide adequate means to ensure that all interested parties have the opportunity to present their views. This may be in the form of an adequately advertised public hearing.

(ii) During the development of an estuarine sanctuary application, all landowners within the proposed boundaries should be informed in writing of the proposed grant application.

(iii) The application should indicate the manner in which the State solicited the views of all interested parties prior to the actual submission of the application.

(e) In order to develop a truly representative scheme of estuarine sanctuaries, the States should attempt to coordinate their activities. This will help to minimize the possibility of similar estuarine types being proposed for designation in the same region. The application should indicate the extent to which neighboring States were consulted.

(f) Discussion, including cost and feasibility, of alternative methods for acquisition, control and protection of the area to provide similar uses. Use of the Marine Sanctuary authority and funds from the Land and Water Conservation Fund Act should be specifically addressed.

§ 921.12 Application for subsequent development and operation grants.

(a) Although the initial grant application for creation of an estuarine sanctuary should include initial development and operation costs, subsequent applications may be submitted following acquisition and establishment of an estuarine sanctuary for additional development and operation funds. As indicated in § 921.11, these costs may include administrative costs necessary to monitor the sanctuary and to protect the integrity of the ecosystem. Extensive management programs, capital expenses, or research will not normally be funded by section 312 grants.

(b) After the creation of an estuarine sanctuary established under this program, applications for such development and operation grants should include at least the following information:

(1) Identification of the boundary.

(2) Specifications of the management program, including managing agency and techniques.

(3) Detailed budget.

(4) Discussion of recent and projected use of the sanctuary.

(5) Perceived threats to the integrity of the sanctuary.

§ 921.13 Federally owned lands.

(a) Where Federally owned lands are a part of or adjacent to the area proposed for designation as an estuarine sanctuary, or where the control of land and water uses on such lands is necessary to protect the natural system within the sanctuary, the State should contact the Federal agency maintaining control of the land to request cooperation in providing coordinated management policies. Such lands and State request, and the Federal agency response, should be identified and conveyed to the Office of Coastal Zone Management.

(b) Where such proposed use or control of Federally owned lands would not conflict with the Federal use of their lands, such cooperation and coordination is encouraged to the maximum extent feasible.

(c) Section 312 grants may not be awarded to Federal agencies for creation of estuarine sanctuaries in Federally owned lands; however, a similar status may be provided on a voluntary basis for Federally owned lands under the provisions of the Federal Committee on Ecological Preserves program.

Subpart C—Selection Criteria

§ 921.20 Criteria for selection.

Applications for grants to establish estuarine sanctuaries will be reviewed and judged on criteria including:

(a) Benefit to the coastal zone management program. Applications should demonstrate the benefit of the proposal to the development or operations of the overall coastal zone management program, including how well the proposal fits into the national program of representative estuarine types; the national or regional benefits; and the usefulness in research.

(b) The ecological characteristics of the ecosystem, including its biological productivity, diversity and representativeness. Extent of alteration of the natural system, its ability to remain a viable and healthy system in view of the present and possible development of external stresses.

(c) Size and choice of boundaries. To the extent feasible, estuarine sanctuaries should approximate a natural ecological unit. The minimal acceptable size will vary greatly and will depend on the nature of the ecosystem.

(d) Cost. Although the Act limits the Federal share of the cost for each sanctuary to $2,000,000, it is anticipated that in practice the average grant will be substantially less than this.

(e) Enhancement of non-competitive uses.

(f) Proximity and access to existing research facilities.

(g) Availability of suitable alternative sites already protected which might be capable of providing the same use or benefit. Unnecessary duplication of existing activities under other programs should be avoided. However, estuarine sanctuaries might be established adjacent to existing preserved lands where mutual enhancement or benefit of each might occur.

(h) Conflict with existing or potential competing uses.

(i) Compatibility with existing or proposed land and water use in contiguous areas.

If the initial review demonstrates the feasibility of the application, an environmental impact statement will be prepared by the Office of Coastal Zone Management in accordance with the National Environmental Policy Act of 1969 and implementing CEQ guidelines.

§ 921.21 Public participation.

Public participation will be an essential factor in the selection of estuarine sanctuaries. In addition to the participation during the application development process (§ 921.11(e)), public participation will be ensured at the Federal level by the NEPA process and by public hearings where desirable subsequent to NEPA. Such public hearings shall be held by the Office of Coastal Zone Management in the area to be affected by the proposed sanctuary no sooner than 30 days after it issues a draft environmental impact

statement on the sanctuary proposal. It will be the responsibility of the Office of Coastal Zone Management, with the assistance of the applicant State, to issue adequate public notice of its intention to hold a public hearing. Such public notice shall be distributed widely, especially in the area of the proposed sanctuary; affected property owners and those agencies, organizations or individuals with an identified interest in the area or estuarine sanctuary program shall be notified of the public hearing. The public notice shall contain the name, address and phone number of the appropriate Federal and State officials to contact for additional information about the proposal.

Subpart D—Operation

§ 921.30 General.

Management of estuarine sanctuaries shall be the responsibility of the applicant State or its agent. However, the research uses and management program must be in conformance with these guidelines and regulations, and others implemented by the provisions of individual grants. It is suggested that prior to the grant award, representatives of the proposed sanctuary management team and the Office of Coastal Zone Management meet to discuss management policy and standards. It is anticipated that the grant provisions will vary with individual circumstances and will be mutually agreed to by the applicant and the granting agency. As a minimum, the grant document for each sanctuary shall:

(a) Define the intended research purposes of the estuarine sanctuary.

(b) Define permitted, compatible, restricted and prohibited uses of the sanctuary.

(c) Include a provision for monitoring the uses of the sanctuary, to ensure compliance with the intended uses.

(d) Ensure ready access to land use of the sanctuary by scientists, students and the general public as desirable and permissible for coordinated research and education uses, as well as for other compatible purposes.

(e) Ensure public availability and reasonable distribution of research results for timely use in the development of coastal zone management programs.

(f) Provide a basis for annual review of the status of the sanctuary, its value to the coastal zone program.

(g) Specify how the integrity of the system which the sanctuary represents will be maintained.

(h) Provide adequate authority and intent to enforce management policy and use restrictions.

§ 921.31 Changes in the sanctuary boundary, management policy or research program.

(a) The approved sanctuary boundaries; management policy, including permissible and prohibited uses; and research program may only be changed after public notice and the opportunity of public review and participation such as outlined in § 921.21.

