Maryland Coastal Bays Program

Our Watershed

5 Main Bays
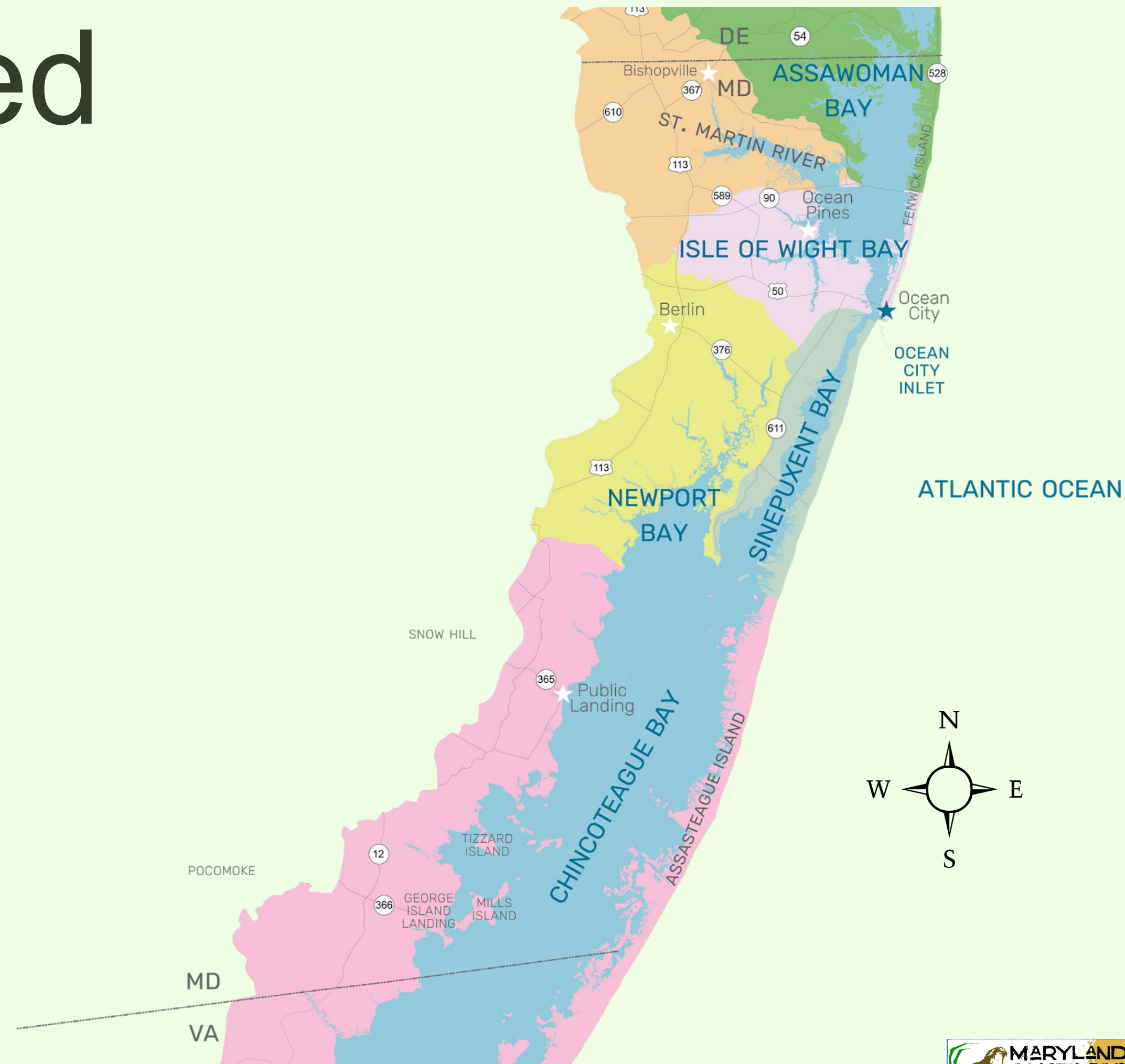
Assawoman

Isle of Wight

Sinepuxent

Newport

Chincoteague

How do we protect our bays?

