



Coastal Habitat Conservation for Climate Resilience

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Introduction



Species



Habitats



Access



**BEGINNING
WITH HABITAT**



Planning Roadmap



Planning Need Identified

Climate Plan
Comprehensive Plan
Open Space Plan
Committee formed

Information Gathering

Data, maps, tools
Example plans
Presentations

Community Input

Public meetings
Surveys
Visioning
Prioritization

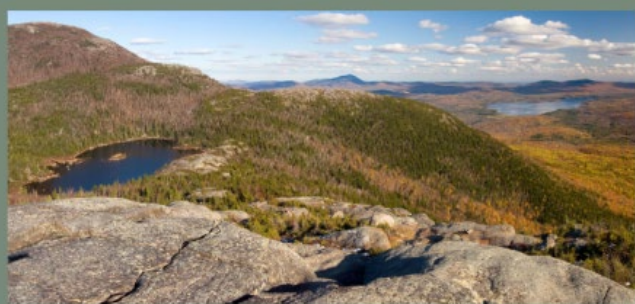
Completed Plan

Drafting
Review and Accept
Specific actions
Specific timeline

Implementation & Funding

On the ground actions
Funding for projects

A Resource for the Public: Beginning with Habitat



Beginning with Habitat



Conserving Maine's Natural Landscape
for Plants, Animals, and People



BwH is...

A landscape-based approach to achieve meaningful conservation of all native species on a developing landscape.

Purpose:

To provide the most up-to-date wildlife and plant habitat information available for use in Comprehensive, Open Space, and Conservation Planning.

Beginning with Habitat Services



Our Services



Information



Spatial Data



Technical Assistance

- Customized presentations & workshops
- Library of ordinance tools, example plans, etc.
- Dedicated landowner biologist for site visits
- Assistance with, and review of comprehensive plans

Our Users



Municipalities



Landowners



Land Trusts

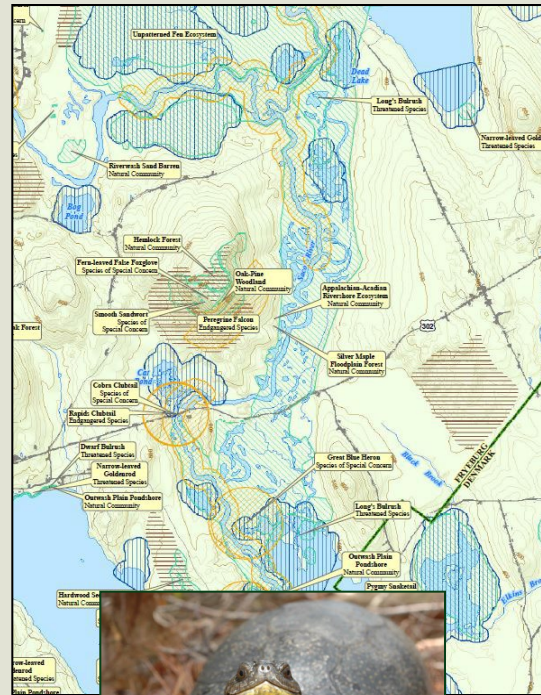
Beginning with Habitat Approach



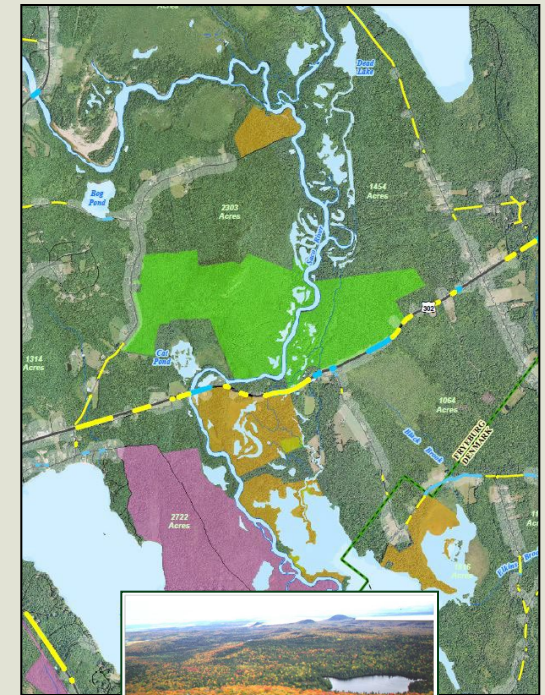
Map 1



Map 2



Map 3





Stream Viewer

Online Map Database

Digital Data

You can use our GIS data to create your own customized planning maps (GIS software required). [Simply let us know which town or region you'd like data from](#), and we will send you the data via OneDrive or on a CD.

What are some observed and expected effects of climate change?



- Warming temperatures
 - Warmer winters, more extreme heat days, melting glaciers
- Changing precipitation patterns
 - Increased heavy rainstorms and flooding, rain-on-snow events, decreased snowpack, increased drought conditions
- Sea Level Rise
- Ocean acidification
- Warming waters



Culvert washout on Pushaw Rd in Glenburn, ME in October 2022 associated with a 25-year storm event. The washout resulted in a 5-mile detour and cost \$111,000 to repair.

