



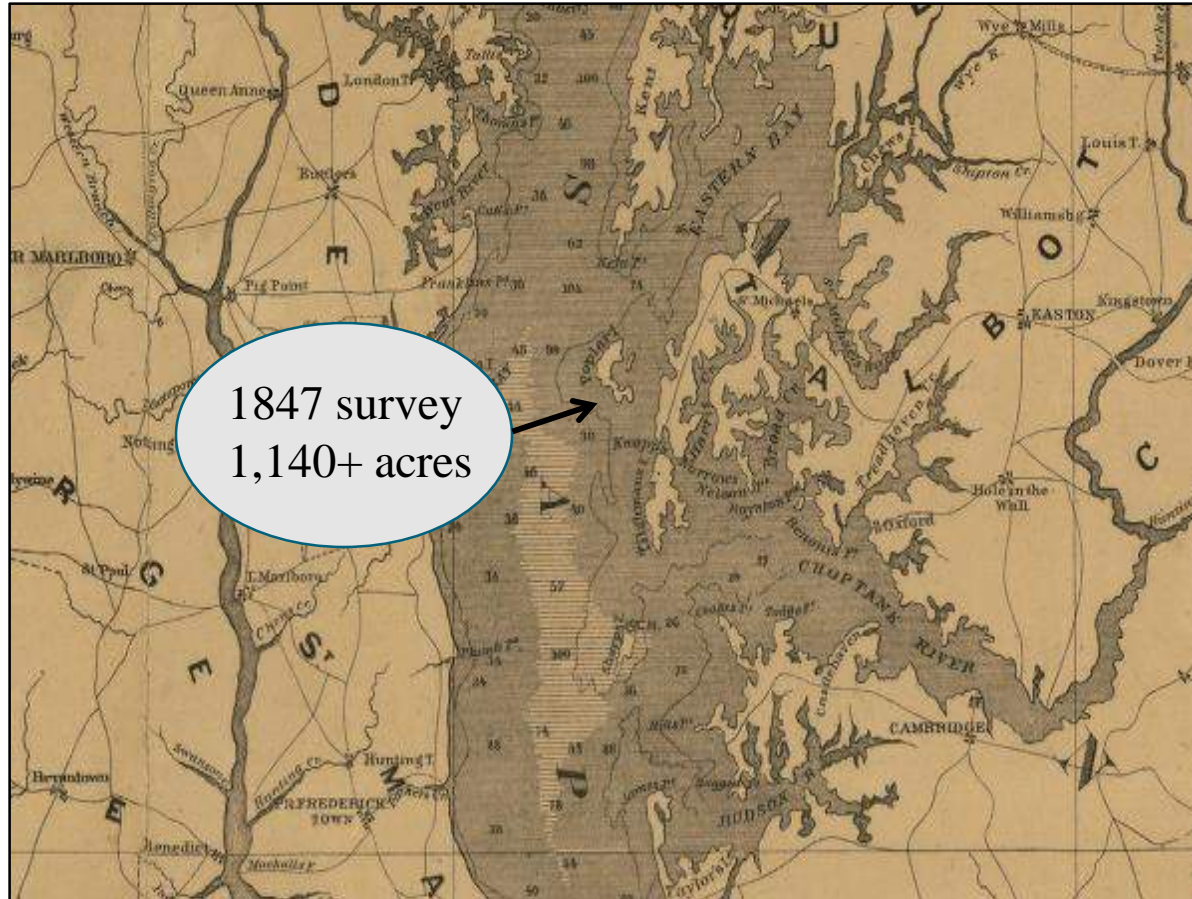
Paul S. Sarbanes
Ecosystem Restoration Project

