

# ANNEX A

## 404(b)(1) EVALUATION

Annex A

CLEAN WATER ACT  
SECTION 404(b)(1) EVALUATION

POPLAR ISLAND RESTORATION PROJECT  
CHESAPEAKE BAY & TALBOT COUNTY, MARYLAND

21 February 1996

**I. PROJECT DESCRIPTION**

**a. Location** - Poplar Island, Talbot County, Maryland and Chesapeake Bay, Maryland.

**b. General Description** - The Poplar Island Restoration Project involves constructing armored dikes, breakwaters, and/or other structures approximating the island's 1847 footprint and filling the enclosed area with clean dredged material from Federal navigation channels in Chesapeake Bay. The 1,110 acre fill area will be subdivided to provide approximately 50% tidal wetland habitats and 50% upland island habitats. An access channel is required. A more detailed description of the project is given in the *Poplar Island, Maryland Environmental Restoration Project Draft Feasibility Report and Environmental Impact Statement*, to which this evaluation is appended.

**c. Purpose** - The purpose of the proposed project is to recreate and restore important regional habitat that has been lost through erosion of islands in the Chesapeake Bay and, at the same time, to provide for a truly beneficial use of sediments that must be dredged from Bay channels.

**d. General Description of Dredged Material** - The sediment to construct the dikes will be excavated from borrow areas on the project site and/or dredged from the proposed access channel. These sediments are expected to consist of fine sand with some silt and clay lenses, and due to its geomorphological position, to contain lower levels of anthropogenic contaminants than typical surface sediments in the Chesapeake Bay. The sediment to construct the proposed wetland and upland habitat area at Poplar Island will be dredged from the following Federal navigation channels or channel

reaches in the Chesapeake Bay leading to Baltimore Harbor: the Craighill Entrance Channel; the Craighill Channel; the Craighill Angle, the Craighill Upper Range; the Cutoff Angle; the Brewerton Channel Eastern Extension; the Tolchester Channel; and the Swan Point Channel. Most project sediments will be excavated during periodic episodes of maintenance dredging. Accordingly, the fill sediment is expected to consist of relatively low cohesion silts and clays with some fine sands. Because the channels are removed from known point sources, anthropogenic contaminant concentrations are likely to be consistent with background levels in the Chesapeake Bay sediments.

**e. Description of the Proposed Discharge Sites** - The Poplar Island Project site is a rapidly eroding archipelago of islands located in the Chesapeake Bay at latitude 38° 46' N, and longitude 76° 23' W. The closest point of mainland is the Eastern Shore of Maryland just north of Tilghman Island, approximately 2 mile east of the site. The proposed containment dikes will enclose approximately 1110 acres of shallow water habitat, including the four smallest remnants of the archipelago (less than 5 acres total) and will abut, but not tie directly into the largest island of the archipelago, Coaches Island. (See the attached figure.)

**f. Description of Discharge Method** - It is expected that fine grained sand to be used in constructing the proposed dikes will be dredged hydraulically and pumped to the dike alignment. Some mechanical shaping of the sand will be required before armor stone can be placed on the exterior slopes. Some small amount of fine grained sediment unsuitable for dike construction may be sidecast near the borrow site within the proposed dike alignment. The material from the Federal channels will most likely be dredged mechanically and placed in barges. The barges will be towed or pushed to the proposed placement sites where the sediments will be pumped into the containment cells. The dredged material will be allowed to settle and consolidate. Supernatant water will be returned to the Bay through weirs or similar control structures in the eastern perimeter dike.

## **II. FACTUAL DETERMINATIONS**

### **a. Physical Substrate Determinations**

(1) **Substrate Elevation and Slope** - Elevations along the proposed eastern perimeter dike near Poplar Harbor are -1.5 and -3.5 ft. MLLW. Elevations along the proposed western perimeter dike are between -5 and -10 ft. MLLW. The average depth of water within the project area is approximately 7 ft. Water depth in the archipelago is 1 to 2 ft. in waters between or adjacent to the islets and increases very gradually to 6 to 8 ft. over a distance of approximately 4,000 ft. to the south, west, and east.

(2) **Sediment Type** - The sediments at the Poplar Island site are typical of lowland

sedimentary deposits and consist of gravel, sand, silt, and clay. The sediment to be used to construct the containment dikes is fine grained sand with some silt and clay lenses. The dredged materials proposed for filling the site are likely to be silt, with some clay and some fine sand.

(3) Discharge Material Movement - The fine grained sand used to construct the containment dikes will be placed and shaped to avoid unnecessary loss of materials. When completed, the containment dikes will control movement of the dredged material placed in the site.

(4) Physical Effects on Benthos - Benthos in the alignment of the containment dike will be buried during construction. Benthos in the containment cells will be buried with dredged material as the cells are filled. Benthos are expected to recolonize the wetland cells and may, over time, achieve higher densities in wetland cells and in the recreated Poplar Harbor. The long term, overall impact on regional benthic populations is not expected to be significant.

(5) Other Effects - Not applicable.

(6) Actions Taken to Minimize Impacts - Dredged material transported to the site will be contained within the armored dikes.

#### **b. Water Circulation, Fluctuation, and Salinity Determinations**

(1) Water - Temporary changes are expected in clarity, color, and quality of Bay waters in the immediate vicinity of the proposed construction. Because construction is expected to virtually end erosion of the remnant islands and resuspension of sediments in the vicinity of the project, clarity, color, and quality of nearby waters should improve somewhat after construction. Temporary, localized changes in clarity, color, and quality of Bay waters are also expected to accompany the periodic maintenance dredging episodes.

Supernatant water released from the placement site should not affect the clarity or color of nearby waters in Poplar Harbor or in the Chesapeake Bay.

(a) Salinity - No change is expected.

(b) Chemistry - Very slight and temporary changes are possible in the immediate vicinity of the dredging operations. Very slight and temporary changes are possible in the immediate vicinity of sand placement activities necessary for dike construction. Minor and temporary changes are possible

within the allowed mixing zone<sup>1</sup> at the placement site. No change is expected outside the allowed mixing zone.

(c) Clarity - Minor and temporary changes are possible in the immediate vicinity of the dredging operations and near the area of sand placement during dike construction. Long term water clarity in the vicinity of the project should increase upon completion of the containment dikes. Minor and temporary changes are possible within the allowed mixing zone at the placement site during and after filling. These temporary changes should be offset by increased water clarity in Poplar Harbor resulting from construction. No change is expected outside the allowed mixing zone resulting from filling activities.

(d) Color - Minor and temporary changes are possible in the immediate vicinity of the dredging operations and near the area of sand placement during dike construction. Very minor and temporary changes are possible within the allowed mixing zone at the placement site during and after filling. No change is expected outside the allowed mixing zone resulting from filling activities.

(e) Odor - No change expected.

(f) Taste - Not applicable.

(g) Dissolved Gas Levels - Temporary changes (increase and/or decrease of dissolved oxygen) may occur in the immediate vicinity of the dredging operations and in the immediate vicinity of dike construction operations. No change is expected outside the site during and after placement of the dredged material.

(h) Nutrients - Temporary (24 to 72 hour) localized increases are expected at the dredging site and at the construction site due to resuspension of sediment during dredging operations. A slight and also temporary increase in nutrients may occur at placement site outfalls. Neither increase is likely to cause an increase in algal blooms.

(i) Eutrophication - Not expected to occur.

---

<sup>1</sup> The actual mixing zone for the site can only be determined after completing placement site design. Needed information includes the number and type of discharge control structures, exact location of proposed discharge structures, the size (capacity) of containment cells, and the maximum rate of dredged material placement.

(j) Others as Appropriate - None.

(2) Current Patterns and Circulation -

(a) Current Patterns and Flow - Vectors illustrating the direction and relative velocity of tidal currents in the vicinity of the Poplar Island archipelago are given in Figures 3-5 and 3-7 of the *Poplar Island, Maryland Environmental Restoration Project Draft Feasibility Report and Environmental Impact Statement*. Proposed construction is expected to increase and train tidal currents along the toe of the western dike, slightly increase the flow immediately to the east of Coaches Island, and substantially reduce flows through Poplar Harbor. It is also possible that the project may cause very small increase in tidal flow through Knapp's Narrows and a commensurate decrease in sedimentation. All of the aforesaid changes to flow would be consistent with flow patterns in the vicinity of Poplar Island approximately 150 years ago. No far field changes in flow will result from the proposed construction. No effects are expected from the required maintenance dredging of the channels or from the placement of dredged material in the proposed site.

(b) Velocity - See foregoing discussion of flow.

(c) Stratification - No change expected.

(d) Hydrologic Regime - No significant changes are expected.

(3) Normal Water Level Fluctuations - No significant changes are expected.

(4) Salinity Gradients - No changes are expected.

(5) Actions to Minimize Impacts - Not applicable.

**c. Suspended Particulate/Turbidity Determinations**

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Project Sites - Minor and temporary increase of suspended particulate and turbidity is expected in the immediate vicinity of the dredging operations and in the immediate vicinity of dike construction operations. No change in suspended particulates and turbidity levels is expected outside of allowed mixing zones for dredging or for construction. Suspended sediment and turbidity in the vicinity of the archipelago are likely to be less than current levels after the proposed construction.

During and immediately after dredged material placement episodes, return water and runoff will be closely monitored and controlled to limit discharge of suspended particulates to acceptable levels. No change in suspended particulate concentrations or turbidity is expected outside of the allowed mixing zone.

(2) Effects on Chemical and Physical Properties of the Water Column - Minor and temporary changes are possible in the immediate vicinity of dredging operations, in the immediate vicinity of proposed dike construction, and in the immediate vicinity of return water flow. No changes are expected outside the allowed mixing zones.

(a) Light penetration - A minor, temporary decrease is anticipated in the immediate vicinity of the dredge plant during dredging and in the vicinity of sand placement during construction of the proposed containment dike. The possible decrease in light penetration will be confined to the allowed mixing zones. No changes are expected outside the allowed mixing zones.

(b) Dissolved Oxygen - A minor temporary change is possible in the immediate vicinity of dredging and construction operations. No change is expected outside the allowed mixing zone at the placement site.

(c) Toxic Metals and Organics - Dredging operations and construction operations are not expected to result in the release of any measurable amounts of contaminants into the water column. Dredged materials that are placed in containment cells at elevations above mean high water will be exposed to the atmosphere and weathering. Exposure of sulfidic marine sediments sets off a chemical reaction that tends to lower sediment/soil pH. This reaction and the exposure to rainfall (which also has a low pH) will cause some naturally occurring metals that are bound to the sediment to dissolve into the water<sup>2</sup>. Dissolved metals can be toxic to aquatic organisms, if present in sufficient concentrations, and could constitute a negative impact to the local biota in the immediate vicinity of the discharge of runoff water into Poplar Harbor. To address this concern, upland soil/sediment at the site will be managed and conditioned periodically to maintain the pH near neutral. This will keep the naturally occurring metals bound to the soil/sediment. Water quality at the weirs will also be monitored so incidences of low pH and high metals can be identified and controlled to minimize impact to local water quality. After high marsh and upland soils have been conditioned, amended, and planted, the potential release of metals will abate and the pH of runoff water will increase.

---

<sup>2</sup> The aforesaid diagenesis has not been observed to result in the release of any contaminants other than metals. Thus, the potential release of any organic compounds is not expected under similar circumstances.

Thus, the potential release of metals from the containment site can be mitigated. No change is expected outside the allowed mixing zone at the placement site.

(d) Pathogens - No change expected.

(e) Aesthetics - Temporary changes during construction might constitute a short-term decrease in aesthetic values. Upon completion of the project aesthetic values are expected to increase above current values.

(f) Others as Appropriate - None applicable.

#### **d. Contaminant Determinations**

Fine grained sand used to construct the proposed containment dikes will be taken from the project site itself. The site is far removed from known sources of anthropogenic contamination and there is no logical reason to believe that fine grained sand could contain higher level of contaminants than the surface sediment on which it will be placed. Therefore, the fine grained sand is determined to satisfy the contaminant determination requirements of 40 CFR 230.11.

Similarly, the sediments likely to be dredged from the Federal channels in the Chesapeake Bay leading to Baltimore Harbor are removed from known sources of anthropogenic contaminants. Hence, the placement of the dredged material from the Bay channels at the Poplar Island site cannot be expected to result in a measurable release of contaminants. However, these sediments are distant from the proposed placement site and periodic confirmatory analysis of channel sediment is recommended to allow comparison of anthropogenic contaminant levels in the proposed dredged material and in reference sediment from the placement site. Testing of channel material is underway and will be repeated at intervals not exceeding 3 years during the life of the project. Results of the initial chemical analysis will be sent to the appropriate regulatory agencies, will be available to the public at the USACE Baltimore District Office, and in the future will be available electronically from the EPA's Chesapeake Bay Program database or from the proposed Poplar Island Project "Home Page."

#### **e. Aquatic Ecosystem and Organism Determinations**

(1) Effects on Plankton - Temporary and localized suppression of plankton communities is possible in the immediate vicinity of dredging operations and near dike construction activities. Long term effect is expected to be negligible.

(2) Effects on Benthos - Benthos in the immediate vicinity of the borrow site will be displaced and/or entrained with the fine grained sand used for containment dike construction. Benthos in the path of dike construction will be buried. Most of these effects are expected to be temporary. Benthic recolonization of disturbed areas outside the containment dikes should occur within a few months. Benthos within the placement site will be smothered with sediments. This effect is not expected to be significant.

(3) Effects on Nekton - Nekton in the immediate vicinity of the borrow site may be displaced or entrained with the dredged and/or borrow material. Effects are expected to be temporary.

(4) Effects on Food Web - No adverse effects expected.

(5) Effects on Special Aquatic Sites - Limited wetlands can be found on the smaller remnant islands. Without the proposed project or other intervention, these wetlands are expected to completely disappear in a few years. Though the project will create over 550 acres of wetland habitat in the vicinity of the remnant islands, it may hasten the demise of these small wetlands. Hence, short term effects will be local and severe. Long-term effects will be very positive and encompass a larger area.

(6) Threatened and Endangered Species - No threatened or endangered species have been observed to inhabit the project site. Endangered bald eagles (*Haliaeetus leucocephalus*) have been observed on nearby Jefferson Island in 1995, including a nesting pair. Construction of the project will not adversely impact threatened and endangered species and is likely to result in increased habitat for listed species in the long term.

(7) Other Wildlife - No impacts expected. Completed project will increase wildlife habitat.

(8) Actions to Minimize Impacts - The dredged material placed at the upland site will be confined to the diked area and best management practices will be employed to manage the site, to maximize environmental benefits, and to minimize potential adverse impacts.

#### **f. Proposed Placement Site Determinations**

(1) Mixing Zone Determinations - The mixing zone for material disturbed and suspended by the proposed activities will be confined to the smallest practicable zone.

(2) Determination of Compliance with Applicable Water Quality Standards - The proposed work will be performed in accordance with all applicable State of Maryland water quality standards.

### (3) Potential Effects on Human Use Characteristics

(a) Municipal and Private Water Supply - No effect expected.

(b) Recreational and Commercial Fisheries - Minimal effect on crabbing and soft clam fisheries is expected.

(c) Water Related Recreation - The construction site and the project footprint will be lost to recreational boating. Poplar Harbor, areas near the rock face of the containment dike, and proposed rock berm fields will attract recreational boaters and recreation fishing when the project is completed.

(d) Aesthetics - Short term reduction in aesthetic values is expected during construction.

(e) Parks, National and Historical Monuments, National Seashore, Wilderness Areas, Research Sites, and Similar Preserves - No effects expected.

**g. Determination of Cumulative Effects on the Aquatic Ecosystem** - No permanent, long term, cumulative adverse effects to the existing aquatic ecosystem are expected as a result of the proposed project. The long term cumulative effect of creating more wetlands using dredged material is beneficial.

**h. Determination of Secondary Effects on the Aquatic Ecosystem** - No secondary effects are expected.

### III. FINDING OF COMPLIANCE

No adaptations of the Section 404(b)(1) Guidelines were made relative to this evaluation.

a. The proposed construction of containment dikes and the subsequent filling of the dikes with dredged material to form wetland and upland habitats has been selected as the result of an alternatives analysis undertaken in accordance with the Guidelines given at 40 CFR 230.10(a). An exhaustive search for dredged material placement sites, including upland sites, is being undertaken in order to meet the dredging needs of the Port of Baltimore into the next century. This site has been identified from this ongoing search. This beneficial project represents the most practical, least environmental impact alternative identified that can accommodate the volume of dredged material needed to maintain navigability of the approach channels to the Port of Baltimore.

Accordingly, the alternatives analysis test is passed.

b. The proposed construction and fill with dredged material is not contrary to other state and Federal laws for the protection of water quality, aquatic species, or habitat; as follows:

(1) The proposed construction, dredging, and placement of dredged material will be in compliance with State water quality standards.

(2) The proposed construction, dredging, and placement of dredged material is not expected to violate the Toxic Effluent Standard of Section 307 of the Clean Water Act.

(3) The proposed project will not negatively affect any endangered species.

(4) No Marine Sanctuaries, as designated in the Marine Protection, Research, and Sanctuaries Act of 1972, are in the project area.

(5) The proposed construction, dredging, and placement of dredged material will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, wildlife, and special aquatic sites. The life stages of aquatic life and other wildlife will not be adversely affected. No contaminants will be discharged in toxic concentration in violation of Section 307 of the Clean Water Act.

Thus, the proposed construction, dredging, and placement of dredged material satisfies the requirements test at 40 CFR 230.10(b).

c. Parts I and II of the analysis (preceding) show that the proposed construction, dredging, and placement of the dredged material do not contribute to the degradation of waters of the United States and as such, the proposed project and proposed use of the placement sites does complies with the requirements of 40 CFR 230.10(c).

d. Appropriate steps to minimize potential impacts of the placement of the material in aquatic systems will be followed.

The mandatory sequence of the Section 404(b)(1) Guidelines has been applied in evaluation of the proposed action. The proposed construction, dredging, and placement of the dredged material at Poplar Island is in compliance with the Section 404(b)(1) Guidelines



# ANNEX B

## ENVIRONMENTAL IMPACT STATEMENT INDEX

**POPLAR ISLAND RESTORATION  
PROJECT, MARYLAND**

**INTEGRATED DRAFT FEASIBILITY REPORT AND  
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)**

**ENVIRONMENTAL IMPACT STATEMENT INDEX**

\*

<u>TOPIC</u>	<u>PAGES</u>
Aesthetics	3-88, 5-57
Adverse Effects Which Cannot Be Avoided	5-54
Affected Environment	3-1 to 3-92
Air Quality	3-73, 5-50
Alternatives	2-7, 5-11
Aquatic Resources	3-29, 5-36
Baseline Conditions	3-1
Concern (Areas of)	5-61
Conclusions	10-1
Consumption Use	5-61
Coordination	9-1
Cover Sheet	
Cultural Resources	3-75, 5-51
Endangered Species	3-71, 5-49
Environmental Laws and Regulations	6-43
Fish and Wildlife Coordination Act Report	Annex C
Geology	3-2, 5-19
Hazardous Materials	3-74, 5-51
Historic Resources	3-77, 5-51
Hydrology and Hydraulics	3-3, 5-19
Irreversible and Irretrievable Commitments	5-61
List of Preparers	Annex D
Prehistoric Resources	3-75, 5-51
Probable Future Condition	3-92
Public Coordination and Involvement	9-1
Purpose and Need for Proposed Action	1-1
Recommendations	11-1

NOTE: \* Indicates information required for NEPA compliance.

<u>TOPIC</u>	<u>PAGES</u>
Recreation	3-90, 5-57
Schedule for Design and Construction	7-4
Section 401 Water Quality Certification	Application will be made
Section 404 (b)(1) Evaluation	Annex A
Selected Plan (Description of)	6-1
Short-Term vs. Long-Term Productivity	5-65
Socio-Economic	3-82, 5-52
Study Area	1-6
Summary	10-1
Table of Contents	vii
Terrestrial Habitat	3-58, 5-46
Threatened and Endangered Species	3-71, 5-49
Water Quality	3-16, 5-30
Wetlands	3-58, 5-46

NOTE: \* Indicates information required for NEPA compliance.



# ANNEX C

## PUBLIC INVOLVEMENT

## **Annex C**

- Attachment A**      **Public Involvement Program Schedule and Outline**
- Attachment B**      **Public Notice and Notice of Intent**  
                            **Public Notice - 19 January 1995**  
                            **Notice of Intent - 8 February 1995**
- Attachment C**      **Public Meetings - Agendas, Attendance Lists, Handouts**  
                            **Scoping Meeting, February 1995**  
                            **Public Information Meeting, April 1995**  
                            **Public Information Meeting, August 1995**  
                            **Public Hearing, November 1995**
- Attachment D**      **Public Comments**
- Attachment E**      **Agency Coordination**  
                            **Coordination Letters from District**  
                            **Letters from Agencies, Other Communications**
- Attachment F**      **News Releases, Articles, and Advertisements**

**Attachment A**

**Public Involvement Program Schedule and Outline**

file: prog

POPLAR ISLAND HABITAT RESTORATION  
DRAFT PUBLIC INVOLVEMENT PROGRAM

Draft Schedule

1995

STAGE 1

January 3 - October 18	Informal meetings w/interest groups - introduce project/team/public involvement process; begin interaction with public, interest groups, and agencies;
January 18	Agency coordination letters distributed
January 25	Congressional letters distributed
January 26	Public Notice and Agency Coordination Letter - announce project beginning; request comments/issues and POC; (approximately 180 mailed)
February 7	Informal Meeting w/interest group - Md. Charterboat Captains Meeting (Contact: Joe Rupp, Pres.)
February 8	News Release/Newsletter - describe project; request comments/involvement; announce scoping meetings
February 13	Informal Meeting w/interest group - Eastern Shore Watermen Meeting (Contact: Ronald Dizes)
February 14	Informal Meeting w/interest group - Talbot County Council Meeting (Contact: General Anderson)
February 21 & Feb 23	Scoping Meetings/First Public Workshop (Eastern and Western Shores) - describe project/public involvement process; work in nominal groups; brainstorm good/bad/ideas; prioritize values; (format: brief presentation & nominal groups)
March 1	Informal Meeting w/interest group - Chesapeake Bay Critical Areas Commission (Contact: Francis Flanigan)
March 1	Informal Meeting w/interest group - Sportfishing group (Contact: Richard Novotny)

**STAGE 2**

April 12

**Second Public Workshop**

- project status; discuss  
alternatives/impacts/trade offs/compromises  
(format: information stations)

**STAGE 3**

August 23

**Third Public Workshop**

- discuss, evaluate and rank a limited number of  
detailed plans  
(format: presentation and discussion)

**STAGE 4**

November 28

**Fourth Public Workshop**

- present plan; discuss recommended plan and  
record comments;  
(format: public hearing)

## DRAFT OUTLINE OF THE POPLAR ISLAND PUBLIC INVOLVEMENT PROGRAM

The purposes of public involvement for the Poplar Island Habitat Restoration Project include the following:

Required by the National Environmental Policy Act (NEPA)

- inform public
- inform decision makers

Method of gathering valuable information

Lack of coordination can result in project implementation difficulties

Good management includes gaining approval for proposed actions

Taxpayers entitled to explanation of tax dollars spent

Public involvement programs must provide opportunities for public participation during each planning stage. Public review of project plans after they are developed does not constitute a meaningful public involvement program. It is understood that public involvement may require informal and sometimes time-consuming dialogue between the planners and the public. The major tasks in a public involvement program may be divided into several stages and generally include the following:

### Stage 1 - Project Initiation

The first stage of a public involvement program is exploratory and comprehensive with regard to the identification and definition of public concerns/issues/problems/constraints. During this stage of the public involvement program the actions are directed toward insuring a wide variety of viewpoints so that they can be considered during the planning process. The number of participants in this preliminary stage is limited to those identified by the project team and may not be as great as in later stages.

The initial objectives of a public involvement program tend to be more values-oriented and include obtaining information useful in directing the study (such as identification of problems, issues, objectives and goals, and alternatives to be considered); obtaining information about the political, social, and economic setting of the project area; and preparing the public, agencies, and project team for further interaction.

The target public(s) include both the participating public (agencies and citizens who are directly involved in the project or public involvement program) and the information audience (people who read or hear about the project/program but are not otherwise involved).

The available forums for Stage 1 involvement include small, informal discussion or brainstorming meetings; scoping meetings; project newsletters; questionnaires; and news articles.

The product of the Project Initiation Stage is information.

### Stage 2 - Development of Alternative Plans

During Stage 2 the focus of the public involvement program shifts to the formulation and testing of alternative plans as well as making sure that values and problems identified in Stage 1 are adequately addressed in the alternatives developed. A number of alternatives may be presented at the second workshop as "straw men", to be dissected and reconfigured to satisfy the

needs of segments of the public. For example, alternative plans may be geared to clambers, recreation boaters, or wildlife habitat. As the number of alternatives is winnowed to a practical number and representative variety, interests are balanced and trade-offs and compromises are negotiated. Problems, issues, and differing perspectives become clearer as alternatives are presented to the public for discussion.

The objective of Stage 2 is to provide opportunities for the interested publics to explore the implications of the alternative plans.

The target publics for involvement in the formulation of alternatives may be broad, with more publics identified as the implications of alternatives are clarified.

Workshops provide an effective forum for Stage 2 activities.

The product of this stage is the formulation of alternative plans.

### Stage 3 - Development of Detailed Plans

Stage 3 of the public involvement program provides an opportunity for the assessment, modification and evaluation of alternative plans, leading to one recommended plan. During this stage project planners need to assess the impacts of the alternative plans and provide detailed alternative and impact information to the public. The public provides information on remaining or unresolved issues; on the adequacy of compromises, mitigation, or trade-offs; and on the preferred alternatives.

The objective of Stage 3 is impact assessment and evaluation of alternatives.

Public interest and involvement as well as the potential for conflict may be highest as real plans are examined and real impacts assessed during this stage.

Forums for public involvement during the development of detailed plans include public workshops, questionnaires, and project team contact persons.

The product of Stage 3 is a small number of detailed alternative plans, evaluated and ranked by workshop participants.

### Stage 4 - End of the Planning Stage

The objective of this stage is development/selection of a plan that has a minimum of negative impacts and a maximum of positive impacts.

The target public includes both the participating public and the information audience.

The forums for public involvement include public workshops, newsletters, and news articles.

The product is a plan that has strong public/agency support and which can then be put forward as the recommended/proposed plan.

**Attachment B**

**Public Notice and Notice of Intent**



US Army Corps  
of Engineers  
Baltimore District

# Public Notice

## POPLAR ISLAND RESTORATION PROJECT

TO ALL INTERESTED PARTIES:

The Baltimore District, U. S. Army Corps of Engineers, proposes to restore approximately 1,000 acres of wildlife habitat using dredged material at Poplar Island in Talbot County, Maryland, in the upper Chesapeake Bay (Enclosure 1). Approximately 10 to 40 million cubic yards of material, primarily dredged during maintenance of the southern approach channels to Baltimore Harbor, would be placed behind dikes at the site. After placement, the material would be shaped and planted to create both intertidal wetland and upland wildlife habitat. Poplar Island has been identified by the U. S. Fish and Wildlife Service, the Maryland Department of Natural Resources, and other natural resource management agencies as a valuable nesting and nursery area for many species of wildlife, including bald eagles, osprey, heron, and egret. The project would restore Poplar Island to the approximate size and footprint of the island in 1857. Currently, the name Poplar Island refers to a group of four small remnant islands located adjacent to Jefferson Island and Coaches Island, approximately one mile northwest of Tilghman Island, on the Bay's Eastern Shore.

The project will be constructed under Section 204 of the Water Resources Development Act of 1992, which allows Federal funding for beneficial use of dredged material projects. Expected project benefits include the creation of wetland and upland wildlife habitat, stabilization of the rapidly eroding island remnants, and beneficial use of dredged material from Federal navigation channel maintenance activities. A project pre-feasibility report (similar to a Corps Reconnaissance report) was completed by the Maryland Port Administration (MPA) in 1993.

In compliance with the National Environmental Policy Act (NEPA), the Baltimore District will prepare an Environmental Impact Statement (EIS) for the project, which will include descriptions of the existing site conditions, design alternatives, project impacts, public involvement, and the recommended plan. A comprehensive public involvement program is being developed to coordinate with interest groups, the general public, and other Federal, State, and local agencies. Current project participants include the MPA and both Federal and State natural resource management agencies.

As part of the public involvement process, the Baltimore District is conducting a scoping process to identify issues and areas of concern. Any person who has an interest in the project or who may be adversely affected by the proposed project may make comments or suggestions or request a public hearing. Comments and requests should be submitted within 30 days of the date of this notice to the District Engineer, ATTN: CENAB-PL-EC, U.S. Army Corps of Engineers, Baltimore District, P.O. Box 1715, Baltimore, Maryland 21203-1715.

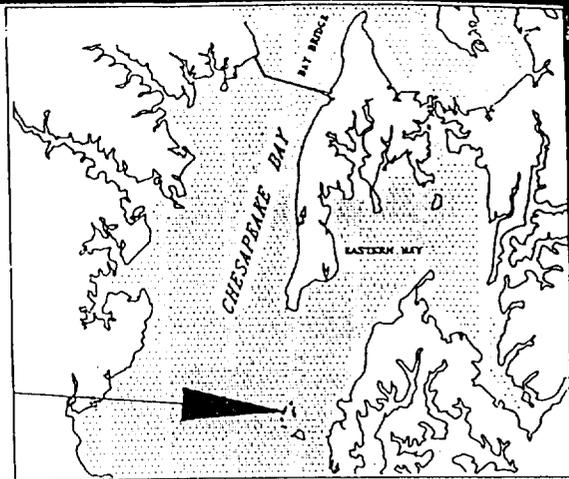
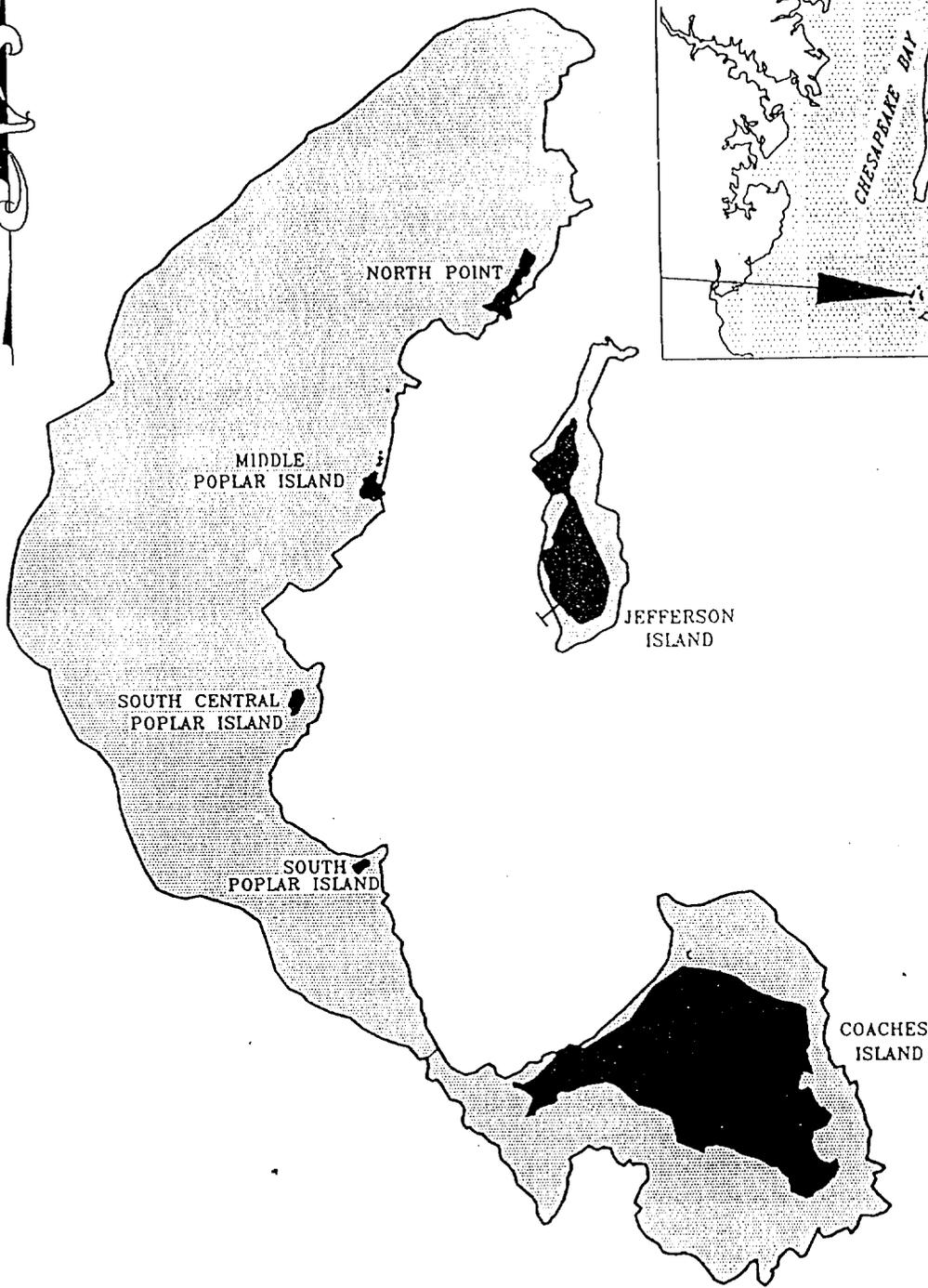
This Public Notice is being sent to organizations and individuals on the enclosed list (Enclosure 2). Please bring this notice to the attention of any other organizations or individuals with an interest in this matter.

FOR THE COMMANDER:

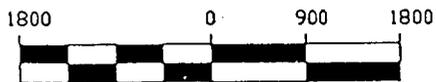
  
DR. JAMES F. JOHNSON  
Chief, Planning Division

DATE: JAN 19 1995

Enclosures



GRAPHIC SCALE



(IN FEET)  
1 INCH = 1800 FT



1993 LANDMASS



1847 LANDMASS

ENCLOSURE 1.

POPLAR ISLAND  
ISLAND COMPARISON 1847-1993

Baltimore District, Corps of Engineers  
Planning Division  
Post Office Box 1715  
Baltimore, Maryland 21203-1715

13 Jan 1995

POPLAR ISLAND FEASIBILITY STUDY

\* \* \* CONGRESSIONAL INTERESTS \* \* \* = UNITED STATES SENATORS

15038 011 MIKULSKI D MD G  
HONORABLE BARBARA A. MIKULSKI  
UNITED STATES SENATE  
709 HART SENATE OFFICE BUILDING  
WASHINGTON, DC 20510-2003  
(202) 224-4654 FAX (202) 224-8858

15039 011 MIKULSKI D MD G  
HONORABLE BARBARA A. MIKULSKI  
UNITED STATES SENATOR  
WORLD TRADE CENTER  
SUITE 253  
401 E. PRATT STREET  
BALTIMORE, MD 21201  
(410) 962-4510

12824 011 SARBANES D MD G  
HONORABLE PAUL S. SARBANES  
UNITED STATES SENATE  
309 HART SENATE OFFICE BUILDING  
WASHINGTON, DC 20510-2002  
(202) 224-4524 FAX (202) 224-3452

12825 011 SARBANES D MD G  
HONORABLE PAUL S. SARBANES  
UNITED STATES SENATOR  
100 SOUTH CHARLES STREET  
TOWER 1  
SUITE 1010  
BALTIMORE, MD 21201  
(410) 962-4436 FAX (410) 962-4156

\* \* \* CONGRESSIONAL INTERESTS \* \* \* = UNITED STATES REPRESENTATIVES

15056 012 CARDIN D MD03 G  
HONORABLE BENJAMIN L. CARDIN  
HOUSE OF REPRESENTATIVES  
227 CANNON HOUSE OFFICE BLDG.  
WASHINGTON, DC 20515-2003  
(202) 225-4016 FAX (202) 225-9219

15058 012 CARDIN D MD03 G  
HONORABLE BENJAMIN L. CARDIN  
REPRESENTATIVE IN CONGRESS  
540 EAST BELVEDERE AVENUE  
SUITE 201  
BALTIMORE, MD 21212  
(410) 433-8886

15063 012 EHRlich R MD02 G  
HONORABLE ROBERT L. EHRlich JR.  
HOUSE OF REPRESENTATIVES  
315 CANNON HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515  
(202) 225-3061 FAX (202) 225-4251

15060 012 EHRlich R MD02 G  
HONORABLE ROBERT L. EHRlich JR.  
REPRESENTATIVE IN CONGRESS  
1407 YORK ROAD  
LUTHERVILLE, MD 21093  
(410) 337-7222 FAX (410) 337-0021

12854 012 GILCHREST R MD01 G  
HONORABLE WAYNE T. GILCHREST  
HOUSE OF REPRESENTATIVES  
412 CANNON HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515-2001  
(202) 225-5311

12855 012 GILCHREST R MD01 G  
HONORABLE WAYNE T. GILCHREST  
REPRESENTATIVE IN CONGRESS  
1 PLAZA EAST  
SUITE 105  
SALISBURY, MD 21801  
(410) 749-3184 FAX (420) 749-8458

15059 012 MFUME D MD07 G  
HONORABLE KWEISI MFUME  
HOUSE OF REPRESENTATIVES  
2419 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515-2007  
(202) 225-4741

16176 012 MFUME D MD07 G  
HONORABLE KWEISI MFUME  
REPRESENTATIVE IN CONGRESS  
2203 NORTH CHARLES STREET  
BALTIMORE, MD 21218  
(410) 235-2700

\* \* \* STATE INTERESTS \* \* \* = GOVERNORS

ENCLOSURE 2.

... STATE INTERESTS ...

<p>12889 021 GLENDENING D MD G                  HONORABLE PARRIS GLENDENING                  GOVERNOR OF MARYLAND                  STATE HOUSE                  ANNAPOLIS, MD 21401                  (410) 974-3901</p>	<p>12347 021 TOWNSEND D MD G                  HONORABLE KATHLEEN KENNEDY TOWNSEND                  LIEUTENANT GOVERNOR OF MARYLAND                  STATE HOUSE                  100 STATE CIRCLE                  ANNAPOLIS, MD 21401                  (410) 974-2804 FAX (410) 974-5252</p>
---	---

... STATE INTERESTS ... - STATE SENATORS

<p>15896 022 ASTLE D MD30 G                  HONORABLE JOHN C. ASTLE                  SENATOR                  MARYLAND GENERAL ASSEMBLY                  51 FLEET STREET                  ANNAPOLIS, MD 21401                  (410) 841-3578</p>	<p>15938 022 BAKER D MD36 G                  HONORABLE WALTER M. BAKER                  SENATOR                  MARYLAND GENERAL ASSEMBLY                  175 RIVERSIDE DRIVE                  ELKTON, MD 21921                  ( ) 000-0000</p>	<p>15954 022 COLBURN D MD37 G                  HONORABLE RICHARD COLBURN                  SENATOR                  MARYLAND GENERAL ASSEMBLY                  4731 EGYPT ROAD                  CAMBRIDGE, MD 21613                  (410) 228-7230</p>
--	---	--

<p>16035 022 DELLA D MD47 G                  HONORABLE GEORGE W. DELLA JR.                  SENATOR                  MARYLAND GENERAL ASSEMBLY                  207 JAMES BUILDING                  ANNAPOLIS, MD 21401                  (410) 841-3600</p>	<p>15805 022 DYSON D MD29 G                  HONORABLE ROY P. DYSON                  SENATOR                  MARYLAND GENERAL ASSEMBLY                  P.O. BOX 5                  GREAT MILLS, MD 20634                  (410) 535-3366</p>	<p>12923 022 MILLER D MD27 G                  HONORABLE THOMAS V. MIKE MILLER JR.                  SENATOR                  MARYLAND GENERAL ASSEMBLY                  6502 HORSEHOSE ROAD                  CLINTON, MD 20735                  (301) 868-6931</p>
---	--	---

12945 022 STONE D MD07 G  
 HONORABLE NORMAN R. STONE JR.  
 SENATOR  
 MARYLAND GENERAL ASSEMBLY  
 6905 DUNMANWAY  
 DUNDALK, MD 21222  
 (410) 288-5270

... STATE INTERESTS ... - STATE REPRESENTATIVES

<p>13085 023 ARNICK D MD07 G                  HONORABLE JOHN S. ARNICK                  DELEGATE                  MARYLAND GENERAL ASSEMBLY                  7918 DIEKELWOOD ROAD                  DUNDALK, MD 21222-8605                  (410) 285-2109</p>	<p>38413 023 BAKER D MD36 G                  HONORABLE WHEELER R. BAKER                  DELEGATE                  MARYLAND GENERAL ASSEMBLY                  1902 BAYSIDE DRIVE                  CHESTER, MD 21619</p>	<p>38419 023 BISSETT R MD30 G                  HONORABLE PHILIP D. BISSETT                  DELEGATE                  MARYLAND GENERAL ASSEMBLY                  453 WALNUT DRIVE                  EDGEWATER, MD 21037</p>
---	---	--

<p>15809 023 BUSCH D MD30 G                  HONORABLE MICHAEL E. BUSCH                  DELEGATE                  MARYLAND GENERAL ASSEMBLY                  951 WINDWHISPER LANE                  ANNAPOLIS, MD 21403                  (410) 263-0500</p>	<p>38418 023 CLAGETT D MD30 G                  HONORABLE VIRGINIA P. CLAGETT                  DELEGATE                  MARYLAND GENERAL ASSEMBLY                  1378 CUMBERSTONE ROAD                  WEST RIVER, MD 20778</p>	<p>38414 023 ECKARDT R MD37B G                  HONORABLE ADELAIDE C. ECKARDT                  DELEGATE                  MARYLAND GENERAL ASSEMBLY                  12 NANTICOKE ROAD                  CAMBRIDGE, MD 21613</p>
---	--	--

... FEDERAL AGENCIES ...

5493 030 USDCNOAA MS. M. ELIZABETH GILLELAN NOAA/NMFS ESTUARINE PROGRAMS OFFICE CHESAPEAKE BAY OFFICE 110 SEVERN AVENUE SUITE 107A ANNAPOLIS, MD 21403 (410) 267-5660	G	38367 030 USDCNOAA MR. DAVID B. KNABBIT DEPUTY CHIEF, MAPPING & CHARTING BRANCH COAST & GEODETIC SURVEY, NOAA SSMC 3, STATION 7360 1315 EAST-WEST HIGHWAY SILVER SPRING, MD 20910 (301) 713-2724	G	13230 030 USDE DIRECTOR OFFICE OF ENVIRONMENTAL COMPLIANCE DEPARTMENT OF ENERGY ROOM 3G-092, PE-25 1000 INDEPENDENCE AVENUE, SW WASHINGTON, DC 20585	G
13236 030 USDI MR. JONATHAN P. DEASON DIRECTOR OFFICE OF ENVIRONMENTAL AFFAIRS DEPARTMENT OF THE INTERIOR 1849 C STREET, NW. (MAIL STOP 2340) WASHINGTON, DC 20240 (202) 208-3891	G	13318 030 USDIFWS MR. JOHN P. WOLFLIN SUPERVISOR, ANNAPOLIS FIELD OFFICE U.S. FISH AND WILDLIFE SERVICE CHESAPEAKE BAY FIELD OFFICE 177 ADMIRAL COCHRANE DRIVE ANNAPOLIS, MD 21401 (410) 269-5448 FAX (301) 269-0832	G	38359 030 USDIFWS DR. RICHARD JACHOWSKI US DEPARTMENT OF INTERIOR FISH AND WILDLIFE SERVICE PATUXENT ENVIRONMENTAL RESEARCH CENTER BOARD OF MIGRATORY BIRD RESEARCH LAUREL, MD 20708	G
13312 030 USDIGS MR. JAMES G. PETERS DISTRICT CHIEF HYDROLOGIST U.S. GEOLOGICAL SURVEY 208 CARROLL BUILDING 8600 LASALLE ROAD TOWSON, MD 21286 (410) 828-1535	G	13795 030 USDTCG CPT GREGORY S. COPE COMMANDING OFFICER U.S. COAST GUARD MARINE SAFETY OFFICE U.S. CUSTOM HOUSE 40 SOUTH GAY STREET BALTIMORE, MD 21202-4022 (410) 962-5121	G	13229 030 USEPA DIRECTOR, OFFICE OF FEDERAL ACTIVITIES U.S. ENVIRONMENTAL PROTECTION AGENCY WEST TOWER, ROOM 537, A-104 401 M STREET, SW WASHINGTON, DC 20460	G
18062 030 USEPA MR. J. GLEN KUGSTER U.S. ENVIRONMENTAL PROTECTION AGENCY CHESAPEAKE BAY PROGRAM OFFICE 410 SEVERN AVENUE SUITE 109 ANNAPOLIS, MD 21403 (202) 382-5043	G	18318 030 USEPA MR. WILLIAM MATUSZESKI DIRECTOR U.S. ENVIRONMENTAL PROTECTION AGENCY CHESAPEAKE BAY PROGRAM OFFICE 410 SEVERN AVENUE, SUITE 109 ANNAPOLIS, MD 21403 (800) 968-5702	G	38363 030 USEPA MR. LORIE ROESER COORDINATOR US EPA CHESAPEAKE BAY PROGRAM OFFICE 410 SEVERN AVENUE SUITE 109 ANNAPOLIS, MD 21403 (410) 267-0061 FAX (410) 267-0282	G
38141 030 USEPA MR. ED STIGALL U.S. ENVIRONMENTAL PROTECTION AGENCY CHESAPEAKE BAY LIAISON OFFICE 410 SEVERN AVENUE SUITE 109 ANNAPOLIS, MD 21403 (410) 267-5740 FAX (410) 267-5777	G	13797 030 USEPA MS. GAIL MACKIERNAN US ENVIRONMENTAL PROTECTION AGENCY MARYLAND SEA GRANT 0112 SKINNER HALL UNIV OF MD, MD 20742-7640	G	15628 030 USEPA MR. ROY E. DENMARK JR. U.S. EPA, REGION III ENVIRONMENTAL PLANNING AND ASSESSMENT SECTION 841 CHESTNUT BUILDING (3ES43) PHILADELPHIA, PA 19107 (215) 597-9857	G
12700 030 USEPA MR. PETER H. KOSTMAYER REGIONAL ADMINISTRATOR U.S. ENVIRONMENTAL PROTECTION AGENCY REGION III 841 CHESTNUT BUILDING (3RA00) PHILADELPHIA, PA 19107-4431 (215) 597-9072 FAX (215) 597-7906	G	13292 030 USEPA MR. WILLIAM MUIR WETLANDS REVIEW SECTION U.S. ENVIRONMENTAL PROTECTION AGENCY 841 CHESTNUT BUILDING (3ES41) PHILADELPHIA, PA 19107 (215) 597-2541 FAX (215) 597-7906	G	38360 030 VADSEQ MR. LARRY MINOCK VA DEPARTMENT OF ENVIRONMENTAL QUALITY CHESAPEAKE BAY & COASTAL PROGRAMS 6TH FLOOR 629 EAST MAIN STREET RICHMOND, VA 23219	G

... STATE INTERESTS ...

15946 023 GUNS D MD36 G  
 HONORABLE RONALD A. GUNS  
 DELEGATE  
 MARYLAND GENERAL ASSEMBLY  
 80 5TH AVENUE  
 ELKTON, MD 21921  
 (410) 398-6847

15962 023 HUGHES D MD37A G  
 HONORABLE DONALD B. HUGHES  
 DELEGATE  
 MARYLAND GENERAL ASSEMBLY  
 5231 DOVE POINT LANE  
 SALISBURY, MD 21801  
 (410) 546-2400

16039 023 MCHALE D MD47 G  
 HONORABLE BRIAN K. MCHALE  
 DELEGATE  
 MARYLAND GENERAL ASSEMBLY  
 322 LOWE BUILDING  
 ANNAPOLIS, MD 21401  
 (410) 841-3319

38420 023 O'DONNELL R MD29C G  
 HONORABLE ANTHONY J. O'DONNELL  
 DELEGATE  
 MARYLAND GENERAL ASSEMBLY  
 P. O. BOX 682  
 LUSBY, MD 20657

15807 023 OWINGS D MD27B G  
 HONORABLE GEORGE W. OWINGS III  
 DELEGATE  
 MARYLAND GENERAL ASSEMBLY  
 8717 C STREET  
 CHESAPEAKE BEACH, MD 20732  
 (301) 855-4100

15957 023 SCHISLER R MD37B G  
 HONORABLE KENNETH D. SCHISLER  
 DELEGATE  
 MARYLAND GENERAL ASSEMBLY  
 315 LAUREL STREET  
 EASTON, MD 21601  
 (410) 228-0437

38411 023 WALKUP R MD36 G  
 HONORABLE MARY ROK WALKUP  
 DELEGATE  
 MARYLAND GENERAL ASSEMBLY  
 12836 STATE POND CREEK  
 WORTON, MD 21678

... FEDERAL AGENCIES ...

12244 030 CENAD-KN G  
 MR. ANDREW KNAPP  
 CHIEF, ENGINEERING DIVISION  
 USAED, NORTH ATLANTIC DIVISION  
 ATTN: CENAD-KN  
 90 CHURCH STREET  
 NEW YORK, NY 10007-2979  
 (212) 264-7138

15171 030 CENAD-PL-R G  
 MR. MARSHALL G. NELSON  
 USAED, NORTH ATLANTIC DIVISION  
 ATTN: CENAD-PL-R, CHIEF  
 90 CHURCH STREET  
 NEW YORK, NY 10007-2979  
 (212) 264-7814 FAX (212) 264-7392

13259 030 CENAD-PP G  
 MR. EDWARD A. COHN  
 DIRECTOR  
 DIRECTORATE OF PROGRAMS MANAGEMENT  
 USAED, NORTH ATLANTIC DIVISION  
 90 CHURCH STREET  
 NEW YORK, NY 10007-2979  
 (212) 264-7103 FAX (212) 264-7392

38365 030 CENAP G  
 LTC ROBERT P. MAGNIFICO  
 US ARMY ENGINEER DISTRICT, PHILADELPHIA  
 WAMAMAKER BUILDING  
 100 PENN SQUARE EAST  
 PHILADELPHIA, PA 19107-3390  
 (215) 656-6502

15119 030 CENAP-PL G  
 MR. ROBERT CALLEGARI  
 USAED, PHILADELPHIA ATTN: CENAP-PL  
 U.S. CUSTOM HOUSE  
 WAMAMAKER BUILDING  
 100 PENN SQUARE EAST  
 PHILADELPHIA, PA 19107-3390  
 (215) 656-6540 FAX (215) 656-6828

38378 030 DEFISHERY G  
 DR. THOMAS B. HOFF  
 MID-ATLANTIC FISHERY MANAGEMENT COUNCIL  
 ROOM 2115  
 FEDERAL BUILDING  
 DOVER, DE 19901

38358 030 US DANRCS G  
 MR. JIM HANNAMALD  
 USDA NATURAL RESOURCES CONSERVATION SVC  
 CHESAPEAKE BAY PROGRAM OFFICE  
 410 SEVERN AVENUE  
 SUITE 109  
 ANNAPOLIS, MD 21403

7510 030 USDCNMFS G  
 MR. ALLEN PETERSON  
 REGIONAL DIRECTOR  
 NATIONAL MARINE FISHERIES SERVICE  
 ONE BLACKBURN DRIVE  
 GLOUCESTER, MA 01930  
 (508) 281-9250

6312 030 USDCNMFS G  
 MR. TIMOTHY GOODGER  
 ASSISTANT COORDINATOR  
 NATIONAL MARINE FISHERIES SERVICE  
 HABITAT AND PROTECTED RESOURCES  
 OXFORD, MD 21654-0279  
 (410) 226-5771 FAX (301) 226-5417

... FEDERAL AGENCIES ...

38364 030 VAMRC G  
 MR. TONY WATKINSON  
 VA MARINE RESOURCES COMMISSION  
 HABITAT MANAGEMENT DIVISION  
 2600 WASHINGTON AVENUE  
 NEWPORT NEWS, VA 23607

... STATE AGENCIES ...

15362 040 MD G  
 MR. THOMAS BURKE  
 CHESAPEAKE BAY COMMUNICATIONS  
 COORDINATING OFFICE  
 STATE HOUSE  
 ANNAPOLIS, MD 21401  
 (410) 974-5300

5969 040 MD G  
 MR. ROLAND E. ENGLISH III  
 DIRECTOR  
 COMPREHENSIVE STATE PLANNING  
 OFFICE OF PLANNING  
 301 W. PRESTON STREET  
 BALTIMORE, MD 21201-2365  
 (410) 225-4562 FAX (301) 225-4480

16083 040 MD G  
 DR. GERARD H. SCHLIMM  
 CHAIRPERSON  
 HART-MILLER ADVISORY BOARD  
 LATROBE HALL, ROOM 108  
 THE JOHNS HOPKINS UNIVERSITY  
 BALTIMORE, MD 21218  
 (410) 338-7828

15299 040 MDDE G  
 HONORABLE DAVID A.C. CARROLL  
 SECRETARY  
 MARYLAND DEPARTMENT OF THE ENVIRONMENT  
 2500 BROENING HIGHWAY  
 BALTIMORE, MD 21224  
 (410) 631-3084 FAX (301) 631-3936

15324 040 MDDE G  
 MR. MICHAEL HAIRE  
 DIRECTOR  
 CHESAPEAKE BAY AND WATERSHED  
 MANAGEMENT ADMINISTRATION, MDDE  
 2500 BROENING HIGHWAY  
 BALTIMORE, MD 21224  
 (410) 631-3680

16074 040 MDDE G  
 MR. ROBERT MAGNIEN  
 CHIEF, CHESAPEAKE BAY PROJECTS DIVISION  
 CHESAPEAKE BAY & SPECIAL PROJECT PROGRAM  
 WATER MANAGEMENT ADMINISTRATION, MDDE  
 2500 BROENING HIGHWAY  
 BALTIMORE, MD 21224  
 (410) 631-3681

15479 040 MDDE G  
 MR. KEN PENNYL  
 CHIEF, WATER QUALITY CERTIFICATION DIV.  
 NON-POINT SOURCE PROGRAM  
 MARYLAND DEPARTMENT OF ENVIRONMENT  
 2500 BROENING HIGHWAY  
 BALTIMORE, MD 21224  
 (410) 631-3609 FAX (301) 633-4883

16073 040 MDDE G  
 MR. PAUL W. SLUNT JR.  
 CHIEF, WATERSHED NON-POINT SOURCE DIV  
 WATER QUALITY PROGRAMS  
 WATER MANAGEMENT ADMINISTRATION, MDDE  
 2500 BROENING HIGHWAY  
 BALTIMORE, MD 21224  
 (410) 631-3575

19121 040 MDDE-CBSPP G  
 MR. PETER LEGG  
 NATURAL RESOURCES PLANNER  
 MD DEPARTMENT OF THE ENVIRONMENT-CBSPP  
 2500 BROENING HIGHWAY  
 BALTIMORE, MD 21224  
 (301) 631-3696

7732 040 MDDNR G  
 HONORABLE TORREY C. BROWN  
 SECRETARY  
 MARYLAND DEPARTMENT OF NATURAL RESOURCES  
 TAMES STATE OFFICE BUILDING  
 580 TAYLOR AVENUE  
 ANNAPOLIS, MD 21401  
 (410) 974-3041

17503 040 MDDNR G  
 MR. CARLO R. BRUMORI  
 CHIEF, TECHNICAL SERVICES  
 FOREST, PARK & WILDLIFE SERVICE, MDDNR  
 TAMES STATE OFFICE BUILDING, B-2  
 580 TAYLOR AVENUE  
 ANNAPOLIS, MD 21401  
 (410) 974-3195

15347 040 MDDNR G  
 MR. THOMAS L. BURDEN  
 EXECUTIVE DIRECTOR  
 CHESAPEAKE BAY TRUST  
 60 WEST STREET, SUITE 200A  
 ANNAPOLIS, MD 21401  
 (410) 974-2941

16080 040 MDDNR G  
 MR. WILLIAM S. BURGESS  
 DIRECTOR  
 ENFORCEMENT SERVICES PROGRAM  
 WATER RESOURCES ADMINISTRATION, MDDNR  
 TAMES STATE OFFICE BUILDING  
 ANNAPOLIS, MD 21401  
 (410) 974-2721

13955 040 MDDNR G  
 MR. STEVE EARLY  
 FISHERIES DIVISION  
 TIDEWATER ADMINISTRATION, MDNR  
 TAMES STATE OFFICE BUILDING  
 580 TAYLOR AVENUE  
 ANNAPOLIS, MD 21401  
 (410) 974-2241

5833 040 MDDNR G  
 DR. MICHAEL HIRSEFIELD  
 DIRECTOR  
 CHESBAY RESEARCH & MONITORING DIVISION  
 TIDEWATER ADMINISTRATION, MDDNR  
 TAMES STATE OFFICE BLDG  
 ANNAPOLIS, MD 21401-9974  
 (410) 974-3782

\*\*\* STATE AGENCIES \*\*\*

<p>16079 040 MDDNR G                  MR. W. PETER JENSEN                  DIRECTOR                  FISHERIES DIVISION, TIDEWATER ADMINIST.                  MARYLAND DEPARTMENT OF NATURAL RESOURCES                  TAWES STATE OFFICE BUILDING                  ANNAPOLIS, MD 21401                  (410) 974-3558</p>	<p>7693 040 MDDNR G                  MR. PAUL MASSICOT                  DIRECTOR, TIDEWATER ADMINISTRATION                  MARYLAND DEPARTMENT OF NATURAL RESOURCES                  580 TAYLOR AVENUE                  TAWES STATE OFFICE BUILDING                  ANNAPOLIS, MD 21401                  (410) 974-2788</p>	<p>17542 040 MDDNR G                  MS. JANET MCKEGG                  ADMINISTRATOR                  NATURAL HERITAGE PROGRAM                  MARYLAND DEPARTMENT OF NATURAL RESOURCES                  TAWES STATE OFFICE BUILDING E-1                  ANNAPOLIS, MD 21401                  (410) 974-2870</p>
--	---	---

<p>15184 040 MDDNR G                  DR. ROBERT D. MILLER                  DIRECTOR, WATER RESOURCES ADMINISTRATION                  MARYLAND DEPARTMENT OF NATURAL RESOURCES                  580 TAYLOR AVENUE                  TAWES STATE OFFICE BUILDING                  ANNAPOLIS, MD 21401-9974                  (410) 974-3846 FAX (301) 974-2618</p>	<p>15308 040 MDDNR G                  DR. SARAH TAYLOR                  EXECUTIVE DIRECTOR                  CHESAPEAKE BAY CRITICAL AREA COMMISSION                  45 CALVERT STREET                  2ND FLOOR                  ANNAPOLIS, MD 21401                  (410) 974-2418 FAX (410) 974-5338</p>	<p>7711 040 MDDNR G                  DR. EMERY T. CLEAVES                  DIRECTOR                  MARYLAND GEOLOGICAL SURVEY                  MARYLAND DEPARTMENT OF NATURAL RESOURCES                  2300 ST. PAUL STREET, SUITE 440                  BALTIMORE, MD 21218                  (410) 554-5504 FAX (410) 554-5502</p>
---	---	--

<p>38377 040 MDDNRMGS G                  MR. JEFF HALKA                  MD DEPARTMENT OF NATURAL RESOURCES                  MARYLAND GEOLOGICAL SURVEY                  COASTAL &amp; ESTUARINE GEOLOGY                  2300 ST. PAUL STREET                  BALTIMORE, MD 21218</p>	<p>15571 040 MDDT G                  MR. O. JAMES LIGETHIZER                  SECRETARY                  MD DEPARTMENT OF TRANSPORTATION                  P. O. BOX 8755                  BWI AIRPORT, MD 21240-0755                  (410) 859-7397</p>	<p>15297 040 MDDTMPA G                  MR. MICHAEL P. ANGELOS                  EXECUTIVE DIRECTOR                  MARYLAND PORT ADMINISTRATION                  THE WORLD TRADE CENTER                  BALTIMORE, MD 21202-3041                  (410) 333-4500 FAX (301) 333-1126</p>
---	--	---

<p>17199 040 MDSEPO G                  DR. SUSAN B.M. LANGLEY                  STATE UNDERWATER ARCHAEOLOGIST                  DIVISION OF HISTORICAL &amp; CULTURAL PROGR.                  MD DEPT OF HOUSING &amp; COMMUNITY DEVELOP.                  100 COMMUNITY PLACE                  CROWNSVILLE, MD 21032-2023                  (410) 514-7661</p>	<p>15321 040 MDSEPO G                  MR. J. RODNEY LITTLE                  STATE HISTORIC PRESERVATION OFFICER                  HISTORICAL AND CULTURAL PROGRAMS                  MD DEPT OF HOUSING &amp; COMMUNITY DEVELOP.                  100 COMMUNITY PLACE, THIRD FLOOR                  CROWNSVILLE, MD 21032-2023                  (301) 514-7600 FAX (301) 974-3932</p>	<p>15458 040 VAMRC G                  MR. WILLIAM A. PRUITT                  COMMISSIONER                  MARINE RESOURCES COMMISSION                  VIRGINIA NATURAL RESOURCES                  P. O. BOX 756                  NEWPORT NEWS, VA 23607-0756                  (804) 247-2200</p>
---	--	--

\*\*\* REGIONAL AGENCIES \*\*\*

<p>7864 050 ICFRB G                  MR. HERBERT M. SACHS                  EXECUTIVE DIRECTOR                  INTERSTATE COMMISSION ON THE                  POTOMAC RIVER BASIN                  6110 EXECUTIVE BOULEVARD, SUITE 300                  ROCKVILLE, MD 20852-3903                  (301) 984-1908 FAX (301) 984-5841</p>	<p>7861 050 SRBC G                  MR. PAUL O. SWARTZ                  EXECUTIVE DIRECTOR                  SUSQUEHANNA RIVER BASIN COMMISSION                  1721 NORTH FRONT STREET                  HARRISBURG, PA 17102                  (717) 238-0422 FAX (717) 238-2436</p>
--	--

\*\*\* LOCAL AGENCIES \*\*\*

\*\*\* LOCAL AGENCIES \*\*\*

8607 061 ANNE ARUNDEL G  
 MR. JOHN GARY  
 COUNTY EXECUTIVE  
 ANNE ARUNDEL COUNTY  
 ARUNDEL CENTER  
 14 CALVERT STREET  
 ANNAPOLIS, MD 21404-1821  
 (410) 222-1821 FAX (410) 222-1155

38371 061 CECIL G  
 HONORABLE EDWIN W. COLE JR.  
 PRESIDENT  
 CECIL COUNTY COMMISSION  
 COUNTY OFFICE BUILDING  
 ROOM 101  
 ELKTON, MD 21921  
 (410) 996-5201

8687 061 DORCHESTER G  
 MS. GLENN L. BRAMBLE  
 PRESIDENT  
 DORCHESTER COUNTY COMMISSIONERS  
 501 COURT LANE, COUNTY OFFICE BUILDING  
 P.O. BOX 26  
 CAMBRIDGE, MD 21613-0414  
 (410) 228-1700 FAX (410) 228-9641

8793 061 SOMERSET G  
 HONORABLE PHILLIP L. GERALD  
 PRESIDENT  
 COMMISSIONERS FOR SOMERSET COUNTY  
 P.O. BOX 37  
 30513 PRINCE WILLIAM STREET  
 PRINCESS ANNE, MD 21853-0008  
 (410) 651-0320 FAX (410) 651-0366

8650 061 ST MARYS R G  
 MS. BARBARA R. THOMPSON  
 PRESIDENT  
 ST. MARY'S COUNTY COMMISSIONERS  
 P.O. BOX 653  
 GOVERNMENTAL CENTER, ROUTE 245  
 LEONARDTOWN, MD 20650  
 (301) 475-4461 FAX (301) 475-4489

6615 061 TALBOT G  
 MS. BLENDA W. ARMISTEAD  
 COUNTY MANAGER  
 TALBOT COUNTY COURTHOUSE  
 11 N. WASHINGTON STREET  
 EASTON, MD 21601  
 (410) 822-2807

8685 061 TALBOT R G  
 MR. CLINTON S. BRADLEY III  
 PRESIDENT  
 TALBOT COUNTY COUNCIL  
 TALBOT COUNTY COURTHOUSE  
 11 NORTH WASHINGTON STREET  
 EASTON, MD 21601  
 (410) 822-2401 FAX (410) 822-8297

38409 061 TALBOT G  
 TALBOT COUNTY CHAMBER OF COMMERCE  
 P. O. BOX 9  
 PRINCE FREDERICK, MD 20678

38369 061 TALBOT G  
 GEN ANDREW H. ANDERSON  
 TALBOT COUNTY COUNCIL  
 29995 BOLINGBROKE LANE  
 TRAPPE, MD 21673  
 (410) 822-2401

\*\*\* LOCAL AGENCIES \*\*\*

38372 062 ESSEX G  
 MR. GEORGE FRANGOS  
 ESSEX/MIDDLE RIVER CIVIC COUNCIL  
 3450 COURTHOUSE DRIVE  
 ELLICOTT CITY, MD 21043  
 (410) 313-3056 FAX (410) 313-3435

\*\*\* PUBLIC MEDIA \*\*\* = NEWSPAPERS

6995 071 ENTERPRI G  
 EDITOR  
 BALTIMORE ENTERPRISE  
 1205 SOUTH CHARLES STREET  
 BALTIMORE, MD 21230  
 (410) 752-0711

38362 071 GAZETTE G  
 MR. BILL NACHEMAN  
 GAZETTE-JOURNAL  
 P. O. BOX J, MAIN STREET  
 GLOUCESTER, VA 23061

7047 071 POST G  
 EDITOR  
 WASHINGTON POST  
 1150 15TH STREET, NW  
 WASHINGTON, DC 20071

38356 071 STAR DEMO G  
 EDITOR  
 STAR DEMOCRAT  
 P. O. BOX 600  
 EASTON, MD 21601

6999 071 SUN G  
 EDITOR  
 BALTIMORE SUN  
 501 NORTH CALVERT STREET  
 BALTIMORE, MD 21278

\*\*\* PUBLIC MEDIA \*\*\* = TELEVISION

\*\*\* PUBLIC MEDIA \*\*\*

7132 072 GABLE MS. DAIL GABLE EDITORIAL DEPARTMENT WJZ-TV, CHANNEL 13 TELEVISION HILL BALTIMORE, MD 21211	G	38357 072 MPT NEWS DIRECTOR MARYLAND PUBLIC TELEVISION 11767 OWINGS MILLS BOULEVARD OWINGS MILLS, MD 21117	G	7140 072 WBAL-TV NEWS DIRECTOR WBAL-TV, CHANNEL 11 3800 HOOPER AVENUE BALTIMORE, MD 21211	G
--	---	--	---	---	---

7137 072 WBFF-TV NEWS DIRECTOR WBFF-TV, CHANNEL 45 3500 PARKDALE AVENUE BALTIMORE, MD 21211	G	7138 072 WMAR-TV NEWS DIRECTOR WMAR-TV, CHANNEL 2 6400 YORK ROAD BALTIMORE, MD 21212	G		
---	---	--	---	--	--

\*\*\* PUBLIC MEDIA \*\*\* = RADIO

7289 073 WBJC-FM NEWS DIRECTOR WBJC-FM 2901 LIBERTY HEIGHTS AVENUE BALTIMORE, MD 21215	G	7254 073 WJHU RAD NEWS DIRECTOR WJHU RADIO 34TH & CHARLES STREETS BALTIMORE, MD 21218	G		
--	---	---	---	--	--

\*\*\* PUBLIC MEDIA \*\*\* = OTHER

7375 074 ENGINEER EDITOR BALTIMORE ENGINEER 11 WEST MOUNT VERNON PLACE BALTIMORE, MD 21201-5190	G	7379 074 MAGAZINE EDITOR MARYLAND MAGAZINE STATE OFFICE BUILDING ANNAPOLIS, MD 21401	G		
---	---	--	---	--	--

