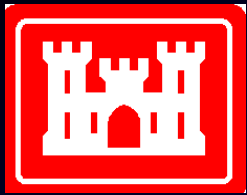


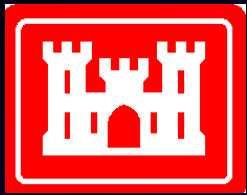
PAUL S. SARBANES
ECOSYSTEM
RESTORATION PROJECT
AT POPLAR ISLAND



Port of Baltimore: A Diverse and Competitive Port

- *Ranked 1st nationally in autos, forest products, and roll-on/roll-off, gypsum, and sugar in 2011*
- *Ranked 2nd in coal imported salt, and aluminum*
- *Ranked 4th in foreign cargo tonnage on the East Coast in 2011*
- 37.8M metric tons (\$51.4B) of cargo in 2010
- Port customers are in the Midwest, Northeast, and Mid-Atlantic regions
- Port has created 14,360 direct jobs and 108,000 jobs linked to port activities
- Responsible for \$3B in personal wages and \$300M in state and local tax revenues





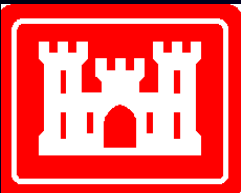
Four New Super Post-Panamax Cranes



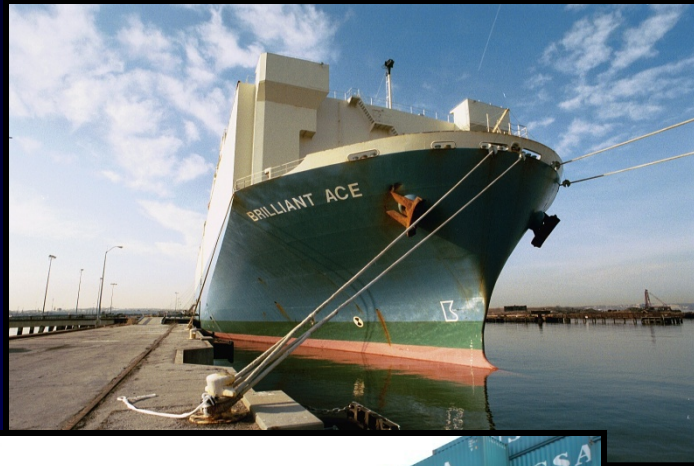


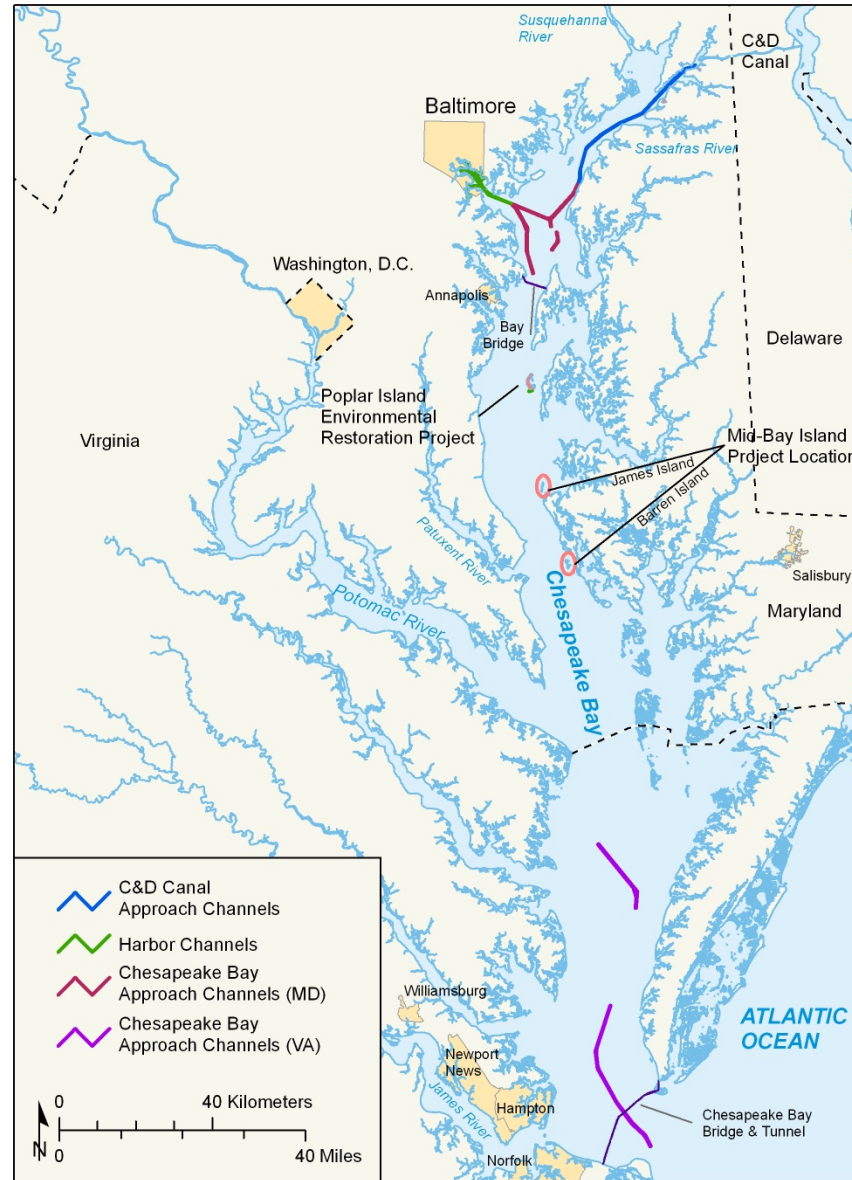
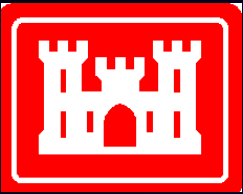
PORTS AMERICA
CHESAPEAKE

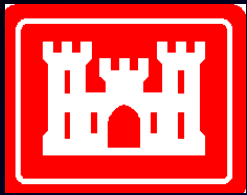
HARD-BAY AREA



Dredging is a Critical Component of a Safe, Efficient, and Competitive Port

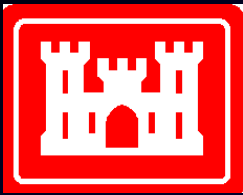






Poplar Island Goals

- Restore remote island habitat in the mid-Chesapeake Bay using clean dredged material from the Chesapeake Bay approach channels to the Port of Baltimore
- Optimize size capacity for clean dredged material while meeting the environmental restoration purpose of the project
- Protect the environment around the restoration site

