New Roots: Growing Wetland Stewards from Landowners

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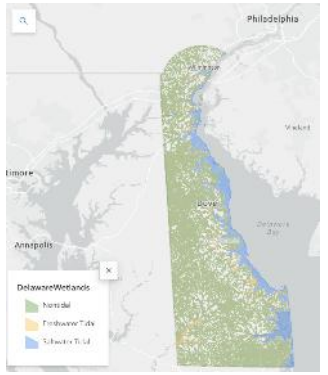
Wetland Monitoring and Assessment Program

MAWWG September 25, 2025

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Wetland Monitoring and Assessment Program

- Wetland mapping and condition assessments
- Demonstration & research wetland restoration and stabilization techniques
- Collaborate with other government agencies, businesses, non-profits and universities
- Education and Outreach – host trainings, workshops, conferences and public events, presentations



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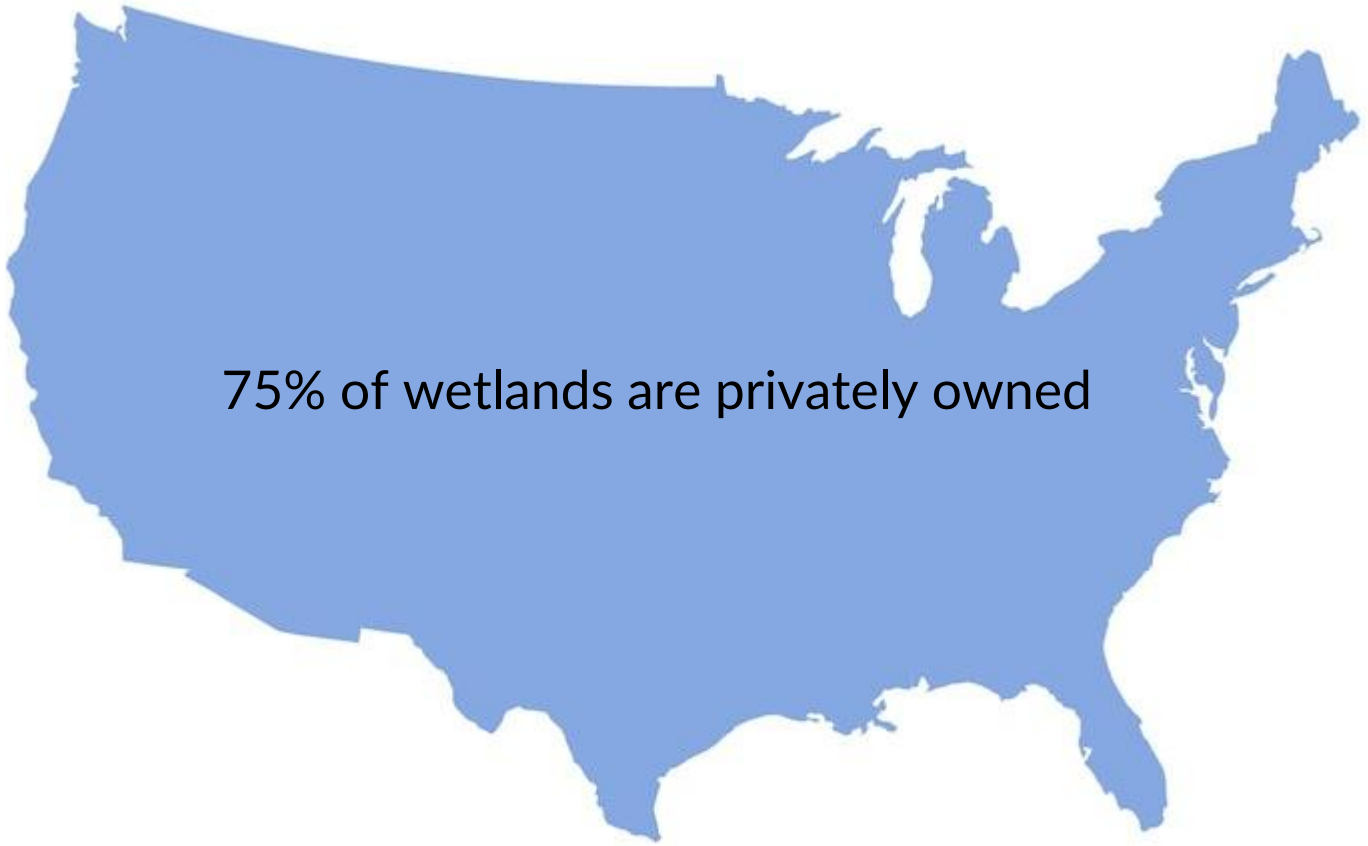
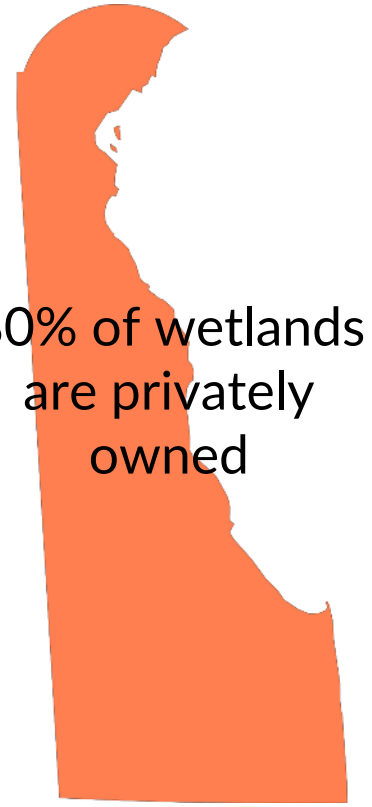
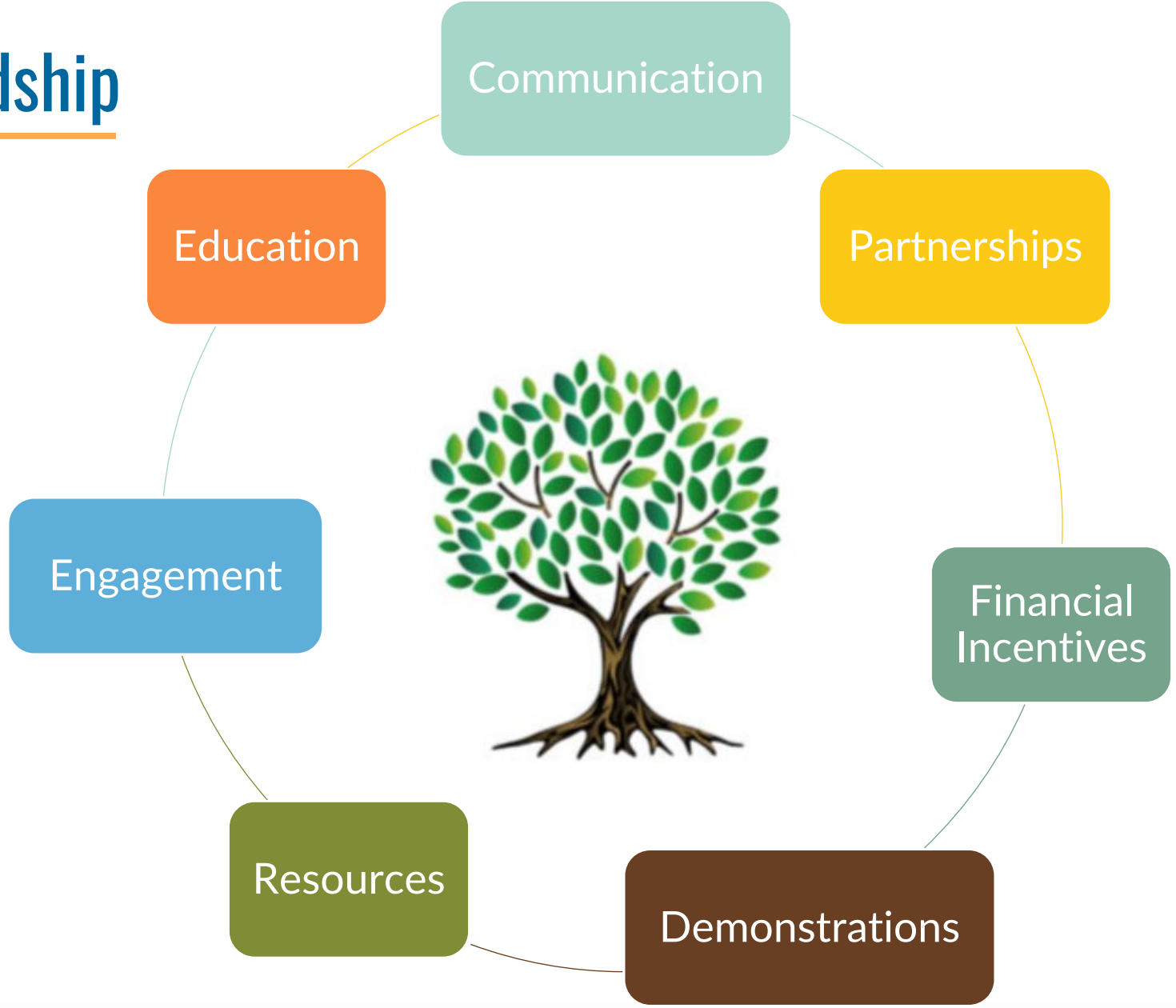
Why Focus on Landowners?