(b) Individuals or organizations which are concerned about possible improper use or restriction of use of estuarine sanctuaries may petition the State management agency and the Office of Coastal Zone Management directly for review of the management program.

§ 921.32 Program review.

It is anticipated that reports will be required from the applicant State on a regular basis, no more frequently than annually, on the status of each estuarine sanctuary. The estuarine sanctuary program will be regularly reviewed to ensure that the objectives of the program are being met and that the program itself is scientifically sound. The key to the success of the estuarine sanctuaries program is to assure that the results of the studies and research conducted in these sanctuaries are available in a timely fashion so that the States can develop and administer land and water use programs for the coastal zone. Accordingly, all information and reports, including annual reports, relating to estuarine sanctuaries shall be part of the public record and available at all times for inspection by the public.

[FR Doc.74-12775 Filed 5-31-74;9:57 am]

federal register

FRIDAY, SEPTEMBER 9, 1977

PART IV

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

■

ESTUARINE SANCTUARY

Guidelines

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[15 CFR Part 921]

ESTUARINE SANCTUARY GUIDELINES

Policies and Procedures for Selection Acquisition and Management

AGENCY: National Oceanic and Atmospheric Administration, Department of Commerce.

ACTION: Proposed rule.

SUMMARY: This proposed rule will allow the National Oceanic and Atmospheric Administration to make a preliminary acquisition grant to a State to undertake a fair market value appraisal, and to develop a uniform relocation act plan, a detailed management plan and a research framework for a proposed estuarine sanctuary, developed pursuant to Section 315 of the Coastal Zone Management Act of 1972, as amended.

DATE: Comments must be received on or before October 1, 1977.

FOR FURTHER INFORMATION CONTACT:

Robert R. Kifer, Physical Scientist, Policy and Programs Development Office, Office of Coastal Zone Management, 3300 Whitehaven Parkway, Page One Building, Washington, D.C. 20235 (202–634–4241).

SUPPLEMENTARY INFORMATION: On June 4, 1974, The National Oceanic and Atmospheric Administration (NOAA) published 15 CFR Part 921 entitled, "Estuarine Sanctuary Guidelines" pursuant to then section 312 of the Coastal Zone Management Act of 1972, as amended, for the purpose of establishing policy and procedures for the selection, acquisition, and management of estuarine sanctuaries.

Under new subsection 315(1) of the Act, the Secretary of Commerce is authorized to make available to coastal States grants of up to 50 per centum of the cost of acquisition, development, and operation of estuarine sanctuaries. In general, subsection 315(1) provides that grants may be awarded to States on a matching basis to acquire, develop, and operate natural areas as estuarine sanctuaries in order that scientists and students may be provided the opportunity to examine over a period of time ecological relationships within the area. The purpose of these guidelines is to implement this program.

As a result of two years of program implementation, the regulations are proposed to be modified to specifically authorize the granting of acquisition money to States in two stages:

(i) An initial grant for such preliminary purposes, as surveying and assessing the land to be acquired, and the development of management procedures and research programs; and

(ii) A second grant for the actual acquisition of the land. The Federal share of the sum of the two grants shall not exceed 50 percent of the acquisition costs involved. Any State receiving an initial grant shall be obligated to repay it if, due to any fault of the State, the sanctuary is not established.

As a result of this new grant procedure, much more information relating to costs, values, management procedures, and research programs will be available at the time of the publication of a draft environmental impact statement. Proposals made public to date in the form of an Environmental Impact Statement (EIS) have been criticized for lack of specificity in these areas. By making a small preliminary acquisition grant to a State, the estuarine sanctuary proposal can be more fully developed and the public can become more aware of the costs and the exact nature of the long-term management.

In response to State questions about estuarine sanctuary research, the proposed regulations provide that such research can be funded if it can be shown to be related to program administration.

NOAA has reviewed these proposed regulations pursuant to the National Environmental Policy Act of 1969 and has determined that promulgation of these regulations will have no significant impact on the environment.

Compliance with Executive Order 11821. The economic and inflationary impact of these proposed regulations has been evaluated in accordance with OMB Circular A–107 and it has been determined that no major inflationary impact will result.

Dated: August 26, 1977.

T. P. GLEITER,
Assistant Administrator for Administration.

It is proposed to amend 15 CFR Part 921 as follows:

(1) By revising the table of contents and authority citation to read as follows:

Subpart A—General

Sec.
921.1 Policy and objectives.
921.2 Definitions.
921.3 Objectives and implementation of the program.
921.4 Biogeographic classification.
921.5 Multiple use.
921.6 Relationship to other provisions of the Act and to marine sanctuaries.

Subpart B—Application for Grants

921.10 General.
921.11 Application for preliminary acquisition grants.
921.12 Application for land acquisition grants.
921.13 Application for operational grants.
921.14 Federally-owned lands.

Subpart C—Selection Criteria

921.20 Criteria for selection.
921.21 Public participation.

Subpart D—Operation

921.30 General.
921.31 Changes in the sanctuary boundary, management policy, or research program.
921.32 Program review.

AUTHORITY: Sec. 315(1), Coastal Zone Management Act of 1972, as amended (90 Stat. 1030, (16 U.S.C. 1461) Pub. L. 94–370).

(2) By revising Subpart B—Application for Grants—as follows:

Subpart B—Application for Grants

§ 921.10 General.

Section 315 authorizes Federal grants to coastal States so that the States may establish sanctuaries according to regulations promulgated by the Secretary. Coastal States may file applications for grants with the Associate Administrator for Coastal Zone Management (OCZM), Office of Coastal Zone Management, Page 1, 3300 Whitehaven Parkway NW, Washington, D.C. 20235. That agency which has been certified to the Office of Coastal Zone Management as the entity responsible for administration of the State coastal zone management program may either submit an application directly, or must endorse and approve applications submitted by other agencies within the State.

§ 921.11 Application for preliminary acquisition grants.

(a) A grant may be awarded on a matching basis to cover costs necessary to preliminary actual acquisition of land. As match to the Federal grant, a State may use money, the cost of necessary services, the value of foregone revenue, and/or the value of land either already in its possession or acquired by the State specifically for use in the sanctuary. If the land to be used as match already is in the State's possession and is in a protected status, the State may use such land as match only to the extent of any revenue from the land foregone by the State in order to include it in the sanctuary. Application for a preliminary acquisition grant shall be made on form SF 424 application for Federal assistance (non-construction programs).