\*\*\* EDUCATIONAL INSTITUTIONS \*\*\* = LIBRARIES

19146 081 BALTO COG LIBRARIAN REGIONAL INFORMATION CENTER BALTIMORE REGIONAL COUNCIL OF GOVERNMENTS 601 N. HOWARD STREET BALTIMORE, MD 21201-4585 (301) 333-4881	G	9043 081 COLL BAL LIBRARIAN COMMUNITY COLLEGE OF BALTIMORE 2901 LIBERTY HEIGHTS AVENUE BALTIMORE, MD 21215	G	12323 081 JHU LIBRARIAN GOVERNMENT PUBLICATIONS DEPARTMENT MILTON S. EISENHOWER LIBRARY JOHNS HOPKINS UNIVERSITY BALTIMORE, MD 21218	G
---	---	--	---	---	---

9049 081 LOYOLA C LIBRARIAN LOYOLA NOTRE DAME LIBRARY 200 WINSTON STREET BALTIMORE, MD 21212	G	9060 081 MDSDLR LIBRARIAN STATE DEPARTMENT OF LEGISLATIVE REFERENCE LIBRARY 90 STATE CIRCLE ANNAPOLIS, MD 21401-1991	G	9083 081 TOWSON S DOCUMENT DEPARTMENT ALBERT S. COOK LIBRARY TOWSON STATE UNIVERSITY TOWSON, MD 21204	G
--	---	---	---	---	---

\*\*\* EDUCATIONAL INSTITUTIONS \*\*\*

<p>9062 081 UNIV BAL G LIBRARIAN LANGSDALE LIBRARY UNIVERSITY OF BALTIMORE 1420 MARYLAND AVENUE BALTIMORE, MD 21201</p>	<p>12235 081 UNIV MD G DOCUMENTS LIBRARIAN UNIVERSITY OF MARYLAND, BALTIMORE COUNTY 5401 WILKENS AVENUE CATONSVILLE, MD 21228</p>	<p>12236 081 UNIV MD G LIBRARIAN FREDERICK DOUGLAS LIBRARY UNIVERSITY OF MARYLAND, EASTERN SHORE PRINCESS ANNE, MD 21853-1299</p>
<p>9066 081 USDCMMPB G LIBRARIAN NATIONAL MARINE FISHERIES SERVICE BIOLOGY LABORATORY OXFORD, MD 21654</p>	<p>9098 081 USFMC G LIBRARY FEDERAL MARITIME COMMISSION 1100 L STREET, NW WASHINGTON, DC 20573</p>	<p>9085 081 WORCESTER G LIBRARIAN WORCESTER COUNTY LIBRARY, SNOW HILL BRANCH 307 WORTH WASHINGTON STREET SNOW HILL, MD 21863</p>
<p>19129 081 WORCESTER G MS. LOUISE ASH COORDINATOR OF COMMUNITY SERVICES WORCESTER COUNTY LIBRARY 307 N. WASHINGTON STREET SNOW HILL, MD 21863 (301) 632-2600</p>		

\*\*\* EDUCATIONAL INSTITUTIONS \*\*\* = UNIVERSITIES

<p>9258 082 COLL BAL G DIRECTOR DEPT OF TECHNICAL STUDIES COMMUNITY COLLEGE OF BALTIMORE 2901 LIBERTY HEIGHTS AVENUE BALTIMORE, MD 21215</p>	<p>9309 082 ERICKSON G DR. HOWARD R. ERICKSON VICE CHAIRMAN ZOOLOGY/ECOLOGY STATE WATER QUALITY ADVISORY COMMITTEE 1041 SOUTH CONSTITUTION ROAD FYLESVILLE, MD 21132</p>	<p>9319 082 ESSEX CO G MS. CHARLOTTE BROZOOZOWSKI CENTER FOR ENVIRONMENTAL SVCS ESSEX COMMUNITY COLLEGE ROSEDALE, MD 21237-0300</p>
<p>9338 082 GW UNIV G DR. DORN MCGRATH URBAN REGIONAL PLANNING DEPT GEORGE WASHINGTON UNIVERSITY WASHINGTON, DC 20052-0001</p>	<p>9287 082 SALISBUR G PRESIDENT SALISBURY STATE UNIVERSITY SALISBURY, MD 21801</p>	<p>9285 082 ST JOHNS G PRESIDENT ST JOHNS COLLEGE ANNAPOLIS, MD 21404</p>
<p>9290 082 TOWSON S G PRESIDENT TOWSON STATE UNIVERSITY TOWSON, MD 21204</p>	<p>9248 082 UNIV BAL G PRESIDENT UNIVERSITY OF BALTIMORE BALTIMORE, MD 21201</p>	<p>13938 082 UNIV E C G DR. GORDON WATTS TIDEWATER ATLANTIC RESEARCH 105 MEADOW DRIVE WASHINGTON, NC 27889</p>
<p>9250 082 UNIV MD G DR. GIAN GUPTA UNIVERSITY OF MARYLAND EASTERN SHORE CARVER HALL PRINCESS ANNE, MD 21853-1299</p>	<p>12361 082 UNIV MD G MR. ROBERT E. ULANOWICZ CENTER OF ENVIRON &amp; ESTUARINE STUD PO BOX 38 UNIVERSITY OF MARYLAND SOLOMONS, MD 20688-0038</p>	<p>19128 082 UNIV MD G DR. RITA R. COLWELL PRESIDENT MARYLAND BIOTECHNOLOGY INSTITUTE MICROBIOLOGY BUILDING, ROOM 1123 UNIVERSITY OF MARYLAND UNIV OF MD, MD 20742 (301) 405-5189</p>

\*\*\* EDUCATIONAL INSTITUTIONS \*\*\*

9267 082 UNIV MD	G	9375 082 VIMS	G	38361 082 VIMS	G
DIRECTOR		DR. GRANT GROSS		MR. STEVE NELSON	
WATER RESOURCES RESEARCH CENTER		CHESAPEAKE RESEARCH CONSORTIUM, INC.		CHESAPEAKE RESEARCH CONSORTIUM, INC.	
UNIVERSITY OF MARYLAND		PO BOX 1280		P. O. BOX 1280	
UNIV OF MD, MD 20742		SOLOMONS, MD 20688-1120		SOLOMONS, MD 20688	

\*\*\* EDUCATIONAL INSTITUTIONS \*\*\* = OTHER

2877 083 UNIV MD	G	9443 083 WICOMICO	G
MR. DARRYL BIRCKETT		PRINCIPAL	
PO BOX 2084		ELEMENTARY SCHOOL	
UNIVERSITY OF MD - EASTERN SHORE		POWELLVILLE, MD 21852	
PRINCESS ANNE, MD 21853			

\*\*\* SPECIAL INTEREST GROUPS \*\*\* = NATIONAL GROUPS

9564 091 AUDUBON SOC	G	9322 091 SMITHSONIAN	G	6673 091 STEVENS	G
REGIONAL VICE-PRESIDENT		DR. TUNGLIN WU		MS. CONNIE STEVENS	
NATIONAL AUDUBON SOCIETY,		CHESAPEAKE BAY CENTER		RESOURCES DEFENSE DIVISION	
MID-ATLANTIC REGIONAL OFFICE		FOR ENVIRONMENTAL STUDIES		NATIONAL WILDLIFE FEDERATION	
1104 FERNWOOD AVENUE		PO BOX 622, ROUTE 4		1412 SIXTEENTH STREET, NW	
CAMP HILL, PA 17011-6983		EDGEWATER, MD 21037		WASHINGTON, DC 20036	

\*\*\* SPECIAL INTEREST GROUPS \*\*\* = STATE GROUPS

9539 092 CHAMBER OF	G	16665 092 CHESAPEAKE	G	38375 092 MARYLAND	G
MRS. ERNIE HONIG KENT		MR. WILLIAM C. BAKER		MR. LARRY SIMMS	
MD CHAMBER OF COMMERCE		PRESIDENT		EXECUTIVE DIRECTOR	
60 WEST STREET		CHESAPEAKE BAY FOUNDATION		MARYLAND WATERMAN'S ASSOCIATION	
SUITE 405		162 PRINCE GEORGE STREET		1805-A VIRGINIA STREET	
ANNAPOLIS, MD 21401-2492		ANNAPOLIS, MD 21401		ANNAPOLIS, MD 21401	
		(410) 268-8816		(410) 268-7722	
38370 092 MARYLAND	G	38374 092 MD CHARTER	G	1784 092 MD CNSRV	G
MR. DANIEL F. BECK		MR. JOSEPH F. RUPP		MR. AJAX B. EASTMAN	
MARYLAND WATERMAN'S ASSOCIATION		MD CHARTER BOAT ASSOCIATION		MARYLAND CONSERVATION COUNCIL	
2358 SCHAFFERS ROAD		P. O. BOX 484		112 EAST LAKE AVENUE	
ESSEX, MD 21221		CHESAPEAKE BEACH, MD 20732		BALTIMORE, MD 21230	
(410) 687-8808		(410) 257-2727			
9534 092 MD CRUIS	G	9533 092 MD OUTBO	G	16789 092 MD PILOT	G
CHAIRMAN		MARYLAND OUTBOARD CRUISING CLUB		CPT MICHAEL WATSON	
MD CRUISING CLUB		224 HILLTOP ROAD		PRESIDENT	
904 STEVENSON LANE		PASADENA, MD 21122		THE ASSOCIATION OF MARYLAND PILOTS	
TOWSON, MD 21204				3720 DILLON STREET	
				BALTIMORE, MD 21224	
				(410) 276-1337 FAX (301) 276-1364	

\* \* \* SPECIAL INTEREST GROUPS \* \* \*

17289 092 MD BALTWATE G  
 DR. RICHARD NOVOTNY  
 EXECUTIVE DIRECTOR  
 MD BALTWATER SPORTFISHERMEN'S ASSOC.  
 7626 BALTIMORE & ANNAPOLIS BLVD.  
 GLEN BURNIE, MD 21061  
 (410) 768-8666 FAX (410) 768-5988

\* \* \* SPECIAL INTEREST GROUPS \* \* \* = REGIONAL GROUPS

5822 093 ALLIANCE G  
 MRS. FRANCES H. FLANIGAN  
 EXECUTIVE DIRECTOR  
 ALLIANCE FOR THE CHESAPEAKE BAY  
 6600 YORK ROAD  
 SUITE 100  
 BALTIMORE, MD 21212  
 (410) 377-6270 FAX (410) 377-7144

9578 093 CNTRL AT G  
 PRESIDENT  
 CENTRAL ATLANTIC ENVIRONMENTAL CNTR  
 PRINCE GEORGES & E STREETS  
 ANNAPOLIS, MD 21401

6047 093 E YACHT G  
 PRESIDENT  
 EASTERN YACHT CLUB  
 PO BOX 7872  
 ESSEX, MD 21221-3698

9584 093 SHELLFIS G  
 PRESIDENT  
 SHELLFISH INSTITUTE OF  
 NORTH AMERICA  
 C/O MORGAN & SONS  
 WEMMS, VA 22576

\* \* \* SPECIAL INTEREST GROUPS \* \* \* = LOCAL GROUPS

9574 094 AUDUBON SOC G  
 PRESIDENT  
 CHESAPEAKE AUDUBON SOCIETY  
 DRUID HILL PARK  
 C/O BALTIMORE ZOO  
 BALTIMORE, MD 21217

9884 094 AUDUBON SOC G  
 MR. NEAL FITZPATRICK  
 CONSERVATION DIRECTOR  
 AUDUBON NATURALIST SOCIETY  
 8940 JONES MILL ROAD  
 CHEVY CHASE, MD 20815  
 (301) 652-9188

38368 094 CHESAPEAKE G  
 MS. JANE HISHIDA  
 CHESAPEAKE BAY FOUNDATION MD OFFICE  
 164 CONDUIT STREET  
 ANNAPOLIS, MD 21401  
 (410) 268-8833 FAX (410) 280-3513

6178 094 CLEAN WT G  
 MR. JOHN KABLER  
 CLEAN WATER ACTION PROJECT  
 44 MADISON PLACE  
 ANNAPOLIS, MD 21401

17342 094 MD WETLANDS G  
 MS. VIVIAN NEWMAN  
 MARYLAND WETLANDS COMMITTEE  
 11194 DOUGLAS AVENUE  
 MARRIOTTVILLE, MD 21104  
 (410) 442-5639

6200 094 SCHAEDLICH G  
 MS. PAULA SCHAEDLICH  
 NATIONAL AQUARIUM  
 PIER 3  
 501 EAST PRATT  
 BALTIMORE, MD 21202

\* \* \* SPECIAL INTEREST GROUPS \* \* \* = COMMITTEES

9947 095 COASTAL RES G  
 REPRESENTATIVE  
 CRAC, TALBOT COUNTY  
 PO BOX 838  
 EASTON, MD 21601

12353 095 HART-MILLER G  
 MR. FREDERICK HABICHT  
 HART-MILLER ISLAND  
 CITIZENS OVERSIGHT COMMITTEE  
 2517 BARRISON POINT ROAD  
 ESSEX, MD 21221-6410  
 (410) 682-4496

38366 095 HART-MILLER G  
 MR. RANDY COGAR  
 HART-MILLER ISLAND  
 CITIZENS OVERSIGHT COMMITTEE  
 THREE RIVERTON ROAD  
 MIDDLE RIVER, MD 21220  
 (410) 391-1818

\* \* SPECIAL INTEREST GROUPS \* \* \*

'632 095 HART-MILLER G  
 J. PEARL GINTLING  
 HART-MILLER ISLAND  
 CITIZENS OVERSIGHT COMMITTEE  
 118 NORTH POINT CREEK ROAD  
 PARROWS POINT, MD 21219  
 (410) 477-2370

\* \* BUSINESSES \* \* \*

7503 100 BIGELOW G  
 R. PETER F. LARSEN  
 SENIOR SCIENTIST  
 BIGELOW LABORATORY FOR OCEAN SCIENCES  
 WEST BOOTHBAY HARBOR, ME 04575  
 (207) 633-2173

19122 100 ESSEX MARIN G  
 MR. J. DENNIS CARPER  
 ESSEX YACHT HARBOR MARINA  
 500 SANDALWOOD ROAD  
 ESSEX, MD 21221  
 (301) 687-6634

19133 100 HILLTOP MAR G  
 MR. EDWARD J. CRUZS  
 OWNER  
 HILLTOP MARINA  
 1802 HILLTOP AVENUE  
 ESSEX, MD 21221  
 (301) 687-4689

\* \* POSTMASTERS \* \* \*

1069 110 21913 G  
 POSTMASTER  
 WHEELTON, MD 21913

\* \* INDIVIDUAL INTERESTS \* \* \*

12394 120 CARL G  
 DR. ERIC R. CARL  
 1118 TRED AVON ROAD  
 ESSEX, MD 21221

6115 120 D'ANNA G  
 MR. CARMEN V. D'ANNA  
 21 HOLLY BEACH AVENUE  
 ESSEX, MD 21221

6117 120 DECKLEMA G  
 MR. JULIUS O. DECKLEMAN  
 201 OAK AVENUE  
 ESSEX, MD 21221

11628 120 GUCINSKI G  
 DR. HERMAN GUCINSKI  
 ENVIRONMENTAL CENTER  
 WYNE ARUNDEL COMMUNITY COLLEGE  
 101 COLLEGE PKWY  
 ARNOLD, MD 21012

12720 120 GUTMAN G  
 MR. JAMES E. GUTMAN  
 STATE WATER QUALITY ADVISORY COMMITTEE  
 233 WILTSHIRE LANE  
 SEVERNA PARK, MD 21146-4038  
 (410) 647-8965

12391 120 LEMANN G  
 MS. MARGARET Z. LEMANN  
 2618 HOLLY BEACH ROAD  
 ESSEX, MD 21221

11797 120 LEWIS G  
 MRS. HAROLD G. LEWIS  
 196 QUEEN ANNE CLUB DRIVE  
 STEVENSVILLE, MD 21666

11867 120 MC KWEN G  
 MR. KENT H. MCEWEN  
 429 NORTH MARYLN AVENUE  
 ESSEX, MD 21221

6131 120 MESSICK G  
 MR. WILLIAM J. MESSICK  
 2274 MONOCACY ROAD  
 ESSEX, MD 21221-1530

6134 120 MOHR G  
 DR. EDWARD C. MOHR  
 1702 OAKFIELD AVENUE  
 ESSEX, MD 21221

6135 120 MOKEN G  
 MR. ANTHONY J. MOKEN  
 2400 BAVERNSCHNIOT DRIVE  
 ROUTE 1  
 ESSEX, MD 21221

6138 120 NELSON G  
 MR. ARTHUR A. NELSON  
 670 GREYHOUND ROAD  
 ESSEX, MD 21221-1803

• • INDIVIDUAL INTERESTS • • •

1373 120 NUNAM G  
HONORABLE MICHAEL W. NUNAM  
LEGATE  
17 BIRCH RUN ROAD  
HESTERTOWN, MD 21620  
(410) 758-3027

6147 120 FUNTE  
MR. JOSEPH H. FUNTE  
101 FUNTE LANE  
ESSEX, MD 21221

G 11956 120 RAUSCHER G  
MR. JOHN C. RAUSCHER  
2511 HARRISON POINT ROAD  
ESSEX, MD 21221-6410  
(410) 686-6017

5150 120 RIGGINS G  
S. VIRGINIA E. RIGGINS  
BRANCH STREET  
ESSEX, MD 21221

6155 120 SCHREIBER G  
MR. ROBERT EL. SCHREIBER  
2205 MIDDLEBOROUGH ROAD  
ESSEX, MD 21221

G 6157 120 SELIG G  
MR. WILLIAM A. SELIG SR.  
358 MILES ROAD  
ESSEX, MD 21221

8376 120 SISOLAK G  
R. JOSEPH SISOLAK  
907 CHESAPEAKE AVENUE  
PARRONS POINT, MD 21219-1627  
(410) 477-9295

fixed overhead costs already reflected inflation. We have, therefore, amended our calculation of fixed overhead by applying a factor to fixed overhead to account only for the effects of inflation on depreciation expense.

#### Final Results of Review

Upon review of comments submitted, the Department has determined the margin for CNSA to be 13.35 percent for the period December 1, 1990 through November 30, 1991. The Customs Service shall assess antidumping duties on all appropriate entries.

Furthermore, the following deposit requirements will be effective for all shipments of the subject merchandise, entered, or withdrawn from warehouse, for consumption on or after the publication date of these amended final results of review, as provided for by section 751(a)(1) Tariff Act of 1930, as amended (the Act): (1) the cash deposit rate for CNSA will be 13.35 percent as outlined above; (2) the cash deposit rate for APSA will continue to be 4.66 percent, the company-specific rate published for the most recent period; (3) if the exporter is not a firm covered in this review, a prior review, or the original less-than-fair-value (LTFV), but the manufacturer is, the cash deposit rate will be the rate established for the most recent period for the manufacturer of the merchandise; and (4) the cash deposit rate for all other exporters will be 20.52 percent, the "all others" rate established in the LTFV investigation. See, *Floral Trade Council v. United States*, Slip Op. 93-79, and *Federal Mogul Corp. v. United States*, Slip Op. 93-83.

These deposit requirements, when imposed, shall remain in effect until publication of the final results of the next administrative review.

This notice also serves as a final reminder to importers of their responsibility under 19 CFR 353.26 to file a certificate regarding the reimbursement of antidumping duties prior to liquidation of the relevant entries during the review period. Failure to comply with this requirement could result in the Secretary's presumption that reimbursement of antidumping duties occurred and the subsequent assessment of double antidumping duties.

In addition, this notice serves as a reminder to parties subject to administrative protective order (APO) of their responsibility concerning the disposition of proprietary information disclosed under APO in accordance with 19 CFR 353.34(d). Timely written notification or conversion to judicial protective order is hereby requested.

Failure to comply with the regulations and terms of the APO is a sanctionable violation.

This notice is in accordance with sections 751(f) of the Act (19 U.S.C. 1675(f)) and 19 CFR 353.28(c).

Dated: February 2, 1995.

Susan G. Eserman,

Assistant Secretary, for Import Administration.

[FR Doc. 95-3134 Filed 2-7-95; 8:45 am]

BILLING CODE 3010-05-0

## DEPARTMENT OF DEFENSE

### Office of the Secretary

#### Meeting of the Commission on Roles and Missions of the Armed Forces

AGENCY: Department of Defense, Commission on Roles and Missions of the Armed Forces.

ACTION: Notice.

**SUMMARY:** On January 25, 1995, 60 FR 4892, the Department of Defense published a notice concerning a meeting of the Commission on Roles and Missions of the Armed Forces. The open portion of this meeting, from 12:45 p.m. until 2:15 p.m., was cancelled. All other information remains unchanged.

Extraordinary circumstances compel this amendment to be posted in less than the 15-day requirement.

Dated: February 3, 1995

Patricia L. Toppings,

Alternate OSD Federal Register Liaison Officer, Department of Defense

[FR Doc. 94-3163 Filed 2-7-95; 8:45 am]

BILLING CODE 5000-4-0

#### Strategic Environmental Research and Development Program, Scientific Advisory Board

ACTION: Notice

In accordance with Section 10(a)(2) of the Federal Advisory Committee Act (P.L. 92-463), announcement is made of the following Committee meeting:

**Date of Meeting:** March 7-9, 1995 from 08:30 to approximately 16:30.

**Place:** U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS.

**Matters to be Considered:** Research and Development proposals and continuing projects requesting Strategic Environmental Research and Development Program funds in excess of \$1M will be reviewed.

This meeting is open to the public. Any interested person may attend, appear before, or file statements with the Scientific Advisory Board at the time and in the manner permitted by the Board.

For Further Information Contact: Ms. Amy Levine, 801 North Street, Suite 303, Arlington, VA, 22203, (703) 696-2124.

Dated: February 2, 1995.

L.M. Bynum,

Alternate OSD Federal Register Liaison Officer, Department of Defense

[FR Doc. 95-3027 Filed 2-7-95; 8:45 am]

BILLING CODE 5000-04-0

## Department of the Army

### Intent To Prepare a Draft Environmental Impact Statement (DEIS) for the Proposed Section 204 Habitat Restoration Project at Poplar Island in Talbot County, MD

AGENCY: U.S. Army Corps of Engineers, DoD.

ACTION: Notice of Intent.

**SUMMARY:** The Baltimore District U.S. Army Corps of Engineers is investigating the use of dredged material to restore Poplar Island to its approximate size in 1857, thereby adding approximately 1,000 acres of wildlife habitat in the Upper Chesapeake Bay. The project would use approximately 10 to 40 million cubic yards of clean material, dredged primarily from the southern approach channels to Baltimore Harbor. The amount of material placed at the site would depend on the final design, including the island size and shape, and the relative proportions of upland and wetland habitat constructed on the island. Dredged material would be placed behind dikes at the site, then shaped and planted to create both intertidal wetland and upland wildlife habitat. The feasibility study is being conducted under the authority of Section 204 of the Water Resources Development Act of 1992. The potential non-Federal sponsor for the project is the Maryland Port Administration (MPA), a part of the Maryland Department of Transportation.

**FOR FURTHER INFORMATION CONTACT:** Questions about the proposed action and DEIS can be addressed to Ms. Stacey Brown, Project Manager, Baltimore District, U.S. Army Corps of Engineers, ATTN: CENAB-PI-PC, P.O. Box 1715, Baltimore, Maryland 21203-1715, telephone (410) 962-3639.

#### SUPPLEMENTARY INFORMATION:

1. The project will be constructed under Section 204 of the Water Resources Development Act of 1992, which allows Federal funding for the protection, restoration, and creation of aquatic and ecologically related

habitats, including wetlands, in connection with dredging for construction, operation, or maintenance of an authorized Federal navigation project.

2. Poplar Island is located on the Eastern Shore of the upper Chesapeake Bay, about one mile northwest of Tilghman Island, in Talbot County, Maryland. The present complex consists of four small remnant islands with a combined area of approximately 5 acres. The island has steadily eroded over time; in 1857 the island covered an area of approximately 1,000 acres; the remaining small islands are in danger of completely eroding within the next few years.

3. The project would restore Poplar Island to the approximate size and footprint of the island in 1857. The proposed project actions include the placement of approximately 10 to 40 million cubic yards of clean dredged material behind dikes at the site. The amount of material to be placed would depend partly on the relative proportions of upland and wetland habitat created. The material would be primarily dredged during maintenance of the southern approach channels to Baltimore Harbor. After placement, the material would be shaped and planted to create both intertidal wetland and upland wildlife habitat. Poplar Island has been identified by the U.S. Fish and Wildlife Service, the Maryland Department of Natural Resources, and other natural Resources management agencies as a valuable nesting and nursery area for many species of wildlife, including bald eagles, osprey, heron, and egret.

4. Expected project benefits include the creation of wetland and upland wildlife habitat, stabilization of the rapidly eroding island remnants, and beneficial use of dredged material from Federal navigation channel maintenance activities. A project pre-feasibility report (similar to a Corps of Engineers Reconnaissance report) was completed by the Maryland Port Administration (MPA) in 1993.

5. Various alternative designs and projects size will be considered including the "no action" alternative. Alternatives to be considered will include variations such as the size and location of the placement area; dike configuration and construction materials; site capacity; and the relative proportions and locations on the island of wetland and upland habitat.

6. The Baltimore District is preparing a DEIS which will describe the impacts of the proposed projects on environmental and cultural resources in the study area and the overall public

interest. The DEIS will also apply guidances issued by the Environmental Protection Agency, under authority of Section 404 of the Clean Water Act of 1977 (Pub. L. 95-217). Potential effects of the project on water quality, fish and wildlife resources, recreation, aesthetics, cultural, and other resources will be investigated.

7. The public involvement program will include meetings and coordination with interested private individuals and organizations, as well as concerned Federal, state, and local agencies. A public notice requesting comments on the proposed project and a coordination letter have been sent to appropriate agencies, organizations, and individuals. Additional public information will be provided through printed media, mailings, and radio or television announcements. Two scoping meetings, identical in format, will be held at 7:00 p.m. on 21 February 1995 at Tilghman Elementary School, Tilghman, Maryland, and on 23 February 1995, at Beach Elementary School, in Chesapeake Beach, Maryland. Two meetings will be held to provide equal opportunities for residents on both the Eastern Shore and the west side of the Chesapeake Bay to take part in the public involvement program.

8. In addition to the Corps and the Maryland Port Administration, current participant's in the DEIS process include, but are not limited to, the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Maryland Department of Natural Resources, Maryland Department of the Environment and the Maryland Port Administration. The Baltimore District invites potentially affected Federal, state and local agencies, and other interested organizations and parties to participate in this study.

**AVAILABILITY:** The DEIS is tentatively scheduled to be available for public review in September of 1995.

**Kenneth L. Denton,**

*Army Federal Register Liaison Officer*  
IFR Doc. 95-1082 Filed 2-7-95; 8:45 am  
BILLING CODE 3719-01-01

#### U.S. Marine Corps

#### Privacy Act of 1974; Amend Record Systems

**AGENCY:** Marine Corps, Department of the Navy.

**ACTION:** Amend record system.

**SUMMARY:** The U.S. Marine Corps proposes to amend a system of records in its inventory of record systems

subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended. During a recent review, the notice for MJA00009, entitled Marine Corps Command Legal Files, was found to be incorrectly republished in the Federal Register on February 22, 1993, at 58 FR 10658. This amendment will correct the notice.

**DATES:** The amendment will be effective on February 8, 1995.

**ADDRESSES:** Send comments to the Head, FOIA and Privacy Act Section, Headquarters, U.S. Marine Corps, 2 Navy Annex, Washington, DC 20380-1775.

**FOR FURTHER INFORMATION CONTACT:** Ms. B. L. Thompson at (703) 614-4008 or DSN 224-4008.

**SUPPLEMENTARY INFORMATION:** The U.S. Marine Corps record system notices for records systems subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended, have been published in the Federal Register and are available from the address above.

The specific changes to the system of records are set forth below followed by the system of records notice published in its entirety, as amended. The amendment is not within the purview of subsection (r) of the Privacy Act of 1974 (5 U.S.C. 552a), as amended, which requires the submission of new or altered systems reports.

Dated February 1, 1995.

**Patricia L. Toppings,**

*Alternate OSD Federal Register Liaison Officer, Department of Defense.*

MJA00009

#### SYSTEM NAME:

Marine Corps Command Legal Files  
(February 22, 1993, 58 FR 10658)

#### CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

Delete the last paragraph.

#### CATEGORIES OF RECORDS IN THE SYSTEM:

Delete entry and replace with: Records of disciplinary proceedings, including courts-martial records and records of nonjudicial punishments with supporting documents, military justice management information pre-post trial (e.g., courts-martial docketing logs, reports of cases tried, etc.), pre-disciplinary inquiries and investigations and documentation pertaining to post-hearing/trial review, clemency action, appellate leave or other personnel action related to or resulting from courts-martial, JAG Manual investigations pertaining to claims, line of duty misconduct determinations, command irregularities, and unusual

DEPARTMENT OF DEFENSE

Billing Code: 3719-41

**CORPS OF ENGINEERS, DEPARTMENT OF ARMY**

Intent to Prepare a Draft Environmental Impact Statement (DEIS) for the proposed Section 204 Habitat Restoration Project at Poplar Island in Talbot County, Maryland.

**AGENCY:** U.S. Army Corps of Engineers, DOD

**ACTION:** Notice of Intent

**SUMMARY:** The Baltimore District U.S. Army Corps of Engineers is investigating the use of dredged material to restore Poplar Island. The project would restore Poplar Island to its approximate size in 1847, thereby adding approximately 1,000 acres of wildlife habitat in the Upper Chesapeake Bay. The project would use approximately 10 to 40 million cubic yards of clean material, dredged primarily from the southern approach channels to Baltimore Harbor. The amount of material placed at the site would depend on the final design, including the island size and shape, and the relative proportions of upland and wetland habitat constructed on the island. Dredged material would be placed behind dikes at the site, then shaped and planted to create both intertidal wetland and upland wildlife habitat. The feasibility study is being conducted under the authority of Section 204 of the Water Resources Development Act of 1992. The potential non-Federal sponsor for the project is the Maryland Port Administration (MPA), a part of the Maryland Department of Transportation.

**FOR FURTHER INFORMATION CONTACT:** Questions about the proposed action and DEIS can be addressed to Ms. Stacey Brown, Project Manager, Baltimore District, U.S. Army Corps of Engineers, ATTN: CENAB-PL-PC, P.O. Box 1715, Baltimore, Maryland 21203-1715, telephone (410) 962-3639.

**SUPPLEMENTARY INFORMATION:**

1. The project will be constructed under Section 204 of the Water Resources Development Act of 1992, which allows Federal funding for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with dredging for construction, operation, or maintenance of an authorized Federal navigation project.
2. Poplar Island is located on the Eastern Shore of the upper Chesapeake Bay, about one mile northwest of Tilghman Island, in Talbot County, Maryland. The present complex consists of four small remnant islands with a combined area of approximately 5 acres. The island has steadily eroded over time; in 1857 the island covered an area of approximately 1,000 acres; the remaining small islands are in danger of completely eroding within the next few years.
3. The project would restore Poplar Island to the approximate size and footprint of the island in 1847. The proposed project actions include the placement of approximately 10 to 40 million cubic yards of clean dredged material behind dikes at the site. The amount of material to be placed would depend partly on the relative proportions of upland and wetland habitat created. The material would be primarily dredged during maintenance of the southern approach channels to Baltimore Harbor. After placement, the material would be shaped and planted to create both intertidal wetland and upland wildlife habitat. Poplar Island has been identified by the U. S. Fish

and Wildlife Service, the Maryland Department of Natural Resources, and other natural resource management agencies as a valuable nesting and nursery area for many species of wildlife, including bald eagles, osprey, heron, and egret.

4. Expected project benefits include the creation of wetland and upland wildlife habitat, stabilization of the rapidly eroding island remnants, and beneficial use of dredged material from Federal navigation channel maintenance activities. A project pre-feasibility report (similar to a Corps of Engineers Reconnaissance report) was completed by the Maryland Port Administration (MPA) in 1993.

5. Various alternative designs and project size will be considered including the "no action" alternative. Alternatives to be considered will include variations such as the size and location of the placement area; dike configuration and construction materials; site capacity; and the relative proportions and locations on the island of wetland and upland habitat.

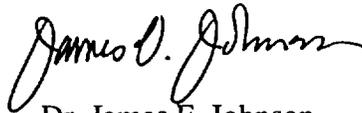
6. The Baltimore District is preparing a DEIS which will describe the impacts of the proposed projects on environmental and cultural resources in the study area and the overall public interest. The DEIS will also apply guidelines issued by the Environmental Protection Agency, under authority of Section 404 of the Clean Water Act of 1977 (P.L. 95-217). Potential effects of the project on water quality, fish and wildlife resources, recreation, aesthetics, cultural, and other resources will be investigated.

7. The public involvement program will include meetings and coordination with interested private individuals and organizations, as well as concerned Federal, state, and local agencies. A public notice requesting comments on the proposed project and a coordination letter have been sent to appropriate agencies, organizations, and individuals. Additional public information will

be provided through printed media, mailings, and radio or television announcements. Two scoping meetings, identical in format, will be held at 7:00 PM on 21 February 1995 at Tilghman Elementary School in Tilghman, Maryland, and on 23 February 1995, at Beach Elementary School, in Chesapeake Beach, Maryland. Two meetings will be held in order to provide equal opportunities for residents on both the Eastern Shore and the west side of the Chesapeake Bay to take part in the public involvement program.

8. In addition to the Corps and the Maryland Port Administration, current participants in the DEIS process include, but are not limited to, the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Maryland Department of Natural Resources, Maryland Department of the Environment, and the Maryland Port Administration. The Baltimore District invites potentially affected Federal, state and local agencies, and other interested organizations and parties to participate in this study.

9. The DEIS is tentatively scheduled to be available for public review in September of 1995.



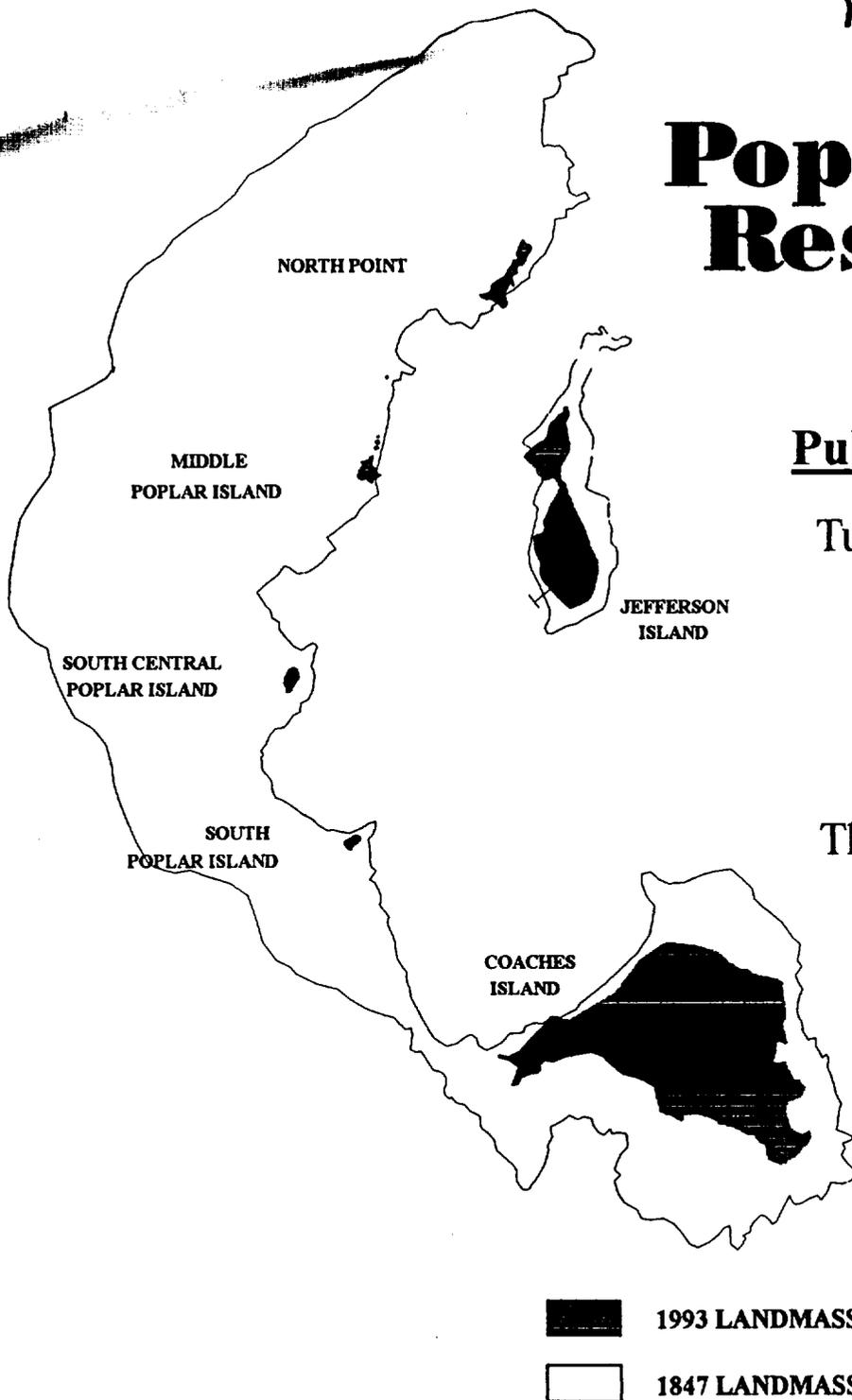
Dr. James F. Johnson  
Chief, Planning Division

**Attachment C**

**Public Meetings - Agendas, Attendance Lists, Handouts  
Scoping Meetings, 21 and 23 February 1995  
Public Information Meeting #2, 12 April 1995  
Public Information Meeting #3, 23 August 1995  
Public Meeting #4, 28 November 1995**

*You are invited...*

# Poplar Island Restoration



## Public Scoping Meetings

Tuesday, February 21, 1995

7:00 P.M.

Tilghman

Elementary School

Thursday, February 23, 1995

7:00 P.M.

Chesapeake Beach

Elementary School

All interested parties are invited to attend a public scoping meeting on the proposed restoration of Poplar Island to its approximate size in 1847.

## WHAT IS A SCOPING MEETING?

A Scoping Meeting is a key step in the public process of writing an environmental statement for an action that is being proposed by the Federal Government. Environmental impacts include any impacts to the general health and welfare of the public. In this case, the proposed Federal action is to use clean, dredged material from the southern approach channels to the Port of Baltimore to restore Poplar Island to its approximate size in 1847.

The principal goal of a Scoping Meeting is to obtain public input into the document, called an "Environmental Impact Statement" (EIS), that the Government will prepare.

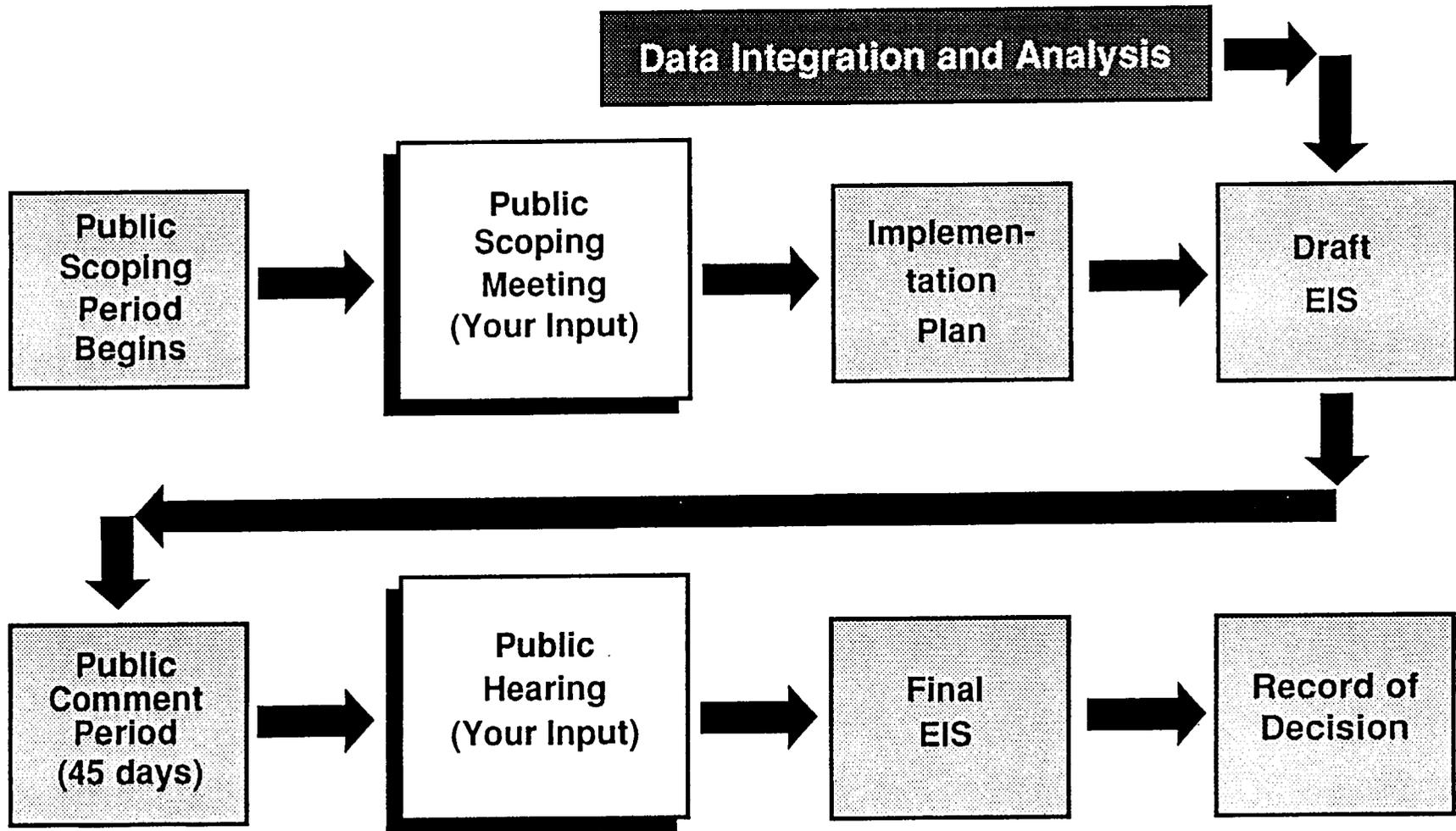
The Scoping Meeting is the first opportunity to make sure that all of the environmental impacts that reasonably may be associated with the proposed action, and all reasonable alternatives to the proposed action, including the environmental impacts that would be associated with those alternatives, are made known to the best of our ability. The time for discussing the actual environmental impacts and alternatives themselves will come when the draft EIS is available for public review and a Public Hearing, similar to today's Scoping Meeting, is called to obtain your reaction to the contents of the draft EIS.

We seek your participation and input at this Scoping Meeting so that we will be better able to identify the environmental aspects of the proposed Poplar Island Restoration Project and the reasonable alternatives to the Project, including the "no action" alternative. It is important to make your views known now, during the Scoping Meeting and throughout the study process. Comments may be made in writing at any time before the comment period closes on November 20, 1995. Your comments will help ensure that the Corps of Engineers (COE) fully addresses all of the appropriate environmental issues and concerns.

What does the Government do with the final EIS? The National Environmental Policy Act (NEPA), the President's Council on Environmental Quality's regulations for implementing NEPA, and the COE's own NEPA regulations, require the COE to use the information provided in the EIS when it decides the outcome of the proposed project. The COE's rules state that, during the decisionmaking process, the COE shall consider the relevant NEPA documents, public and agency comments (if any) on those documents, and COE responses to those comments. This is done as part of the COE's consideration of the proposal, including the alternatives analyzed in the EIS, before rendering a decision on the proposal.

Finally, when the COE issues its "Record of Decision" (ROD) for the proposed action, the COE will include the relevant NEPA documents, public and agency comments (if any) on those documents, and the COE's responses to those comments as part of the ROD.

# Environmental Impact Statement (EIS) Process





US Army Corps  
of Engineers  
Baltimore District

# Public Notice

## POPLAR ISLAND RESTORATION PROJECT

TO ALL INTERESTED PARTIES:

The Baltimore District, U. S. Army Corps of Engineers, proposes to restore approximately 1,000 acres of wildlife habitat using dredged material at Poplar Island in Talbot County, Maryland, in the upper Chesapeake Bay (Enclosure 1). Approximately 10 to 40 million cubic yards of material, primarily dredged during maintenance of the southern approach channels to Baltimore Harbor, would be placed behind dikes at the site. After placement, the material would be shaped and planted to create both intertidal wetland and upland wildlife habitat. Poplar Island has been identified by the U. S. Fish and Wildlife Service, the Maryland Department of Natural Resources, and other natural resource management agencies as a valuable nesting and nursery area for many species of wildlife, including bald eagles, osprey, heron, and egret. The project would restore Poplar Island to the approximate size and footprint of the island in 1857. Currently, the name Poplar Island refers to a group of four small remnant islands located adjacent to Jefferson Island and Coaches Island, approximately one mile northwest of Tilghman Island, on the Bay's Eastern Shore.

The project will be constructed under Section 204 of the Water Resources Development Act of 1992, which allows Federal funding for beneficial use of dredged material projects. Expected project benefits include the creation of wetland and upland wildlife habitat, stabilization of the rapidly eroding island remnants, and beneficial use of dredged material from Federal navigation channel maintenance activities. A project pre-feasibility report (similar to a Corps Reconnaissance report) was completed by the Maryland Port Administration (MPA) in 1993.

In compliance with the National Environmental Policy Act (NEPA), the Baltimore District will prepare an Environmental Impact Statement (EIS) for the project, which will include descriptions of the existing site conditions, design alternatives, project impacts, public involvement, and the recommended plan. A comprehensive public involvement program is being developed to coordinate with interest groups, the general public, and other Federal, State, and local agencies. Current project participants include the MPA and both Federal and State natural resource management agencies.

As part of the public involvement process, the Baltimore District is conducting a scoping process to identify issues and areas of concern. Any person who has an interest in the project or who may be adversely affected by the proposed project may make comments or suggestions or request a public hearing. Comments and requests should be submitted within 30 days of the date of this notice to the District Engineer, ATTN: CENAB-PL-EC, U.S. Army Corps of Engineers, Baltimore District, P.O. Box 1715, Baltimore, Maryland 21203-1715.

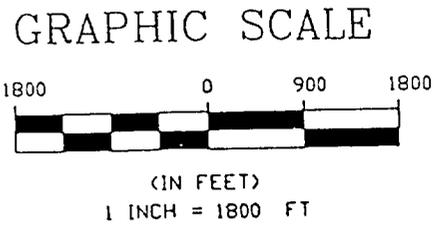
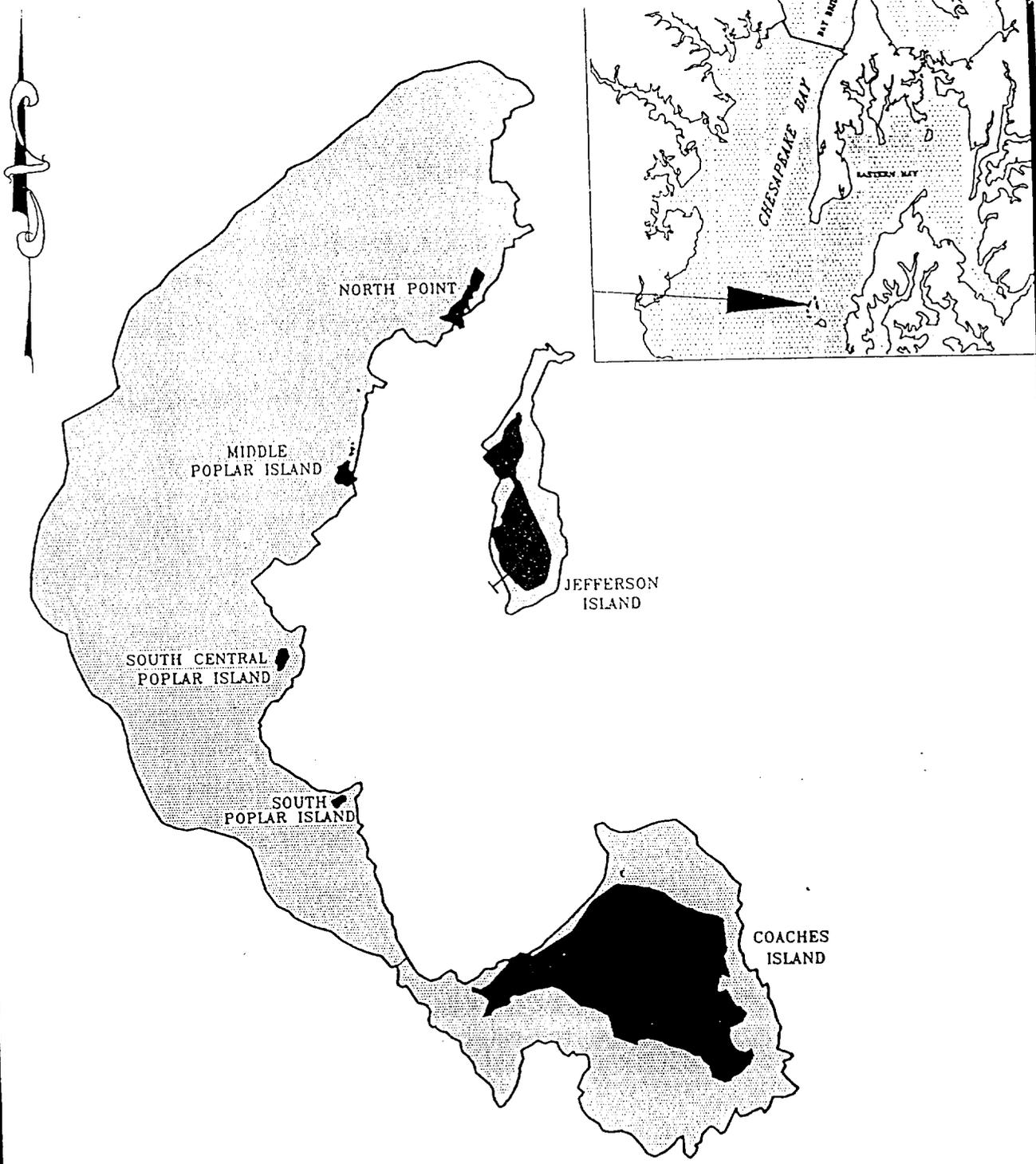
This Public Notice is being sent to organizations and individuals on the enclosed list (Enclosure 2). Please bring this notice to the attention of any other organizations or individuals with an interest in this matter.

FOR THE COMMANDER:

  
DR. JAMES F. JOHNSON  
Chief, Planning Division

DATE: JAN 19 1995

Enclosures



1993 LANDMASS  
 1847 LANDMASS

ENCLOSURE 1.

POPLAR ISLAND  
ISLAND COMPARISON 1847-1993

---

## **EIS Schedule for Proposed Poplar Island Restoration Project (Tentative)**

---

Notice of Intent (NOI) (Public Comment Period Begins)	February 8, 1995
Public Scoping Meetings	February 21, 1995 February 23, 1995
Second Public Workshop (Discuss Status, alternatives, impacts)	March 30, 1995
Third Public Workshop (Evaluate and rank detailed plans)	May 17, 1995
Draft Environmental Impact Statement	September, 1995
Public Hearing	September, 1995
Final EIS	December, 1995
Record of Decision	December, 1995

---



US Army Corps  
of Engineers  
Baltimore District



US Army Corps  
of Engineers  
Baltimore District

2

## Poplar Island Feasibility Study



US Army Corps  
of Engineers  
Baltimore District

### Handout Package

3

- Public notice
- Copies of slides
- Comment card -  
Used to compile mailing list for this study  
Receive future announcements, newsletters,  
notices  
Information is kept confidential  
Turn in the comment card at end of meeting or  
mail it to us

3



US Army Corps  
of Engineers  
Baltimore District

### Poplar Island Feasibility Study

4

- Study requested by the Maryland Port Administration
- Purpose of study is to determine the feasibility of restoring upland and wetland habitat at Poplar Island with material dredged from the approach channels to the Port of Baltimore
- Study initiated September 1994
- Study is a joint effort of the Baltimore District and the Maryland Port Administration
- Maryland Port Administration has contracted with an architect-engineering firm to design the restoration project.

5



US Army Corps  
of Engineers  
Baltimore District

### Section 204, 1992 Water Resources Development Act

5

**"(a) IN GENERAL.** - The Secretary is authorized to carry out projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with dredging for construction, operation, or maintenance by the Secretary of an authorized navigation project."

1



US Army Corps  
of Engineers  
Baltimore District

### Section 204 Cost Sharing

6

- If a project is authorized for Poplar Island, the Federal government would pay for 75 percent of the construction cost of the facility. Non-Federal interests (State of Maryland) would pay the remaining 25 percent, including all lands, easements, rights-of-way, and necessary relocations.
- Non-Federal interests would pay 100 percent of the operation, maintenance, and rehabilitation costs of the project.

2



US Army Corps  
of Engineers  
Baltimore District

## Purpose of Tonight's Meeting

7

- Tell you about the proposed project
- To gather information relevant to the study
- To allow you to express your views on what should be investigated during the study
- To explain the study process and schedule
- Part of the scoping process for an environmental impact statement (EIS)

5



US Army Corps  
of Engineers  
Baltimore District

## Cooperating Agencies

8

- Corps of Engineers
- Maryland Port Administration
- Maryland Environmental Service
- US Fish and Wildlife Service
- Other Federal, State and local agencies

5



US Army Corps  
of Engineers  
Baltimore District

## Tonight's Agenda

11

- Opening remarks
- Project background - Maryland Port Administration
- Project Overview - Maryland Environmental Service
- Explanation of breakout groups
- Break into small groups
- Discussion of small group results

6



US Army Corps  
of Engineers  
Baltimore District

## Project Need

12

- Port Of Baltimore needs dredged material placement areas.
- In the past 100 years, 10,000 acres of island habitat have been lost in the Bay.
- Size of Poplar Island has decreased from 115 acres in 1952 to less than 5 acres in 1993.

3



US Army Corps  
of Engineers  
Baltimore District

## Study Schedule

13

- Study initiated, September 1994
- ➔ Scoping meetings, February 1995
- ➔ Alternatives workshop, March 1995
- ➔ Evaluation workshop, May 1995
- Draft report and environmental impact statement, September 1995
- ➔ Public hearing, September 1995
- Final report December 1995
- Authorization by Secretary of the Army
- Initiate construction June 1996

9



US Army Corps  
of Engineers  
Baltimore District

## Public Involvement Program

14

- Informal meetings with special interest groups
  - Eastern Shore Waterman's Association
  - Eastern Shore Legislators
  - Talbot County Council
  - Maryland Charterboat Captains
  - Others as requested
- Newsletters
- Workshops like tonight
- Formal public hearing at end of study

9



US Army Corps  
of Engineers  
Baltimore District

## Project Need

15

- **Frank Hamons**  
Manager of Harbor Development  
Maryland Port Administration

1



US Army Corps  
of Engineers  
Baltimore District

## Project Overview

16

- **Bob Smith**  
Study manager  
Maryland Environmental Service

1



US Army Corps  
of Engineers  
Baltimore District

## Small Groups

17

- **Topics to consider**
  - What are good characteristics about the Poplar Island area?
  - What are the problems with Poplar Island?
  - Your vision for Poplar Island
  - What issues and concerns should be addressed?
- **List ideas**
- **Identify important ideas**
- **Spokesperson will summarize group's thoughts**

8



US Army Corps  
of Engineers  
Baltimore District

## Discussion of Small Group Results

18

- **Briefly summarize major discussion points of small groups**
- **How did your group vote on the issues?**
- **Questions and answers**

3



US Army Corps  
of Engineers  
Baltimore District

## Next Actions

20

- **Engineering field investigations have been completed**
- **Environmental field investigations are continuing**
- **Developing alternative alignments**
- **Alternatives workshop in late March**
- **Test dike construction this summer**

5



US Army Corps  
of Engineers  
Baltimore District

## Your Comments

21

- **Mail comments to**  
**Stacey Brown**  
**Attention: CENAB-PL-PC**  
**Baltimore District, Corps of Engineers**  
**P.O. Box 1715**  
**Baltimore, Maryland 21203-1715**
- **Internet address for Stacey Brown**  
**seb@cenabpl.nab.usace.army.mil**
- **FAX comments to Stacey Brown at 410-962-4698**
- **Comments due by 10 March 1995**

4

## PUBLIC INVOLVEMENT SCOPING WORKSHOP - MEETING #1

### TENTATIVE AGENDA

**PURPOSE:** To introduce the project to the public; to begin preparing the public and the project team for further interaction; to identify the values, issues, and concerns of the interested public regarding the proposed project; and to identify potential environmental impacts.

**CONCEPTS:** Low-key, Informative, Productive, Identical information provided at two scoping meetings at Tilghman and Chesapeake Beach.

**PRODUCT:** Prioritized list of interests/issues/concerns and potential environmental impacts identified by the interested and attending public.

- |         |  |
|---------|--|
| 2 min.  | Welcome and introductions. (MAJ Deren, COE)  |
| 5 min.  | Background/Context (Frank Hamons, MPA)   |
| 7 min.  | Video.   |
| 15 min. | Presentation. (Bob Smith, MES)   |
| 5 min.  | Explanation of small group/brainstorming. (MAJ Deren)  |
| 5 min.  | Count off/move into small groups.  |
| 20 min. | Small groups/brainstorming topics. <ul style="list-style-type: none"><li>- positive</li><li>- negative</li><li>- ideal</li><li>- issues</li></ul>  |
| 5 min.  | Vote with stick-on colored dots.   |
| 2 min.  | Move back into large group.  |
| 5 min.  | Group spokesperson for each small group reads items identified by their group as most important.   |
| 10 min. | Discussion/questions/issues/thoughts/reactions. (MAJ Deren)  |
| 2 min.  | Closure <ul style="list-style-type: none"><li>- Second public workshop - late March-early April.</li><li>- You are welcome to contact any one of us to ask questions or to make comments.</li><li>- Thank you for participating.</li></ul> |

(Approximate time: 1 hour and 15 minutes)

**HANDOUTS:** Welcome to meeting/explanation of scoping process; Public Notice with map(s); newsletter; comment card; 4 colored dots.

**GRAPHICS:**  
Board - 1847 footprint and island remnants;  
Board - Alternative layouts;  
Board - Typical cross section;  
Board - Aerial photo of Poplar Island area.

**SUPPLIES:** Video, VCR, name tags (2 colors), sign-in sheets, pencils/pens, markers, cello and masking tape, scissors, handouts, business cards, easels, pads of butcher paper, colored dots, signs to meeting room, camera/film.

**PERSONNEL:**           MES - Bob Smith, Wayne Young  
                          MPA - Dave Bibo, Mike Hart, Frank Hamons, Tricia Slawinski  
                          COE - Stacey Brown, Carol Anderson-Austra, Mark  
                                  Mendelsohn, Brian Walls, Wes Coleman, Bob  
                                  Bank, Harold Nelson, MAJ Deren

**PRE-MEETING TASKS:** Decide on meeting room layout, set up tables, chairs, easels, video; organize sign-in sheets, pens/pencils, name tags, waste receptacle, brochures/handouts, refreshments; post direction signs; meet and make note of people to be introduced, both attendees and team members.

file: topics

## SCOPING MEETINGS - GENERAL PREPARATION

Items to keep in mind:

1. Scoping meetings and other public involvement activities are purpose-driven. The purpose is to gather information regarding the project area and the proposed project from the public. The public should be, and should feel, that they are a genuine part of the decision making process.
2. The project is being planned WITH, not FOR, the participating agencies and the public. A commitment to public interaction will help to create a more integrated public perception of the project.
3. The project is PROPOSED. It is NOT a done deal. The proposed project has strong support from a number of publics and appears to be a win-win situation in providing environmental benefits and placement for dredged material. However, the proposed project could come to a screeching halt if it is not technically feasible, environmentally and economically beneficial, and acceptable to the public.
4. In compliance with the National Environmental Policy Act (NEPA), the purpose of the meeting is to gather information about public reactions, concerns, and ideas regarding the proposed project.
5. Public involvement does not necessarily simplify the planning process, and it may generate conflict, but it can show competing public wills and provide an opportunity to solve problems early in the project.
6. Public involvement can provide insights to perceptions of equal/unequal gain or loss resulting from a project. It is not so much the absolute gain or loss as the perceived relative deprivation of benefits that is key. The process can provide an opportunity for discussions regarding the appropriate mitigation for distribution of perceived gain or loss.
7. Public involvement is not a technique, but a strategy/approach/philosophy. The techniques used are not as important as the people and attitudes of those using a technique. Honesty is critical and will be judged by the public.
8. Public involvement can confront planners with problems we have no authority to solve; those who have that authority will have to exercise their responsibility as problems are identified.
9. If public reception to a meeting is hostile, keep in mind that it is not personal; the reaction is to the role or agency represented. If there is a potential for negative public reaction, avoid symbols of power such as large numbers of staff, elaborate graphics or visuals; present yourself as a human being on the same level as everybody in the audience.
10. Please show respect to all speakers during the meeting, even if you're completely familiar with the material being presented or disagree with what is being said. Conversations in the back of the room are never as quiet as we intend them to be and are distracting as well as disrespectful.

## SMALL GROUPS/BRAINSTORMING

**PURPOSE:** To identify values/issues/concerns of the interested and attending public.

**METHOD:**

1. Arrange seats in a circle; limit group size to approximately 10 people; don't seat friends/spouses together.
2. Each group has a facilitator and a scribe (someone who can write quickly and legibly).
3. Facilitator introduces self, scribe, and process. Check to see that everyone has 4 colored dots.
4. Be welcoming and encouraging; remember that we want to make it easy for attendees to provide information and ideas that will benefit the project; our task is to elicit information, to question, listen, and pay attention in a way that rewards each individual's input; take care not to challenge, however negative or hostile an attendee may appear; facilitate expression of the thought or problem; address group members by name.
5. Remind the small group of the brainstorming rules:
  - work quickly;
  - get as many ideas written down as possible;
  - focus on the topic for a minute before beginning;
  - move sequentially around the circle;
  - everyone gets an equal chance to speak;
  - don't edit your own or others ideas, just say it;
  - keep the ideas flowing, if you can't think of anything, say "pass", and keep thinking; something else may come to you during the next round;
6. Introduce one topic at a time. Have the topic written at the top of a sheet of butcher paper.
7. Ask that the group members focus on the topic; explain what the topic means; give an example.

"Think about something that's good about Poplar Island; it might be a memory of a picnic on the island when you were a child, or the way it looks in the sunset, or that it is a good place to go fishing."
8. Go around the group as many times as possible in the time allowed. Make suggestions if ideas are slowing down. Keep the tone of the group light, but productive. When the time is almost up ask for any last thoughts, from anyone, not necessarily in turn. Compliment the group for all the good ideas.
9. Scribes: abbreviate where possible; if there is any question about whether the item as written reflects what the speaker said, check with the speaker. ("Does this say what you mean?")
10. As each topic is completed, tape the paper(s) up on the wall.
11. When all 4 topics have been brainstormed and the papers taped up, have the group vote with their colored dots. Dots can be placed by whichever items each person thinks are the most important considerations for the project. All 4 dots can be placed by one item, or one dot can be placed by one item under each topic, etc. (One person, 4 votes; it's better than a democracy.)
12. Draw the group's attention to the items that got the most votes in their group. You might informally summarize the results. ("It looks like this group is really interested in/concerned about \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_, and pretty concerned about \_\_\_\_\_.")

13. Ask for a volunteer to read the highest priority items/concerns/ideas when the large group reconvenes.

14. Thank the group for their efforts.

15. Assist the group members in reconvening into the large group.

**SUGGESTED FACILITATORS/SCRIBES:** Stacey Brown/Wayne Young, Tricia Slawinski/Mark Mendelsohn, Dave Bibo/Bob Bank, Brian Walls/Bob Smith, Carol Anderson-Austra/Mike Hart, MAJ Deren/Wes Coleman.

Frank Hamons, Harold Nelson - Oversee small groups, keep times for brainstorming activities.

## SMALL GROUP/BRAINSTORMING TOPICS

The small groups will consider four topics related to Poplar Island. The purpose of the questions/topics is to elicit information about the values of the public regarding Poplar Island and the proposed project. General information about the proposed project will be provided prior to forming the small groups. The questions/topics are:

1. What is good about the island?
2. What is bad or negative about the island?
3. What is your idea of a perfect Poplar Island?
4. What issues or problems can you think of regarding Poplar Island or the project?

Sometimes it helps for facilitators to give examples to get a group going on brainstormed lists. Following are a few suggestions for introducing the questions/topics:

(For topic 1)

"Think about something that's good about Poplar Island; it might be a memory of a picnic on the island when you were a child, or the way it looks in the sunset, or that it is a good place to go fishing."

(For topic 2)

"What can you think of that's bad or negative about the island? It might be simply that it's eroding, or that you can't go crabbing there any more, or that last time you were there you saw litter along the shore."

(For topic 3)

"Use your imagination and think of the most perfect condition for Poplar Island. Create a vision in your mind and describe what it could be like if there were unlimited money and other resources. You might say it's just perfect the way it is; or it should be the way it was in 1847; or that it should be forested, or quiet, or more accessible."

(For topic 4)

"What issues need to be addressed about Poplar Island and this project? Making the fishing better? Keeping the big or little boats out? Making the island better for water fowl? For clams? For people?"

Note that ideas brought forward by the group may represent conflicting views, values, or possibilities. That's ok; reassure the group that conflict can be productive. All ideas are valid and valuable at this stage of the project. It's simple to solve one problem, but design and engineering (and life) frequently involve finding solutions for a wide range of problems related to the task at hand. Public input helps to identify existing conditions, define problems, and develop strategies and future actions for the project.

## Poplar Island Habitat Restoration Scoping Meetings

The purpose of the scoping workshops was to provide preliminary information about the proposed project and to gather information about the values of the population which would be impacted by the project. Comments made during the scoping process for the project reflected a wide range of values, interests, and concerns, including broad environmental issues, technical construction questions, and personal feelings about the island and the proposed project.

The following lists include responses to questions addressed during brainstorming sessions at two scoping meetings held on Tilghman Island, on the Eastern shore, and at Chesapeake Beach, on the west side of the Bay. The lists include responses to four questions regarding what the meeting attendees felt was good, bad, or problematical about the island in the past, in its existing condition, and in the future, both with and without the project. Attendees were also asked to describe their idea of the perfect Poplar Island.

In response to the question "What is good about Poplar Island?", the issues identified as most important focused on the value of the area for clamming, crabbing, and fishing; its environmental/habitat value; the protection from erosion it provides; and its natural beauty and other features. The historic resources of the island were also considered important, as well as the potential for recreation and jobs if the island is restored.

Responses to the question "What is bad about Poplar Island?" reflected two different perspectives: dissatisfaction with existing conditions in the Poplar area and concerns with the proposed project. Existing conditions which were considered "bad" focused on the effects of erosion: the resulting shoaling and sedimentation in the surrounding areas as well as the loss of trees, irregular shoreline, and other wildlife habitat. Negative aspects of the proposed project were identified as the impacts of construction on fishing activities, and the high cost of the proposed project, as well as questions about the ability of the retaining dikes to withstand storm conditions.

The majority of responses on the topic of Issues, Problems, and Concerns with the project were identified as potential problems with the strength of the structure and project impacts during and after construction on fishing and wildlife habitat in the area. Other issues identified were the potential for pollution from material placed on the island, project costs, ownership of the restored island, and the impacts to cultural resources and conservation efforts.