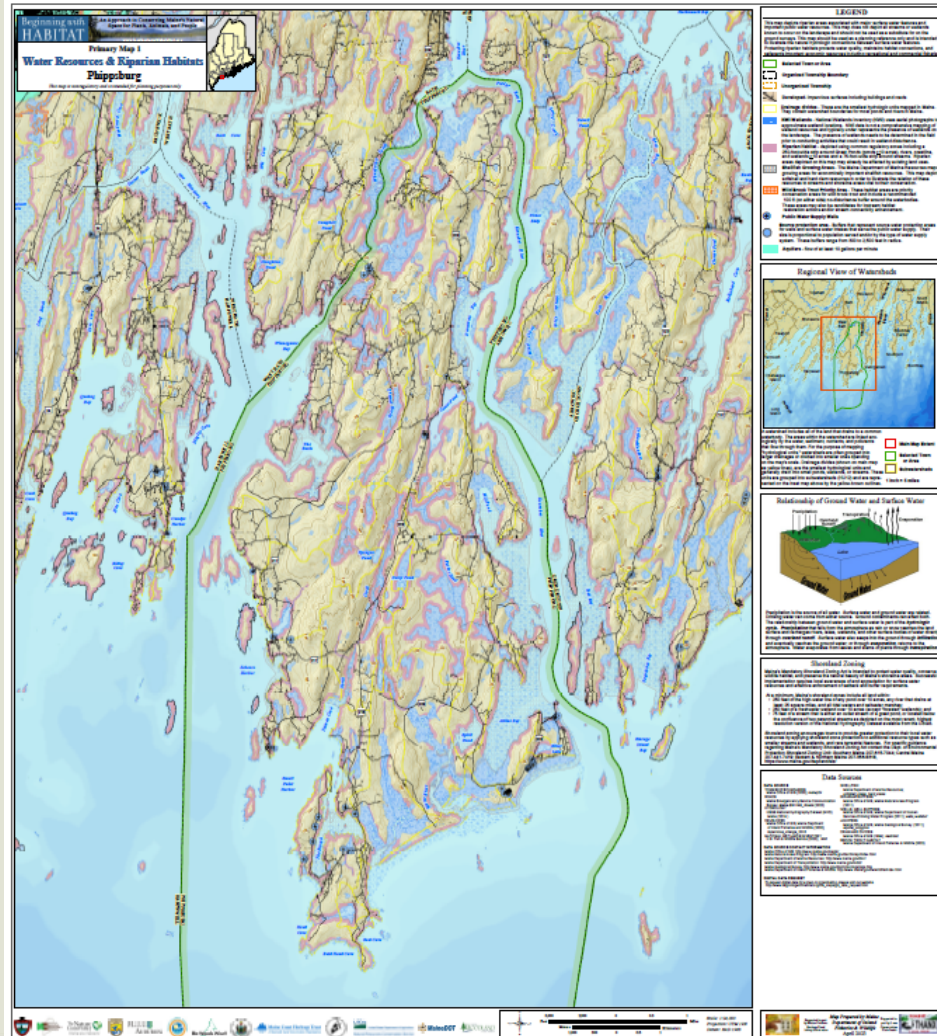


Friends of Lake Winnecook

Water Resources and Riparian Habitats



- BwH Map 1
 - Great ponds
 - Wetlands
 - Streams
 - Riparian buffers
 - Aquifers
 - Priority wild brook trout areas



Online Resources: BwH Map Viewer



BwH Map Viewer

Welcome Layers Legend

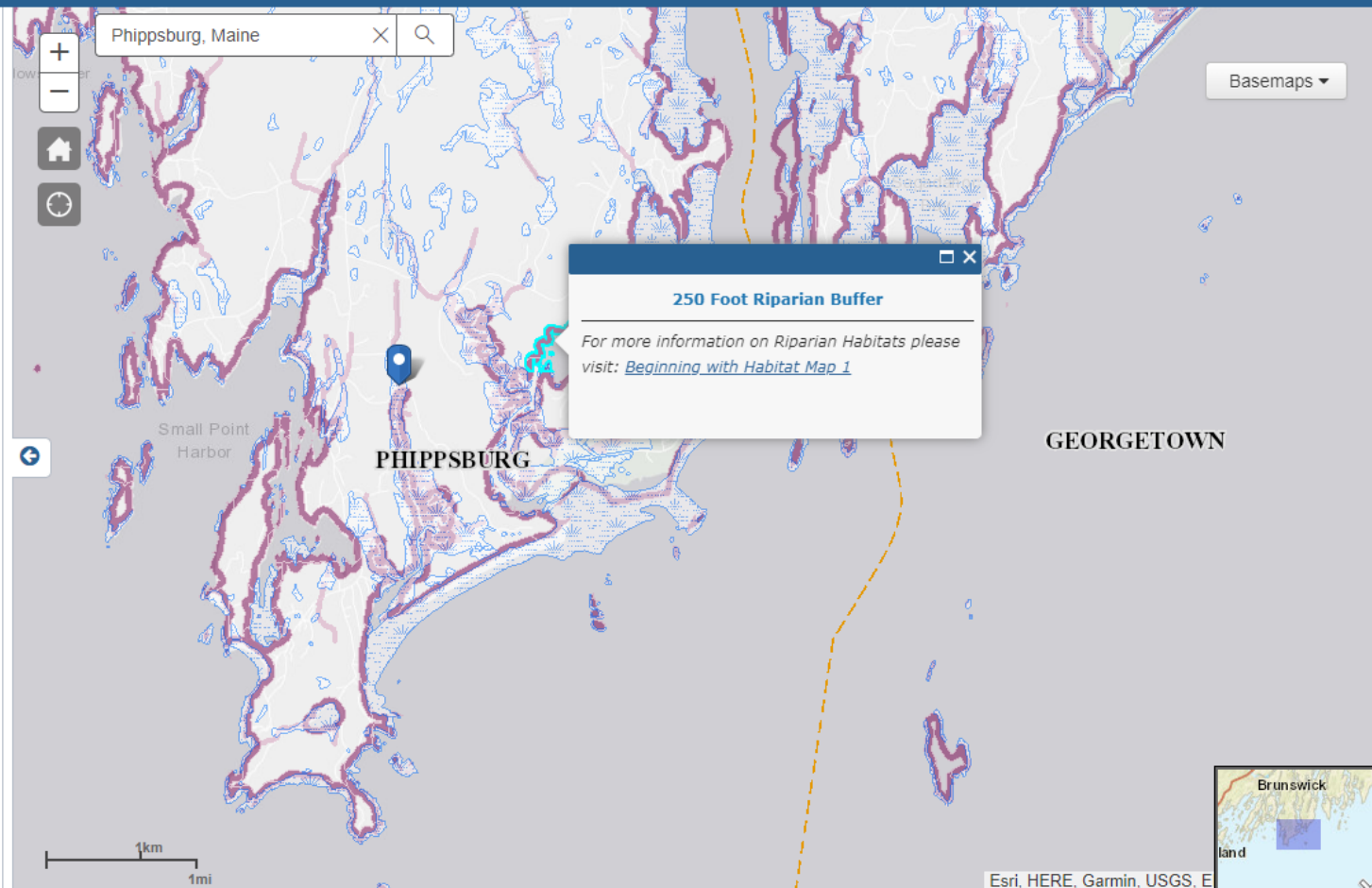
current smeltish closures, consult [State of Maine DMR](#) For more information about classification of shellfish flats, visit: [State of Maine DMR Classification](#)

