

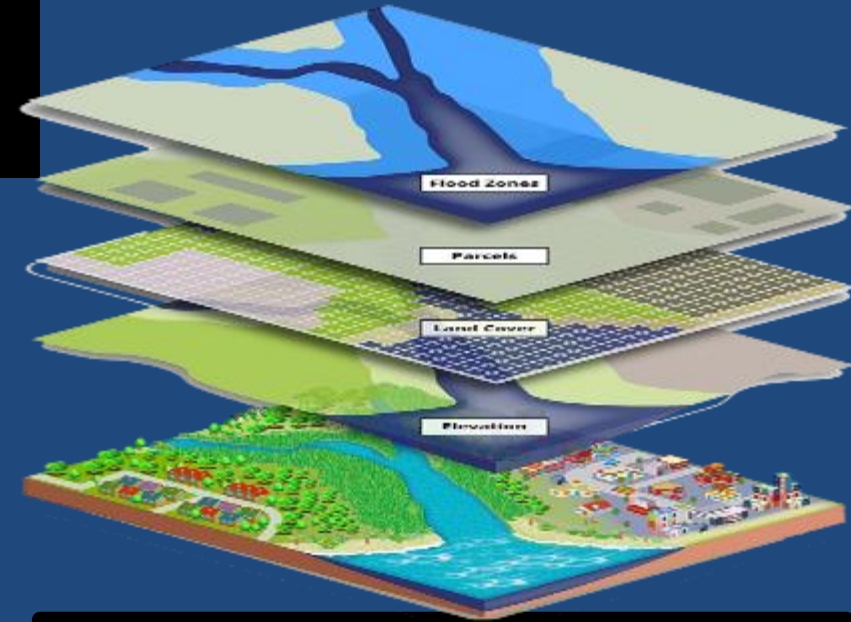
# Communication Strategies – Lessons Learned in New Hampshire

Mary Ann Tilton, PWS  
Assistant Wetlands Bureau Administrator  
NHDES – Wetlands Bureau  
Land Resources Management  
(603)271-2929





# Agenda



**NHDES  
Wetland  
Program  
Background**



**Mapping Tools  
& Teams**

**Rules Initiative**

# NHDES – Wetlands Program Background

- ❖ 1967 NH Legislature established state regulation over tidal wetlands
- ❖ 1969 NH Legislature established regulation of non-tidal wetlands and waters
- ❖ Mid-1980s the Wetlands program accepted mitigation for federal permitting
- ❖ 1991 NHDES Wetlands Program adopted rules to bring state-federal rules consistency
- ❖ 1992 US Army Corps issued State Programmatic General Permit (SPGP) to NH
- ❖ 2006 NH Legislature established the Aquatic Resource Mitigation Fund (ILF)
- ❖ 2010 NHDES adopted Stream Crossing Rules



# 1992 State Programmatic General Permit (SPGP)

- US Army Corps permit issued to the State of New Hampshire
- Established process for Corps, EPA, and DES processing of permits under the Clean Water Act;
- Applications filed to the NHDES Wetlands program trigger Corps and EPA review under the SPGP; vast majority of state permits serve as federal permits.
- Ensured coordinated pre-application reviews including US Army Corps, EPA, NHDES, NH Fish and Game Department, NH Natural Heritage Bureau, applicant, consultant to provide input on projects before they are submitted.

# NHDES – Wetlands Rulemaking & Process Improvement Timeline

- ❖ 2013 Launched Wetlands Rulemaking & Process Improvement Effort
- ❖ 2014 Interviewed Functional Partners & Internal research
- ❖ 2014 Hosted Public Listening Sessions with general public
- ❖ 2015 Hosted Stakeholder meetings on rules concepts
- ❖ 2016-2017 Drafted rules based on research & feedback
- ❖ 2018 Released draft rules and hosted public comment sessions
- ❖ 2019 Reconvened Stakeholder Workgroup to review Revised rules
- ❖ 2019 Adopted rules and hosted trainings prior to effective date



# NHDES Wetlands Rules & Process Initiative Communication Strategies 1

- 1. Establish Internal Rules Team**
- 2. Establish Goals & Concepts**
- 3. Interview Functional Partners**
- 4. Internal research on process, existing practices & best available science**

# Wetlands Program Rulemaking & Process Improvement Effort

## GOALS

- Enhance predictability and transparency
- Increase consistency and standardization
- Ensure scientifically-based decisions that are protective of New Hampshire's important natural resources



# NHDES Wetlands Rules & Process Initiative

## Communication Strategies 1

### Example Functional Partners included:

- Regional Planning Commissions
- US Army Corps of Engineers
- EPA Region 1, US Fish & Wildlife Service, NOAA, NRCS
- NH Port Authority
- NH Timberland Owners Association
- NHDOT; NH Fish & Game; NH Natural Heritage Bureau, NH NH Dept of Agriculture; NHDES Water Administrators
- NH Municipal Association



# NHDES Wetlands Rules & Process Initiative

## Communication Strategies 1

### Research Topics included:

- Purpose; Need, Avoidance, Minimization
- Project Classification
- Delineation & Definitions
- Thresholds & Process
- Wetland Functional assessment
- Criteria for Approval
- Plan Requirements
- Stream Bank Stabilization;
- Water Quality & Wildlife Assessment
- Standard Permit conditions;
- Project Specific Criteria

Federal rules  
& SPGP

Model state  
rules

Best available  
science

Existing  
practices



## NHDES Wetlands Rules & Process Initiative Communication Strategies 2

5. Host public listening sessions
6. Seek comments on Draft rules
7. Hold meetings to review Revised Drafts
8. Align rollout of Tools, forms, and guidance with rules changes