The majority of comments describing the "perfect Poplar Island" ranged from "leave it the way it is now" to "restore it to a forested wildlife sanctuary". Most responses described an ideal island restored to the size of the original (1847) island, with little or no development. According to the comments, the ideal island would be maintained for wildlife habitat and scientific study, and with limited or passive recreation use, such as bird watching or visits by science classes.

Meeting attendees were divided into four groups at the Tilghman meeting and each group's comments are listed separately below. Attendees at the Chesapeake Beach meeting remained in one group for the brainstorming exercise. Numbers in parentheses indicate "votes" for items attendees felt were the most important considerations for the Poplar Island area.

Poplar Island Habitat Restoration  
Scoping Meeting #1  
Tilghman Island 2/21/95

**Group #1**

Good

Only clam producing places left (8)  
Protects shoreline of E. Shore (2)  
Protects birds/nesting (2)  
Likes to see island  
Helps fishing  
Helps fishermen/seafood industry

Bad

Erosion contributes to shoaling of Knapps Narrows (1)  
E. Side hard to navigate  
Channel shoals  
Too many birds eat bait  
No SAV

Issues/Problems/Concerns

Ruination of clam/oyster bottom-clams everywhere around island (5)  
How long of buffer zone during construction (2)  
Containment of material/fines affecting oyster bar (2)  
How long construction  
How long will project last  
Access channel tearing of bottom  
Maintenance of project

Perfect Poplar Island

Original Size (4)  
Size 20 years ago (1)  
Create nursery (1)  
Erosion stopped-left alone-let nature take its course  
Same depth

**Group #2**

Good

For the environment  
Conservation  
Crabs, fish, fishing opportunities  
Doesn't destroy marshes or farmland  
Cultural resources site

### Bad

Loss of mainland protection  
Doesn't maintain shoreline  
Loss means losing sea bird habitat  
Loss of deer haven  
Loss of eagle habitat

### Issues/Problems/Concerns

How can we prove dredged material is clean (5)  
Need bottom habitat for clammers, crabbers (4)  
People need to work on the water (4)  
Maintain/salvage existing cultural resources (3)  
Loss of bay bottom (2)  
Mother nature/conservation (2)

### Perfect Poplar Island

What it is now  
Move it to Smith Island  
Keep Poplar where it is now  
Enhanced bottom habitat along with island restoration  
Balance the needs of everyone interested

### **Group #3**

### Good

Without it we lose all the marsh in the area (1)  
Natural buffer (1)  
Restores natural harbor (1)  
Alignment 3 is more cost-effective than alignment 1  
If you're going to do something good, let's do it in Talbot County  
Possible jobs for watermen

### Bad

Immediate impacts to clammers/crabbers (2)  
Area open during construction (buffer zones) (2)  
Dike riprap before sand (1)  
Ht. of East Dikes (1)  
Uplands should be 22 ft. like HMI (1)  
Thin lifts of dredged material (1)  
Too much wetland (high ground more important)  
Foundation strengths  
Lowes wharf-marsh will be exposed without project  
Concern with construction of wetlands so as not to form mudflats

Issues/Problems/Concerns

Erosion  
Siltation

Perfect Poplar Island

Containment before placement (3)  
Restrict the island width, make higher (2)  
Do it similar to the way its being laid out  
Wildlife sanctuary

Group #4

Good

Better crabs and clams since eroded (more area) (2)  
Nothing (1)  
Former good habitat (1)  
Historical resources-steam engine (1)  
Stop erosion from Tilghman Island  
Good placement site  
Habitat  
Former good farmland  
Duck hunting  
Safe harbor  
Goats (30 wild)  
Grow tomatoes and wheat  
Crabs and clams  
History

Bad

Gone and too costly too save (2)  
Possibility of losing material during construction- need stone dike on all sides (1)  
Eroding  
Too far from girls for HB  
Not providing protection for Tilghman  
Possibility of losing material if built  
Too late for Army Corps  
Loss of property

Issues/Problems/Concerns

Cost-too high (6)  
Possibility to lose mud-will rinse out (5)  
Place stone dike bulkhead-cost a fortune (1)  
Every 10 years ice storm-consider ice-need to protect from all sides (1)  
Silt will run everywhere (1)  
Hurricanes from NE (1)  
Idea too stupid  
If you're going to do it-do it right  
If material breaks loose-mess up all area  
Every 10 years ice storm-consider ice

Can't be wetland  
Water control  
Rough seas

### Perfect Poplar Island

10' water on top (1)  
Let it go-leave the way it is  
Can do anything on it  
Tie in Coach's Island  
Good agriculture/forest land  
Good habitat  
Scientific study  
Good use of \$

### Poplar Island Habitat Restoration Scoping Meeting #2 2/23/95 Chesapeake Bay, MD

### Good

Pristine, beautiful place (2)  
Bring back marshes/good marshes (2)  
Wildlife Habitat (1)  
Recreate islands/stop erosion (1)  
Irregular shoreline (1)  
Good placement site  
Good oyster area  
Protection for harbor  
Clear water  
Snags provide good fishing habitat  
Provides possible recreational/wildlife opportunities  
Provides protection to shoreline  
Protection of oyster bars  
Sub-aqueous vegetation  
Good clamming/crabbing area  
Good camping/good fishing  
Aid to navigation  
Remote area  
Provides excellent fishing  
Providing habitat

### Bad

Erosion is occurring (1)  
No trees (1)  
Losing shoreline/coves (1)  
Stumps are navigation hazard  
Sediment is filling in channels  
Oyster bars are disappearing due to erosion

### Issues/Problems/Concerns

Sequence of construction and minimization of impacts to habitat (3)  
Ownership of land for the future (3)  
Safety for fishing gear during construction-designated access channels (3)  
Where is fill coming from?/Is it clean? (2)  
Public access to testing records (2)  
What will dikes be constructed of? (1)  
How will material impact crabs, clams, oysters, etc.? (1)  
Jetties for habitat/some type of beach/variation of water-stone interface (1)  
Clean dirt needs to be used (1)  
Material needs to be monitored to ensure cleanliness (1)  
Sedimentation during construction  
How will construction impact crabs, oysters, etc.?  
Duration of project as it relates to aesthetics and habitat

### Perfect Poplar Island

No facilities (2)  
Wildlife-endangered (2)  
Bird watching (1)  
Restore it to the way it was (1)  
Wildlife sanctuary (1)  
Limited/regulated hunting-upland game/migratory waterfowl (1)  
Lots of trees (poplars, pines, hardwoods)  
No fast boats/jet skis/water skiing  
No habitation by humans  
One caretaker to live there, no developments  
School visits  
Emergency shelter  
Camping-groups/individuals  
Wonderful fishing spot  
Boat anchorages  
Dikes with "nooks and crannies"  
Biketrail  
Re-establishment of oyster bars/marshes  
Passive, low key activities (interpretive services)

*You are invited...*

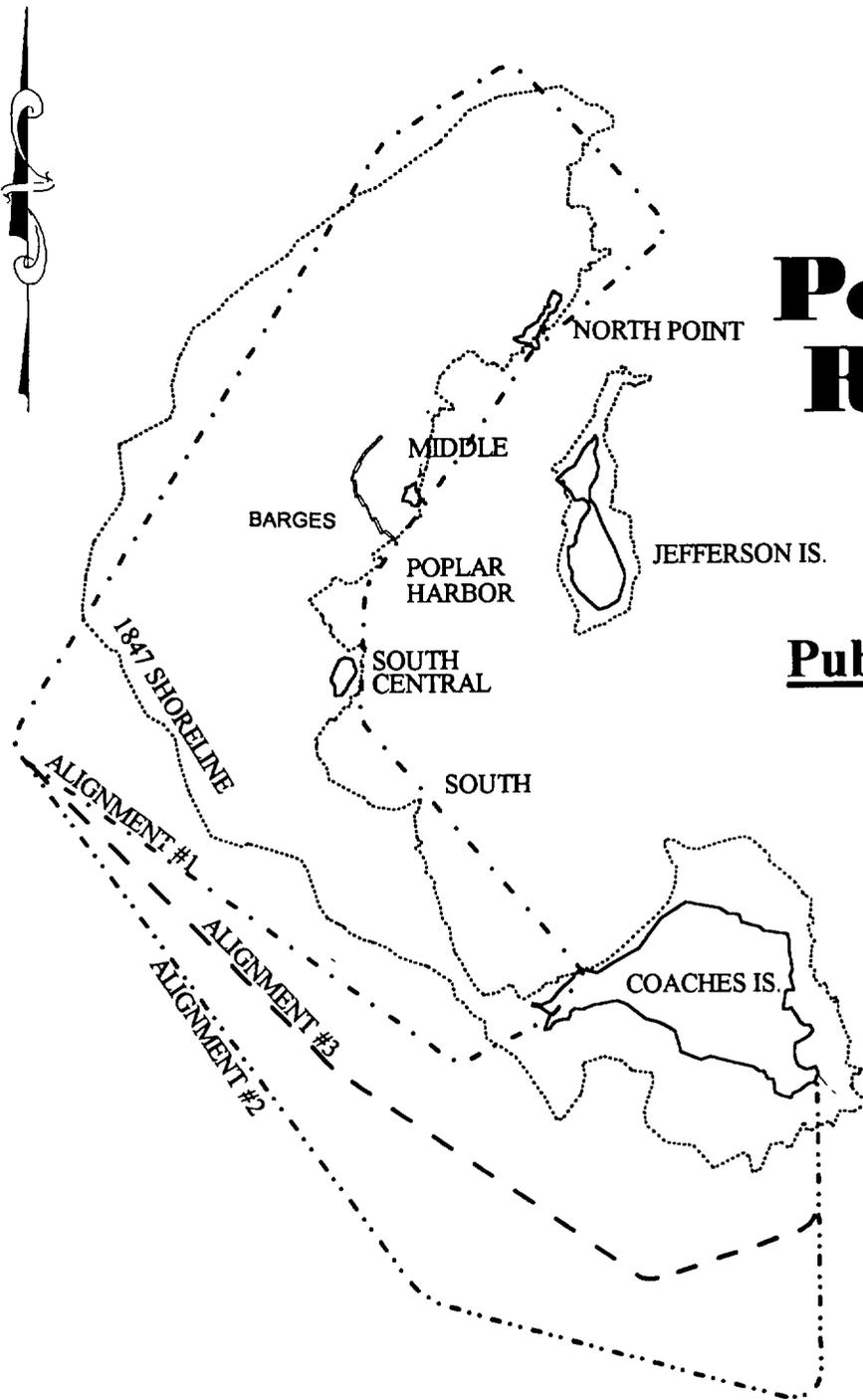
# **Poplar Island Restoration**

## **Public Information Meeting**

Wednesday, April 12, 1995

7:00 P.M.

Tilghman  
Elementary School



All interested parties are invited to attend a meeting to discuss possible alternatives for the proposed restoration of Poplar Island.

## WELCOME

to the

### POPLAR ISLAND RESTORATION PUBLIC INFORMATION MEETING

This meeting is a step in the public participation process that is required by the National Environmental Policy Act (NEPA) for Federal plans and projects. The purposes of NEPA include encouraging "productive and enjoyable harmony" between human activities and the environment.

Earlier steps in the public involvement process for the Poplar Island project have included informal meetings with a variety of interest groups (such as watermen and charterboat captains), coordination with natural resource management agencies (such as DNR, FWS, and NMFS/NOAA), and public scoping meetings. A full schedule of public information meetings and agency coordination will continue throughout the life of the project.

The principal goal of this meeting is to obtain public input on alternative alignments being developed by the engineering contractor. As required for the Environmental Impact Statement (EIS) being prepared for the project, comments made during earlier steps in the public involvement process are being incorporated into the design process. Public and agency input is expected to include comments and other information on environmental, economic, aesthetic, and cultural impacts to the project area.

We seek your input at this meeting so that we will be better able to identify the impacts - both positive and negative - of the proposed project. Your comments and suggestions will be considered and addressed in the EIS.

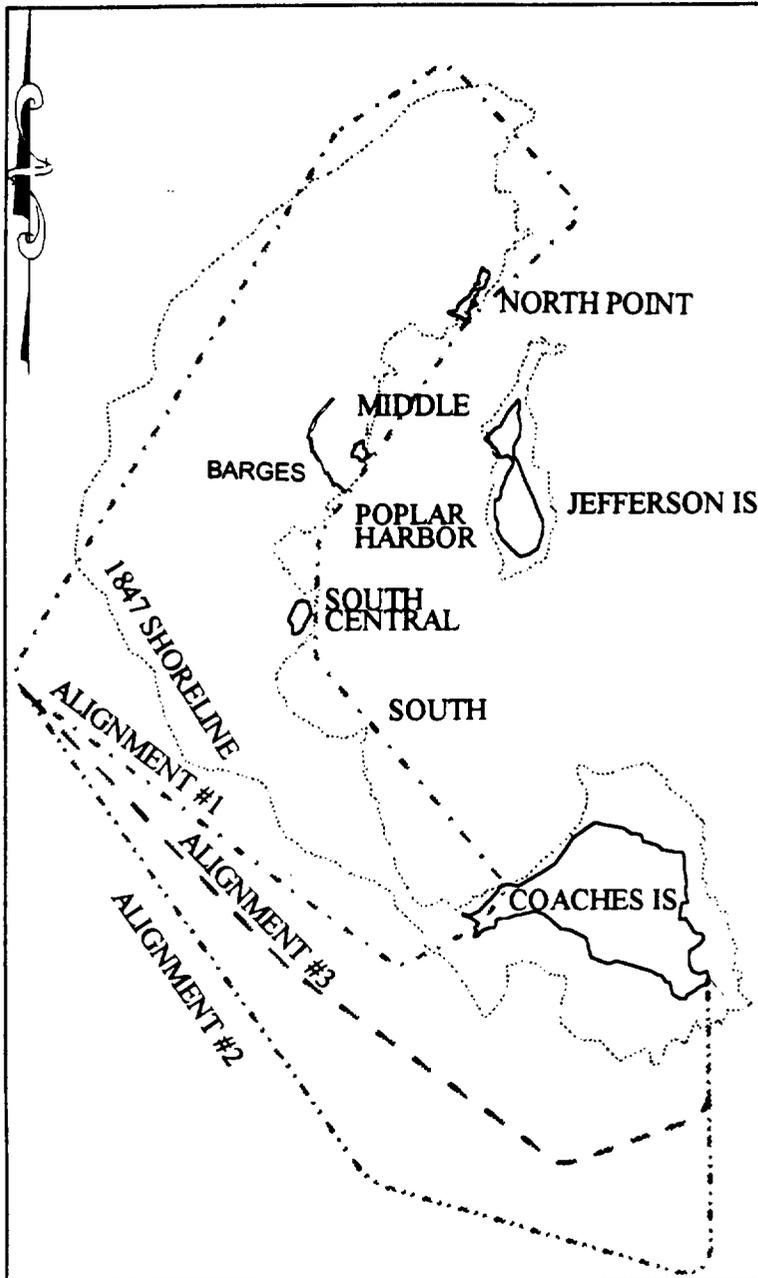
This meeting will include a brief presentation on the background and status of the proposed project, a description of the alternative designs being developed, and a question and answer and open discussion periods.

We invite you to provide comments, suggestions, and ideas about the project at this meeting or any time throughout the study. Comments may be written or sent via internet to the addresses below:

U. S. Army Corps of Engineers  
Poplar Island Restoration Project  
Attn: CENAB-PL-PC  
P. O. Box 1715  
Baltimore, Maryland 21203-1715

Internet address: [seb@cenabpl.nab.usace.army.mil](mailto:seb@cenabpl.nab.usace.army.mil)

# WELCOME TO THE POPLAR ISLAND RESTORATION STUDY PUBLIC INFORMATION MEETING



This meeting is a step in the public participation process that is required by the National Environmental Policy Act (NEPA) for Federal plans and projects. The purposes of NEPA include encouraging "productive and enjoyable harmony" between human activities and the environment.

Earlier steps in the public involvement process for the Poplar Island project have included informal meetings with a variety of interest groups (such as watermen and charterboat captains), coordination with natural resource management agencies (such as DNR, FWS, and NMFS/NOAA), public scoping meetings. A full schedule of public information meetings and agency coordination will continue throughout the life of the project.

The principal goal of this meeting is to obtain public input on alternative alignments being developed by the engineering contractor. As required for the Environmental Impact Statement (EIS) being prepared for the project, comments made during earlier steps in the public involvement process are being incorporated into the design process. Public and agency input is expected to include comments and other information on environmental, economic, aesthetic, and cultural impacts to the project area.

We seek your input at this meeting so that we will be better able to identify the impacts - both positive and negative - of the proposed project. Your comments and suggestions will be considered and addressed in the EIS.

This meeting will include a brief presentation on the background and status of the proposed project, a description of the alternative designs being developed, and a question and answer and open discussion period.

4/12/95

## PUBLIC INFORMATION WORKSHOP - MEETING #2

### TENTATIVE AGENDA

**PURPOSE:** To provide a description of the plan alternatives and project status and an opportunity for the public to comment and ask questions about the project.

**CONCEPTS:** Provide information and answer questions on plan alternatives and technical aspects of the project.

**PRODUCT:** Prioritized list of preferred alternatives or plan elements identified by the interested and attending public.

- 2 min. Welcome/introductions (Brown, COE)
- 5 min. Project background/context (Hamons, MPA)
- 10 min. Project Status (Smith, MES)  
- Alternatives development  
- Public involvement  
- Environmental testing
- 20 min. Presentation of project alternatives (Thomas, GBA)
- 5 min. Environmental Testing/Monitoring (Walls, COE)  
- Dredged material/biological  
- Pre-construction  
- During construction  
- Post-construction
- 20 min. Questions and Answers/Open Discussion
- 2 min. Closure  
- Third public workshop - late May-early June  
- You are welcome to contact any one of us to ask questions or to make comments.  
- Thank you for participating.

(Approximate time: 1 hour)

**HANDOUTS:** Welcome to meeting/meeting purpose and agenda; alternative layouts; newsletter; comment cards; 3x5 cards/pencils.

**GRAPHICS:** Board - 1847 footprint and island remnants;  
Boards - Alternative layouts;  
Board - Typical cross section;  
Board - Aerial photo of Poplar Island area.  
Board - Flow diagram  
Others

**SUPPLIES:** Name tags (2 colors), sign-in sheets, pencils/pens, markers, cello and masking tape, scissors, handouts, business cards, easels, pads of butcher paper, 3x5 cards, signs to meeting room, camera/film.

**PERSONNEL:** MES - Bob Smith  
MPA - Dave Bibo, Frank Hamons  
COE - Stacey Brown, Carol Anderson-Austra,

Brian Walls, Wes Coleman  
GBA - Dick Thomas  
EA - Frank Pine

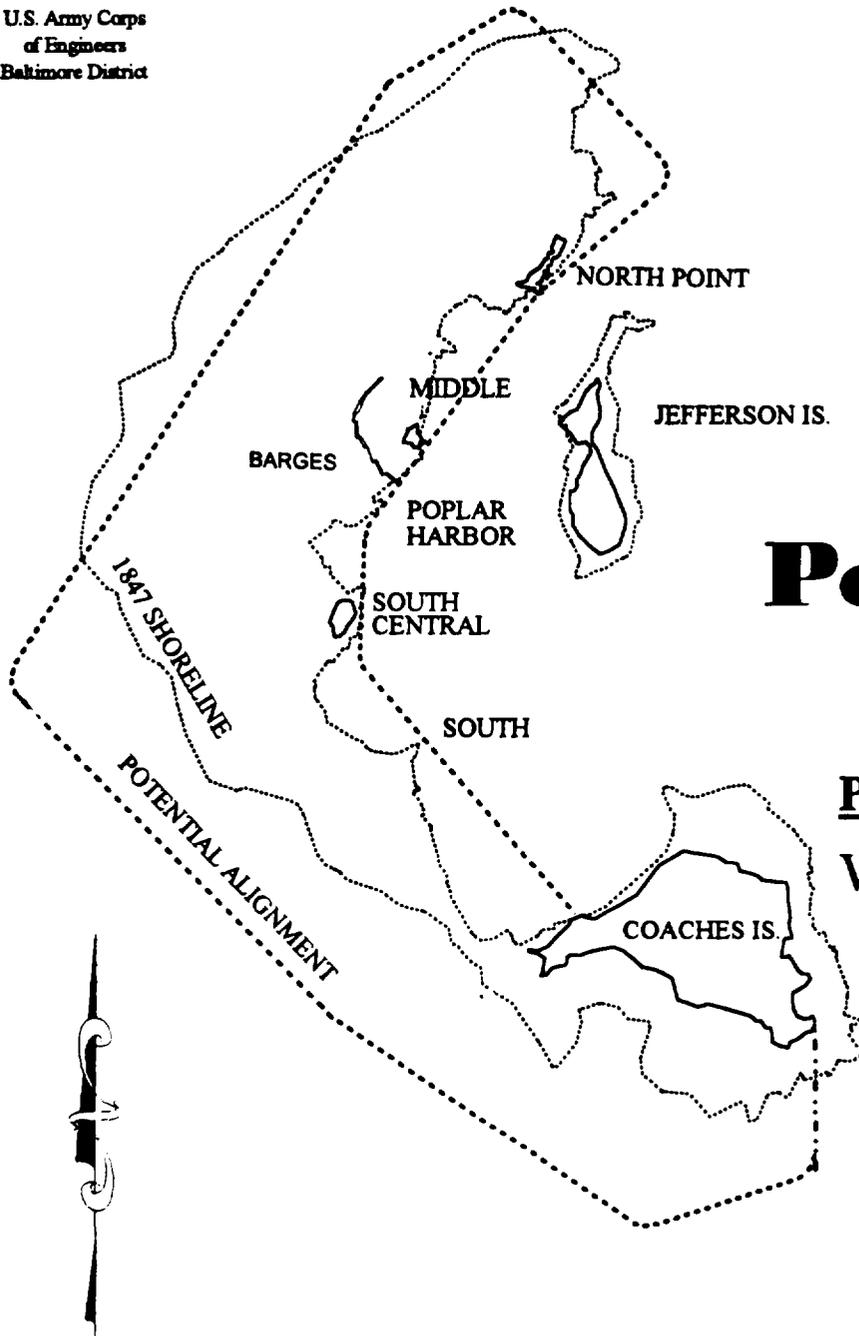
**PRE-MEETING TASKS:** Decide on meeting room layout, set up tables, chairs, easels; organize sign-in sheets, pens/pencils, name tags, waste receptacle, brochures/handouts, refreshments; post direction signs; meet and make note of people to be introduced, both attendees and team members.



U.S. Army Corps  
of Engineers  
Baltimore District



Maryland Port  
Administration



*You are invited...*

# Poplar Island Restoration

Public Coordination Meeting

Wednesday, August 23, 1995

7:00 P.M.

Tilghman

Elementary School

21374 Foster Avenue

Tilghman, MD

All interested parties are invited to attend a meeting to provide an update on the project status and a description of the potential project alignment and the limited funding alternative.

## POPLAR ISLAND RESTORATION PROJECT

### PUBLIC INFORMATION MEETING

Welcome to the third public information meeting for the Poplar Island Restoration Project. The purpose of this meeting is to present a brief overview of the project status, the alternative alignments for the restored island, and the test dike, as well as a description of the recommended project alignment. In addition, this is an opportunity for the public to ask questions and make comments about the project.

This meeting is a step in the continuing public participation process that is required by the National Environmental Policy Act (NEPA) for Federal plans and projects. The purposes of NEPA include encouraging "productive and enjoyable harmony" between human activities and the environment.

Earlier steps in the public involvement process for the Poplar Island project have included a number of informal meetings with a variety of interest groups (such as watermen and charterboat captains), coordination with natural resource management agencies (such as DNR, FWS, and NMFS/NOAA), and two public meetings similar to this one.

As required for the Environmental Impact Statement (EIS) being prepared for the project, comments made during each step in the public involvement process are being incorporated into the project. We seek your input at this meeting so that we will be better able to identify the impacts - both positive and negative - of the proposed project. Your comments and suggestions will be considered and addressed in the EIS. We invite you to provide comments, suggestions, and ideas about the project at this meeting or any time throughout the study. Comments may be written or sent via internet to the addresses below:

U. S. Army Corps of Engineers  
Poplar Island Restoration Project  
Attn: CENAB-PL-PC  
P. O. Box 1715  
Baltimore, Maryland 21203-1715

Internet address: [seb@cenabpl.nab.usace.army.mil](mailto:seb@cenabpl.nab.usace.army.mil)

### MEETING AGENDA

Welcome and Introductions  
Project Background  
Project Status  
Test Dike  
Recommended Alignment  
Environmental Impacts  
Discussion/Questions  
Closure

Stacey Brown, COE  
Frank Hamons, MPA  
Bob Smith, MES  
Brian Walls, COE  
Bob Smith, MES  
John Gill, FWS/Brian Walls, COE

## CONTINUING COORDINATION MEETING - MEETING #3

## TENTATIVE AGENDA

**PURPOSE:** To provide an update on the project status and a description/discussion of the recommended project alignment and the limited funding alternative.

**CONCEPT:** Provide information, conduct discussion, and answer questions on the recommended alignment and the limited funding alternative.

**PRODUCT:** A description of the presentation, discussion, and comments to be incorporated into the final design and NEPA documentation prepared for the project.

- 2 min. Welcome/introductions (Brown, COE)
- 5 min. Project background/context  
- Limited funding alternatives (Hamons, MPA)
- 10 min. Project status (Smith, MES)  
- Review of alternatives  
- Public involvement  
- Tilghman area watermen  
- Environmental testing/monitoring
- 5 min. Test dike (Walls, COE)
- 20 min. Presentation of recommended alignment  
(Smith, MES)
- 5 min. General Environmental Impacts (Walls, COE; Gill, USFWS)  
- During construction  
- Project features  
- Post-construction
- 20 min. Questions and Answers/Open Discussion
- 2 min. Closure  
- Next meeting - public hearing - Nov 95  
- You are welcome to contact any one of us to ask questions or to make comments.  
- Thank you for participating.

(Approximate time: 1 hour and 15 minutes)

**HANDOUTS:** Welcome to meeting/meeting purpose and agenda; MPA brochure; comment cards; 3x5 cards/pencils.

**GRAPHICS:** Board - 1847 footprint and island remnants;  
Boards - Alternative layouts;  
Board - Typical cross section;  
Boards - Aerial photos of Poplar Island.  
Board - Flow diagram

Board - Recommended alignment (and limited funding alternative)  
Others

**SUPPLIES:** Name tags (2 colors), sign-in sheets, pencils/pens, markers, cello and masking tape, scissors, handouts, business cards, boards, easels, pads of butcher paper, 3x5 cards, signs to meeting room, camera/film, refreshments.

**PERSONNEL:** MES - Bob Smith  
MPA - Dave Bibo, Frank Hamons  
COE - Stacey Brown, Carol Anderson-Austra,  
Brian Walls, Wes Coleman  
GBA - Dick Thomas  
M&N - John Headland  
EA - Frank Pine

**PRE-MEETING TASKS:** Decide on meeting room layout, set up tables, chairs, easels; organize sign-in sheets, pens/pencils, name tags, waste receptacle, brochures/handouts, refreshments; post direction signs; meet and make note of people to be introduced, both attendees and team members.

## **POPLAR ISLAND RESTORATION PROJECT**

### **FINAL PUBLIC INFORMATION MEETING**

November 28, 1995  
Talbot County Free Library, Easton, Maryland

Welcome to the fourth public information meeting for the Poplar Island Restoration Project. The purpose of this meeting is to present a summary of the recommended project, including the alternatives considered, and the environmental impacts of the project, both adverse and beneficial, as presented in the draft Feasibility Report and Environmental Impact Statement (EIS). In addition, this is an opportunity for the public to ask questions and make comments about the project.

This meeting is a step in the public participation process that is required by the National Environmental Policy Act (NEPA) for Federal plans and projects. The purposes of NEPA include encouraging "productive and enjoyable harmony" between human activities and the environment, as well as providing information about a project to the public and to decision-makers.

Earlier steps in the public involvement process for the Poplar Island project included a number of informal meetings with a variety of interest groups (such as watermen and charterboat captains), coordination with natural resource management agencies (such as the Department of Natural Resources, Fish and Wildlife Service, National Marine Fisheries Service, and the National Oceanic and Atmospheric Administration), and three public meetings.

As required for the draft EIS prepared for the project, comments made during each step in the public involvement process have been incorporated into the project. Your input at this meeting will also be incorporated into the project planning process and addressed in the environmental documentation prepared for the project. The meeting will be recorded, and a transcript of the recording will be prepared and available upon request.

After this meeting, further comments may be written or sent via internet to the addresses below. Comments must be received by December 28, 1995, in order to be incorporated into the project documents.

U. S. Army Corps of Engineers  
Poplar Island Restoration Project  
Attn: CENAB-PL-PC  
P. O. Box 1715  
Baltimore, Maryland 21203-1715

Internet address: [stacey.e.brown@ccmail.nab.usace.army.mil](mailto:stacey.e.brown@ccmail.nab.usace.army.mil)

### **MEETING AGENDA**

**Welcome and Introductions**  
**Recommended Project**  
**and Schedule**  
**Comments and Questions**  
**Closing**

**Stacey Brown, COE**  
**MAJ Lawrence A. Deren, COE**  
**Stacey Brown, COE**

**FINAL POPLAR ISLAND PUBLIC INFORMATION MEETING**  
**November 28, 1995 - Easton Library**  
**TENTATIVE AGENDA**

**PURPOSE:** To present the recommended project design and the resulting environmental impacts, both positive and negative.

**CONCEPT:** Present information, answer questions, and accept comments on the proposed project and the draft EIS.

**PRODUCT:** A transcription and video of the presentation, questions, and comments. All statements will be addressed in the final EIS.

- |         |  |
|---------|--|
| 2 min.  | Welcome/introductions (Brown, COE)<br>Congress, others, project team   |
| 20 min. | Presentation of recommended project (Maj. Deren, COE)<br>Future actions/schedule   |
| 30 min. | Questions, comments  |
| 10 min. | Closing (Brown, COE) <ul style="list-style-type: none"><li>- opportunity after meeting to discuss project</li><li>- opportunity to comment by mail</li><li>- thank you for participating</li></ul> |

(Approximate time: 1 hour)

**HANDOUTS:** Welcome to meeting/meeting purpose and agenda; MPA brochure; comment cards; 3x5 cards/pencils.

**GRAPHICS:** Board - 1847 footprint and island remnants;  
Boards - Alternative layouts;  
Board - Typical cross section;  
Boards - Aerial photos of Poplar Island.  
Board - Flow diagram  
Board - Recommended alignment (and limited funding alternative)

**SUPPLIES:** Name tags (2 colors), sign-in sheets, pencils/pens, markers, cello and masking tape, scissors, handouts, business cards, boards, easels, butcher paper, 3x5 cards, signs to meeting room, video camera/film, refreshments.

**PERSONNEL:** MES - Bob Smith  
MPA - Dave Bibo  
COE - Maj. Deren, Stacey Brown, Wes Coleman, Clyde Jobe,  
Doug Garman, Brian Walls, Carol Anderson-Austra  
GBA - Dick Thomas  
M&N - John Headland  
EA - Frank Pine

**PRE-MEETING TASKS:** Decide on meeting room layout, set up tables, chairs, easels; organize sign-in sheets, pens/pencils, name tags, waste receptacle, brochures/handouts, refreshments; post direction signs; meet and make note of people to be introduced, both attendees and team members.

**Attachment D**  
**Public Comments**

## COMMENT CARDS

Pre-addressed post cards were distributed at each public meeting. The cards provided an opportunity for comments and questions. A number of cards were returned at the meetings or by mail with a request that the senders name be added to the project mailing list. Approximately 35 messages were received on the comment cards, in letters or notes, and by electronic mail. The following messages were mailed, faxed, or e-mailed to the Corps' project manager. In response to these and other messages, information was phoned, faxed, or mailed, as appropriate.

**Mr. and Mrs. Irvin Berkemeier**  
P.O. Box 238  
Tilghman, MD 21671

February 15, 1995

U. S. Army Corps of Engineers

Re: EIS to assess the environmental effects of using dredged material to enlarge Poplar Island to its approximate size in 1847.

I will not be able to make the meeting scheduled for February 21, 1995 (7:00PM) at Tilghman Elementary School. I have the following questions and or comments:

- \* Where would the dredged material come from?
- \* Ball park figure on cost?
- \* Is the dredged material the proposed dredge (spoils) from the Baltimore Inner Harbor?
- \* Will previous owners of home sites on Poplar Island regain/be able to re-establish their land titles/squatters rights?
- \* Will this dredge filled approx. 1000 acres be strictly wildlife habitat or will it be developed into state of Maryland enterprizes such as Black Walnut point Inn and Wildlife Refuge at the end of Tilghman Island?

**Clarence N. Scott**  
Facilities Manager  
Montgomery County Schools  
4703 Red Fox Road  
Rockville, MD 20852  
(301) 770-6374

February 18, 1995

I believe this is an excellent project and I give my complete support.

**Gregory Phillips**  
228 Camper Circle  
Tilghman, MD  
(410) 886-2431

February 13, 1995 (mtg)

I would be willing to talk about plan.

**Lanny Ray**  
Captain  
Maryland Charter Boat Association  
615 E. Marshall Avenue  
Deale, MD 20751  
1-(410)-867-1795

February 14, 1995

Looking forward in watching the island gaining its original shape.

Pete Sweitzer  
Waterman - 50 years  
P.O. Box 139  
Tilghman, MD 21671

February 23, 1995

This project will be a great benefit to Baltimore, MD, Talbot County, Tilghman Island in particular. Do not let self-serving people get in your way.

Leroy W. Brooks  
Duns Cove Farm  
P.O. Box 98  
7004 Duns Cove Road  
Sherwood, MD 21665  
(410) 886-2257

March 2, 1995

We are strongly in favor of this project. Rebuild to 1,000 acres in accordance with your plans. Construct retaining bulkhead to minimize damage to other area and aquatic life. Should be very beneficial to the restoration of the Chesapeake Bay and the wildlife habitat.

April 6, 1995

I wish to compliment you on your preparation and conduct of the very informative meeting held at Tilghman Elementary School, February 21, 1995.

I have walked on, fished and crabbed around Poplar Island since the 1920's and have observed the continuous eroding of the island as well as the enormous decline of marine life, aquatic vegetation and upland wildlife.

A few of the watermen present expressed concerns that the project would endanger some marine life and were therefore opposed to the project. Historically some watermen have been opposed to any change just because it may possibly, temperarally [sic] affect their own personal income, without regard to the beneficial overall effect the change may have on other people, the environment, or the ecology. The long range benefits vastly override selfish short-term effects.

The approach channels to Baltimore Harbor are to be dredged anyway and Poplar Island is an ideal place to deposit some of the clean material.

The proper construction of the retaining dykes [sic] to contain the dredged material with no seepage, thereby creating intertidal wetland and upland wildlife habitat, restoring the island to its early 19th century size is a very worthwhile project. It would be a tremendous benefit to the Chesapeake Bay, the surrounding wetlandss and shorelands of the Eastern Shore, as well as greatly helping to restore endangered marine life and many species of wildlife.

I strongly recommend your proceeding with the Poplar Island Restoration Project. It may prove to be an ideal pilot Project to effectively correct other seriously eroding land areas.

Sincerely,

(signed) Leroy W. Brooks P. O. Box 98 Sherwood, MD 21665

**Captain George A. Prenant**  
President  
AAA Charterboats Inc.  
946 Main Street  
Deale, MD 20751  
(301) 261-5656

February 11, 1995

Re-forest Poplar Island after reservation with trees that will allow Cormorants and Herons roosting and nesting. Use trees like are left on island now.

**Thomas L. Johnson**  
Tracy Lynn Charters  
1121 Brice Drive  
Edgewater, MD 21037  
(301) 261-7734

February 13, 1995

Hope this study doesn't disturb the fishing on Poplar Island or surrounding areas.

**Robert C. Sweitzer**  
Waterman  
P.O. Box 315 Coopertown Road  
Tilghman, MD 21671  
(410) 886-2605

March 6, 1995

Stay within framework of plan. Idea is good, needs more in depth study. Island Restoration Project should be beneficial to all in the future.

**Charles C. Lynde**  
5703 Shore Drive, B-3  
Churchton, MD 20733  
(410) 867-3608

March 10, 1995

Much in favor of this reconstructing of this island.

**Hugh K. Bailey**  
9979 Wades Point Road  
McDaniel, MD 21647  
(410) 745-3120

February 21, 1995 (mtg)

Costs way too high and sure to go much higher than estimates if job is done right. Totally impractical. Waste of taxpayer's money.

**Randy Gowe**  
Waterman  
21456 P.O. Box 152  
Tilghman, MD 21671  
(410) 886-2367

February 16, 1995

Time date where future meetings are going to be held.

Captain Louis K. Forrest  
Fin Finder Charters  
P.O. Box 421  
Lexington Park, MD 20653  
1-800-831-2702

February 21, 1995

I am considering fishing more in that area and want not to interfere.

Stephen and Adrienne Nassau  
7415 Nevis Road  
Bethesda, MD 20817  
202-775-1550 AM  
301-229-5715

March 13, 1995

See the comments faxed and e-mailed to Stacey Brown on 3-13-95. We own the property which is at the southernmost point of Green Marsh Point. We have 850 feet of shoreline and another 750 feet of bulkheaded shoreline. The marsh is eroding rapidly. The project is vital to preserving the marsh which is an important part of the ecological system beneficial to the health of the bay. We are anxious to do what we can to see it approved.

**Memorandum**

(fax date) March 2, 1995

TO: Stacey Brown FROM: Stephen & Adrienne Nassau RE: Poplar Island Restoration Project  
DATE: March 13, 1995

We own the property at Green Marsh Point in Sherwood, Md., which is directly opposite Coaches Island. We have over 1000 feet of shoreline on the Bay, 850 feet of which is the marsh which begins on our property and goes north toward Goat Island and Punch Point. Our property is among those that would be most directly affected by the Poplar Island Restoration Project. However, we live and work in the Washington area during the week and were not advised of the Public Scoping Meeting which was held on Tilghman Island a few weeks ago. We certainly would have participated in the meeting if we had known about it.

The marsh opposite Poplar Island is eroding rapidly because the protection which once was provided by the Island is no longer there. The State Department of Natural Resources has just completed a study of our shoreline and shoreline of the property directly to the south of us. The report states the following:

The need for shoreline protection at these two properties is justified by the existing site conditions.... The rate of erosion taking place along these shorelines, generally between 5 and 6 feet per year, is a direct result of the large open water and the severe storms experienced in the area. Wind generated waves intensify the normal tidal conditions causing these shorelines to erode. As a result of this on-going erosive process, marsh lands have receded, unprotected bank areas have been undermined, protected bank areas are overtopped and exposed, and sediments are being released into the Bay.

The Poplar Island Restoration proposal will help to dampen the wave action against the marsh and slow down the rate of erosion. This will prolong the life of the marsh significantly, which will in turn continue its beneficial ecological effects on the Bay.

We strongly support the concept of continuing the wildlife sanctuary on Coaches Island, which provides an unspoiled and protected habitat for the birds and animals which is becoming less and less easy for them to find.

Poplar Island has a unique place in the history of Maryland and the Chesapeake Bay. It would be a shame to allow it to disappear entirely beneath the water.

We wish to be kept advised of developments regarding the Project and the schedule of public meetings. Mail should be sent to: Stephen and Adrienne Nassau  
7415 Nevis Road  
Bethesda, MD 20817  
Phone 301-229-5715 (h) 202-775-1550 (w) 202-775-0008 (fax)  
E-mail snassau@igc.apc.org

Our local address is 21476 Donnell Jones Rd., Sherwood, MD 21665, and local phone no. is 410-886-2714.

Thank you.

April 12, 1995 (mtg)

(List from Ms. Nassau)

#### EIA SHOULD EXAMINE

How to assure that dredge material is free of toxic material

- sterilization
  - testing
  - choice of dredge sites
- testing on reg. basis required. Prob w/hot spots

How to stabilize soil as you go.

- (wind erosion problem)
- Can you plant as you go.

Effect of new material on water quality in immediate area  
(e. g. turbidity)

Archaeological investigation

Possible effect on erosion or build up on adjacent mainland and  
Green Marsh

Effect on oysters, clams, crabs, etc.  
existing fish and birds both during and after  
construction period

Noise of construction

How to guarantee restored area will not be built on

How many boats per day during construction period. Hours of  
operation. What kind of machinery.

How to prevent additional erosion of recovered areas

Construction period for phase 1, 2, 3.

Alternatives to water discharge point and effects.  
involvement of school children and neighbors in restoring  
habitat and education, etc.

Nature trails

Would water disposal have better water quality than receiving waters?

How long does it take to fill a cell

Any special characteristics of dredge material that is different from material on Poplar now?

Rock or sand on E side? Mud flats or not?

Drainage from Poplar?

Who will maintain site after construction with whose money?

Effect on aquifer

Do you have an alternate site for contaminated soils?

(fax)

April 19, 1995

Ms. Brown, I wish to thank you and the others involved for the excellent presentation on the project at Tilghman last week. It was most informative.

Of most concern to the owners of nearby property fronting on the Bay is the effect that the changed currents and wave action resulting from the rebuilding of the Island will have on the shoreline. It would be useful if these matters could be addressed in the future.

At the meeting, my wife asked if there were any similar projects of this scope in existence, and apparently there are none. We were just with a friend from the Netherlands who suggested the Corps might want to contact Dutch engineering firms who have had a lot of experience with rebuilding land that has been washed away. He said the results have sometimes been unexpected and he thought their experience might be useful.

Thanks again.

Steve Nassau

**G. A. Hamilton**  
**P. O. Box 222**  
**Tilghman, MD 21671**  
**410-886-2345**

April 12, 1995 (mtg)

Please include funds to repair unexpected damage, E. G. additional silting in Knapps Narrows channel due to the Poplar Island reconstruction

Mr. and Mrs. Tilghman C. Coale  
109 Rock Lane  
Kent Point Farm  
Stevensville, MD 21666-3855

April 6, 1995

Dear Sir: We are happy to see the notice in the Annapolis paper about the dumping of clean dredge material to restore acres of land on Poplar Island. We live on the very end of Kent Island (South) facing Popular [sic] Island and we've seen the erosion of this beautiful place go into the water each year. Not only are you helping to maintain the island for wildlife but it's going to help our shoreline from eroision. Popular Island acts as a buffer. We feel it will help the whole end of Kent Island on both Eastern Bay and the Chesapeake Bay. We hope you get many good comments about this project. Keep up the good work. Sincerely,

Mr. and Mrs. Tilghman C. Coale

P. S. We only wished we knew about the meeting sooner so we could be there - we had other commitments.

Harold E. Cartright  
2556 Hoopers Island Road  
Fishing Creek, MD 21634

April 12, 1995

Dear Sirs: I am unable to attend tonight's meeting an the "Poplar Island Restoration", but am vitally interested because I live on an island in Chesapeake Bay south of the site.

Please send me information on why, who is paying, how much, and why Poplar Island and not Barren Is. or Smith or any of the other islands that are washing into the bay.

Thank you  
Harold E. Cartright  
2556 Hoopers Island Road  
Fishing Creek, MD 21634

Sinclair Gearing  
2717 Riva Road  
Annapolis, MD 21401  
410-266-5868/267-6475

April 14, 1995

Awaiting call-back on possible 2nd Chesapeake Beach Meeting on the project. Add to observations voiced at meeting last winter that I think it important to plan some form of beach replenishment around outside of rip-rap/rubble bulkhead. At least enough shore to beach a boat and wade around most of island, if necessary. SG

Robert K. Keller  
8612 Tilghman Island Road  
Box 130  
Wittman, MD 21676  
410-745-2237

April 13, 1995

1) Good meeting Tilghman April 12 Expressed concern to Bibo (MPA) and to John Gill - Federal Wildlife that there was no established policy commitment by top State or Federal authorities covering the future use of Poplar Island - by the public (such as nature trails - boat landings etc especially eastern side of island. Please advise what can we expect etc This is important I am very concerned about keeping this protected.

Gerald A. Cole  
2554 Hooper Island Road  
Fishing Creek, Maryland, 21634

Department of Microbiology & Immunology  
University of Maryland School of Medicine  
655 W. Baltimore St.  
Baltimore, Maryland  
410-706-7112  
fax 706-7496

Sirs: It is difficult for me to understand why the CE would spend the time, effort, and taxpayer dollars on the restoration of Poplar Island after years of neglect when other Chesapeake Bay areas are in more immediate need of Federal assistance to prevent major land-loss due to erosion. A good example is Smith Island which, together with its inhabitants, is in danger of extinction [sic]. Another is Barren Island which is disappearing at an alarming rate thereby increasing the rate of erosion of upper Hooper Island about a mile to the east. These same areas are also habitats for wildlife. As a home owner in the Bay area I wonder how the decision is made to restore one site and ignore others that seem (to me) to be of significantly greater importance to the lives of people. Can you provide [me] with that information?

Yours truly, G. A. Cole

Mrs. Ednah Stang  
Member  
Boat Act Advisory Committee  
7166 Lauren Lane #606  
Easton, Maryland 21601 410-820-5142

August 23, 1995

First trees to be planted by the Boat Act Advisory Com. (Enclosed photos of trees planted on dredged material.)

Gregory P. Wilson  
21420 Dogwood Cove Road  
Tilghman, Maryland 21671  
410-886-2309

August 23, 1995

(Is self employed.) (Wants) local employment.

**Charles E. Neumiller, Jr.  
Md. Watermen's Association P. O. Box 138  
Cordova, Maryland 21625**

**August 23, 1995**

The restored island should be kept as a wildlife refuge.

**Robert A. Cooper  
General Manager  
Higgins Crab House  
507 Hazelwood Drive  
Easton, Maryland 21601  
410-822-9277/home  
410-745-5056/work**

**October 16, 1995**

I am most concerned about this project being a success - My wife's mother and her family of "Ridgeways" were born on Poplar Island.

**From:** igc>snassau  
**Subject:** Re: Poplar Island Restoration Project Meetings  
**To:** seb  
**Cc:**  
**Sent:** 10/25/95  
**Received:** 10/25/95

---

Cc: snassau@igc.apc.org As you may recall, I own property directly east of Coaches Island. I am interested in getting an update on the project. Specifically, I have been told that Jefferson Island will now be tied into the rebuilt island. Can you verify this? Also, I would like information on who will have title to the rebuilt island? Will it be the present owners of Jefferson and Coaches or the state or federal government? Thanks for your cooperation.

Stephen M. Nassau

Author: Stacey E Brown at zzplan  
Date: 11/20/95 4:58 PM  
Priority: Normal  
Receipt Requested  
: snassau@igc.apc.org at INTERNET  
C: Stacey E Brown  
subject: Poplar Island Restoration Project

----- Message Contents -----

Mr. Nassau - I apologize for not having responded to your messages sooner, however we have changed mail systems and I did not know there were messages in my old mailbox.

In answer to your questions, Jefferson Island will not be tied into the rebuilt island and the rebuilt island will belong to the State of Maryland.

As far as a project update goes, the draft feasibility study and draft environmental impact statement are currently out for public review. Copies are available at public libraries in Easton, St. Michaels, Cambridge, Princess Anne, Chesapeake Beach, and Baltimore, Maryland.

There will be a public meeting on Tuesday, November 28th at the Talbot County Free Library at 100 W. Dover Street in Easton, Maryland at 7 p.m.

If you have any additional questions please feel free to contact me by phone at (410) 962-3639 or by e-mail at my new address which is stacey.e.brown@ccmail.nab.usace.army.mil.

Stacey Brown

**Attachment E**

**Agency Coordination  
Coordination Letter from District to Agencies  
Letters from Agencies  
Other Communications**

### **Coordination Letters from District**

- 18 January 1995 Letter from District to Congressional Representatives  
Identical letters were sent to Senators Mikulski and Sarbanes, and to Representatives Cardin, Ehrlich, Gilchrest, and Mfume
- 18 January 1995 Letter from District to Agencies  
Identical letters were sent to representatives of the following agencies: National Marine Fisheries, NOAA/ Coast and Geodetic Survey, U.S. Fish and Wildlife Service, U.S. Coast Guard, U.S. Environmental Protection Agency/Chesapeake Bay Program, U.S. Environmental Protection Agency/Region III, Maryland Department of the Environment, Maryland Department of Natural Resources, Chesapeake Bay Critical Areas Commission, Maryland Geological Survey, Talbot County Council, Talbot County Manager, Maryland Saltwater Sportfishermen's Association, Alliance for the Chesapeake Bay, Chesapeake Audubon Society, Chesapeake Bay Foundation - Maryland Office, Maryland Wetlands Committee

### **Letters From Agencies, Other Communications**

Numerous sponsors, contractors, and agencies collaborated in producing the Poplar Island Restoration Feasibility Study. The success of the project required many high-energy, productive meetings; careful consideration of complex issues; joint responsibility; short timeframes for products; and quick turn-around of products for review and comment. Open communication among many participants was critical for completion of the study. Accomplishment of the project goals was possible only through the sharing of coordination letters and other communications as appropriate. For this reason, letters were often sent to one participant and forwarded to others. Extensive informal coordination also took place. Therefore, agency coordination for the project, as reflected in the following letters and memos, was necessarily significant.

- 16 September 1994 Letter from EPA to MES regarding NEPA compliance for Poplar Island Habitat Restoration Project.
- 21 October 1994 Letter from Paul Slunt at MDE to USACE regarding scope of work for environmental sampling to be documented for the study.
- 25 October 1994 Phone conversation record for call from NMFS to USACE regarding environmental testing/sampling.

- 26 October 1994 Letter from NMFS to MES regarding environmental sampling .
- 27 October 1994 Memorandum from Cece Donovan/MES to Robert Smith/MES commenting on environmental scoping for the project.
- 1 November 1994 Memorandum from DNR to MES regarding reclassification of Natural Oyster Bar 8-10, which is adjacent to the proposed alignment for the restored island. The re-classification had been requested by the project team in order to reduce the design constraints on the project development.
- 8 November 1994 Letter from NMFS to MES regarding minimum environmental sampling.
- 16 November 1994 Phone conversation record for calls between MES and USACE regarding environmental testing.

(The following four letters were prepared by the environmental contractor, EA Engineering, to respond to comments made by various agencies on environmental testing for the project.)

- 23 November 1994 Letter from EA Engineering to USACE addressing comments on environmental sampling in 21 October letter from Paul Slunt of MDE.
- 28 November 1994 Letter from EA Engineering to USACE addressing comments in 27 October memo from Cece Donovan on environmental sampling.
- 5 January 1994 Letter from EA Engineering to USACE addressing comments on environmental sampling in 26 October NMFS letter.
- 6 January 1994 Letter from EA Engineering to USACE addressing comments on environmental sampling in 8 November letter from NMFS.
- 18 January 1995 Letter from USACE to MPA regarding decision to prepare EIS.
- 20 January 1995 Cover letters from MES to NMFS sent with contractor responses to environmental testing comments in NMFS letter of 26 October and 8 November.
- 3 February 1995 Letter from National Biological Survey to USACE regarding an offer of technical expertise on water birds at Poplar Island.
- 6 February 1995 Memorandum for the Record regarding January 30 meeting with SHPO to discuss the results of the Phase I investigation and define Phase II tasks.
- 7 February 1995 Letter from Maryland Historical Trust to USACE regarding cultural resources investigations at Poplar Island.
- 14 February 1995 Memorandum from cultural contractor, Goodwin and Associates, to project

design contractors providing an update on Phase I and Phase II investigations at the project site.

- 16 February 1995 Letter from U.S. Fish and Wildlife Service to environmental contractor responding to request for information on endangered species and fish and wildlife resources in the project area, in accordance with the Endangered Species Act and the Fish and Wildlife Coordination Act.
- 17 February 1995 Letter from Chesapeake Bay Foundation to USACE regarding CBF support for the project.
- 17 March 1995 Memorandum for the Record documenting results of meeting among representatives of USACE, MES, MPA, and contractors regarding cultural resources investigations tasks.
- 5 April 1995 Letter from NMFS to USACE regarding locations of fisheries in project area.
- 5 April 1995 Letter from Butkowski at DNR to USACE regarding potential spawning areas for horseshoe crabs and terrapins in the project area.
- 21 June 1995 Letter from contractor (Goodwin and Associates) regarding schedule of cultural investigations in project area.
- 19 July 1995 Letter from Mr. Robert L. Miller at Maryland DNR to environmental contractor providing information on threatened and endangered species and critical habitats in the Poplar Island area.
- 27 July 1995 Letter from MES to Maryland Watermen's Association regarding coordination with watermen on support for project. Although the project was strongly supported by watermen in general, informal meetings with Tilghman-area watermen had identified the loss of fishing areas as an important negative impact.
- 8 August 1995 Letter from NOAA to environmental contractor providing information on endangered species and fishery and habitat resources.
- 23 August 1995 Letter from USFWS to environmental contractor responding to a request for information on natural resources within the project area, in accordance with the Endangered Species Act, the Fish and Wildlife Coordination Act, and the Migratory Bird Treaty Act.
- 1 September 1995 Memorandum from MES to Members of Environmental working group requesting agency concurrence on monitoring plan.
- 7 September 1995 Letter from Senators Mikulski and Sarbanes to President Clinton supporting the project and urging the President to make Poplar Island a national priority.

14 September 1995 Letter from NMFS to MES regarding comments on the draft Habitat Development Report for the project.

15 September 1995 Letter from Governor Glendening to President Clinton supporting the project and urging Federal funding support.

25 September 1995 Executive Summary Letter from contractor (Goodwin and Associates) to Joint Venture discussing findings at Poplar Island.

3 October 1995 Letter from Maryland Historical Trust to USACE with discussion of draft Phase I Terrestrial and Marine Archeological Surveys for the project and Phase II Investigation for several sites.

27 November 1995 Letter from MES to USACE providing phone conversation notes from discussion between Cece Donovan and EPA Region III reviewers.

5 December 1995 Letter of support from commercial marina at Knapp's Narrows, at Tilghman, Maryland.

6 December 1995 Letter of support for project from Mary Roe Walkup, Maryland House of Delegates.

12 December 1995 Letter from U.S. Department of the Interior requesting an extension of the draft report review and comment period to February 9, 1996.

14 December 1995 Letter of support for project from U.S Fish and Wildlife Service.

18 December 1995 Letter of support for project from National Biological Service/Patuxent Environmental Science Center.

21 December 1995 Letter of support from Maryland Department of the Environment.

28 December 1995 Letter from Maryland DNR to Baltimore District providing agency comments.

3 January 1996 Agency comments received from Maryland Department of the Environment.

3 January 1996 Letter of support from Maryland Department of Natural Resources.

16 January 1996 Letter of support from the Alliance for the Chesapeake Bay.

17 January 1996 Letter from EPA requesting an extension of comment and review period to 2 February.

18 January 1996 Agency comments received from Maryland Geological Survey.

- 22 January 1996 Letter from NOAA/NMFS providing agency comments on draft document.
- 23 January 1996 Letter of agency support for project from National Oceanic and Atmospheric Administration.
- 26 January 1996 Letter from the Maryland DNR to Baltimore District providing additional agency comments.
- 30 January 30 1996 Letter from U.S. Department of the Interior to Baltimore District providing FWS comments in accordance with Section 2(b) of the Fish and Wildlife Coordination Act and Section 7 of the Endangered Species Act.
- 30 January 1996 Letter from the Maryland Oyster Recovery Partnership suggesting intertidal oyster reef development at the Poplar Island project.
- 31 January 1996 Letter from the Maryland Department of the Environment to the Baltimore District stating that the project will comply with the Department's air quality regulations.
- 1 February 1996 Letter from Maryland Department of the Environment in support of the project and stating that the project is consistent with the State's Coastal Zone Management Program.
- 2 February 1996 Letter from EPA Region III providing comments on the draft EIS.

January 18, 1995

Planning Division

Honorable Barbara A. Mikulski  
United States Senator  
World Trade Center  
Suite 253  
401 E. Pratt Street  
Baltimore, Maryland 21201

Dear Ms. Mikulski:

This letter is to inform you that the U. S. Army Corps of Engineers, Baltimore District, has initiated the preparation of an Environmental Impact Statement (EIS) for a Section 204 habitat restoration project at Poplar Island, in Talbot County, Maryland, and to request the assistance of your organization. Section 204 of the Water Resources Development Act of 1992 authorizes the Corps to carry out projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with dredging for construction, operation, or maintenance of an authorized Federal navigation project.

The Poplar Island project would restore approximately 1,000 acres of wildlife habitat in the upper Chesapeake Bay using approximately 10 to 40 million cubic yards of material dredged primarily from the southern approach channels to Baltimore Harbor. The material would be placed behind dikes at the site, then shaped and planted to create both intertidal wetland and upland wildlife habitat.

In compliance with the National Environmental Policy Act (NEPA), the EIS will include descriptions of the existing site conditions, design alternatives, project impacts, public involvement, and the recommended plan. We are requesting information on these topics, as well as input on other issues or concerns regarding this project.

This material is being provided for your information. Coordination letters with the same information are being sent to the organizations and individuals on the enclosed mailing list. If you have any questions or comments at any time throughout the study, please feel free to contact me or have a member of your staff contact Dr. James F. Johnson, Chief, Planning Division, at (410) 962-4900.

Sincerely,

Randall R. Inouye, P.E.  
Colonel, Corps of Engineers  
District Engineer

Enclosures

Identical letters to be sent to the following people:

Honorable Barbara A. Mikulski  
United States Senator  
World Trade Center  
Suite 253  
401 E. Pratt Street  
Baltimore, Maryland 21201

Honorable Paul S. Sarbanes  
United States Senator  
100 South Charles Street  
Tower 1  
Suite 1010  
Baltimore, Maryland 21201

Honorable Benjamin L. Cardin  
Representative In Congress  
540 East Belvedere Avenue  
Suite 201  
Baltimore, Maryland 21212

Honorable Robert L. Ehrlich Jr.  
Representative In Congress  
1407 York Road  
Lutherville, Maryland 21093

Honorable Wayne T. Gilchrest  
Representative In Congress  
1 Plaza East  
Suite 105  
Salisbury, Maryland 21801

Honorable Kweisi Mfume  
Representative In Congress  
2203 North Charles Street  
Baltimore, Maryland 21218

January 18, 1995

Planning Division

Mr. William Matuszeski  
Director  
U.S. Environmental Protection Agency  
Chesapeake Bay Program Office  
410 Severn Avenue, Suite 109  
Annapolis, Maryland 21403

Dear Mr. Matuszeski:

This letter is to inform you that the U. S. Army Corps of Engineers, Baltimore District, has initiated the preparation of an Environmental Impact Statement (EIS) for a Section 204 habitat restoration project at Poplar Island, in Talbot County, Maryland, and to request the assistance of your organization. Section 204 of the Water Resources Development Act of 1992 authorizes the Corps to carry out projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with dredging for construction, operation, or maintenance of an authorized Federal navigation project.

The Poplar Island project would restore approximately 1,000 acres of wildlife habitat in the upper Chesapeake Bay using approximately 10 to 40 million cubic yards of material dredged primarily from the southern approach channels to Baltimore Harbor. The material would be placed behind dikes at the site, then shaped and planted to create both intertidal wetland and upland wildlife habitat.

In compliance with the National Environmental Policy Act (NEPA), the EIS will include descriptions of the existing site conditions, design alternatives, project impacts, public involvement, and the recommended plan. We are requesting information on these topics, as well as input on other issues or concerns regarding this project.

Identical letters are being sent to the individuals and organizations on the enclosed list. Also enclosed is a copy of the Public Notice and a separate mailing list for that document. It is requested that you provide an agency point of contact (POC) within 30 days from the date of this letter to facilitate future coordination. If you have any questions, please call Ms. Carol Anderson-Austra, Planning Division, at (410) 962-2910.

Sincerely,

Dr. James F. Johnson  
Chief, Planning Division

Enclosures

Identical coordination letters sent to the following:

Mr. Timothy Goodger  
Assistant Coordinator  
National Marine Fisheries Service  
Habitat and Protected Resources  
Oxford, Maryland 21654-0279

Mr. David B. Enabnit  
Deputy Chief, Mapping & Charting Branch  
Coast & Geodetic Survey, NOAA  
SSMC 3, Station 7360  
1315 East-West Highway

Mr. John P. Wolflin  
Supervisor, Annapolis Field Office  
U.S. Fish and Wildlife Service  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, Maryland 21401

CPT Gregory S. Cope  
Commanding Officer  
U.S. Coast Guard Marine Safety Office  
U.S. Custom House  
40 South Gay Street  
Baltimore, Maryland 21202-4022

Mr. William Matuszeski  
Director  
U.S. Environmental Protection Agency  
Chesapeake Bay Program Office  
410 Severn Avenue, Suite 109  
Annapolis, Maryland 21403

Mr. Peter H. Kostmayer  
Regional Administrator  
U.S. Environmental Protection Agency  
Region III  
841 Chestnut Building (3RA00)  
Philadelphia, Pennsylvania 19107-4431

Mr. Ken Pensyl  
Chief, Water Quality Certification Division  
Non-Point Source Program  
Maryland Department of Environment  
2500 Broening Highway  
Baltimore, Maryland 21224

Honorable Torrey C. Brown  
Secretary  
Maryland Department of Natural Resources  
Tawes State Office Building  
580 Taylor Avenue  
Annapolis, Maryland 21401

Dr. Sarah Taylor  
Executive Director  
Chesapeake Bay Critical Area Commission  
45 Calvert Street  
2ND Floor  
Annapolis, Maryland 21401

Dr. Emery T. Cleaves  
Director  
Maryland Geological Survey  
Maryland Department of Natural Resources  
2300 St. Paul Street, Suite 440  
Baltimore, Maryland 21218

Mr. Clinton S. Bradley III  
President  
Talbot County Council  
11 North Washington Street  
Easton, Maryland 21601

Ms. Blenda W. Armistead  
County Manager  
Talbot County Courthouse  
11 N. Washington Street  
Easton, Maryland 21601

Mr. Larry Simms  
Executive Director  
Maryland Waterman's Association  
1805-A Virginia Street  
Annapolis, Maryland 21401

CPT. Michael Watson  
President  
The Association of Maryland Pilots  
3720 Dillon Street  
Baltimore, Maryland 21224

Mr. Richard Novotny  
Executive Director  
Maryland Saltwater Sportfishermen's  
Association  
7626 Baltimore & Annapolis Boulevard  
Glen Burnie, Maryland 21061

Mrs. Frances H. Flanigan  
Executive Director  
Alliance For the Chesapeake Bay  
6600 York Road  
Suite 100  
Baltimore, Maryland 21212

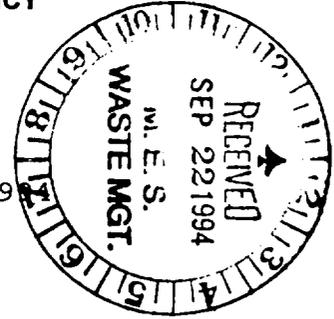
President  
Chesapeake Audubon Society  
Druid Hill Park  
c/o Baltimore Zoo  
Baltimore, Maryland 21217

Ms. Jane Nishida  
Chesapeake Bay Foundation Maryland  
Office  
164 Conduit Street  
Annapolis, Maryland 21401

Ms. Vivian Newman  
Maryland Wetlands Committee  
11194 Douglas Avenue  
Marritsville, Maryland 21104



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
841 Chestnut Building  
Philadelphia, Pennsylvania 19107-4431



September 16, 1994

Mr. Robert Smith  
Maryland Environmental Service  
2011 Commerce Park Drive  
Annapolis, Maryland 21401

Re: Poplar Island Habitat Restoration Project and the National Environmental Policy Act (NEPA) Compliance

Dear Mr. Smith:

Thank you for sending the Prefeasibility Report for the Poplar Island Habitat Restoration Project that was jointly completed by Maryland Environmental Service (MES) and Maryland Port Administration. We have also received the minutes and request for comments to the Poplar Island Working Group meeting that was held on August 3, 1994 from Glenn Eugster of the Chesapeake Bay Program Office. He has been extensively involved in commenting on this project and has kept the NEPA Review Team up to date on the details of this project. In accordance with the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, EPA has reviewed Poplar Island Work Group materials and the Prefeasibility Report for recommendation of proper NEPA documentation.

The project involves the utilization of approximately 11 million cubic yards (MCY) of dredged materials to create almost 1000 acres of habitat on Poplar Island. Wetland habitat will be targeted for approximately 70% of the restoration project and approximately 30% will target upland habitat. The dredged materials will be obtained from Federal navigation projects in the area. The largest cost that will result from this project is the transport of the compatible dredged material to the restoration site. Cost for the project will be shared by the Maryland Port Administration and the U.S. Army Corps of Engineers (Corps), Baltimore District.

The ultimate goal of NEPA is not to produce documents, but for the federal government to consider fully the environmental effects of proposed action into their decision making process. Considering that this project is a restoration project, which is intended to positively impact the environment through habitat creation, no net adverse environmental impacts are anticipated as a result of this project. However, the scope of the project is based on approximately 1000 acres of impact, whether positive or negative, to the waters of the U.S. and is costly. The decisions that will be made regarding the technical designs and alternative methods for creating the habitat will ultimately result in

restoration for the benefit of the Chesapeake Bay and the expenditure of a large amount of federal resources. Consequently, EPA recommends that a project of this scope warrants an EIS, which would serve as a decision making tool to help determine a preferred alternative.

After reviewing the existing information on the project and the plans to gather additional data for the NEPA documentation recommended by the Working Group, it appears that little additional effort would be required to produce an EIS instead of an Environmental Assessment (EA). However, proceeding with an EIS could save time and resources in the long term. If the Corps decided to go forward with an EA only to discover that an EIS was warranted, the whole review process and revisions would have to begin again. This would prolong the whole public and resource agency participation process as well as resources for the revision of the documents. It is ultimately the lead agency's decision to decide the type of document that is needed to fulfill the NEPA requirements.

EPA appreciates the opportunity to comment early in the process. Please continue to keep us informed on the status of this project. If you have any questions on our comments, please do not hesitate to contact me or Danielle Algazi of my staff. We can be reached at (215) 597-1177 and (215) 597-1168 respectively.

Sincerely,



Roy E. Denmark, Jr.  
Acting Chief  
Environmental Planning and  
Assessment Section

CC: Wes Colman, U.S. Army Corps of Engineers, Baltimore District  
Tim Goodger, National Marine Fisheries  
John Gill, U.S. Fish and Wildlife Service, Annapolis  
Field Office

**MARYLAND DEPARTMENT OF THE ENVIRONMENT  
CHESAPEAKE BAY AND WATERSHED MANAGEMENT ADMINISTRATION  
410-631-3572**

October 21, 1994

Carol Anderson-Austra  
Planning Division  
Baltimore Corps of Engineers  
P.O.Box 1715  
Baltimore, Maryland 21203-1715

**RE: COMMENTS ON DRAFT "SCOPE OF WORK-ENVIRONMENTAL  
SAMPLING FOR POPLAR ISLAND" RELATIVE TO THE EA/EIS**

Dear Ms. Anderson-Austra

As part of the Poplar Island Workgroup commitment of October 13, 1994, MDE is providing you with comments on the draft "Scope of Work(SOW)-Environmental Sampling for Poplar Island" relative to the EA/EIS. Our comments are as follows:

The objective of the study should be stated.

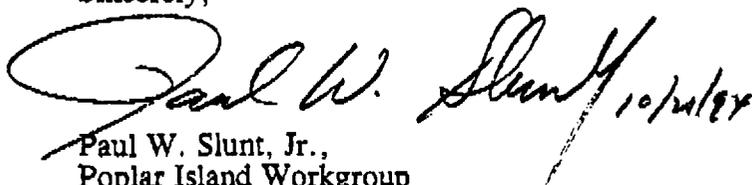
Why are we vertically-compositing samples from shallow waters? In the Bay-wide monitoring, samples are taken at various depths due to significant changes in the water column. These shallow waters around Poplar Island would not be expected to have vertical differences.

