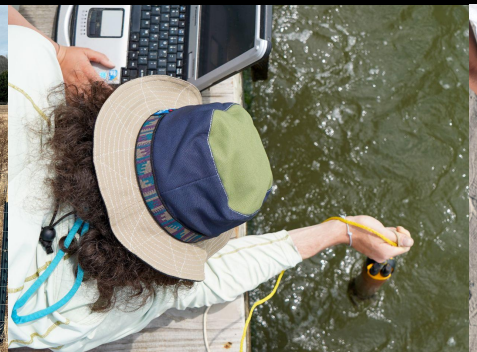
State of the Bays 2026

(2021-2026)

Parts of the Report

Working Estuary

Land Use, Aquaculture

Call for Action:

Aquaculture has arrived. Now how does it become sustainable.

Coastal Resilience

Marshes, Sea level

Call for Action:

Marsh restoration in practice: Case Study Millsboro BU, Whites Creek BU

Living Resources

Horseshoe Crabs, Fish

Call for Action:

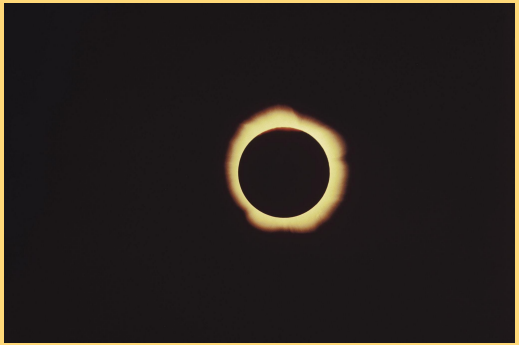
Do suitable areas exist for expansion of desired habitats?

Parts of the Report

Public Facing

Short Video

Impact Statement



Subject in Brief

4 pages

Stand alone

Image-based

Technical Report

Data Reports

References

Public Facing– Engaging, Easy to Understand

Short Videos

Publication

- Icon / Graphic heavy - one or two sentences per indicator
- Short Communications for a public audience

Technical Report– Data, Details and Follow-up

Template based

Follows the similar format to PDE

Online only

Subject in Brief– The Challenge, The Approach, The Impact & Key Benefits

Data Source(s)
Brief Results
Recent Publications (last 5 years)

Answered for each topic:
Why is this metric someone should care about?
How does this topic relate to humans - is there a different response in different groups?
Does this topic affect just part of the watershed - this could be a consistent icon, based on a picture of the watershed and indicate one of 6 patterns in the watershed, coast, bay coast, east, middle, west, north or south
Is this metric trending - use trend icons from 2021 report.

Salt Marsh Elevation– Relative elevation as compared with sea level, long-term monitoring, protect function of salt marshes & habitat

Data Source(s): CIB LTSMM Network;

Brief Results: Most plots are not keeping up with sea-level rise resulting in loss of marsh acreage and conversion of salt grass meadow to open ponds.

Recent Publications (last 5 years):

Campbell, A.D., Fatoyinbo, L., Goldberg, L. and Lagomasino, D., 2022. Global hotspots of salt marsh change and carbon emissions. *Nature*, *612*(7941), pp.701-706.

Lang, M.W., Stedman, S., J. C. Ingebritsen, and R. K. Griffin. 2024. Status and Trends of Wetlands in the Coastal Watersheds of the Conterminous United States 2009 to 2019. U.S. Department of the Interior, Fish and Wildlife Service and National Oceanic and Atmospheric Administration, National Marine Fisheries Service. 58 p.

Salt Marsh Elevation– Relative elevation as compared with sea level, long-term monitoring, protect function of salt marshes & habitat

Why is this metric someone should care about? - Reduced salt marsh elevation leads to lower function; failure to buffer land during storms; failure to absorb pollutants from overland flow

How does this topic relate to humans - is there a different response in different groups? - Salt marshes, traditionally used as hay meadows, today provide habitat value, especially for birds which can affect the tourism economy. For near shore residents; salt marshes buffer wave action, moderate shoreline erosion and storm energy.

Does this topic affect just part of the watershed? bay coast

Is this metric trending? Worse trend from 2021 report.