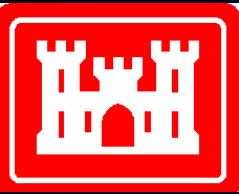


Project Delivery Team



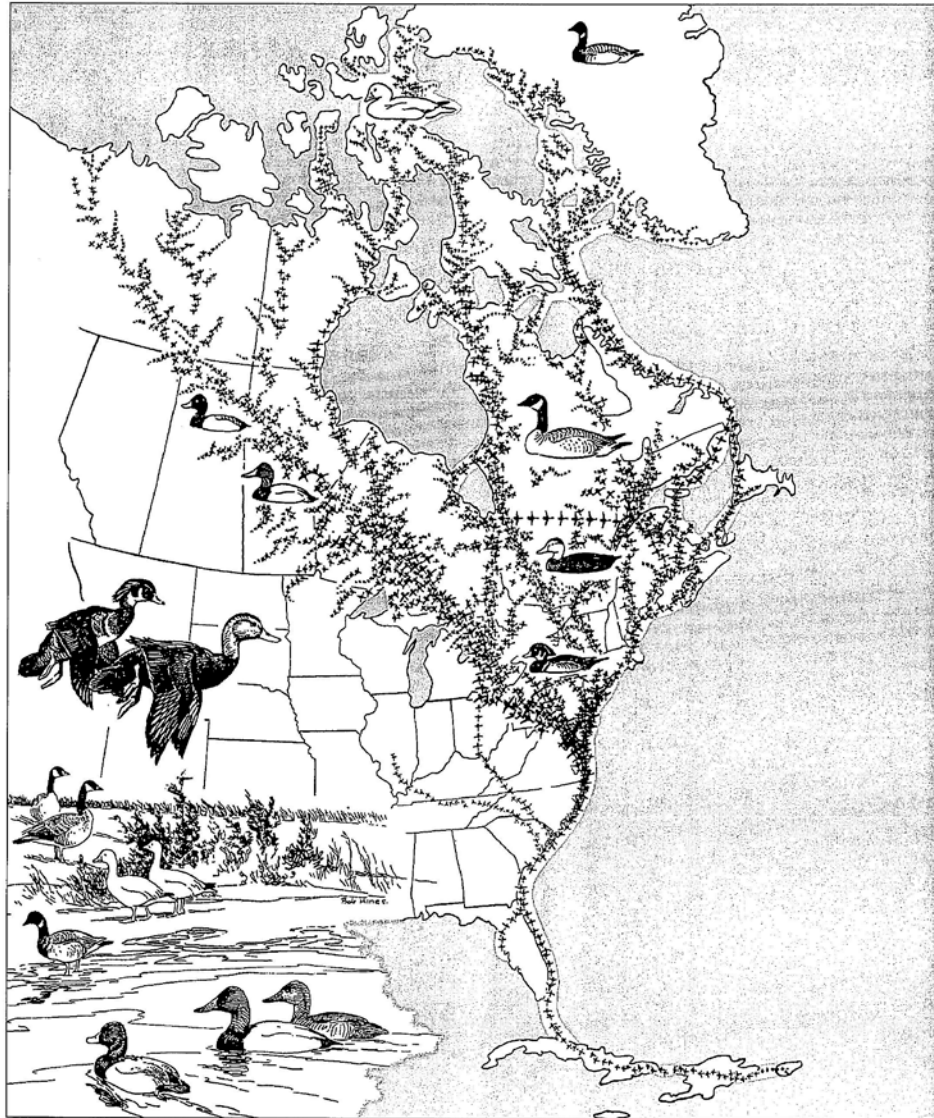
- Maryland Port Administration (MPA)
- US Environmental Protection Agency (USEPA), Region 3
- US Fish and Wildlife Service (USFWS)
- National Marine Fisheries Service (NMFS)
- National Oceanic and Atmospheric Administration (NOAA)
- Maryland Department of Natural Resources (MDNR)
- Maryland Department of the Environment (MDE)
- Maryland Geological Survey (MGS)
- Maryland Environmental Service (MES)
- University of Maryland Center for Environmental Science (UMCES)