Environmental Education

Explore the Estuary
Colonial Nesting Bird Counts
Voices of the Coastal Bays
K-12 Education
MWEEs
Summer Camps
Teacher Professional Development
Living Local
Climate Change Vulnerability Assessments
Discover Your Watershed
Boat Tours
Public Workshops
Wetland restoration

Scientific Monitoring

Water Quality Sampling
SAV Surveys
Fish Sampling
GIS Mapping
Horseshoe Crab Surveys
HAB Sampling
Homeowner's Guide
MCRA
Marine Debris
Stream Surveys
Bay Day
Clean-ups
Oyster gardening
Partnerships

Restoration Efforts

Invasive Removal
Living Shorelines
Artificial Nesting Platform
Island Restoration
Trash Clean-ups
Bays
State of the
Annual report
Cards
CAC

Outreach & Communications

Restoration Projects

Living Shorelines: Shoreline Resiliency

- Assateague Living Shoreline (Implemented 2018)
- Sinepuxent South (Planning/Design Stage)
- Jenkins Point (Permitting Stage)

Island Restoration: For Colonial Nesting Birds

- Reedy Island (Phase 1 Completed 2024)
- Tizzard Island, South Point Spoils, Skimmer Island

Wetland Restoration: Saltmarsh Sparrow Habitat

- Rum Point Runnels (Implemented Summer 2022)
- EA Vaughn Ditch Plug Modification (Implemented 2021)
- 9 other marsh projects in planning/implementation phase
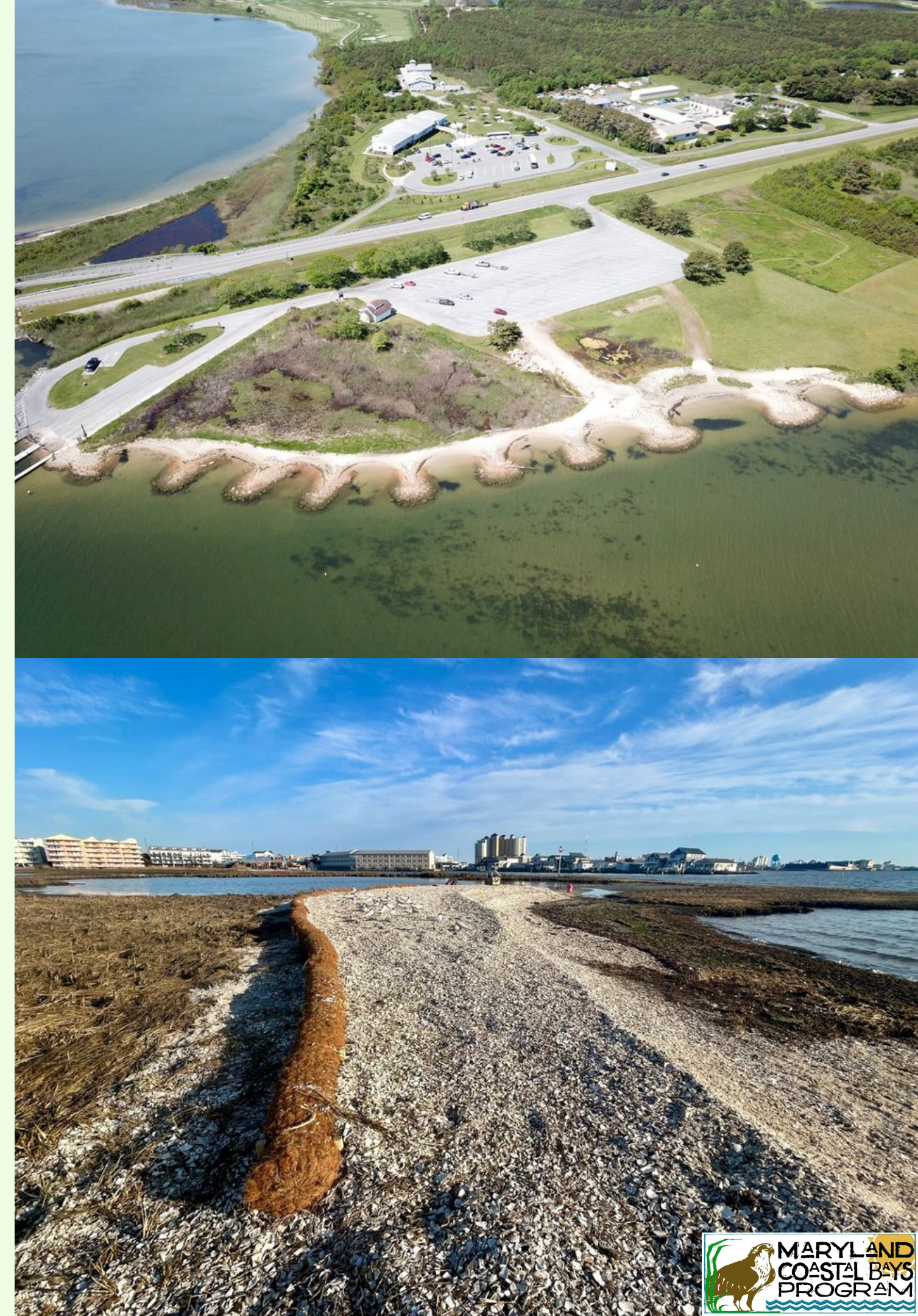
Water Quality Monitoring