## NHDES Wetlands Rules & Process Initiative Communication Strategies 3

9. Delayed effective date to provide internal and external trainings –so all are ready
10. Addressed any needed changes identified.
11. Ensure regulated community engaged in rules process.
12. Vetted concepts with sister states and Regional partners



# RSA 482-A Public Purpose Wetland Function





# Wetlands provide many services...



Recreation



Water quality



Moderate flood flows

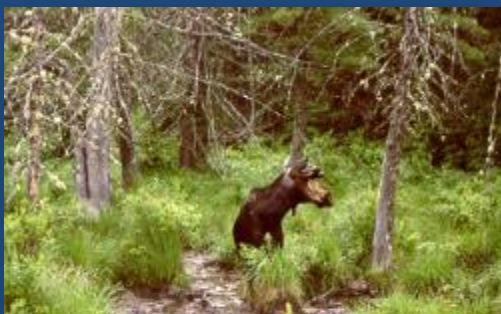


Maintain stream flows



Shellfish

NH Sea Grant



Wildlife habitat



Carbon storage



Support aquatic life

# Striking the Right Balance

**Protecting  
Natural  
Resources**

**Supporting  
Economic  
Activity**

**Despoliation prevented**



# Outcome: Standardize Conditions to Protect ...



**Water Quality**

**Env-Wt 307.03**

**Fisheries & Breeding areas**

**Env-Wt 307.04**

**Threatened/endangered  
species, critical habitat**

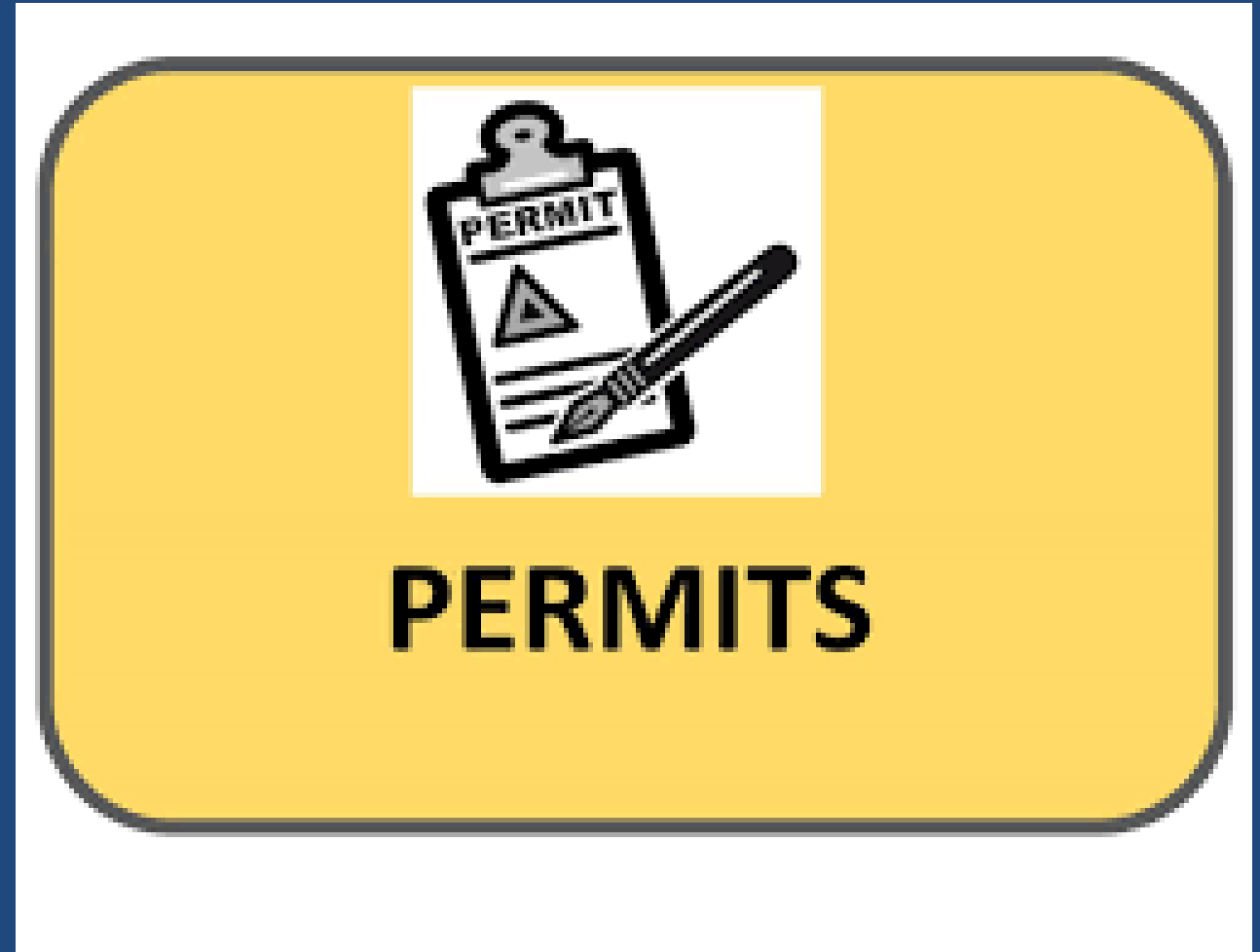
**Env-Wt 307.06**

**Designated Prime Wetlands**

**Env-Wt 307.08**

# 32 New Project-Specific Standards

- Applicability.
- Approval Criteria.
- Design Criteria.
- Project Classification.
- Construction R'qmts.
- Maintenance.