Components of Stewardship



Education

Delaware Wetlands Fact Sheet

Wetlands are part of the foundation of our nation's water supply and are vital to the health of our communities. Wetlands feed into rivers, lakes and streams, reduce flooding, recharge groundwater supplies, remove pollution and provide fish and wildlife habitat. Wetlands vary widely because of differences in soils, location, climate and presence of fresh or salt water. Delaware is a state rich in wetlands that vary from forested seasonal ponds, to highly productive salt marshes, to unique Bald Cypress swamps.

1/4 of the state's land area is made up of wetlands

- 44% Tidal
- 56% Non-tidal

HALF of our wetlands have been lost since the late 1700s due to conversion of land to farm fields, development, storms and sea level rise.

Delaware Wetland Ownership

- 80% are privately owned
- 20% are state/federally owned

Anywhere you stand in Delaware you are within 1 mile of a wetland!

What is a wetland?

A wetland is a place in which the land is covered by water - salt, fresh, or somewhere in between - either seasonally or permanently. The area must have 3 characteristics:

Water — It must contain water at or near the surface. During the summer and fall months, water may not always be visible.

Hydric soils — Soils that are soaked with water are called hydric soils. There are many different types, but most can be identified through characteristics like color, texture, and odor.

Hydrophytic plants — Plants that have adapted to survive in waterlogged soils are called hydrophytic plants. Examples include cattails, blueberries, saltmarsh cordgrass, and pond lilies.

There are two types:

Tidal | Non-tidal

Find out more at de.gov/delawarewetlands

DNREC Wetland Monitoring and Assessment Program | Follow us! @dnrecwetlands

Delaware's Marsh Migration

Tidal Wetlands Survival Response to Climate Change

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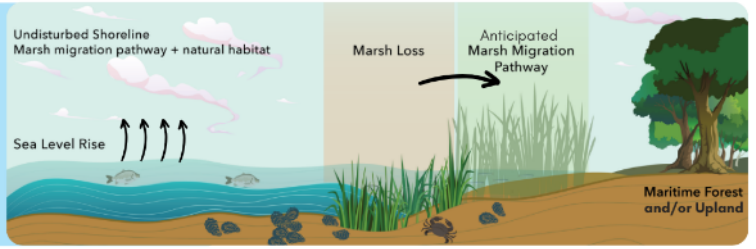
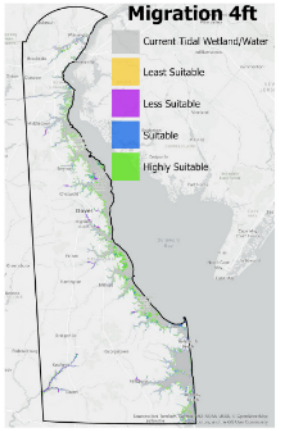
Across the world, sea level rise is driving changes in natural habitat and ecosystems. Challenged by accelerated rates of rising water levels and increased storm surge associated with climate change, **tidal wetlands are facing serious threats from these rapid environmental changes.** In response, these habitats have adapted a survival mechanism called marsh migration.

Marsh migration is the act of tidal wetlands moving from their current habitat, away from rising sea levels, towards higher and drier land to avoid drowning. Ground where the wetlands migrated from is eventually flooded and converted to open water.





Why is it important to know where marshes may migrate?

Tidal wetlands provide a variety of ecosystems services to humans the natural world alike. Their persistence means continued benefits such as erosion control, habitat preservation, carbon storage, storm protection, and water quality improvement. This landward movement can only happen where there are no natural or human-made physical barriers in the way, such as seawalls or roadways. **Knowing where these habitats could migrate to is critical for land management and property owners, as well as to ensure that wetlands have a future along our coasts.**

How can we determine where marshes may migrate?

Many computer-based models and methods are being used to illustrate the projected sea level rise and map the potential loss or migration of tidal wetlands. **DNREC conducted a study** through a simplistic GIS (Geographic Information System) model that combined many layers of data, different sea level rise scenarios, and an areas distance to the nearest tidal wetland.

The Delaware Marsh Migration Suitability Analysis

Data and Research
Once all information was combined, areas for marsh migration were scored ranging from 0 (unsuitable) to 12 (highly suitable). **The results focus on areas that scored 10-12 that are highly suitable locations for marshes to move to.**

Model and Report
Under a 4 ft. sea level rise scenario, the model **estimated that 21,449 acres of land in Delaware were highly suitable for marsh migration.** There are suitable areas in each county of the state and example areas are showcased in the report.

Outreach
This model is meant to be a guidance tool for professionals and landowners alike. DNREC is utilizing this model to **aid in better land management decisions and resiliency planning** for many different stakeholders and groups.

DNREC - Wetland Monitoring and Assessment Program - Delaware Coastal Management Program

Communication

- Be a reliable source
  - 2024- gave 7 requested presentations for 206 private landowners
  - 2025- given 6 for 140 people so far

Buffers
Pollution
Natives
Marsh Migration
Living Shorelines
Volunteer
Support Protection
Share the News

Wetlands 101: A Prized Natural Resource in Delaware

Division of Watershed Stewardship

Wetland Monitoring and Assessment Program

Communication

Quarterly e-newsletter – 960 subscribers

Creates a connection

Informative blog

Calendar of events

What are we up to?

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Delaware Wetland Connection

Well, we've made it about halfway through summer and hopefully you're embracing it as much as we are. This season has a been a bit different for our program. Though we keep our plates full and stay busy, the sweaty, water-chugging field days have be lighter than in years past. Technically, this is the off-season for public events, but our engagement continues to be on the rise. Landowner calls, site visits, professional trainings, new partners, press interviews - we cannot complain about the wetland love! We're still getting outside knee-deep in mud, but a little office time never hurts.