Again, why are we measuring field parameters at surface, mid-depth, and bottom of the water column?

The SOW does not tell me what you plan to do with the data. It does not tell me why each station was pick were it is or how the data is planned to be analyzed. Are you just documenting existing water quality conditions? Is it to be used in a model? In other words, what is the monitoring rationale?

Our last comment deals with the laboratory methods. Based on conversations with Mr. Narendra Panday on October 20 & 21, you were informed that there are some major differences between the laboratory methods of EA and the U. of Md. It was suggested that you call Mr. Carl Zimmermann, chemist at the U. of Md., and speak to him directly. We assume that the differences will be resolved and that the data would therefore be consistent with our Bay data.

Sincerely,

  
Paul W. Slunt, Jr.,  
Poplar Island Workgroup  
member for MDE

## CONVERSATION RECORD

---

TIME: 11:15

DATE: Oct 25, 1994

FILE NAME: POPLAR/nmfs

TYPE: TELEPHONE: incoming

Name of person(s) contacted:  
Dave Meyer

Organization:  
NMFS/NOAA

Phone No.:  
919-728-8743

SUBJECT: NMFS Comments on Environmental SOW

SUMMARY: Mr. Meyer said that his office is preparing a letter which includes comments from several individuals at both the lab and restoration center where he and Chris Doley work. Their comments include the following points:

1. Mr. Meyer feels that the testing/sampling stations marked on the map do not have a pattern in the underwater areas; in the land areas there seems to be some balance. I responded that the station locations had been changed since the map was marked up; if he sends a map with the locations they prefer, we will be glad to consider them.

2. Comment: The proposed seining near the islands will produce qualitative measures; he suggested using block nets to capture quantitative information as well. Also, there should be seining on the east as well as west sides of the islands, and possibly near Coach's and Jefferson Island. He explained that block nets are set perpendicular to the shore so that a seine can be run between them, reducing the number of animals that escape from the sample. Response: A decision has been made to change seining locations to include test sites on the west sides of the islands. In addition, we will consider test locations near Coach's and Jefferson's Islands and the use of block nets.

3. Comment: The mesh size of the seines should be the same as that of the trawl nets for easier comparison. I will discuss with environmental and contracting folks.

4. Comment: Mr. Meyer suggests testing for ichthyoplankton at a series of 3 sets of 3 locations (for a total of 9 test sites). Each set would include a test site west of the island footprint, a test site within the island footprint, and a test site east of the island footprint. Ideally, the tests should be replicated 3 times at each of the test sites within each sampling period/night/visit. Also ideally, the test times would include a Spring tide/new moon for maximum fish, and a neap tide for the least fish. He stated that, in general, it is more important to sample several times at one location than once at several locations.

5. Comment: SAV beds need to be delineated and the number of shoots and total biomass defined as a way of identifying the quality as well as the extent of the existing SAV. Depending on the size and location of the beds, it is possible that trawling or dropnet sampling for animals should also be done in the beds.

6. Comment: It is not clear what size sampling tools will be used. It may be necessary to sample for both large and small animals, requiring the use of large and small sampling tools. Response: Comment will be considered.

As a follow-up, I asked Mr. Meyer to prioritize his comments and suggestions as guidance when we are considering the costs and benefits of the actions. He said he will have to give that some thought before he responds.

**ACTION REQUIRED:** Coordinate with contractor, SQS/Walls, PM, and environmental technical folks.

---

NAME OF PERSON DOCUMENTING CONV.  
CA-A

SIGNATURE

DATE

---

ACTION TAKEN:

---

SIGNATURE

TITLE

DATE



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE

Southeast Fisheries Science Center  
Beaufort Laboratory  
101 Pivers Island Road  
Beaufort, NC 28516-9722

October 26, 1994

Mr. Robert Smith  
Maryland Environmental Service  
2011 Commerce Park Drive  
Annapolis, MD 21401-2995

Dear Bob:

We have reviewed the scope of work proposed for the environmental sampling of Poplar Island. We do feel it is a good starting point, but feel that additional information on the biotic communities needs to be obtained to assess the impact to them within the footprint and the surrounding the area of Poplar Island. In particular we feel that more emphasis should be placed on characterizing the function of the existing marsh, SAV and oyster beds adjacent to and within the footprint of the proposed island.

We do agree that sampling for fauna should be conducted during at least three seasons and benthic infauna and water quality in all four seasons. We suspect that faunal collections will be made during the spring, summer and fall. We do wonder however, what was the rationale for deciding to use 10 stations for infaunal and water quality sampling. Why were they selected as shown on the figure. We feel that stations should be equally distributed along the eastern, western and within the footprint of the proposed island with adequate replication ( $n=5$  for each area) to statistically validate the observation obtained.

Sediment analysis (at least once) should be conducted within the study site in connection with benthic and terrestrial collections. This should include sediment analyses for nearby oyster reefs and seagrass beds. Minimum information of particle size and organic content should be collected.

For the aquatic ecology assessment (this includes blue crab, trawling and ichthyoplankton assessment) we propose that a minimum of nine stations be established with three replicates at each of the stations (Figure 1). Sampling for blue crabs and trawling should be conducted during spring, summer and fall.



What size mesh do you propose to use for the crab pots? This type of sampling is not of much use to collect anything other than adult and sub-adult crabs. A small mesh size or different method needs to be used for smaller sized crabs.

For benthic invertebrate (infaunal) assessment a petite Ponar sampling device is proposed but there is no indication of size of the sampler or screens to sieve the sediment. Will the size gear suggested be able to adequately sample for clams and other macrofauna. What about smaller infauna? Instead of using one device to sample the benthic community it may be better to use two separate methods or methodologies, one for measuring large macrofauna (such as clams), and another to measure smaller infauna such as polychaetes. This may better determine the community structure.

Ichthyoplankton sampling as proposed is not sufficient. What is the rationale for the two stations as proposed? The effect of the island will have a more pronounced effect than on just the area that will be lost once the island is built. The area immediately adjacent to the island will also be effected through at least the change in water movement within the area. This too should be examined. A total of nine stations should be set up three on both the eastern and western sides of the island and three within the foot print of the proposed island. Within each site three replicate tows should be made during each season (winter, spring and summer), during flood tide on either a new or full moon (this should be consistent throughout the sampling schedule). How will sampling be accomplished for ichthyoplankton? Will they be fished as a push net, abeam, astern? Push net type is preferable, abeam is suitable if the boat maintains an arc course with the net on the outside of the arc. Whichever method employed it is also necessary to attempt to fish at least 100 m<sup>3</sup> of water with each replicate net.

How long or far are the trawls with the otter trawl going to be? We suggest a set distance (~100 m) at a set speed or a set time and speed with distance being determined using a range finder. This could help to quantify animals within the area as well as determine species composition. These trawls should also be done on a rising spring tide at the nine stations we suggest for the ichthyoplankton sampling. Replicate nets at each station would be preferable. Also, an on-board holding tank should be considered for animal collected while they are being identified (to species we hope) to increase their chances for survival. We also suggest using similar mesh sizes for trawls and seines so the results could be comparable to some degree.

The beach seining proposed is not very informative or valuable. Why only fish on the western side of two islands? It would be better to fish one replicate seine on both the eastern and western sides of three or more islands within the footprint of

the proposed island, at and Jefferson and Coaches Island (and n of two is not sufficient for valid statistical analysis). Further, the typical beach seining proposed is a qualitative measurement of fish species, not a quantitative measure. With a little more effort the beach seining could be quantitative through the use of block nets set up ~ 80 ft apart from each other perpendicular to the shore immediately prior to seining. Once the side block nets are set, a 100 ft beach seine could be pulled landward with each end abutted against a block net.

The determination of SAV presence and assessment needs to be more extensive. It would be better to first delineate the boundaries of SAV, possibly through areal photography survey of the area under suitable conditions (if they occur), and then ground truthing of the areas suspected of being SAV. During ground truthing (which should be done during the summer) systematic or randomly quantifying SAV species and shoot density by species should be performed (i.e., are there 100 or 10,000 shoots/ m<sup>2</sup>) to assess the condition of the SAV areas. This could be performed through coring of the SAV or *in situ* shoot counts with the aid of SCUB. The SAV should also be sampled for faunal use through trawling replicate areas for larger mobile fauna (at least three areas, if they exist) and throw traps for smaller less mobile epifauna. Infauna should also be sampled as at the unvegetated stations and the sediment should be analyzed for grain size and organic content (once). Above and below ground biomass of the SAV should also be quantified.

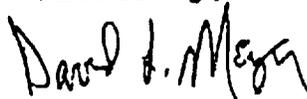
Wetlands should be not only delineated but quantified for areal coverage as should the terrestrial areas. For both areas, species surveys at each of the islands in the footprint of the island should be conducted during late spring and summer to determine vegetation species present, estimated coverage of each species (listing the dominant) and systematic or randomly determined shoot densities of the dominant species. During the spring summer and fall, replicate quantitative samples of the marsh areas for fish shrimp and crab use should be obtained using the islands as replicates and species identified and quantified. Replicate infaunal sampling, sediment size and organic characteristics of the island marshes should also be obtained during the fall.

There should be a survey of the existing oyster beds to examine if they are productive (spat settlement, size of live oysters etc.). This should be performed during the early summer and fall. An examination of sediment condition for the oyster beds should also be performed to detect any sedimentation that might occur due to water flow or current changes in the area due to the proposed island.

The examination of the terrestrial component of the island remnants is very vague. What does it encompass? There should be a systematic or randomized survey of the vegetation noting the dominant and an assessment of all plant species present during the late spring and summer. Additionally the use of the islands by terrestrial animals and birds needs to be assessed. Possibly through live trapping and track and scat surveys for terrestrial animals and visual bird surveys.

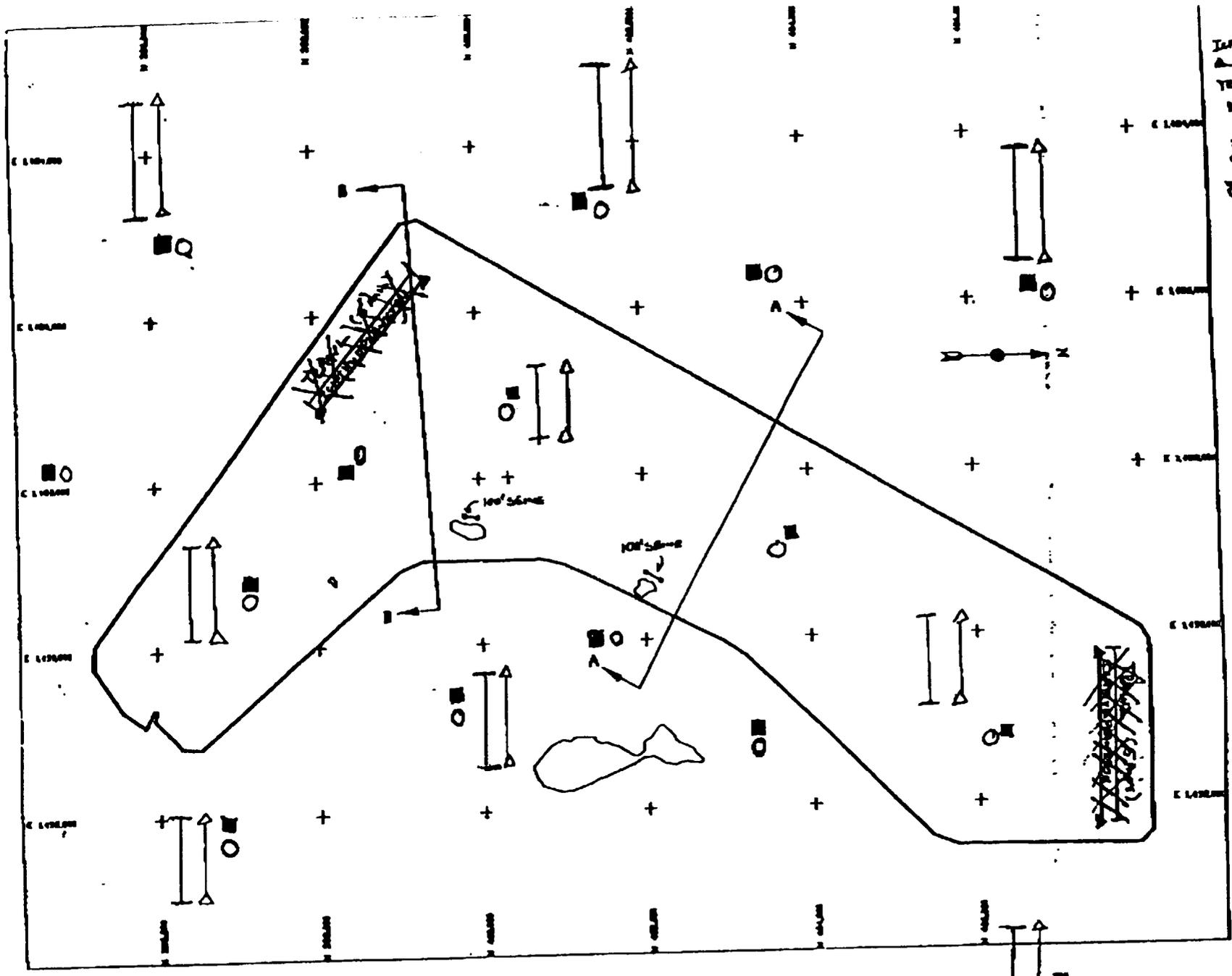
If you have any questions or need something else pertaining to this project let me know (919) 728-8743.

Sincerely,



David L. Meyer  
Research Fishery Biologist

cc: G. Thayer  
D. Hoss  
C. Doley  
J. Thomas  
B. Norman  
G. Mayer  
C. Anderson  
T. Goodger



LEADERS STATION  
 TRAIL STATION  
 SINK STATION  
 WATER GATE/  
 CENTER STATION  
 BALL CAP  
 STATION

DRAFT

October 27, 1984

**MEMORANDUM**

**TO:** Bob Smith, Project Manager

**FROM:** Ceca Donovan *CD*

**SUBJECT:** Environmental Sampling at Poplar Island -  
Comments on the Scope of Work

Prior to tomorrow's meeting, here are my written comments on the above-mentioned scope. Most of these comments are those mentioned in the Oct 13 POP Work Group meeting.

**Page 1 - Assumptions**

**Assumption 1**

1. Sampling for Ichthyoplankton may only yield valuable data in the spring/early summer. So one sample collection may be adequate.
2. Most benthic organisms have been observed to have growth seasons in either the spring and fall. It may be wise to only sample in these seasons, rather than also in the winter and summer, when there is not much going on.

**Assumption 2**

1. Nine stations were counted from the original plan for aquatic sampling - there were a total of 10 stations, but 9 were in the water and one on land.
2. Should any background or reference stations be included - not for the purposes of future monitoring, but to establish whether or not this area is comparable - more or less valuable or unique than other nearby areas. This was the issue in G-West - if the area to the south contained "valuable" or "unique" habitat that may be impacted. Background or reference stations may be advisable for some, if not all, study elements to answer these questions for the impact assessment.

**Bob Smith**  
**October 27, 1994**  
**Page 2**

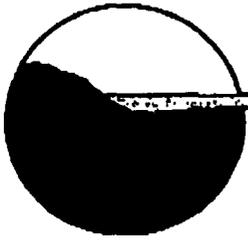
**Assumption 3**

1. As the Chesapeake Bay Program water quality monitoring study is conducted on a monthly and biweekly basis depending on the season, this may be a better frequency for the

study. Also, unless there is suspicion that the water column is stratified in this area, the need to sample at varying depths may not be necessary.

**Assumption 5**

1. For B., see above comment under assumption 2.
2. For C, see above comment under Assumption 1.
3. For D, acoustics may be useful in detecting fish, and diel sampling.
4. Some mention should be made in the Aquatic Ecology section that Rare, Threatened and Endangered Species will be noted if encountered, and that an aquatic survey will be conducted, as well as the Terrestrial Survey noted in Assumption 6.



## Maryland Department of Natural Resources

**Tidewater Administration**  
 Tawes State Office Building  
 580 Taylor Avenue  
 Annapolis, Maryland 21401

William Donald Schaefer  
 Governor

Torrey C. Brown, M.D.  
 Secretary



November 1, 1994

### MEMORANDUM

TO: Robert Smith, MES

FROM: Chris Judy, DNR Shellfish Program *(unc)*

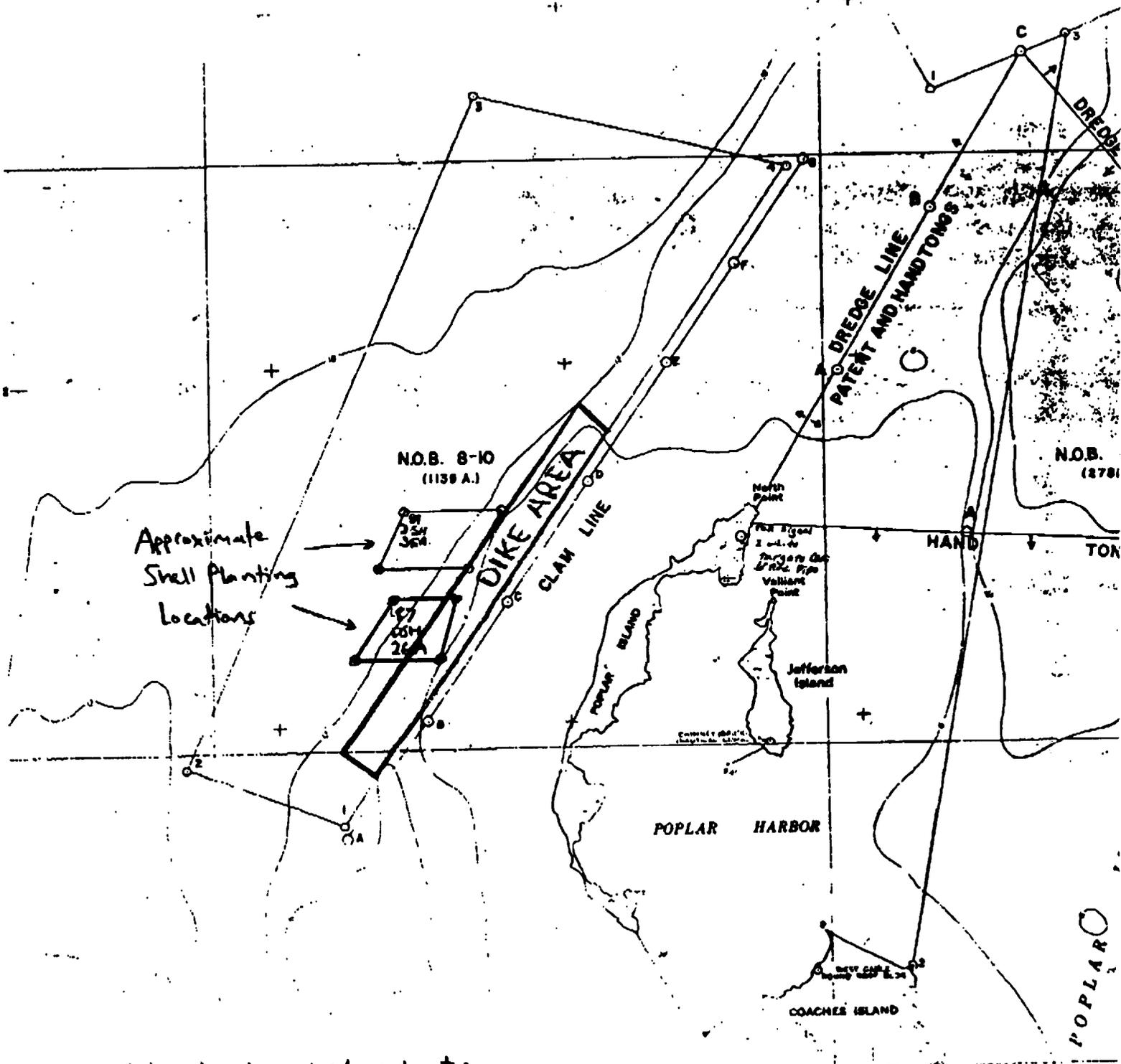
SUBJECT: Poplar Island Project - Natural Oyster Bar 8-10

I am responding to your request that the Fisheries Division consider reclassifying a portion of the eastern boundary of Natural Oyster Bar 8-10 where a proposed dike would intrude into the bar.

The Director of the Fisheries Division, W.P. Jensen, has decided to not pursue a reclassification of that bottom from natural oyster bar. Within the 55 acre section that your office indicated would be impacted by a reclassification, there is a shell planting made in 1987 that is populated by oysters. Adjacent to the area is another shell planting, made in 1989, also populated by oysters. The shell plantings are illustrated on the attached chart.

If you have any questions please call me at 974-3733.

Telephone: \_\_\_\_\_  
 DNR TTY for Deaf: 301-974-3683



Not a legal oyster bar chart:  
 For diagrammatic purposes only

Prepared By DNR, Shellfish Program 11/1/74



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
**Habitat and Protected Resources**  
Division

904 South Morris Street  
Oxford, Maryland 21654

8 November 1994

Mr. Robert Smith  
Maryland Environmental Service  
2011 Commerce Park Drive  
Annapolis, MD 21401-2995

Dear Mr. Smith:

The comments that follow are the consensus opinion of the National Marine Fisheries Service (NMFS), as represented by the Southeast Fisheries Science Center, Beaufort Laboratory; NOAA Chesapeake Bay Program Office, Annapolis; NOAA Restoration Center, Silver Spring; and Northeast Region, Habitat and Protected Resources Division, Oxford, with respect to the minimum sampling requirements for living aquatic resources and habitat that we need to satisfy our mandates pursuant to the National Environmental Policy Act (NEPA).

In our opinion, the information generated by the present field sampling plan will not be adequate to characterize the existing environment biologically, as required by NEPA. In the absence of a suitable site characterization, potential impacts, either positive or negative, cannot be adequately addressed. On the other hand, the plan identifies some sampling that will not provide particularly useful data, which are unnecessary for the characterization (e.g., winter fish trawl and blue crab surveys). We believe that with some adjustments in the proposed sampling plan, the data that are collected will not only satisfy NEPA, but also provide a statistically sound baseline from which can be measured the relative success, or failure, of the project during the monitoring phase. We provided many recommendations to enhance the statistical validity of the sampling design previously (David L. Meyer, 26 Oct. 1994). By incorporating these recommendations, sampling efforts can serve multiple purposes, thereby saving time, money, and reducing duplication of effort.

A major deficiency is that the sampling plan fails to address molluscan shellfish resources. The footprint of the restored island approaches Natural Oyster Bar (NOB) 8-10 on the west shore, and encroaches upon a natural seed bar on the east. NOB 8-11 north of Poplar Island may also be affected. Additionally, the footprint will encroach upon softshell clam habitat currently available to commercial harvest. The sampling plan must describe existing shellfish resources so that the potential impacts to these resources can be addressed in the NEPA document. Furthermore, the NEPA document must also address mitigative measures to reduce those impacts, which will not be possible if shellfish resources are not adequately described. If someone other than the contractor (e



MD DNR) is going to describe molluscan shellfish resources for subsequent environmental impact analysis, it should be so noted in the sampling plan.

As stated previously, winter fish trawl and blue crab surveys will not yield particularly useful information. Instead of winter surveys, more samples at more stations should be collected in the remaining seasons. Additionally, running replicate fish trawls immediately after sampling along the same transects will not yield meaningful data. Fish will be dispersed following the initial trawl; sufficient recovery time must be allotted before fish will re-assemble. As an alternative, more stations or sampling times should be established. Similarly, replicate seine samples should not be collected. As an alternative, stations should be established at sheltered and exposed environments on the same islands. Comparing sheltered to exposed areas should provide useful insights for evaluating potential impacts of island restoration. Consideration should be given to include seine sampling stations at Jefferson and Coates Islands. Again, winter sampling is unnecessary. We recommend that final details of field sampling design be discussed at the next workgroup meeting where consensus may be reached.

It appears that modifications in proposed field techniques to characterize wetlands and SAV are generally satisfactory. However, it should be noted that the SAV sampling procedures are not adequate for horned pondweed (Zannichellia pallustris). Horned pondweed emerges in the early spring, disappears as water temperatures warm in the summer, and may re-appear in the autumn. If historic SAV surveys conducted under the auspices of the Chesapeake Bay Program indicate horned pondweed is a species of significance in the project area, sampling strategies will need to be modified. Additionally, if wetlands and SAV are not going to be sampled to determine the extent of faunal use, a literature review should be conducted to document what is known relative to similar habitats.

If you have questions concerning these comments, please call me at (410) 226-5771.

Sincerely,

  
Timothy E. Goodger  
Assistant Coordinator

cc: Dave Meyer/Gordon Thayer-Beaufort Lab.  
Bruce Norman/Bess Gillelan-NOAA Chesapeake Bay Off.  
Chris Doley-NMFS  
Roy Denmark-EPA-Region III  
John Gill-FWS, Annapolis  
Nick Carter-DNR-Tidewater  
Mark Mendelsohn-Corps of Eng.-Balt.  
Stacey Brown-Corps of Eng.-Balt.  
Brian Walls-Corps of Eng.-Balt. (Operations)

CONVERSATION RECORD

TIME: : :16/11/94 FILE NAME: usr2/mendels

TYPE:

TELEPHONE:  
incoming:  
outgoing:x

VISIT:

CONFERENCE:

Name of person(s) contacted:

Organization:

Phone No.:

Bob Smith

MES

SUBJECT: Poplar Island Restoration

SUMMARY:

I returned Bob's call. He was concerned that the 8 Nov 1994 letter from Tim Goodger (NMFS) said that winter testing for crabs and fish wasn't necessary. I told him that if the consensus among agencies was that winter testing wasn't necessary then let's not do it. I told him that neither USFWS or DNR said not to do it. He said that John Gill (USFWS) suggested winter testing.

I told him that because of dredging restrictions most of our work would be done in the winter and it would be good to know what the impacts be if any. He said that there was a seed oyster bed on the east side of the island which impacts the design that has wetlands on that side.

He said that DNR is going to locate all clam and oyster areas. He said that the oyster bar within footprint is considered alive by DNR. He said that we will have to mitigate for any loss of habitat that NMFS is concerned about. I told him that I would like to not use the word mitigation because of what it implies.

He said that the job is to get all the agencies which support the project to work together.

We then talked about whether we really wanted complete seasonal reports or if we could use seasonal data. He said that there is a risk in using interim data but we don't want to wait till the final report for all 4 seasons to come in when we will be pushed for time. I told him that there is probably information from each season's report that we can use for the NEPA doc. He said that the contractor will present the first data at 17 Nov 1994 mtg and we can decide if it is what we need.

ACTION REQUIRED:

Mark Mendelsohn



11/16/94

\_\_NAME OF PERSON DOCUMENTING CONV.

SIGNATURE

DATE

ACTION TAKEN:

\_\_SIGNATURE

TITLE

DATE



23 November 1994

Ms. Carol Anderson-Austra  
Planning Division  
Baltimore District, USACE  
P.O. Box 1715  
Baltimore, MD 21203-1715

**RE: MDE comments on Draft "Scope of Work - Environmental Sampling for Poplar Island"**

Dear Carol:

This letter is in response to the letter to you from Paul Slunt (attached) describing his comments to the Poplar Island sampling plan. We can go over these with you to finalize the reply.

1. The specific objective of the field study is to a) corroborate existing information and b) to provide adequate additional baseline data to support the preparation of an Environmental Document. The level of effort was developed to include those groups of aquatic and terrestrial /wetland biota which were considered of sufficient importance to provide the necessary basis for defining existing conditions. The purpose is to determine if any unusual or unique communities exist which would be significantly impacted by the proposed action as well as the types and general structure of the resources affected. This information will also be used in conjunction with existing information and available data from the literature or agency files to define the anticipated impacts of the proposed action.

The Scope of the field effort was developed in cooperation with the Baltimore District USACE, MES, USFWS, and Maryland DNR. The station locations, sampling frequency and number of replicates were arrived at through consultation with these agencies. Further, the station locations were defined to low for near and far field comparisons for benthic infauna and water quality.

2. The vertical compositing is a standardized method to obtain a more representative sample of the water column at any given location. We routinely measure field parameters at the surface, mid-depth, and bottom, unless the depth is less than 3 feet deep. While vertical differences are not anticipated in shallow water, some stations are deeper than others, and we prefer to be consistent.

3. The data will first be organized into raw data tables to be included in the quarterly data reports. Each discipline will be analyzed differently, but no modelling will be done. We do not intend to establish any trends, since this is not considered necessary for purposes of establishing existing conditions. Trends can only be established by collecting over a number of years. The efforts undertaken here are not intended to be part of a longterm monitoring program. That program will be developed following these baseline surveys. The monitoring program is proposed to be comparisons between the immediate post-construction condition, and reference areas where established communities exist. Since it is clear that the island reconstruction will result loss of bottom and shoreline within the dike. The sampling will verify the communities affected, provide adequate support for the NEPA documentation, but is not intended to conceptually form the basis of a monitoring plan.

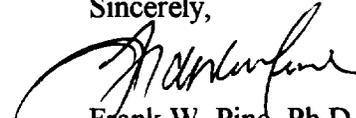
The water quality data will be compared among stations and between seasons. The new data collected during these baseline studies from MES station 004 will be compared with both historical and current state data from this station to determine consistency.

Fish and ichthyoplankton data will be organized into tables defining relative species composition, length/age class, and relative abundance. The intent is to compare this information with existing data and to establish existing conditions.

4. The water quality samples will be analyzed by the CEES laboratory at the CBL lab in Solomons. This is the lab which analyzes all the samples under the Chesapeake Bay Program. Therefore, all differences have been resolved.

If you have any comments related to these answers, please call me at any time. We will have complete responses to all the comments from NMFS early next week. I am waiting until we have resolved the issues surrounding the change in dike configuration before completing those comments. I think we should meet sometime soon to discuss the issue of monitoring. If a reasonable plan can be outlined, at least for discussion purposes, I think most of the concerns raised should be resolved.

Sincerely,



Frank W. Pine, Ph.D.  
Project Manager

cc: R. Smith  
D. Urso  
M. Hart  
File 60864.01  
f:/ea&m/poplar/usace23.nov



28 November 1994

Ms. Carol Anderson-Austra  
Planning Division  
Baltimore District, USACE  
P.O. Box 1715  
Baltimore, MD 21203-1715

RE: Cece Donovan's comments on Draft "Scope of Work - Environmental Sampling for Poplar Island"

Dear Carol:

This letter is in response to the memorandum to you from Cece Donovan (attached) describing her comments to the Poplar Island sampling plan. We can go over these with you to finalize the reply.

**Assumption 1**

1. While we agree that ichthyoplankton sampling would be most productive in the spring/early summer, there are concerns about the potential restrictions against construction activities during the winter/early spring months because of anadromous fish spawning. Information related to the winter season may be important in attempting to have that restriction relaxed or removed. Timing will be important and it may be of value to conduct a field effort later in the winter as an additional ichthyoplankton assessment. Further, we originally understood that the request for the full winter survey was related to maintaining equal effort in all four seasons.
2. The benthic sampling provides the best assessment of the general condition of the area and should be continued for all four seasons. We can determine the relative abundance and diversity for each season, and compare seasons.

**Assumption 2**

1. The number of stations originally proposed was four, all in the water. This was changed to ten in the water. The terrestrial stations were added just before the fall sampling trip. We have no recollection of there ever having been nine stations proposed, or one on land. At this time we are considering some additions due to changes in the configuration of the dike.

2. Two of the ten benthic/water quality stations were located east of Coaches Island as background stations. At the time these were chosen, it was agreed not to add other disciplines at these two stations. We believe that the uniqueness of the area proposed for reconstruction will be determined by comparison of the data collected in the area with existing information.

**Assumption 3**

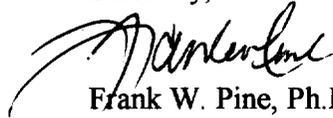
1. An increase in sampling frequency would be prohibitively expensive. Since we are sampling at the same location as the state at station BWQ 8-104, we can determine if there are any significant discrepancies. We need to keep in mind that the purpose of the field investigations is to confirm existing information and complete an existing conditions section of the Environmental Document.

**Assumption 5**

3. While acoustics may be useful, the sampling needs to be uniform and consistent with respect to general location and method. We believe that the methods chosen are the most appropriate.
4. Rare, threatened, and endangered species will be noted throughout the field efforts, both during aquatic and terrestrial surveys. Potential RTE plants will be specifically included in the terrestrial survey.

If you have any comments or questions related to the above discussion, please call me at any time.

Sincerely,



Frank W. Pine, Ph.D.  
Project Manager

cc: R. Smith  
D. Urso  
M. Hart  
File 60864.01  
f:\ea&m\poplar\usace28.nov



5 January 1995

Mr. Robert Smith  
Maryland Environmental Service  
2011 Commerce Park Drive  
Annapolis, MD 21401-2995

RE: Response to National Marine Fisheries Service comments on Draft "Scope of Work - Environmental Sampling for Poplar Island"

Dear Bob:

This letter is in response to the 26 October 1994 letter to you from David L. Meyer, National Marine Fisheries Service, Beaufort Laboratory(attached). The responses to the 8 November letter are provided separately.

1. The specific objectives of the field studies are to a) corroborate existing information and b) to provide data to support the preparation of an Environmental Document. The level of effort was developed to include those groups of aquatic and terrestrial /wetland biota which were considered of sufficient importance to provide the necessary basis for defining existing conditions. The purpose is to determine if any unusual or unique communities or habitats exist which would be significantly impacted by the proposed action as well as the types and general structure of the resources affected. This information will also be used in conjunction with existing information and available data from the literature or agency files to define the anticipated impacts of the proposed action.

The Scope of the field effort was developed in cooperation with the Baltimore District USACE, MES, USFWS, and Maryland DNR. The station locations, sampling frequency and number of replicates were arrived at through consultation with these agencies. Further, the station locations were defined to allow for near and far field comparisons for benthic infauna and water quality.

2. Sediment samples have been taken in conjunction with the benthic sample collection during the Fall. These will be analyzed for particle size distribution and organic content.

3. While we agree that ichthyoplankton sampling would be most productive in the spring/early summer, there are concerns about the potential restrictions against construction activities during the winter/early spring months because of anadromous fish spawning. Information related to the winter season may be important in attempting to establish utilization of the area by anadromous fish species. Timing will be important and it may be of value to conduct a field effort later in the winter as an additional ichthyoplankton assessment. Further, we originally understood that the request for the full winter survey was related to maintaining equal effort in all four seasons. For this reason we will be conducting a complete survey during winter.
4. The crab pots are standard commercial gear with approximately a 1 inch mesh. This part of the program was meant to target the commercial fishery and was meant to be qualitative.
5. Sorting protocol-- we are using a large ponar and a 600 $\mu$ m mesh sieve in the field. In the lab the samples are rinsed with a 500  $\mu$ m sieve and are sorted under a dissecting microscope, then identified to the lowest practical taxon and enumerated.
6. Ponar will sample a general cross section of relatively immobile epifauna and infauna. Five or more replicates might be necessary for statistical comparisons in the monitoring phase but such rigorous statistical comparisons are not required to characterize the site for NEPA purposes. The study as it is set up now does not address larger infauna and epifauna (clams and oysters). Some of the information will be derived from state records. Other data will be collected by the state DNR and included in the document.
7. The proposed ichthyoplankton sampling program was designed only to provide data for a characterization of existing conditions near the archipelago and was not meant to be a basis for statistical comparisons. Ichthyoplankton sampling was done near the end of the flood tide/high slack and the beginning on the ebb tide, but was not coordinated with a full or new moon. Tidal cycles have been shown to have an influence on abundance, but depending on the area, low tide can influence sample composition as much as high tide. In the area that we're working, flood tide might influence abundances, but would probably have little effect on composition. The same is probably true for the higher amplitude tides of the new/full moon.
8. Our plankton sled was towed astern. Depth in the water column was estimated using a metered block, clinometer and depth nomograph. Nets were set on the bottom and raised incrementally (every minute) with the last minute being a surface set. During most of the set the net was below our prop wash, and was being towed some distance behind the boat.
9. Both otter trawl and ichthyoplankton tows were 5 minutes long. All were at set boat speeds (1300 and 900 rpms, respectively) and beginning and end coordinates were taken at each.

---

Ichthyoplankton sample volume averaged 100 m<sup>3</sup> and estimates of bottom trawled were about 15 second of longitude or 300+ meters.

10. Otter trawls were done on the flood tide.
11. The sampling program involved 2 seines and 2 trawls at each location and were not true replicates but rather side by side samples. This is a method we have used effectively to maximize effort in relatively small areas where, for example, a 10 minute trawl tow would cover too much linear area and run outside of the target area or there is a limited area to seine. This method covers a large amount of space over a small distance of bottom or shoreline. The fish collected from the first of the two hauls at each location were held in tubs while the second haul was made. This ensures that any disoriented organisms are not recaptured in the second haul.
12. The beach seine locations have already been moved. Sampling could not be done on the west side of North or South Central Poplar due to the tremendous number of downed trees. Approximately 200 feet of shoreline were covered in two tows. This constitutes the northern tip and a mid-island reach of South Central Poplar and the entire eastern shore and the north and south tips of Middle Poplar Island. Block netting would be counterproductive in that we would scare more than we caught.

Sampling in many of the areas proposed on the enclosed map would be impossible. There is not enough clear (relatively snag free) deep water between the islands to trawl. Stations placed outside of the footprint on the north west side would be over the commercial oyster beds which we have been told are off limits. Having comparable gear sizes between seine and trawl is neither necessary or desirable...the programs are meant to target different lifestages.

13. We will use existing aerial photographs and other existing historic SAV bed information to initially define the detailed sampling locations. This will be accomplished by reviewing Maryland Department of Natural Resources' SAV survey photos or by having an early season (e.g. May) photo taken for the study area in addition to having an aerial photo taken in mid-summer. The SAV sampling approach will include concentrated sampling point locations in areas identified from photos and other available information as potential SAV beds. A more widely spaced sampling approach will be used to cover the remainder of the study area. In terms of SAV abundance determination, a limited quantitative approach will be used in any areas found to have SAV present. This will include the use of a weighted PVC quarter-meter square quadrat from which all SAV plants can be removed and counted/weighed. Sampling locations will be based upon a stratified random method of selection. Sediment tube coring is not planned. Trawling in SAV beds is strongly discouraged as it is likely to result in significant damage. We will rely upon existing data to characterize the general faunal composition of beds. If required, more intensive sampling

---

of SAV could be made a part of the monitoring plan.

14. The wetland low marsh and high marsh areas have already been well characterized on the four small islands in terms of plant species present during the fall survey. Any additional species identified in subsequent surveys will be added to the inventory list. Regarding quantitative sampling of vegetation it has always been our intent to estimate areal coverage using the Braun-Blanquet Method. We will use quadrat sampling (e.g., 1 m<sup>2</sup> plots for herbaceous plants and 10 m<sup>2</sup> for shrubs) along transects established through the various communities present. In order to satisfy the request for stem density data we can conduct counts on a limited number of the quadrats, for example, one out of ten. Vegetation from these stem density plots can be clipped at ground level and removed, taken to EA's biology lab for counting, and wet and dry weights can be determined for biomass, if necessary. If the footprint of the dike is expanded, forested areas on Coaches Island can be quantitatively surveyed by employing known dimension plots (e.g., 1/10-acre) in which to identify tree species, determine diameter at breast height, and estimate shrub and herbaceous plant coverage. It does not seem necessary to conduct more intensive surveys of the remnants of Poplar Island, since they are all flooded at seasonal high tides and all upland vegetation is dead or dying.
15. The state of Maryland will be conducting surveys of the beds and charted oyster bars in the area.
16. On the four remnant islands we have investigated the presence of terrestrial wildlife (e.g., mammals, reptiles, and amphibians) including investigation for the presence of sign (scat, tracks, bones, etc.). These initial efforts suggest that the presence of these animals is highly unlikely, since the remnant islands are small and are flooded during spring and storm high tides. However, the potential addition of Coaches Island to the study area raises the possibility for the occurrence of mammals and herptiles. In order to characterize this potential resource some limited trapping efforts might be incorporated to supplement the customary documentation of wildlife sign. This could be accomplished by setting small mammal trap lines (e.g., Sherman live traps and/or Victor or Museum Special snap traps) in areas of potential habitat on Coaches Island. Additionally, reptiles and amphibians could be captured using funnel or drift fence trapping and pitfall trapping. This effort would best be undertaken in the spring or summer.

The timed bird observation efforts appear to be sufficient to characterize presence and use. However, the bird survey efforts may also warrant some modification. This is due to the fact that evidence of bird nesting has been observed on the islands. In order not to disturb/displace these birds during the spring and summer surveys it may be necessary to establish the observation points offshore of the islands and conduct the bird survey from a small anchored boat.

Robert Smith

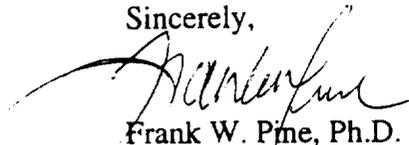
5 January 1995

---

The quantitative natural resource inventory measures recommended above will function to allow for establishment of the existing conditions for the NEPA documentation process. The survey efforts will also function to provide insight into the potential plant and animal colonization sources for the island habitats to be created during the proposed restoration project. Additionally, this effort can also function as a basis for defining the necessary elements of a sound monitoring program and to track progress of the project.

If you have any comments or questions related to the above discussion, please call me at any time.

Sincerely,



Frank W. Pme, Ph.D.  
Project Manager

cc: C Anderson-Austra  
D. Urso  
M. Hart  
File 60864.01  
f:\6086400\letters\smith05.doc



6 January 1995

Mr. Robert Smith  
Maryland Environmental Service  
2011 Commerce Park Drive  
Annapolis, MD 21401-2995

RE: National Marine Fisheries Service comments on Draft "Scope of Work - Environmental Sampling for Poplar Island", 8 November Letter.

Dear Bob:

This letter is in response to the 8 November 1994 letter to you from Timothy E. Goodger National Marine Fisheries Service, Beaufort Laboratory (attached).

1. The specific objectives of the field studies are to a) corroborate existing information and b) to provide data to support the preparation of an Environmental Document. The level of effort was developed to include those groups of aquatic and terrestrial /wetland biota which were considered of sufficient importance to provide the necessary basis for defining existing conditions. The purpose is to determine if any unusual or unique communities or habitats would be significantly impacted by the proposed action as well as the types and general structure of the resources affected. This information will also be used in conjunction with existing information and available data from the literature or agency files to define the anticipated impacts of the proposed action.

The Scope of the field effort was developed in cooperation with the Baltimore District USACE, MES, USFWS, and Maryland DNR. The station locations, sampling frequency and number of replicates were arrived at through consultation with these agencies. Further, the station locations were defined to allow for near and far field comparisons for benthic infauna and water quality.

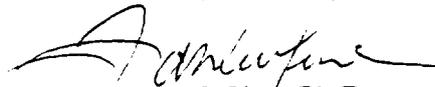
The quantitative natural resource inventory measures recommended will function to allow for establishment of the existing conditions for the NEPA documentation process. The survey efforts will also function to provide insight into the potential plant and animal colonization sources for the island habitats to be created during the proposed restoration project. Additionally, this effort can also function as a basis for defining the necessary elements of a sound monitoring program to track progress of the project.

2. The study as it is set up now does not address larger infauna and epifauna (clams and oysters). While this appears to be a deficiency, the State of Maryland has already begun an assessment of the adjacent oyster beds and will conduct an assessment of soft-shell clam beds in the area. Some of the information can also be derived from state records, but the completeness of those records will need to be evaluated.
3. While Blue crab and fisheries sampling in the winter is less valuable than at other times of the year, it is important to maintain consistency in seasonal efforts as well as providing documentation of winter anadromous fish utilization (February through April). Two seine and trawl hauls were proposed for each sampling station to cover the most area (maximize effort) in restricted sampling areas (the relatively small footprint and the limited seinable beaches of the islands). There is not enough room for a 10 minute trawl within most areas of the footprint, because of all the snags and shallow water. We have used this technique effectively in moderate-sized rivers where stations needed to be placed closely. The hauls are not really replicates, but are end to end for the seines and side by side (separated by several hundred feet) in the case of trawls. More stations might be considered for a monitoring program but the sampling we're doing maximizes the agreed upon effort required for support of the NEPA document.
4. We will use existing aerial photographs and other existing historic SAV bed information to initially define the detailed sampling locations. This will be accomplished by reviewing Maryland Department of Natural Resources SAV survey photos or by having an early season (e.g. May) photo taken for the study area in addition to having an aerial photo taken in mid-summer. The SAV sampling approach will include concentrated sampling point locations in areas identified from photos and other available information as potential SAV beds. A more widely spaced sampling approach will be used to cover the remainder of the study area. In terms of SAV abundance determination, a limited quantitative approach will be used in any areas found to have SAV present. This will include the use of a weighted PVC half-meter square quadrat from which all SAV plants can be removed and counted/weighed. Sampling locations will be based upon a stratified random method of selection. Sediment tube coring is not planned. Trawling in SAV beds is strongly discouraged as it is likely to result in significant damage. We will rely upon existing data to characterize the general faunal composition of beds. If required, more intensive sampling of SAV could be made a part of the monitoring plan.

The presence of Zannichellia palustris will be investigated in both April and late May to ensure that it is adequately assessed.

If you have any comments or questions related to the above discussion, please call me at any time.

Sincerely,



Frank W. Pine, Ph.D.  
Project Manager

cc: C. Anderson-Austra  
D. Urso  
M. Hart  
File 60864.01  
f:\6086400\letters\smith06.dec

January 18, 1995

Planning Division

Mr. Frank L. Hamons  
Manager, Harbor Development  
Maryland Port Administration  
Maritime Center II  
2310 Broening Highway  
Baltimore, Maryland 21224-6621

Dear Mr. Hamons:

The purpose of this letter is to document the decision to prepare an Environmental Impact Statement (EIS) for the Poplar Island Section 204 Restoration Project. The decision was the result of several recent informal discussions among various team members and natural resource management agencies. As we agreed at the initiation of the study, initial environmental actions would be geared toward preparation of an Environmental Assessment (EA) to provide comprehensive environmental analysis and documentation in compliance with National Environmental Policy Act (NEPA) requirements. We further agreed that an early decision point would be built into the schedule to determine whether an EA or a full EIS would be the most appropriate document to prepare.

At this time it appears that preparation of an EIS, rather than an EA, will provide greater assurance to concerned agencies and individuals that comprehensive environmental analysis and documentation will be prepared. The preparation of an EIS is not expected to impact the current study schedule, which calls for construction to be initiated in June 1996.

If you have any questions regarding matter, please call me or my action officer, Ms. Carol Anderson-Austra, at (410) 962-2910.

Sincerely,

Dr. James F. Johnson  
Chief, Planning Division

Copy Furnished:

Mr. Roy Denmark, Environmental Protection Agency, Region III  
Mr. Timothy Goodger, National Marine Fisheries Service  
Mr. John Gill, U.S. Fish and Wildlife Services  
Mr. Nick Carter, Maryland Department of Natural Resources  
Mr. Paul Slunt, Maryland Department of the Environment  
Mr. Robert Smith, Maryland Environmental Service  
Mr. Glenn Eugster, Chesapeake Bay Program, EPA

CENAB-OC (Ms. Katherine Will)  
CENAB-OP-R (Mr. Brian Walls)  
CENAB-PL-PC (Ms. Stacey Brown)  
ERB Reading File

MARYLAND  
ENVIRONMENTAL  
SERVICE

William Donald Schaefer  
*Governor*

George G. Perdikakis  
*Director*

January 20, 1995

Mr. Timothy E Goodger  
National Marine Fisheries Service  
Habitat and Protected Resources Division  
904 South Morris Street  
Oxford, MD 21654

Dear Mr. Goodger:

In response to your letter of 8 November 1994, the attached letter addresses your concerns about the Environmental Scope of Work for Poplar Island. These responses have been prepared in cooperation with the Environmental Section of the Corps of Engineers, Baltimore District and EA Engineering, Science, and Technology.

If you have any questions or comments about the responses, please call me at (410) 974-7261.

Sincerely,



Robert Smith  
Project Manager

Attachment.

cc: Wayne Young, MES  
Michael Hart, MPA  
Stacey Brown, USACE  
Richard Thomas, GBA/MN, JV

MARYLAND  
ENVIRONMENTAL  
SERVICE

William Donald Schaefer  
*Governor*

George G. Perdikakis  
*Director*

January 20, 1995

Mr. David Meyer  
National Marine Fisheries Service  
Southeast Fisheries Science Center  
Beaufort Laboratory  
101 Pivers Island Road  
Beaufort, NC 28516-9722

Dear Mr. Meyer:

In response to your letter of 26 October 1994, the attached letter addresses your concerns about the Environmental Scope of Work for Poplar Island. These responses have been prepared in cooperation with the Environmental Section of the Corps of Engineers, Baltimore District and EA Engineering, Science, and Technology.

If you have any questions or comments about the responses, please call me at (410) 974-7261.

Sincerely,



Robert Smith  
Project Manager

Attachment.

cc: Wayne Young, MES  
Michael Hart, MPA  
Stacey Brown, USACE  
Richard Thomas, GBA/MN, JV



# United States Department of the Interior

NATIONAL BIOLOGICAL SURVEY

PATUXENT ENVIRONMENTAL SCIENCE CENTER  
Branch of Migratory Bird Research  
11410 American Holly Drive  
Laurel, Maryland 20708-4015

February 3, 1995

District Engineer  
ATTN:CENAB-PL-EC  
U.S. Army Corps of Engineers  
Baltimore District  
P.O. Box 1715  
Baltimore MD 21203-1715

Dear Sir:

I am responding to your public notice on the "Poplar Island Restoration Project" announced by Dr. J.F. Johnson on January 19, 1995. As federal researchers at a facility interested in natural resource management, we would like to offer our technical expertise in developing plans for the project and any post-project monitoring. We work closely with the Chesapeake Bay Field Office, U.S. Fish & Wildlife Service and would coordinate our activities with that office.

We are presently planning some research and monitoring of Army Corps project sites including Smith Island and Barren Island where geotubes are being installed. Poplar would make another excellent site because of the environmental similarities with these two sites. Our initial research aims at relating habitat condition to bird use of the sites over a time series, including shorebirds, colonial nesting species, waterfowl, and migrant songbirds. Another study will focus on colonization of newly created sites (e.g. dredge sites) by micro- and macroinvertebrates, fish, and plants.

I am planning to attend the Feb. 7 meeting at John Gill's FWS office to discuss the monitoring aspect of the project. I have been in contact with Ms. Donovan of the MES concerning the meeting.

Thank you for the opportunity to provide input into the project. This appears to be a project with a "win-win" solution.

Sincerely,

  
R. Michael Erwin, PhD  
Group Leader, Migratory  
Birds

~~Bob~~ 12/03  
Carr A-A

cc: S. Funderburk, CBFO  
J. Gill, CBFO  
L. Mitchell, CBFO  
G. Therres, MD DNR  
S. Hughes, MD Coop. Res. Unit/UMES

## MEMORANDUM FOR RECORD

SUBJECT: SHPO Consultation for Poplar Island Study

1. The purpose of this memorandum is to document the results of a meeting held on 30 January 1995, between Mr. Ken Baumgardt, CENAB-PL-EC; Dr. Christopher Goodwin, Goodwin and Associates; and Dr. Susan Langley, Maryland Historic Trust, regarding the Phase I investigation of the Poplar Island Project Area.
2. Dr. Langley was favorable regarding the results of the Phase I investigation, and fully accepted the recommendations and conclusions of the contractor as presented in their Management Summary of 13 January 1995. Discussions were held regarding the level of continued investigations and the survey methodology to be employed, as follows:
  - a. It was agreed that submarine historic features were exposed on the bottom surface, and may hold fragile historic materials, and that Phase II investigations should be conducted by manned scuba exploration of the sites.
  - b. It was agreed that potential deeply buried shell middens should be tested using borings and suction dredges to collect sufficient materials to tell whether they are natural or manmade features.
  - c. It was agreed that the historic site on South Central Island should be tested with conventional approaches as soon as possible, due to its rapidly eroding condition.
  - d. It was agreed that the unexplored area to the west of the present islands is too shallow for sonar exploration, but a combination of magnetometer survey and subsurface testing with a clam dredge will adequately identify any sites in that area.
  - e. It was agreed that the location of the proposed test dike has been adequately surveyed, and there are no cultural resources in the area which will be affected by the construction of the test dike.
3. Dr. Goodwin was requested by the Joint Venture to prepare a cost estimate for the agreed upon Phase II investigations. Completion of the Phase II is expected to occur during the spring and summer of 1995, so that a Conditional No Adverse Effect Agreement can be prepared and signed prior to construction.
- 4 Questions regarding this matter can be addressed to Mr. Ken Baumgardt, at (410) 962-2894.

Kenneth Baumgardt  
Historian, CENAB-PL-EC

/export/home/k9b/mfr.popis.0295

MARYLAND  
HISTORICAL



TRUST

Parris N. Glendening, Governor  
Patricia J. Payne, Secretary

Office of Preservation Services

February 7, 1995

Dr. James F. Johnson  
Chief, Planning Division  
Baltimore District  
U.S. Army Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203-1715

Re: Poplar Island Restoration  
Project, Talbot County,  
Maryland

Dear Dr. Johnson:

In response to your public notice of 19 January 1995, this office has reviewed the above-referenced undertaking with respect to effects on historic properties.

For terrestrial archeology at Poplar Island, our files record six inventoried archeological sites. These resources include sites 18TA217 (Archaic and Woodland periods), 18TA218 (Late Archaic, Middle and Late Woodland, nineteenth century), 18TA219 (Archaic and Woodland), 18TA222 (Late Archaic), 18TA236 (eighteenth and nineteenth centuries), and 18TA237 (seventeenth and eighteenth centuries). (Three other inventoried archeological sites are located on nearby Coaches and Jefferson islands.) In 1993, R. Christopher Goodwin & Associates conducted archival research and a pedestrian reconnaissance for the project, finding an additional historic-period site (MP.1) on Middle Poplar Island. Their draft December 1993 report, Phase IA Archeological Investigations at Poplar Island, Talbot County, Maryland, recommended an intensive terrestrial archeological survey for the project area.

The Trust concurs that a Phase I archeological investigation should be conducted to identify archeological properties in all upland portions of the area of potential effects. The survey should be carried out by a qualified professional archeologist, and

Division of Historical and Cultural Programs  
100 Community Place • Crownsville, Maryland 21032 • (410) 514-

*The Maryland Department of Housing and Community Development (DHCD) pledges to foster  
the letter and spirit of the-law for achieving equal housing opportunity in Maryland.*



Dr. James F. Johnson  
February 7, 1995  
Page 2

performed in accordance with the Standards and Guidelines for Archeological Investigations in Maryland (Shaffer and Cole 1994) and with Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines (1983). Based upon the results of the survey, we will be able to determine whether or not the project may affect significant archeological resources and make appropriate recommendations for any additional work. Further consultation with our office will be necessary to comply with Section 106 of the National Historic Preservation Act of 1966.

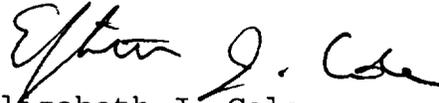
We understand that Goodwin & Associates is currently completing the recommended Phase I survey. The Trust looks forward to reviewing a copy of their complete Phase I report.

The extent and nature of investigations pertaining to submerged cultural resources were discussed in a meeting 31 January 1995 between Goodwin and Associates, Mr. Kenneth Baumgardt, U.S. Army Corps of Engineers, and the State Underwater Archeologist. At that time it was determined that six (6) submerged anomalies specified in an Executive Summary (13 January 1995) would be investigated using divers and some limited form of dredging or bucket sampling. It was also agreed that areas not previously surveyed because they are too shallow to permit remote sensing, and an additional area south and southwest of Coaches Island, within the parameters of the Alternative Alignment #2 would be examined by divers using suction dredges.

If you have any questions or require further information, please contact Dr. Susan Langley (for underwater archeology) or Dr. Gary Shaffer (for terrestrial archeology) at (410) 514-7600.

Thank you for your cooperation and assistance.

Sincerely,



Elizabeth J. Cole  
Administrator  
Archeological Services

EJC/GDS/SL  
9500083

cc: Dr. R. Christopher Goodwin  
Mr. Thomas Williams  
Mr. Victor MacSorley  
Mr. Shawn Callahan



## **R. CHRISTOPHER GOODWIN & ASSOCIATES, INC.**

337 East Third Street, Frederick, MD 21701 • 301-694-0428

5824 Plauche Street, New Orleans, LA 70123 • 504-736-9323

848 Blountstown Highway, Unit "D", Tallahassee, FL 32304 • 904-575-0565

### **M E M O R A N D U M**

**DATE:** February 14, 1995

**TO:** Richard F. Thomas, PE  
Dennis Urso  
GBA - M&N A Joint Venture

**FROM:** R. Christopher Goodwin, Ph.D., President & CEO

**RE:** Archeological Investigations Update

On January 31, 1995, Dr. Goodwin and April Fehr from Goodwin & Associates, Inc. met with Dr. Susan Langley of the Maryland Historical Trust and with Mr. Ken Baumgardt of the U.S. Army Corps of Engineers, Baltimore District, concerning the need for additional archeological investigations for the Poplar Island Restoration Project. The following tasks were recommended to complete the additional Phase I and Phase II investigations as required by the Trust and the Baltimore District:

#### **Terrestrial and Near-shore Investigations**

- 1. Shoreline survey at Coaches Island.** This task involves a limited shoreline survey along the portion of Coaches Island affected by proposed alternative alignments 2 and/or 3 (including Option B). The purpose of this task is to determine the presence/absence of previously identified site 18TA216, and to identify any other archeological resources along the shore.
- 2. Near-shore dredging at Coaches Island.** This task involves obtaining limited hand-held induction dredge samples for the near-shore area of Coaches Island. The purpose of this testing is to identify archeological deposits in the near-shore area, if any. The dredging is an extension of the terrestrial survey and will locate submerged portions of terrestrial sites.
- 3. Phase II testing at Site 18TA237, South Central Island.** The purpose of this task is to provide data concerning the integrity and National Register potential of site 18TA237. Close interval shovel testing, test unit excavation, feature recordation and near-shore dredging will be used to determine the National Register eligibility of this site. The site is threatened by severe erosion and the Baltimore District feels that the Phase II should be undertaken during the spring of 1995.

### **Marine Investigations**

1. **Phase I remote sensing survey of area encompassed by new dike alignment.** This task involves remote sensing survey of previously unsurveyed bottom lands within the proposed dike alignment encompassing Coaches Island. The remote sensing survey array will consist of a proton precession magnetometer and recording fathometer. A side scan sonar will be deployed over those areas with a water depth of five (5) ft or more. Survey will be conducted along predetermined lanes spaced 50 ft apart. Positioning control will be maintained using DGPS.
2. **Phase II underwater testing of anomalies.** Magnetic and acoustic anomalies located during Phase I survey of the Poplar Island project area will be examined to determine their cultural significance. Anomalies to be tested include 10-727, 10-755, 30-1151, 40-665, 48-819, and a cluster formed of anomalies 58-1477, 60-579, and 62-1508. Anomalies will be tested through a combination of visual search, metal detecting, probing and excavation. The purpose of this task is to provide data concerning the integrity and National Register potential of submerged cultural properties.
3. **Underwater examination of unexplored near-shore areas.** During Phase I survey of the original Poplar Island area, some areas were not accessible to survey owing to limitations of the equipment and a depth of water too great for non-diving techniques. The Maryland Historical Trust has requested some testing of those areas. Testing methods will be similar to those listed for Phase II testing. Testing locations will be derived from geographic coordinates for terrestrial features indicated on historic maps. Five test loci will be selected for examination.





# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, Maryland 21401

February 16, 1995

Ms. Jane Boraczek  
EA Engineering, Science and Technology  
11019 McCormick Road  
Hunt Valley, Maryland 21031

Re: Poplar Island Restoration Project  
Talbot County, Maryland

Dear Ms. Boraczek:

This is in response to your December 8, 1994, letter requesting natural resources distribution information for the vicinity of Poplar Island. We have received your request and are providing the enclosed information in accordance with the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

### Endangered Species

A bald eagle (*Haliaeetus leucocephalus*) nest is located on Jefferson Island. A breeding pair of eagles used this nest in 1994, although no young were fledged. Bald eagles are currently listed as Federally endangered, although the U.S. Fish and Wildlife Service (Service) has proposed reclassifying them to threatened. Glenn Therres of the Maryland Department of Natural Resources (DNR) can be reached at (410) 827-8612 for further information regarding bald eagle populations in the mid-Bay region.

The West Coast and Central Plains populations of least terns (*Sterna albifrons*) are listed as Federally endangered, but its Atlantic Coast breeding population is not Federally listed. Least terns are colonial nesters that prefer rocky or sandy substrates with sparse vegetation. A cooperative least tern habitat restoration effort was undertaken at Poplar Island during the spring of 1994. Clam shell was spread on one of the grounded barges to provide nesting substrate. This project will be monitored to determine if least terns initiate nesting at Poplar Island in 1995.

Except for occasional transient individuals, the Poplar Island complex is not known to support any other Federally listed, proposed or candidate species.

This response relates only to threatened and endangered species under our jurisdiction. For information on other rare species, including state-listed species, you should contact the Maryland Natural Heritage Program at (410) 974-2870.

### Fish and Wildlife Resources

Midwinter waterfowl surveys by the Service and the Maryland Department of Natural Resources (DNR) have identified the following species in the vicinity of Poplar Island:

Year	Bufflehead	Mergansers	Oldsquaw	Canada Geese	Tundra Swans
1990		20			
1992	10		13	300	30
1993	10		117		

Bufflehead (*Bucephala albeola*), mergansers (*Mergus serrator* and/or *M. merganser*) and oldsquaw (*Clangula hyemalis*) are common during winter in the open waters of Chesapeake Bay. These species feed primarily on fish and aquatic invertebrates. Canada geese (*Branta canadensis*) typically roost in large flocks in the open waters, and feed in marshes or fields during the day. Other common wintering waterfowl species that may occur in the vicinity of Poplar Island include ruddy ducks (*Oxyura jamaicensis*), canvasbacks (*Athya valisineria*) and common goldeneye (*Bucephala clangula*). Larry Hindman of the DNR can be reached at (410) 827-8612 regarding waterfowl use of the Poplar Island region.

Poplar Island provides breeding habitat for a variety of colonial waterbirds. Great blue herons (*Ardea herodias*), great egrets (*Casmerodius albus*), cattle egrets (*Bubulcus ibis*), snowy egrets (*Egretta thula*) and little blue herons (*Florida caerulea*) are known to have nested on the island. Numbers of nesting double-crested cormorants (*Phalacrocorax auritus*) are increasing in Chesapeake Bay, and Poplar Island supported numerous nesting pairs in 1994. Further information regarding colonial waterbird use of Poplar Island can be obtained from David Brinker of the DNR at (410) 974-3195.

Severe erosion has resulted in significant losses of forested upland, sandy shore and tidal marsh habitats at Poplar Island. Erosion results in the conversion of fastlands to shallow water habitat, which is a valuable resource for many fish species. Shallow estuarine waters provide excellent conditions for growth of phytoplankton, bacteria and algae. Due to high primary production, these areas also provide good foraging habitat for consumers such as shorebirds, wintering waterfowl and anadromous fish. The juvenile forms of anadromous species such as alewife (*Alosa pseudoharengus*), blueback herring (*A. aestivalis*), and white perch (*Morone americana*) may occur in these shallows. Other common Bay species that would be expected in this area are spot (*Leiostomus xanthurus*), bay anchovy (*Anchoa mitchilli*) and striped bass (*Morone saxatilis*). Shallow waters with sandy substrates are especially valuable habitat to female blue crabs (*Callinectes sapidus*) bearing eggs

("sponge crabs"), because the coarse sediments in these areas aid in sloughing of fertilized eggs. Detailed information regarding fisheries resources near Poplar Island can be obtained from Nick Carter of the DNR at (410) 974-5780.

There are several natural oyster (*Crassostrea virginica*) bars adjacent to the Poplar Island complex. The Poplar Island Bar (#8-10) consists of approximately 1100 acres of Bay bottom west of Poplar Island, while the Poplar Island Narrows Bar (#8-11; 1700 acres) is located between Poplar Island and the mainland. Oyster larvae are carried from spawning grounds to these bars, where spat setting occurs. Water quality in the vicinity of oyster bars can affect their ability to support juvenile oysters, impeding recruitment into the reproductive population. Oyster populations on many bars in the mid-Bay region, including those adjacent to Poplar Island, have been negatively impacted in recent years by the diseases MSX and dermo.

The shallow waters adjacent to the Eastern Shore between the Chester River and Tangier Sound are among the most highly productive soft shell clam (*Mya arenaria*) waters in the Bay. Soft shell clams are found primarily in areas with sandy substrates, although they also occur on harder clay bottoms. The original footprint of Poplar Island is characterized by a hard clay substrate, and would thus be expected to produce fewer clams than the sandy substrate outside the island's original footprint. Juvenile clams are an important food source for blue crabs, mud crabs, flatworms, mummichogs and spot. Adult soft shell clams are commercially harvested, and may be heavily depended upon by ducks, geese and swans. All of the Bay waters surrounding Poplar Island are open to shellfish harvesting. Chris Judy of the DNR can be reached at (410) 974-3733 regarding shellfish populations near Poplar Island.

Submerged aquatic vegetation (SAV) plays an important role in nutrient and energy cycling in Chesapeake Bay. In addition to serving as a significant food source for waterfowl, SAV provides protective cover for molting blue crabs and the juvenile life forms of many fish species. SAV is a good indicator of water quality due to its sensitivity to turbidity and nutrient levels. The 1978 Bay-wide SAV survey documented SAV beds in the shallows adjacent to Poplar Island, Jefferson Island and Coaches Island. Although the species composition of these beds was not documented, nearby SAV beds on the mainland shoreline consisted of sago pondweed (*Potamogeton pectinatus*), redhead grass (*P. perfoliatus*), widgeon grass (*Ruppia maritima*) and horned pondweed (*Zanichellia palustris*). By 1984, only a few small patches of SAV were present adjacent to Coaches Island. Aerial surveys have not documented any SAV within the Poplar Island complex since 1984.

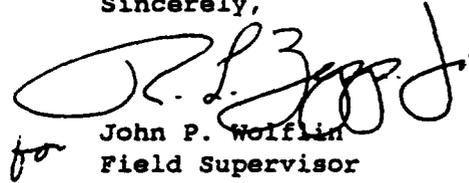
Wildlife habitat value of the islands has been drastically affected by the severe erosion. Hundreds of acres of forested habitat and tidal marsh have been lost. Prior to erosion, the Poplar Island complex may have supported large numbers of colonial nesting waterbirds, waterfowl and songbirds. Some species, such as osprey, may still nest within the Poplar Island complex, although in reduced numbers compared to the 19th century.

Jane Boraczek

4

The value of mid-Bay island habitat to wildlife is evidenced by the density and diversity of colonial waterbirds continuing to nest at Poplar Island, despite tremendous losses of habitat. As a cooperator in the Poplar Island Restoration Project, the Service is committed to restoring the habitat value of this island complex to 19th century levels. If there are further questions regarding this project, please contact John Gill of this office at (410) 573-4529.

Sincerely,

A handwritten signature in black ink, appearing to read "John P. Wolfelin". The signature is stylized and cursive, with a large initial "J" and "W".