Aquatic Species and Habitats

Wild Brook Trout Habitat: Avoid disturbing habitat within 100 feet of Brook Trout habitat; if riparian areas within that zone are cleared or degraded, then restoring the riparian area to natural tree cover is also recommended. These areas may also be candidates for instream habitat restoration and/or stream connectivity enhancement. Consult with MDIFW Regional Fisheries Biologists or the Native Fish Conservation Biologist for further guidance. For more information please visit: [State of Maine IF&W](#)

Atlantic Salmon Habitat: Developed from field surveys conducted on the mainstem and selected tributaries of the Aroostook, Dennys, Ducktap, East Machias, Kennebec, Machias, Passagassawakeag, Penobscot, Pleasant, Presumpscot, Saco, Sheepscot, St. George, Tunk and Union Rivers in Maine by staff of the Maine Dept. of Marine Resources. For more information please visit: [Atlantic Salmon Restoration](#)

Riparian Habitat: Shoreline habitat depicted using common regulatory zones, including a 250-foot-wide strip around Great Ponds (ponds 10 acres in size and greater).



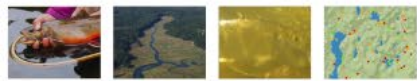
Beginning with Habitat Map Viewer: <https://webapps2.cgis-solutions.com/beginningwithhabitat/mapviewer/>

Online Resources: Maine Stream Habitat Viewer



Maine Stream Habitat Viewer

Welcome Layers Adv Search Identify



Maine Stream Habitat Viewer

The Stream Habitat Viewer helps bring people together to cooperatively restore and conserve fish and wildlife habitats important to Maine's economy, ecology and way of life.

For More Information and Training:

How To - How to use the viewer and Frequently Asked Questions.

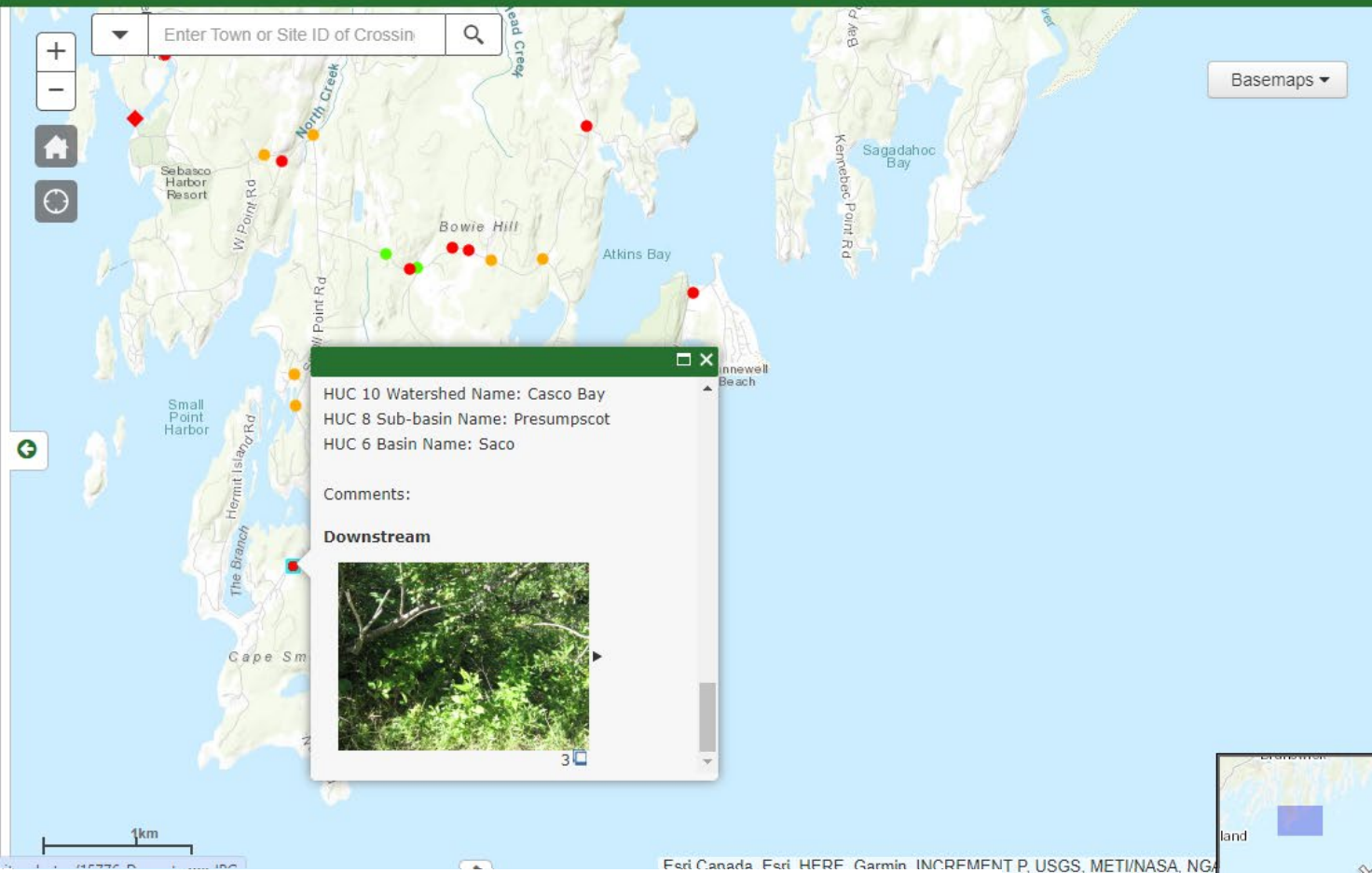
About Barriers - Read more about how barriers affect fish and wildlife.