U.S. Fish & Wildlife Service

Atlantic Flyway



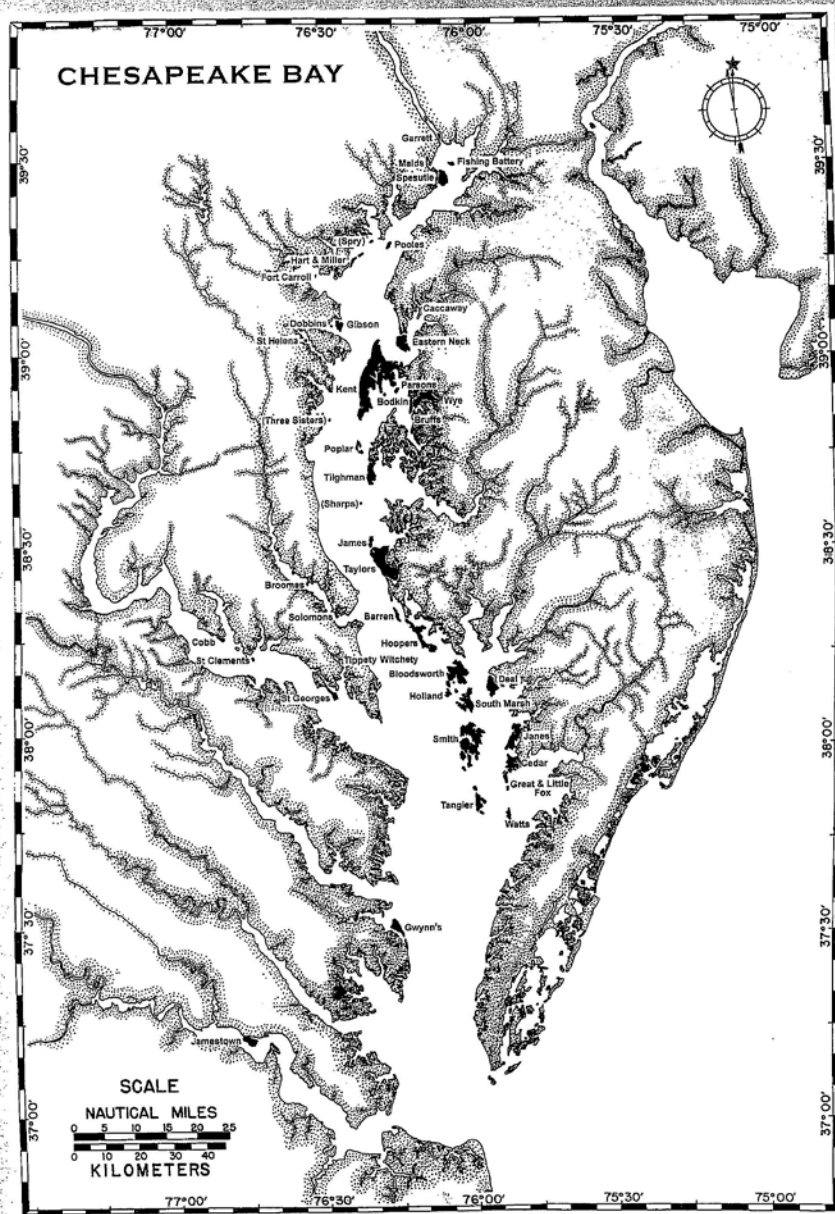