Poplar Island

*An International Model
of Innovative Reuse*



Historic Map

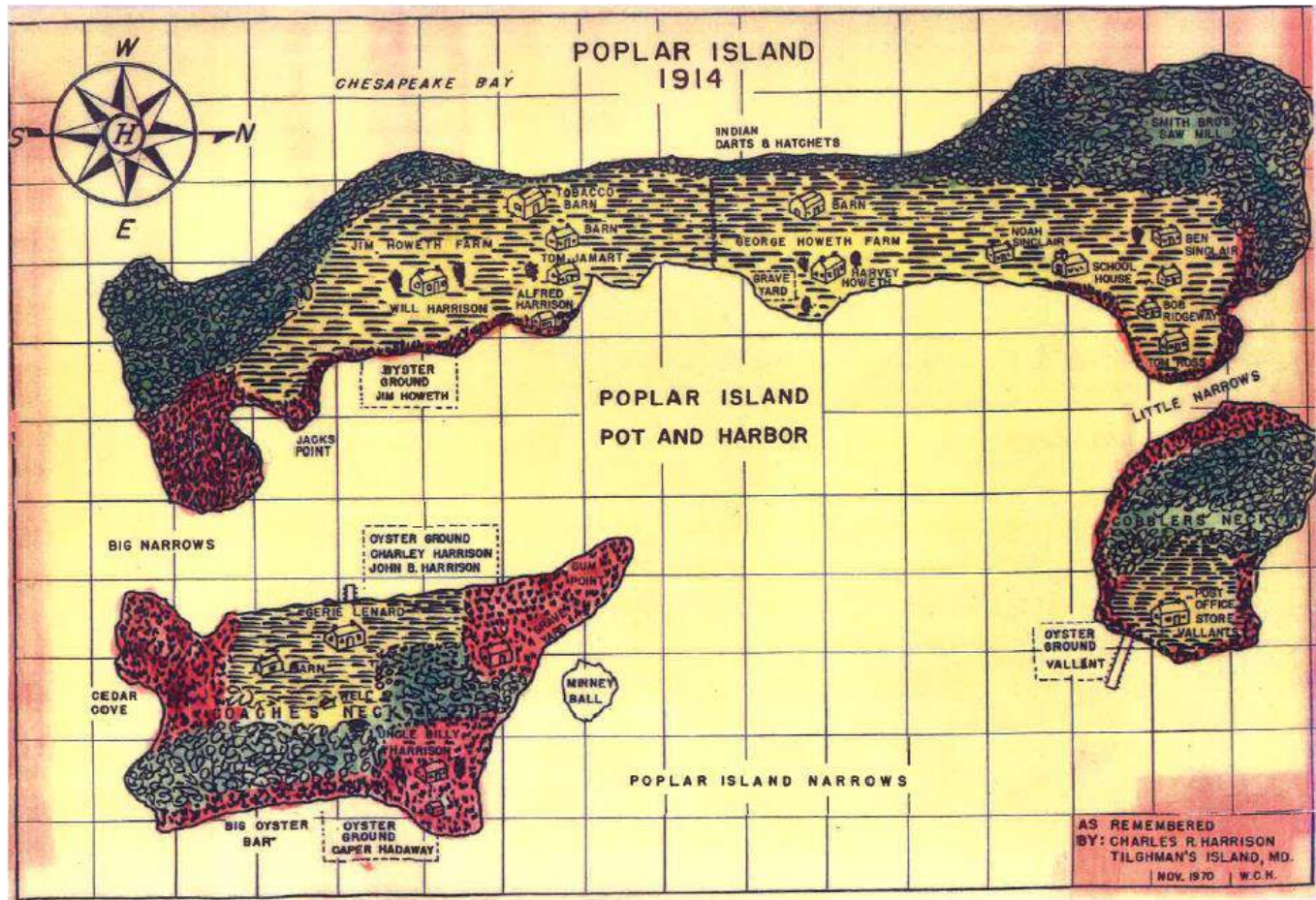


Over 400
Islands have
disappeared
due to erosion