Training Opportunities - For Stream-Smart road crossings, crossing surveys and for using the Stream Habitat Viewer.

Contacts - To find out more about the Viewer, data layers, and species specific information.

Convened by the Maine Coastal Program, the Maine Stream Connectivity Work Group is a partnership of state, federal, industry and non-government organizations working cooperatively to improve Maine's stream restoration efforts. See our list of [Partners](#)

Application by Corson GIS Solutions



Maine Stream Habitat Viewer: <https://webapps2.cgis-solutions.com/MaineStreamViewer/>

Strategies for protecting shoreland habitat and improving resilience

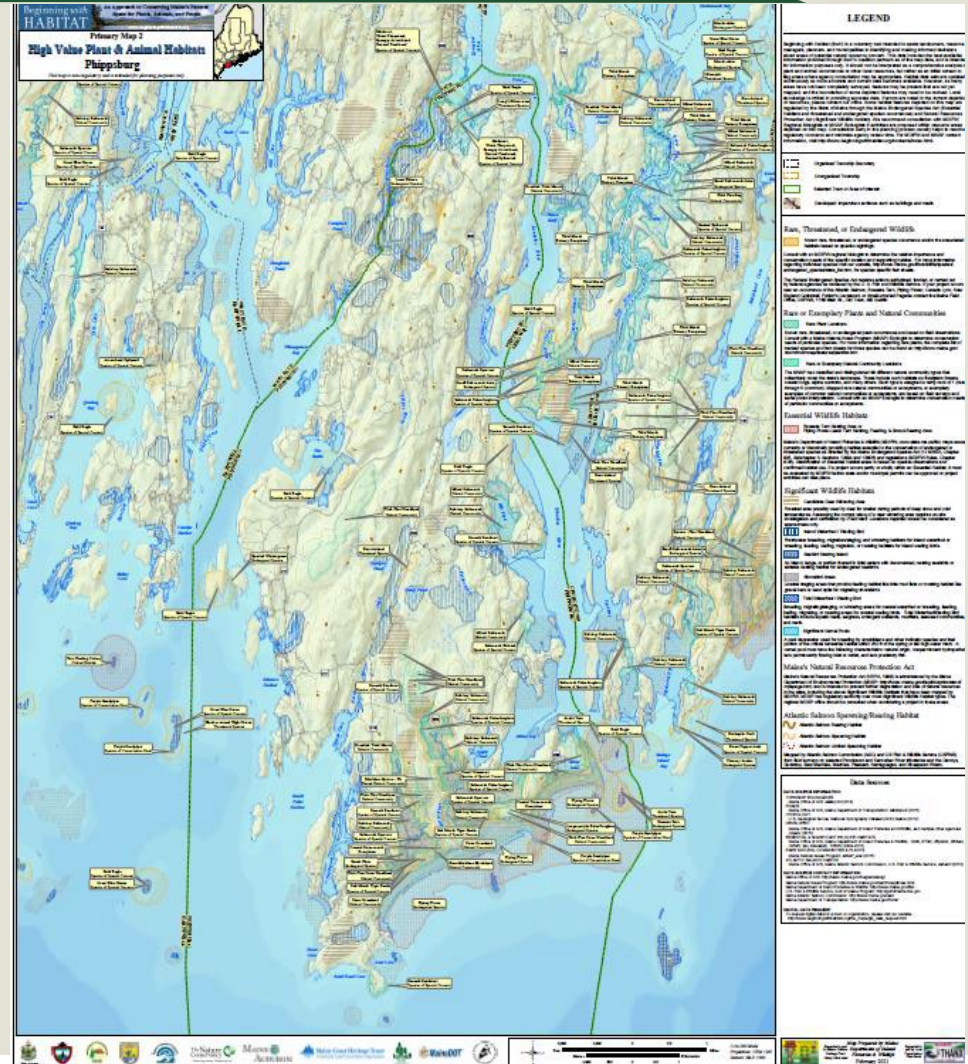


- Consider revising ordinances to increase setbacks along shorelines, coastal wetlands, and floodplains, to provide a natural buffer against flooding, erosion, and storm surge.
- Identify and address tidal restrictions to mitigate flooding, increase infrastructure resiliency, and restore marsh hydrology.
- Adopt Stream Smart crossing techniques and identify grant opportunities for restoration projects and culvert replacement
- Promote voluntary shoreland conservation options to landowners