(b) A preliminary acquisition grant may be made for the defrayal of the cost of:

(1) An appraisal of the land, or of the value of any foregone use of the land, to be used in the sanctuary;

(2) The development of a Uniform Relocation Assistance and Real Property Acquisition Policies Act plan;

(3) The development of a sanctuary management plan;

(4) The development of a research and educational program; and/or,

(5) Such other activity of a preliminary nature as may be approved in writing by OCZM. Any grant made pursuant to this subsection shall be refunded by the State to whatever extent it has spent in relation to land not acquired for the sanctuary, and if OCZM requests such refund.

(c) The application should contain:

(1) Evidence that the State has conducted a scientific evaluation of its estuaries and selected one of those most representative.

(2) Description of the proposed sanctuary including location, proposed boundaries, and size. A map(s) should be included, as well as an aerial photograph if available.

(3) Classification of the proposed sanctuary according to the biogeographic scheme set forth in § 921.4.

(4) Description of the major physical, geographic, biological characteristics and resources of the proposed sanctuary.

(5) Demonstration of the necessary authority to acquire or control and manage the sanctuary.

(6) Description of existing and potential uses of, and conflicts within, the area if it were not declared an estuarine sanctuary; and potential use restriction and conflicts if the sanctuary is established.

(7) List of protected sites, either within the estuarine sanctuaries program or within other Federal, State, or private programs, which are located in the same region or biogeographic classification.

(8) The manner in which the State solicited the views of interested parties.

(9) In addition to the standard A-95 review procedures, the grant application should be sent to the State Historic Preservation Office for comment to insure compliance with section 106 of the National Preservation Act of 1966.

(d) In order to develop a truly representative scheme of estuarine sanctuaries, the States should coordinate their activities. This will help to minimize the possibility of similar estuarine types being proposed in the same region. The extent to which neighboring States were consulted should be indicated.

§ 921.12 Application for land acquisition grants.

(a) Acquisition grants will be made to acquire land and facilities for estuarine sanctuaries that have been thoroughly described in a preliminary acquisition grant application, or where equivalent information is available. Application for an acquisition grant shall be made on SF 424 application for Federal assistance (construction program).

In general, lands acquired pursuant to this subsection are legitimate costs and their fair market value, developed according to Federal appraisal standards, may be included as match. The value of lands donated to the State and cash donations may also be used as match. If the State already owns land which is to be used in the sanctuary, the value of any use of the land foregone by the State in order to include such land in the sanctuary, capitalized over the next 20 years, may be used by the State as match. The value of lands purchased by a State within the boundaries of proposed sanctuaries while an application for a preliminary acquisition grant or land acquisition grant is being considered may also be used as match.

(b) An acquisition application should contain the following information:

(1) Description of any changes in proposed sanctuary from that presented in the preliminary acquisition grant application. If such an application has not been made, then, information equivalent to that required in such a grant application should be provided.

(2) Identification of ownership patterns, proportions of land already in the public domain; fair market value appraisal and Uniform Relocation Act plan.

(3) Description of research programs, potential and committed research organizations or agencies, and benefits to the overall coastal zone management program.

(4) Description of proposed management techniques, including the management agency and proposed budget—including both State and Federal shares.

(5) Description of planned or anticipated land and water use and controls for contiguous lands surrounding the proposed sanctuary (including, if appropriate, an analysis of the desirability of creating a marine sanctuary in adjacent areas).

(6) Assessment of the environmental, and socio-economic impacts of declaring the area an estuarine sanctuary, including the economic impact on the surrounding community and its tax base.

(7) Discussion, including cost and feasibility of alternative methods for acquisition and protection of the area.

§ 921.13 Application for operation grants.

(a) Although an acquisition grant application for creation of an estuarine sanctuary should include initial operation costs, subsequent applications may be submitted following acquisition and establishment of an estuarine sanctuary for additional operational funds. As indicated in § 921.11, these costs may include administrative costs necessary to monitor the sanctuary and to protect the integrity of the ecosystem. Extensive management programs, capital expenses, or research will not normally be funded by section 315 grants.

(b) After the creation of an estuarine sanctuary established under this program, applications (Form SF 424) for Federal assistance (non-construction program), for such operational grants should include at least the following information:

(1) Identification of the boundary (map).

(2) Specifications of the research and management programs, including managing agency and techniques.

(3) Detailed budget.

(4) Discussion of recent and projected use of the sanctuary.

(5) Perceived threats to the integrity of the sanctuary.

§ 921.14 Federally-owned lands.

(a) Where Federally-owned lands are a part of or adjacent to the area proposed for designation as an estuarine sanctuary, or where the control of land and water uses on such lands is necessary to protect the natural system within the sanctuary, the State should contact the Federal agency maintaining control of the land to request cooperation in providing coordinated management policies. Such lands and State request, and the Federal agency response, should be identified and conveyed to the Office of Coastal Zone Management.

(b) Where such proposed use or control of Federally-owned lands would not conflict with the Federal use of their lands, such cooperation and coordination is encouraged to the maximum extent feasible.

(c) Section 315 grants may not be awarded to Federally-owned lands; however, a similar status may be provided on a voluntary basis for Federally-owned lands under the provisions of the Federal Committee on Ecological Perserves program.

§ 921.20 [Amended]

(4) Subpart C—Selection Criteria—is amended by changing the first sentence in § 921.20 to read: "Applications for preliminary acquisition or land acquisition grants to establish estuarine sanctuaries will be reviewed and judged on criteria including:"

(5) Section 921.21 is revised, as follows:

§ 921.21 Public participation.

(a) Public participation in the selection of an estuarine sanctuary is required. In the selection process, the selecting entity (see § 921.10) shall seek the views of possibly affected landowners, local governments, and Federal agencies, and shall seek the views of possibly interested other parties and organizations. The latter would include, but need not be limited to, private citizens and business, social, and environmental organizations in the area of the site being considered for selection. This solicitation of views may be accomplished by whatever means the selecting entity deems appropriate, but shall include at least one public hearing in the area. Notice of such hearing shall include information as to the time, place, and subject matter, and shall be published in the principal area media. The hearing shall be held no sooner than 15 days following the publication of notice.