and sea level
rise*

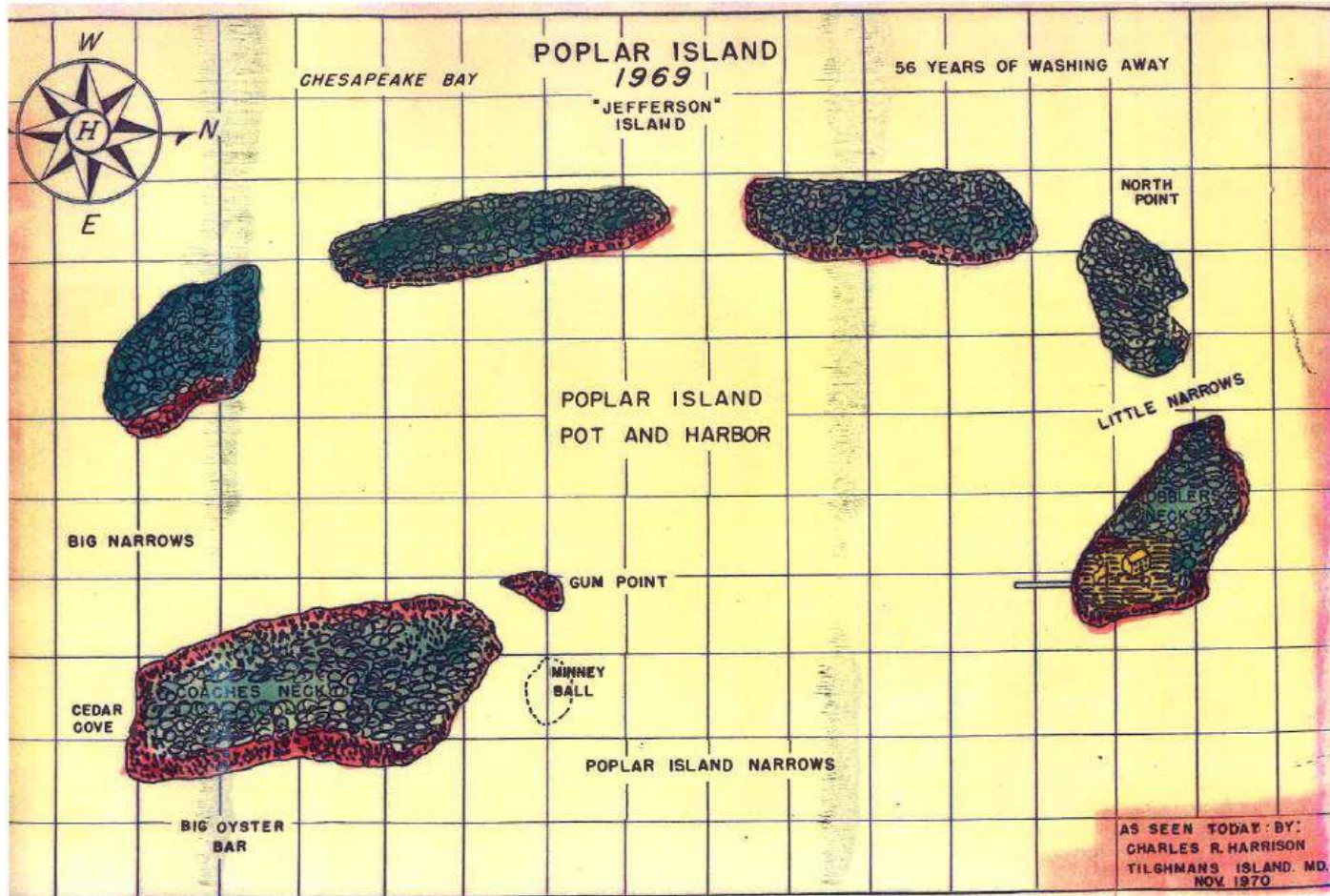
“The state of
Maryland loses
approximately
260 acres of
tidal shoreline
due to erosion
each year.”