When I think of how this summer has been in the Delaware wetland world, a few words come to mind: advocacy, curiosity, and appreciation. More and more people are caring about their local wetland habitats, and they want to better understand and help these environments. The everyday landowner call has been filled with inquisitiveness and concern of what's happening in their own backyard. With follow-up emails and resource sharing galore, we're happy to plant new seeds that grow wetland stewards. HOAs, municipalities, neighbors, journalists, they're all asking questions and seeking out answers. Climate change

Blog Posts

A Cross-Country Road Trip: Wetlands of the Northeast

Riparian Buffers: A Natural Solution for Resilience and Cooling

The Land Before Time: Prehistoric Wetland Creatures

Events

Mid-Atlantic Ocean Data Portal Training
August 14, 2025

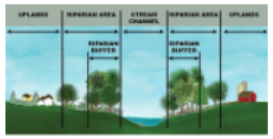
Bay Banter and Brews: Submerged Aquatic Vegetation
August 20, 2025

Wetlands 101: A Prized Natural Resource in Delaware
September 16, 2025

Crab Pot Round-Up and Volunteer Training Event
September 23-24, 2025

Blog Posts

A Cross-Country Road Trip: Wetlands of the Northeast
By Alison Stouffer, DNREC's Wetland Monitoring and Assessment Program
Congratulations folks! You have made it to the fifth, and final, installment of the cross-country wetland road trip. I would be lying if I said this wasn't...Read More



Riparian Buffers: A Natural Solution for Resilience and Cooling
By Kristen Travers, Delaware Nature Society
We're all uncomfortably aware of how hot this summer has been. On a recent 90+ degree afternoon, while walking with a group of people, the first request was simple...Read More

The Land Before Time: Prehistoric Wetland Creatures
By Olivia Allread, DNREC's Wetland Monitoring and Assessment Program
Many millions of years before us Homo sapiens appeared, there lived a vast array of plants and animals in extensive environmental systems we no longer see today...Read More

Partnerships

BAYS TO BACKYARDS

COMMUNITY ENGAGEMENT PROGRAM

EVERY DAY SOLUTIONS. PRACTICAL APPROACH. PROFESSIONAL GUIDANCE.

Bays to Backyards (B2B) aims to support healthy people, water, and wildlife across the Inland Bays' backyard—from neighborhoods along the coast to the countryside. Experts will assist communities with a variety of enhancement efforts, including but not limited to those under the following themes:

Landscaping with Nature in Mind

Stormwater Management

Wildlife Habitat

Together, we can reconnect with and revitalize our natural surroundings while improving the health and value of our residential neighborhoods. Participating community efforts and achievements will be publicly recognized by a vast network of program partners.

HOW IT WORKS

5-STEP PROCESS

STEP 1: IDENTIFY
Identify the topics from the program's action framework that interest your community. Think about any issues to address and/or goals to accomplish.

STEP 2: EXPLORE
It's best to know the operational details (current contracts, HOA, rules, etc.) of your community. Be sure to gather details on any governing bodies.

STEP 3: INQUIRE
Fill out the inquiry form. A program representative will reach out to you with initial steps and resources to move forward.

STEP 4: DEVELOP AND IMPLEMENT
Create a 3-5 year action plan and begin implementation. Action items have different timelines, needs, or criteria.

STEP 5: REPORT AND BE RECOGNIZED
Share updates and accomplishments annually. Your community will receive recognition in a wide range of categories and levels.