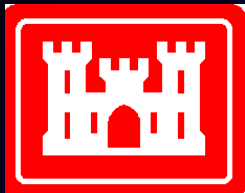
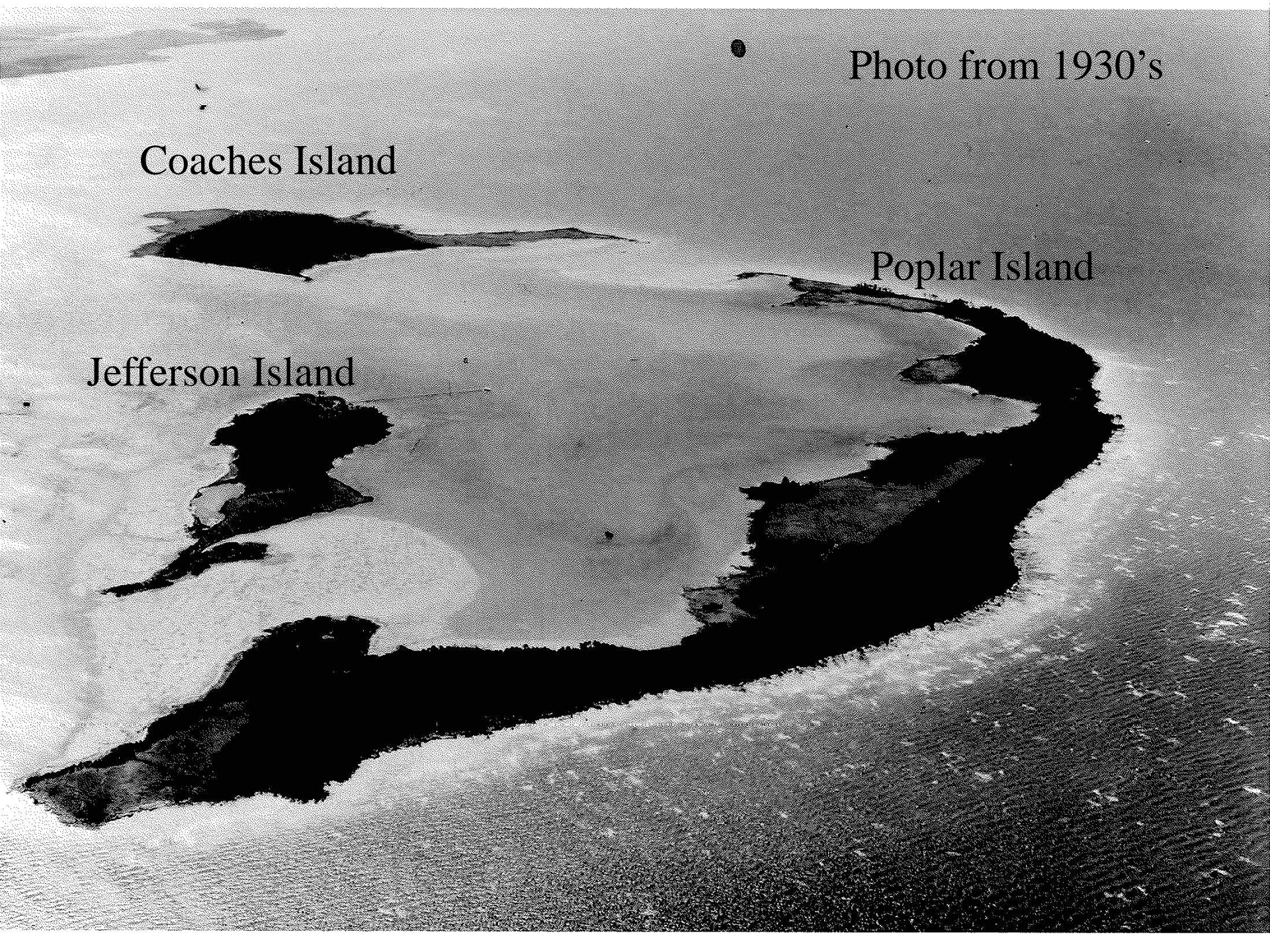