*<http://www.chesapeakequarterly.net/sealevel/main8/>

Historic Map (1914)

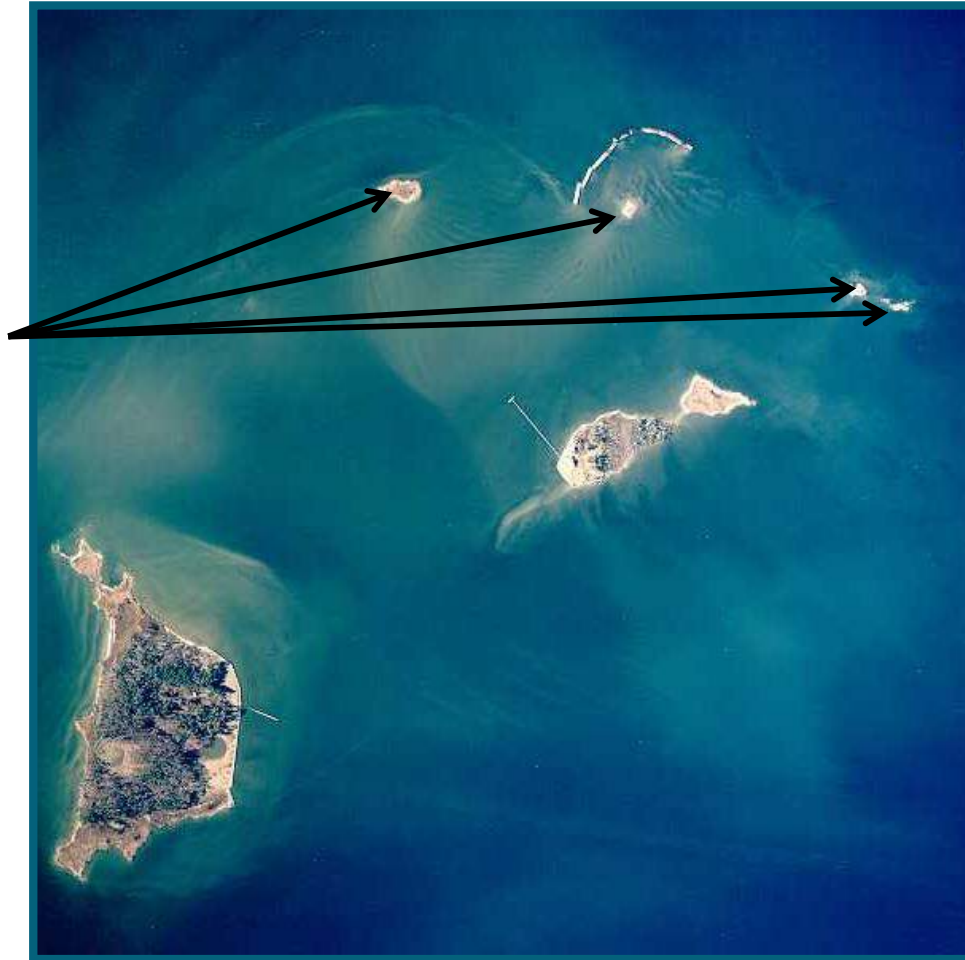


Historic Map (1969)



Results of Erosion (1993)