Working Land, Working Estuary

- Natural Habitat Protection Acres (Data shared on the Delaware Open Data Portal.)
  - Reforested
  - Preserved Forest /Forest Quality Assessment (Bill McAvoy)
  - /baygrass planted - Baygrass (Taylor, Kayla and Brittany)
  - /oyster reefs Morgan and Mark?
  - /living shorelines (Doug)
  - /marshes created (Alison)
  - /easements, preserves (Michelle)
- Shoreline comparison 2012-2022 (Andrew H.)
- Aquaculture Industry (Zina/John) & Disease load on oysters
- Other Shellfish (Zina/Andrew)
- Prohibited Shellfish Waters (Andrew B.)
- Tourism
- LUC tables
  - Impervious Surface
  - Buffers - Tree and Grass
  - Agriculture Land
- Population (census report?) Resident/Transient; Changing Demographics
- Nutrient Loadings by HUC-12 Watershed (11 Watersheds in the Inland Bays)
  - Nonpoint Source
  - Point Source
  - Septic/Sewer Conversions
  - Land Application (DNREC Division of Water, Groundwater Discharges Section, Large Systems Branch)
  - Wastewater (Michelle/Jen Biddle Ecoli poo study) Center Wastewater project on hold until new coordinator hired
- Emerging Contaminants
  - PFAS in fish - UD Grad student Jacquie? (is deer meat study in Kent relevant?)
- Trash & Microplastics (Lisa)

Our estuary is a place people live, work. and play.

It is not other or away.

It is accessible and used, and therefore must be protected

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Climate Resilience

Long Term Salt Marsh Monitoring (Taylor, DNREC)
DEOS
Wind (https://globalwindatlas.info/en/area/United%20States/Delaware)
Sea Level
- Lewes/ Ocean City
- Millsboro
- Massey's Landing

Salt Water Intrusion - Tom? DGS or Holly? (Delmarva wide)
- Department of Agriculture Ions, pesticides, groundwater? Or USGS?

NFWF
Soil Quality
Sediment Quality & Contaminants
Water Quality (https://cema.udel.edu/applications/waterquality/)
- eColi Ed Wherat
- eColi Andrew Bell
- Phytoplankton
- DO Taylor
- Temperature (https://www.ncei.noaa.gov/access/monitoring/monthly-report/national/202505)
- pH (Maracos contacts?)
- Clarity?
- Nitrogen (Bott)
- Phosphorus (Bott)
- Water Quality Index (??)
- Any others (TP, ortho-P, ammonia N, NO2+NO3, TN, TOC, DOC, Chl a, BOD, DO, TSS, alkalinity, hardness, pH, conductivity, salinity, temperature, Secchi depth, light attenuation, turbidity, chloride, total *Enterococcus,* Cu, Pb, Zn, As)?
- Patterns of tributary water vs. open water (Bott)

Change is always happening.

If we prepare for change we instill resilience.

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Living Resources

Species of Conservation Concern (DNREC Wildlife Action Plan)
HSC (Nivette)
Terrapin (Nivette)
Fish (Taylor/Morgan)
- Trawl
- Shorezone
- Recreational (NOAA Fisheries Service, Marine Recreational Information Program (MRIP))
- Fish Kills (DNREC data)
- Oyster Count (Taylor/Morgan)
- Oyster Recruitment (Morgan/Jess)
- Eels (Morgan)

Bird
- Osprey (Nivette)
- Bald Eagle (Jordan)
- Mid-Winter Waterfowl (Data shared on the Delaware Open Data Portal)

Our wildlife help make our region unique.

We strive to understanding how our wildlife co-exist.

Metrics not included in 2026

Nutrient loadings from atmospheric sources - No funding to monitor local

Best Management Practices Implementation
This metric is a counting the practices implemented - not a result on the Bays outcome; data is reported elsewhere.

Natural Habitat Project Implementation
This metric is a counting the practices implemented - not a result on the Bays outcome; data is reported in the fiscal year it is completed in NEPORT.

Macroalgal Cover - No monitoring as macroalgal cover has been reduced

Hydrodynamic Model - No funding/no update

Blue Crab Harvest - No metric

Human Health
Fishable/Wadeable/Swimmable Waters <<This could be moved up, there is data, and has been included
Long-term citizen monitoring = no change in metric (Ed Wherat?)
Fish Tissue - No new updates from DNREC
Bird Flu?

Indicators not in 2026 State of the Bays.

These lack new high quality data sources or pose no significant change in metric.

Target Publication Date

June 2026