(b) The Office of Coastal Zone Management (OCZM) shall prepare draft and final environmental impact statements pertaining to the site finally selected for the estuarine sanctuary following public participation in the selection of that site, and shall distribute these as appropriate. OCZM may hold a public hearing in the area of such site at which both the draft environmental impact statement (DEIS) and the merits of the site selection may be addressed by those in attendance. OCZM shall hold such a hearing if: (1) In its view, the DEIS is controversial, or (2) if there appears to be a need for further informing the public with regard to either the DEIS or one or more aspects of the site selected, or (3) if such a hearing is requested in writing (to either the selecting entity or (CZM) by an affected or interested party, or (4) for other good cause. If held, such hearing shall be held no sooner than 30 days following the issuance of the DEIS and no sooner than 15 days after appropriate notice of such hearing has been given in the area by OCZM with the assistance of the selecting entity.

[FR Doc.77-26128 Filed 9-8-77;8:45 am]

APPENDIX 8

MEMORANDUM OF UNDERSTANDING AMONG

FIVE NEW YORK STATE AGENCIES

MEMORANDUM OF UNDERSTANDING

This Memorandum serves as an expression of intent among five parties-in-interest hereinafter called the Signatories: the New York State Department of Environmental Conservation (Lead Agency), the New York State Office of General Services, the Palisades Interstate Park Commission, the New York State Office of Parks, Recreation and Historic Preservation, and the New York State Department of State.

Witnesseth:

WHEREAS, New York State has received a grant from the United States Secretary of Commerce for acquisition, development and operation of certain portions of the Hudson River Estuary (see Appendix **A**) as the Hudson River National Estuarine Sanctuary (the Sanctuary), and

WHEREAS, the purpose of such grant is to create new opportunities for coordinated Hudson River research and public education (the Program), and

WHEREAS, such Program has wide public support, and

WHEREAS, the Signatories have already evidenced support for such Program through the formation in 1981 of a Hudson River Estuarine Sanctuary Steering Committee which has met regularly to coordinate the efforts of the Signatories in establishing the Sanctuary,

NOW THEREFORE, in consideration of the mutual benefits to be derived from implementing this Program, the Signatories agree to the following:

1. The lands described in Appendix **A** are hereby designated as the Hudson River Estuarine Sanctuary.

2. There shall be a Management Plan for the Sanctuary, which Management Plan shall provide a framework for conducting research and educational programs. The Management Plan shall be developed by the Estuarine Sanctuary staff and reviewed by the Steering Committee. Such Management Plan shall set forth compatible and non-compatible uses for each site in the Sanctuary. The Management Plan shall not take effect except upon unanimous approval of the Signatories. The Management Plan shall be reviewed annually and shall be revised as needed, but no revisions shall take place except upon unanimous approval of the Signatories.

3. No land ownership and management prerogatives in the Sanctuary shall be changed except as specified in the Management Plan.

4. The purpose of the Program is the protection of such lands for use as a natural field laboratory in which to gather data and make studies of the natural and human processes occurring within the Hudson River estuary.

5. The Signatories shall adhere to the Management Plan in their land ownership and management activities within the Sanctuary.

6. Multiple uses of such lands are encouraged to the extent such uses are compatible with the Program and its purpose as expressed in the Management Plan. These areas are being managed to facilitate ecological research and education. Uses and/or levels of use, which are not compatible with the use of the Sanctuary as a natural field laboratory, shall be prohibited or limited to the greatest extent feasible, by the agency having jurisdiction.

7. Management Structure

a. There shall be a Sanctuary Steering Committee, comprised of one member from each of the Signatories, which shall review the recommendations of Sanctuary Advisory Committees and shall submit them to the agencies having jurisdiction over lands in the Sanctuary. The Steering Committee shall review the Management Plan annually and shall advise the Lead Agency regarding its implementation. The chairman of each Sanctuary Advisory Committee and a representative of the National Oceanic and Atmospheric Administration shall serve as non-voting, ex-officio representatives to the Steering Committee.

b. There shall be three Sanctuary Advisory Committees appointed by the Lead Agency, in consultation with the Steering Committee, which shall meet regularly to discuss the progress of the Sanctuary and to make recommendations to the Steering Committee.

c. The Lead Agency shall implement the Program by hiring and directing Estuarine Sanctuary staff, supervise and coordinate implementation of the provisions of the Management Plan, and by receiving and acting upon the recommendations of the Steering Committee.

d. The Estuarine Sanctuary staff, hired by and reporting to the Lead Agency, is immediately responsible for Program coordination with the agencies having jurisdiction over respective Sanctuary sites.

8. No projects shall be carried out on Sanctuary lands without the approval of the agency having jurisdiction over such lands. Such agency shall maintain all facilities built on its lands in furtherance of a project, and shall cooperate with Sanctuary staff in carrying out the Program.

9. The Lead Agency and the Department of State shall confer regularly to ensure coordination between the Estuarine Sanctuary Program and the Coastal Management Program.

10. This Memorandum shall not be construed so as to preclude additional transfers of property among the Signatories, or to preclude additions of appropriate lands to the Estuarine Sanctuary.

11. This Memorandum shall continue in effect in perpetuity; additional Signatories may join by unanimous approval of existing Signatories, and the Memorandum may be amended or terminated by majority vote of the Signatories at any time. Nothing in this Memorandum shall, however, preclude the unilateral withdrawal of any of the Signatories. In such latter eventuality is understood that the lands of such withdrawing Signatory would be dedesignated from the Sanctuary, and it is understood that the federal Office of Management and Budget will take appropriate action with respect to grant funds as may be indicated by its regulations.

Signed,

Department of Environmental Conservation

By _____

Date 8/4/82 Title First Deputy Comm

Office of General Services

By _____

Date 8/5/82 Title Deputy Commissioner

Palisades Interstate Park Commission

By _____

Date 8/3/82 Title _____

Office of Parks, Recreation and Historic Preservation

By _____

Date 8/2/82 Title Deputy Commissioner

Department of State

By Eugenia M. Hahn

Date 8-2-82 Title Executive Deputy Secretary of State

APPENDIX A

to the Memorandum of Understanding

(The following maps and their symbols are described fully in Part II of this FEIS.)