Remnants of
Poplar Island

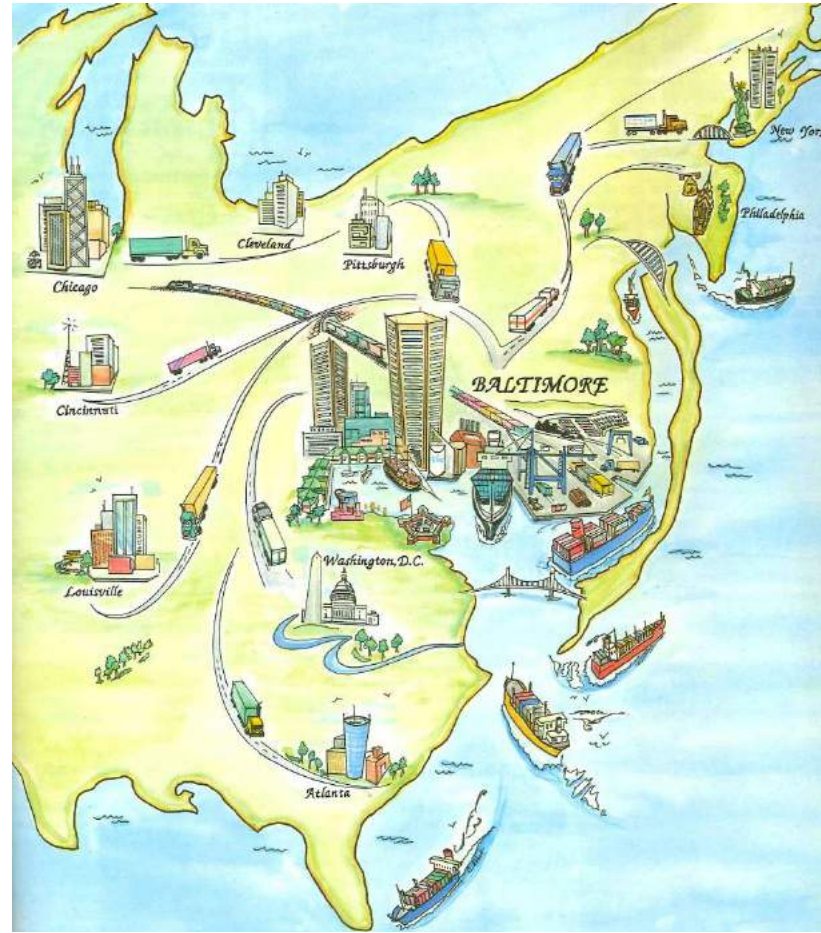


Aerial Photo (2018)