John P. Wolfelin  
for  
Field Supervisor  
Chesapeake Bay Field Office

cc: Nick Carter (DNR)  
Bob Smith (MES)  
Frank Hammons (MPA)  
Carol Anderson-Austra (COE)  
Tim Goodger (NMFS)



# Chesapeake Bay Foundation

*Environmental Defense - Environmental Education - Land Management*

Maryland Office • 164 Conduit Street • Annapolis, Maryland 21401  
(410) 268-8833 Fax (410) 280-3513

## **OFFICERS**

Thomas H. Stoner  
*Chairman*

Russell C. Scott  
*Vice Chairman*

Jennifer Stanley  
*Secretary*

Blaine T. Phillips  
*Treasurer*

Godfrey A. Rockefeller  
*Chairman Emeritus*

William C. Baker  
*President*

Robert G. Hoyt  
*Senior Vice President*

Ann Powers  
*Vice President*

## **EX OFFICIO TRUSTEES**

Governor Robert P. Casey  
Governor William Donald Schaefer  
Governor George F. Allen  
Mayor Sharon Pratt Kelly  
Hal C. B. Clagett - *Clagett Trustee*  
Joanne S. Berkley - *Bay Care Chapter*  
Sidney C. Dixon - *York Chapter*

## **TRUSTEES**

Myrtha L. Allen  
John M. Barber  
Thomas W. Beauduy  
Donald F. Boesch  
Herbert W. Carden  
L. Eugene Cronin  
Louisa C. Duemling  
Dorothy B. Dully  
A. Paul Funkhouser  
Joseph V. Gartlan, Jr.  
Leonie L. Galely  
Maurice K. Goddard  
Lonneal J. Henderson  
Robert M. Hewes 3rd  
Peter A. Jay  
Ernest W. Jennes  
G. R. Klinefelter  
Shepard Krech, Jr., M.D.  
Burks Lapham  
M. Lee Marston  
H. Turney McKnight  
Katherine Turner Mears  
Philip Merrill  
G. Steele Phillips  
Sumner Pingree  
Marie W. Ridder  
Willcox Ruffin, Jr., M.D.  
Truman T. Semans  
Arthur W. Sherwood  
Henry F. Stern  
Eugene B. Sydnor, Jr.  
Dennis L. Taylor  
W. Lawrence Wallace, Sr.  
Michael Watson  
Arthur L. S. Waxter

## **HONORARY TRUSTEES**

T. Marshall Duer, Jr.  
C. A. Porter Hopkins  
Charles McC. Mathias  
Sture G. Olsson  
C. Trowbridge Strong  
William W. Warner

Joseph H. Maroon  
*Virginia Executive Director*

Jane T. Nishida  
*Maryland Executive Director*

Jolene E. Chinchilli  
*Pennsylvania Executive Director*

February 17, 1995

Colonel Randall R. Inouye  
District Engineer  
U.S. Army Corps of Engineers  
Baltimore District  
P.O. Box 1715  
Baltimore, Maryland 21203-1715

Dear Colonel Inouye,

The Chesapeake Bay Foundation (CBF) appreciates the opportunity to comment on the U.S. Army Corps of Engineers proposal to create approximately 1000 acres of wildlife habitat using 10 to 40 million cubic yards of dredged material at Poplar Island in Talbot County, Maryland. We support the Poplar Island project which will result in a net gain in habitat for a number of Chesapeake Bay living resources.

The Poplar Island project is a creative solution to a complex and pressing problem: cost-effective and environmentally sound placement of dredged material. While there are still some environmental issues to be resolved, we feel that the current concept to create a system of wetlands and uplands within a footprint similar to the Island's 1847 landmass will result in a variety of water quality and habitat benefits to the area.

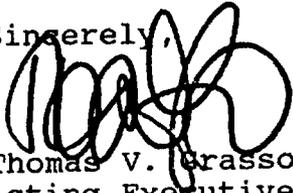
As a participant in the various Dredged Material Working Groups, CBF has been pleased to see that representatives of local interest groups (e.g. Maryland Charter Boat Association) have been included in the planning process. The practical knowledge of fisheries issues as provided by the people intimately familiar with the project area has been invaluable. We hope that input from additional local groups and individuals who may be affected by the Poplar Island activities (e.g. small vessel operators, crabbers, clambers) will be gained as soon as possible. It is to everyone's advantage to have concerns and needs identified and addressed early in the design phase.

Headquarters: 162 Prince George Street • Annapolis, Maryland 21401 • (410) 268-8816  
Virginia Office: Heritage Building • 1001 E. Main Street • Richmond, Virginia 23219 • (804) 780-1392  
Pennsylvania Office: 214 State Street • Harrisburg, Pennsylvania 17101 • (717) 234-5550

Page 2

CBF is optimistic that Poplar Island will be a truly beneficial and innovative project, if future challenges are faced as a partnership. We look forward to working with the Corps and the other public and private interest groups involved in this effort.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Grasso', written over the word 'Sincerely,'.

Thomas V. Grasso  
Acting Executive Director

## MEMORANDUM FOR RECORD

SUBJECT: Continued Phase I for Poplar Island Study

1. The purpose of this memorandum is to document the results of a meeting held on 16 March 1995, between Mr. Ken Baumgardt, CENAB-PL-EC; Mr. Christopher Polglase and Ms. April Fehr of Goodwin and Associates, and Mr. Michael Hart and Mr. Bob Smith, Maryland Port Authority, and Mr. Richard Thomas, Joint Venture. The meeting was held to discuss the recommendations for continued cultural resource investigations for the Poplar Island study.
2. Goodwin and Associates provided the Joint Venture with a proposal to conduct Phase I investigations for the expanded part of the project, and Phase II investigations for one terrestrial archeological site and six underwater magnetic anomalies. Due to the fact that the Phase I investigations were not completed, it was determined to be more appropriate to complete them before proceeding to the more expensive underwater Phase II investigations. However, due to the rapidly eroding condition of the terrestrial archeological site, it was recommended that the Phase II investigation of this site be conducted immediately.
3. Based upon the results of the meeting, R. Christopher Goodwin and Associates will submit to the Joint Venture a detailed cost proposal to complete all Phase I investigations and conduct a Phase II investigation on the terrestrial archeological site. All underwater investigations will be delayed until the summer of 1995. This procedure will not affect the project schedule, and may result in substantial cost savings by limiting the amount of Phase II investigations required for the project.
4. Questions regarding this matter can be addressed to Mr. Ken Baumgardt, at (410) 962-2894.

Kenneth Baumgardt  
Historian, CENAB-PL-EC

/export/home/k9b/mfr.popis.0395



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Habitat and Protected Resources  
Division  
904 South Morris Street  
Oxford, Maryland 21654

5 April 1995

Mr. Brian Walls  
Planning Division  
Baltimore District  
Corps of Engineers  
P. O. Box 1715  
Baltimore, Maryland 21203

Dear Mr. <sup>Brian</sup> Walls:

As per your request of 4 April 1995, I am providing a copy of the map designating the relative locations of several important fisheries in vicinity of Poplar Island (enclosure 1). The map was prepared by staff from presentations at the 22 March public meeting.

Also enclosed is the requested list of endangered and threatened species that are within the purview of the National Marine Fisheries Service. As stated previously, however, except for occasional transient individuals, these species are not likely to occur in the project area. Consequently, no further coordination pursuant to Section 7 is required, unless new information becomes available or project conditions change.

If you have questions, or wish to discuss other issues, please call me at (410) 226-5771.

Sincerely,

Timothy E. Goodger  
Assistant Coordinator

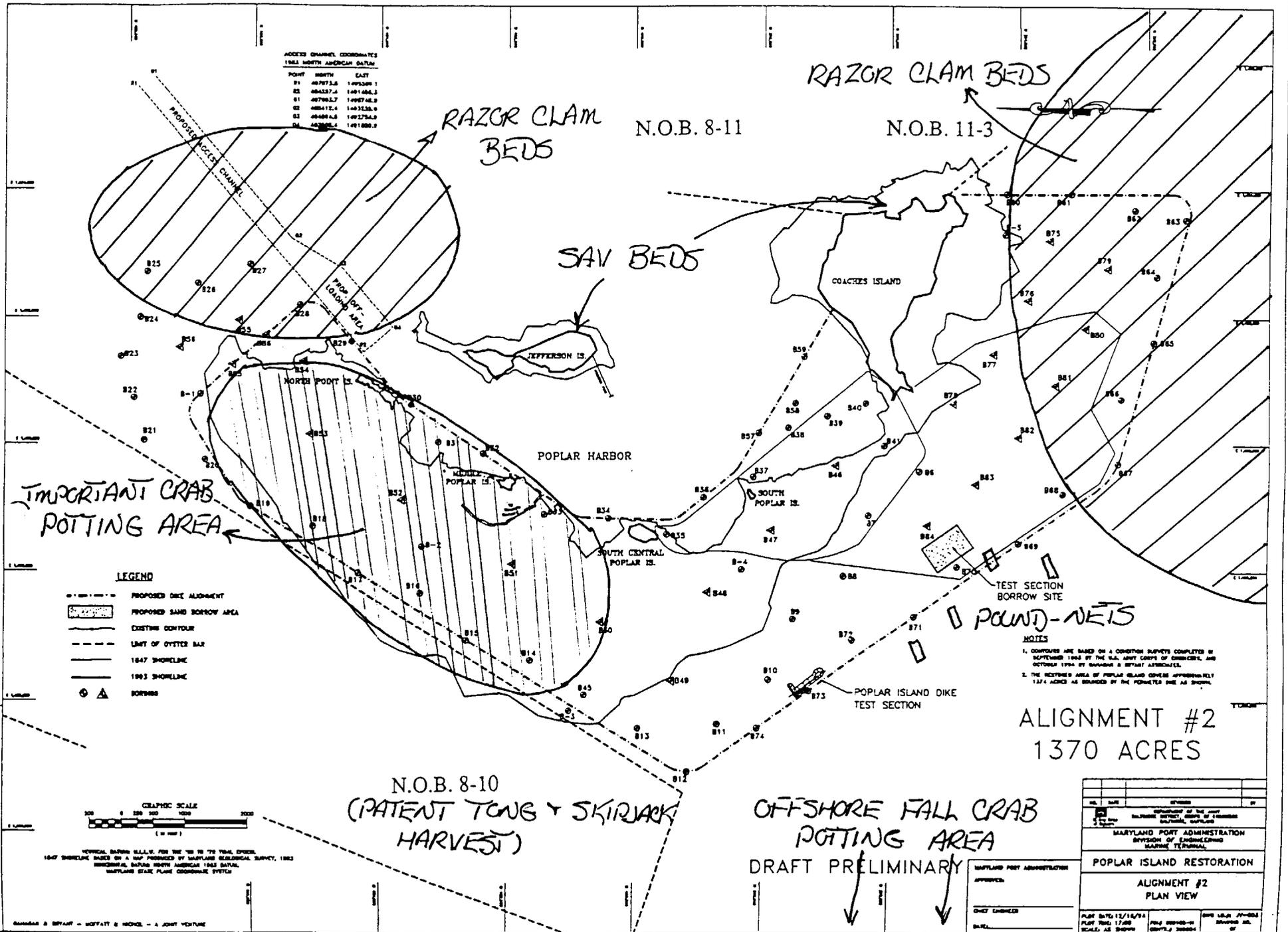
Enclosures

cc: Dave Meyer  
Lee Crockett  
Chris Doley



# FIGURE 1

Figure 2: Map of Poplar Island archipelago. Note location of test dike and borrow site in relation to islands and natural oyster bars (N.O.B.).



NATIONAL MARINE FISHERIES SERVICE

Endangered Species List for Northeast Region

ENDANGERED -

Right whale (Eubalaena glacialis)

Humpback whale (Megaptera novaeangliae)

Fin whale (Balaenoptera physalus)

Sperm whale (Physeter macrocephalus)

Sei whale (Balaenoptera borealis)

Kemp's ridley sea turtle (Lepidochelys kempii)

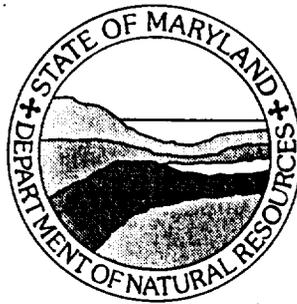
Leatherback sea turtle (Dermodochelys coriacea)

Green sea turtle (Chelonia mydas)

Shortnose sturgeon (Acipenser brevirostrum)

THREATENED -

Loggerhead sea turtle (Caretta caretta)



Parris N. Glendening  
Governor

**Maryland Department of Natural Resources**

Tawes State Office Building  
Annapolis, Maryland 21401

April 5, 1995

John R. Griffin  
Secretary

Ronald N. Young  
Deputy Secretary

Ms. Carol Anderson-Austra  
Baltimore District  
U.S. Army Corps of Engineers  
P.O. Box 1715  
Baltimore, Maryland 21203-1715

Dear Ms. Anderson-Austra,

We have received a public notice concerning the construction of a containment dike as part of the Poplar Island restoration program. This area looks like a potential spawning area for both horseshoe crabs and terrapins. Does the environmental assessment consider these two species in their analysis? Will the dike prevent these species from utilizing the Poplar Island habitat? As part of the Chesapeake Bay Program to protect living resources in the Bay, a Horseshoe Crab Management Plan was developed in 1994. One of the plan's important recommendations is to protect spawning habitat. Peak spawning time for horseshoe crabs occurs in May and June and they prefer beach areas within bays and coves which are protected from surf. Although there is limited data on the distribution and abundance of horseshoe crabs in the Bay, their occurrence has been documented in the Miles River, Eastern Bay area and the Chester and Choptank Rivers. We would like to coordinate our efforts to protect these species.

I would be happy to provide you with any information you might need to ensure that horseshoe crab and terrapin spawning needs are considered in decisions regarding beach habitat. I can be contacted at 410-974-2241. Thank you for the opportunity to comment.

Sincerely,

*Nancy H. Butowski*

Nancy H. Butowski  
Fisheries Biologist  
Fishery Management Plans



R. CHRISTOPHER GOODWIN & ASSOCIATES, INC.

337 East Third Street, Frederick, MD 21701 • 301-694-0428  
5824 Plauche Street, New Orleans, LA 70123 • 504-736-9323  
848 Blountstown Highway, Unit "D", Tallahassee, FL 32304 • 904-575-0565

June 21, 1995

Mr. Richard F. Thomas, PE  
Project Manager  
GBA-M&N A Joint Venture  
9009-O Yellow Brick Road  
Baltimore, Maryland 21237

RE: Schedule for Archeological Investigations at Coaches and Poplar Island

Dear Mr. Thomas:

As you requested, enclosed please find a proposed schedule for completion of Phase I archeological investigations at Coaches Island and Phase II testing at Site 18TA237, and for Phase II testing of six marine anomalies. The Phase I schedule essentially follows that proposed by the Joint Venture (JV) except that we have included a week for review of the draft report by the JV and the Maryland Port Authority (MPA) prior to submittal to the Maryland SHPO.

There are two options for the Phase II investigations. Option 1 follows from the desire expressed by Mike Hart in our March 16, 1995 meeting to have the Phase I report reviewed by the Maryland Historical Trust prior to planning the Phase II investigations. This would mean that we could not start Phase II work until SHPO review is completed in October, and that the Phase II draft report would be submitted the end of November. Option 2 proposes that a summary letter be prepared within two weeks of completion of the Phase I fieldwork and that a meeting be held with the Maryland Historical Trust to discuss the results and obtain a preliminary reading of their expectations for Phase II investigations. While the Trust will not formally review a summary letter, they likely would agree to discuss the results and their concurrence with the findings. This would mean that Phase II work could begin in August, and a draft Phase II report could be submitted in September.

The budget we have submitted for the *Phase II Evaluations of Six Marine Anomalies at Poplar Island* applies only to those anomalies discovered during the Phase I investigations at Poplar Island. If additional anomalies and/or potentially significant terrestrial sites are found during the Phase I investigations at Coaches Island, a revised budget will be submitted.

We look forward to working with you on this project. We will be in the field next week. Please do not hesitate to contact us should you have questions about this schedule or the project in general.

With best regards, I remain

Yours faithfully,

April L. Fehr, M.A.

**SCHEDULING OPTIONS FOR PHASE I AND PHASE II ARCHEOLOGICAL INVESTIGATIONS  
AT POPLAR AND COACHES ISLAND**

Prepared June 21, 1995

**Phase I Survey at Coaches Island and Phase II Investigations at 18TA237**

Start Fieldwork	June 28
End Fieldwork	July 21
Draft Report Submittal	August 30
Complete In House (JV/MPA) Review	September 6
Complete SHPO Review (30 days)	October 6
Final Submittal	October 27

**[Option 1] Phase II Investigations (Starting After SHPO Review of Phase I)**

Start Fieldwork	October 18
End Fieldwork	October 27
Ph.II Draft Report Submittal	November 27
Complete In House (JV/MPA) Review	December 4
Complete SHPO Review (30 days)	January 2
Final Submittal	January 23

**[Option 2] Phase II Investigations (Starting After Review of Preliminary Phase I Results by  
JV/MPA and meeting with SHPO)**

Start Fieldwork	August 16
End Fieldwork	August 25
Ph.II Draft Report Submittal	September 22
Complete In House (JV/MPA) Review	September 29
Complete SHPO Review (30 days)	October 30
Final Submittal	November 27





RECEIVED

AUG 3 1995

EA Engineering, Science, and Technology  
EA 201 - Hunt Valley

Parris N. Glendening  
Governor

Maryland Department of Natural Resources  
Fish, Heritage and Wildlife Administration  
Tawes State Office Building  
Annapolis, Maryland 21401

John R. Griffin  
Secretary

Ronald N. Young  
Deputy Secretary

July 19, 1995

Mr. Donnell E. Redman  
EA Engineering, Science and Technology  
11019 McCormick Road  
Hunt Valley, MD 21031

RE: Request for Threatened and Endangered Species and Critical Habitats Information for the Poplar Island Complex.

Dear Mr. Redman:

There is an active Bald Eagle's nest on the north end of Jefferson Island. The island complex has a long history of use by various colonial nesting waterbirds. In 1995 Double Crested Cormorants, Snowy Egrets and Cattle Egrets nested on Poplar Island and Great Blue Herons nested on Coaches Island.

I regret the delay in responding to your request.

Sincerely,

A handwritten signature in cursive script that reads "Robert L. Miller".

Robert L. Miller  
Environmental Review Coordinator

cc: G. Therres  
D. Brinker

ER95796.TA





UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Habitat and Protected Resources  
Division  
904 South Morris Street  
Oxford, Maryland 21654

8 August 1995

RECEIVED

Mr. Edward W. Morgereth, Jr.  
Environmental Assessment and  
Management  
EA Engineering, Science, and  
Technology  
11019 McCormick Road  
Hunt Valley, Maryland 21031

AUG 10 1995

EA Engineering, Science, and Technology  
EA 214-11019

Dear Mr. Morgereth:

Reference is made to your letter, dated 24 July 1995, requesting information relative to endangered or threatened species found within the vicinity of Poplar Island. Enclosed is a list of endangered and threatened species that are within the purview of the National Marine Fisheries Service (NMFS). However, except for occasional transient individuals, these species are not likely to occur in the project area. Consequently, no further coordination pursuant to Section 7 is required, unless new information becomes available or project conditions change.

Although the Poplar Island proposal does not pose an imminent threat to protected resources, the project will significantly affect other fishery resources and habitat in the area. The NMFS has expressed concerns for these resources, particularly shellfish, to the Corps of Engineers, Maryland Environmental Service, and others in previous correspondence and at meetings of the Poplar Island Working Group.

If you have questions, or wish to discuss other issues, please call me at (410) 226-5771.

Sincerely,

  
Timothy E. Goodger  
Assistant Coordinator

cc: Lee Crockett-Bay Program  
Chris Doley  
David Meyer-Beaufort Lab.  
Brian Walls-Corps, Baltimore District

Enclosure



NATIONAL MARINE FISHERIES SERVICE

Endangered Species List for Northeast Region

ENDANGERED -

Right whale (Eubalaena glacialis)

Humpback whale (Megaptera novaeangliae)

Fin whale (Balaenoptera physalus)

Sperm whale (Physeter macrocephalus)

Sei whale (Balaenoptera borealis)

Kemp's ridley sea turtle (Lepidochelys kempi)

Leatherback sea turtle (Dermochelys coriacea)

Green sea turtle (Chelonia mydas)

Shortnose sturgeon (Acipenser brevirostrum)

THREATENED -

Loggerhead sea turtle (Caretta caretta)

4-5-95



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401

August 23, 1995

RECEIVED

AUG 24 1995

EA Engineering, Science, and Technology  
EA & M - Hunt Valley

Mr. Edward W. Morgereth, Jr.  
EA Engineering, Science, and Technology  
11019 McCormick Road  
Hunt Valley, MD 21031

Re: Poplar Island Project  
Talbot County, Maryland

Dear Mr. Morgereth:

This responds to your July 24, 1995, request for information supporting your investigation of natural resources within the above referenced project area. We have reviewed the information you enclosed and are providing comments in accordance with the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*), and the Migratory Bird Treaty Act (40 Stat. 755, as amended; 16 U.S.C. 703 *et seq.*).

### Endangered Species

The following listed species nests on Jefferson Island which is within the referenced Poplar Island chain.

Bald eagle (*Haliaeetus leucocephalus*)

Sections 4(d) and 9 of the Endangered Species Act prohibit "taking" of listed species. "Take" is defined to include harming or harassing such species, or attempting to engage in any such conduct. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding or sheltering. "Harassment" is defined as those actions that may result in injury to listed species by significantly disrupting normal breeding, feeding or sheltering patterns.

You may wish to contact Mr. Glenn Therres of the Maryland Department of Natural Resources at (410) 827-8612 for further information about the eagle nest and for time-of-year restrictions necessary to minimize impacts from construction activities.

This response relates only to threatened and endangered species under our jurisdiction. For information on other rare species, including state-listed species, you should contact Ms. Lynn Davidson of the Maryland Natural Heritage Program at (410) 974-2870.

We appreciate the opportunity to provide information relative to fish and wildlife resources. If you have any questions on these comments, please contact Andy Moser of this office at (410) 573-4500.

Sincerely,

*G. A. Moser*

*John P. Wolflin*  
Supervisor  
Chesapeake Bay Field Office

**MEMORANDUM**

**TO:**

Maryland Dept. of the Environment  
Visty Dalal

Maryland Environmental Service  
Cece Donovan

Maryland Port Administration  
David Bibo

National Marine Fisheries Service  
Lee Crockett, CBO  
Dave Meyer, Beaufort Lab.  
Chris Doley, Silver Spring  
Tim Goodger, Oxford Lab

Maryland Dept. of Natural Resources  
Nick Carter  
Bill Panageotou, MGS  
Jim Hill, MGS

US Fish & Wildlife Service  
John Gill

US Army Corps of Engineers  
Carol Anderson-Austra  
Mark Mendlesohn  
Brian Walls

**FROM:** Bob Smith

**SUBJ:** Monitoring Framework

**DATE:** September 1, 1995

The attached documents were sent out today for agency concurrence. There were minor format revisions to the last version you received.

Number of pages (including this cover sheet) 15

September 1, 1995

RE: Agency Concurrence with Poplar Island Monitoring Framework and Baseline Monitoring Implementation Plans

Dear

Thank you for your agency's participation in the collaborative team which has worked on the Poplar Island Monitoring framework and implementation plan. The interagency cooperation has resulted in a cost-effective, multi-disciplinary framework and implementation plan which can be a model for future projects.

Please review the attached documents - "Poplar Island Restoration Project Monitoring Framework" and "Poplar Island Baseline Monitoring Implementation Plan." These documents have been prepared using a multi-disciplinary team which included representatives of five federal and four state agencies and are being provided to you to obtain your agency's concurrence. Please note that agency concurrence is an indication that the framework and implementation plan are adequate as submitted to meet the identified monitoring needs at Poplar Island. After concurrence by all agencies, the framework will be provided to the U.S. Army Corps of Engineers for inclusion in the Environmental Impact Statement (EIS) documentation.

*Please indicate your agency's concurrence for each document separately on the attached letter and return a copy of the letter to me by September 8, 1995.*

Thanks again for your assistance. As you know, time is of the essence in completing the EIS and beginning the baseline monitoring this fall, so your speedy response will be appreciated by all concerned. Upon receipt of concurrence, MES will coordinate implementation of the baseline monitoring plan with MPA and the Baltimore District Corps of Engineers, and keep you posted on developments. If there are any questions, please contact me at 410-974-7261.

Sincerely,

Wayne Young  
Program Director  
Environmental Dredging Program

Attachments

1. Concurrence Letter
2. Monitoring Framework
3. Implementation Plan

Date: \_\_\_\_\_

Mr. Wayne Young, Program Director  
Environmental Dredging Program  
Maryland Environmental Service  
2011 Commerce Park Drive  
Annapolis, MD 21401

Dear Mr. Young:

Concurrence by my agency with the Poplar Island Restoration Project Framework and Implementation Plan for Baseline Monitoring are indicated below.

Sincerely,

John Wolflin  
U.S. Fish and Wildlife Service

My agency concurs that the Poplar Island Restoration Project Monitoring Framework submitted as Attachment 2 to my letter of September 1, 1995 from the Maryland Environmental Service satisfies the monitoring needs for this project.

\_\_\_\_\_  
Printed Name: \_\_\_\_\_ Date  
Printed Title:  
U.S. Fish and Wildlife Service

My agency concurs that the Poplar Island Restoration Project Baseline Monitoring Implementation Plan submitted as Attachment 3 to my letter of September 1, 1995 from the Maryland Environmental Service would satisfy the monitoring needs for this project.

\_\_\_\_\_  
Printed Name: \_\_\_\_\_ Date  
Printed Title:  
U.S. Fish and Wildlife Service

## **POPLAR ISLAND RESTORATION PROJECT**

### **MONITORING FRAMEWORK**

#### **I. PURPOSE**

This document has been developed to provide a multi-disciplinary monitoring framework that meets the regulatory agency, resource agency and construction compliance requirements for the Poplar Island Restoration Project.

#### **II. INTRODUCTION**

Clean dredged material will be used to restore over 1100 acres of wetland and upland habitat at Poplar Island in Talbot County, Maryland. The Maryland Port Administration (MPA) has worked with state and federal resource agencies and the U.S. Army Corps of Engineers (USACE) to formulate design, construction, and site management plans for the placement of dredged sediment to restore the eroded Poplar Island, a valued bird and wildlife habitat resource in the Chesapeake Bay.

The proposed habitat will include uplands and tidal and intertidal wetlands. The project will also create a sheltered harbor which is expected to result in hydrodynamic and water quality conditions that will enhance the colonization and growth of submerged aquatic vegetation and will also enhance juvenile fish habitat.

Construction of the outer dikes of the facility is scheduled for 1996, with filling of the first cells planned for 1997. Monitoring needs have been identified in a collaborative manner by a multi-disciplinary group of state and federal regulatory and resource agencies.

Multi-disciplinary monitoring is required for this project, and this is reflected in the framework. Monitoring will be performed to ensure regulatory compliance, to document the creation of beneficial habitat, to confirm the expected findings of no negative impacts, and to provide operational input on the success of habitat creation and potential changes which will increase the habitat value and utilization.

These monitoring needs require baseline data collection in the year prior to initiation of construction, as well as at various points during the life of the project. The baseline monitoring will utilize and enhance the data collected during the feasibility study as part of the National Environmental Protection Act (NEPA) requirements. The NEPA data is to be included in the federal Environmental Impact Statement (EIS). The NEPA data was only intended to identify and describe existing conditions and projected impacts to the degree sufficient for the EIS. The baseline data will include monitoring information not previously collected for the NEPA efforts.

Poplar Island Restoration Project  
Monitoring Framework  
Page 2  
September 1, 1995

Baseline data collection must start in the Fall of 1995 in order to gather a full year of baseline data before planned construction of the project begins in the summer of 1996. Baseline data collection will focus on gathering information for use in establishing reference and baseline conditions. The baseline and reference information will then be used for comparison with during- and post-project conditions.

### **III. BACKGROUND**

This framework was prepared as part of the monitoring plan development services which are currently being performed for MPA by the Maryland Environmental Service (MES). This stage of development of a comprehensive, collaborative monitoring framework will be complete upon concurrence from participating resource and regulatory agencies. The Baltimore District, USACE, is participating as a potential source of project funding and the regulatory authority under Section 404 of the Clean Water Act.

Agencies providing expertise and information on monitoring elements include the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, the National Biological Survey, the Maryland Department of Natural Resources (including the Maryland Geologic Survey), the Maryland Department of the Environment, the Maryland Environmental Service, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers, Baltimore District. A collaborative, multi-disciplinary team was used to develop the framework in order to contain costs, to ensure comprehensive monitoring and to provide concurrent peer review of the monitoring effort.

The development of the framework is a dynamic process and monitoring elements will evolve to fit changing conditions and findings. Given that details of the project design, schedule and operations are still being finalized, the specifics of each monitoring element will be controlled by the final project details. All changes in the monitoring framework will continue to be presented to the team of resource and regulatory agencies for their review and comment.

### **IV. MONITORING ELEMENTS**

#### **A. Sediment Quality Monitoring**

**Objectives-** To monitor physical parameters and the concentrations of metals and other chemicals in sediment which could be indicators of accompanying effects to benthic infauna and potential bioaccumulation through the food chain. To provide operational input

Poplar Island Restoration Project  
Monitoring Framework  
Page 3  
September 1, 1995

on wetlands function and the need for soil conditioning to increase pH and reduce metals mobilization in the uplands.

Poplar Island Restoration Project  
Monitoring Framework  
Page 4  
September 1, 1995

**Hypothesis**- Project conditions will not change the metals behavior in Poplar Island wetlands or Poplar Harbor when compared to regional background sediments.

**Brief Description** - Baseline sediment sample collection, analysis for grain size, trace metals, C/N/S. Baseline year will include 60 additional reference stations for establishment of reference values and statistical database. Sample stations established at the same eleven points as the benthic monitoring and water quality monitoring stations. Scheduling of the second sample event will be dependent on three factors - inflow of dredged material, closing off of Poplar Harbor and the number of years since the baseline monitoring. The second sample event will take place no less than three years after the first event, but no longer than one year after Poplar Harbor is closed off and inflow begins. The third sampling event will take place within one year after the first cell received material above mean lower low water and no later than three years after the second sampling event. Samples are planned to be collected annually after this for a ten year period.

## **B. Wetland Vegetation Monitoring**

### **Objectives**

To measure and evaluate differences in plant community species composition, densities or production among the Poplar Island restored marshes, those of the remnant islands and nearby reference marshes; to measure and evaluate differences in plant community species composition, densities or production associated with age (seral stage) of the restored marshes; to measure and evaluate differences in plant species composition or zonation associated with age (seral stage) or topographic changes of restored marshes. To provide operational input on survival of plant species and methods to increase planting success.

### **Hypotheses**

1. There are no differences in plant community species composition, densities or production among the Poplar Island restored wetlands, those of the remnant islands and nearby reference wetlands.
2. There are no differences in plant community species composition, densities or production associated with age (seral stage of the restored wetlands).
3. There are no differences in plant species composition or zonation associated with age (seral stage) or topographic changes of restored wetlands.

Poplar Island Restoration Project  
Monitoring Framework  
Page 5  
September 1, 1995

**Brief Description** - Vegetation surveys and collections will be performed at the end of the growing season during the baseline year. Up to six permanently marked plots of known size will be selected in a reference wetlands and at existing vegetated areas on the remnant islands. A transect will also be established through each plot and will be permanently marked. Plant shoot densities, plant survival, above and below ground biomass survival and large scale vegetation delineation and survival estimates will be performed. Sediment movement and vegetation zonation will also be examined through topographic measurement along transects, aerial photography and comparison of surveys. This will be repeated after planting of the first cell and every three years after that.

### **C. Water Quality Monitoring, including Turbidity Monitoring**

**Purpose** - To characterize water quality in the project area, to evaluate whether long term water quality changes have resulted from the project. To comply with Water Quality Certification turbidity monitoring requirements during construction.

#### **Hypotheses**

1. There will be no significant long term change in water quality at Poplar Island. (A short term change is expected.)
2. Turbidity levels outside of a defined mixing zone will remain in compliance with the Water Quality Certification limitations during construction activities.

**Brief Description** - Eleven stations will be monitored once in the summer, once in the fall and once in the spring in the year prior to dike construction. The same parameters as are tested in the Chesapeake Bay Program will be used for water quality testing. This will be repeated after completion of the dike at a frequency of once per month during warm months and once per month during colder months. Evaluations will be made annually on whether the monitoring should be continued.

Compliance turbidity monitoring is not defined as yet, it will depend on test dike data. Turbidity monitoring will be required during construction, compliance limits will be set in the Water Quality Certification. This monitoring may be performed by the operators of the site or another agency.

### **D. Benthics Monitoring**

Poplar Island Restoration Project  
Monitoring Framework  
Page 6  
September 1, 1995

**Purpose** - To characterize the benthic community in the project area, to verify reestablishment of the community, to provide information on epibenthic colonization on the dike, to assure there is no accumulation of contaminants in the tissue of benthic organisms in and around Poplar Island due to project conditions.

**Hypotheses**

1. There will be achievement of the benthic restoration goal (an abundance and diversity goal for benthic systems developed as part of the Chesapeake Bay Program) in Poplar Harbor within two years of exterior dike construction.
2. There will be no accumulation of contaminants in benthic tissue as a result of project conditions.
3. The project will promote an epibenthic community on the exterior dikes and finger dikes. This will enhance the habitat restoration impacts of the project and may offset the loss of the snag field to the recreational fishery.

**Brief Description** - Eleven benthic infauna stations will be monitored once in the summer, once in the fall and once in the spring in the year prior to dike construction. Three replicate samples per station will be collected. Two stations will be located in the area where the created wetlands will be constructed. Community composition, abundance and diversity will be measured and recorded. After the dike is constructed, the eleven infauna stations will be monitored during three seasons, along with two stations on the exterior dike or finger dikes to evaluate epibenthic colonization. Evaluations will be made annually on whether monitoring should be continued.

Benthic tissue samples will be collected when the benthic sampling occurs. The tissue samples will be analyzed for a complete scan of organic contaminants and metals. These samples will be collected in the baseline year, then no more than three years after that, and then again one year after the first uplands have begun to dewater. At least two benthic tissue stations will be located within the created wetlands at Poplar, to measure contaminant concentrations in the tissue of the organisms most likely to be affected by any mobilization of metals from the dewatering of the uplands. Evaluations will be made after the results from each sampling event are known on whether monitoring should be continued.

**E. Fisheries Use of Exterior Proximal Waters Monitoring**

**Purpose** - To measure and evaluate differences in fish and decapod populations and densities before and after the project.

Poplar Island Restoration Project  
Monitoring Framework  
Page 7  
September 1, 1995

### Hypotheses

1. There is no difference in fish or decapod species composition or density within the Poplar Island Harbor area prior to island construction compared to after island construction.

2. There is no difference in faunal species composition or density in areas immediately adjacent to the outside of the dike prior to construction compared to after construction.

Brief Description - Poplar harbor and areas on the reference islands east of the island footprint will be sampled using trawls, gill nets, throw traps and crab pots. Additionally, gill nets will be used in the snag area on the western side of the remnant islands. This monitoring will provide baseline data on fish and decapod utilization. Species composition, abundance and size will be recorded. Trawling will be performed in early spring, summer and fall; gill netting during spring and fall; crab pots will be set in early summer; throw trap sampling will be done during early fall. This monitoring will be performed in the baseline year, then after construction of the first cell, then every year for three years, then every three to five years.

### F. Wetlands Use By Fish Monitoring

Purpose - To measure and evaluate differences in decapod and fish densities and community species composition over time in the restored marshes, the reference marshes and the remnant marshes at Poplar.

### Hypotheses

1. There are no differences between decapod or fish densities, or community species composition among the Poplar Island restored wetlands compared to those prior to restoration.

2. There are no differences between decapod, or fish densities or community species composition among restored Poplar Island wetlands compared to nearby reference wetlands.

3. There are no differences in decapod, or fish densities or community species composition associated with age (seral stage) of restored Poplar Island wetlands.

Poplar Island Restoration Project  
Monitoring Framework  
Page 8  
September 1, 1995

**Brief Description** - Fish, shrimp and crab use of the wetlands will be sampled in reference marshes, created marshes and remnant marshes. Replicate block and fyke nets will be used, with six replicates per station where possible. Sampling for fauna will be performed during early spring, summer and fall. Environmental parameters will also be analyzed. Species, size and abundance data will be recorded. This monitoring will be performed in the baseline year, after completion of the first cell, then every year for three years, then every three to five years.

### **G. Wetlands Use By Wildlife Monitoring**

**Purpose** - To measure and evaluate species and numbers of migratory waterbirds nesting on the island; to compare densities and species composition of migratory waterbirds on the restored marshes the remnant marshes and nearby reference marshes; to evaluate differences in wildlife utilization with the seral age of the marsh; to evaluate use of the island by terrapin.

#### **Hypotheses**

1. The species and numbers of migratory waterbirds nesting on the islands in the Poplar group show no numerical change or site relocation comparing pre- vs. post-restoration of Poplar Island.
2. Densities and species composition of migratory waterbirds using (feeding, roosting) the wetlands do not differ among restored wetlands on Poplar, remaining island reference wetlands or nearby mainland reference wetlands.
3. Age (or seral stage) or restored sites has no influence on their relative attractiveness as nesting sites (uplands) or feeding sites (wetlands to migratory waterbirds).
4. Use of restored upland sites by nesting terrapins is no difference from use at either remnant island or mainland reference wetlands.

**Brief Description** - The number of species and species densities of migratory waterbirds and terrapins on the remnant island marshes and in nearby reference marshes will be quantified. Nest counts will be conducted in the spring. Key indicator species will be used. Wetlands plots in reference wetlands, created wetlands and remnant wetlands will also be used to evaluate bird use in each plot. This will be performed 1-2 times per month in the spring and August-mid September. Uplands transects will also be established for terrapin searches, which will be conducted at weekly intervals from June 1 to July 15.

Poplar Island Restoration Project  
Monitoring Framework  
Page 9  
September 1, 1995

Indicator species are bald eagles, black ducks, little blue herons, least and common terns, snowy egrets, migrant shorebirds, and terrapins.

#### **H. Shellfish Bed Sedimentation Monitoring**

**Purpose** - To provide information on the change in sedimentation rates on nearby charted oyster bars.

**Hypothesis** - There is no increase in sedimentation rates on the charted oyster bars during construction of the exterior dikes at Poplar Island when compared to sedimentation rates prior to dike construction.

**Brief Description** - Sediment traps will be set up on the two charted Natural Oyster Bars and checked periodically by onsite personnel during the critical growth seasons for baseline sediment accumulation. This will then be repeated periodically during construction.

#### **I. Technical Integration**

**Purpose** - To integrate the studies with each other and the overall project design and schedule, to coordinate and monitor plan elements, to provide support to principal investigators and to communicate needs and findings to all participants.

**Brief Description** - The technical integrator will provide services to coordinate studies with principal investigators and to maximize efficiencies and exchange information during the study period. This will include periodic meetings of principal investigators, verification and tracking of cruises, deliverables and findings, production of an integrated annual comprehensive monitoring report, coordination of monitoring activities with dredging and construction activities, provision of overall program Quality Assurance/Quality Control to ensure that project elements are meeting stated technical objectives and are meeting the QA/QC goals of each study, provision of technical information and guidance as necessary for current and future Poplar Island placement actions, permits, certifications and specifications; and preparation of the next years' monitoring plan for the Poplar Island restoration project.

Poplar Island Restoration Project  
Monitoring Framework  
Page 10  
September 1, 1995

## **J. Project Management**

**Purpose** - To administer and manage the agreements and funding for the principal investigators.

**Brief Description** - The project manager will prepare, administer and manage the agreements and funding arrangements for the principal investigators. The project manager will also prepare schedules and work plans, will coordinate activities between the investigators and the sponsors, will monitor progress on work tasks, will prepare and conduct meetings as necessary for relevant committees, the general public, and the principal investigators, will provide budget tracking service and subcontractor invoice payment approvals, will prepare monthly progress reports to clients, will prepare fiscal year budgets and schedules as required by project sponsors, will conduct budget reviews and projections as required by client, and will prepare scopes and agreements for monitoring plan elements for the next monitoring year.

## **V. STUDY ELEMENT SCHEDULE**

See Table 1, attached, Page 10.

## **POPLAR ISLAND RESTORATION PROJECT**

### **BASELINE MONITORING IMPLEMENTATION PLAN**

A monitoring framework for the Poplar Island Habitat Restoration Project has been prepared by a collaborative, multi-disciplinary team of federal and state agencies.

Some of the agencies on the framework development team have prepared implementation plans for monitoring elements which include in-kind services or grants provided by these agencies. In this way, costs could be contained and the monitoring process would continue the collaborative, multi-disciplinary approach which guided the development of the framework.

The agencies which have indicated their capability and availability to perform the monitoring elements of the baseline plans are listed on Table 1. As a State (MPA) funded project, MES would provide management and integration of the studies. The Corps may provide additional management and integration as part of a cooperative agreement and cost sharing if federal funding is obtained.

This implementation plan would meet the monitoring framework needs for the baseline year if the data collection effort is implemented using the agencies indicated in Table 1. The preliminary implementation plans for each element have been previously submitted and reviewed by the monitoring team. Detailed scopes of work will be prepared for each element by each agency after concurrence with the implementation plan is received. This implementation plan does not preclude changes as needed, but acknowledges that this implementation plan would meet the needs of the baseline year data collection at Poplar Island.

Poplar Island Restoration Project  
Baseline Monitoring Implementation Plan  
Page 2  
September 1, 1995

Table 1  
Poplar Island Monitoring Framework  
Baseline Monitoring

<b>Study Task</b>	<b>Agency</b>	<b>Agency Type</b>
Sediment Quality Monitoring	Maryland Geological Survey	State
Wetland Vegetation Monitoring	U.S. Fish and Wildlife Service	Federal
Water Quality Monitoring	Maryland Department of the Environment	State
Benthics Monitoring	Maryland Department of the Environment	State
Fisheries Use of Exterior Proximal Waters	National Marine Fisheries Service	Federal
Wetlands Use by Fisheries	National Marine Fisheries Service	Federal
Wetlands Use by Wildlife	National Biological Survey	Federal
Shellfish Bed Sedimentation	Department of Natural Resources	State
Technical Integration	Maryland Environmental Service	State
Project Management	Maryland Environmental Service	State

# United States Senate

WASHINGTON, DC 20510

September 7, 1995

The President  
The White House  
Washington, D.C. 20500

Dear Mr. President:

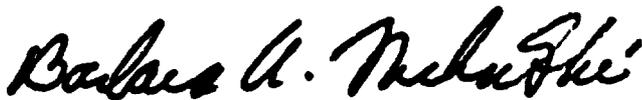
**We need your help!**

As you may recall, we have communicated with you in the past about the importance and crucial need for construction of the Poplar Island, Maryland beneficial use of dredged material project -- a project that is vital to the Chesapeake Bay restoration efforts and Maryland's economy and maritime industry. Over the past year we have worked closely with officials in the U.S. Army Corps of Engineers, OMB, EPA and the U.S. Fish and Wildlife Service as well as the Senate authorizing and appropriations committees in an effort to move this important project forward. Throughout this process we have received strong support and encouragement from officials in your Administration at all levels, but have recently run into some roadblocks on the funding and policy issues associated with the project which require strong executive leadership and direction to resolve.

There is a great urgency to this matter. The State of Maryland will exhaust its dredged material disposal capacity in 1996 and it is imperative that construction of the Poplar Island project begin early next year to avoid any disruption in maintenance dredging of the Baltimore shipping channels and to prevent the rare coalition of business and environmental community interests which formed around the project from unraveling. Poplar Island is the only viable and most environmentally sound new dredge material disposal site.

We ask that you direct OMB and the Secretary of the Army to make Poplar Island a national priority and to identify the most appropriate and expeditious mechanism to initiate the project in fiscal 1996.

We greatly appreciate the support which you have given to us and to this important project and know that with your continued assistance, we can restore Poplar Island and show the nation how to successfully blend commercial maritime and environmental enhancement efforts.



Barbara A. Mikulski  
United States Senator

Sincerely,



Paul S. Sarbanes  
United States Senator



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE

Habitat and Protected Resources  
Division

904 South Morris Street  
Oxford, Maryland 21654

14 September 1995

Mr. Robert Smith  
Maryland Environmental Service  
2011 Commerce Park Drive  
Annapolis, MD 21401-2995

Dear Bob:

We appreciate your providing us with the short time extension for commenting on this document to accommodate our logistical problems. My colleagues and I have examined the "Habitat Development Draft Report for Poplar Island", and we offer the following comments on the identified sections for your consideration.

2.5.1: It sounds like the low marsh will include the channels, moats, ponds, and 2-acre upland islands. How much actual low marsh is projected?. How much mudflat and open water?

It seems that the "moats" around the island will eventually fill in making the islands more susceptible to predator species, unless the moats are maintained. We assume that there will be open water areas within the cell other than just the ponds and that the cell will not simply be wall to wall marsh. Would it not be more practical to place the islands in open water areas within the cell instead of building moats and feeder channels? This should make it easier to maintain the integrity and isolation of the islands.

2.5.2: We suggest planting Scirpus spp. at the boarder of the upland and the high marsh as well as Juncus. Planting both species in a broken pattern parallel to the boarder (i.e., -a block of Scirpus, a block of Juncus, a block of Scirpus, etc.) will increase habitat complexity, which should be beneficial for both faunal and floral species. In lower portions of the high marsh, the typical "corn field" planting of Spartina patens is suitable.

Ponds that are only 18-24 inches deep where water exchange is provided exclusively by spring tides are subject to fish kills during drought conditions. A 3-foot deep reservoir for fish should be provided at the end or middle of each pond.

2.5.3: See comment above relative to high marsh ponds (2.5.2).

2.5.4, sentence 1: This should be revised to 551 acres of upland habitat with 543 acres being contiguous uplands and 8 acres being upland islands.



see the same growth data used for Spartina alterniflora, S. patens, and Scirpus spp.

5.1.3, paragraph 1 sentence 4: Is the cost differential between peat pot and bare root stock the same for S. patens as it is for S. alterniflora? No cost differential was stated in the discussion for smooth cordgrass on p. 16.

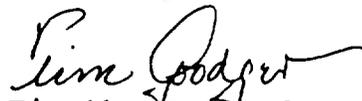
5.1.4, paragraph 1, sentence 4: Sod collection as described seems expensive. It would be interesting to see a cost analysis based on planting unit/work time and planting unit/cost for the different methods discussed.

7.2.1: It was our understanding that dikes would be constructed between the high marsh and the uplands. Is the transition zone to be established on dike bases? What will the dimensions be?

7.3.3.3.1: Tree and shrub seedlings could be planted with a tractor and tobacco planter, as is done for wind breaks in the midwest. This is an established, economical method that yields excellent results. Seedlings should be planted while dormant in early spring (rainy season). Planting saplings or larger trees and shrubs is expensive, and the added cost is not worth the few years it will take seedlings to reach similar size.

We appreciate having had the opportunity to comment on the subject document. If you have questions, or wish to discuss a specific issue or item, please call me at (410) 226-5771.

Sincerely,



Timothy E. Goodger  
Assistant Coordinator

cc: Nick Carter-MD DNR  
Michael Erwin-Nat'l. Bio. Survey  
Stacey Brown-Corps of Engs.  
Chris Doley-NMFS  
Dave Meyer-NMFS  
John Gill-US FWS  
Lee Crockett-Chesapeake Bay Prog.  
Kilho Park-NMFS

Mr. Wesley E. Coleman, Jr.

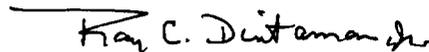
December 28, 1995

Page 3

should be able to provide information on the studies that were conducted on Poplar, Jefferson and Coaches Islands during this period.

Again, we wish to thank you for the opportunity to provide comments on this project and hope that the proposed island restoration can be accomplished. Should you require additional information on this project, please feel free to contact Dr. Roland Limpert of my staff at (410) 974-2788.

Sincerely,

  
Ray C. Dintaman, Jr., Director  
Environmental Review Unit

RCD:RJL

cc: E. Ghigiarelli, MDE  
P. Slunt, DNR-RAS  
C. Judy, DNR-FS

STATE OF MARYLAND  
OFFICE OF THE GOVERNOR



CC: *Winstead*  
*Peraino*  
*Stel*  
*Frantz*  
*Yoshitani*  
*Hummus*  
*Stawinski*

PARRIS N. GLENDENING  
GOVERNOR

ANNAPOLIS OFFICE  
STATE HOUSE  
100 STATE CIRCLE  
ANNAPOLIS, MARYLAND 21401  
(410) 974-3901

WASHINGTON OFFICE  
SUITE 311  
444 NORTH CAPITOL STREET, N.W.  
WASHINGTON, D.C. 20001  
(202) 638-2215

TDD (410) 333-3098

September 15, 1995

The Honorable William J. Clinton  
President of the United States  
The White House  
Washington DC 20500

Dear Mr. President:

One of the hallmarks of your Administration has been the effort to protect and enhance the environment while at the same time improving economic competitiveness. The State of Maryland and the United States Army Corps of Engineers are prepared to embark on an effort -- the Poplar Island Beneficial Use Project -- which exemplifies these goals. This project, which involves the restoration of an eroded island in the Chesapeake Bay using materials dredged from ship channels serving the Port of Baltimore, is vital to Chesapeake Bay restoration efforts and Maryland's economy and maritime industry.

Officials of the U.S. Army Corps of Engineers, Office of Management and Budget, Environmental Protection Agency, U.S. Fish and Wildlife Service and the State of Maryland as well as members of our congressional delegation have worked closely to move this important project forward. Throughout, we have been supported by officials in your Administration and we are most appreciative of this cooperation. However, we now find ourselves at an impasse in regard to funding for this critical project. Despite concerted efforts, we have not been able to secure the necessary federal funding.

It is urgent that we devise a funding plan for the Poplar Island Beneficial Use Project. We will soon exhaust available sites which can be used to dispose of material dredged from shipping channels. We are facing a potential crisis in which we might be forced to curtail basic "maintenance dredging" needed to keep shipping channels at their existing depths. This would have significant consequences to the State of Maryland and the maritime industry that is essential to the economic health of the Baltimore metropolitan region. Construction of the Poplar Island project must begin in federal fiscal year 1996 if we are to have it ready for use when needed.

The Honorable William J. Clinton  
September 15, 1995  
Page Two

Your assistance is requested in assuring that the Office of Management and Budget and the Secretary of the Army are able to successfully develop a method by which federal funds can be made available for the project. With your leadership, we will be able to demonstrate to the nation how commercial maritime and environmental enhancement efforts can be successfully blended.

Sincerely,

A handwritten signature in black ink, reading "Parris N. Glendening". The signature is written in a cursive style with a long, sweeping tail on the final letter.

Parris N. Glendening  
Governor

cc: Maryland Congressional Delegation



## **R. CHRISTOPHER GOODWIN & ASSOCIATES, INC.**

337 East Third Street, Frederick, MD 21701 • 301-694-0428

5824 Plauche Street, New Orleans, LA 70123 • 504-736-9323

848 Blountstown Highway, Unit "D", Tallahassee, FL 32304 • 904-575-0565

September 25, 1995

Mr. Richard F. Thomas, PE  
Project Manager  
GBA - M&N A Joint Venture  
9008-O Yellow Brick Road  
Baltimore, Maryland 21237

**RE: Phase II Evaluations of Six Marine Anomalies at Poplar Island - Executive Summary Letter**

Dear Mr. Thomas:

This Executive Summary letter presents the preliminary results of Phase II evaluations of six marine anomalies identified during earlier underwater investigations for the Poplar Island Reclamation project. These investigations were carried out during August and September, 1995 by R. Christopher Goodwin & Associates, Inc. under contract to the Joint Venture of Gahagan & Bryant Associates, Inc. and Moffatt & Nichol, Engineers. This project was conducted in accordance with the National Environmental Policy Act (NEPA) of 1969, with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and with Article 83B, Sections 5-617 - 618 of the Annotated Code of Maryland.

These investigations were conducted in support of plans to reclaim Poplar Island by restoring its shoreline by constructing a series of dikes to facilitate backfilling of the island area. Phase I marine investigations included magnetic, acoustic sub-bottom, and side-scan sonar survey in the aquatic portions of the project area. These investigations identified 28 magnetic and acoustic anomalies. Additional Phase II sub-surface testing was recommended for six (6) target areas within or adjacent to the Alternative Alignment #1 project area.

Phase II investigations included a combination of visual search, metal detecting, probing, and excavation. The purpose of this task was to provide data concerning the integrity and National Register potential of submerged cultural resources. Anomalies to be tested were 10-727, 10-755, 30-1151, 40-665, 48-819, and the cluster of targets at 58-1477, 60-579, and 62-1508.

Anomaly 10-727. The sub-bottom profile record of this anomaly showed a narrow, very hard, vertical target extending deep into the substrata. The magnetometer registered a 16 gamma magnetic anomaly in the same location. The anomaly was postulated to be a possible submerged well. Phase II investigations involved relocating the target by going over the area with the magnetometer on a 25 ft grid. Three separate circle searches were conducted at ten ft intervals for a distance of 70 ft from the buoy (140 ft diameter). The divers probed the bottom as they searched. No sign of the target, or of any other cultural material was located. This anomaly was too discrete to locate despite intensive bottom survey; no further work is recommended.

Anomaly 10-755. This target was identified as a small surface mound accompanied by a 32-gamma magnetic anomaly. The target was relocated with the magnetometer and the bottom was searched. A 6 x 30 ft concentration of amorphous ferrous material was identified. This material may represent either a pile of corroded sheets of very thin metal, or a deposit of bog iron. There was no indication that the material was man-made; no fasteners or fastening holes were identified. This target is not considered potentially eligible for listing in the National Register of Historic Places; no additional investigation is recommended.

Anomaly 30-1151. This sub-bottom profile target showed a hard, reflective surface curving downward from the surface of the bay floor to about 1 m below surface. This target was postulated to represent a shell midden. This target was relocated and a bottom search was made. The bottom was sandy and did contain a lens of oyster and clam shells. The shell was scattered throughout the upper 1 1/5 ft of sand. This shell lens overlay hard packed sand. This hard packed sand layer may have been what caused the initial sub-bottom profile reading.

Four dredge tests were excavated into this shell deposit and the shell was retained for analysis. Preliminary analysis does not suggest that the shell deposit has a human origin. The shell appears to be recent; it was scattered loosely in the sand and did not have the density of a cultural shell midden. The shell has been sent to a specialist for evaluation of its origin and integrity; final interpretation of this deposit awaits the results of that analysis.

Anomaly 40-665. This anomaly represented a moderately strong (60 g) magnetic target without accompanying acoustic signature. The anomaly was relocated with the magnetometer and the bottom was searched. The area was characterized by a one to two ft sand cap over clay. There was a scattering of stones in the area. Two lithic types were noted: blocky quartz stones and flat black sandstone. Some of the stones were large. A piece of rebar also was identified, which may account for the magnetic signature. No archeological site was identified; no further investigation is recommended.

Anomaly 48-819. This anomaly appeared as a U-shaped target on both the sub-bottom profile and fathometer records. The magnetic record displayed a moderately strong anomaly of significantly long duration and a multicomponent signature. The U-shaped signature commonly is associated with sunken vessels and the target was postulated to represent a small watercraft.

The target area was relocated with the magnetometer and two 70 ft circle surveys were conducted. The area was characterized by a clay bottom, however, sand had collected around two objects: an iron furnace remnant, and a dead tree that had collected miscellaneous debris (a brick fragment, a hunk of iron pipe) in its branches. The tree branch had a crescent shape, which may account for the U-shaped signature on the original sub-bottom profile and fathometer records. No other cultural material was identified. This collection of debris did not represent a coherent site; no further work is recommended.

Anomalies 58-1477, 60-579, and 62-1508. This was a cluster of acoustic and magnetic targets which included an acoustic target that resembled an open topped box with straight vertical sides and a flat bottom. This was surrounded by a large area of disturbed surface and a hard reflective layer approximately 1 m below the bottom. The size of the anomaly suggested the potential for a buried structure. The targets were relocated and diving searches were conducted on all 3 anomalies. The area was probed as it was searched. Nothing was found in the area except a flat, featureless clay bottom. It is possible that the hard reflective



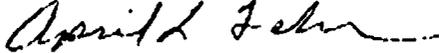
Mr. Richard F. Thomas, PE  
September 25, 1995  
Page 3

layer identified in the Phase I survey was the hard clay bottom. Perhaps the rectilinear feature was a crab pot that since has been removed. In any case, there was no evidence for the postulated structure; no cultural material of any kind was identified. No additional investigation is recommended.

This Executive Summary letter has presented the preliminary results and recommendations of Phase II evaluation of six marine anomalies at Poplar Island. No additional investigations are expected to be recommended as a result of this study. Analysis and report preparation are ongoing. The results of this investigation will be presented as an addendum to the Phase I report. Please do not hesitate to contact us should you have questions regarding this Executive Summary letter or progress on the project to date.

With best regards, I remain

Yours faithfully,



April L. Fehr, M.A.  
Project Manager

ALF/slc

cc: Mr. Michael Hart, Maryland Port Administration  
Mr. Kenneth Baumgardt, U.S. Army Corps of Engineers, Baltimore District

R. CHRISTOPHER GOODWIN & ASSOCIATES, INC.



MARYLAND  
HISTORICAL



TRUST

Parris N. Glendening, Governor  
Patricia J. Payne, Secretary

Office of Preservation Services

October 3, 1995

Dr. James F. Johnson  
Chief, Planning Division  
Baltimore District  
U.S. Army Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203-1715

Re: Poplar Island Reclamation  
Project

---

Dear Dr. Johnson:

Thank you for your letter of 11 September 1995 and for the draft copy of the following report: Phase I Terrestrial and Marine Archeological Surveys for the Poplar Island Reclamation Project and Phase II Investigations of Site 18TA237, Talbot County, Maryland (September 1995). R. Christopher Goodwin & Associates, Inc., prepared the document.

The report describes the goals, methods, and results of the terrestrial and underwater archeological investigations. It contains informative illustrations and addresses most of the Standards and Guidelines for Archeological Investigations in Maryland (Shaffer and Cole 1994) (see comments below). Our discussion of the document is divided by survey location:

**Terrestrial Archeology**

In our opinion, the level of background research and fieldwork was sufficient to identify the full range of archeological properties in terrestrial sections of the area of potential effects. On **North Point Island**, shovel testing, augering, and dredging failed to reveal any traces of prehistoric site 18TA219. Erosion of the island apparently has destroyed the site. Lacking physical integrity, **18TA219** is ineligible for the National Register of Historic Places. The survey of this island did locate a number of nineteenth century artifacts, but these resources also lacked physical integrity, being mixed among modern artifacts and



EQUAL HOUSING  
OPPORTUNITY

Division of Historical and Cultural Programs

100 Community Place • Crownsville, Maryland 21032 • (410) 514-7638

*The Maryland Department of Housing and Community Development (DHCD) pledges to foster  
the letter and spirit of the law for achieving equal housing opportunity in Maryland.*



Dr. James F. Johnson  
October 3, 1995  
Page 2

features. No further work is warranted at North Point Island due to the lack of National Register properties.

On **Middle Poplar Island**, surveyors sought traces of reported prehistoric site 18TA222. A concentration of shells at the northern end of the island may derive from the site, but no prehistoric artifacts were retrieved from testing. Due to a lack of research potential and integrity, 18TA222 is ineligible for the National Register. Other work on the island located historical site 18TA304 (MP.1). This site represents the location of former buildings, as seen in several clusters of bricks and brick foundation piers. Shoreline investigations found 37 artifacts, dating primarily from the late nineteenth century. Erosion had removed most of the soil in this area indicating a lack of physical integrity of the archeological resource. Therefore, 18TA304 is ineligible for the National Register; and Middle Poplar Island warrants no additional study.

Survey of **South Central Island** determined that erosion had destroyed reported prehistoric site 18TA218. Fieldworkers found only five stone flakes which might derive from the site. Due to a lack of physical integrity and research potential, 18TA218 is not eligible for the National Register. Historical site 18TA236 was represented by two concentration of bricks. Survey in this area found only one artifact: an eighteenth to nineteenth century, "glass tipped pontil" (pontil-marked glass?). The lack of diagnostic artifacts, research potential, and integrity in this eroding area mean that 18TA236 is ineligible for the National Register. Initial examination of historical site 18TA237 found three concentrations of bricks, mixed with a number of mostly kitchen-related artifacts dating from the nineteenth century. Evaluative testing of this property entailed excavation of shovel test pits, dredge tests, auger tests, and 5 x 5 ft units, as well as systematic trenching. This work characterized the brick features as water-disturbed structural remains probably dating from the nineteenth century. Most of the kitchen and architectural artifacts were of that time period, while other artifacts from as early as the seventeenth century and as late as the modern period were mixed in. The lack of integrity of the archeological materials indicates 18TA237 is ineligible for the National Register. No additional studies are warranted for South Central Island.

At **South Poplar Island**, archeologists found no trace of reported prehistoric site 18TA217. Shovel and dredge testing and pedestrian reconnaissance recovered only one sherd of stoneware (probably nineteenth century) and modern glass. Erosion evidently destroyed the prehistoric site. Due to the absence of physical integrity, 18TA217 is ineligible for the National Register. No additional studies area needed for this island.

Dr. James F. Johnson  
October 3, 1995  
Page 3

Investigations on the shore of **Coaches Island** recovered two stone flakes, one chert bifacial tool fragment, and one jasper projectile point (Early or Middle Woodland?). These items are the only indication that prehistoric site 18TA216 was once in this location. Erosion apparently has destroyed the site; and wave and current action are redepositing the prehistoric artifacts on the present beach. Due to a lack of physical integrity, 18TA216 is ineligible for the National Register. No additional studies are necessary for Coaches Island.

### Underwater Archeology

The investigations undertaken offshore of the remnant island within the Poplar Island footprint were adequately promulgated and are satisfactory for assessing the potential for significant resources and to support the determination that these do not have sufficient integrity to be eligible for the National Register. They do not warrant further investigation.

Studies focusing on the submerged marine anomalies not covered in this report were undertaken in close cooperation with the State Underwater Archeologist. We understand that these investigations will be addressed in a forthcoming report.

We have a few comments on the draft report which should be addressed in a revised volume:

- 1) Editing is needed for the following pages: 45 (shifted), 51 (Map), 69 (only), 91 (where a positive dredge hit is depicted by map, but is missing from the legend), 104 (site's), 109 (Sgraffito), and 112 (Sgraffito).
- 2) Figure 2 needs to outline the project's area of potential effects.
- 3) The last sentence in the last complete paragraph on page 73 should explain what is meant by "lacked context and may not represent a coherent collection."
- 4) A completed NADB-Reports Recording Form needs to be submitted.

Dr. James F. Johnson  
October 3, 1995  
Page 4

We look forward to receiving the final version of the report and to reviewing the results of the remaining marine survey. If you have any questions or require further information, please contact Dr. Gary Shaffer (terrestrial archeology, 410-514-7638) or Dr. Susan Langley (underwater archeology, 410-514-7662).

Sincerely,



Elizabeth J. Cole  
Administrator  
Archeological Services

EJC/GDS/SL  
9502353

cc: Mr. Thomas Williams  
Mr. Victor MacSorley  
Ms. Deborah Renshaw  
Dr. Christopher Goodwin



MARYLAND  
ENVIRONMENTAL  
SERVICE

Parris N. Glendening  
Governor

November 27, 1995

James W. Peck  
Director

Ms. Carol Anderson-Austra  
US Army Corps of Engineers  
ATTN: CENAB/PL-EN  
PO Box 1715  
10 Howard Street  
Baltimore, MD 21203-1715

RE: Poplar Island Preliminary Draft EIS Comments

Dear Ms. Anderson-Austra:

Please find enclosed some notes from a telephone conversation held with Art Spingarn, Bill Muir, Roy Denmark and Brigitte Farren of EPA Region III. Also included are the written questions which they sent me. In the telephone conversation, in addition to the EIS questions, I went over the Poplar Island Working Group structure and the two subgroups for Habitat Development and Monitoring which have been meeting for some time to provide agency input concurrent with the EIS preparation. There has apparently been a disconnect between the people representing EPA Region III on the Working Group and the rest of the Region III staff who review the EIS. Last week, we sent notification of the next meetings of the Habitat and Monitoring Subgroups and the Working Group meeting to Region III. We will now also send meeting notes from the working group and sub group meetings to several more people at Region III. In addition, Danielle Algazi, who was their representative, should be back from leave soon, and they should have increased representation at that time.

Please be aware that the attached comments are my notes from the conversation. The Region III representatives should be able to clarify their questions and concerns. Please call me if there are any questions.

Sincerely,

A handwritten signature in black ink that reads "Cecelia L. Donovan".

Cecelia L. Donovan  
Project Manager  
Environmental Dredging Program

Attachment

cc: Bob Smith  
Dave Bibo  
Art Spingarn, EPA Region III

"Twenty-five Years of Service to the Citizens of Maryland"  
1970-1995

**Telephone Conversation of November 21, 1995 on Preliminary Draft EIS, Poplar Island**

MES Representative - Cece Donovan

EPA Region III Representatives - Roy Denmark, Bill Muir, Art Spingarn, Brigitte Farren

Written concerns are in bold. Notes from conversation follow.

**Need a summary table comparing impacts, costs, etc. of each alternative. Phased construction should be compared with non phased construction.**

Show which alternatives were screened out and why. All of the information doesn't need to be provided for every alternative, just until the 'fatal flaw' hits. (Bob mentioned that if beneficial use projects are the object of the action, all but beneficial use projects would screen out.)

**Need to incorporate Habitat Document into general document in some way.**

They were given the draft Habitat Document to review. I explained the EIS process versus the JV process and that the entire Habitat document wasn't originally meant to be included in the EIS. Region III indicated that at least some details of how the habitat will be developed are needed in the EIS to enable reviewers to understand the whole project concept. I also explained the time schedule, and how the habitat and monitoring frameworks were focussing on actions up to 20 years in the future, and thus needed to stay flexible in order to respond to knowledge gained on this project and others down the road. Region III suggested adding the Habitat Document, or some form of it as an Appendix.

**Need remedial action plan for problems that arise during construction.**

I again explained the EIS versus the JV processes, and that a Site Management plan was being developed to address construction issues, but they again indicated that certain site management related issues should be dealt with in the EIS. Some examples:

What are the precautions to reduce and protect erosion from unarmored, exposed faces if the project is phased?

What are comparisons and impacts of phased versus non-phased construction?

What will happen if dike breach occurs?

I said I thought that there would still be armoring of all exposed faces during phased construction. They did not think this was clear in the EIS.

### **Need more water quality monitoring stations extending southward in the Bay.**

This question was related to confusion between the EIS data and the monitoring framework stations. I tried to explain the difference between the two. They would like to see more southward stations to enable review of nitrogen and phosphorous impacts during placement and construction. They would also like a description of the CBP mainstem stations that could be used for comparison.

There was also a question on the monitoring framework, specifically, could we look at winter monitoring to enable comparison of minimum recruitment achievements, as opposed to the apparent maximum recruitment we are now looking at. I said this could be discussed in the framework meetings.

Brigitte Farren asked if the reference stations and the regular stations could be more clearly identified on the maps.

### **Need more detailed wetland monitoring program.**

They again asked for the Habitat Development Guidelines to be part of the report. A concern was relayed that vegetation monitoring on six plots every three years may not be enough to control nuisance species, and to revegetate adequately if necessary due to low survival. I said that there would be ongoing operations and maintenance and other people would be at Poplar and would be looking at issues like revegetation, Phragmites control, soil conditions, etc. They asked if that could be part of the document. I said it was hard to write hard and fast specs for something that wasn't going to happen for 5-10 years down the road.

Some of their basic concerns and suggestions:

- Ongoing maintenance should look at enough area of the entire island to get a good idea of what is going on. This should be expressed as a percent of the entire area that will be looked at. They recommend looking at the vegetation 2X a year during the first year, then when the area is stable, monitoring can be performed less frequently.

- They recommended use of photo stations, aerial, land or both, with pictures taken during all four seasons of each year to document changes.