Monthly WQ Sampling

- MCBP, MDNR, ANP, and Volunteers

- 23 sites monitored

- Sampling began in 1997

- 10 volunteer locations are showing significant improvements in at least one parameter (DO, chl a, TN, or TP)

NOAA Phytoplankton Monitoring Network

- MCBP, MDNR, ANP, ACT and volunteers

- 9 sites monitored, 4 volunteers

- Sampling began in Summer 2023 & occurs every two weeks
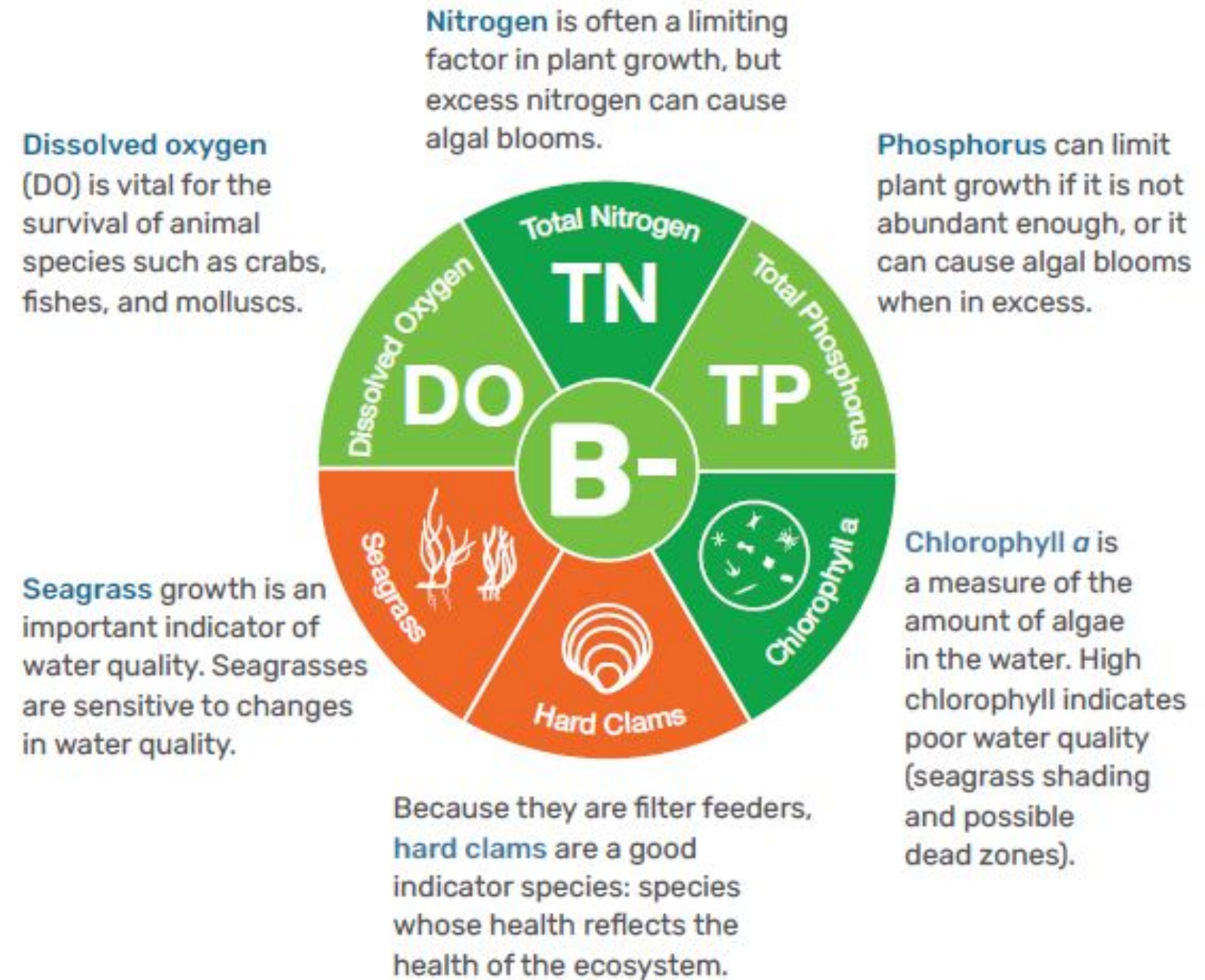