Photo from 1930's

Coaches Island

Poplar Island

Jefferson Island





Coaches Island

Jefferson Island

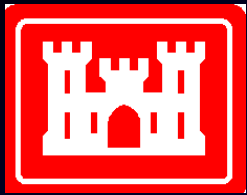
South Central Poplar
Island

Middle Poplar Island

North Point

Poplar Island Circa 1994



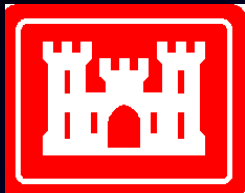


Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island



- Size: 1,715 acres (695 hectares)
- Capacity: 68 mcy (52 million m³)
- Cost: \$1.2 billion
- Uplands: 840 acres (340 hectares)
- Tidal marsh: 737 acres (298 hectares)
- 80% low marsh
20% high marsh
- Open Water Embayment: 138 acres (56 hectares)





Importance of Proper Dewatering



1
cubic foot

**Volume In-Situ Before Dredging
(85% Water)**



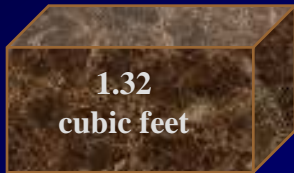
1.15
cubic feet

**Volume After Dredging (Clamshell)
(87% Water)**



1.62
cubic feet

**Volume At Deposition in Placement Site
(91% Water)**



1.32
cubic feet

**Volume In Site 2 Months After Placement
(Decanting, Drying, Consolidation)
(89% Water)**



.81
cubic foot

**Volume After 12 Months in Site
(Exceeds Length of Typical Drying Season)
(82% Water)**



.59
cu. foot

**Volume After 2 to 3 Years and
1 to 2 Additional Placement Lifts
(75% Water)**



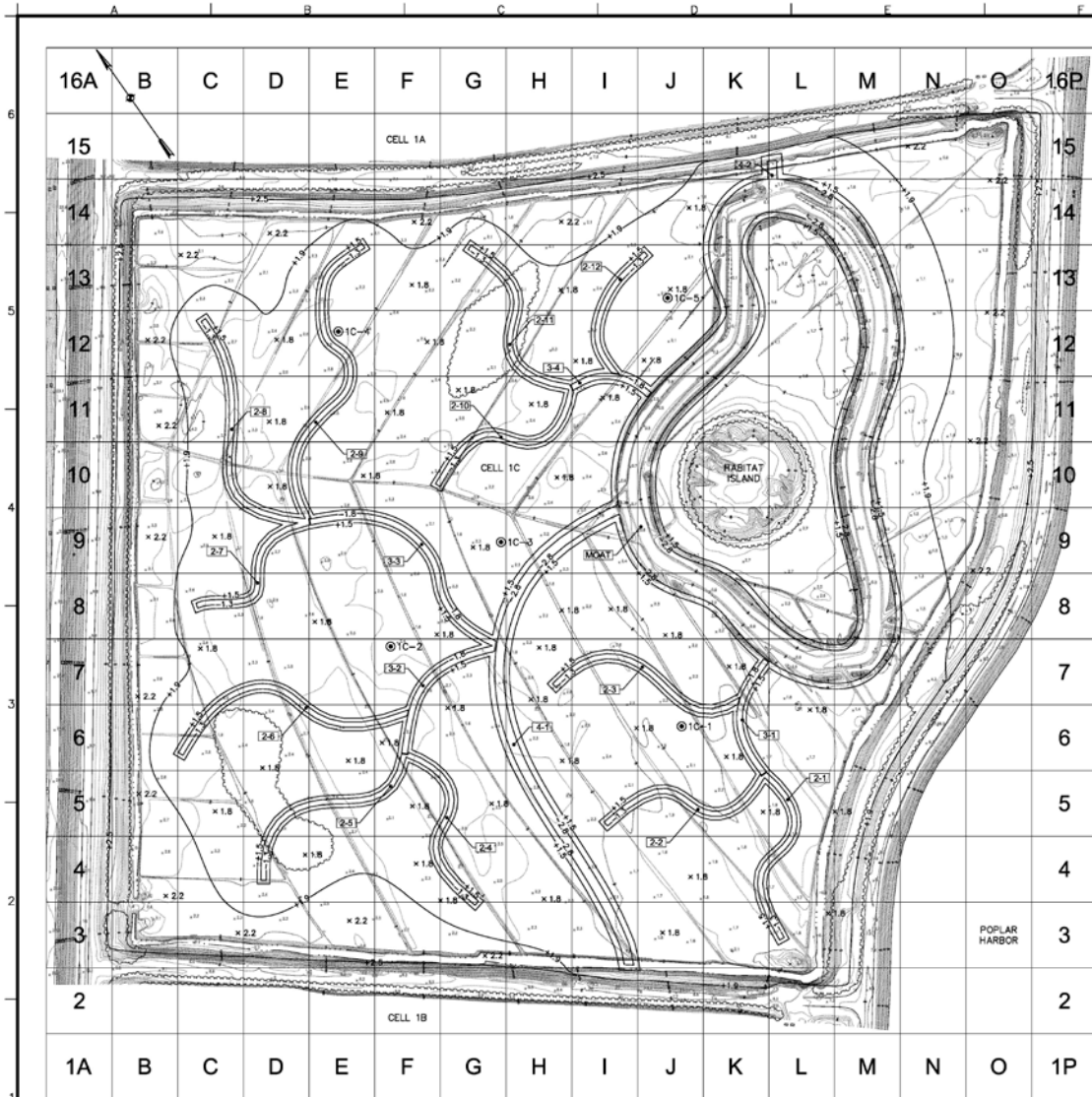
ISLAND
101
000010









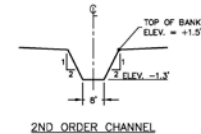
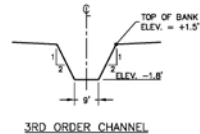
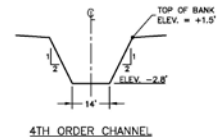
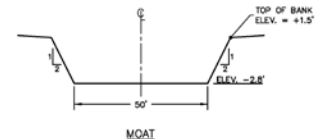