- They recommend a plan for control of nutria, swans, geese and other herbivores so they don't tear up the seedlings before they are established in the wetlands.

- They recommend conducting a plant species inventory periodically, for detection of both problem and rare species.

- Put a budget for vegetation in the EIS to show that there are resources planned for this.

- They asked about sediment quality and assurances that the material was clean. I described the North Point-Rock Point line restrictions and the reference sediment quality monitoring and evaluating that Brian will be doing. They said that should be documented in the EIS.

**Recommend university involvement in monitoring programs.**

I told them that UMCEES would be involved in the benthic and water quality evaluations, they were happy to hear this and said that a lot of monitoring work could be done through graduate research projects.

**EPA Region III may be able to provide assistance:**

- 1. Water quality monitoring**
- 2. Wetland monitoring**

I said that we did have assistance from EPA CBPO, they said that wasn't the same as Region III. I also told them that we had USFWS, NMFS, NBS, MDE, DNR on the subgroups and that they would certainly be welcome on the subgroup. I described the process of developing the monitoring framework and habitat development guidelines, and that both of them would change over time in response to input from the state and federal agencies. They asked to have information faxed to them on the meetings, but said they had travel restrictions that might keep them from going.



December 5, 1995

Re: Comments on Poplar Island Project

Dr. James F. Johnson, Chief, Planning Division  
District Engineer, U. S. Army Corps of Engineers  
% CENAB-PL-PC  
Baltimore District  
P. O. Box 1715  
Baltimore, Maryland 21203-1715

Dear Dr. Johnson:

I have read your *Notice of Availability* soliciting comments on the Poplar Island Project. I appreciate the opportunity to provide input.

Based on what is known to date, I can only offer support for the project, its rationale and intended purposes.

The only suggestion offered concerns the dredging plans. Again, I have no problems with the proposed use of spoils from the Baltimore Harbor channels. However, I would recommend serious consideration be given to capitalizing on the location, minimal expense involved, and economic benefits that would be derived if the Knapp's Narrows channels and slip areas along the Narrows would be dredged as well and the spoils added to the Poplar Island fill.

At this point I have not sought support from other businesses or users along the Narrows but would be more than willing to do so if appropriate. Please advise.

Sincerely,

Larry Lorton, PhD.  
General Manager

cc: Bill Davis, Tilghman on the Chesapeake  
Carl Griebel, Severn Marine Services  
Jack Redmond, Tilghman Island Inn  
Steuart Chaney, Tilghman Quay

(ltrpopis.dre)



HOUSE OF DELEGATES  
ANNAPOLIS, MARYLAND 21401-1991

MARY ROE WALKUP  
DISTRICT 36  
KENT, QUEEN ANNE, CECIL,  
CAROLINE AND TALBOT COUNTIES  
—  
ECONOMIC MATTERS COMMITTEE

**ANNAPOLIS OFFICE:**  
423 LOWE HOUSE OFFICE BUILDING  
(410) 841-3449 (BALTIMORE METRO)  
(301) 858-3449 (WASHINGTON METRO)  
1-800-492-7122 EXT. 3449

**DISTRICT OFFICE:**  
12836 STILL POND CREEK ROAD  
WORTON, MARYLAND 21678  
(410) 778-6635

December 6, 1995

Dr. James F. Johnson  
Chief, Planning Division  
U.S. Army Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203

Dear Dr. Johnson:

I regret that I was unable to attend the public hearing on the Poplar Island Restoration Project that was held on November 28th. I have, however, been advised of the plans for placement of clean dredge material at Poplar Island and wanted to let you know of my support for this project.

Thank you for continuing to keep me informed and feel free to contact me anytime.

Sincerely,

Mary Roe Walkup

MRW/bjc



# United States Department of the Interior

OFFICE OF THE SECRETARY  
Washington, D.C. 20240

ER 95/863

DEC 12 1995

Mr. Wesley E. Coleman, Jr.  
Attn: CENAB-PL-PC  
U.S. Army Corps of Engineers  
Baltimore District  
Baltimore, Maryland 21203-1715

Dear Mr. Coleman:

This is in regard to the request for the Department of the Interior's comments on the Draft Feasibility Report and Environmental Impact Statement for Popular Island Restoration Study, Chesapeake Bay and Talbot County, Maryland.

This is to inform you that the Department will have comments, but will be unable to reply within the allotted time. Please consider this letter as a request for an extension of time in which to comment on the statement.

Our comments should be available about February 9, 1996.

Sincerely,

*Terence N. Martin*

Terence N. Martin  
Team Leader, Natural Resources Management  
Office of Environmental Policy & Compliance



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401

December 14, 1995

Colonel Randall R. Inouye, P.E.  
District Engineer  
Baltimore District, Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203

Re: Poplar Island Integrated Draft Feasibility  
Report and Draft Environmental Impact  
Statement

Dear Colonel Inouye:

The U.S. Fish and Wildlife Service has reviewed the referenced Draft Feasibility Report and Draft Environmental Impact Statement. The recommended plan would create a 1,110 acre dredged material placement island in a configuration that would roughly follow Poplar Island's 1,847 footprint. Uncontaminated dredged material would be used to create low and high saltmarsh (50% of the footprint), of which 80% will be low marsh characterized by smooth cordgrass (*Spartina alterniflora*). The remaining 50% of the historic island footprint would be filled with uncontaminated dredged material to an elevation of 20 feet above mean sea level, and planted with forest, shrub, and vine species of vegetation.

Offshore islands are a unique ecosystem component in the Chesapeake Bay watershed. Although similar vegetative communities may occur on the mainland, isolation, relative lack of human disturbance, and fewer predators make islands more desirable as nesting sites for colonial waterbirds and some endangered species. The remnant islands in the complex, which includes Poplar Island, support nesting snowy egrets (*Leucophoyx thula*), common egrets (*Casmerodius albus*), double-crested cormorants (*Phalacrocorax auritus*), terns, green herons (*Butorides virescens*), great blue herons (*Ardea herodias*), black ducks (*Anas rubripes*), and the Federally-listed threatened bald eagle (*Haliaeetus leucocephalus*). Diamondback terrapins (*Malaclemys terrapin*) nest on the high marshes and beaches, and river otters (*Lutra canadensis*) fish from the island shore. From exacerbated erosion, ship wakes, land subsidence, and sea level rise are causing these valuable island habitats to be lost. In the last 150 years, in the middle eastern portion of Chesapeake Bay alone, 10,500 acres have been lost.

At the same time islands have been eroding, a lack of environmentally acceptable disposal sites has led to navigation projects being held up during the environmental and regulatory review process, and a continued reliance on overboard (unconfined) disposal. At a time when the Federal and state

governments are spending millions of dollars to restore Chesapeake Bay's living resources, reduce nonpoint source pollution and sediment loadings, these same governments are funding the dumping of 1-2 million cubic yards of silt, muck, and sand into the Bay each year.

The Poplar Island proposal represents a partial solution to the dredged material management problem, while supporting habitat restoration objectives outlined in the Chesapeake Bay Agreement. This is the reason the Poplar Island Restoration project has gained such unprecedented approval from the entire Chesapeake Bay community. The proposal fully supports the Service's mission to "Protect, conserve, and enhance fish and wildlife resources and the habitats they are dependent upon....."

We look forward to the completion of the project design in January, and the initiation of construction next summer. Please contact Mr. John Gill of my staff at (410) 573-4529 if you require any assistance from this office.

Sincerely,

**ACTING** 

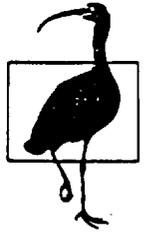
John P. Wolflin  
Supervisor  
Chesapeake Bay Field Office

cc: Mr. Tay Yoshitani, Maryland Port Administration



# United States Department of the Interior

National Biological Service  
Patuxent Environmental Science Center  
11410 American Holly Drive  
Laurel, Maryland 20708-4015



December 18, 1995

Colonel Randall R. Inouye, P.E.  
District Engineer  
Baltimore District  
U.S. Corps of Engineers  
P.O. Box 1715  
Baltimore MD 21203-1715

Dear Colonel Inouye:

The National Biological Service has reviewed the Integrated Draft Feasibility Report and Draft Environmental Impact Statement and supports the proposed plan to reconstruct Poplar Island. Implementation of this project will reestablish some essential habitat resources within the Chesapeake Bay. Tidal wetlands, which have declined markedly in the Bay, will be constructed and with them, feeding and nesting habitat for waterbirds and their prey will be added to the mid-Bay region.

We have actively supported this project over the past year when emergency measures were taken to protect the remaining island habitat from imminent destruction. The Poplar Island Project is important to our agency because it affords us an opportunity to evaluate a long-term restoration project using an adaptive resource management approach. It will be instructive to monitor how resource quantity and quality change through time.

The coordination between the Baltimore District, the Maryland Port Administration, and the resource agencies has been exceptional and has resulted in the completion of the Poplar Island design in record time. The beneficial aspects of this project, the inter-agency cooperation, and the wide support received from the Chesapeake Bay community should position this project as a model for other projects and other COE districts.

We look forward to the completion of the project design in January and the initiation of construction next summer. If you require any assistance from my office, please do not hesitate to call me at 301-497-5640.

Sincerely,  
  
R. Michael Erwin, Ph.D.

cc: Tay Yoshitani, MPA



MDE

MARYLAND DEPARTMENT OF THE ENVIRONMENT  
2500 Broening Highway • Baltimore, Maryland 21224  
(410) 631-3000

Parris N. Glendening  
Governor

Jane T. Nishida  
Secretary

Colonel Randall R. Inouye  
Baltimore District, USACE  
P.O.Box 1715  
Baltimore, MD 21203-1715

December 21, 1995

Dear Colonel Inouye:

The Maryland Department of the Environment (MDE) has reviewed the **'Integrated Draft Feasibility Report'** and Draft **'Environmental Impact Statement'** and supports the proposed plan to reconstruct Poplar Island. Implementation of this project will provide the much needed Dredged Material Disposal Site for the placement of "clean" and uncontaminated dredged material while reestablishing an essential habitat resource within the Chesapeake Bay.

MDE has actively supported this project right from its inception back in 1992 when emergency measures were taken to protect the remaining island habitat from imminent destruction. The Poplar Island project will provide the capacity for the placement of clean and uncontaminated dredged material obtained from the Baltimore Harbor Shipping Channels. Maintenance of the appropriate depth in these channels allows the international carriers to bring business to the Baltimore Port thereby providing a boost to the Maryland economy.

The outstanding coordination between the Baltimore District, the Maryland Port Administration, and the resource agencies has resulted in the completion of the Poplar Island design in record time. The beneficial aspects of this project, the inter-agency cooperation, and the wide support received from the Chesapeake Bay Community should position this project as a model for other projects around the country.

We look forward to the completion of the project design in January '96 and the initiation of construction next summer. If you require any assistance from my office, please contact Mr. Visty Dalal or me at (410) 631-3680.

Sincerely,

Peter Tinsley, Deputy Director  
Technical and Regulatory Service Administration

cc: Mr. Tay Yoshitani, Maryland Port Administration



Parris N. Glendening  
*Governor*

**Maryland Department of Natural Resources**

John R. Griffin  
*Secretary*

Environmental Review Unit  
Tawes State Office Building, B-3  
Annapolis, Maryland 21401

December 28, 1995

Mr. Wesley E. Coleman, Jr.  
Attn: CENAB-PL-PC  
U.S. Army Corps of Engineers, Baltimore District  
P.O. Box 1715  
Baltimore, MD 21203-1715

Subject: Draft Integrated Feasibility Report and Environmental Impact Statement; Poplar Island; Chesapeake Bay Area; Talbot County

Dear Mr. Coleman:

Thank you for the opportunity to reviewed the above referenced document. The Environmental Review Unit (ER) has coordinated a Departmental review of the document and proposed project. The following comments were generated by that review process:

1. The document should provide information on the current ownership of the Poplar, Jefferson and Coaches Islands and what, if any, changes in ownership are anticipated when the proposed project is completed.
2. Page 3-68, section 3.1.7.c **Avifauna**. Has the composition of the colonial waterbird community changed as the islands have eroded? If some colonial waterbird species were lost as the islands have eroded would they be expected to recolonize the created island? The paragraph describing the existing Double-crested Cormorant colony fails to note that this colony is one of only two nesting colonies for this species in Maryland and that the Poplar Island colony is the larger of the two colonies.

3. Page 3-69, section **3.1.7.d Waterfowl**. EA reports that Common Eider (*Somateria mollissima*) were observed in the vicinity of Poplar Island. Common eider would be an unusual species to be observed in the Bay. When and how frequently was this species observed at Poplar Island? In addition, the sea duck species, Surf Scoter (*Melanitta perspicillata*) and Black Scoter (*Melanitta nigra*) are commonly found around Poplar Island but are not noted as being observed.
4. Page 5-18, section **5.4.2 Physiography, Geology, and Soils**. The final sentence in the final paragraph is incomplete.
5. Page 5-33, section **5.4.4.b Long-Term Impacts**. The 4th paragraph implies that aeration will be adequate to convert much of the ammonia to nitrate. This assumes that the pH will be kept in a neutral zone and that nitrifying bacteria will be present. Perhaps the second sentence should be modified to read, "....., it is expected that aeration, coupled with the maintenance of proper pH and the expected presence of nitrifying bacteria will be adequate to .....".
6. Page 8-5, section **8.2.4 Benthics Monitoring**. The relationship of the two stations to be located in the area where the created wetlands will be constructed needs to be clarified. Are these two stations two of the original 11 or two additional stations? This is not clear. If these two stations are of the original 11, then modify the sentence referring to these two stations to read, "Two of the original 11 stations will be located in the area where .....constructed." If these two stations are two additional stations, the word "additional" needs to be added to the sentence referring to these two stations. Also, if these two stations are additional stations, a sentence will need to be included (between .....colonization. and Evaluation.....) which states the monitoring frequency of these two additional stations even if it is to say the monitoring frequency will be determined. This will separate the 11 stations from the two additional stations.
7. Page 8-7, section **8.2.8 Shellfish Bed Sedimentation**. If monitoring of the adjacent charted natural oyster bars indicates that impacts from sedimentation are occurring to the oyster bars, what is the proposed remedial action? Will mitigation for impacts from sedimentation and/or barge traffic (propeller wash, accidental groundings) be provided?
8. Poplar Island and Jefferson Island were owned by the Smithsonian Institution during the 1970's and early 1980's. Scientists from the Smithsonian Environmental Research Center (SERC) and National Zoo conducted ecological research on the islands at that time. The results of their research may provide historical documentation of the flora and fauna of the site. This information may be of use in guiding the restoration activities and goals. Drs. Jim Lynch and Dennis Whigham at SERC (410-798-4424)



Parris N. Glendening  
Governor

Jane T. Nishida  
Secretary

Mr. Wesley E. Coleman, Jr.  
Baltimore District, USACE  
P.O.Box 1715  
Baltimore, MD 21203-1715

January 3, 1996

Dear Mr. Coleman:

**Re: Comments on the Poplar Island 'Draft Feasibility Report and Draft Environmental Impact Statement (November 1995)'.**

I thank you on behalf of the 'Technical and Regulatory Services Administration (TARSA)' of the Maryland Department of the Environment, for giving us the opportunity to comment on the '*Integrated Draft Feasibility Report and Draft Environmental Impact Statement*' for the Poplar Island Beneficial Use Project, prepared jointly by the United States Army Corps of Engineers (Baltimore District) and the Maryland Port Administration. In my opinion the information in the report has been presented in a well organized manner. I also take this opportunity to provide the following comments and suggestions on certain topics in the report.

- page 2-15; 4th. para, third line** should read: " .....shown to result *in* a substantial....".
- page 2-18;** The Upland Placement Sites Grove Neck, Rocky Point, and Queenstown are not located in Fig. 2-6 as mentioned here.
- page 3-2; 2nd. para.** The Poplar Island must have been formed during the Holocene Period ( less than 10,000 years) instead of the Pleistocene Period (2 million - 10,000 years back). The melting of the Glaciers **after** the Pleistocene glaciation period produced sea level rises separating mainland highs from the mainlands resulting in the formation of the Poplar Island Complex.
- page 3-19; last para:** There is no discussion of methods of collection for turbidity data in any of the quarterly data reports as stated in bottom of page.

- **page 3-21;** If data for Turbidity (NTU) & Secchi Depth (mm) are not easily obtained from the Maryland's CB Water-Quality Monitoring Program (CBWQM) then do not include their column in the table. However, the Secchi Depth data for station MCB4.1 does exist on the CBP computer system.
  
- **pages 3-22 & 3-26;** The tables are not very clear due to the small font size. The information may be readily available if the tables are enlarged.
  
- **page 3-25;** Why was turbidity not measured at mid & bottom depths in the water column? Also, the Secchi depth numbers should be common for the whole water column, not just for the surface waters as it is shown in table 3-7.
  
- **page 3-27; 1st. para:** The first paragraph needs to be appropriately referenced.  
**3rd. para:** Sentence on "NTU values recorded in plumes ranged from 6.5-14.7". These values are too low to be in plumes emanating from remnant island erosion.
  
- **page 3-28;** Last sentence in section 3.1.4. "Although values of turbidity and suspended sediment were elevated.....". The NTU values presented show very low turbidity, not elevated values.
  
- **page 3-47; Section 3.1.6.d;** An attempt should be made here to calculate the '**Restoration Goals Index (RGI)**' developed by the Chesapeake Bay Program (Ref: Ches. Bay Benthic Community Restoration Goals, March 1994; CBP/TRS 107/94). Using these goals benthic data from any part of the Bay can be compared to determine whether conditions at that site met, were above, or were below expectations defined for reference sites in similar habitats. For the Poplar Island baseline monitoring, the Maryland Department of the Environment will include calculations for the RGI in their benthic monitoring efforts.
  
- **page 5-30; 2nd. para;** References should be provided for the sentences, "It is expected .....prevailing winds and currents".  
**3rd. para;** Each sentence is stating facts and therefore needs to be substantiated by appropriate references and/or monitoring data.
  
- **page 5-32;** Again, many references are made to the turbidity data from monitoring test

dike but no data is presented. The 'Final' EIS should have these references and data included in it.

- page 6-32; 1st. para; Check spelling of productivity.**
  
- page 7-4; 3rd. para; It should read " Construction is presently projected to begin ....."**

We look forward to receiving the final version of the report and to reviewing the results of the **Poplar Island 'test dike' monitoring** work. If you have any questions or require further information, please feel free to contact me at 410-631-3689.

Sincerely,

A handwritten signature in cursive script that reads "V. P. Dalal". The signature is written in black ink and is underlined with a single horizontal line.

Visty P. Dalal  
Staff Engineer/TARSA

cc: Mr. Peter Tinsley/MDE  
Mr. Nauth Panday/MDE  
Ms. Diana Reynolds/MDE  
Mr. Frank Hamons/MPA



Parris N. Glendening  
*Governor*

Maryland Department of Natural Resources

Tawes State Office Building  
Annapolis, Maryland 21401

John R. Griffin  
*Secretary*

Ronald N. Young  
*Deputy Secretary*

January 3, 1996

Colonel Randall R. Inouye, P.E.  
District Engineer  
Baltimore District  
U.S. Corps of Engineers  
P.O. Box 1715  
Baltimore, Maryland 21203-1715

Re: Integrated Poplar Island draft  
feasibility report and DEIS.

Dear Colonel Inouye:

The Chesapeake & Coastal Watershed Administration of the Department of Natural Resources has reviewed the integrated draft feasibility report and draft environmental impact statement for the reconstruction of Poplar Island as a beneficial use of dredged material. We support the plan as developed to date. As you are aware, Departmental representatives have been active since the outset in the development of the Poplar Island site, and have contributed several concepts for improving habitat value. We anticipate that the project will restore the egret rookery, provide breeding and rearing habitat for waterfowl, reduce erosion and sedimentation, and improve the surrounding area for sport fishing.

We have supported the Poplar concept since 1990, when we made initial computations of area and capacity and subsequently proposed emergency protection measures using barges for the remaining Poplar Island fragment. The resources to be enhanced and protected by a restored Poplar Island are a direct responsibility of the Department.

The successful integration of the needs of navigation with those of living resources management in Chesapeake Bay has provided an exceptional, in fact almost a rare opportunity for inter-agency cooperation. The compromises agreed to allowed the development of wide support for the project. These should be able to serve as a model for similar cooperation in other Corps districts.

Colonel Inouye  
Poplar Island  
Page 2

Our detailed comments on the integrated draft report and environmental statement follow under separate cover. We look forward to the early completion of the design phase and the onset of construction this summer. Please be assured of our continuing support and willingness to facilitate project progress.

Sincerely,

A handwritten signature in black ink, appearing to read "W. R. Carter, III". The signature is fluid and cursive, with a large, sweeping flourish at the end.

W. R. Carter, III  
Biologist  
Chesapeake and Coastal  
Watershed Administration

cc: Mr. Tay Yoshitani, Maryland Port Administration

**ALLIANCE**  
*for the*  
**CHESAPEAKE BAY**

January 16, 1996

Colonel Randall R. Inouye, P.E.  
District Engineer  
Baltimore District  
U.S. Army Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203-1715

RE: Poplar Island Restoration Project

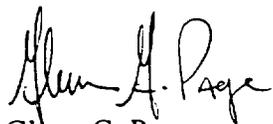
Dear Colonel Inouye:

The Alliance for the Chesapeake Bay has reviewed the Integrated Draft Feasibility Report and Draft Environmental Impact Statement and supports the proposed plan for the referenced project. We believe that implementation of this project will provide essential habitat within the Chesapeake Bay. We also look forward to enhancing public awareness in the beneficial uses of dredged material and public involvement in the long term process of Chesapeake Bay island habitat restoration.

We have actively supported this project since 1994 when we felt our ability to provide public involvement and awareness were an important element to a successful and sustainable project. The project is important because it has many benefits in addition to dredged material disposal and habitat value. We feel that the public needs the opportunities for involvement in the long term process of habitat restoration in the Bay if it is to be a viable option for dredged material placement.

The coordination between the Baltimore District, the Maryland Port Administration and the resource agencies and the Alliance for the Chesapeake Bay has been exceptional. This collaborative effort should be a model for future efforts. Please contact me if you have any questions regarding our involvement in the process.

Sincerely,



Glenn G. Page

Watershed Restoration Program Director

cc: Mr. Tay Yoshitani, Maryland Port Administration

6600 York Road  
Baltimore, Md. 21212  
(410) 377-6270  
Fax (410) 377-7144

225 Pine Street  
Harrisburg, Pa. 17101  
(717) 236-8825  
Fax (717) 236-9019

P.O. Box 1981  
Richmond, Va. 23218  
(804) 775-0951  
Fax (804) 775-0954

Chesapeake Regional  
Information Service  
1-800-662-CRIS

EXECUTIVE DIRECTOR  
Frances H. Flanigan

BOARD OF DIRECTORS

PRESIDENT  
Donald F. Boesch, Ph. D.  
University of Maryland

VICE PRESIDENT, MD  
William F. X. Band, III  
Maryland Pilots Association

VICE PRESIDENT, PA  
James A. Humphreys, III  
Barley, Snyder, Snett, & Cohen

VICE PRESIDENT, VA  
Mayer G. Levy, D.D.S.  
York Chapter CBF

VICE PRESIDENT, DC  
Kent Minichiello, Ph. D.  
Audubon Naturalist Society

SECRETARY  
Douglas Clark Hollmann  
The Law Office of Douglas C. Hollmann

TREASURER  
Thomas R. Schueler  
Center For Watershed Protection

Sharon O. Adams  
Virginia Beach Society for the  
Prevention of Cruelty to Animals

David E. Bailey  
Potomac Electric Power Company

Edwina H. Coder  
Pa. League of Women Voters

Robert T. Dennis  
Piedmont Environmental Council

William A. Eberhardt, Ph. D.  
The Procter & Gamble  
Paper Products Company

Roland B. Geddes  
National Assn. of State  
Conservation Agencies

John S. Gottschalk  
American Fisheries Society

James H. Hannaham  
University of District of Columbia

Susan T. Hansen  
Cooper, Spong & Davis

Robert G. Hoyt  
Widener University Law School

Patricia A. Jackson  
James River Association

John T. Kauffman  
Pa. Power & Light Company

Michael R. Marino  
NationsBank

Sally P. McGarry  
Md. League of Women Voters

Walter L. Pomeroy  
National Audubon Society

William Roberts, Jr.  
Woods & Water Magazine

Louis E. Sage, Ph. D.  
Academy of Natural Sciences

Jay P. Sherman  
Chesapeake Bay Foundation

Donald L. Spickler  
Md. Assn. of Conservation Districts

Dennis L. Taylor, Ph. D.  
Virginia Institute of Marine Science

Joseph A. Tiernan  
Baltimore Gas & Electric Company



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
841 Chestnut Building  
Philadelphia, Pennsylvania 19107-4431

January 17, 1996

Ms. Carol Anderson-Austra  
U.S. Department of the Army  
Baltimore District, Corps of Engineers  
P.O. Box 1715  
Baltimore, Maryland 21203-1715

Re: Poplar Island Environmental Impact Statement

Dear Ms. Anderson-Austra:

This is to follow up on our January 16 phone conversation. Several of us here at EPA Region III have been actively reviewing the Draft Environmental Impact Statement for the Poplar Island Project. Our work was unfortunately hampered by the three-week government shut-down from December 18 through January 10.

As I indicated on the phone, we would like to meet with you and the Maryland Environmental Service to go over our comments before we finalize our comment letter. It is our hope that such a meeting will lead to a more constructive letter, and will help enhance the overall success of the Poplar Island project. We look forward to setting a mutually agreeable date for this meeting in the next few days.

In light of the government shut-down and this requested meeting, we are also requesting an extension of the comment deadline for this project until February 2, 1996.

Thank you for your consideration in this matter.

Sincerely,

Arthur L. Spingarn, Ph.D.  
Environmental Scientist

cc: Ms. Cece Donovan, Maryland Environmental Service  
Mr. William Matuszeski, Chesapeake Bay Program



Parris N. Glendening  
Governor

**Maryland Department of Natural Resources**  
**Maryland Geological Survey**  
The Kenneth N. Weaver Building  
2300 St. Paul Street  
Baltimore, MD 21218-5210

John R. Griffin  
Secretary

Ronald N. Young  
Deputy Secretary

Mr. Wesley E. Coleman  
U.S. Army Corps of Engineers  
Baltimore District  
P.O. Box 1715  
Baltimore MD 21203-1715

January 18, 1996

**RE: Comments on the Poplar Island Integrated Draft Feasibility Report and Draft Environmental Impact Statement, November 1995**

Dear Mr. Coleman,

We have read the Draft Report with great interest, however, our comments are limited to the sections pertaining to sediment quality. They are as follows:

**Section 3.1.5, pages 3-28 and 3-29**

**paragraph 1** - Although shoreline erosion is a significant source of sedimentation in this part of the Bay, bottom erosion is significant, and the Susquehanna is still an important source of material, especially trace metals. (See the works of: Helz; Cantillo; and Sinex).

**paragraph 2** - Sediments in the mainstem Chesapeake Bay have low concentrations of *metals* - these may be naturally occurring and not *contaminants*. Other anthropogenic chemical species such as pesticides could be considered contaminants. No distinction was made.

**paragraph 3** - Aluminum levels in the Bay reflect primarily the clay mineral content of the sediment. Areas with "elevated aluminum levels" most likely reflect sediments of high clay content and are a natural occurrence. Consequently, these areas should not be singled out as significant. High concentrations of aluminum, or any other metal, are significant only when there is compelling corroborating evidence to indicate loading different from regional baseline behavior.

**paragraph 4** - Although there is no reason to believe that the sediments around Poplar Island are anything but clean Bay sediments, the concluding sentence does not follow from the preceding line of reasoning. Diverse and productive benthic communities alone are not adequate indicators of sediment quality. Framing an argument in this manner has many potential pitfalls. It would be better to discuss diversity and productivity in a different section, than to use it in the manner presented.

Mr. Wesley E. Coleman  
January 18, 1996  
Page 2

**Section 5.4.2, page 5-18**

**paragraph 2** - The last sentence was not completed.

**Section 5.4.5, page 5-34**

This section is internally inconsistent. Paragraph 2 contradicts paragraph 1. The main point to be made is that there is a potential impact to the surrounding environment whenever *sulfidic* (not *sulfitic* as stated in paragraph 2, second sentence) sediments are exposed to subaerial conditions. This potential impact is *lessened* by the disposal of "clean" material. Furthermore, design and operation protocol of the site were proposed in order to mitigate this impact.

**paragraph 1** - What tests are going to be used and at what frequency to ensure sediment suitability for placement in Poplar Island? Please specify.

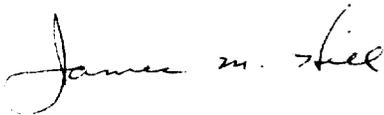
**Section 8.2.1, page 8-2**

**paragraph 3** - The second sentence should read "The second sampling event will take place no longer than 3 years after the first event..." rather than "The second sample event will take place no fewer than 3 years..."

**General Comment**

At the monitoring sub-group meetings, Brian Walls discussed the Corps of Engineers' reference sediment monitoring requirements. There was no mention of these requirements in the DEIS. A discussion of these requirements should be included.

Sincerely,



James M. Hill, Ph.D.  
Geochemist



William Panageotou  
Geologist



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE

Habitat and Protected Resources  
Division  
904 South Morris Street  
Oxford, Maryland 21654

22 January 1996

Colonel Randall R. Inouye, P.E.  
Chief, Planning Division  
Baltimore District  
Corps of Engineers  
P. O. Box 1715  
Baltimore, Maryland 21203

Dear Colonel Inouye:

The National Marine Fisheries Service (NMFS) has reviewed the Integrated Draft Feasibility Report and Draft Environmental Impact Statement for the Poplar Island, Maryland, Environmental Restoration Project. The following compilation of comments, prepared collectively by the NMFS Southeast Fisheries Science Center, Beaufort Laboratory; NOAA Chesapeake Bay Program Office, Annapolis; NOAA Restoration Center, Silver Spring; and NMFS Northeast Region, Habitat and Protected Resources Division, Oxford, is offered for your consideration.

In general, we found that the document satisfactorily describes fisheries, living estuarine resources and habitat in the project area. Although we consider the potential impacts to shellfisheries to be understated, we concur that overall adverse environmental effects associated with the project will not be significant and should, in the long-term, provide substantial benefits to fish and wildlife resources of Chesapeake Bay. Specific comments addressing technical issues or minor deficiencies are enclosed.

We appreciate having had the opportunity to comment on the subject document. If you have questions, or wish to discuss a specific issue or item, please call me at (410) 226-5771.

Sincerely,

Timothy E. Goodger  
Assistant Coordinator

Enclosure

cc: Nick Carter            Chris Doley  
      Bob Smith            Kilho Park  
      Visty Dalal            Dave Meyer  
      Lee Crockett          Gordon Thayer



## Specific Comments

Executive Summary (p. iii): Why is the Deep Trough (\$74 million) used as the "base plan"? Although the least cost alternative, it is not necessarily a foregone conclusion that Deep Trough will be implemented (e.g., current statutory constraints). A diked containment site, similar to Hart-Miller Island, is also a likely alternative, the cost of which will greatly exceed \$74 million. To represent a more balanced cost comparison between the proposed design at Poplar Island and a base plan, a range of costs would be more realistic varying from \$74 million at Deep Trough and the cost of a Hart-Miller type facility at Poplar Island.

2.3.2 (pp. 2-20 - 2-22): This section focuses on the beneficial aspects of the Poplar Island proposal without acknowledging the detrimental ones. Although we concur with the benefits delineated, we recommend that the discussion be balanced with the adverse impacts associated with the project, such as loss of productive shellfish habitat and displacement of fisheries activities.

3.1.3.c (p. 3-4): The bounds of the intertidal zone are critical in determining the elevations for planting and successful establishment of wetland plants. Consequently, the discussion should include the rationale as to why MLLW and MSHW were selected as the bounds of the intertidal zone. For example, why were not MLW and MHW or some other set of bounds used? MLW and MHW encompass a tidal range of 1.5 feet, which is the average tidal range for the area.

3.1.5, paragraph 3 (top of p. 3-29): The sentence beginning with "Aluminum" needs clarification. Does the statement mean "with a low probability of dissolution"?

3.1.6.a, paragraph 1 sentence 3 (p. 3-29): This sentence is unclear. Does it mean that phytoplankton productivity within the vicinity of the Bay Bridge is the maximum for the entire Chesapeake Bay, or for a more restricted geographic area?

3.1.6.a, paragraphs 2 and 3 (p. 3-29): The phytoplankton taxonomic groups that are considered to dominate the Chesapeake Bay are listed; how does the composition of the groups collected during the EIS compare to this list. What were the dominant groups and species collected and is there a list of the species observed? If this information was collected, even through personal observations, it would be useful and should be presented.

3.1.6.a, paragraph 7 (p. 3-30): The razor clam (Tagelus sp.) should be included as a commercially important bivalve species.

3.1.6.a, paragraph 8 (p. 3-30): The listing of the different taxonomic zooplankton groups collected in the ichthyoplankton surveys is useful, but a list of individual genera and species, as shown for fish and benthic invertebrate species, would be more informative.

3.1.6.b (p. 3-44): A number of reasons are offered to explain the relatively low number of species and abundance of ichthyoplankton observed near Poplar Island. One reason, which may have been a factor in the perceived low species numbers and abundance, was the diurnal and tidal timing of the collections. According to the information we received on the EIS ichthyoplankton collections, these collections were performed during daylight hours with no coordination with the lunar phase. Although this scheme may make collection easier, the timing is not best for collecting data on the species present within the area, or determining their perceived abundances. Night collections during flood spring tides would have provided better information on species present and their perceived abundances. If explanations on the quality of the data are going to be offered, than the effect of sample collection during less than optimal times (as was performed) should also be included.

3.1.7.b, paragraph 5 (p. 3-63): The high marsh at Coaches Island also contains tide pool habitat.

3.3.1, paragraph 2, sentence 4 (p. 3-82): In our surveys, juvenile blue crabs were observed using the remaining salt marsh at Coaches, South Central Poplar, Middle Poplar and North Point. Consequently, the remnants of Poplar have some, although limited, economic value.

3.4.2, paragraph 2, sentence 2 (p. 3-91): Barges were placed on the west side of Middle Poplar Island, not South Central Poplar.

3.5, paragraph 2 (p. 3-92): According to the EIS (3.1.7.c and d), only nesting of snowy egrets, cormorants, little blue herons, black ducks and willet occurred on the four remnant islands. Therefore, it must be concluded that common egret, cattle egret, tern, great blue heron, green heron and threatened bald eagle nesting will not be affected if the 5 acres of remnant islands are not protected.

4.3 (p. 4-8): The blue crab (Callinectes sapidus) should be included as an invertebrate on the list of indicator species that will benefit from creation of low marsh.

5.3.3, paragraph 8 (p. 5-17): It should be noted that the caveats associated with the 50/50 wetland/upland design (i.e. 80% low marsh and stone jetties) was the consensus position expressed by MD DNR, USFWS, and NMFS for the project to advance with modified Alignment Number 3.

5.4.2, paragraph 2 (p. 5-18): Part of the last sentence is missing.

5.4.4.a, paragraph 4 and 5 (pp. 5-30 - 5-31): With approximately half of the mixing zone located over oyster reefs during construction of the northwest and southern perimeter of the dike, the potential impact to oyster reefs may be substantially greater than anticipated in the discussion. Also, sedimentation may be exacerbated by the north-south orientation of the tidal currents.

5.4.4.a, paragraph 5 (p. 5-31): It should be noted that "Restrictions within the Bay may preclude dredging..." are administrative, not natural. Time of year restrictions are routinely imposed through the regulatory process to protect sensitive life stages of oysters and other species.

5.4.4.b (p. 5-33): The discussion of "Long-term Impacts" does not address the potential effects of discharges from developing uplands on wetlands established on the east side of Poplar Island. It is anticipated that these discharges may have widely fluctuating salinities, which may adversely impact plant growth and vigor in established wetland cells. This potential impact was discussed at workgroup meetings, and should be addressed in the subject document. Channelizing the discharge to facilitate its release directly into the Bay with minimal impact on wetland plants, also discussed in workgroup meetings, should be included.

5.4.6.b, paragraph 2 (p. 5-36): The estimates of species composition and abundances within the ichthyoplankton portion of the EIS were not appropriately measured to support statements relative to the impact of the project on ichthyoplankton (see comment 3.1.6.b). Even with the EIS study, the importance of the Poplar Island area, in terms of ichthyoplankton use, is still not understood, and the impact of turbidity caused by the project to ichthyoplankton cannot be determined.

5.4.6.b, paragraph 3, sentence 8 (p. 5-36): It is recommended that the sentence be changed to read: "Moreover, the protected cove created by Poplar Island may create conditions conducive to the recruitment and growth of SAV, a habitat type that is currently areally restricted in Poplar Harbor." As presently written, the sentence implies that SAV will establish, even though there are no data to support that assumption, and that SAV provides habitat comparable to the existing snags. The snags seem to be providing habitat for larger fish, whereas any SAV that develops will provide habitat primarily for juveniles. Additionally, it was previously stated that stone jetties will be constructed in an attempt to offset the loss of the snag field; recruitment by SAV would be a secondary benefit.

5.4.6.c, paragraph 2 (p. 5-39): The statement that declining clam harvests may diminish the ability of the clams to repopulate the area is not documented. Although clam densities may be reduced well below those needed to be harvested economically, there will likely be sufficient numbers to repopulate the area. Individual clams produce millions of eggs and larvae. Additionally, planktonic larval stages may remain in the water column for as long as a month, so larval sources for Poplar Island can be from distant areas. It was stated previously (p. 3-47) that recent sampling indicates active recruitment of juvenile soft clams occurring within the area of the proposed dike. These recruits could serve to replenish harvestable stocks in the future. A major factor affecting clam density is habitat availability. The footprint of the restored Poplar Island will permanently eliminate more than

1000 acres of clam habitat, and changes in sedimentation patterns may further reduce available habitat in the area in the future.

5.4.6.c, paragraph 3 (p. 5-39): The statement that wetland productivity will increase shellfish populations should be qualified. Bivalves feed primarily on phytoplankton, not detritus.

Second sentence: How many feet?

5.4.6.d paragraph 3 (p. 5-40): Last sentence: How many feet?

5.4.6.d, paragraph 8 (p. 5-41): It is not likely that "seed" organisms in the dredged material placed in the wetlands cells will significantly contribute to repopulating the area. How many organisms will survive being dredged, transported by barge, pumped into the wetland, and subsequently sculpted with machinery? Meroplankton is the more likely source of early recruitment.

5.6.2., **Economic Impact to Aquatic Resources** (p. 5-50): The razor clam fishery should be discussed in this section.

5.6.2.a, Soft Clam Fishery (p. 5-51): As noted previously, bivalves are not likely to benefit directly from marsh creation or SAV recruitment. Habitat conversion and modification are likely to adversely affect local soft clam populations.

5.6.2.b, paragraph 1, sentence 9 (p. 5-52): It has been stated that reconstruction of Poplar Island may, in the long-term, be beneficial to nearby oyster beds. If the anticipated benefits are derived solely through erosion abatement of the remaining island remnants, the 5+ acres is an insignificant sediment source when considering that the oyster beds remain intact, despite the previous erosion of 1,000 acres.

5.7.2.b. (p. 5-55): It is stated that boat access will be provided to the island. It was our understanding that direct access to the island would not be provided, so as to preserve the quality of isolation afforded by islands to optimize wildlife habitat value.

6.1.2.e., paragraph 2 (p. 6-16): Earlier comments (5.4.4.b above) relative to the need to protect created wetlands from high and low salinity water discharged from the upland cells also applies here.

6.1.2.f, paragraph 6 (p. 6-21): Again, it was our understanding that public access would be discouraged to enhance the value of the island for wildlife.

6.1.2.g, paragraph 5 (p. 6-21): Collection of sod mats from existing, natural wetlands is strongly discouraged. Availability of nursery-grown stock obviates the need for this ecologically disruptive practice. We do, however, support the concept of establishing wetland nurseries on-site, using commercial stock, as was discussed during workgroup meetings.

8.2.6, last paragraph, sentence 2 (p. 8-6): This sentence should read "Replicate fyke nets will be used, with six replicate stations per treatment type (reference, remnant, created) where possible." Please note that block nets were not used for collecting baseline samples and will not be used for future collections.



Parris N. Glendening  
Governor

**Maryland Department of Natural Resources**  
Environmental Review  
Tawes State Office Building  
Annapolis, Maryland 21401

John R. Griffin  
Secretary

Ronald N. Young  
Deputy Secretary

January 26, 1996

Mr. Wesley E. Coleman, Jr.  
Attn: CENAB-PL-PC  
U.S. Army Corps of Engineers, Baltimore District  
P.O. Box 1715  
Baltimore, Maryland 21203-1715

RE: Draft Integrated Feasibility Report and Environmental Impact Statement; Poplar Island;  
Chesapeake Bay Area; Talbot County

Dear Mr. Coleman:

The Environmental Review Unit has received the following additional comments from the Department's Wildlife Division regarding the above referenced document:

1. Page 5-44, section **5.4.7.b Avifauna, Colonial Waterbirds**. The heron rookery on Coaches Island extends throughout most of Coaches Island and not just the extreme southeastern tip of the island. Therefore, the proposed buffer between the rookery and the construction activities adjacent to Coaches Island is not to minimize impacts to nesting birds. To adequately protect this colony, a time of year restriction on construction activities should be maintained for the entire southern shoreline of Coaches Island. Because Coaches Island is a Great Blue Heron rookery, the time of year restriction period would need to February 15 through July 15 of any year. Great Blue Herons begin to nest earlier than other colonial waterbirds and thus require the earlier start on the time of year restriction period.
2. Page 5-46, section **5.4.8 Rare, Threatened, and Endangered Species**. Although the proposed construction activities are to be conducted over 1000 feet from the Bald Eagle nest site, those activities would be clearly visible from the nesting eagles. Bald

Mr. Wesley E. Coleman, Jr.  
January 26, 1996  
Page 2

Eagles are disturbed more by human activity that they can see than by noise. Numerous studies have documented eagles being flushed at great distances by approaching boats. Since there is no visual buffer between the construction activities and the nest site a time of year restriction on the proposed activity is needed to minimize impacts to the nesting eagles. The usual time of year restriction to avoid and minimize impacts to Bald Eagles is December 15 through June 15. However, in recent years the Bald Eagle pair that nests on Jefferson Island has initiated their nesting attempt later than most Bald Eagles in that region of the Chesapeake Bay. Therefore, the time of year restriction period could be shortened to January 15 through June 15. If the eagles fail to nest or produce young, the time of year restriction could be waived for that particular season. However, an annual determination of the reproductive status of the nesting pair could not be made until end of March for any year.

Should you require additional information regarding these comments, please feel free to contact Dr. Roland Limpert of my staff at (410) 974-2788.

Sincerely,



Ray C. Dintaman, Jr., Director  
Environmental Review Unit

RCD:RJL

cc: E. Ghigiarelli, MDE  
G. Therres, DNR-FWHS



# United States Department of the Interior

OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
Custom House, Room 244  
200 Chestnut Street  
Philadelphia, Pennsylvania 19106-2904

IN REPLY REFER TO:

January 30, 1995

ER 95/0863

Colonel Randall R. Inouye, P.E.  
District Engineer  
Baltimore District, Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203

Attn: Mr. Wesley E. Coleman, Jr.

Dear Colonel Inouye:

The Department of the Interior (Department) has reviewed the Poplar Island Integrated Draft Feasibility Report and Draft Environmental Impact Statement (DFR/DEIS) and offers the following comments for your consideration.

These Departmental comments include the report of the Fish and Wildlife Service on the recommended plan, and are submitted in accordance with the provisions of Section 2 (b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

## GENERAL COMMENTS

The DFR/DEIS recommends implementing a plan to create a 1,110 acre dredged material placement island within a 35,000-foot perimeter in a configuration that would roughly follow Poplar Island's historical footprint of 1847. Uncontaminated dredged material would be used to create low and high saltmarsh (50 percent of the footprint), of which 80 percent will be low marsh characterized by smooth cordgrass (Spartina alterniflora). The remaining 50 percent of the historic island footprint would be filled with uncontaminated dredged material to an elevation of 20 feet above mean sea level, and planted with forest, shrub, and vine species of vegetation.

Offshore islands are a unique ecosystem component in the Chesapeake Bay watershed. Although similar vegetative communities may occur on the mainland, isolation, relative lack of human disturbance, and fewer predators make islands more desirable as nesting sites for colonial waterbirds and some endangered species. The remnant islands in the complex which includes Poplar Island support nesting snowy egrets (Leucophoyx thula), common egrets (Casmerodius albus), double-crested cormorants (Phalacrocorax auritus), several species of tern, green herons (Butorides virescens), little blue herons (Florida coerulea), great blue herons (Ardea herodias), black ducks (Anas rubripes), and the Federally-listed threatened bald eagle (Haliaeetus leucocephalus). Diamondback terrapins (Malaclemys terrapin) nest on the high

marshes and beaches, and river otters (Lutra canadensis) fish from the island shore. Ship wakes, land subsidence, and sea level rise are causing these valuable island habitats to be lost from exacerbated erosion. In the last 150 years, in the middle eastern portion of Chesapeake Bay alone, 10,500 acres have been lost.

At the same time islands have been eroding, a lack of environmentally acceptable disposal sites has led to navigation projects being delayed during the environmental and regulatory review process, and a continued reliance on overboard (unconfined) disposal. At a time when the Federal and state governments are spending millions of dollars to restore Chesapeake Bay's living resources, reduce nonpoint source pollution, and reduce sediment loadings, those same governments are funding the dumping of 1-2 million cubic yards of silt, muck, and sand into the Bay each year.

The Poplar Island recommended plan represents a partial solution to the dredged material management problem, while supporting habitat restoration objectives outlined in the Chesapeake Bay Agreement. This is the reason the Poplar Island Restoration project has gained widespread support from the Chesapeake Bay government community. The Department also offers its support for the project, subject to your agency's careful consideration of the following comments and recommendations.

#### SPECIFIC COMMENTS

##### **Section 2.3.1.a. Open Water Placement**

The Department has expressed specific concerns relative to dredged material placement in sinks such as the Deep Trough. These concerns include nutrient releases and bay eutrophication, loss of thermal refugia, and potentially eliminating government incentive to use dredged material for beneficial purposes such as habitat restoration. During the proposed 1990 demonstration project, the U.S. Environmental Protection Agency calculated significant nutrient releases from dredged material placement into the anaerobic zone during the summer. These concerns should be noted in the final document.

##### **Section 3.1.2. Physiography, Geology, and Soils**

We question whether elevations on Coaches Island only reach a maximum of about 4 feet mean low water. Please review this information for accuracy.

##### **Section 4.3 (pg. 4-7) Formulation and Evaluation Criteria**

Use of the term "bottomland" when describing non-wetland habitats is misleading (e.g. sounds like a palustrine forested wetland). Forest and shrub would be a more accurate description. Please modify the text of the final document.

##### **Section 5.3.2 Wetland/Upland Ratios**

If the sole project objective is to provide the most productive fish and wildlife habitat possible, a mix of upland, beach, aquatic, and wetland

habitats is preferred. Although development of 100 percent low marsh would provide greater benefits to fish, it would not provide habitat for species requiring upland nesting sites in close proximity to wetland feeding and brooding areas (e.g. waterbirds). Restoring a mix and interspersed of habitat types will recreate the type of island ecosystem endemic to the middle, eastern portion of Chesapeake Bay. This information should be included in the final document.

#### **Section 5.4.7.a. Terrestrial Resources**

Recent designs have included alternative alignments and operations which might affect vegetation on the remnant Poplar Islands (through inundation during filling). The Department's believes that if such an impacting alignment is chosen, the wetlands to be created will compensate for the loss. Without the project the islands will definitely be lost. We have no objection to alignments that do not affect remnant islands.

We recommend dredged material placement volumes per lift that do not inundate the double-crested cormorant rookery on Middle Poplar Island. If this is not possible, we recommend artificial nesting structures (e.g. pilings with attached platforms) be erected adjacent to Middle Poplar Island prior to initial inflow to mitigate the loss. Double-crested cormorants are known to readily utilize artificial structures.

#### **Section 5.4.7.b. Colonial Waterbirds**

The proposed buffer zone around the great blue heron rookery on Coaches Island is insufficient. The rookery extends along the entire forested portion of the southern shore of Coaches Island. We recommend time-of-year restrictions for construction of the containment berm and human activities along the entire forested portion of the southern shoreline, where that construction or human activity will occur within 660 feet. The time-of-year restriction for this portion of Coaches Island should be February 15 through July 15. This recommended time-of-year restriction will not be necessary for inflow operations.

The double-crested cormorant colony on Middle Poplar Island could be impacted by construction activities if the activities occur within 500 feet. The Department recommends a time-of-year restriction on berm construction from March 1 through July 15.

#### **Section 5.7.2.d. Other Recreational Activities**

Time-of-year restrictions should avoid displacement of nesting waterbird colonies.

#### **Figure 6-1**

This figure is illegible. In addition, the proposed interior islands are not shown. A revised figure should be included in the final document.

**Section 6.1.2.f. Habitat Areas (High Marsh)**

Black needlerush (Juncus roemerianus) should not be encouraged by planting. This species will more than likely colonize on its own, thereby diversifying the planted wetland community. However, introducing black needlerush before the cordgrasses have become established could result in large monotypic stands of this species, thereby lowering plant diversity.

**Page 6-22 Island Habitat (Section 4.5.4.)**

The section number appears to be wrong. Also, the islands should not be located in close proximity to upland areas or the containment dikes in order to deter access by predators.

**THREATENED AND ENDANGERED SPECIES COMMENTS**

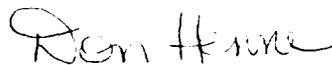
A bald eagle nest is located on Jefferson Island. A breeding pair of eagles used this nest in 1994, although no young were fledged. Bald eagles are currently listed as Federally threatened. Although construction will occur over 1,000 feet from the nest site, activities will be clearly visible to nesting eagles. As discussed with Mr. Satiathe Therres (Supervisor, Wildlife Diversity Program within the Maryland Department of Natural Resources), numerous studies have documented eagles being flushed from their nests by boats approaching from large distances. Therefore, we recommend (in concurrence with Mr. Therres) a time-of-year restriction from January 15 through June 15 prohibiting construction and human activities within the quarter mile bald eagle protection zone surrounding the nest. This recommended time-of-year restriction will not be required for inflow operations. If the eagles fail to nest or produce young, the recommended time-of-year restriction may be reconsidered.

The West Coast and Central Plains populations of least terns (Sterna albifrons) are listed as Federally endangered, but its Atlantic Coast breeding population is not Federally listed. Least terns are colonial nesters that prefer sand, rock, and shell substrates with sparse vegetation. A cooperative least tern habitat restoration effort was undertaken at Poplar Island during the spring of 1994. Crushed clam shell was spread on one of the breakwater barges in the vicinity of Middle Poplar Island. Monitoring has not documented least tern nesting on the restoration attempt.

Except for occasional transient individuals, such as the much publicized manatee (Trichechus manatus), the Poplar Island complex is not known to support any other Federally listed, proposed, or candidate species. This response relates only to threatened and endangered species under our jurisdiction. For information on other rare species, including state-listed species, Maryland Natural Heritage Program should be contacted at (410) 974-2870.

Thank you for coordinating this environmental review with the Department. Questions regarding these comments should be addressed to Mr. John Gill of the U.S. Fish and Wildlife Service's Chesapeake Bay Field Office at (410) 573-4529.

Sincerely,



**Don Henne**  
Regional Environmental Officer

c:\wp51doc\ER-95-863.fin

# OYSTER RECOVERY PARTNERSHIP

January 30, 1996

Mr. Robert Smith, Chair  
Poplar Island Workgroup  
Maryland Environmental Services  
2011 Commerce Park  
Annapolis, MD 21401

Dear Mr. Smith:

As the Poplar Island project moves from the drawing board to implementation, I would like to encourage the use of all known "technologies" in association with the work. Studies conducted on the intertidal oyster reefs of the Carolinas show that there is a positive correlation between the existence of oyster reefs and the resistance to erosion by the associated grasses behind these structures. In short, if the restoration of Poplar island is to enjoy long-term success, perhaps we should investigate the introduction of intertidal reef communities at a minimum on the leeward side.

Without engaging in an involved treatise on the historic role of the oyster, early settlers noted the existence of intertidal oyster reefs in their explorations of the Chesapeake Bay. Long vanished due to harvest and navigational pressures of the colonial period, today, we mistakenly associate intertidal oyster populations as a Carolina phenomena. The Poplar Island project offers an outstanding opportunity to restore these historic structures to the ecology of the Chesapeake Bay.

I would welcome the opportunity to discuss this further, and if there is interest, facilitate the process by proving oysters from our hatchery program. I look forward to hearing from you.

Sincerely,

Robert M. Pfeiffer,  
Executive Director

cc: ✓ M. Mendelsohn, ACOE  
L. Crockett, NOAA  
G. Thayer, NMFS



MARYLAND DEPARTMENT OF THE ENVIRONMENT  
2500 Broening Highway • Baltimore, Maryland 21224  
(410) 631-3000

Parris N. Glendening  
Governor

Jane T. Nishida  
Secretary

January 31, 1996

Mark Mendelsohn  
12 S. Howard Street  
U. S. Army Corps of Engineers  
CENAB - PL - E  
P. O. Box 1715  
Baltimore MD 21203-1715

Dear Mr. Mendelsohn:

In recent phone conversations we have discussed whether two projects the Corps of Engineers is pursuing will need to have general conformity determinations. The projects are the dredging operations at Poplar Island and creation of various oyster bars in several area rivers.

Neither project involves the creation of substantial air pollution emissions. The threshold level requiring a general conformity determination in the area of the projects is 50 tons per year of VOC or NO<sub>x</sub> emissions. It is unlikely that any of the projects will even approach this threshold. I do not believe that a quantitative analysis is necessary.

The Corps of Engineers is familiar with the Department's air quality regulations especially those concerning construction projects and will certainly comply with them during these projects. If you have any further questions concerning general conformity or the Department's regulations, please let me know.

Sincerely,

Diane L. Franks, Chief  
Air Quality Planning Division  
Air and Radiation Management Administration

DLF\sف



MARYLAND DEPARTMENT OF THE ENVIRONMENT  
2500 Broening Highway • Baltimore, Maryland 21224  
(410) 631-3000

Parris N. Glendening  
Governor

Jane T. Nishida  
Secretary

February 1, 1996

Mr. Wesley E. Coleman, Jr.  
Baltimore District, Corps of Engineers  
P.O. Box 1715  
Baltimore, Maryland 21203-1715

RE: Poplar Island, Draft Integrated Feasibility  
Report and Environmental Impact Statement,  
November, 1995

Dear Mr. Coleman:

The Department of the Environment (MDE) has reviewed the referenced document for consistency with the State's Coastal Zone Management Program. The draft document presents the findings of the cooperative study between the Corps of Engineers and the Maryland Port Administration to determine the feasibility of using uncontaminated dredged material from the approach channels to Baltimore Harbor to recreate and restore ecological habitat at Poplar Island.

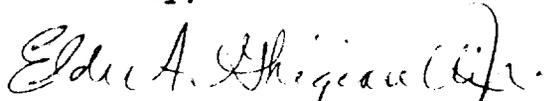
The Department of the Environment and the Department of Natural Resources (DNR) have provided detailed comments on the draft report and DEIS (letters from Mr. Visty Dalal, MDE, and Mr. Ray Dintaman, DNR, dated 1/3/96 and 12/28/95, respectively). As you are aware, the State supports the environmental restoration effort to restore Poplar Island to its approximate size in 1847 through the use of uncontaminated dredged material. This beneficial use project provides a solution to the Port of Baltimore dredged material placement problems, and will result in ecological benefits through the creation of wetland and upland habitats.

Based on these considerations and the information presented in the draft feasibility Report and DEIS, the proposed project is consistent with the State's Coastal Zone Management Program, as required by Section 307 (c)(1) of the Federal Coastal Zone Management Act of 1972, as amended.

Mr. Wesley E. Coleman, Jr.  
February 1, 1996  
Page 2

If you have any questions, please contact me at (410) 974-2156.

Sincerely,



Elder A. Ghigiarelli, Jr.  
Chief, Coastal Zone Consistency

EAGJr:cma

cc: Gary Setzer, MDE  
Visty Dalal, MDE  
Ray Dintaman, DNR



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
841 Chestnut Building  
Philadelphia, Pennsylvania 19107-4431

February 2, 1996

Colonel Randall R. Inouye, P.E.  
District Engineer  
Baltimore District, Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203

Dear Colonel Inouye:

The Environmental Protection Agency has reviewed the Draft Feasibility Report and Environmental Impact Statement (EIS) for the proposed Poplar Island Restoration project. Due to the federal government shutdown from December 18, 1995 through January 5, 1996, we were unable to meet the original December 28 comment deadline for this document.

This proposed 350 million dollar project would provide disposal capacity for 38 million cubic yards of clean dredged material from the Federal navigation channels serving the Port of Baltimore. At the same time, an island containing 1,100 acres of wetlands and uplands would be restored in the Chesapeake Bay during the 22-year lifespan of the project.

The proposed Poplar Island Project is the result of several years of coordinated efforts on the part of more than 12 federal, state, and local agencies, including the Environmental Protection Agency, as well as several private organizations. It represents a partial solution to the dredged material management problem, and supports habitat restoration objectives outlined in the Chesapeake Bay Agreement. The Environmental Protection Agency supports these dual beneficial use/habitat restoration goals of the Poplar Island Project.

Based on our review of the draft Environmental Impact Statement, we have assigned an "EC-2" rating (Environmental Concerns, Insufficient Information) to the document. A copy of our rating system is enclosed. Our principle concerns regarding the document pertain to the monitoring, maintenance, and remedial action components of the project. While it is apparent that the working groups have spent many dozens of hours discussing the budgets, levels of effort, agency participation, and data management that will be required to assure successful habitat restoration, these plans are not adequately described or referenced in the draft document.

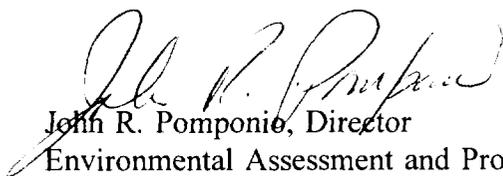
Specifically, we recommend that the Final Environmental Impact Statement (FEIS) include the following:

- **SUMMARY TABLE** The FEIS should include a summary table comparing impacts, costs, etc. of each alternative. This table should include the no-build option, and should compare phased vs. non-phased construction.
- **HABITAT RESTORATION PLAN** The document should provide more detailed information on:
  - a. Revegetation methods and goals.
  - b. Budget for revegetation efforts.
  - c. Lead agency/agencies.
- **MAINTENANCE & REMEDIAL ACTION PLAN** The document should outline what steps will be taken in the event of storm damage to the dikes or restored habitat areas during and after construction. In addition, steps to minimize and remediate potential vegetation damage from deer, geese, and other waterfowl should be documented.
- **SCIENTIFIC MONITORING** The document needs to be more specific about the vegetation and wildlife monitoring methods that will be used in order to assure statistical and scientific validity.
- **MONITORING AGREEMENTS** The FEIS should stipulate that a written interagency agreement will be prepared, committing both the necessary personnel and funds to assure that the 20 years of monitoring required to document the environmental benefits and impacts of this project will be performed.
- **PHASED CONSTRUCTION** It appears likely that due to funding constraints, a phased approach to construction will be used. Better documentation and diagrams of the phased construction process are needed.
- **DATA MANAGEMENT** Chapters 7 ("Plan Implementation") and 8 ("Monitoring Framework") should contain sections on data management. Budgets and lead agencies should be stipulated. In addition, the FEIS should contain a schedule for periodic summary reports with appropriate distribution to agencies and concerned parties.
- **TIMELINE** The document should provide a detailed timeline laying out the proposed implementation of all phases of the project. The timelines should stipulate deadlines and responsible parties for all aspects of the project, including planning, design, construction, monitoring, and maintenance.

In addition to these concerns, we have identified a number of issues in the draft EIS which should be corrected in the FEIS. Our comments and recommendations are discussed in greater detail in the enclosed "Technical Comments."

We appreciate this opportunity to comment, and look forward to continued coordination with you and your staff on this project. Please feel free to contact Dr. Arthur Spingarn (215-597-3360) or Mr. Roy Denmark (215-597-1177) of my staff if you have any further questions.

Sincerely,



John R. Pomponio, Director  
Environmental Assessment and Protection Division

Enclosures

cc: Tim Goodger, National Marine Fisheries Service  
Bill Matuszeski, EPA Chesapeake Bay Program  
Bob Smith, MD Environmental Service  
John Wolflin, U.S. Fish and Wildlife Service

# POPLAR ISLAND DRAFT ENVIRONMENTAL IMPACT STATEMENT EPA REGION III TECHNICAL COMMENTS

## I. KEY CONCERNS

- **SUMMARY TABLE** The Final Environmental Impact Statement (FEIS) should include a summary table comparing impacts, costs, etc. of each alternative. This table should include the no-build option, and should compare phased vs. non-phased construction.
- **HABITAT RESTORATION PLAN** The document should provide more detailed information on:
  - a. Revegetation methods and goals: The document should stipulate that a permanent interagency scientific monitoring committee will be created, and that this committee will review the most current monitoring data available to determine which revegetation method(s) should be used to maximize the success of the wetland and upland restoration efforts.
  - b. Budget for revegetation efforts.
  - c. Lead agency/agencies.
- **MAINTENANCE & REMEDIAL ACTION PLAN** The document should outline what steps will be taken in the event of storm damage to the dikes or habitat areas during and after construction. In addition, the document should specify what actions will be taken to minimize and remediate potential vegetation damage from deer, geese, and other waterfowl.
- **SCIENTIFIC MONITORING** The document needs to be more specific about the vegetation and wildlife monitoring methods that will be used in order to assure statistical and scientific validity. Intended lead agencies for each aspect of the monitoring effort should be specified.
- **MONITORING AGREEMENTS** On p. 8-1, eight federal and state agencies that will be involved with monitoring are listed. The EIS should stipulate that a written interagency agreement will be prepared, committing both the necessary personnel and funds to assure that the 20 years of monitoring required to document the environmental benefits and impacts of this project will be completed.
- **PHASED CONSTRUCTION** It appears likely that due to funding constraints, a phased approach to construction will be used. Better documentation and diagrams of the phased construction process are needed.

- **DATA MANAGEMENT:** Chapters 7 ("Plan Implementation") and 8 ("Monitoring Framework") should contain sections on data management. Budgets and lead agencies should be stipulated. In addition, the FEIS should contain a schedule for periodic summary reports with appropriate distribution to agencies and concerned parties.
- **TIMELINE** The document should provide a detailed timeline laying out the proposed implementation of all phases of the project. The timelines should stipulate deadlines and responsible parties for all aspects of the project.

## II. ADDITIONAL COMMENTS

- The print on a number of figures and tables is too small to read (e.g. Table 3.6, "Summary of Water Quality Conditions"; Table 3-8, "Summary of Existing Water Quality Conditions"; Fig. 6-1, Habitat Map; Fig. 6-10, "Typical Cell Layout"). These should be reprinted using larger fonts or 11 X 17 pages.
- Section 3.1.3g, "Residence Times" is missing from the DEIS.
- The scales shown on figures 3-17 and 3.18 (pp. 3-60 and 3-61) have been skewed by photo-reduction and are incorrect.
- The list of legal authorities on p. 4-3 lists the "Emergency Wetlands Resources Act of 1986" twice.
- Table 5-1, "Incremental Cost Comparison."
  - a. Units are not specified. It is not clear whether the costs are monthly totals, tonnage estimates, or based on some other unit of measure. It is also not clear whether these figures include:
    1. dike construction costs,
    2. budgets for monitoring and maintenance,
    3. budgets for remedial actions.
- Table 5-1 (p. 5-11). Total cost/cubic yard for Poplar Island is quoted as \$4.73. How does this relate to the total site development cost of \$3.22/cy quoted in table 5-2 (p. 5-16)? Should they be added together to compute total costs?

- Table 5-2 indicates that the Initial Construction Cost of the preferred alternative (#3) will be \$49.6 million and Total Site Development Costs will be \$122.1 million. How are these figures related to the overall project cost of \$297 million?
- Section 5.4.2 (p. 5-18). This section ends with an incomplete sentence.
- Blank spaces on pages 5-38, 5-39, and 5-40 should be filled in.
- Section 5.4.4(b), p. 5.33. The discussion of long-term impacts should include a discussion of impacts from discharges from the upland portions of the project into the created wetlands. Techniques for minimizing these impacts should also be discussed.
- Table 5-6, "Environmental Outputs Summary" provides primary productivity estimates ranging from 41,000 gm/m<sup>2</sup>/yr to 938,000 gm/m<sup>2</sup>/yr. These numbers should be checked:
  - a. These estimates disagree with the primary productivity estimates in table 5-5, "Ecosystem primary productivity values." Total primary productivity estimates for the site should be in the thousands of metric tons per year.
  - b. A 23-fold difference in productivity among the build alternatives seems unlikely.
- The cells shown in Fig. 6-10 (p. 6-18) do not correspond to those listed in table 6-3. Are all the cells in 6-10 supposed to be labelled "w"?
- The text on p. 6-19 says, "An estimate of cell life and cell capacity for the 7 cells is contained in table 6-3." Table 6-3 does not provide information on cell life.
- Section 6.1.2d (p. 6-16) Water Level Control Structures. This section states, "The wetland cell control structures discharging through the eastern perimeter dike will be deactivated after the perimeter dike has been breached to introduce tidal flows."
  - a. How large will be breached areas be?
  - b. Will they be armored to withstand storm events?
- Section 6.1.2.f. Habitat Areas.
  - a. We recommend that the Habitat Document be incorporated into general document, at least by reference.
  - b. The proposed artificial reef construction should also be described in the FEIS.
- The text on p. 6-24 reads, "Since phased construction will not enclose the borrow area, the area will only be marginally protected from turbidity effects during construction." Where is the borrow area? How large is it? How long will be exposed?
- Section 6.1.2g (p. 6-21). "Saltmarsh cordgrass will be established by ...placing field collected sprigs or mats." EPA strongly discourages the collection of sod mats from natural wetlands.

- Section 6.1.3 (p. 6-23) states, "The total project cost is estimated to be \$297 million. This includes costs for maintenance dredging, placement, shaping and planting of the island, supervision and inspection, execution of the feasibility study, review of the plans and specifications, and advertisement and award of the construction contract (Table 6-4)." Earlier documentation estimated wetland seeding costs at \$1,278,000, wetland maintenance costs at \$50,000/year, and annual environmental monitoring costs at \$300,000 per year. Environmental monitoring, maintenance, and remediation costs should be specifically broken out in the FEIS, along with proposed lead agencies and potential funding sources.
- The text on p. 6-29 states, "Each habitat cell will be evaluated twice a year: once early and once late in the growing season." EPA strongly supports twice a year monitoring during the first few years of revegetation efforts. This monitoring frequency is not reflected in table 8-1, "Poplar Island Proposed Monitoring Schedule."
- Project costs are stated as \$223 million on p. 7-2 and as \$297 million on p. 10-3. The current projected cost should be consistently displayed throughout the FEIS. Section 7-4 should provide a clearer explanation of incremental costs.
- Section 8.2. Monitoring Elements. We commend the approach of presenting scientific hypotheses with regard to wetland vegetation, water quality, benthics, fisheries, and wildlife monitoring. However, the document should also provide information on what actions will be triggered by the acceptance or rejection of these hypotheses.
- Section 8.2.2. Wetland Vegetation Monitoring: The FEIS should provide a more detailed wetland monitoring program. Frequent monitoring during the first few years is vital. A permanent monitoring committee should be established to review data, oversee monitoring efforts, and make recommendations regarding revegetation and other habitat needs.
  - a. What is the size of the 6 permanent plots? What % of total created wetland acreage is being sampled? A statistically valid approach to sampling should be implemented.
  - b. Fixed photo stations should be included.
  - c. Annual monitoring overflights/aerial photographs should be included.
  - d. Plant species inventories should be conducted.
  - e. A vegetation monitoring budget should be included.
  - f. What actions will be taken in the event of significant plant damage by deer, geese, or other waterfowl? A remedial action plan should be included.
  - g. University involvement in monitoring programs should be solicited.
  - h. A potential role for trained citizen volunteers in monitoring programs should be considered.
  - i. A lead agency should be designated for data management and analysis.