# Chapter 500 - Non-tidal - NEW CHAPTER

## 18 Project-Specific Requirements

Consistent sub-headings for each project type

- Applicability
- Approval Criteria
- Application Requirements
- Design Requirements
- Construction Requirements
- Project Classification

Project-Specific  
Criteria  
Worksheet





# Outcome: Standardize Project Criteria



**Trails & Paths**

**Env-Wt 517**

**Ponds**

**Env-Wt 519**

**Forestry**

**Env-Wt 520**

**Utility**

**Env-Wt 521**

**Agriculture**

**Env-Wt 522**

**Residential /Commercial** Env-Wt 524

**Restoration/Enhancement** Env-Wt 525

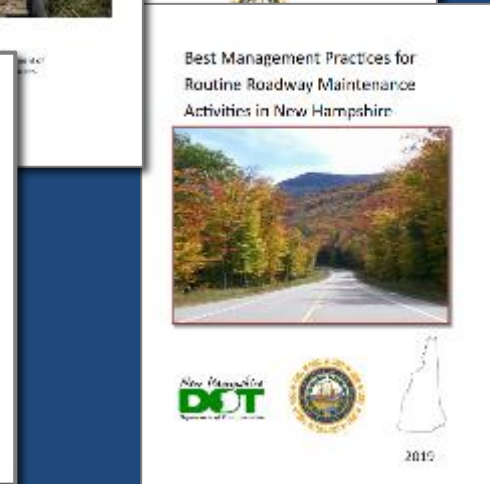
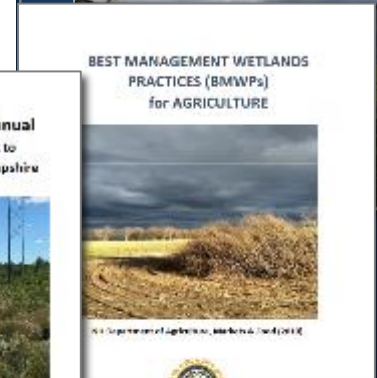
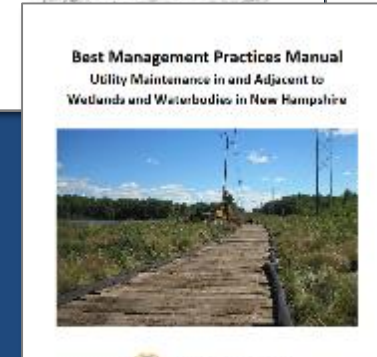
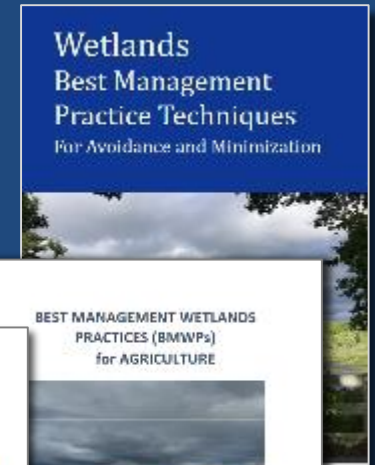
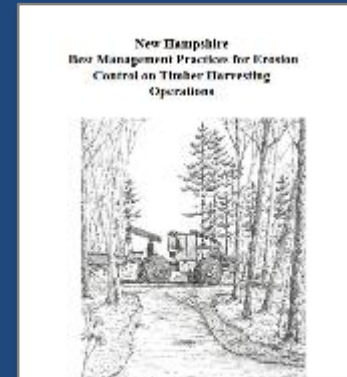


# Updated and New BMPs

- Avoidance and Minimization.

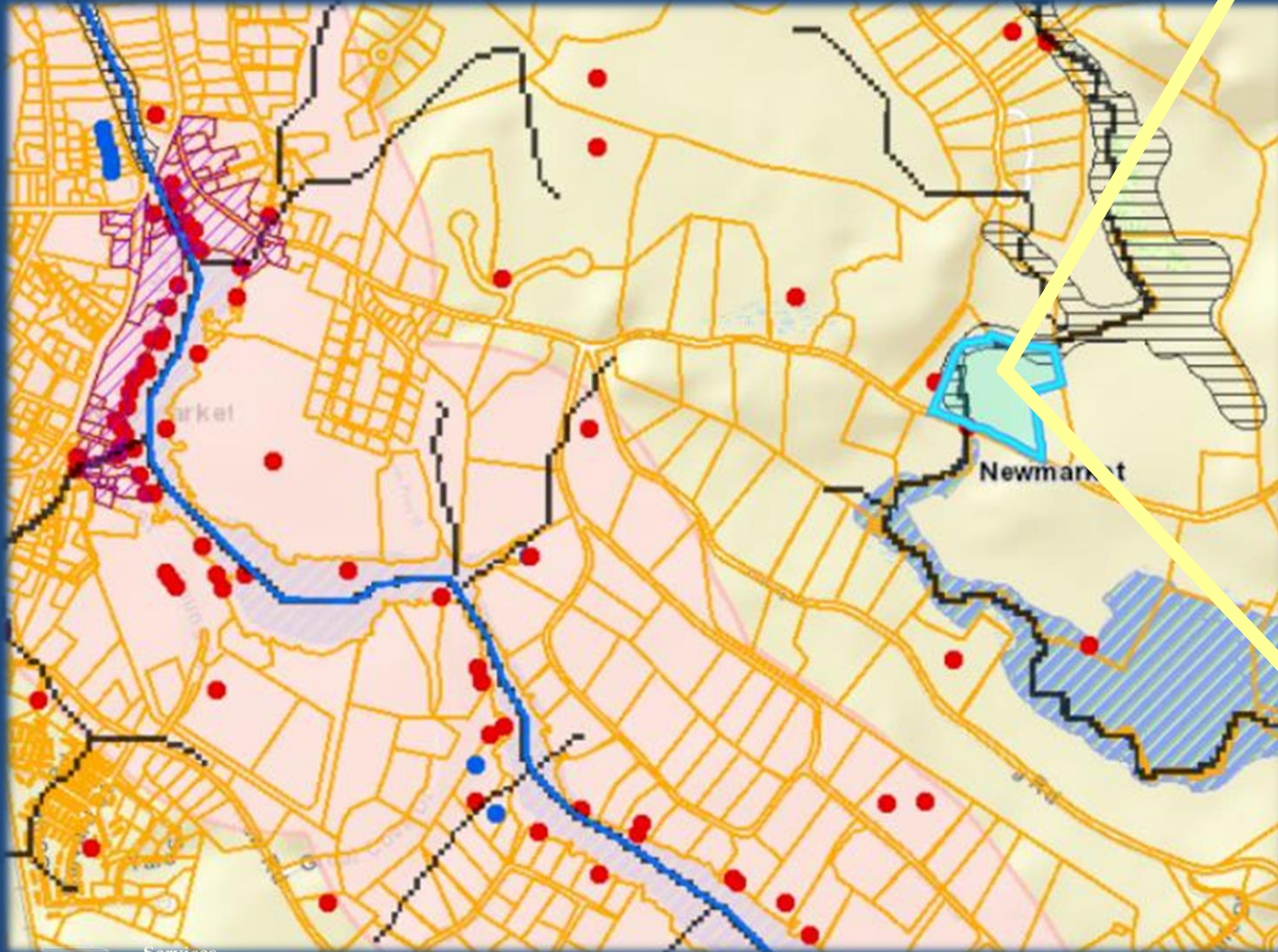
Use is required with certain notification activities:

- BMWP for Agriculture.
- Trail Construction and Maintenance.
- Routine Roadway Maintenance.
- Utility Maintenance.
- Timber Harvesting Operations.

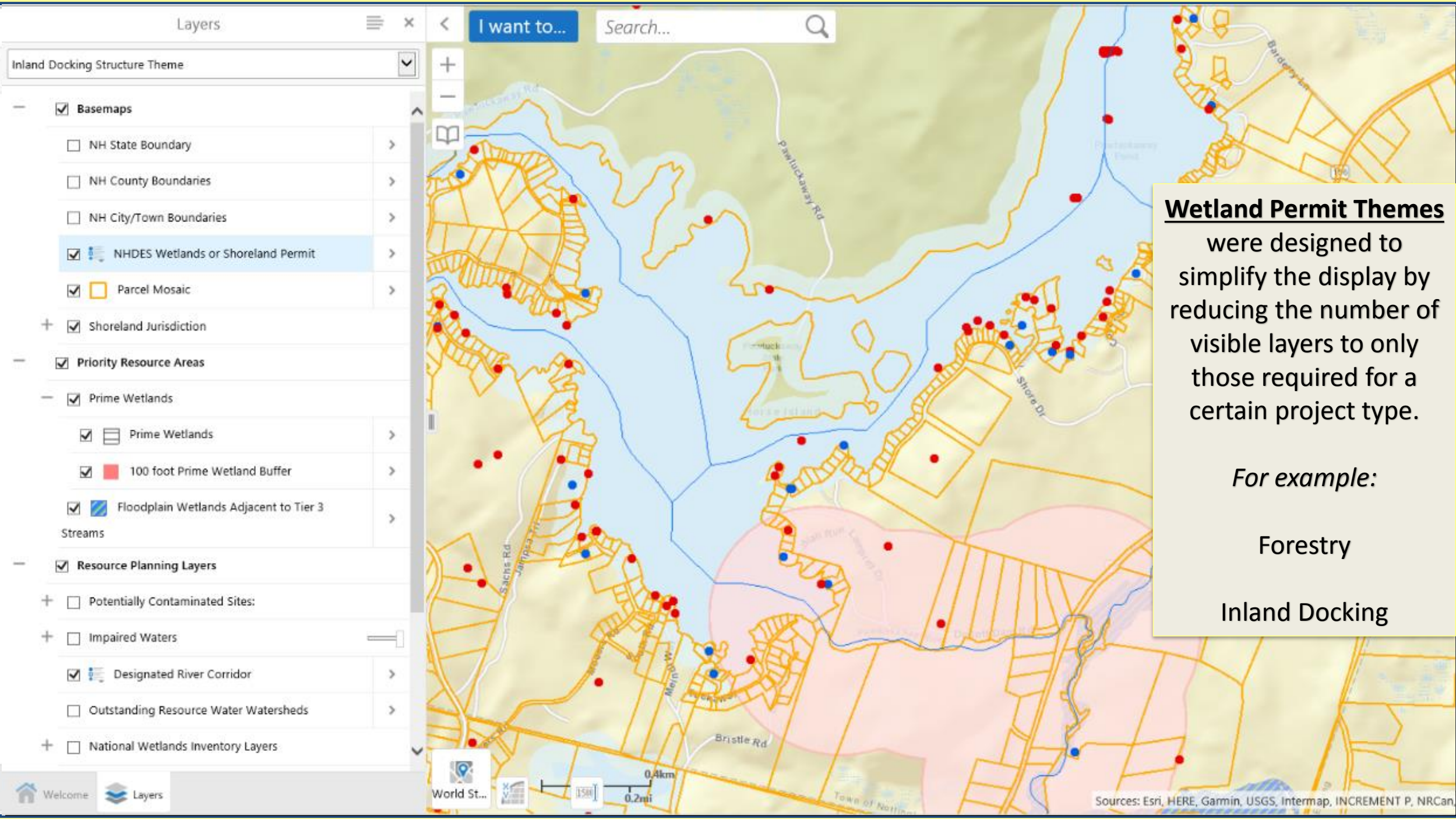




# NHDES Wetlands Permit Planning Tool (WPPT)







- Layers
- Inland Docking Structure Theme
- Basemaps
    - NH State Boundary
    - NH County Boundaries
    - NH City/Town Boundaries
    - NHDES Wetlands or Shoreland Permit
    - Parcel Mosaic
  - Shoreland Jurisdiction
  - Priority Resource Areas
  - Prime Wetlands
    - Prime Wetlands
    - 100 foot Prime Wetland Buffer
    - Floodplain Wetlands Adjacent to Tier 3 Streams
  - Resource Planning Layers
    - Potentially Contaminated Sites:
    - Impaired Waters
    - Designated River Corridor
    - Outstanding Resource Water Watersheds
    - National Wetlands Inventory Layers