> 1,140 acres

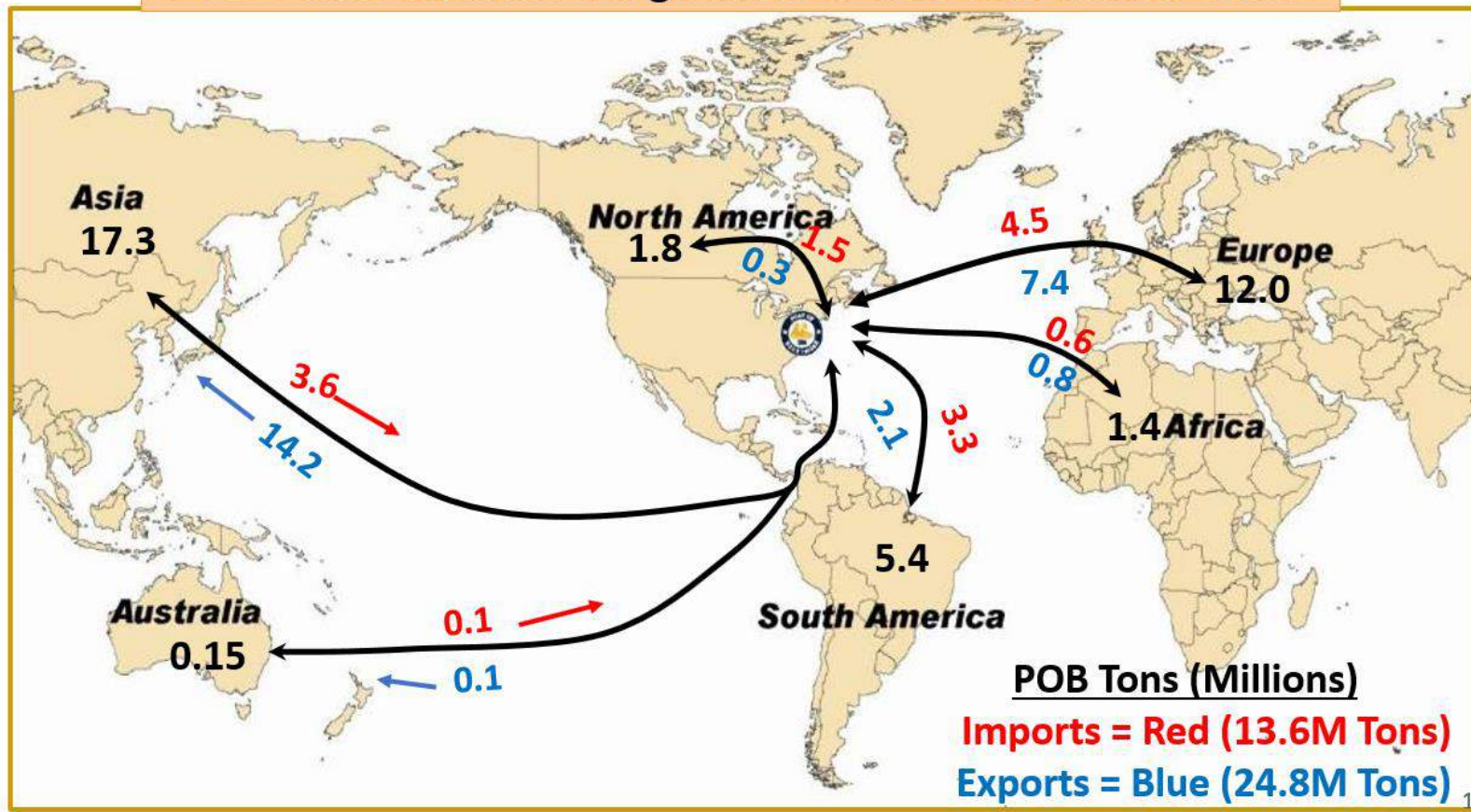


The Port of Baltimore Inland Location



The Port of Baltimore Global Reach

POB's International Cargo in 2017 was 38.4 Million Tons.



Port of Baltimore Economics

HOW DOES THE PORT BENEFIT
MARYLAND AND THE U.S.?



THE PORT OF BALTIMORE GENERATES:

- 37,300+ MD jobs
- 15,330+ direct jobs
- \$3.3 billion in wages annually
- \$395 million in state and local tax revenues annually

THE PORT OF
BALTIMORE CONNECTS
THE U.S. TO
INTERNATIONAL PORTS
IN COUNTRIES AROUND
THE WORLD.



BALTIMORE RANKS #1 IN:

- autos and light trucks
- roll-on and roll-off heavy equipment
- imported sugar and gypsum



BALTIMORE RANKS #2 IN:

- exported coal



BALTIMORE RANKS
9TH IN FOREIGN
CARGO VALUE
(\$59.7 BILLION)



OVER 10 MILLION
TONS OF CARGO
PASSED THROUGH
THE PORT IN 2018

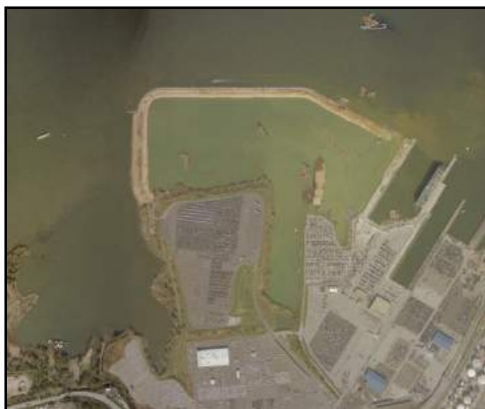


BALTIMORE RANKS 11TH
IN FOREIGN CARGO
TONNAGE
(43. MILLION TONS)

Dredged Material Placement Sites



Cox Creek



Masonville



Poplar Island



Hart-Miller Island

The Need to Dredge



How Dredging Works



How Dredging Works



How Dredging Works



How Dredging Works



How Dredging Works



Project Goals

- ▶ Optimize Capacity for Dredged Material
- ▶ Restore Remote Island Habitat
 - Unique habitat type that offers protected nesting and aquatic nursery areas within the Chesapeake Bay
 - Serves as important stop-overs for migratory birds along the Atlantic Flyway
 - Important wetland functions (nutrient and CO₂ sequestering)
 - Remote island habitat estimated loss of 10,500 acres over last 150 years
- ▶ Cause No Harm to the Environment
 - Monitor wildlife and surrounding conditions