High Value Plant and Animal Habitats



- BwH Map 2
 - Threatened and Endangered wildlife, Species of Special Concern
 - Rare Plants
 - Exemplary Natural Communities
 - Significant Wildlife Habitats



High Value Plant and Animal Habitats



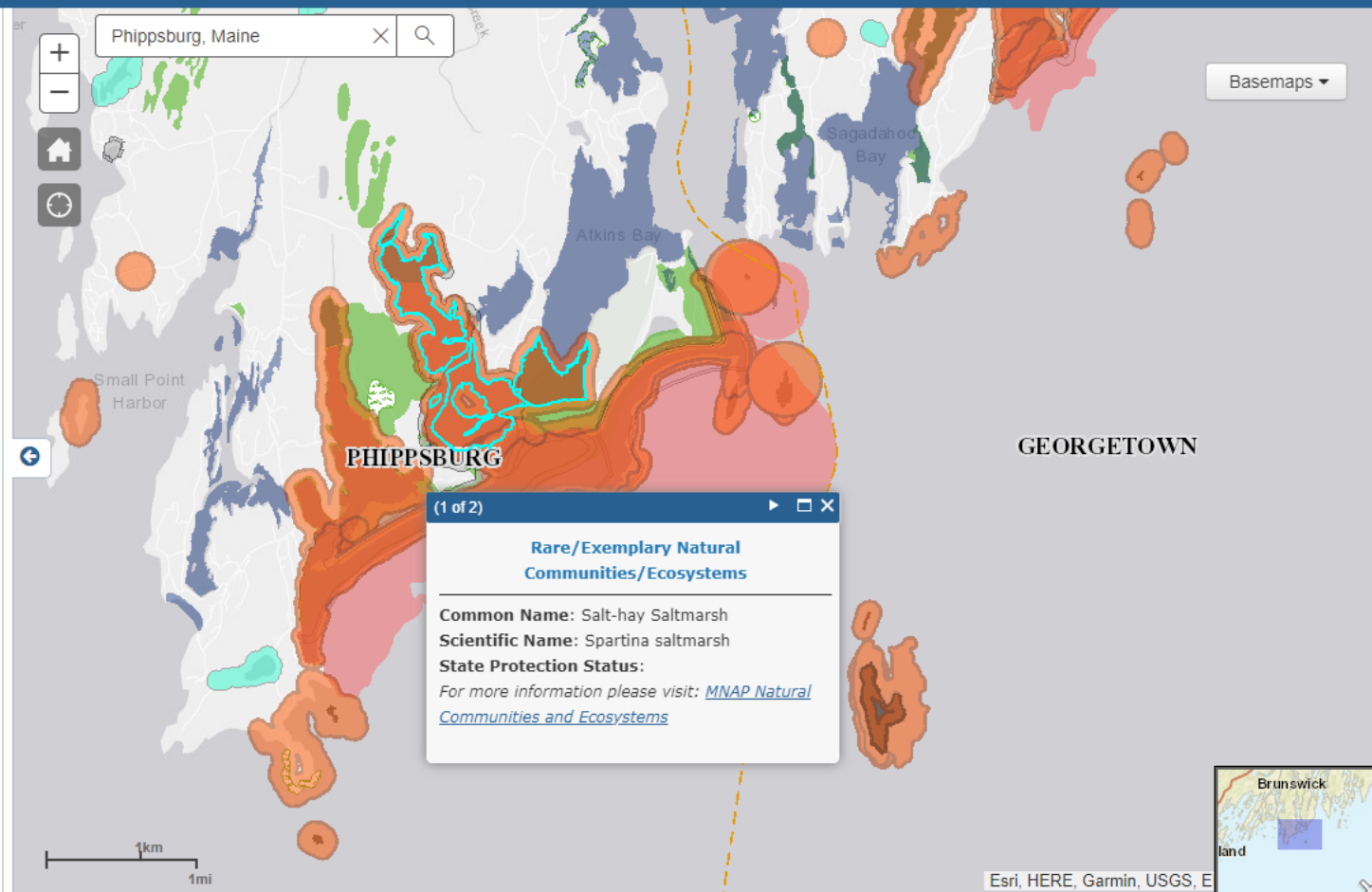
BwH Map Viewer

Welcome **Layers** Legend

Layer Details:

Toggle layers on and off. Layers with gray checkbox will appear once zoomed in or out to visible scale.