Spring Stream Sampling

- Sample 58 streams every April

- Latest analysis shows that 46 streams are showing significant

Report Cards & State of the Bays

- The overall grading of the bays has improved from a C+ to a B over the last 5 years
  - DO, TN, and TP have all shown signs of improvement
  - Chl a has maintained a grade of an A
  - Areas that still need improvement are SAV and Hard Clams
    - An increase in hard clams has been noticed recently, showing promise.

- State of the Bays - Greatest Challenges:
  - SLR and Climate Change (warming waters)
  - Emerging contaminants- PFAs, endocrine disruptors, and microplastics

Overall Coastal Bays health is slightly better

Coastal Bays health is defined as the progress of four water quality indicators (nitrogen, phosphorus, chlorophyll *a*, and dissolved oxygen) and two biotic indicators (seagrass and hard clams) toward scientifically derived ecological thresholds or goals. The Coastal Bays had an overall score of B- for 2022, an incremental improvement over last year.

Nitrogen is often a limiting factor in plant growth, but excess nitrogen can cause algal blooms.

Dissolved oxygen (DO) is vital for the survival of animal species such as crabs, fishes, and molluscs.

Phosphorus can limit plant growth if it is not abundant enough, or it can cause algal blooms when in excess.

Seagrass growth is an important indicator of water quality. Seagrasses are sensitive to changes in water quality.

Chlorophyll *a* is a measure of the amount of algae in the water. High chlorophyll indicates poor water quality (seagrass shading and possible dead zones).

Because they are filter feeders, **hard clams** are a good indicator species: species whose health reflects the health of the ecosystem.

What do the scores mean?

| very poor 0–20% | poor 21–40% | moderate 41–60% | good 61–80% | very good 81–100% |

Community Science

<u>Stranded Spawning HSC Recovery Team</u>

- Established in 2022
- Over 6,900 stranded HSCs have been rescued!

<u>Oyster Gardening Program</u>

- Collaborative effort between ORP, Horn Point, MDNR, and Protectors of the St. Martin River
- Over 43,000 oysters have been planted in the Coastal Bays for oyster restoration since 2014.
- Most oysters do not make it past 2-3 years due to disease

Restoration Goals

Addressing island loss and declines in colonial nesting bird populations.

- Creation of the artificial nesting platform for Common Terns
  - 2021: 22 fledglings
  - 2022: 153 fledglings
  - 2023: 170 fledglings