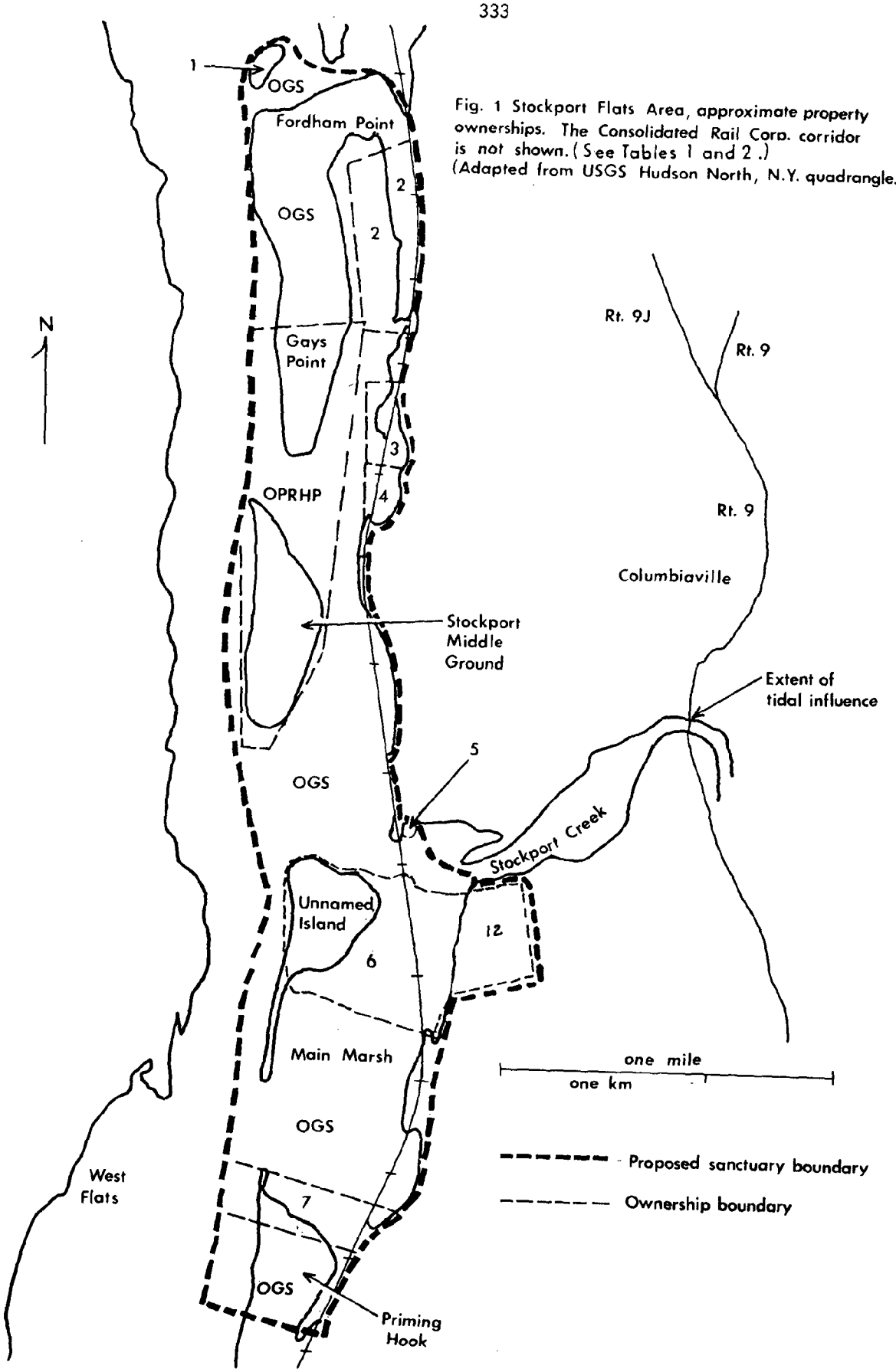

Fig. 1 Stockport Flats Area, approximate property ownerships. The Consolidated Rail Corp. corridor is *not* shown. (See Tables 1 and 2.) (Adapted from USGS Hudson North, N.Y. quadrangle.)