### Wetland Permit Themes

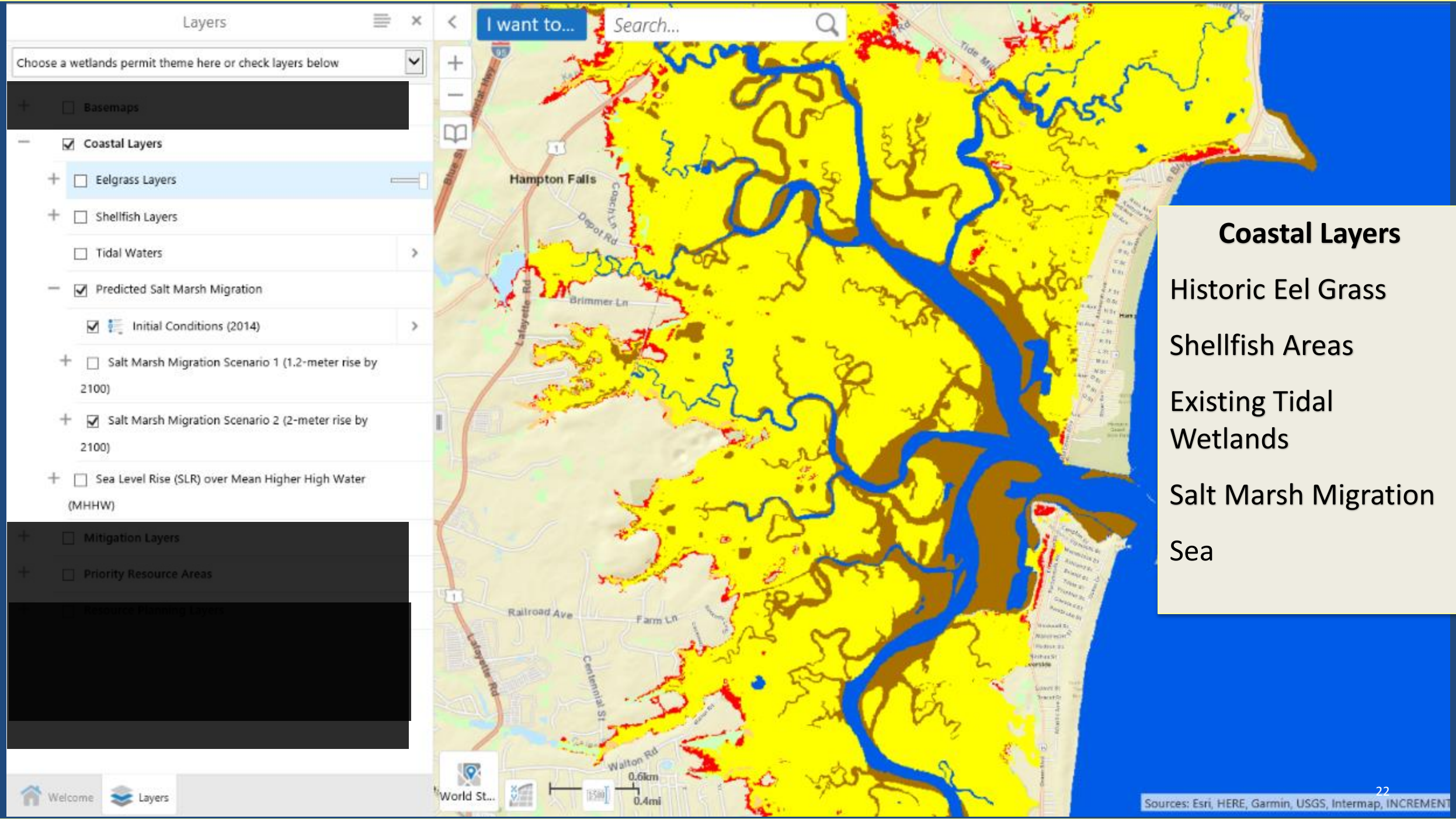
were designed to simplify the display by reducing the number of visible layers to only those required for a certain project type.

*For example:*

Forestry

Inland Docking





- Layers
- Choose a wetlands permit theme here or check layers below
- +  Basemaps
  - Coastal Layers
  - +  Eelgrass Layers
  - +  Shellfish Layers
  - Tidal Waters
  - Predicted Salt Marsh Migration
    - Initial Conditions (2014)
    - +  Salt Marsh Migration Scenario 1 (1.2-meter rise by 2100)
    - +  Salt Marsh Migration Scenario 2 (2-meter rise by 2100)
    - +  Sea Level Rise (SLR) over Mean Higher High Water (MHHW)
  - +  Mitigation Layers
  - +  Priority Resource Areas

- ### Coastal Layers
- Historic Eel Grass
  - Shellfish Areas
  - Existing Tidal Wetlands
  - Salt Marsh Migration
  - Sea

Layers

Choose a wetlands permit theme here or check layers below

- Basemaps
- Coastal Layers
- Mitigation Layers
- Priority Resource Areas
- Prime Wetlands
- Dunes
  - backdune
  - foredune
  - interdune
  - other
- Peatlands
- Floodplain Wetlands Adjacent to Tier 3 Streams
- Tidal\_Waters
- Resource Planning Layers



- Priority Resource Areas [PRAs]**  
(Env-Wt 103.65)  
jurisdictional areas that have:
- Protected species or habitat (NHB)
  - Bogs
  - Floodplain wetlands adjacent to Tier 3+
  - Prime Wetlands
  - Sand Dunes
  - Tidal Wetlands, Tidal Waters or
  - Undeveloped Tidal Buffer Zone