PLAN

SCALE: 1 IN.=80 FT.
 0 80 160

NOTES:

1. EXISTING CONTOURS SHOWN ON THIS PLAN WERE GENERATED FROM AN AERIAL SURVEY CONDUCTED BY AERO-METRIC, INC. IN SEPTEMBER 2008. EXISTING CONTOUR INTERVAL IS 0.5'.
2. ALL ELEVATIONS ARE IN FEET AND REFERENCE THE POPLAR CONSTRUCTION DATUM (PCD).
3. ALL COORDINATES ARE IN FEET AND REFERENCE THE MARYLAND STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83).
4. EXISTING SAMPLING POINT MARKERS SHALL BE PROTECTED FROM DAMAGE DURING GRADING OPERATIONS.
5. GRADE MOAT CHANNEL TO ELEVATION -2.8' WITH 2H:1V SIDE SLOPES UP TO ELEVATION +1.5'.
6. GRADE 4TH ORDER CHANNELS TO ELEVATION -2.8' WITH 2H:1V SIDE SLOPES UP TO ELEVATION +1.5'.
7. GRADE 3RD ORDER CHANNELS TO ELEVATION -1.8' WITH 2H:1V SIDE SLOPES UP TO ELEVATION +1.5'.
8. GRADE 2ND ORDER CHANNELS TO ELEVATION -1.3' WITH 2H:1V SIDE SLOPES UP TO ELEVATION +1.5'.
9. GRADE ALL INTERIOR DIKE SLOPES TO A 3H:1V SLOPE.
10. THE AREA WITHIN THE INSIDE TOP OF BANK OF THE MOAT CHANNEL (WHICH INCLUDES THE HABITAT ISLAND AND REMNANTS) DOES NOT REQUIRE GRADING.
11. GRADING OF THE CHANNEL CONNECTING THE TIDAL INLET STRUCTURE AND THE MOAT WILL BE COMPLETED BY THE CELL 1C TIDAL INLET STRUCTURE CONTRACTOR.



TYPICAL SECTIONS

HORIZONTAL SCALE: 1 IN.=20 FT.
 0 20 40

VERTICAL SCALE: 1 IN.=5 FT.
 0 5 10

LEGEND:

- EXISTING CONTOUR
- +1.5— PROPOSED CONTOUR
- x 1.8 PROPOSED SPOT ELEVATION
- ⊙ 1C-X EXISTING SAMPLING POINT
- [2X] 2ND ORDER CHANNEL
- [3X] 3RD ORDER CHANNEL
- [4X] 4TH ORDER CHANNEL
- MOAT MOAT CHANNEL



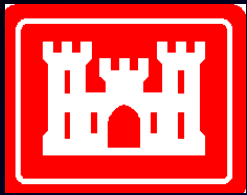
NO.	DESCRIPTION	DATE

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND	FILE NAME
DRAWING NUMBER	DATE: APRIL 2009 (PL SCALE: 1" = 1')
PLATE	SCALE: AS SHOWN
1	

PAUL S. SUBANES ECOSYSTEM RESTORATION PROJECT
 AT POPLAR ISLAND
 CELL 1C WETLAND DEVELOPMENT
FINAL GRADING PLAN

Sheet Number:
1

11/28/08
 11/28/08
 11/28/08



Wetland Cell Development Timeline

Dredge material inflow (years 1-4)



Crust management (years 1-4)



Channel excavation (years 4-5)



Marsh plain grading (year 5)



Tidal inlet construction (year 5)



Planting (year 6)









Least Tern



American Oyster
Catcher



Black Necked Stilt



Red Owl



Black Skimmer



American Avocets

Osprey



Snowy Owl





River Otter

8/10/06 10:56 PM





Diamondback Terrapin

902 Hatchlings in 2011



Least Tern Chick



Questions?