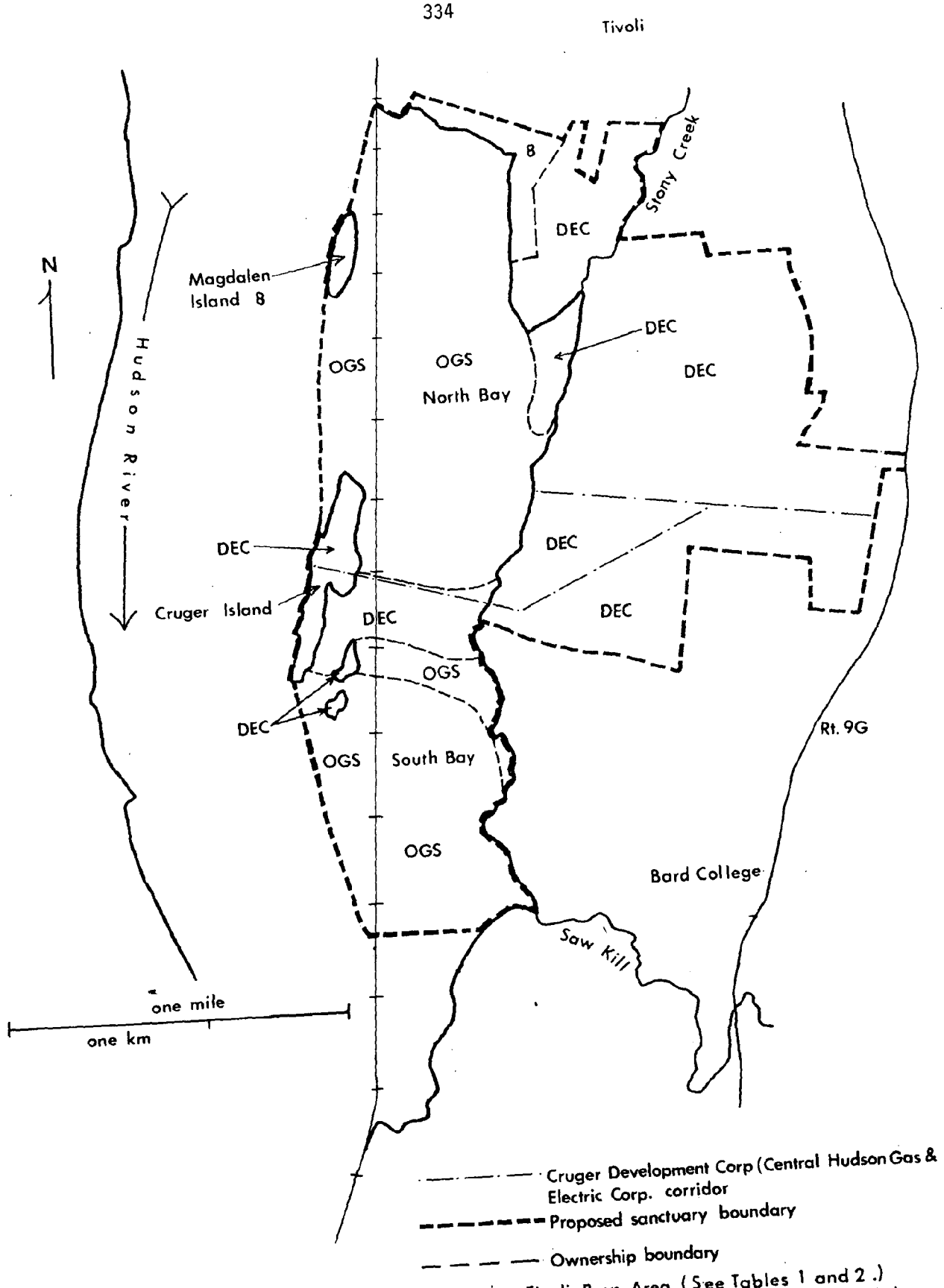

Fig. 2 Tivoli Bays Area. (See Tables 1 and 2.) (Adapted from USGS Saugerties, N.Y. quadrangle.)

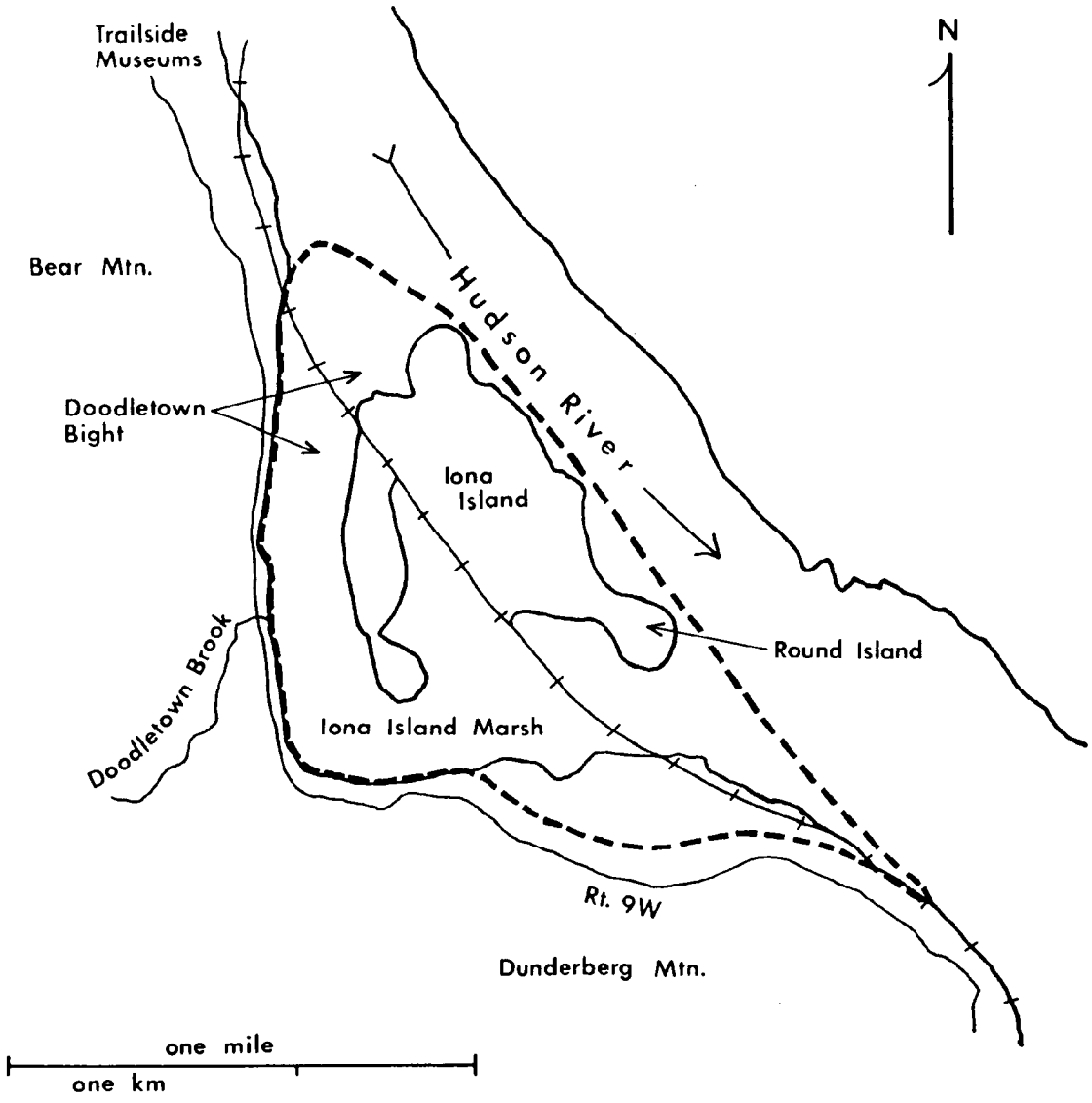

Fig. 3 Iona Island Marsh Area (See Tables 1 and 2.)
(Adapted from USGS Peekskill, N.Y. quadrangle.)
Ownership all PIPC