- ☒ Locator
- ☐ State Of Maine Parcels
 - ☒ City/Township
 - ☐ Developed Land/Impervious Surfaces
- ☐ Drainage Divides
- ☐ Physical Natural Resources
- ☒ Wildlife Habitats
 - ☒ Rare, Threatened, Endangered Animals
 - ☒ Essential Wildlife Habitats
 - ☒ Significant Wildlife Habitats
 - ☐ Aquatic Species and Habitats
- ☒ Plants and Natural Communities-(not displayed in Unorganized Territories)
 - ☒ Rare Plants and Natural Communities
 - ☒ Rare/Exemplary Natural Communities/Ecosystems
- ☐ Conservation and Connectivity Planning Resources



Case Study: Sea Level Rise and Salt Marshes



Rare Animals

Saltmarsh Sharp-tailed Sparrow
Common Moorhen
Harlequin Duck
Least Bittern
Arctic Tern
New England Cottontail

Rare Plants

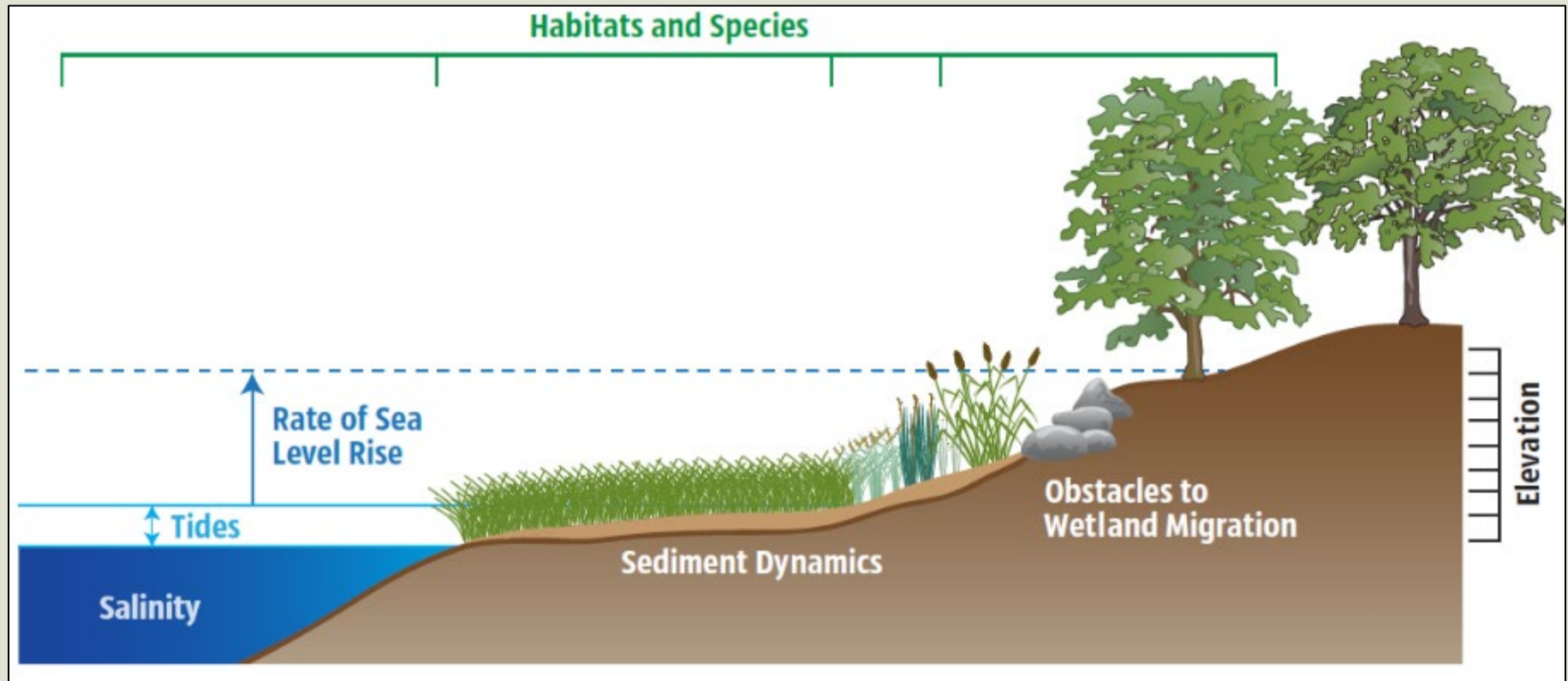
Saltmarsh False-foxglove
Smooth Winterberry Holly
Beach Plum
Dwarf Glasswort