- Mapping Island loss in the Coastal Bays

- Potential to create and artificial nesting platform in

2007 Shoreline

2019 Shoreline

1989 Shoreline
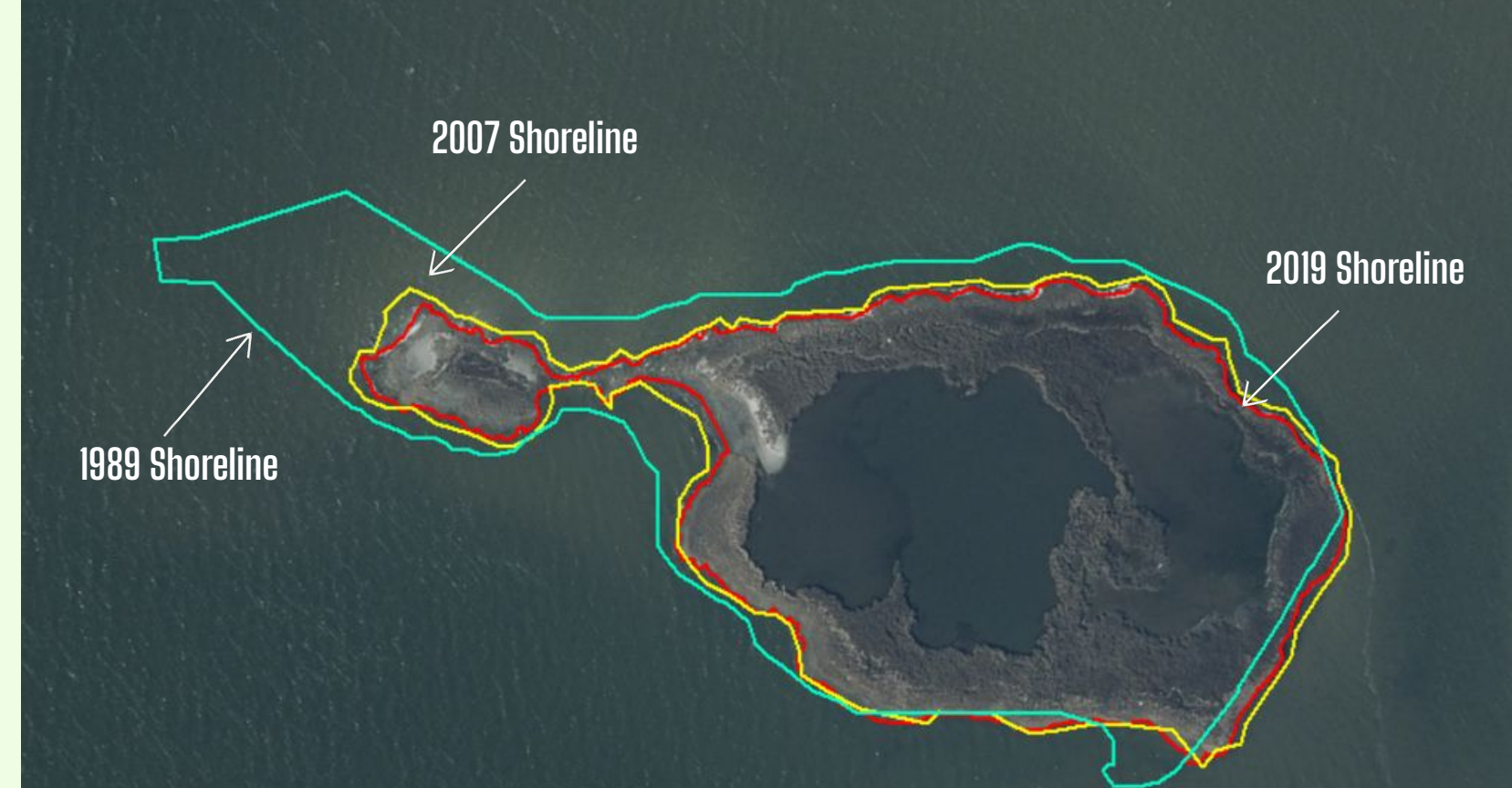
Reedy Island, Isle of Wight Bay

MARYLAND COASTAL BAYS PROGRAM

Restoration Goals

Quantifying marsh loss in the Coastal Bays.

- Maryland Coastal Restoration Alliance (MCRA)
  - Partners include USFWS, UMCES, MDNR, Audubon Mid-Atlantic, Lower Shore Land Trust, National Park Service, and others.

- Prioritizing Saltmarsh Sparrow and Black Rail habitat

- Understanding differences in marsh loss
  - internal marsh loss cause by veg dieback/pooling
  - marsh loss caused by shoreline erosion

- Using mapping layers such as UVVR to identify marshes

Restoration Goals

Developing a Sediment Management Plan

- Dredging for restoration purposes NOT just navigation

- Working with agencies to align dredging projects with marsh and island restoration in the Coastal Bays

- Prioritizing restoration projects and identifying sediment needs

Thank You!