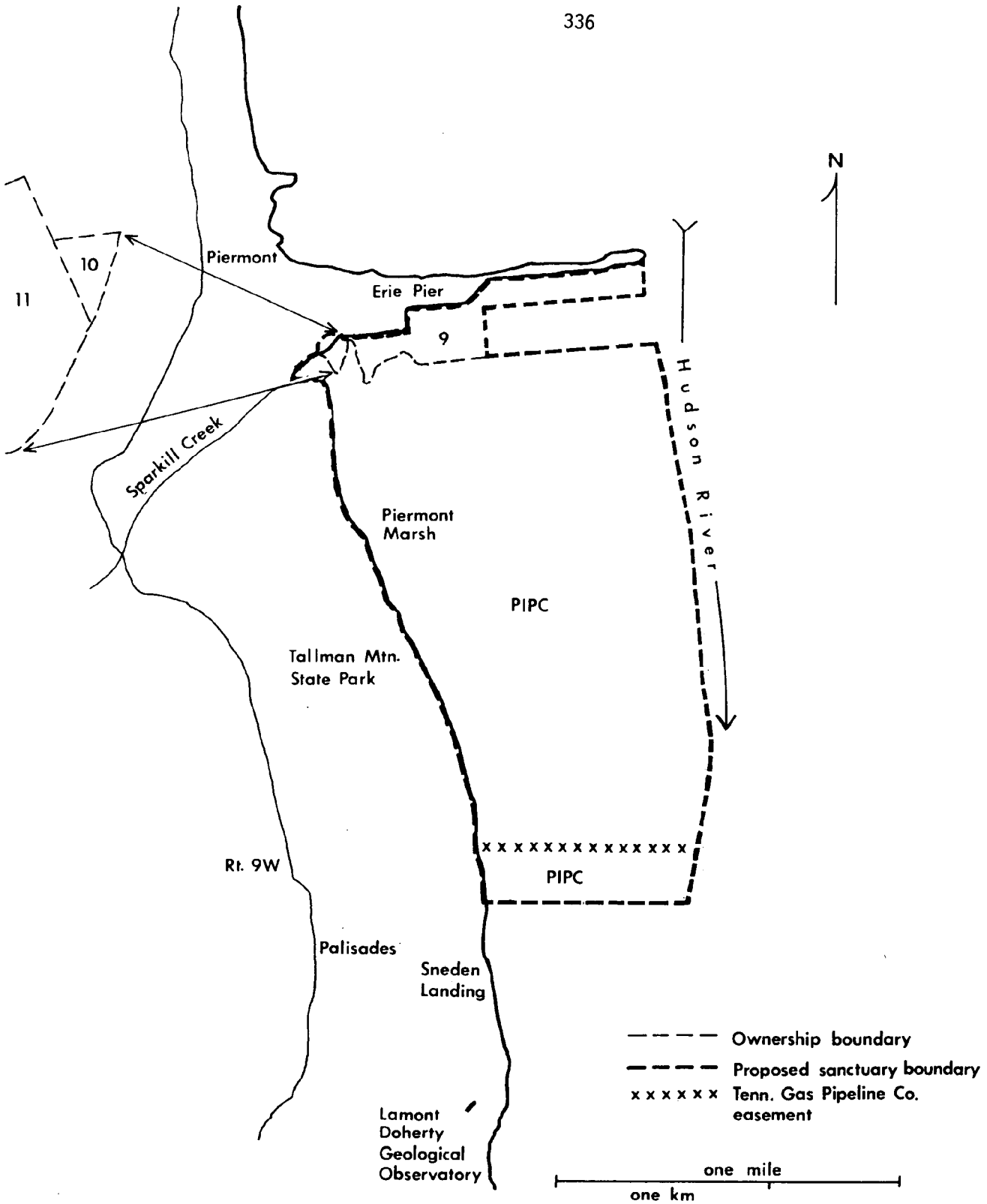

Fig. 4 Piermont Marsh Area. (See Tables 1 and 2.)
(Adapted from USGS Nyack, N.Y.—N.J. quadrangle.)

APPENDIX 9

Summary of Workshop to Generate
Ideas on Research and Education

Summary of a Conference held 8 June 1982 to Generate Ideas on Research and Education Programs for the Proposed Hudson River Estuarine Sanctuary

The conference was co-sponsored by the New York State Department of Environmental Conservation, Bard College, and Hudsonia, and held at Bard. It was chaired by Dr. Michael Rosenthal, Professor of Chemistry at Bard, Affiliate of Hudsonia, and Chairman of the Dutchess County Environmental Management Council. Most of the conference was spent in general discussion of the Sanctuary program, and the Hudson River proposal. The conference was attended by more than 60 Hudson Valley scientists, educators, and conservationists. At the close of the conference the chairman asked for a show of hands to express support for the Hudson River Estuarine Sanctuary proposal; support was nearly unanimous, no one expressed opposition.

This summary was prepared by Erik Kiviat and Jim Stapleton of Hudsonia. The purpose is to highlight the discussion and select the most relevant and constructive suggestions for the consideration of the public agencies involved in the program. Special attention was paid to ideas not covered in the DEIS. This summary represents Hudsonia's interpretation of the conference, and any inaccuracy is the responsibility of Kiviat and Stapleton.

Four major ideas emerged from the discussion:

1. The Hudson River National Estuarine Sanctuary should provide a meeting ground for cooperative effort among existing Hudson River research, education, sportsmen and conservation groups.

2. Research in the sanctuary should address specific needs and problems. Available information should not be duplicated. Data collection on the Hudson River Estuary should be coordinated.

3. Research should solve problems perceived by decision makers (e.g., local government officials) and the general public. If the sanctuary does not contribute to problem-solving in coastal management, it will be difficult to obtain long-range funding.

4. A stable long-range funding mechanism (or mechanisms) is needed to ensure the continuation and continuity of research. Long-term protection of the sites is critical, but not enough without funding.

Additionally, a number of specific suggestions were made by attendees and also verbally or in writing by persons invited who

could not attend. These suggestions are listed under the headings "Research", "Education", and "General".

Research

1. The Estuarine Sanctuary can guarantee a researcher study sites that will not be damaged in future. Long-term control over the sites will allow many people to collaborate for a long time in collection of data that will be very valuable for management and legal purposes. Most research projects last for a year or two; 10 or 20- year projects are rare and little information is available on changes in natural systems over decade-length periods, with continuous data collection.

2. Unlike the well-studied saline-tidal ecosystems, very little research has been done on freshwater-tidal and low salinity brackish-tidal wetlands. The Hudson River sites are almost virgin territory for science. What is the plant and animal productivity of these systems, their relation to fisheries production, their resource values?

3. The sanctuary could be a clearinghouse for scientific and natural history information on the hudson River Estuary marshes and shores, including bibliography, unpublished reports, and records of observations. The sanctuary's permanence could support a long-term effort to collect small pieces of information which can eventually be synthesized into a meaningful picture. One element of a clearinghouse could be a toll-free telephone number and/or a pre-printed postcard reporting system for short-lived phenomena and unusual observations (e.g., rare species, early and late occurrences, extralimital occurrences, extremes of environmental conditions, natural trauma or damage).

4. Institutions should cooperate not compete; the sanctuary can catalyze collaboration. Existing facilities should serve (when appropriate) as repositories for specimens or certain types of data, or as facilities specializing in certain types of technology or research. Avoid duplication of research facilities and services. Colleges and research institutions near the sanctuary sites can cooperate in sanctuary research through internships, theses, sharing of equipment and workspace, shared time on vessels, etc.