- We recommend that annual monitoring reports and presentations be provided to federal, state, and local agency officials.
- Section 8.2.3. Water Quality Monitoring: The use of existing Bay mainstem water quality monitoring stations as reference stations should be documented in the FEIS.
- SAV monitoring should be added to Section 8, in order to determine whether the SAV goal stipulated on p. 2-21 and p. 5-36 is met.
- Annex A, Clean Water Act Section 404(b)(1) Evaluation: Section I (b-f) does not provide any specific information regarding the volumes of material being placed (subject to section 404). Additional details should be provided including estimates of material being disposed as a result of approach channel dredging, material being disposed as a result of excavation (dredging) of a portion of the dike alignment, disposal of dredged material to create the dikes, etc. Also, since all material used to armor the dikes which is placed below the high tide line is subject to Section 404 some estimate of the volume of this material should be provided.
- Annex B, the Index, needs to have page numbers inserted.
- Annex B, Attachment A, "Public Involvement and Program Schedule and Outline" is missing, and should be included in the FEIS.
- Annex B, Attachment C, "Public Meetings, Agendas, Attendance Lists, Handouts" is missing, and should be included in the FEIS.
- Annex B, Attachment D, "Public Comments" is missing, and should be included in the FEIS.
- Annex C, Attachment F, "News Releases, Articles and Advertisements" is missing, and should be included in the FEIS.

## **SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION\***

### **Environmental Impact of the Action**

#### **LO--Lack of Objections**

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

#### **EC--Environmental Concerns**

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

#### **EO--Environmental Objections**

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

#### **EU--Environmentally Unsatisfactory**

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

### **Adequacy of the Impact Statement**

#### **Category 1--Adequate**

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

#### **Category 2--Insufficient Information**

The draft EIS does not contain sufficient information for the EPA fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

#### **Category 3--Inadequate**

EPA does not believe that draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment.

**Attachment F**

**News Releases, Articles, and Advertisements**



By David Challinor

## But islands too are only clay

*A Smithsonian scientist discusses Man's license or ability to intervene here and weighs the alternative of studying nature taking its course*

There are tides in the affairs of nature that Man frequently tries to stem—usually for his own purposes, especially in the name of “progress,” and sometimes for altruistic reasons. The Poplar Islands dilemma, if resolved to favor a *status quo ante*, will exemplify the latter, that is, well-meaning human intervention in a natural process.

Millennia ago these islands constituted a single land-mass of some 2,000 acres; then they began to erode. Without artificial rebuilding they will disappear as inevitably as every biological organism, or even as mountains do in the course of eons. It is easy to argue that the islands must be rescued, if only as some sort of ransom against human plunder elsewhere in the world. But a germane question remains: By what right (or to what purpose) should Man seek to mitigate a process as inexorable as the wearing down of the once tall Appalachians, or the extinction of the woolly mammoth, or the demise of some other species doomed by nature?

Chesapeake Bay, a comparatively young estuary, was evidently formed about 8,000 years ago and will probably disappear in a like time. It was largely created by erosion, from the runoff of melting glaciers; and the companion process of siltation will probably fill it until a river meanders through Maryland to a delta near Norfolk, Virginia. The process is a viable one and largely immutable by Man—thus far. Several islands of recent memory are gone, eroded and become silt. Parts of the Eastern Shore have lost two-thirds of an acre per mile *annually* for more than a century.

There are several reasons—environmental, economic  
*Continued on page 72*

island had long since been cut by wide channels into three separate islands totaling more than 200 acres: Coaches Island to the southeast, Jefferson to the northeast and, to the west, Poplar Island proper (according to modern nomenclature). Over the next 20 years this windward land dwindled to a narrow wooded strip that winter storms chopped into four smaller pieces. The total land area of Poplar Island proper shrank to less than 100 acres. It now comprises barely 54.

On my first exploration in 1963, masses of poison ivy grew to 15 feet, reducing air circulation and inten-  
*Continued on page 70*

*Dr. Challinor, a concerned conservationist, is the Institution's assistant secretary for science.*

*Reese, continued from page 69*

sifying the June heat. Hundreds of herons, nesting in the 40-foot loblolly pines year after year, had covered the vines below with their droppings. Biting flies made my life miserable and snakes slithered through the snarl of fallen trees and vines. Kingbirds, crested flycatchers and house wrens were abundant, as were spiders, robber flies, dragonflies and five-lined skinks.

At scattered locations, too, I found the vine-covered remnants of past human habitation. Vast beds of flowering lilies, a razed building, broken foundations, an orchard, piles of bricks and bottles, great heaps of oyster shells, stump-cleared alleyways where roads and lanes once ran through the trees, a graveyard.

Poplar Island has known many owners and many names. John Smith called it one of the Winstones. In 1631 Captain William Claiborne, a Virginia Puritan who established a trading post on nearby Kent Island, became the first white man to visit and claim it. According to most Talbot County histories he named it Poplin's Island for an associate. One of his followers, Richard Thompson, settled his family there; a few years later Nanticoke Indians massacred the household while he was away.

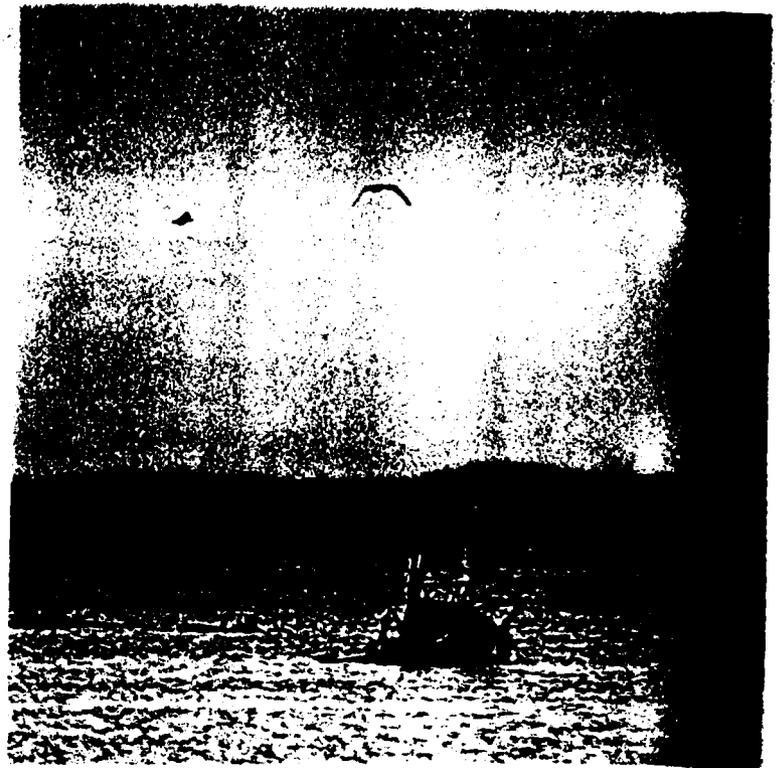
By 1654 the name had been corrupted to Popeley's and a former Maryland governor had sold it for 10,000 pounds of tobacco to one Thomas Hawkins. He sold half to Seth Foster and deeded the other half to his wife Elizabeth and his son. Hawkins died and Elizabeth married Foster. "Foster Island" became a sanctuary for Alexander D'Hynosa, Dutch governor of what was to become Delaware.

#### *Bootleggers and presidents*

When Charles II captured the Dutch colonies in North America, D'Hynosa received asylum on the island from Lord Baltimore. The Dutchman then bought it from Foster for 300 pounds sterling in 1699 and lived there as a naturalized citizen. Early in the 18th century the place became the property of the father of the famous Charles Carroll of Carrollton, a signer of the Declaration of Independence and one of the richest men in America. By that time Popeley's had been further corrupted to Poplar.

In the 19th and early 20th centuries, Poplar Island supported a thriving little community peopled chiefly by watermen who made their living from oysters, fish and crabs. It had several small farms, a school, general store and mail service—weather permitting. Harvests of grain and seafood were shipped north to Annapolis, Baltimore and other ports in barges and skipjacks, the sloops unique to Chesapeake waters.

Each year, however, existence grew more difficult as the hungry bay claimed more land through erosion.



Gulls clutter the early morning sky over the shallows, a heron flies from fishing and an osprey waits.

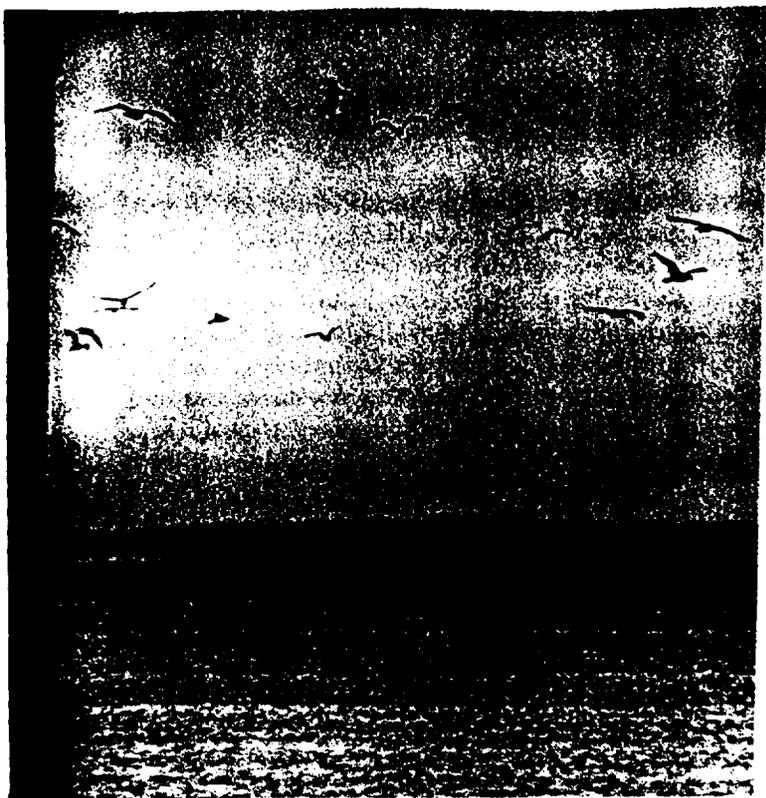
The acreage, given as 806 in 1847, was down to about 500 in 1912 and 485 a few years later. In the mid-1920s the remaining inhabitants gave up and moved away.

Though the island was fragmenting, it was not completely abandoned. In 1929 federal agents determined that suspicious characters were frequenting the place; the revenueurs made a visit, captured five bootleggers and broke up 20,000-gallon stills. Two years later a group of influential Washington Democrats acquired the small, deserted northeast island which they renamed Jefferson. They built a spacious lodge and established the exclusive Jefferson Islands Club. In the heyday of the New Deal, President Franklin D. Roosevelt was a visitor, eating Maryland oysters, crabs, wild duck and terrapin.

President Truman also enjoyed the club, but by 1950 the lodge had burned and the members disbanded. They sold out to executives of a Delaware corporation who built a new clubhouse as a base for goose and duck shooting. This clubhouse also burned.

The most recent man-made venture—and perhaps the last—was an attempt by an individual to establish a yacht club in 1960. After building a third clubhouse, he sold the islands to Dr. William L. Elkins of Philadelphia for a summer retreat. In 1966, Dr. Elkins began deeding the islands to the Smithsonian in the hope that measures might be taken to halt the erosion and save the birds. The lodge and its outbuildings on Jefferson Island are now used as shelter for visiting scientists and as the caretaker's home.

Today, erosion remains Poplar Island's most savage enemy. No shoring or bulkheading has been attempted



on the western shore. Timber enough to build a small house rumbles into the bay annually. Along with the trees go the nests of a few more great blue herons.

In 1964, I started driving stakes and marking trees at various exposed locations to measure annual erosion. Of ten sites marked, three have averaged inland losses of 14 feet a year and all have lost more than two feet annually. Worst of all, new wash-throughs occur almost every winter; the pace of erosion is increasing.

If nothing is done, it is only a matter of time until Poplar Island proper dissolves into a series of tiny, barren hummocks. At the present rate, it probably will be denuded of trees within a decade. When that happens, little Jefferson Island, now partly sheltered by Poplar, will be at the mercy of the bay's winds, waves and currents. (Coaches Island, most shoreward and southerly of the three, already is eroding steadily, though at a somewhat slower pace than Poplar.)

What then becomes of the ospreys and the great blue herons? If their future is not something with which we human beings are concerned, it should be. For the Poplar Island colonies of these two species are among the finest remaining in America.

Some 30 pairs of ospreys nest annually here and in the immediately adjacent waters. This is the largest osprey concentration in so small a space on Chesapeake Bay, and it is part of an even larger community in and around Talbot County that constitutes the most successful osprey colony north of Florida.

Or would it be more accurate to say "least unsuccessful" in this context? Talbot County's ospreys are not being wiped out as they are in New England and

the Great Lakes region, where the once-large populations have been reduced to a few individuals or obliterated by chemical pesticides and the destruction of breeding sites. But neither are they doing more than, at best, holding their own. My annual studies of osprey breeding in the Talbot County area since 1963 show a slight decline in the number of fledglings produced per nest during the period. Although the success rate remains substantially above those of most other well-documented U.S. bird populations, it is less than half that of Chesapeake Bay ospreys before 1947, when hard pesticides such as DDT were introduced.

As for the Poplar Island birds, their future is uncertain. Their reproduction rate seems to have been impaired by chlorinated hydrocarbons which they absorb from live fish, their chief food. Their nests and young are subject to human depredations, some innocent, some deliberate, which wipe out a disgraceful number of eggs and hatchlings each year.

These range from picnicking pleasure boaters, whose mere presence keeps the adult bird off the nest (while the sun cooks eggs or young), to Coast Guard personnel who often must destroy nests on lighted navigation markers. Most important, their island is dying. My artificial platforms cannot offset this erosion. Poplar Island's sheltering landmass, however diminished, provides snags and dead trees for nesting sites, building material and protection against storms.

#### *Threatened herons*

Poplar Island's other magnificent breeding birds, the great blue herons, face an even more immediate threat. Here in one of the largest heron colonies on the eastern seaboard, I estimated nearly 500 active nests in 1963; in 1971, about 120.

Like the osprey, the great blue heron is a fish eater and so is endangered by the persistent pesticides it absorbs. More important, the great blue heron—even more than the osprey—must have an isolated, undisturbed breeding site to survive. Herons build huge, untidy nests of sticks in the branches and high forks of trees; they stay as far away as possible from human habitation. Shy and wary creatures, they flush from the nest at the slightest disturbance, exposing eggs and nestlings to predators and the sun. If frequently disturbed, they abandon the nest. And they cannot be induced to adapt themselves to a man-made platform.

On Poplar Island the great blues nest in the branches of the loblolly pines that cluster along the eroding western shore, congregating in late March and early April to lay four or five blue eggs and brood their young. Some stay all year, roosting in the loblollies by night and fishing in the shallow waters by day. To see one of these great slate-blue birds, more than three

*Reese, continued*

feet tall, towering above its nest like a giant sentinel outlined against the sky, is to recapture a vision of an earlier and more beautiful America.

Already their nesting trees are being washed away—as many as 40 a year. Many displaced birds seek breeding sites elsewhere. When the island is gone, the sad prospect is that the herons—at least in anything like their present numbers—will be gone from the bay also. So too, the hundreds of swans, geese, ducks, grebes and loons that winter each year in the island's lee.

I believe Poplar Island can be saved, but it will cost a good deal of money. High-sounding talk, the only weapon applied so far, certainly won't stop the tireless Chesapeake. Last winter a state survey was finally made that estimated the minimum cost of erosion control on the windward shore of Poplar Island to be about \$800,000.

Unfortunately but predictably, Maryland is not primarily concerned with the fate of the herons and ospreys. The Department of Chesapeake Bay Affairs' mandate was to consider how "to develop shore recreational facilities for the benefit of the boating public." One plan reportedly called for the state to take title of the entire island group, lease part of it back to the Smithsonian for wildlife studies, and establish a boating center on Jefferson Island. The state would pay for erosion control.

#### *Disaster for the birds*

This might be nice for the boating public, but it would be disastrous for the birds. If the island group is turned into a playground for people, there will be little wildlife for the Smithsonian or anyone else to study. Boaters, campers and picnickers would drive away the nesting colonies as surely—and a lot more quickly—than continued erosion.

But can the legislature be convinced that a chunk of land is worth saving without regard to its dollars-and-cents value to Maryland voters? Or that funds should be voted to benefit a few birds? This is a difficult concept for most Americans to grasp.

I have lived within sight of this jewel in the Chesapeake all my life, have known it intimately for the past eight years. I have watched it blossom in the spring, listened to the eerie clicking voices of hundreds of incubating herons, marked the joyous growth of new, young living creatures through the summer. I have watched them mature and have seen the islands dormant in the harsh blast of winter. I, for one, will mourn this island if it dies. But it will be equally tragic if the island ends its long and stubborn battle against the Chesapeake as a piece of kept land, a parking place for Sunday speedboats.

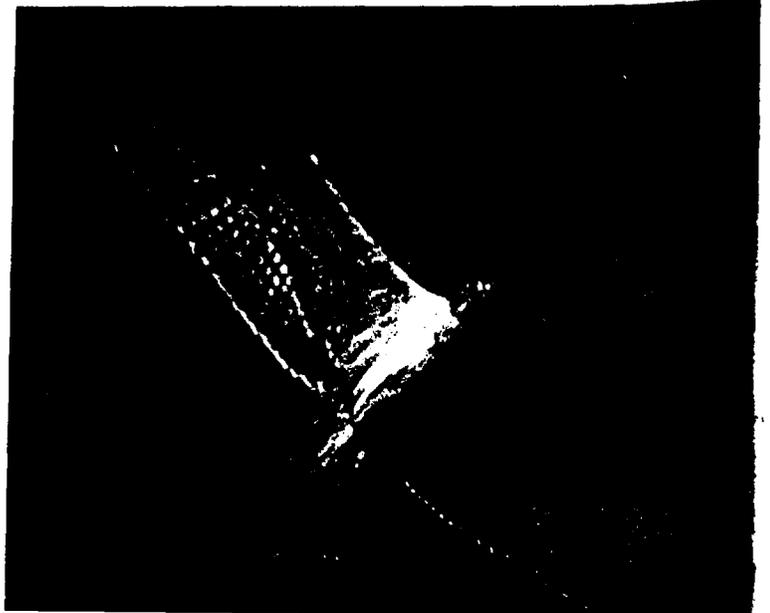
*Challinor, continued*

and emotional—that at an easy glance justify strenuous efforts to save the islands. They protect part of Talbot County's eroding mainland from the full force of tides and waves. They provide a safe harbor for watermen and winter feeding grounds for thousands of waterfowl. They constitute esthetic and sentimental landfalls in the protean bay. A most important consideration is the plight of the ospreys and great blue herons. Could they survive without these nesting grounds? Would they relocate? They have done so before and we can assume they would again. They probably did not frequent Poplar when it supported a human community, but presumably nested in the loblolly pines only after men abandoned the dwindling land.

Is there a cogent argument for letting the islands die? Yes, the rationale of scientific study and discovery. Knowing these islands are victim to relentless processes of decay, we can use them as a natural laboratory for examining these mechanics against the time another island is threatened. Watching these islands give up their ghosts could provide copious and useful data.

In economic terms it is certainly easier to study the decline and death of the islands than it is to save them, an effort that might cost upwards of four million dollars. That price tag—for filling the breaches, widening the shoreline by 100 feet and building a protective revetment (after cutting some trees to provide access for heavy equipment)—comes from the Corps of Engineers, the organization with perhaps the greatest experience in trying to bend natural forces to human design. In terms of the GNP or the federal budget, this might seem a paltry sum, but it is naive to argue that moot point. In terms of realistic alternatives, should the national government save these islands rather than cure urban blight?

Should Maryland spend tax revenues here that



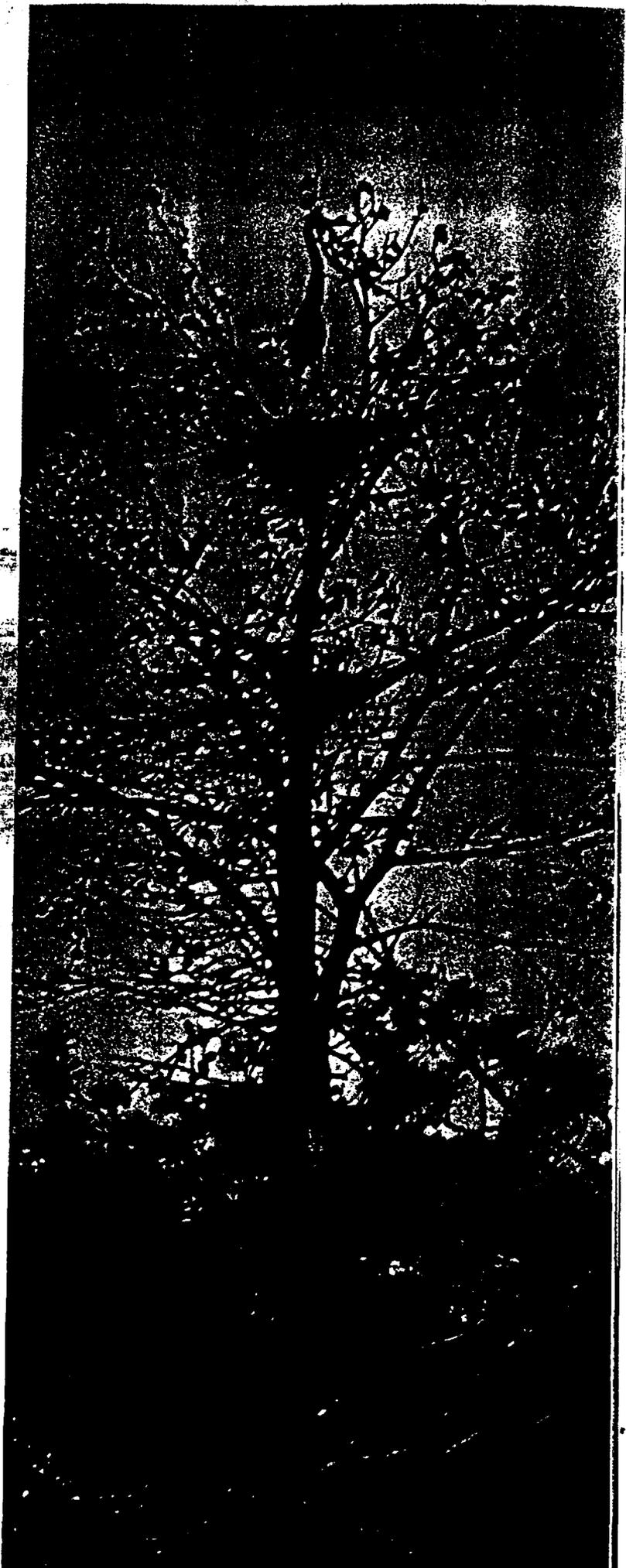
might otherwise cleanse the polluted upper Chesapeake? Should the Smithsonian discontinue astrophysical research or abandon its Chesapeake Bay Center for Environmental Studies to preserve 54 acres of languishing island that have debatable scientific, human and ecological importance? It is all very well to hope that public money used for some ignoble cause be applied to island conservation, but the fact remains that funds once spent on biological warfare, for instance, probably won't be diverted to Chesapeake Bay this fiscal year, or next.

Priorities aside, the feasibility of preserving the islands without adverse side effects has not been proved. Some seemingly attractive solutions had to be abandoned after thorough study, such as using baled solid waste to protect the shoreline. (The bales themselves might erode, causing new pollution.)

The most promising proposal, from a professor of environmental engineering at the California Institute of Technology, involves a project twice as expensive as the Corps'—but one that would pay for itself. A rock breakwater would be built 1,000 feet seaward of the existing Poplar islets. Inert refuse would be dumped in the man-made lagoon to a level above high tide, covered with solid waste and topped off with a layer of sanitary landfill and soil, which would support new flora. The result: a larger, stabilized, fertile island. The project could be self-supporting since nearby Baltimore, for one, faces increasing difficulties in disposing of both its municipal waste and the demolition debris from buildings razed for urban renewal. Using Poplar Island as a carefully managed, selective dumping ground would be cheaper and cleaner than present disposal methods. (But such a practice must not become widespread, or the Chesapeake will be subject to such landfill pressures as San Francisco Bay.)

This last caveat points up why we must take such care; the solution to this dilemma must not cause worse ancillary problems. So the Caltech engineer's preliminary plan is now being reviewed by federal, state and private agencies prior to a final proposal.

If such a project is ecologically sound, technologically feasible and economically possible, almost all interested parties could accept the abandonment of a natural laboratory and the halting of a natural process. The sanctuary of these islands, which will *not* be converted to a marina at the expense of wildlife, will then be saved—nay, restored and expanded—for the perpetual use of birds that may remain there.



A soaring osprey hovers over Poplar Island (left). The stately heron guarding a treetop nest (right) is threatened by pesticides, pleasure boats and the tides.

success of the created intertidal wetland and upland habitat and minimize the construction costs. The goal was to develop practical and constructable alternatives that are both operationally and economically feasible.

**POPLAR ISLAND RECLAMATION AND BENEFICIAL USES OF DREDGED MATERIAL**

Edward T. Fulford, P.E.<sup>1</sup>

INTRODUCTION

Poplar Island is located near the mouth of the Choptank River, approximately two miles southwest of Knapps Narrows as shown in Figure 1. The island has historically been a rookery for blue herons and other wildlife and is one of the few remaining islands on the main body of the Chesapeake Bay that is not currently developed.

As a result of its exposed location, the island has in the past and is continuing to experience significant erosion. The island, which had an area in the middle 1800's on the order of 750 acres (not including Coaches and Jefferson Island), has eroded to approximately 4.7 acres in the last 150 years and has split into four separate smaller islands. The two largest islands are now identified as Poplar Island and North Point, respectively. Continued erosion of North Point will result in the loss of the remainder of the island in the next several years.

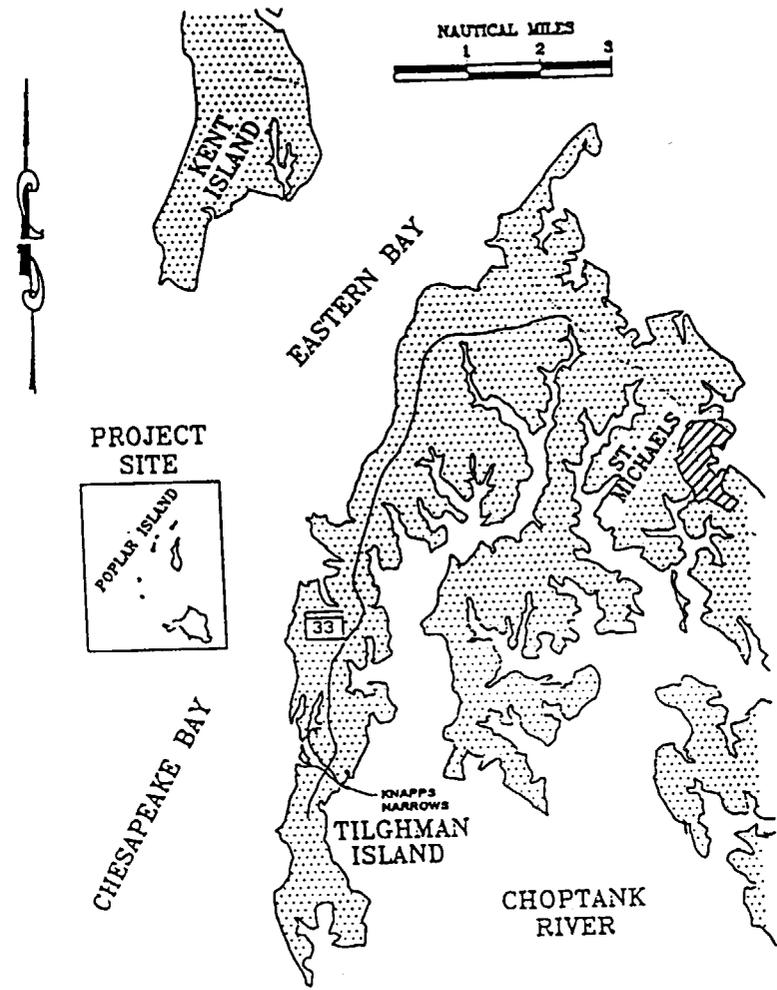
The area has been identified as a site for restoration through the beneficial use of dredged material. Materials dredged from nearby navigation channel projects could be used to reclaim the island to its 1847 footprint by constructing breakwaters and/or other structures and backfilling the enclosed areas with clean dredged material from the Baltimore Harbor approach channels. The backfilled areas are to be developed into intertidal wetlands and upland habitat which will serve as valuable nesting and nursery area for many wildlife species. This habitat is now in imminent danger of completely eroding within the next few years. Thus, the proposed project will utilize clean dredge material as a "beneficial resource" to restore and protect the habitat.

CONCEPTUAL PLANS

**GENERAL**

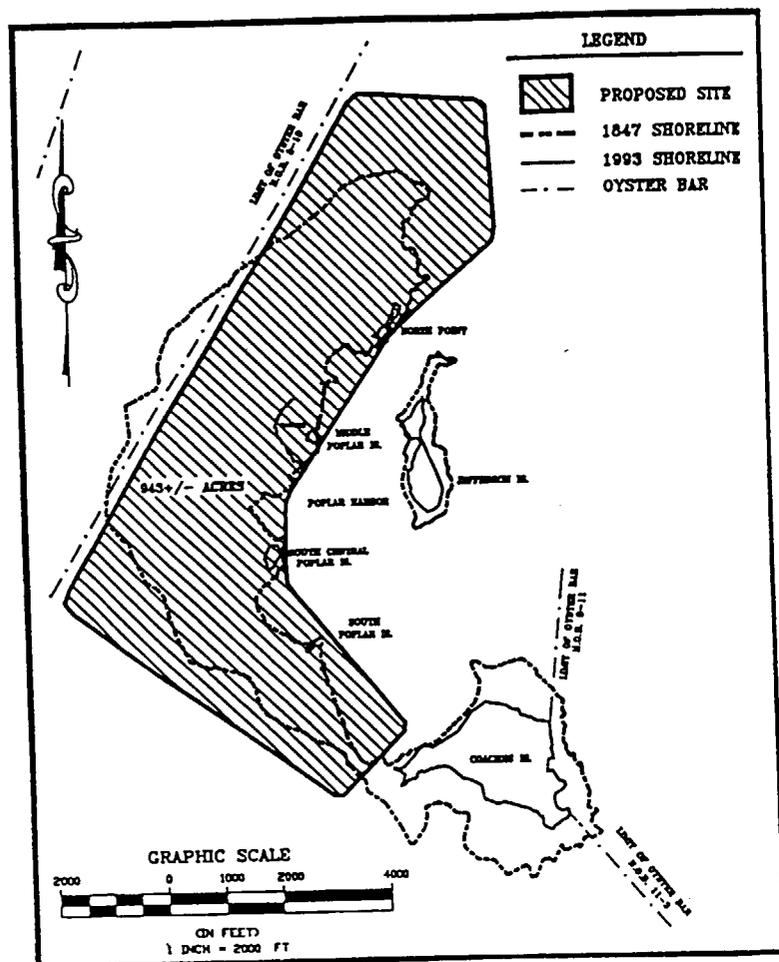
The primary objective was to develop alternative conceptual plans for the reclamation of Poplar Island using dredged material. A key concern was to develop alternatives that would maximize the stability of the placed dredged material, maximize the

<sup>1</sup>Manager, Marine Engineering, Andrews, Miller & Assoc., Inc., 508 Maryland Avenue, Cambridge, Maryland 21613.



Location Map  
Figure 1

As a starting point, an overall dredged material placement area footprint, based on preliminary Maryland Environmental Service studies, was selected as shown in Figure 2. This containment area consists of four (4) individual dredged material placement cells with a total area of 943 acres.



Dredged Material Placement Area  
Figure 2

### DREDGED MATERIAL PLACEMENT SITE CONSIDERATIONS

The basic concept for dredged material placement in the proposed site consists of initial mechanical dredging in the Baltimore Harbor navigation channels and transport of the dredged material by barge to the site. At this point, the material will be hydraulically dredged/unloaded and discharged into the site. As a result, containment dikes will be required during the placement operation and will be subsequently required to provide protection to the placed dredged material and habitats created.

#### Dredged Material Placement Requirements

In order to achieve acceptable effluent water quality, the proposed dredged material

placement site must have sufficient area to permit proper settling, adequate effluent weir length and ponding depth, and a flow pattern to minimize short-circuiting. A discussion of these design parameters is presented in the following paragraphs.

**Containment Area Required** - Guidance on the determination of the required containment area is presented in WES Technical Report D-78-56 entitled "Methodology for Design of Fine-Grained Dredged Material Containment Areas for Solids Retention". Lacking specific data on the proposed dredged material, the design solids loading,  $S_d$ , was varied from 1.0 to 4.0 lb/hr - ft<sup>2</sup> (typical range for fine-grained sediment dredging operations) to determine the range of containment areas required. These results are shown in Table 1.

Table 1  
Containment Area VS. Solids Loading

Solids Loading, $S_d$ (lb/hr - ft <sup>2</sup> )	Area (Acres)	Design Area, $A_d$ (Acres)
1.0	17.6	39.7
2.0	8.8	19.8
3.0	5.9	13.2
4.0	4.4	9.9

Since the proposed areas for the dredged material containment cells range from 158 acres to 298 acres, more than sufficient area will exist to insure adequate settling and effluent water quality.

**Ponding Depth and Weir Length** - Sufficient weir length and ponding depth near the weir must be provided in a containment area to prevent water with high suspended solids concentrations from flowing out of the basin. The ponding depth provides a parameter through which effluent quality can be controlled. Essentially, it is the depth of ponded water above the solids interface that is required for sedimentation in a containment area. Insufficient ponding depth is a major cause of short-circuiting. The optimal range for this parameter is from 1 to 3 feet.

WES Technical Report D-78-18 entitled "Weir Design to Maintain Effluent Quality From Dredged Material Containment Areas" provides a design procedure that uses nomograms for selecting weir length and ponding depth at the weir to maintain effluent quality, given the material type and design flows.

The design procedure using the nomogram is an iterative procedure with four variables that can be manipulated to achieve an optimal design. These are design flow ( $Q$ ), weir length ( $B$ ), ponding depth ( $y_o$ ), and the effluent suspended solids (SS). Any three variables ( $Q$ ,  $B$ ,  $y_o$ , or SS) can be selected and solve for the fourth. Using this analysis, ponding design depths at the weir ranging from 2 feet to 4 feet were determined to meet typical effluent water quality criteria.

**Short-Circuiting** - Short-circuiting is by far the most common and significant problem with dredged material containment structures. The overall effect of short-circuiting is to reduce the effective residence time of a major portion of the flow. Short-circuiting can be caused by insufficient ponding depth, improper location of the dredged material inlet pipeline in relationship to the discharge weirs, the location of the

discharge weirs, topography, and vegetation in the basin. All of these factors can cause an improper distribution of velocity vectors resulting in shortened detention periods and increased velocities with resultant scouring of settled solids. Short-circuiting and dead zones can be reduced by the proper placement and number of weirs. For the proposed site, the concept of using the entire west side of the dike as a weir is possible. With this concept, the potential dead zones would be reduced even further, if not eliminated entirely.

#### Wave Erosion Protection

Due to the exposed location of the site, armoring of the impermeable core dikes with stone will be required to prevent erosion and possible failure of the dikes due to wind generated wave conditions. For the purposes of this study, a design analysis was conducted to determine the weight, size and layer thickness of stone required to protect the core dikes from erosion. The design level selected for this analysis was the 25 year storm event with a wave height of 6.4 feet. This analysis indicated that armor stone weights ranging from 1,000 lbs. to 1,700 lbs. with a double layer thickness of 4 feet are required to protect the clay dikes along the southwest through northeast sides of the site. From the east-northeast through the south side of the site, an armor stone weight of 500 lbs. with a double layer thickness of 2 feet is required.

#### Wave Overtopping Analysis

An analysis of the effects of waves overtopping the dikes was conducted to determine the dike height required to prevent erosion damage along the back slope of a dike section without armoring. The objective of this analysis was to identify the crest elevation of the containment dike to minimize overtopping for wave conditions corresponding to a 25 year storm event. Tolerable overtopping rates for an unprotected back slope (i.e. clay, compacted soil, grassed) are 0.05 C.F./sec./ft. (Hydraulic Research Station, 1990). Overtopping rates greater than this will result in damage to the unprotected back slope.

Irregular wave runup and overtopping rates were computed using the Corps' Automated Coastal Engineering System (ACES) Version 1.07 Irregular Wave - Rough Slope Runup and Overtopping. Overtopping rates were calculated for both the exposed (SW to NE) and sheltered (ENE to S) sections of the containment site to determine the appropriate crest elevations. Rough slope coefficients for a riprap structure were applied for runup calculations. Overtopping coefficients were a function of structure slope, water depth at the structure, and wave height and period. This analysis indicated that dike heights of +8.0 feet MLW and +6.0 feet MLW are required to prevent erosion damage along the unarmored back slope of the dike along the south-southwest to northeast and east-northeast to south sides of the containment site, respectively. Dike elevations lower than these would require the placement of protective stone armor on both the exterior and back slopes of the dikes.

#### Conceptual Dike Cross-Sections

A range of initial concepts for the containment area dikes were considered to include the following:

**Water Structures** - Water Structures are a patented product that combines three or more polyethylene or woven geo-tech tubes that are filled using an available water supply.

**Sediment Filled Geotextile Tubes** - Geotextile tubes filled with sediment have been used to provide dikes up to 4 feet high within dredged material storage areas. Geotextile tubes are constructed of woven geosynthetic materials and are pumped full of dredged material, preferably sand.

**Clay Core Dike With Armor Stone Protection** - This concept consists of the construction of a clay core dike covered by filter cloth and a bedding stone layer and then covered with several layers of armor stone. Geotechnical investigations indicated that the hard clay bottom in the proposed project area will provide suitable material for dike construction. Because of the exposed location of the area, it will be necessary to protect the clay dike from wave action by placing armor stone on the bayside slope and possibly the back slope (due to wave overtopping).

**Stone Dike** - Consideration was given to the construction of the containment dikes with a core of small stone, covered by an impermeable filter cloth/liner and then covered with a stone bedding layer and several layers of armor stone. Although this concept would provide a functional dike, the cost of the structure would be extremely high.

#### Conceptual Dike Cross-Sections Considered Further

Based on an evaluation of the above concepts, several containment dike sections were developed that would satisfy each of the design requirements for the dredged material placement operation (i.e. adequate ponding depth), wave erosion protection (i.e. adequate stone armoring) and wave overtopping protection (i.e. adequate crest height or stone armoring to prevent back slope erosion). The typical sections are shown in Figure 3 for the 1V:2H mechanical dredging option.

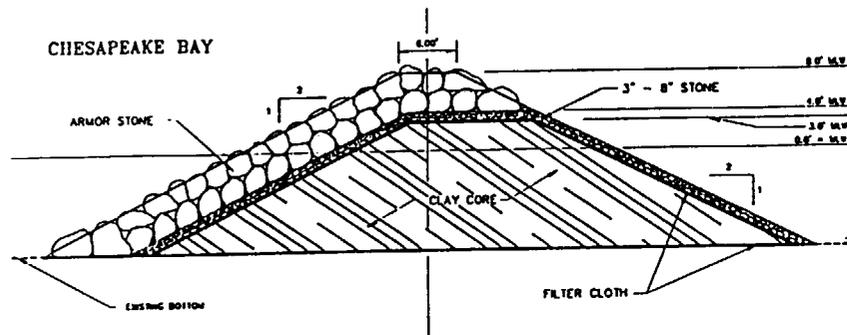
**Dike Section Alternative for High Energy Areas** - This dike section, shown in Figure 3a, for the higher wave energy sides of the site (southwest through northeast) incorporates a clay core with a design elevation of +3.0 feet MLW which will provide sufficient ponding depth to achieve adequate effluent water quality. The clay core will be covered with filter cloth and a 12 inch layer of 3 inch to 8 inch stone. The armor stone design elevation is +8.0 feet MLW which will eliminate the requirement for armoring of the back slope for wave overtopping protection. However, to prevent erosion along the back slope due to wind generated waves within the containment cells, a 12 inch layer of 3" to 8" stone will be placed along the back slope.

**Dike Section Alternative for Low Energy Areas** - This dike section, shown in Figure 3b, incorporates a clay core elevation ranging from +4.0 feet MLW to +5.5 feet MLW and an armor stone design elevation of +7.0 feet MLW. An access roadway is also incorporated in this section. The increase in the elevation of part of the clay core to +5.5 feet MLW is due to the incorporation of the access roadway section.

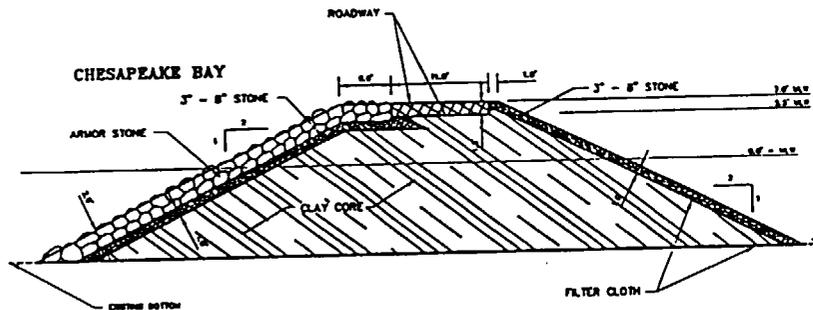
#### CONTAINMENT DIKE DESIGN FUNCTION

##### Effluent Water Quality and Flow

The proposed containment dikes are designed with a +3.0 Ft. MLW clay core elevation along the west side of the site, +4.0 feet MLW core dike elevation along the north and south sides of the site and +5.5 feet MLW clay core elevation along the east side with an access road. This elevation differential will result in the west side dike length acting as a weir for dewatering the site during the disposal operation.



Dike Section for High Energy Areas  
Figure 3a



Dike Section for Low Energy Areas  
Figure 3b

This concept is illustrated in Figure 4. It is assumed that the proposed structure would act as a broad crested weir with restricted flow which is dependent on the permeability of the bedding stone material. Preliminary analyses indicates that the proposed containment dike weir section would be adequate to provide the required effluent water quality and flow. Additional analyses will be conducted during the project design phase to verify this conclusion.

#### Tidal Exchange

Sections would be incorporated in the initial containment dike construction that would be modified after the dredged material placement operation is complete to provide for the tidal exchange required to support the proposed wetland vegetation areas. This concept is illustrated in Figure 5 and consists of sections along the west side of the site that could be "notched" out of the dike after the site is dewatered. These sections would initially be constructed by placing core stone up to the +3.0 feet MLW elevation of the adjacent clay core and placing an impermeable filter cloth or liner layer of 3 inch to 8 inch stone would then be placed over the filter cloth followed by the addition of the two layers of armor stone. This section would then function as an impermeable core similar to the adjacent clay core sections.

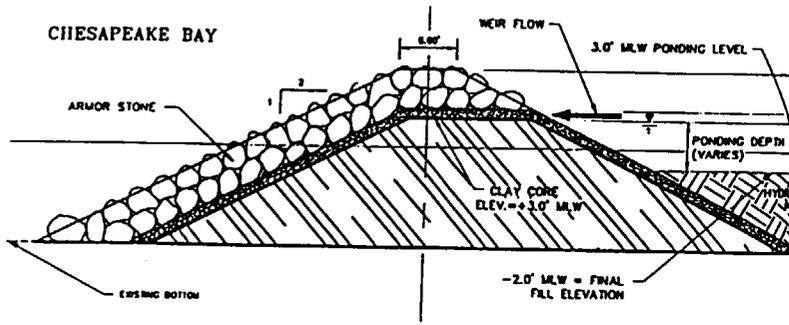
Following the dewatering of the site, the armor stone and the 3 inch to 8 inch stone in these sections would be removed down to the filter/liner material which would then be removed. To provide tidal flow into and out of the site and also provide fish passage areas through the containment dike an "open" notch down to an elevation of -1.0 feet MLW would be provided.

#### DREDGED MATERIAL PLACEMENT CONCEPTS

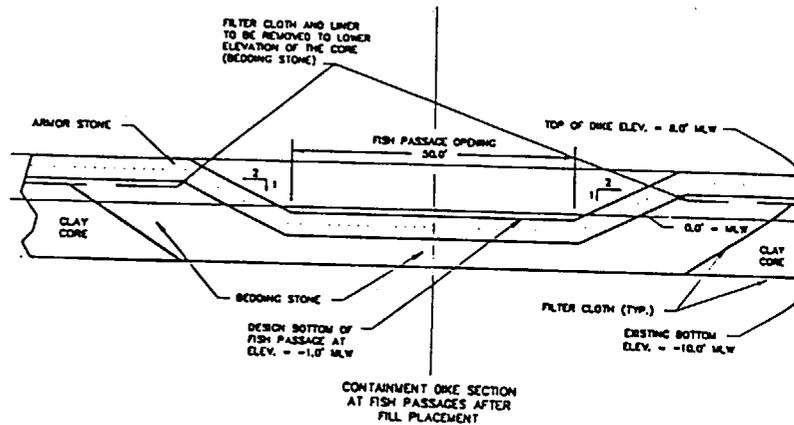
A primary consideration in the development of plans for placing the dredged material is the need to achieve the final elevations of the dredged material required for wetland vegetation success through the dredged material discharge process. This accomplishment is necessary since the loosely consolidated, deposited dredged material will not support conventional grading equipment for an indefinite period of time. In addition, the cost of the grading operation would probably be cost prohibitive. As a result, based on experience from the Hart-Miller Island dredged material disposal area, it is assumed that slopes of 1V:200 H to 1V:400H and 1V:500H to 1V:800H for subaqueous and subaerial fill, could be achieved through the dredged material discharge process. Subaqueous fill placement could be enhanced by using a floating pipeline that could be moved during the disposal operation. Dredged material fill elevations to higher elevations will have to be achieved through the "mounding" process and selective placement of the discharge line.

#### RECOMMENDED PLAN

Based on the preceding analyses and evaluations, the recommended dredged material placement concept is shown in Figure 6. Dredged material placement contours at elevations of +1.0 Ft. MLW and lower would be achieved using an anticipated natural slope of 1V:200H to 1V:400H for subaqueous disposal. For proposed elevation contours higher than +1.0 feet MLW, a natural slope of 1V:500H to 1V:800H is anticipated. The recommended plan would provide a dredged material placement capacity of 11.0 MCY and would provide 943 acres of diverse habitat including a shallow water area around the interior perimeter of the containment dike.

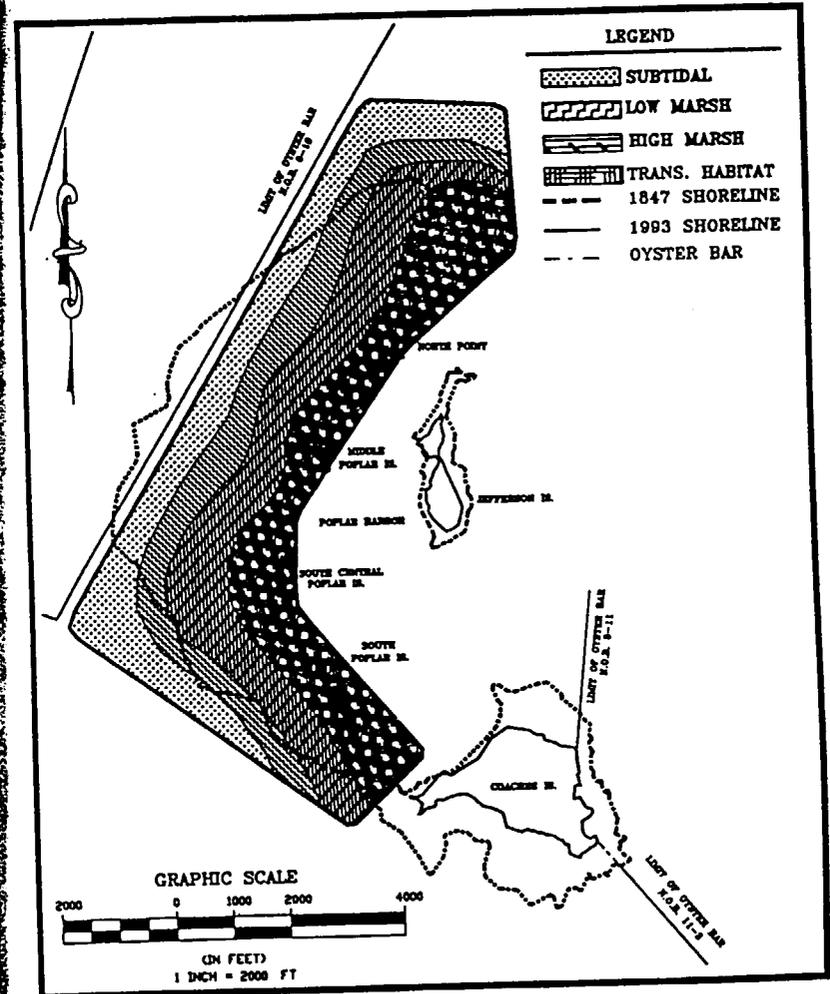


Weir Dike Concept  
Figure 4



Fish Passage/Tidal Flow Section  
Figure 5

This area could be used to establish submerged aquatic vegetation and support the associated marine life. The second habitat zone would provide a low marsh area from -0.5 ft. MLW to +1.5 ft. MLW with the establishment of *spartina alterniflora*. Daily inundation of this zone would be required to maintain this vegetation. From +1.5 ft. MLW up to elevation +3.5 ft. MLW, a high marsh zone could be provided with the establishment of *spartina patens*. Periodic inundation of this area during higher tide occurrences would be required to maintain this habitat. The last habitat zone would be established from +3.5 ft. MLW up to +5.0 ft. MLW with the planting of upland shrubs, bushes and trees. This area would provide needed habitat for migratory waterfowl. The estimated construction cost for the recommended plan is \$52,000,000.



Recommended Plan  
Figure 6

By Jan Reese

# Doomed island and a lament

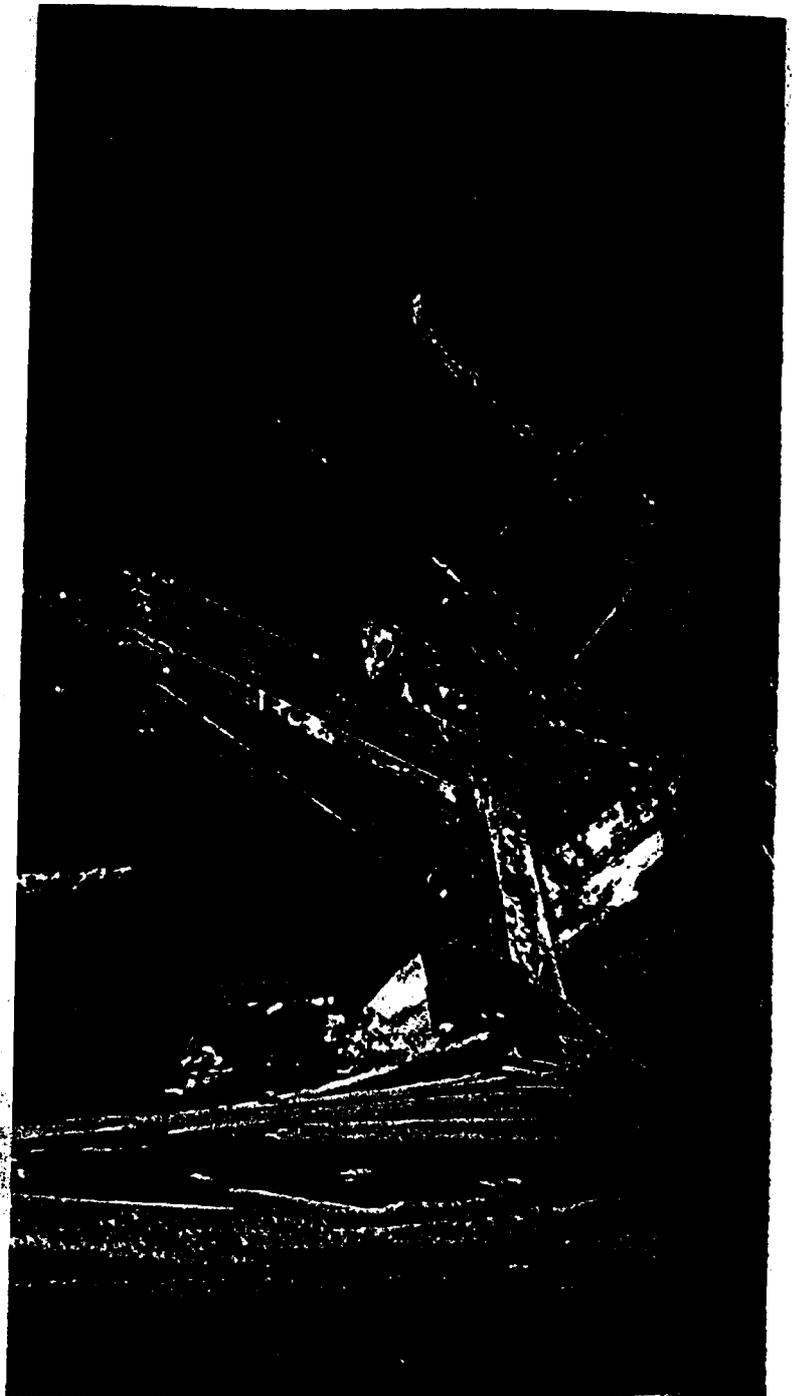
*An osprey expert and experienced bird  
watcher decries the natural death by erosion of  
Poplar Island in Chesapeake Bay*

For eight years I have watched ospreys occupy an island that may not be there in eight more.

One pair used to nest in a dead tree snag near the wreck of a fishing boat. In the winter of 1966 the snag disappeared into Chesapeake Bay, and the nest with it, so I built a platform above the reach of summer tides on the rotting *Arabelle's* bow. Twelve days later it held a nest with two brown-and-white eggs. All was well in 1967, but the next year I returned to find the platform collapsed. The same ospreys greeted me with shrieks and withdrew to a nearby tree while I hammered together a new platform. Three hours later one bird was breast deep in sticks while the mate brought more from shore. The next year I had to remove the nest; the birds screamed at this sacrilege but resumed homemaking when I had repaired the platform and replaced the nest. In 1970 the ospreys were on hand when I arrived; again winter had destroyed the scaffold. As I reconstructed it, the silence from their tree-top perch was broken only by an occasional call. The ospreys watched intently, then burst into a screaming chorus as I finished. They went to work building a new nest before I'd gathered up my tools.

Next spring the platform may be gone again, perhaps even the *Arabelle's* hulk—victim of the Chesapeake's tireless tides and storms. Why? Because the bay is devouring Poplar Island and Man has not stayed the hungry erosion. I have done what I can to help the birds, but the Chesapeake is winning, eroding the windward shoreline 14 feet a year in places. Wild animals and birds are not alone in being threatened with extinction; here, two-and-a-half miles off Maryland's Eastern Shore, part of the earth itself is vanishing, van-

*Reese studied the subject islands under the aegis of  
the Smithsonian and the Interior Department.*



A young osprey, eyed by its nesting parent, alights on a broken wreck in the shoals of Poplar Island.

quished by the tides, tempest and human indifference.

Once a single island, the place comprised more than a thousand acres when Captain John Smith first sighted it in 1608. For three centuries it supported watermen and farmers. Today it has been battered into several islets—owned in large part by the Smithsonian Institution—totaling no more than 163 acres. The timid tenants, wild breeding colonies of osprey and great blue heron, will be hard pressed to find new nesting sites in the densely developed bay region if this sanctuary disappears, as it easily may.

Formerly a horseshoe of land open to the east, the

SMITHSONIAN — DEC, 1971 pp 68-73

# DAY JOURNAL

4 No. 7

A public education service of the Chesapeake Bay Program

October 1994

## New view of Bay comes from high above the Earth

By Karl Blankenship

A new image of the Chesapeake watershed has been pieced together; taken from hundreds of miles in the sky and computer enhanced, it identifies all major land uses in the 64,000-square-mile drainage basin down to a fraction of an acre in size.

It is not a photograph, but a mass of more than 200 million water-cooled squares. Each depicts the dominant land use in a 25.8- by-25.8 meter area (roughly one-sixth of an acre).

Stored on a computer at the EPA's Chesapeake Bay Program Office, users can look at the entire watershed, or smaller chunks to locate wetlands, forests, and suburban developments in a specific area.

The Chesapeake Bay Program Land Use Database identifies activities so small that officials were at first stumped by what appeared to be a heavily urbanized island sitting in the water near Norfolk. They zoomed in for a closer look.

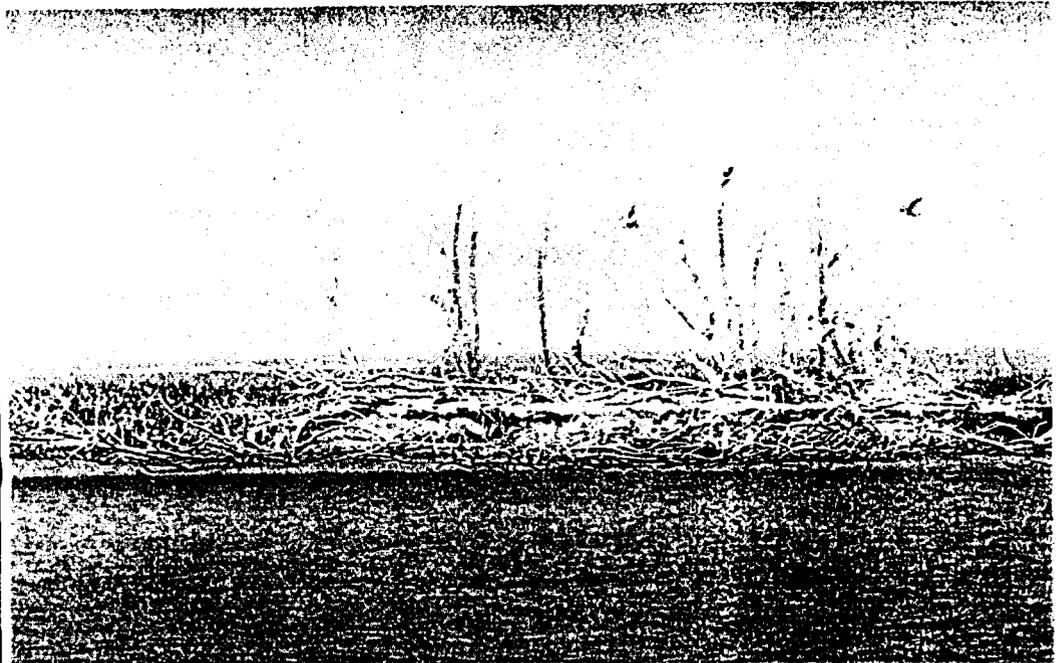
"It was pointy in one end and square at the other," said Lewis Linker, modeling coordinator for the EPA's Bay Program Office. "It happened to be in the middle of the shipping channel. It zoomed out to be a freighter."

On the computer, users can zoom in and locate the reflecting pools on the mall in Washington, or the two concrete ribbons that make up the Bay Bridge outside Annapolis.

Like giant aerial photos, the maps reveal forested ridges separated by agricultural valleys. There are urban centers with spider-web networks of roads that lead out of them into less-dense sprawled development which, in turn, tapers into farmland and forests. "You can really tell the interaction between the land and the people," Linker said.

The database's main purpose, though, is to improve the accuracy of the Bay Program's Watershed Model. That computer model is used to estimate the amount of nutrients flushed into the Bay from different parts of the watershed. Such information helps managers put together nutrient

Please see MAPS — page 8



One of the rapidly eroding Poplar Island remnants has become a major breeding ground for several bird species.

## Rising from the depths:

Plan would use dredged sediment to rebuild island for Bay wildlife

By Karl Blankenship

THE remains of what was once Poplar Island today rise above the waters of the Chesapeake Bay only in fragmented bits and pieces. Some remnants are mounds of nearly barren soil less than an acre in size.

Only a century ago, it was an active farming community. The island was more than 700 acres in size. By the 1940s, it had shrunk to a third of that, but it still served as a retreat for presidents Franklin D. Roosevelt and Harry S. Truman. What's left totals less than 100 acres.

Gone with the land are the farms and the settlers. But while the remnant islands have lost much of their value to humans, the same can't be said of the wildlife that inherited them.

"They're valuable simply because they are islands,"

said John Gill, a biologist with the U.S. Fish and Wildlife Service. "They are isolated from human disturbance and they support many fewer predators."

In the past two decades, they have been a haven for certain birds, including great blue herons and bald eagles. Now, to make the site even more valuable for wildlife, plans are in the works to make Poplar Island again rise above the waves.

In what proponents consider a win-win proposal, state and federal agencies are planning to rebuild the island with sediment dredged from shipping channels. Eventually, they envision a network of wetlands and uplands that would provide more than 1,000 acres of wildlife habitat.

The idea is championed by the Bay Program and a wide array of state and federal agencies, as well as environmental groups, commercial interests, and local land owners.

Proponents believe the multimillion dollar project

Please see ISLAND — page 6

## ISLAND — from page 1

would become a showcase for the nation as the largest attempt to use dredge materials for habitat construction. "We're basically looking at the stuff as a resource as opposed to a waste by-product of dredging," Gill said.

It could also solve a major problem for the Maryland Port Administration. The Port of Baltimore generates about 85,000 jobs and between \$1 billion and \$2 billion in economic activity annually.

But keeping it competitive requires that shipping channels be dredged so they remain deep enough for giant freighters. Each year, an estimated 3.2 million cubic yards of sediment is dredged in Maryland's Bay and harbor channels. During the next two decades, the port administration estimates that more than 90 million cubic yards will be dredged from all channels that serve the Port of Baltimore, including some in Virginia and the C&D Canal.

Finding ways to get rid of that sediment is increasingly difficult. The port administration projects a 75 million cubic yard shortfall in storage capacity over the next two decades.

Resource agencies and environmental groups have often opposed dumping dredge material back into the Bay because of concern about its impact on bottom habitats.

Though about a million cubic yards of "open water" disposal still takes place in Maryland waters, the port administration has increasingly sent much of the dredged material to Hart-Miller Island, a containment site near the head of the Bay. But that site may be filled by 1998. Hart-Miller has long been controversial with many local residents, and officials do not envision building another facility of that size.

As one alternative, officials are turning to the idea of using the dredged material to rebuild small islands, wetlands, and other habitats — a concept dubbed "beneficial use."

The concept was endorsed regionally in a Chesapeake Bay Ecosystem Management agreement recently signed by more than two dozen federal agencies, which called for "assuring the beneficial use of clean dredged material to support fish, migratory waterfowl, and other wildlife habitat in the Bay." The Army Corps of Engineers, which pays for much of the dredging, is the lead agency on the commitment.

With such broad support for the beneficial use concept, the port administration has put plan development for the Poplar Island project on a "fast track," which could allow construction to begin in about a year-and-a-half, said Frank Hamons, manager of harbor development for the port administration. "We've got a lot of support for this site," he said. "It's a good project from an environmental perspective."

**U**NDER the concept that Gill helped to devise, a series of three dikes would be

built to roughly correspond with the historical "footprint" of Poplar Island. One-by-one, those dikes would be filled during the next decade with dredged material.

Inside the containment site, the sediment would be sculpted to form a variety of habitats: permanently flooded subtidal areas, low marshes, high marshes, pools, rivulets, small beach islands, and uplands. About 70 percent of the restored area would be wetlands, and about 30 percent would be uplands.

Many species would benefit. The marshes would be breeding grounds for fish and waterfowl. Small sandy islands within the diked area would be created as habitat for least terns, which are about to be listed as a threatened species in Maryland. With a declining amount of beach around the Bay, 75 percent of the least terns in the state now nest on top of buildings with flat, pebble-covered roofs.

Much of the island system, it is anticipated, would be a sanctuary for colonial waterbirds, such as herons and egrets. While these birds — which live in large colonies — have had stable populations in recent years, they have gradually been crowded into fewer, but larger, colonies. That makes them more susceptible to disease, predation, and catastrophic impacts from tornadoes or storms.

"That crowding is an ecological threat to them," said Dave Brinker, colonial waterbird project leader with the Maryland Department of Natural Resources. The new island, he said, will "give more opportunities to provide more nesting sites."

A number of those species had flourished on the remnant islands in recent years, largely because of the lack of predators. But their numbers have gradually declined as the islands eroded and the trees used for nesting gave way to advancing water.

The port administration and the Bay Program recently arranged to ground 10 scrap barges as a breakwater around the island most used by the birds to stem further erosion. The idea is to protect a remnant bird population to speed the colonization of the rebuilt island. "If there's no tradition left," Brinker said, "it could take a while to attract the birds back."

But Brinker has no doubt the project will succeed. "It's sort of like, you build it, and they will come."

The new habitat would be protected from erosion by the dike built to contain the dredge material. When completed, though, openings would be created in the dike to allow water to flow in and out.

In addition to providing habitat inside the dike, Gill said restoring Poplar Island's historic shape will offer more protection for the adjacent Poplar Harbor. "The old timers tell me that in the old days, that cove supported quite a bit of grass," Gill said. "We're hoping — in fact we're expecting — that if we can recon-



*Much of the island system, it is anticipated, would be a sanctuary for colonial waterbirds, such as herons and egrets.*

figure the island back into the shape of a kidney, that grass will come back. That's going to have obvious benefits to all the crabs and all the fish associated with grass beds."

If successful, the tactic may be put to work for some of the Bay's other vanishing islands: A study done for the USF&WS showed that since colonial times, 12 of 35 islands in the middle portion of the Bay along the Eastern Shore had disappeared entirely as the result of erosion caused by rising water levels over the past century. The total amount of land lost was 10,500 acres.

**B**UT beneficial use is also more expensive than more conventional options. Disposing of the material into deep portions of the Bay is relatively inexpensive, though it raises environmental concerns.

Even disposal at Hart-Miller Island is far less costly. Hart-Miller cost about \$60 million to build. Its containment dikes rise 28 feet above the water surface and enclose a 1,100-acre disposal area which can hold about 70 million cubic yards of dredged material.

Beneficial use sites, which seek to restore wetlands and low-lying uplands, can barely rise above the water. So the low dikes around Poplar Island will hold only about 11 million cubic yards of dredged material even though they will enclose an area almost as large as Hart-Miller. And because of the setting and the types of dikes needed at Poplar Island, construction costs would be almost the same while storing only a fraction of the material.

In addition, Poplar Island — located south of Kent Island — is about 20 miles farther from the dredged shipping channels than Hart-Miller. As a rule of thumb, Hamons said, transporting dredged sediment costs about 10 cents per cubic yard per mile. That translates to about \$40 million to \$48 million in additional costs over the project's life.

"Someone has got to pay for that," Hamons said. Also, the project does not come close to handling all the port's disposal needs. It will have to continue searching for more places to dispose of

the material.

"But," Hamons added, "when you have an enhancement project that is making a positive contribution to the biological systems out in the Chesapeake Bay, that's a value too. It's not as easy to calculate as some others, but that also has to be part of your consideration."