Choose a wetlands permit theme here or check layers below



Coastal Layers

Mitigation Layers

Priority Resource Areas

Resource Planning Layers

+  Potentially Contaminated Sites:

+  Impaired Waters

Designated River Corridor

Outstanding Resource Water Watersheds

+  National Wetlands Inventory Layers

+  Wildlife Action Plan Layers

FEMA Floodplains

 1 pct. Annual Chance Flood Hazard

 Floodway

 0.2 pct. Annual Chance Flood Hazard

 Area of Undetermined Flood Hazard

 Area Protected by Levee

Hydric Soils

Soil Drainage Classification

Watershed Drainage Area (sq. mile)



*Resource Planning Layers:*  
**FEMA Floodplains**

**FEMA Floodplains** ✕

Flood Zone: AE  
 DFIRM Study Area: Hillsborough County  
 Flood Zone?: 1 PCT ANNUAL CHANCE FLOOD HAZARD

[Metadata](#)

[View Additional Details](#) [Add to Results](#)



# WPPT – Tools & Products

## Identify Features

Ex: How many NHDES Wetlands or Shoreland Permits have been issued on Jolly Island?

Enable a buffer on your search

View additional fields that aren't displayed in a pop-up

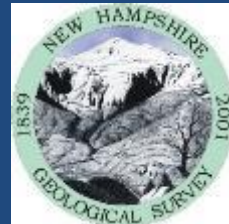
The screenshot displays a GIS application interface. At the top, a toolbar contains several icons and labels: 'Enable Buff...', 'Enable Sna...', 'Select Snap...', 'Identifiable...', and 'Identify'. The 'Enable Buff...' option is highlighted with a red dashed circle. Below the toolbar is a 'Buffer Options' dialog box with a close button (X). The dialog box contains a 'Distance' input field with the value '0.25', a 'Units' dropdown menu set to 'Miles (mi)', and a checkbox for 'Write to Drawing Layer' which is currently unchecked. At the bottom of the dialog box are three buttons: 'Clear', 'Cancel', and 'Continue'. Below the dialog box is a map showing 'Jolly Island' with a red circular buffer around it. Several yellow circular markers with orange centers are scattered across the island, representing search results.

# NEW HAMPSHIRE STREAM CROSSING INITIATIVE

- Multi-agency partnership
- Address the complex problem of undersized and deficient crossings

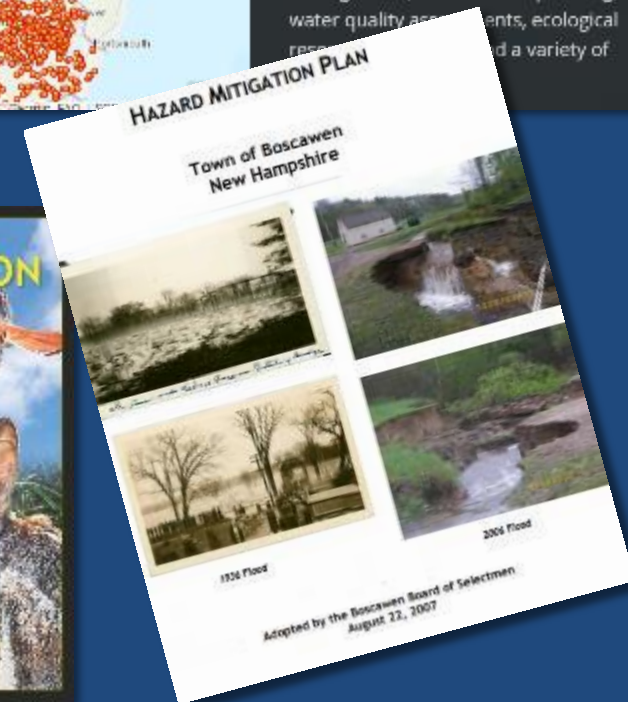
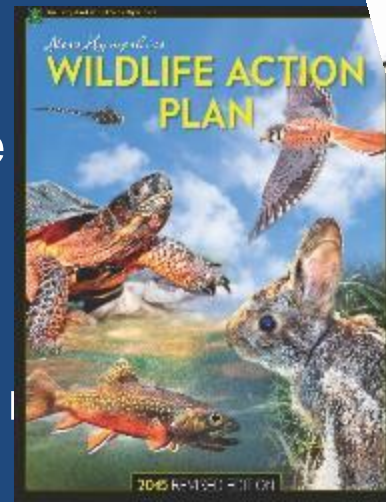
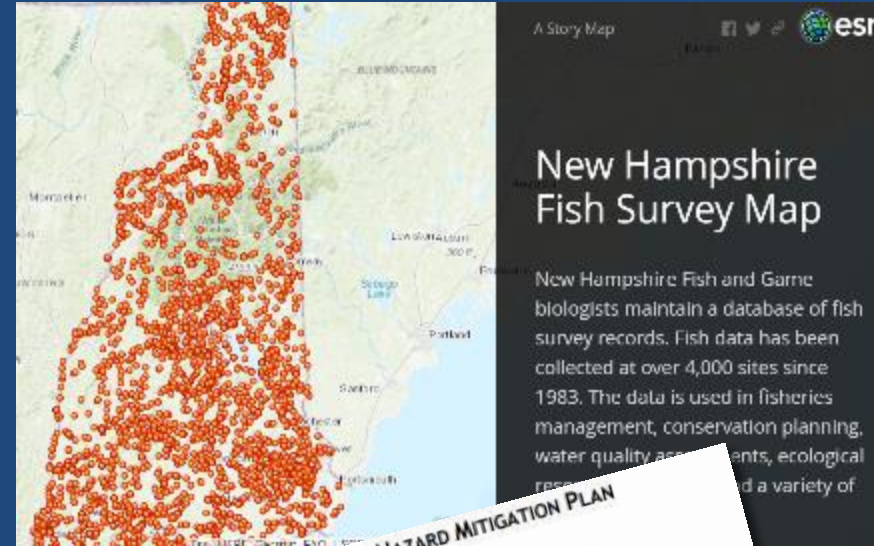
## MISSION