5. The Estuarine Sanctuary should collaborate with other reserves, parks and sanctuaries in research programs. Other sites, such as Constitution Island Marsh, could be compared to the sanctuary sites for insight into the effects of pollution and other stresses on

areas that have been more modified by human activities that the sanctuary sites. Also, other sites may be used for research on species or phenomena that do not occur at the sanctuary sites - no selection of four sites can include all of the species of the estuary. Areas outside the sanctuary could also provide information on how much the results of research within the sanctuary may be generalized.

6. The sanctuary sites should be thought of as a long-term "control area" for evaluation of human-caused changes in other sites outside the sanctuary.

7. The States's Sanctuary Steering Committee should plan ahead so that adequate funding is available after the 5-year federal operations funding is used. Funding from Hudson Valley industries should be explored, among oother potential sources. Incentives, especially financial incentives, are needed to stimulate long-term monitoring of the sanctuary environment.

8. Mechanisms are needed to insure that research findings become useful in coastal management decision-making. The sanctuary staff must be able to "translate" research results for decision makers in local government, state agencies, and business-industry. Some of the mechanisms for facilitating this communication could be regular forums where management problems and research findings are discussed by sanctuary staff, Sanctuary Advisory Committee members, and other representatives of business, industry, sportsmen, conservation groups and government; communication of research results in non-technical language in the popular media including newspapers, magazines, radio and television; efforts to publicize research projects in progress on the sanctuary sites so that the public is aware of what scientists are doing; and involvement of the public and students in research through volunteer assistance and sharing of information.

9. Sanctuary activities and programs should be evaluated at regular intervals to see if program goals are being met. Such evaluations should include the Steering Committee and the Advisory Committee.

10. Concern was expressed about the possible impacts of research and education activities upon the environment at the sanctuary sites. Care must be taken in designing and siting facilities (e.g. the boardwalk at Tivoli) and planning and carrying out projects to minimize environmental impact.

11. A number of research questions or projects were mentioned:

How do educational experiences affect human behavior?
Sociology of Users of Marshes:

How does use of the marshes for education and researh affect the environment?

Is there a role for marsh "creation" in the Hudson River Estuary? Would it be feasible to reestablish shellfisheries in the lower estuary?

What effect does fire have on marsh vegetation?

Nutrient cycles in tidal marshes.

Metals accumulation in tidal marshes and relation to sedimentation.

Role of plant communities in nutrient and metals distribution.

Effects of toxic substances on animals, e.g., cadminum at Constitution Island Marsh.

Wild-rice is making a comeback in the Hudson - what conditions are favorable?

Purple loosestrife invasion of cattails.

Relation of fine grade suspended sediment transport and contaminant distrbution.

Lead shot ingestion by waterfowl.

Does acid precipitation affect the estuary?

Primary productivity of marsh plants.

Blue crab relation to salinity.

Damage done by dredge spoil disposal; how to manage disposal sites.

Bank erosion by tides and boat wakes.

Mapping glacial deposits.

A historical overview of utility - hudson River - fish interactions.

Potential peregrine falcon use of the marshes as feeding areas.

Erection of osprey nesting platforms in the marshes,

Archeological resources, past inhabitants of the areas, and past ecological relationships; species that were formerly present.

12. The sanctuary should maintain an inventory of scientific support services potentially available to researchers on the estuary, for example, specimen collections, water quality laboratories, research vessels.

13. Solid funding will ensure that useful research is conducted, that researchers will collaborate, and that results will be interpreted for the public.

Education

1. Several "target groups" were mentioned: elementary school classes, high school students, non-school groups such as scouts and 4-H, sportmen, other recreationists, decision makers and college students.

2. Several communications media were mentioned: a traveling exhibit for museums and larger schools; short video programs; fact sheets for decision makers such as legislators; a generalized publication to advertise the sanctuary; and personal contact; a summer session for advanced high school students; and self-guided trails.

3. Ways of bringing sportsmen and non-sportsmen users of the sites together for education or work on projects could include: sportsmen taking birdwatchers on boat tours (this is done at Stockport); non-sportsmen joining fish and game clubs; interpretive articles in sportsmen's magazines. Sportsmen and non-sportsmen could work together to protect habitats and solve pollution problems and other probems in the sanctuary.

4. Access problems were discussed. Getting across the railroad at Stockport is a problem. Transportation for school groups may not be covered in school budgets. A user constituency for the sanctuary can be built by improving access opportunities, for example, public boat landings. Commercial tour boats might serve for viewing or access to the sites.

5. There should be an education subcommittee of the Sanctuary Advisory Committee.

6. There can be cooperation be between education and research projects. This can be done by using high school students to make environmental measurements under supervision of a scientist; by establishing a "clearinghouse" system for receiving and analyzing public observations on natural history; by using specimens obtained from sportsmen's bags for scientific studies of animals; by using sportmen and naturalists as "guides" for scientists; and by press releases and interviews on the inception and progress of research projects in the sanctuary.

7. The sanctuary's education program should stress public obligations in land use decisions (e.g., State Environmental Quality Review Act, various wetlands laws, zoning ordinances).

General

1. How can the Estuarine Sanctuary be used to take a positive (constructive) approach to environmental management?

2. It is important to involve the public (including local government, business-industry, sportsmen, etc.) in decisions about the use and function of the sanctuary.

3. The Sanctuary Advisory Committee could assemble a research agenda that meets the information needs of river users (industry, sportsmen, etc.) and then help raise funds to get the research done.

4. The sanctuary will appeal more to the public through involvement in community-action projects such as reconstructing docks.

5. The Sanctuary could publish a newletter for a coalition of Hudson River environmental organizations.

6. Good connections should be made with existing facilities such as the Dutchess Community College Norrie Point Environmental Laboratory, Columbia University Lamont-Doherty Geological Observatory, Stony Kill Environmental Education Center, Bard College, and Columbia-Greene Community College, for collaboration in research and education programs.

7. The sanctuary should be used as an example of the best preserved wetlands.

8. The Estuarine Sanctuary program has a role - to make the results of scientific research available locally to make a better case for protecting wetlands outside of the sanctuary. How far will this effect go beyond the sanctuary? Will there be spin-off to the protection of wetland resources in general, on the Hudson and along the Atlantic Coast?

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