In fact, it is something that is being increasingly considered nationwide. A push toward beneficial use is gaining momentum as port administrations across the country are faced with similar difficulties in locating places to put dredged materials. The Clinton administration has established a federal interagency task force to study dredging issues, and port authorities are asking that it recommend making beneficial use of dredge materials a priority.

Generally, the Corps of Engineers — which pays for dredging — is supposed to pursue the low-cost option on a project, though the law does allow exceptions. If the sponsor of the program, usually the local port administration, does not choose the lowest cost siting option, the corps can require them to make up the difference.

Senators from Virginia and Maryland are seeking funds that will help pay for Poplar Island and other habitat restoration activities which they say will help demonstrate the environmental value of using dredged materials.

"There's a growing recognition that instead of dumping this stuff overboard, it should be put to an environmentally beneficial use when the stuff is clean and you can do something else with it," said Charlie Stek, an aide to Sen. Paul Sarbanes of Maryland, who has advocated that such alternative uses be encouraged by the federal government.

Sarbanes has introduced a bill, also backed by Sens. Chuck Robb and John Warner of Virginia and Barbara Mikulski of Maryland, that would provide \$30 million to the corps as a pilot program to design and construct habitat projects related to the Bay in Maryland, Virginia, and Pennsylvania. The measure, part of the Water Resources Development Act, was expected to pass in early October.

"The cost is high, there's no question about it," Stek said. "But the benefits can be great as well."

One of the benefits, said Gill, is that the beneficial use concept has allowed agencies which historically squared off against each other — and often worked at cross-purposes — to begin working side-by-side on creative solutions.

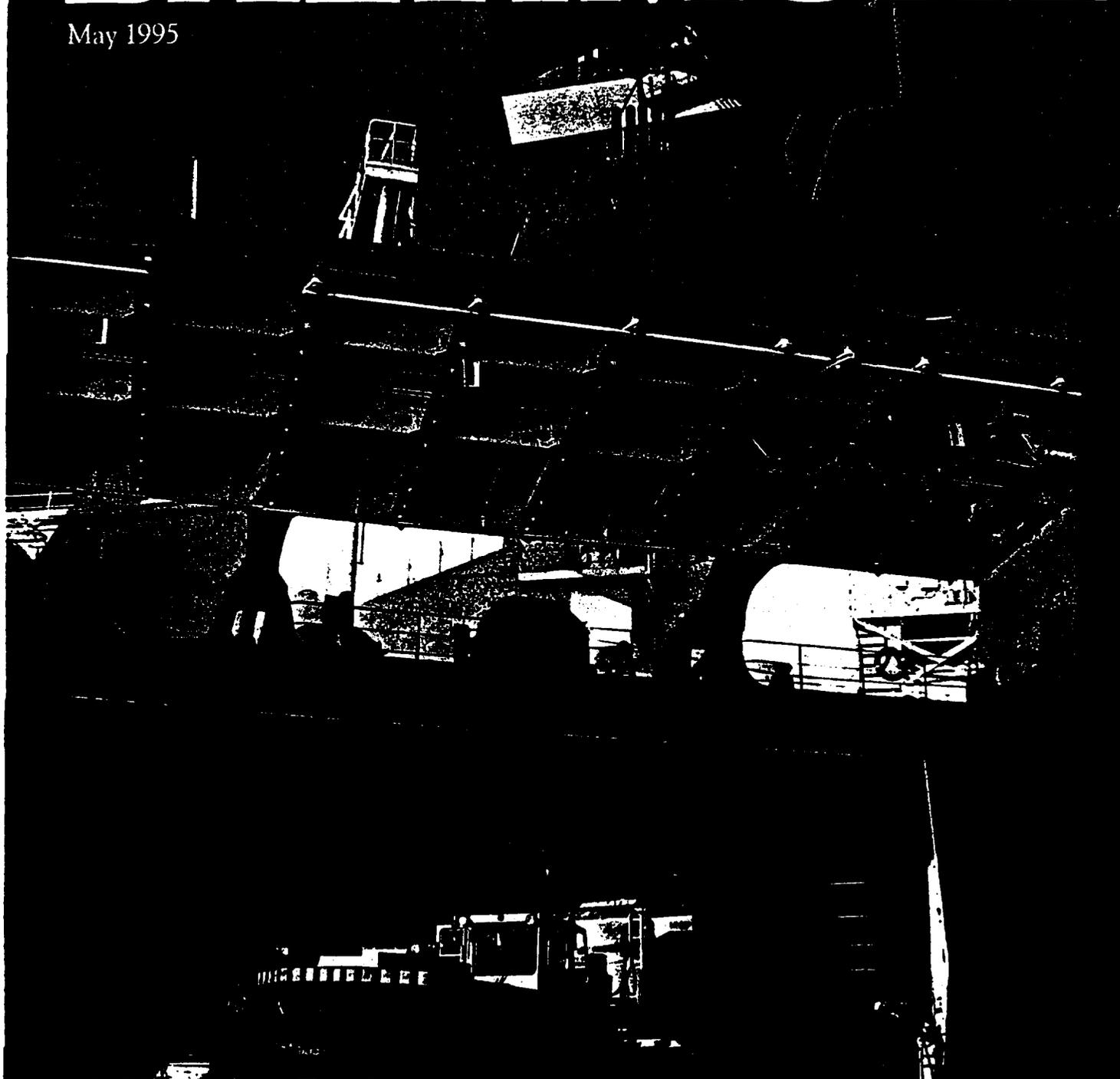
"At a time when the government was spending millions of dollars to restore Chesapeake Bay resources, reduce non-point source pollution, and reduce sediment loadings, that same government was dumping 1 to 2 million cubic yards of dredged sediment over the sides," Gill said.

"Rather than butting heads, we — the environmental advisory agencies — went to the corps and the port and said 'why don't we try to support Chesapeake Bay Program goals and give you a placement site by pursuing beneficial use opportunities?'"

"They bought into it. At present, it seems to be the way to go."

# THE • P O R T • O F BALTIMORE

May 1995



**A Winning Project:  
Smooth Sailing  
For Mighty Dozer**

*Freight Forwarders Section*

# Beneficial Use Projects Create A "Win-Win"

By Helen D. Bentley

The Port of Baltimore proudly touts that it is one of the few United States ports that has a 50-foot channel leading directly into its terminals.

All of the highways leading through the Chesapeake Bay to the Patapsco River must be maintained constantly to prevent any interruption to the flow of the giant behemoths coming out of U.S. graving docks and down shipways, as well as the world's shipyards. Today, these vessels transport cargoes in amounts they would never have transported in the past — football field size quantities.

So we are working hard to emphasize the need to secure Federal funding for beneficial use projects. It is more difficult these days because of the challenges to develop affordable and environmentally sound means of disposing of material dredged from those ship

channels. New sites must be developed in the near future.

The hottest project on the table for funding at the moment is the Poplar Island Beneficial Use Project. This tiny chain of pieces of Poplar Island, together with the sister islands of Coaches and Jefferson, sits in the Chesapeake Bay directly opposite Talbot County. It will become a nonentity over the next decade or two if steps are not taken to preserve it. This is where the Port of Baltimore enters — we can save this rapidly eroding group of tiny island segments, restoring the area to its original size and at the same time provide a home for the placement of material dredged from shipping channels.

It's a win-win situation all around, which is why the Poplar Island project has developed support from a diverse range of interest groups. The total cost of the project, including construction, operation and transportation costs will exceed \$100 million over 15 years.

Congressional assistance is vital to secure the Federal funding needed (\$50-\$55 million) and Maryland's Congressional delegation is working with the Maryland Port Administration and Department of Transportation staffs to make it happen.

Not only is the port facing environmental challenges for disposal sites, but also the challenge to plan affordable projects — doubly difficult in this tough era of budget cutting on Capitol Hill.

We expect the good fairy to wave its wand on the Port of Baltimore because both Port and political officials are well aware of the importance of the cargo to the economy of the entire state.

Decisionmakers are equally aware of the value of the 350,000 containers of precious cargo that move to and from Dundalk Marine and Seagirt Terminals and South Locust Point.

This importance to the entire state cannot be underestimated. Today, the Port's economic impact generates 87,000 jobs, an estimated 45,000 held

by Maryland residents. A total of 18,051 are direct jobs; 6,625 are induced jobs (support local purchases made by direct jobs); and there are a total of 62,500 jobs indirectly related to activities at the Port.

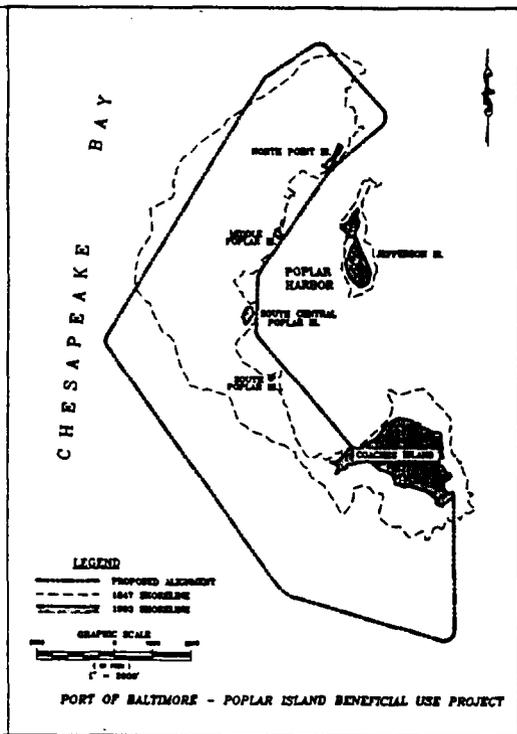
Revenue impact from the Port resulted in earnings of \$1.3 billion for firms in the maritime sector.

We are also asking for Congressional action on other channel-related projects. These include:

- Modification to Tolchester Channel S-Turn: This difficult-to-navigate turn needs straightening immediately.
- Brewerton Extension Channel: Designs must be updated for the uncompleted portion of the deepening and widening of the Brewerton Channel-Eastern Extension (\$750,000).
- C&D Canal: Funds are needed for the stabilization of the shoreline at Sandy Point (\$1.5 million).
- Chesapeake and Delaware Canal Study: Continuing studies of navigational improvements to the C&D Canal, improving the Reedy Point Flare, and relocation of the Arnold Point Anchorage to Howell Point (\$112,000).
- Operation and Maintenance Dredging: Congress is being asked to appropriate funds for our routine dredging activities, an essential part of the total picture. Baltimore Harbor (\$14 million), C&D Canal (\$17.5 million).

In Congress, we are working hard to emphasize the need to secure beneficial use project funding. Current facilities for the disposal of dredged materials are nearing capacity, and unless a solution is found, as early as 1996 or 1997 we may have to reduce maintenance dredging and delay new dredging work. And that is something I — and anyone who knows the vitality provided by the Port of Baltimore — do not want to see happen.

*Helen D. Bentley is a maritime consultant and former Congresswoman.*



The placement of dredged material can restore Poplar Island, making it a positive habitat for the Chesapeake Bay.

# Recycling may save bay isle

## Sand dredged from Balto. shipping lanes could find model use

By Dail Willis  
Eastern Shore Bureau of The Sun

An innovative plan to restore a vanishing island in mid-Chesapeake Bay to its turn-of-the-century shape would use material dredged from shipping channels leading to Baltimore's harbor.

Advocates include an array of state, federal and private organizations. They say the plan could become a national model of how to turn environmental lemons into lemonade by providing an ecologically positive use for the material created by channel maintenance.

"This will be an example for the rest of the country," said John Gill, a biologist for the U.S. Fish and Wildlife Service, one of the agencies involved in the project.

"Placement of dredged material is a problem nationally. . . I think you'll see a lot of ports looking at this."

The project, now in the feasibility-study stage, would take clean material dredged from the Baltimore harbor's southern approaches and deposit it on what remains of Poplar Island, about 50 miles to the south. Poplar Island is northwest of Tilghman Island on the Eastern Shore, roughly opposite southern Anne Arundel County.

The dredged materials would restore the island to its shape, or "footprint," of a century ago. Until 1929, the island supported a thriving farming community. Now, time and tide have reduced it to a handful of land shards.

The restoration plan is notable for the high level of cooperation and enthusiasm it has generated among a multitude of agencies, many with a history of being at odds with each other.

Among those agencies are the Maryland Port Administration, Army Corps of Engineers, U.S. Fish and Wildlife Service, National Fisheries Association, Chesapeake Bay Foundation, Maryland Waterman's Association and the Environmental Protection Agency.

See ISLAND, 3B

# ISLAND: Sand dredged from

From Page 1B

"It's a give-and-take; we're going to work with everybody," said Tricia Slawinski, the Maryland Port Administration's environmental and governmental affairs coordinator. "That's the uniqueness of this project."

## 'Lively, thrashing situation'

Numbers — costs, cubic yards of dredged material, the size of the finished Poplar Island — are still fluid, as engineers, biologists and shipping interests negotiate the details.

"It's still in a lively, thrashing situation," said Nick Carter, a fisheries biologist with the Maryland Department of Natural Resources. "But I imagine we will reach some kind of compromise."

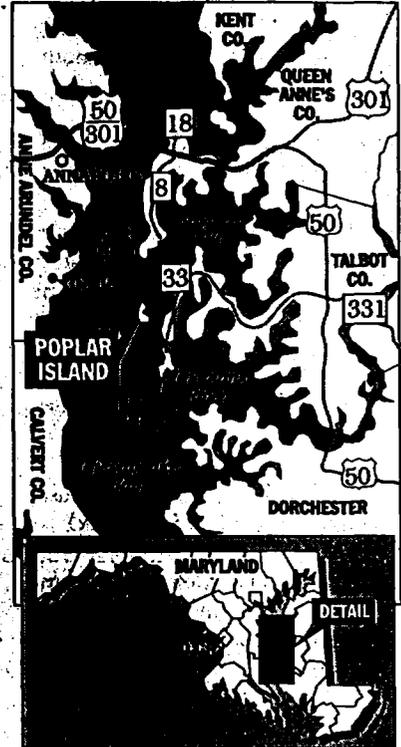
To date, a rough outline has been agreed upon, and the process would work this way:

The approaches to Baltimore's harbor are dredged each year to a maximum depth of 50 feet, part of the maintenance necessary to keep ships moving through the port — about 3,000 of them a year.

Dredged material would be taken by barge south on the Chesapeake Bay and deposited in the area of Poplar Island, eventually building up and linking the island remnants into a single land mass of 820 to 1,370 acres.

The re-created island would become a mix of uplands, which are relatively high and dry, and wetlands, the marshy tidal areas that support so much of the bay's fragile ecologies, particularly bird life. How much of each is still being worked out, Mr. Carter said.

Environmental interests want lots of wetlands, which are better for birds, turtles and other bay life. En-



gineers and shippers would like to have lots of uplands because that would put more dredged material into the site.

## Cost, duration unknown

Uncertainties include how much material would be dredged and how high and wide it would be stacked at Poplar Island.

Those decisions will determine the project's cost and duration, said Stacey E. Brown, who is the Poplar Island project manager in the Army Corps of Engineers.

Preliminary price estimates for the project, which could take nine to 20 years, range from \$39 million to

MAY 22, 1995 BALTIMORE SUN

# From Baltimore shipping lanes may restore bay isle



PHOTO COURTESY OF THE U.S. FISH AND WILDLIFE SERVICE

These bumps of land originally were part of Poplar Island, about 50 miles south of Baltimore.

\$100 million. The costs are expected to be shared, with the federal government assuming 75 percent and state government paying the remaining quarter, Ms. Brown said.

She said the dredged material would not come from the Patapsco River. Material from there is classified as contaminated.

"It's mainly clean sand — we don't anticipate any metals or contaminants," and it would be tested regularly, she said of the Poplar Island material.

"It's stuff running off farmland and residential material," added Mr.

Gill, the fish and wildlife biologist. "It's upland runoff, coming down the Susquehanna River."

He and others pointed to something they consider a key aspect of the plan: By finding an environmentally positive use for uncontaminated dredge material, less of it will eat up areas designed to take dirty material, such as Hart-Miller Island off eastern Baltimore County.

Hart-Miller is filling up — Army corps estimates are that it will be filled to capacity by 1998.

Although the Poplar Island plan would solve a thorny problem at the

port — where to deposit the dredged material — the idea originally came from environmental advocates.

"This wasn't originally proposed by the port," said Mr. Gill. "We went to the port and proposed Poplar Island as an alternative to 'overboard disposal.'"

Overboard disposal, the traditional way to get rid of dredged materials, just piles it up elsewhere in the bay, he said. It uses the bay as a dumping ground — a practice abhorred by many — and eventually the material moves back to the original site anyway.

Poplar Island, which will have dikes to contain the deposited material, solves that problem, he said.

"This particular project is win-win," said Frank Hamons, the Maryland Port Administration's harbor development manager.

"It enables us to perform a service for the channels that we have to do — keep them clear — and it's beneficial to the ecosystem."

Critics are few and remarkably faint.

"We have a few watermen who are a little bit concerned, but we're trying to accommodate them," said Mr. Hamons.

"It's hard to explain to a waterman that works that area [Poplar Island]," agreed Larry Simms, president of the Maryland Waterman's Association.

"If you look at the individual, it's going to hurt them in the short term. It's not easy for the people who are directly affected."

Mr. Simms, whose group supports the project, said the Poplar Island project will directly affect about 50 watermen who clam and crab in the area.

"People who work that area are making a sacrifice," he said. But long term, he said, the Poplar Island project can serve everyone, particularly those who earn a living from the bay waters.

"The watermen really have a broader view, a longer view, than anyone else," he said. "It's a sacrifice on the waterman's part in the short haul, but if you look at the long term, it will help the bay."

SEPT 30, 1995  
WASHINGTON POST

# Poplar Island To Undergo Restoration

## State, Federal Groups Plan Wildlife Habitat

Associated Press

COACHES ISLAND, Md.—Only tiny remnants are left of a Chesapeake Bay island that was a presidential playground as recently as the 1940s.

But state and federal agencies are working on a plan to use sand and silt dredged from bay shipping channels to rebuild Poplar Island, now just four acres, into a 1,100-acre haven for wildlife.

Over the next 20 years, the Maryland Port Administration expects to pump 30 million to 40 million cubic yards of sand and silt dredged from bay shipping channels onto the island. Sand berms reinforced with stone will be built on the west side of the island to keep the dredge materials from eroding.

The island, a few miles west of Sherwood, will be restored roughly to its size in the mid-1800s, said Mike Hart, project manager for the port administration.

In the 1600s, the island measured about 1,500 acres. It was briefly occupied by the British during the War of 1812 and was for a short time, according to legend, the residence of Charles Carroll, a signer of the Declaration of Independence.

In the 1800s and early 1900s, there was a thriving settlement with farms, a school and a store. But by that time, storms had divided the island into three islands—Poplar, Jefferson's and Coaches.

In the 1900s, a Democratic club was built on Jefferson's Island, and Presidents Franklin D. Roosevelt and Harry S. Truman both made trips to the islands for hunting, fishing and recreation.

Without the restoration project, an island with a rich history would soon disappear, said Lee Crockett of the National Oceanic and Atmospheric Administration.

Under the plan to rebuild the island, half of the 1,100 acres will be wetlands and half will be elevated 10 to 30 feet or more and will be planted with trees, such as pines, that typically grow on islands in the Chesapeake Bay.

The forests will provide safe nesting areas for such birds as herons, eagles and snowy egrets, said John Gill of the U.S. Fish and Wildlife Administration.

With many bay islands steadily eroding away, habitat is slowly disappearing, forcing birds to the mainland, where they are under pressure from people and natural predators, he said.

The port administration's practice of dumping dredged spoils into bay waters has been criticized by environmentalists, who say the silt and sand smother oyster and clam beds and damage underwater vegetation.

The proposal to use Poplar Island, by contrast, has backing from such groups as the Chesapeake Bay Foundation, the Alliance for the Chesapeake Bay, the Maryland Waterman's Association, the Maryland Saltwater Sporting Association and the Maryland Charter Boat Association as well as state and federal agencies.

"It's an unprecedented coalition that has found an innovative solution to a nagging problem in the bay," said Rod Coggin, spokesman for the bay foundation.

"It may not be the best solution, but it's a pretty good one to restore some habitat and restore some wetlands," he said.

Funding for the \$50 million project is not settled. Originally, the federal government was to pay 75 percent of the cost, but it is now unlikely that funds will be available from the Republican-controlled Congress.

The port administration is now seeking state funding for the project, Hart said.

ANGUS PHILLIPS

# Dredging Up the Facts on Poplar Island

**M**yths have a way of spreading when people want something really badly. Thus has the myth developed that if the Port of Baltimore gets its way and turns 37 million cubic yards of dredge spoil into a rock-lined, 1,100-acre island in the middle of Chesapeake Bay, the result will somehow be a handsome recreation of lost bay glory.

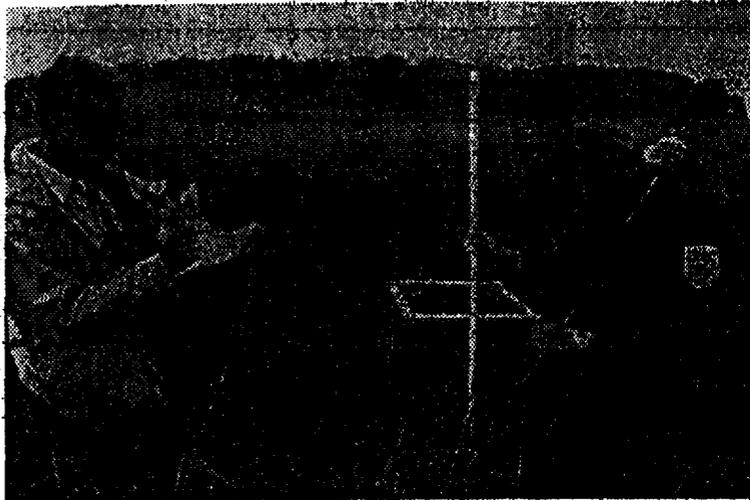
That's what federal and state authorities are hinting as they rush to sell the proposed Poplar Island "habitat restoration project," which in fact is a dredge-spoil dump in a wild and already beautiful place.

News stories this spring when the project first popped up suggested the objective of the \$50 million to \$100 million project is to "restore a vanishing island in the middle of Chesapeake Bay to its turn-of-the-century shape."

In fact, the objective is to find a handy place to dump barge-loads of silt, sand and muck that are sucked continually from the harbor approaches to Baltimore to keep the channels deep enough for big commercial ships.

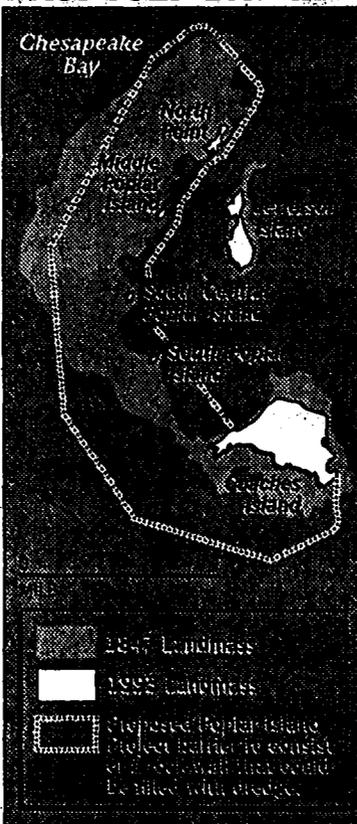
The 2½-mile-long island that the Port of Baltimore, Corps of Engineers, U.S. Fish & Wildlife Service, state Department of Natural Resources and a host of other government agencies want to see built would, said Nick Carter, a DNR biologist familiar with the project, "look vaguely like a large crescent," but not at all like the original island, which bore the stamp of nature in all its timeless irregularity.

"If I set myself up as an arbiter of beauty," said Carter, "I wouldn't build it this way. But wildlife doesn't care," he added, "and I think it will solve some serious problems."



BY ANGUS PHILLIPS—THE WASHINGTON POST  
John Gill, with Leslie Gehrich, says of Poplar Island project: "If done right, this could protect existing bird habitat [and] help water quality."

## PROPOSED BARRIER



willing to float start-up costs with state money," said Hart, if it can wring the funds from the legislature.

The Corps has completed a required environmental impact statement, due for release in November. And opinion leaders and news types are being led out to the site for tours in an effort to build public approval.

I was on such a foray last week, led by John Gill of the U.S. Fish & Wildlife Service, a Chesapeake specialist who is a key promoter of the project.

Standing on the squishy ground of a sweet-smelling Coaches Island marsh, Gill described his vision of a day to come when the great, rock-faced crescent island would be done. Angling off its stony front, facing the northerly storms that have wracked Poplar for centuries, he described underwater structures to attract rockfish and perch; on the back, man-made channels directing tidal flow to a broad marsh planted in lowland grasses and full of birds and muskrats and peeler crabs.

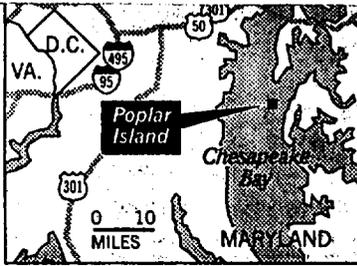
Carter's is a welcome dispassionate voice in the one-sided nondebate over the Poplar Island Project, which everyone seems to favor wholeheartedly. By all official accounts Poplar is a "win-win" situation in which the port, the ducks, fish and birds all profit, as do owners of adjacent islands that for decades have been eroded by pummelings from westerly storms.

The Poplar Project's aim is to build a huge, crescent-shaped, stone-faced barrier just west of weather-beaten Coaches and Jefferson islands. It would reflect the ancient outlines of Poplar Island, the original, natural barrier, which in colonial times measured more than 1,000 acres but has washed away to just a few muddy remnants.

According to the plan, the front half of the new island behind a 10-foot monolithic rock face would be high ground supporting trees while the back half would be low marsh for ducks and shorebirds and little fishes. Behind that, sea grasses would grow in a broad, protected bay as they did before the original Poplar washed away.

The barrier island also would protect private Jefferson Island, an 18-acre marshy tract owned by a group of Washington-area professionals whose clubhouse is continually imperiled by wind and tide, and larger Coaches, owned by a Philadelphia waterfowl hunter. Also, it would protect Tilghman Island, a substantial waterman's community three miles to the east.

But mostly, once the rock



BY DAVE COOK—THE WASHINGTON POST

perimeter is in place, it would provide a hole into which dredge spoil could be pumped for the next 20 years, if not longer. Poplar would get relatively clean spoil from the 50-foot-deep ship approaches outside Baltimore Harbor. Contaminated harbor spoil would continue to go to fully contained Hart-Miller Islands north of Baltimore.

The Port of Baltimore has faced a dilemma over where to put its clean dredge spoil since the Maryland legislature a few years ago banned a plan to free-dump it in the deep trench that runs down the middle of the Chesapeake. Hart-Miller Islands are two or three years from being full and other dumping areas are likewise topping up.

So Poplar looked terrific, according to port spokesman Mike Hart, particularly when the remnants of the barrier island were deeded over to the project for free by the Jefferson Island owners, and the Army Corps of Engineers expressed hope that \$15 million in federal construction funds could be used for the rock perimeter.

Congressional cutbacks since have knocked down the Corps funding for the novel dredge-spoil project to about \$2½ million, Carter said. The port itself is now

Beyond that he saw an 800-acre grass-choked bay providing refuge and food for aquatic critters, and on the protected high ground of Coaches and Jefferson islands egrets, herons and eagles continued to nest in tall trees that might otherwise have fallen to the ravages of erosion.

"If done right," said Gill, "this could protect existing bird habitat, help water quality by confining dredge spoil rather than just dumping it, and restore aquatic habitat that's being lost to erosion."

It's a big if, of course, and a long wait-and-see. If the Poplar Project survives its current budgetary troubles, 18 months of perimeter construction could start next spring. Already, dredges and barges are strung in the shallows, building test structures and pumping sand for fill.

For at least 20 years the place will be filling up, and it'll be years after that before vegetation is complete.

Construction is never pretty and anyone who has seen finished, man-made dredge islands knows they are utilitarian at best in appearance. At 1,100 acres, Poplar would be the dredge spoil island to end all dredge spoil islands. The Poplar Project may indeed be the best possible solution to a thorny problem, as its government proponents say. But every benefit has a price.

Restored jewel in the Chesapeake's crown? Not too likely. How about innovative, moderately inoffensive dredge-spoil dump. And don't look too close.



..... Feb 13 ..... 19 95 .....

WE HEREBY CERTIFY, that the annexed advertisement of

*US Army Corps of Engineers*

was published in "THE BALTIMORE SUN" a daily newspaper printed  
and published in the City of Baltimore Feb 11, 1995

The Baltimore Sun Company,

By..... *P. Reilly* .....

4070

**NOTICE OF PUBLIC MEETING  
POPLAR ISLAND RESTORATION**

The Baltimore District of the U.S. Army Corps of Engineers (COE) issued a Notice of Intent in the Federal Register, February 2, 1995, to prepare an Environmental Impact Statement (EIS) to assess the environmental effects of using dredged material to enlarge Poplar Island. The project would restore Poplar Island to its approximate size of 4,184 acres, thereby adding approximately 1,000 acres of wildlife habitat in the Upper Chesapeake Bay. The COE invites interested agencies, organizations, and individuals to a public scoping meeting to submit comments or suggestions on the environmental issues or recommended scope of the EIS. The public scoping meetings are to be held as follows:

- February 21, 1995 (7:00 pm)  
Tilghman Elementary School  
Tilghman, Maryland
- February 23, 1995 (7:00 pm)  
Beach Elementary School  
Chesapeake Beach, Maryland

The meetings will be held in format and location to provide equal opportunities for residents of Eastern and Western Shore, Maryland, and to take part in the public involvement process. Comments received at the meeting or written to the COE will be considered.

U.S. Army Corps of Engineers  
Poplar Island Restoration Study  
PAINT CENAB-PL-PC  
P.O. Box 1715  
Baltimore, Maryland 21203-1715

**NOTICE**

**OF PUBLIC SCOPING MEETING  
POPLAR ISLAND RESTORATION**

The Baltimore District of U.S. Army Corps of Engineers (COE) issued a Notice of Intent in the Federal Register, February 6, 1995, to prepare an Environmental Impact Statement (EIS) to assess the environmental effects of using dredged material to enlarge Poplar Island. The project would restore Poplar Island to its approximate size in 1847, thereby adding approximately 1,000 acres of wildlife habitat in the Upper Chesapeake Bay. The COE invites interested agencies, organizations, and individuals to a public scoping meeting to submit comments or suggestions on the environment issues or recommended scope of this EIS. The public scoping meetings are to be held as follows:

- February 21, 1995 (7:00 pm) **Tilghman Elementary School**  
**Tilghman, Maryland**
- February 23, 1995 (7:00 pm) **Beach Elementary School**  
**Chesapeake Beach, Maryland**

The two meetings will be identical in format and are being held to provide equal opportunities for residents on both the Eastern and Western Shores of the Chesapeake Bay to take part in the public involvement program.

Comments may be presented at the meeting or sent to the following address:

U.S. Army Corps of Engineers  
Poplar Island Restoration Study  
Attn: CENAB-PL-PC  
P.O. Box 1715  
Baltimore, Maryland 21203-1715

2/18  
03499

OFFICE OF

**The Capital**

Published by

**THE CAPITAL-GAZETTE NEWSPAPERS, INC.**

HOLDER OF CONTRACT FOR ANNE ARUNDEL COUNTY ADVERTISING

**CERTIFICATE OF PUBLICATION**

Annapolis, Md., February 18, 1995

We hereby certify, that the annexed

Notice

Poplar Island Restoration

was published in

**The Capital**

a newspaper published in the City of Annapolis, Anne Arundel County, Maryland, once a week for Two

successive weeks before the     

day of     , 19     

The insertions being made the 15<sup>th</sup>, 18<sup>th</sup>

February, 19 95

**THE CAPITAL-GAZETTE NEWSPAPERS, INC.**

By T. Blatterberger

No. E. C.

# ANNEX D

## LIST OF PREPARERS

## Annex D

### List of Preparers

Carol Anderson-Austra	Landscape Architect USACE, Baltimore District
Joe Berg	Project Scientist (Wetlands) EA Engineering, Science, and Technology, Inc.
Daniel M. Bierly	Civil Engineer USACE, Baltimore District
Cedric A. Bland	Civil Engineering Technician USACE, Baltimore District
Jane Boraczek	Project Scientist (Fisheries, Ichthyoplankton) EA Engineering, Science, and Technology, Inc.
Stacey Brown	Civil Engineer, Study Manager USACE, Baltimore District
Wesley E. Coleman	Oceanographer USACE, Baltimore District
Richard Connelly	Project Scientist (Benthic Macroinvertebrates) EA Engineering, Science, and Technology, Inc.
Peggy Derrick	Project Scientist (Plankton, Water Quality) EA Engineering, Science, and Technology, Inc.
Jeff Elseroad	Project Scientist (Water/Sediment Quality) EA Engineering, Science, and Technology, Inc.
Barbara J. Grider	Editor USACE, Baltimore District
Jack Gurley	Project Scientist (Socioeconomics, Cultural Resources, Recreation) EA Engineering, Science, and Technology, Inc.

Craig R. Holmesley	Realty Specialist USACE, Baltimore District
Charles Leasure	Project Scientist (Vegetation Resources) EA Engineering, Science, and Technology, Inc.
Dave Ludwig	Project Scientist (Wetland Ecology) EA Engineering, Science, and Technology, Inc.
Jeffrey A. McKee	Ecologist USACE, Baltimore District
Mark Mendelsohn	Biologist USACE, Baltimore District
Ed Morgereth	Project Scientist (Wildlife Resources) EA Engineering, Science, and Technology, Inc.
Robert Newman	Project Scientist (Air Quality) EA Engineering, Science, and Technology, Inc.
Robert Pace	Project Scientist (Geology and Physiography) EA Engineering, Science, and Technology, Inc.
Frank Pine	Biologist (Senior Technical Review) EA Engineering, Science, and Technology, Inc.
Michael R. Snyder	Civil Engineer USACE, Baltimore District
Christopher Spaur	Biologist USACE, Baltimore District
Brian Walls	Civil Engineer USACE, Baltimore District

## **Technical Assistance Provided**

Noel Beegle	Civil Engineer USACE, Baltimore District
Cece Donovan	Environmental Scientist Maryland Environmental Service
Robert Gore	Community Planner USACE, Baltimore District
Pete Kotulak	Engineer (Hydrology and Hydrodynamics) Moffatt & Nichol, Engineers
Patricia Mutschler	Economist USACE, Baltimore District
Christopher Norris	Graphics Specialist Maryland Environmental Service
Laura Seebeck	Biologist USACE, Baltimore District
Robert Smith	Coastal Engineer Maryland Environmental Service
Scott Tracey	Engineer (Design and Graphics) Gahagan & Bryant Associates, Inc.
Dennis Urso	Senior Engineer Gahagan & Bryant Associates, Inc.
Katherine Will	Attorney USACE, Baltimore District

# ANNEX E

## REFERENCES

## Annex E

### References

- Adam, P. 1990. *Saltmarsh Ecology*. Cambridge Studies in Ecology. University Press, Cambridge.
- Adams, D.D. 1978. Release of nutrients from freshwater marsh sediments and recently perturbed dredge sediments presented at the NBS 5th Annual Symposium on Controlled Release of Bioactive Materials. Gaithersburg, Maryland. Unpublished.
- Ayvazian, S.G., L.A. Deegan, and J.T. Finn. 1992. Comparison of habitat use by estuarine fish assemblages in the Acadian and Virginian zoogeographic assemblages. *Estuaries* 15(3):368-383.
- Baird, D., and R.E. Ulanowicz. 1989. The seasonal dynamics of the Chesapeake Bay Ecosystem. *Ecol. Monogr.* 59(4):329-364.
- Baker, P.K., and R. Mann. 1991. Soft Shell Clam, in *Habitat Requirements of Chesapeake Bay Living Resources, Second edition* (Funderburk *et al.*, eds.). Prepared for Chesapeake Bay Program (CBP).
- Batiuk, R.A, S. Bieber, V. Carter, W.C. Dennison, P. Heasley, R.E. Hickman, S. Kollar, K.A. Moore, R.J. Orth, N.B. Rybicki, L.W. Staver, and J.C. Stevenson. 1992. *Chesapeake Bay Submerged Aquatic Vegetation Habitat Requirements and Restoration Targets: A Technical Synthesis*. USEPA, Chesapeake Bay Program (CBP), Annapolis, Maryland.
- Bayley, S., H. Rabin, and C.H. Southwick. 1968. Recent decline in distribution of eurasian milfoil in Chesapeake Bay. *Chesapeake Science*. 9(3):173-181.
- Bean, G.A., M. Fusco, and W.L. Klarman. 1973. Studies on the "Lake Venice Disease" of eurasian milfoil in Chesapeake Bay, 1958-1975. *Chesapeake Science*. 14(4):279-280.
- Blankenship, K. 1994. Rising from the depths: plan would use sediment to rebuild island for Bay wildlife. *Bay Journal*. 4(7):1-6.
- Boesch, D.F. 1973. Classification and community structure of macrobenthos in the Hampton Roads area, Virginia. *Mar. Biol.* 21:226-244.
- Booth, D.P., and R.T. Saucier. 1974. Dredged material disposal effects and alternatives. *Water Spectrum*. 6(3):26-33.

- Brownlee, D.C., and F. Jacobs. 1987. Mesozooplankton and microzooplankton in the Chesapeake Bay, in *Contaminant Problems and Management of Living Chesapeake Bay Resources* (S.K. Majumbar, L.W. Hall and H.M. Austin, eds.), pp. 217-269. The Penn. Acad. Of Science.
- Buck, Gene. 1995. Info Summary for Congress and Staff. Abstract of Associated Press Release on Chesapeake Bay Blue Crabs. Internet 17 February 1995.
- Butowski, N.H. 1995. Maryland Department of Natural Resources, Fisheries Biologist, Fisheries Management Plans. Personal communication, Letter to Carol Anderson-Austra, 5 April 1995.
- Carriker, Melbourne R. 1967. Ecology of estuarine benthic invertebrates: a perspective, in *Estuaries* (G.H. Lauff, ed.), pp. 442-487. Est. Amer. Assoc. Advanc. Sci., Washington, D.C.
- Carter, Nick. 1995. Maryland Department of Natural Resources. Personal communication.
- Cashin, J.A. 1956. Density of spoil in suction dredging. *Dock Harb. Auth.* 37(433):232.
- Chao, L.N., and J.A. Musik. 1977. Life history, feeding habits and functional morphology of juvenile sciaenid fishes in the York River estuary, Virginia. *Fish. Bull.* 75:657-702.
- Chesapeake Bay Program (CBP). 1995. State of the Chesapeake Bay-1995. Printed by U.S. Environmental Protection Agency for Chesapeake Bay Program. 45pp.
- Chesapeake Bay Program (CBP). 1990-1994. Maryland's Chesapeake Bay Water Quality Monitoring Program Database. Maryland Department of Natural Resources, Resource Assessment Administration.
- Chesapeake Bay Program (CBP). 1978. Submerged Aquatic Vegetation Aerial Survey Database. Virginia Institute of Marine Science.
- Chesney, E.J., Jr. 1989. Estimating the food requirements of striped bass larvae (*Morone saxatilis*): effects of light, turbidity, and turbulence. *Mar. Ecol. Prog. Ser.* 53(2):191-200.
- Christoffers, E.W. 1990. National Oceanographic and Atmospheric Administration, Annapolis. Personal communication, Letter to V. Harrison, Assistant Secretary, Maryland Department of Natural Resources.
- Cloern, J.E. 1982. Does the benthos control phytoplankton biomass in South San Francisco Bay? *Mar. Ecol. Prog. Ser.* 9:191-202.

- Conant, R. 1986. *A Field Guide to Reptiles and Amphibians, Second edition*. Houghton Mifflin Company, Boston.
- Correll, D.L. 1987. Nutrients in Chesapeake Bay, in *Contaminant Problems and Living Chesapeake Bay Resources* (S.K. Majumbar, L.W. Hall and H.M. Austin, eds.), pp.298-320. The Penn. Acad. of Science,
- Cronin, W.B. 1985. Islands of the Chesapeake, Poplar Island. *Chesapeake Bay Magazine*. 15(3):24-26.
- Dauer, D.M., H.R. Barker, Jr., R.M. Ewing, W.T. Harlan, J.W. Sourbeer, and G.M. Tourtellotte. 1982. Predation pressure, resource limitation and the structure of benthic infaunal communities. *Int. Revue Gen. Hydrobiol.* 67:477-489.
- Day, J.W., C.A. S. Hall, W. M. Kemp, and A. Yanez-Arancibia. 1989. The estuarine bottom and benthic subsystem, in *Estuarine Ecology* (John Wiley & Sons, eds.), pp. 338-375. New York, New York.
- Department of the Army (DA). 1995. Implementing Ecosystem Restoration Projects in Connection with Dredging. Regulation EC 1105-2-209. Department of the Army, U.S. Army Corps of Engineers, Washington, DC. March.
- Department of Natural Resources (DNR). 1995. Commercial Fisheries Landings Database 1980-1993.
- Department of Natural Resources (DNR). 1993. Report of Commercial Charterboats, Area 27, South Central Chesapeake Bay.
- Diaz, R.J., and L.C. Schaffner. 1990. The functional role of estuarine benthos in *Perspectives on the Chesapeake Bay*, (M. Haire and E.C. Chrome, eds.), Chapter 2, pp. 25-56. CBP/TRS 41/90. Chesapeake Research Consortium, Gloucester Point, VA.
- Diaz, R.J., and D.F. Boesch. 1977. *Habitat Development Field Investigations. Windmill Point Marsh Development Site, James River, Virginia. Appendix C. Environmental Impacts of Marsh Development with Dredged Material: Acute Impacts on the Macrobenthic Community*. Report No. WES-TR-D-77-23-APP-C (Final Report). USACE Waterways Experiment Station (WES), Vicksburg, Mississippi.
- Dovel, W. L. 1971. *Fish eggs and larvae of the upper Chesapeake Bay*. Natural Resource Institute, Univ. of MD.
- EA Engineering, Science and Technology (EA). 1995a. *Poplar Island Restoration Project. First Quarter Data Report (Fall Survey)*. Prepared for Maryland Port Administration (MPA). Final. June.

- EA Engineering, Science and Technology (EA). 1995b. *Poplar Island Restoration Project. Second Quarter Data Report (Winter Survey)*. Prepared for Maryland Port Administration (MPA). Final. October.
- EA Engineering, Science and Technology (EA). 1995c. *Poplar Island Restoration Project. Third Quarter Data Report (Spring Survey)*. Prepared for Maryland Port Administration (MPA). Final. October.
- EA Engineering, Science and Technology (EA). 1995d. *Poplar Island restoration project. Fourth quarter data report (Summer Survey)*. Prepared for Maryland Port Administration (MPA). Final. October.
- EA Engineering, Science and Technology (EA). 1996a. *Poplar Island Test Dike Monitoring Report*. Prepared for U.S. Army Corps of Engineers - Baltimore District. Draft Final. February.
- EA Engineering, Science and Technology (EA). 1996b. *FY 1995 Sediment Sampling and Chemical Analysis for Baltimore Harbor and Chesapeake Bay, Maryland*. Prepared for U.S. Army Corps of Engineers - Baltimore District. Draft. February.
- Earth Engineering and Sciences, Inc. (E2Si). 1995. *Subsurface Investigation, Poplar Island Restoration Project, Chesapeake Bay, Talbot County, Maryland*. Interim Draft Report.
- Earth Engineering and Sciences, Inc. (E2Si). 1994. *Pre-feasibility Geotechnical Study for Poplar Island Wetlands Project, Poplar Island, MD*. Prepared for Maryland Environmental Service (MES). February.
- Environmental Protection Agency (EPA). 1990-1993. Environmental Monitoring and Assessment Program - Estuaries (EMAP-E) Virginian Province Database. Office of Research and Development, Narragansett, Rhode Island. "Although data described in this report have been funded wholly or in part by the U.S. EPA through its EMAP-Estuaries Program, it has not been subjected to Agency review, and therefore does not necessarily reflect the views of the Agency and no official endorsement should be inferred."
- Environmental Protection Agency (EPA) and Department of the Army (DA). 1994. Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual (Draft). EPA 823-B-94-002. Environmental Protection Agency, Washington, DC and Department of the Army, US Army Corps of Engineers, Washington, DC. June.
- Environmental Protection Agency (EPA) and Department of the Army (DA). 1995. QA/QC Guidance for Sampling and Analysis of Sediment, Water, and Tissues for Dredged Material Evaluations - Chemical Evaluations. EPA 823-B-95-001. Environmental Protection Agency, Washington, DC and Department of the Army, US Army Corps of Engineers, Washington, DC. April.

Eskin, Rich. 1995. Maryland Department of the Environment, Technical and Regulatory Services Administration. Personal communication.

Feigenbaum, D., and M. Kelly. 1984. Changes in the lower Chesapeake Bay food chain in presence of the sea nettle *Chrysoira quinquecirrha* (Scyphomedusa). *Marine Ecology Progress Series* 19:39-47.

Funderburk, S.L., S.J. Jordan, J.A. Mihursky, and D. Riley. 1991. *Habitat requirements for Chesapeake Bay living resources*. Prepared for Living Resources Subcommittee of Chesapeake Bay Program (CBP). June.

Fish and Wildlife Service (FWS). 1988. Habitat Suitability Index Models: Diamondback Terrapin (Nesting) - Atlantic Coast. Fish and Wildlife Service, U. S. Department of the Interior. Biological Report FWS/OBS-82-10.151. March.

Fish and Wildlife Service (FWS). 1985. Habitat Suitability Index Models: Least Tern. Fish and Wildlife Service, U. S. Department of the Interior. Biological Report FWS/OBS-82-10.103. August .

Fish and Wildlife Service (FWS). 1984. Habitat Suitability Models: Spotted Seatrout. Fish and Wildlife Service, U. S. Department of the Interior. Biological Report FWS/OBS-82-10.75. September .

Fish and Wildlife Service (FWS) and U.S. Army Corps of Engineers (USACE) . 1989a. Species Profiles: Life Histories and Environmental Requirements of coastal fishes and Invertebrates (Mid-Atlantic) - Bluefish. Fish and Wildlife Service, U. S. Department of the Interior and Coastal Ecology Group, U. S. Army Engineer Waterways Experiment Station, U. S. Army Corps of Engineers. Biological Report 82-11.96. April.

Fish and Wildlife Service (FWS) and U.S. Army Corps of Engineers (USACE) . 1989b. Species Profiles: Life Histories and Environmental Requirements of coastal fishes and Invertebrates (Mid-Atlantic) - Weakfish. Fish and Wildlife Service, U. S. Department of the Interior and Coastal Ecology Group, U. S. Army Engineer Waterways Experiment Station, U. S. Army Corps of Engineers. Biological Report 82-11.109. August .

Fish and Wildlife Service (FWS) and U.S. Army Corps of Engineers (USACE) . 1985. Species Profiles: Life Histories and Environmental Requirements of coastal fishes and Invertebrates (Mid-Atlantic) - Mummichog and Striped Killifish. Fish and Wildlife Service, U. S. Department of the Interior and Coastal Ecology Group, U. S. Army Engineer Waterways Experiment Station, U. S. Army Corps of Engineers. Biological Report 82-11.40. June.

- Fish and Wildlife Service (FWS) and U.S. Army Corps of Engineers (USACE) . 1982. Species Profiles: Life Histories and Environmental Requirements of coastal fishes and Invertebrates (Mid-Atlantic) - Summer and Winter Flounder. Fish and Wildlife Service, U. S. Department of the Interior and Coastal Ecology Group, U. S. Army Engineer Waterways Experiment Station, U. S. Army Corps of Engineers. Biological Report 82-11.112. August .
- Gahagen and Bryant Associates (GBA) and Moffatt and Nichol (M&N). 1995a. *Poplar Island Restoration Project Hydrodynamic and Coastal Engineering 60% Draft Report*. Prepared for Maryland Port Administration. August.
- Gahagen and Bryant Associates (GBA) and Moffatt and Nichol (M&N). 1995b. *Poplar Island Restoration Project 50% Submittal*. Prepared for Maryland Port Administration.
- Gahagen and Bryant Associates (GBA) and Moffatt and Nichol (M&N). 1995c. *Poplar Island Restoration Project Site Development Guidelines: Environmental Study and Engineering Design*. Prepared for Maryland Port Administration, January 1995.
- Gahagen and Bryant Associates (GBA) and EA Engineering, Science and Technology, Inc. (EA). 1989. *Port of Baltimore, Dredged Material Management Master Plan (Draft)*. Prepared for Maryland Port Administration. July 1989.
- Garbisch, E.W., P.B. Woller, and R.J. McCallum. 1975. *Saltmarsh Establishment and Development*. Environmental Concern, Inc., St. Michaels, Maryland.
- Garry, Marty. 1995. Maryland Department of Natural Resources, Recreational Fisheries/Pound Net Project Leader. Personal communication.
- Gill, John. 1995. Fish and Wildlife Service, U. S. Department of the Interior, Annapolis, Maryland. Personal communication.
- Goda, Y. 1985. *Random Seas and Design of Maritime Structures*. University of Tokyo Press.
- Goodger, T.E. 1995. National Marine Fisheries Service, Oxford, Maryland. Personal communication, Letter to Edward Morgereth, Jr. 8 August 1995.
- Goodwin and Associates, Inc. 1995. Phase I Marine and Terrestrial Archeological Surveys for the Poplar Island Reclamation Project, Talbot County, Maryland. Executive Summary Report. Prepared for GBA - M&N, A Joint Venture. January.
- Goshorn, Dave. 1995. Maryland Department of Natural Resources, Fisheries Division. Personal communication.

- Grassle, J.F., and J.P. Grassle. 1974. Opportunistic life histories and genetic systems in marine benthic polychaetes. *J. Mar. Res.* 32:253-284.
- Gucinski, H., and Ecological Analysts, Inc. (EAI). 1984. *Deep Trough Study of the Chesapeake Bay*. Prepared for Maryland Department of Natural Resources.
- Hildebrand, S.F., and W.C. Schroeder. 1928. *Fishes of the Chesapeake Bay*. Bulletin of the United States Bureau of Fisheries. Vol. XLIII. Part 1. U.S. Government Printing Office, Washington, D.C.
- Hobbs, C.H., and S.M. Kimball. 1990. Sand Resources of Lower Chesapeake Bay. *Marine Mining*. 9(4):429-440.
- Holland, A.F., V.A. Dickens, J. Gerritsen, J.A. Ranasinghe, L.C. Scott, and A.T. Shaughnessy. 1989. *Long-term Benthic Monitoring and Assessment Program for the Maryland Portion of Chesapeake Bay: Interpretive Report*. Prepared for the Maryland Dept. of Natural Resources by Versar, Inc. Columbia, MD. CBRM-LTB/EST-2.
- Holland, A.F., M.H. Heigel, K.R. Kaumeyer, N.K. Mountford, and J.A. Mihursky. 1980. The influence of predation on infaunal abundance in upper Chesapeake Bay. *Mar. Biol.* 57:221-235.
- Holland, A.F. 1976. *Analysis and evaluation of preoperational benthic data at Calvert Cliffs June 1971-February 1974*. Maryland Power Plant Siting Program. Report No. CC-76-1, 80 p.
- Homer, M.L., and J.A. Mihursky. 1991. Spot, in *Habitat Requirements of Chesapeake Bay Living Resources, Second edition* (Funderburk et al., eds.). Prepared for Chesapeake Bay Program (CBP).
- Homer, M., and W.R. Boynton. 1978. *Stomach analysis of fish collected in the Calvert Cliffs Region, Chesapeake Bay-1977*. Final Report to Maryland Power Plant Siting Program, Univ. of Maryland, Chesapeake Biol. Lab. Ref. No. UMCEES 78-154-CBL.
- Houde, E.D., and C.E. Zastrow. 1991. Bay Anchovy. In: *Habitat Requirements of Chesapeake Bay Living Resources, Second edition* (Funderburk et al., eds.). Prepared for Chesapeake Bay Program (CBP).
- Hunt, C.B. 1967. *Physiography of the United States*. W.H. Freeman and Co. 480p.
- Hunt, L.J. 1978. Corps developing wildlife habitat to solve disposal problems. *Civil Engineering*. 48(9):101-106.

- Hunt, L.J. 1976. Upland habitat development on dredged material presented at the *World Dredging Conference on Environmental Effects & Technology of Dredging*, San Francisco. Unpublished.
- Kemp, W.M., and W.R. Boynton. 1981. External and internal factors regulating metabolic rates in an estuarine benthic community. *Oecologia*. 51:19-27.
- Kennedy, V.S. 1991. Eastern Oyster, in *Habitat Requirements of Chesapeake Bay Living Resources, Second edition* (Funderburk *et al.*, eds.). Prepared for Chesapeake Bay Program (CBP).
- Kirkley, J.E. 1987. A socio-economic overview of the Chesapeake Bay fisheries, in *Contaminant Problems and Management of Living Chesapeake Bay Resources*. (S.K. Majumbar, L.W. Hall and H.M. Austin, eds.), pp. 54-62. The Penn. Acad. Of Science.
- Klauda, R.J., S.A. Fisher, L.W. Hall, Jr., and J.A. Sullivan. 1991. Alewife and Blueback Herring in *Habitat Requirements of Chesapeake Bay Living Resources, Second edition* (Funderburk *et al.*, eds.). Prepared for Chesapeake Bay Program (CBP).
- Landin, M.C., J.W. Webb, and P.L. Knutson. 1989. *Long-term Monitoring of Eleven Corps of Engineers Habitat Development Field Sites Built of Dredged Material, 1974-1987*. Prepared for U.S. Army Corps of Engineers. Final Report. Technical Report D-89-1. December.
- Landin, M.C., and A.C. Miller. 1988. Beneficial uses of dredged material: a strategic dimension of water resource management in proceedings of *The Wildlife Management Institute north American Wildlife & Natural Resources 53rd Conference*, Louisville, Kentucky. pp. 316-326.
- Landin, M.C. 1978. *Annotated Tables of Vegetation Growing on Dredged Material Throughout the United States*. U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.
- Lasalle, M.W., M.C., Landin, and J.G. Sims. 1991. Evaluation of the Flora and Fauna of a *Spartina alterniflora* marsh established on dredged material in Winyah Bay, South Carolina. *Wetlands*. 11(2):191-208.
- Lippson, A.J., and R.L. Lippson. 1984. *Life in the Chesapeake Bay*. The Johns Hopkins University Press, Baltimore, Maryland.
- Lippson, A.J., M.S. Haire, A.F. Holland, F. Jacobs, J. Jensen, R.L. Moran-Johnson, T.T. Polgar, and W.A. Richkus. 1979. *Environmental Atlas of the Potomac Estuary*. Prepared for Power Plant Siting Program, Maryland Department of Natural Resources.

- Lippson, A.J., and R.L. Moran. 1974. *Manual for Identification of Early Developmental Stages of Fishes of the Potomac River Estuary*. Martin Marrietta Corporation. PPSP-MP-13. December.
- Lippson, A.J., ed. 1973. *The Chesapeake Bay in Maryland: An Atlas of Natural Resources*. The Johns Hopkins University Press, Baltimore, Maryland.
- Lowery, D. 1992. The distribution and function of prehistoric sites within the lower Bay Hundred District, Talbot County, Maryland. *Journal of Middle Atlantic Archeology*. 8:11-40.
- Lunz, J.D., T.W. Zeigler, R.T. Huffman, R.J. Diaz, and E.J. Clairain. 1978. *Habitat Development Field Investigations. Windmill Point Marsh Development Site, James River, Virginia, Summary Report*. WES-TR-D-77-23 (Final Report). USACE WES, Vicksburg, Mississippi.
- Maryland Department of Economic and Employment Development (MDEED). 1994. Talbot County: Brief Economic Facts. 4p.
- Maryland Department of Transportation. 1991. *Recommendations of Governor William Donald Schaefer's Task Force on Dredged Material Management*. Baltimore. Unpublished.
- Maryland Environmental Service (MES). 1994. *Prefeasibility Report for Poplar Island Restoration Project*. Prepared for Maryland Port Administration. May.
- Maryland Environmental Service (MES) and U.S. Fish and Wildlife Service (FWS). 1994. *Partners for Wildlife, Fish and Wildlife Habitat Restoration Agreement*. MES, Annapolis and FWS, Hadley, Massachusetts. Unpublished.
- Maryland Port Administration (MPA). 1990. Port of Baltimore; Dredged Material Management Master Plan. Report prepared for MPA by Gahagen and Bryant Associates and EA Engineering, Science and Technology, Inc. Unpublished.
- Maryland Port Administration (MPA). 1992. Dredging Needs and Placement Operations Program. [Revised, October 1992] Unpublished.
- McCauley, J.E., D.R. Hancock, and R.A. Parr. 1977. Benthic infauna and maintenance dredging: a case study. *Water Research*. Vol. 11, pp. 233-242.
- Miller, R.L. 1995. Maryland Department of Natural Resources; Fish, Heritage, and Wildlife Administration, Annapolis, Maryland. Personal communication, Letter to Don Redman, 19 July 1995.

- Minello, T.J., and R.J. Zimmerman. 1992. Utilization of natural and transplanted Texas salt marshes by fish and decapod crustaceans in *Marine Ecology - Progress Series*. 90(3):273-285.
- Molinero, F.J., and M.L. Sohn. 1992. *Chemical Oceanography*. CRC Press. Ann Arbor, Michigan.
- Montgomery, R.L., and F.H. Griffis, Jr. 1973. Corps of Engineers Dredged Material Research Program presented at the *Annual World Dredging Conference (5th)*, Hamburg, Germany. Unpublished.
- Mountford, N.K. 1995. Cove Corporation, Lusby, MD. Personal communication.
- Mountford, N.K., A.F. Holland, and J.A. Mihursky. 1977. Identification and description of macrobenthic communities in the Calvert Cliffs region of the Chesapeake Bay. *Chesapeake Sci.* 14:360-369.
- Myatt, E.N., and D.O. Myatt, III. 1990. *A study to determine the feasibility of building artificial reefs in Maryland's Chesapeake Bay*. Prepared for Maryland Department of Natural Resources. January.
- National Ocean Service (NOS). 1995. U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA). Personal communication. Rockville, MD.
- National Research Council (NRC). 1992. *Restoration of Aquatic Ecosystems: Science, Technology, and Public Policy*. National Academy Press, Washington, DC.
- Newling, C.J., and M.C. Landin. 1985. *Long-term Monitoring of Habitat Development at Upland and Wetland Dredged Material Disposal Sites, 1974-1982*. Prepared for U.S. Army Corps of Engineers. Final Report. Technical Report D-85-5. July.
- Nichol, John. 1995. National Marine Fisheries Service, Oxford, MD. Personal communication.
- O'Connell, T. 1995. Maryland Department of Natural Resources, Fisheries Biologist. Personal communication.
- Odum, E.P. 1983. *Basic Ecology*. Saunders College Publishing, Philadelphia.
- Officer, C.B., T.J. Smayda, and R. Mann. 1982. Benthic filter feeding: a natural eutrophication control. *Mar. Ecol. Prog. Ser.* 9:203-210.
- Orth, R.J., G.F. Anderson, K.P. Kiley, J.F. Nowak, and J.R. Whiting. 1992. *Distribution of Submerged Aquatic Vegetation in the Chesapeake Bay and Tributaries and Chincoteague Bay - 1991*. Prepared for Chesapeake Bay Program. December.

- Outten, Bill. 1995. Maryland Department of Natural Resources, Shellfish Project Leader. Personal communication.
- Pfitzenmeyer, H.T. 1970. *Benthos in Gross Physical and Biological Effects of Overboard Spoil Disposal in Upper Chesapeake Bay, Univ. Maryland*. Natural Resources Institute Special Report No. 3, pp.26-38.
- Ramraj, R. 1994. The WRA of 1986 - Background and beneficial use of dredged material with particular reference to the Great Lakes. *Journal of Coastal Research*. 10(1):30-38.
- Reed, P.B., Jr. 1988. U. S. Fish and Wildlife national list of plant species that occur in wetlands: Northeast (Region 1).
- Rhoads, D.C. 1974. Organism-sediment relations on the muddy sea floor. *Oceanogr. Mar. Biol. Ann. Rev.* 12:263-300.
- Rhoads, D.C., and D.K. Young. 1970. The influence of deposit feeding organisms on sediment stability and community trophic structure. *J. Mar. Res.* 28:150-177.
- Richkus, W.A., H.M. Austin, and S.J. Nelson. 1992. Fisheries assessment and management synthesis: lessons for Chesapeake Bay, in *Perspectives on Chesapeake Bay, 1992: Advances in Estuarine Sciences*. Chesapeake Research Consortium Publication No. 143.
- Ringler, R.F. 1992. *Birds of Hart Miller Island*.
- Roberts, M.H., Jr., M.E. Bender, and D.F. Boesch. 1975. *The Chesapeake Bay: A Study of Present and Future Water Quality and Its Ecological Effects. Volume II: Analysis and Projection of Ecological Conditions*. Final Report to National Commission on Water Quality. Virginia Inst. Mar. Sci., Spec. Rept. Appl. Mar. Sci. & Ocean Eng. No. 91. 199 pp.
- Saucier, R.T. 1978. Dredged material - waste product or resource. *Water Spectrum*. 10(4):10-18.
- Sanders, H.L., S. Garner-Price, J.F. Grassle, G.R. Hampson, C.C. Jones, and L.S. Morse. 1980. Anatomy of an oil spill: long-term effects from the grounding of the barge Florida off West Falmouth, Massachusetts. *J. Mar. Res.* 38:265-380.
- Sanders, H.L. 1958. Benthic studies in Buzzards Bay. I. Animal-sediment relationships. *Limnol. Oceanogr.* 3:245-258.
- Schwartz, F.J. 1961. Fishes of Chincoteague and Sinepuxent Bays. *American Midland Naturalist*. 65(2):384-408.

- Seneca, E.D., S.W. Broome, W.W. Woodhouse, L.M. Cammem, and J.T. Lyon. 1976. Establishing *Spartina alterniflora* marsh in North Carolina. *Environmental Conservation*. 3(3):185-189.
- Sellner, Kevin G. 1987. Phytoplankton in Chesapeake Bay: Role in carbon, oxygen and nutrient dynamics, in *Contaminant Problems and Living Chesapeake Bay Resources* (S.K. Majumbar, L.W. Hall and H.M. Austin, eds), pp. 134-157. The Penn. Acad. Of Science.
- Setzler-Hamilton, E.M., and L.W. Hall. 1991. Striped Bass, in *Habitat Requirements of Chesapeake Bay Living Resources, Second edition* (Funderburk et al., eds.). Prepared for Chesapeake Bay Program (CBP).
- Setzler-Hamilton, E.M. 1987. Utilization of Chesapeake Bay by early life stages of fishes, in *Contaminant Problems and Management of Living Chesapeake Bay Resources* (S.K. Majumdan, L.W. Hall, Jr., and H.M. Austin, eds.), pp. 63-93. The Pennsylvania Academy of Science, Philadelphia.
- Shulenberger, E. 1970. Responses of *Gemma gemma* to a catastrophic burial. *Veliger* 13, 163.
- Smith, H.K. 1978A. Habitat creation with dredged material. *World Dredging and Marine Construction*. 14(8):14-20.
- Smith, H.K. 1978B. An Introduction to Habitat Development on Dredge Material (Final Report). *Synthesis of Research Results, Dredged Material Research Program*. WES-TR-DS-78-19. USACE WES, Vicksburg, Mississippi.
- Smith, H.K. 1977. Feasibility of Developing Biological Habitats on Dredged Material presented at the *Center for Dredging Studies 9th Dredging Seminar*. Unpublished.
- Smith, H.K. 1976. Marsh and Wildlife Habitat Development upon Dredged Material; a Proven Alternative presented at the World Dredging Conference on *Environmental Effects & Technology of Dredging, San Francisco*. Unpublished.
- Smith, R.L. 1980. *Ecology and Field Biology*. Harper & Row Publishers, New York, New York. 835 pp.
- Soots, Jr., R.F., and M.C. Landin. 1978. Development and Management of Avian Habitat on *Dredged Material Islands in Dredged Material Research Program*. WES-TR-DS-78-18. USACE WES, Vicksburg, Mississippi.
- U.S. Army Corps of Engineers (USACE). 1995. Environmental Assessment: Poplar Island - Test Containment Dike Construction, Talbot County, Maryland.

- U.S. Army Corps of Engineers (USACE). 1992. *Evaluating Environmental Effects of Dredged Material Management Alternatives - A Technical Framework*. EPA842-B-92-008, November.
- U.S. Army Corps of Engineers (USACE). 1984. *Shore Protection Manual, Volumes I and II*, Fourth edition. Waterways Experiment Station (WES), Coastal Engineering Research Center (CERC). U.S. Government Printing Office.
- U.S. Army Corps of Engineers (USACE). 1974. *Maintenance Dredging, FY 1974, Mare Island Channel and Turning Basin, Solano County, California*. Army Engineer District, San Francisco.
- U.S. Bureau of Census. 1990. Census of the United States. U.S. Government Printing Office. Washington, DC.
- U.S. Bureau of Census. 1989. Census of the United States. U.S. Government Printing Office. Washington, DC.
- U.S. Department of Agriculture (USDA) Soil Conservation Service. 1970. Soil Survey Talbot County, Maryland.
- U.S. Geological Survey (USGS). 1968. Geological Map of Maryland.
- Van Heukelem, W.F. 1991. Blue Crab, in *Habitat Requirements of Chesapeake Bay Living Resources, Second edition* (Funderburk et al., eds.). Prepared for Chesapeake Bay Program (CBP).
- Versar, Inc. 1990. *Impact Assessment of Craighill Channel Dredged Material Placement in the Deep Trough*. Prepared for Maryland Dept. of Natural Resources.
- Virginia Institute of Marine Science. 1978. *Storm Surge Height-Frequency Analysis and Model Prediction for Chesapeake Bay*. Special Report No. 189 in Applied Marine Science and Ocean Engineering.
- Virnstein, R.W. 1979. Predation on estuarine infauna: response patterns of component species. *Estuaries*. 2:69-86.
- Virnstein, R.W. 1977. The importance of predation of crabs and fishes on benthic infauna in Chesapeake Bay. *Ecology*. 58:1199-1217.
- Wheeler, T.B. 1995. MD, VA urged to ban crabbing in deep waters. *Baltimore Sun*, 11 August 1995.
- White, C.P. 1989. *Chesapeake Bay: Nature of the Estuary*. Tidewater Publishers, Centreville, Maryland.

- Windom, H.L. 1977. Ability of Saltmarshes to Remove Nutrient and Heavy Metals from Dredged Material Disposal Area Affluents. Dredged Material Research Program. WES-TR-D-77-37. USACE WES, Vicksburg, Mississippi.
- Wolf, P.L., J.L. Gallagher, and C.H. Pennington. 1977. Field Bioassay test for detecting Contaminant uptake from Dredged Material by Marsh Plants. *Dredged Material Research Program*. WES-MP-D-78-6. USACE WES, Vicksburg, Mississippi.
- Wolflin, J.P. 1995. U.S. Fish and Wildlife Service, Chesapeake Bay Field Office. Personal communication, Letter to Jane Boraczek, 16 February 1995.
- Wolflin, J.P. 1994. FWS, Annapolis, Maryland. Personal communication, Letter to Pending Projects, National Fish and Wildlife Federation.
- Wolflin, J.P. 1992. FWS, Annapolis. Personal communication, Letter to L. Zeni, MES.
- Young, D.K., and D.C. Rhoads. 1971. Animal-sediment relations in Cape Cod Bay, Massachusetts. I. A transect study. *Mar. Biol.* 11:242-254.