Inventory stream crossings throughout the state to inform data-driven decisions on culvert replacement and stream restoration



# FINDING GOOD LOCAL MITIGATION *STREAM RESTORATION*

- Focus on:
  - NHFG WAP Tier 1 and Tier 2
  - Benefits to threatened and endangered species
  - Connecting conservation lands
  - Drinking water quality and supply
- Use NHFG Aquatic WAP- Fish Survey Data
- Maximize stream miles gained/enhanced for fish and wildlife passage
- Use local flood data
- Land protection is encouraged but **required**





# PROJECTS TO REMOVE STREAM BARRIERS CAN BE USED AS MITIGATION

- Removing aquatic barriers
  - Dam removal
  - Stream crossing upgrades using stream simulation
  - Many culverts are old and undersized
  - Update infrastructure while improving aquatic habitat!
- How can you find good stream crossing projects in your community?



# PROJECTS TO REMOVE STREAM BARRIERS CAN BE USED AS MITIGATION



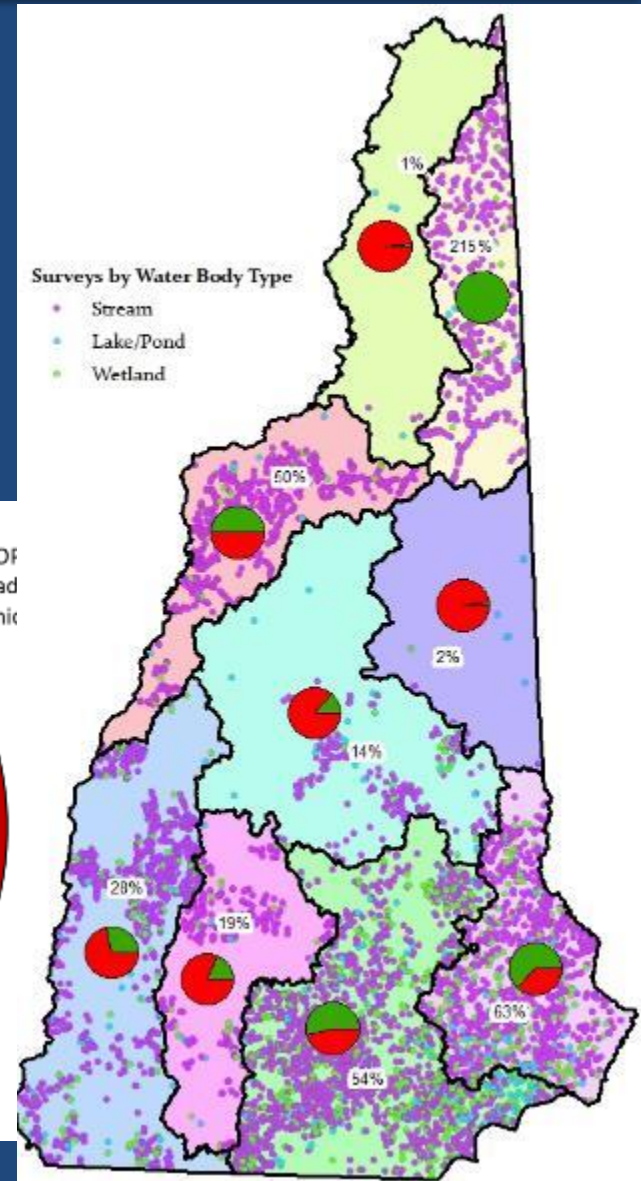
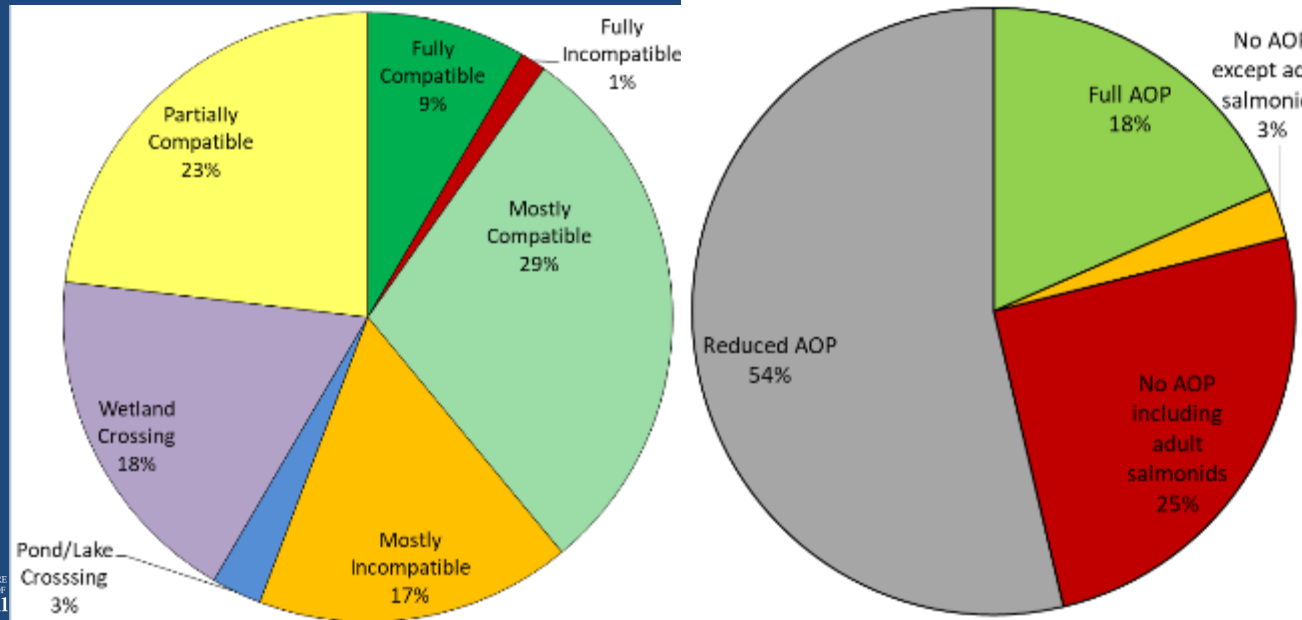