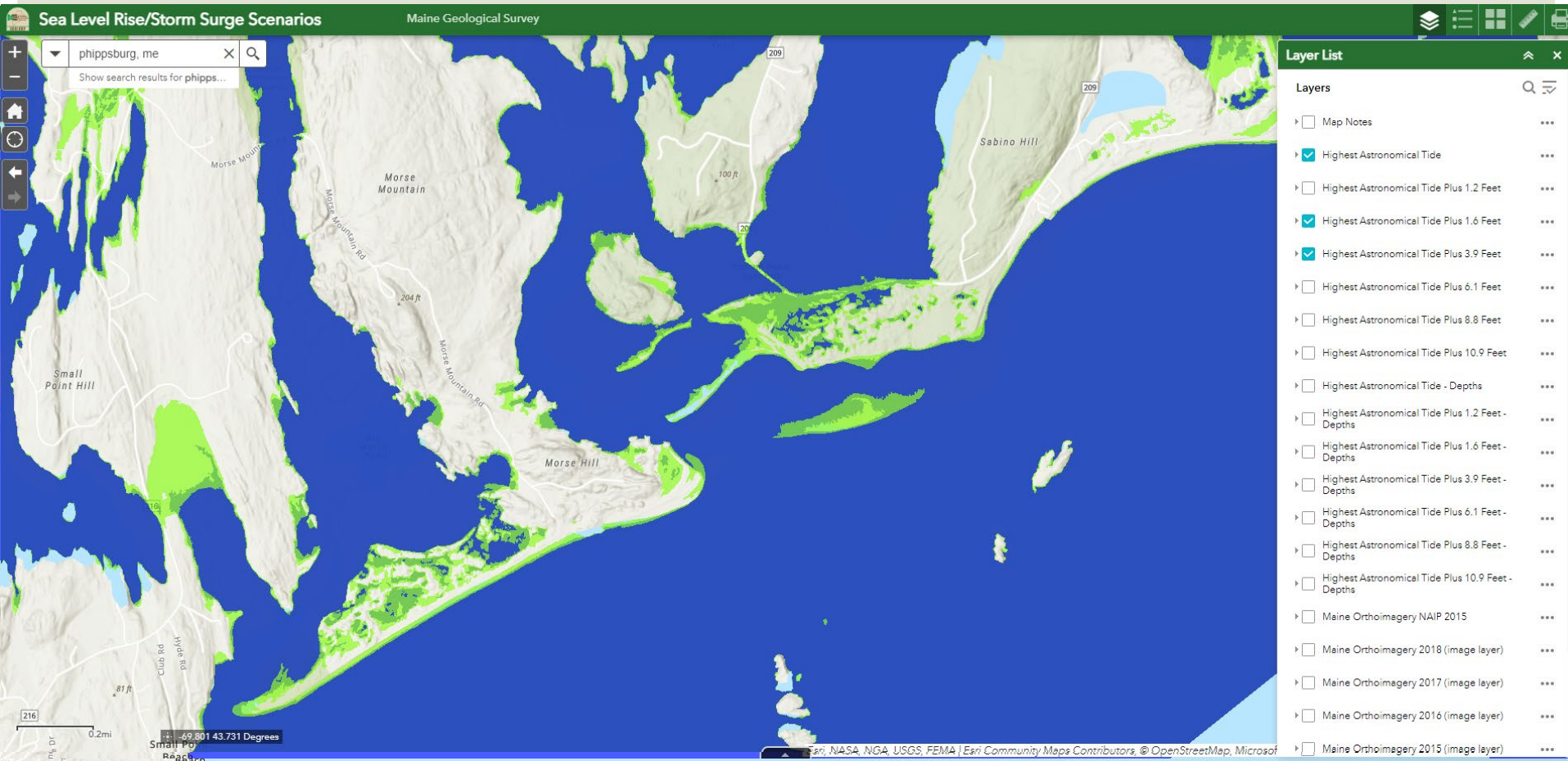
Alewives, Photo by Bridget Edmonds/TNC

Scarborough Marsh, Photo by Hildegard Anderson

Case Study: Sea Level Rise and Salt Marshes



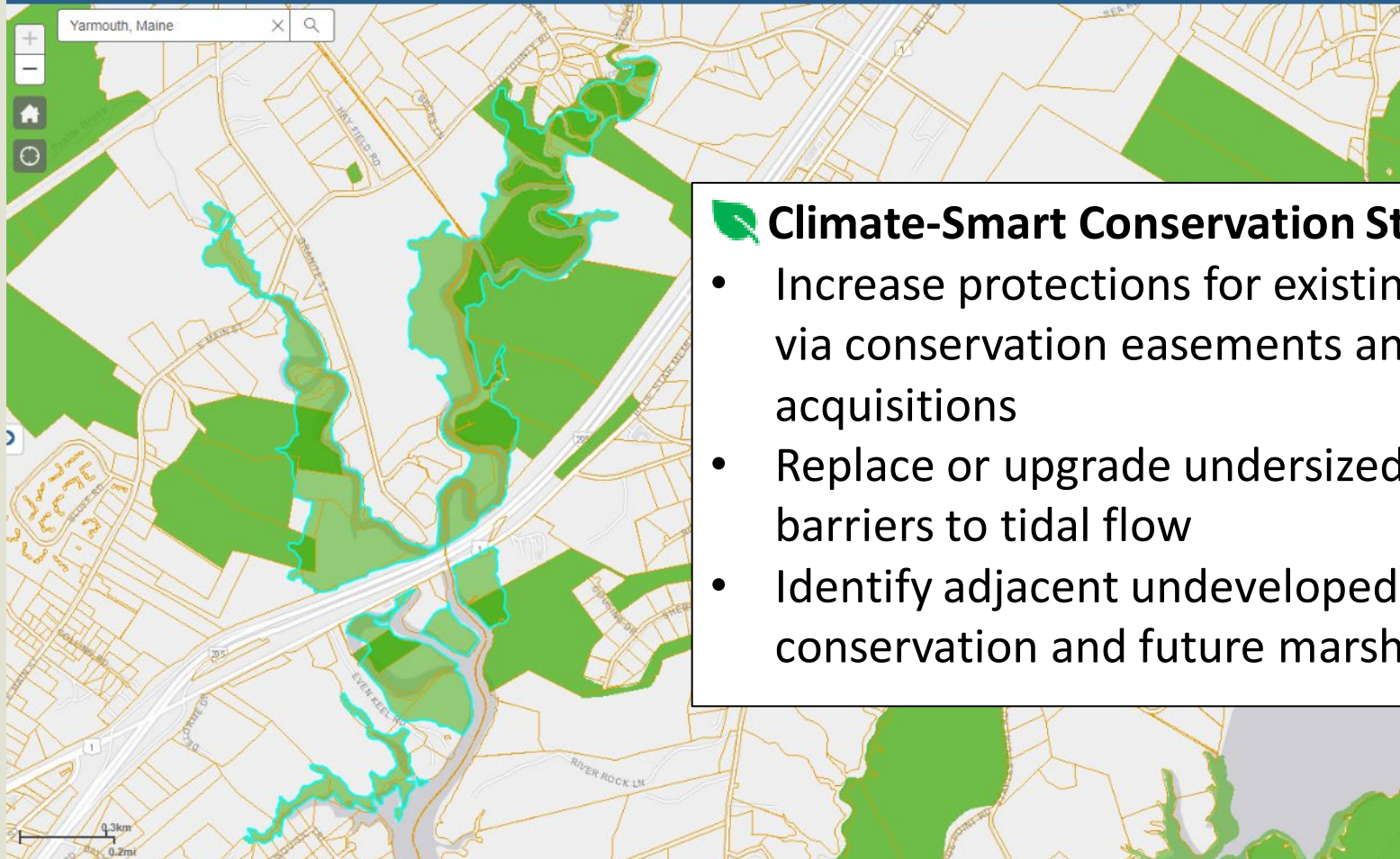
Case Study: Sea Level Rise and Salt Marshes