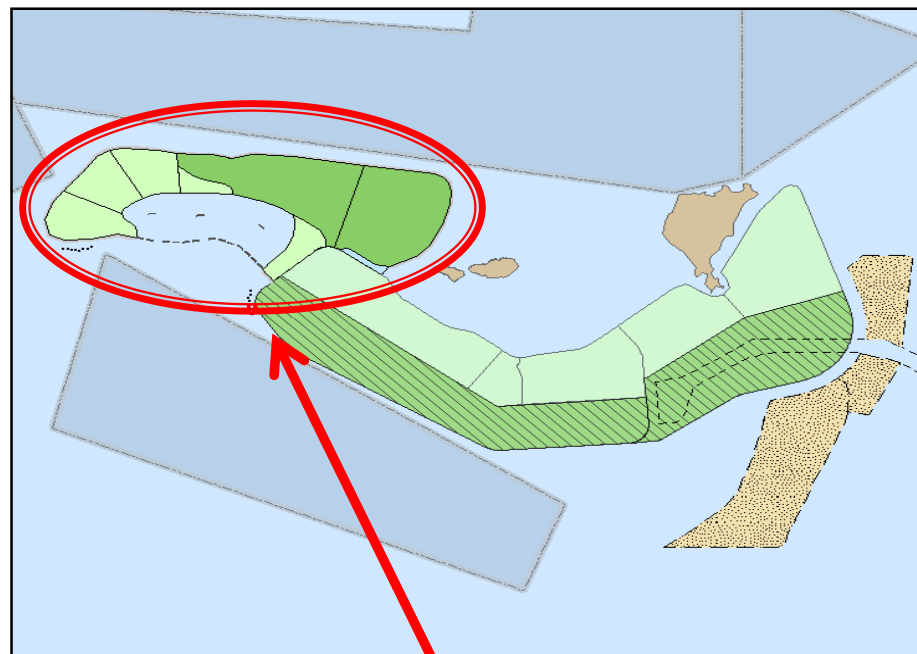
Project Goals

Remote Island Habitat

- Current: 1,140 acres
- Expansion: 575 acres
- 1,715 total acres



1,140 acres



575 acres

Habitat Restoration



Habitat Restoration



Habitat Restoration

NOVEMBER



The Result



Nesting Birds of Poplar Island

Common Tern



Least Tern



Bank Swallow



American Oystercatcher



Osprey



Black-necked Stilt



How Do We Measure Success?

- ▶ Almost 400 acres of wetlands restored
 - Just under 375 in spring 2018
- ▶ Over 227 bird species have been identified
- ▶ A total of 39 bird species have nested onsite
- ▶ As many as 1,600 terrapin hatchlings tagged in a single season

Cause No Harm to the Environment

- ▶ Exterior turbidity monitoring
 - Monitored 1 time/week during periods of construction
- ▶ Noise monitoring
 - All sound between 7 PM and 7 AM not to exceed 75 dBA
 - Data reviewed daily by MES
 - Sound readings collected using automated system

Cause No Harm to the Environment

▶ Water Quality Monitoring

Parameter	Limit
Turbidity	150 NTU daily 50 NTU 4-day average
pH	6.5–8.5 (MDE guidance up to 9.0)
TSS	800 mg/L daily 400 mg/L monthly average
Metals	Varies depending on State Water Quality Standards
DO	
DO %	
Salinity	
Conductivity	
Temperature	

Diamondback Terrapin Education



Terrapins are Tagged and Raised in Classrooms



School Release on Poplar Island





Public Tours



www.poplarislandrestoration.com



The U.S. Army Corps of Engineers (USACE) funds 75% of the Poplar Island project and the Maryland Department of Transportation Maryland Port Administration (MDOT MPA) funds the remaining 25%. MDOT MPA has a subcontract with the Maryland Environmental Service (MES) to perform day-to-day operations on the site.



Project Sponsors:

- Maryland Department of Transportation
Maryland Port Administration (MDOT MPA)
- U.S. Army Corps of Engineers



Project Team:

- US Fish and Wildlife Service (USFWS)
- National Marine Fisheries Service (NMFS)
- United States Geological Survey (USGS)
- National Oceanic and Atmospheric Administration (NOAA)
- Maryland Department of Natural Resources (MDNR)
- Maryland Department of the Environment (MDE)
- Maryland Environmental Service (MES)
- University of Maryland Center for Environmental Science (UMCES)





Questions?

Ryland Taylor

rtaylor@menv.com

Tours:

Poplartours@menv.com

410-770-6503