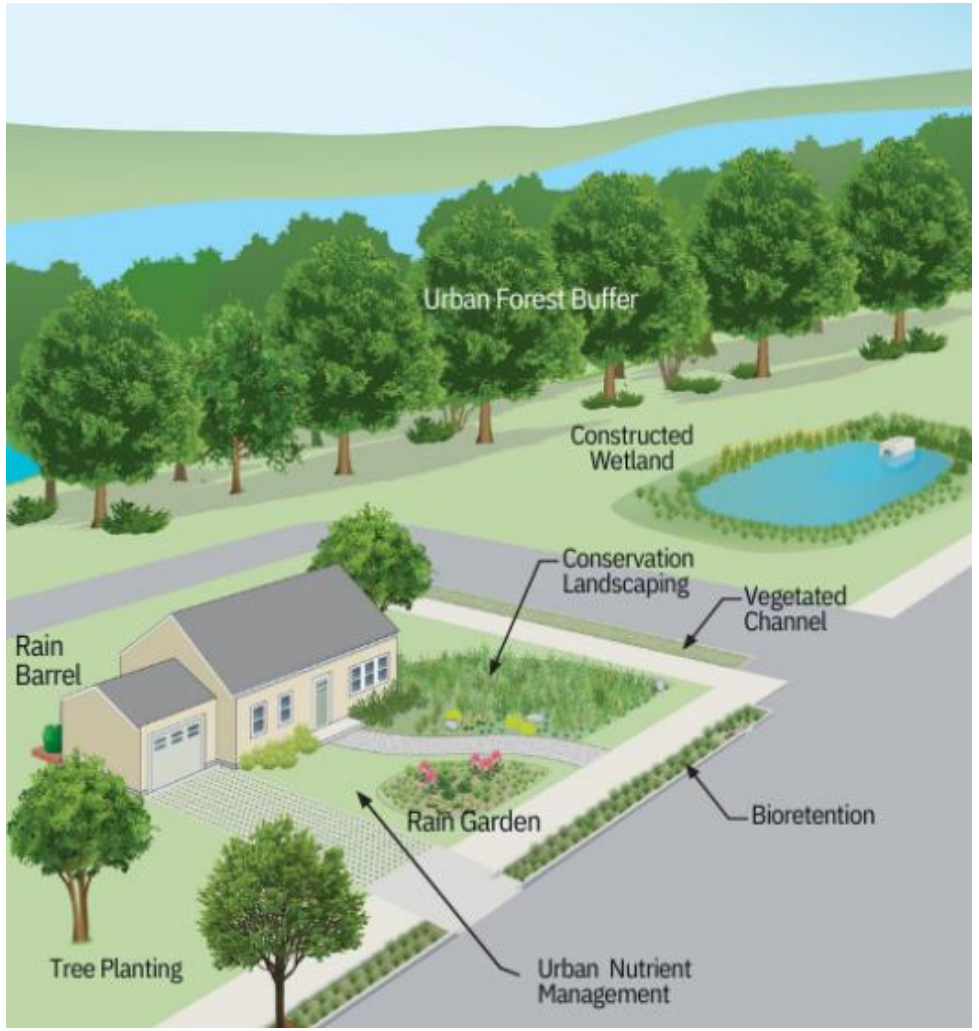
B2B is currently in its pilot phase, with plans to publicly launch fall 2025.
Stay updated at inlandbays.org and direct inquiries to
lswanger@inlandbays.org.

Partnerships

DELAWARE CENTER FOR THE INLAND BAYS
Research. Educate. Restore.

Financial Incentives

Community Conservation Assistance Program



Buffer Incentive Program (grass or forest)

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Demonstration
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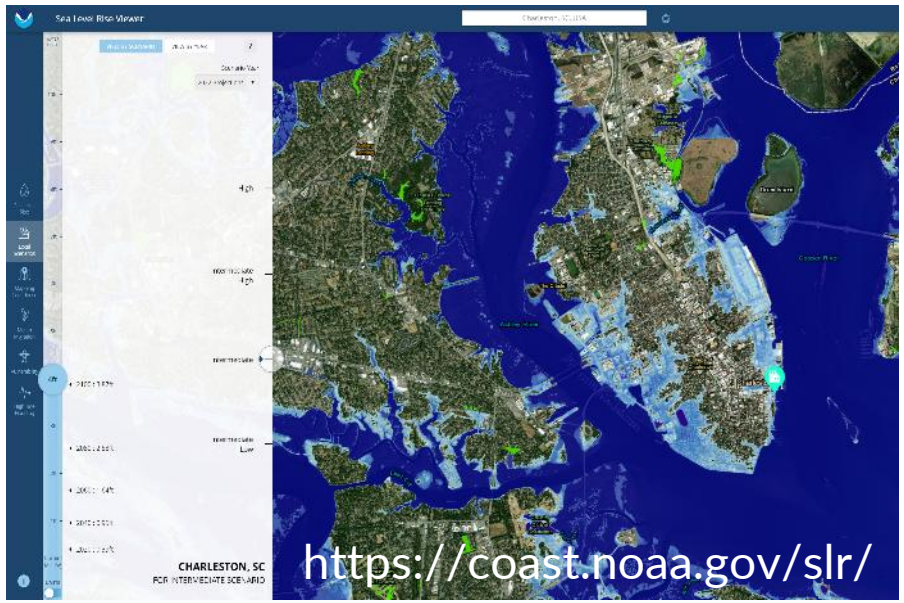
Sassafras Landing: Hybrid Living Shoreline