Strategies for conserving marshes and improving coastal resilience



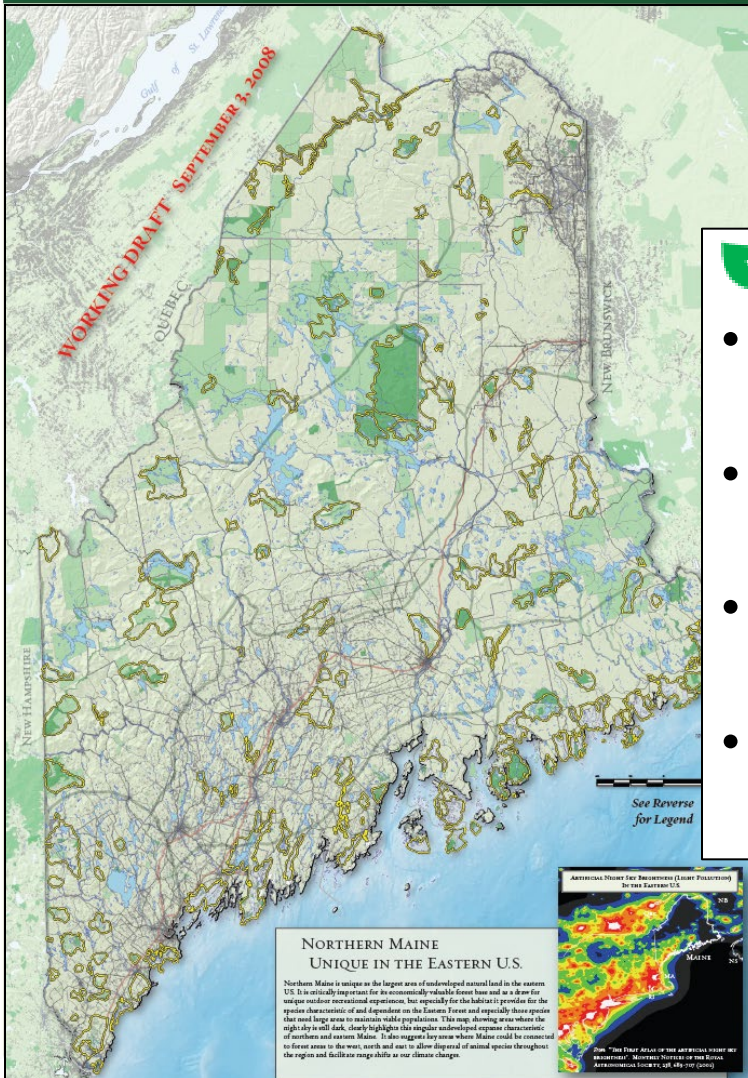
BwH Map Viewer



Climate-Smart Conservation Strategies:

- Increase protections for existing marshes via conservation easements and acquisitions
- Replace or upgrade undersized culverts or barriers to tidal flow
- Identify adjacent undeveloped land for conservation and future marsh migration

Landscape Level Conservation: Focus Areas of Statewide Significance

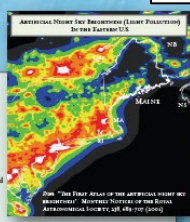


Climate-Smart Conservation Strategies:

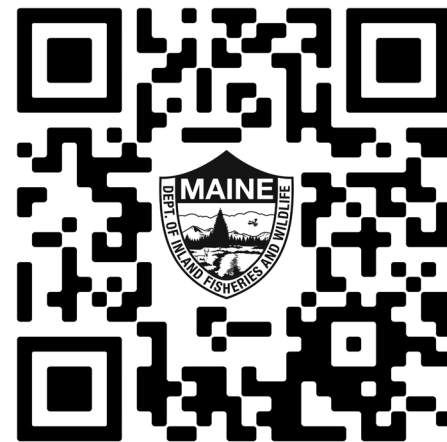
- Permanent conservation of unprotected and undeveloped lands within Focus Areas
- Improved connectivity of conserved parcels and riparian corridors
- Maintain intact forested buffers along water bodies and wetlands
- Identify and restore tidal restrictions and undersized culverts

NORTHERN MAINE UNIQUE IN THE EASTERN U.S.

Northern Maine is unique as the largest area of undeveloped natural land in the eastern U.S. It is critically important for its economically valuable forest base and as a draw for unique outdoor recreational experiences, but especially for the habitat it provides for the species characteristic of and dependent on the Eastern Forest and especially those species that need large areas to maintain viable populations. This map, showing areas where the eight-day rainfall data clearly highlights the singular undeveloped exposure characteristic of northern and eastern Maine. It also suggests key areas where Maine could be connected to forest areas in the west, north and east to allow dispersal of natural species throughout the region and facilitate range shifts as our climate changes.



Questions?



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