To stabilize the eroding saltwater shoreline and protect a freshwater impoundment

Resources

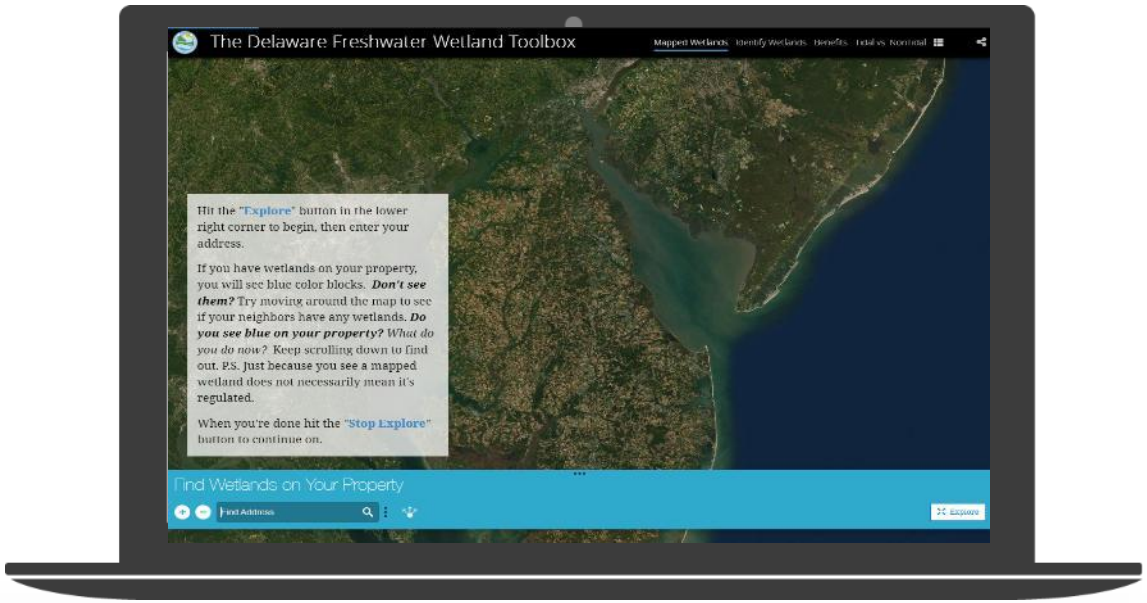
NOAA Sea Level Rise Viewer

- Potential coastal flooding
- Marsh migration
- High tide flooding
- Impacts on vulnerable populations



DE Wetland Toolbox

- Mapped wetlands in Delaware
- Types of wetlands that could be on your property
- Info, benefits, and resources



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Resources

Delaware Living Shorelines Committee

delawarelivingshorelines.org

Engagement

Horseshoe Crab Night Survey Volunteer program

Operation Terrapin Rescue Volunteer program

SAV Seekers: Submerged Aquatic Vegetation Monitoring

Volunteer Launch: Spring 2026

Engagement

Angola by the Bay Community, Lewes

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Research. Educate. Restore.
Get on board with the bays.
inlandbays.org

living shoreline • wetland expansion • pollinator garden • biochar experiment •

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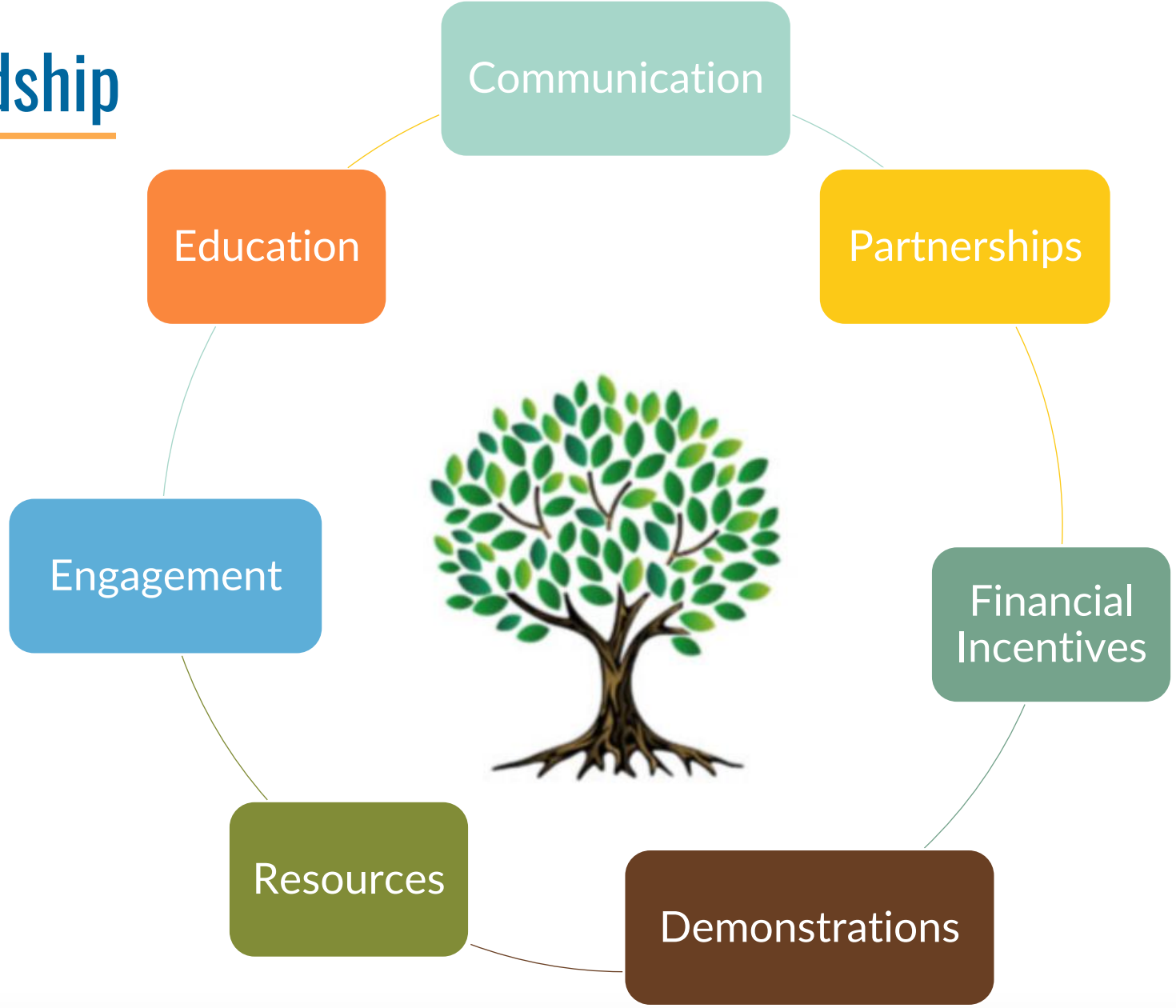
Components of Stewardship



Thank You!

Follow us!

@DNRECwetlands

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