# PRIORITIZING CULVERT REPLACEMENTS FOR FISH AND FLOODS

- 7,500 surveys statewide
- Replacements are costly so need to focus efforts where it matters most



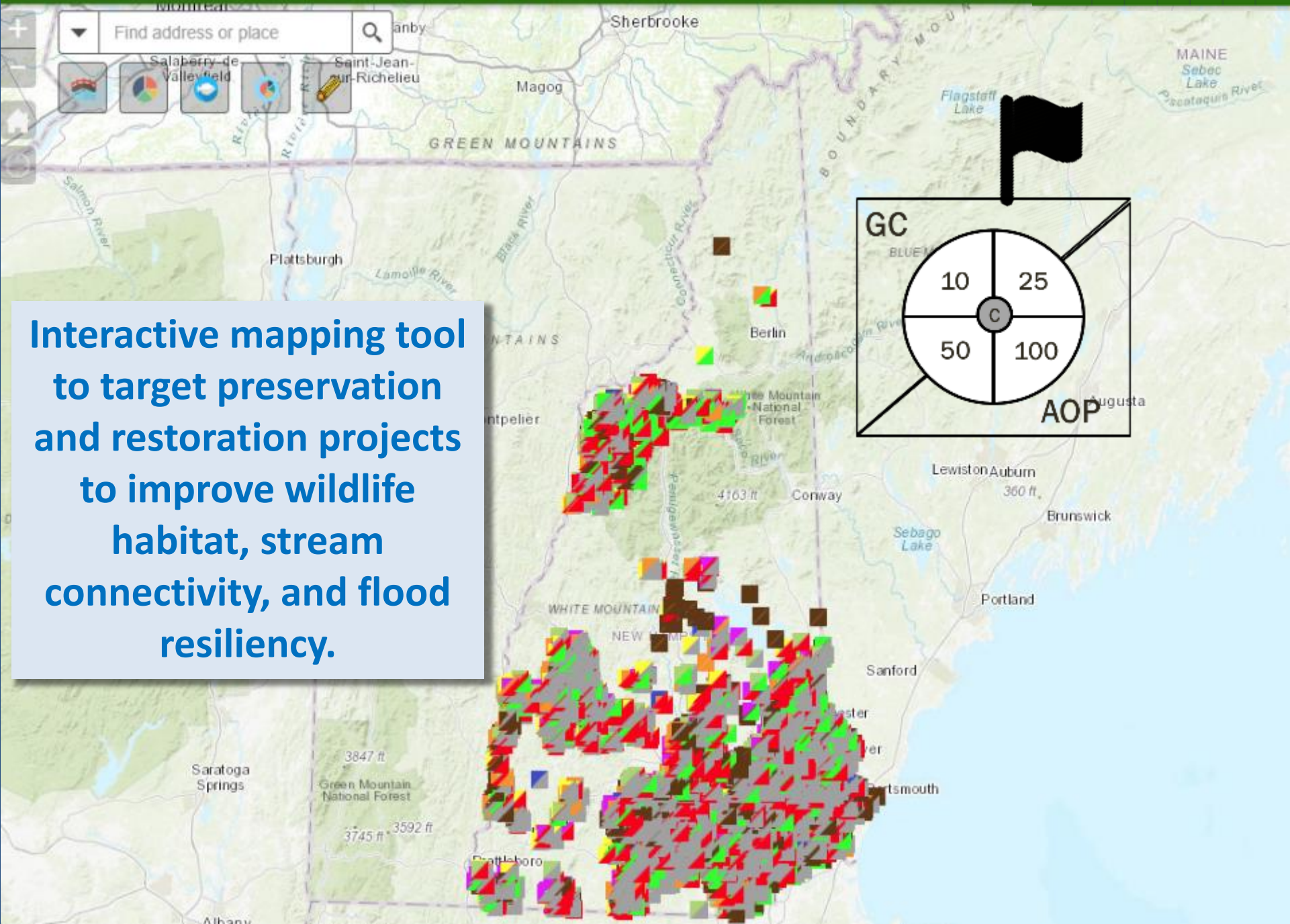
# PRIORITIZING STREAM CROSSING PROJECTS FOR MITIGATION

## Target stream crossings with greatest environmental impact

- ✓ Identify crossings with repeated flood issues and damage
- ✓ Causing bank erosion and scour
- ✓ Barrier to aquatic organism passage
- ✓ Preventing diadromous fish migrations or access to critical spawning habitat
- ✓ Disconnecting T&E species habitat of important WAP habitat

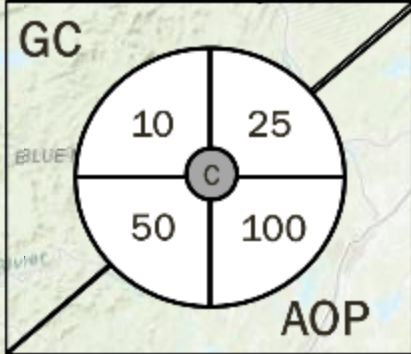
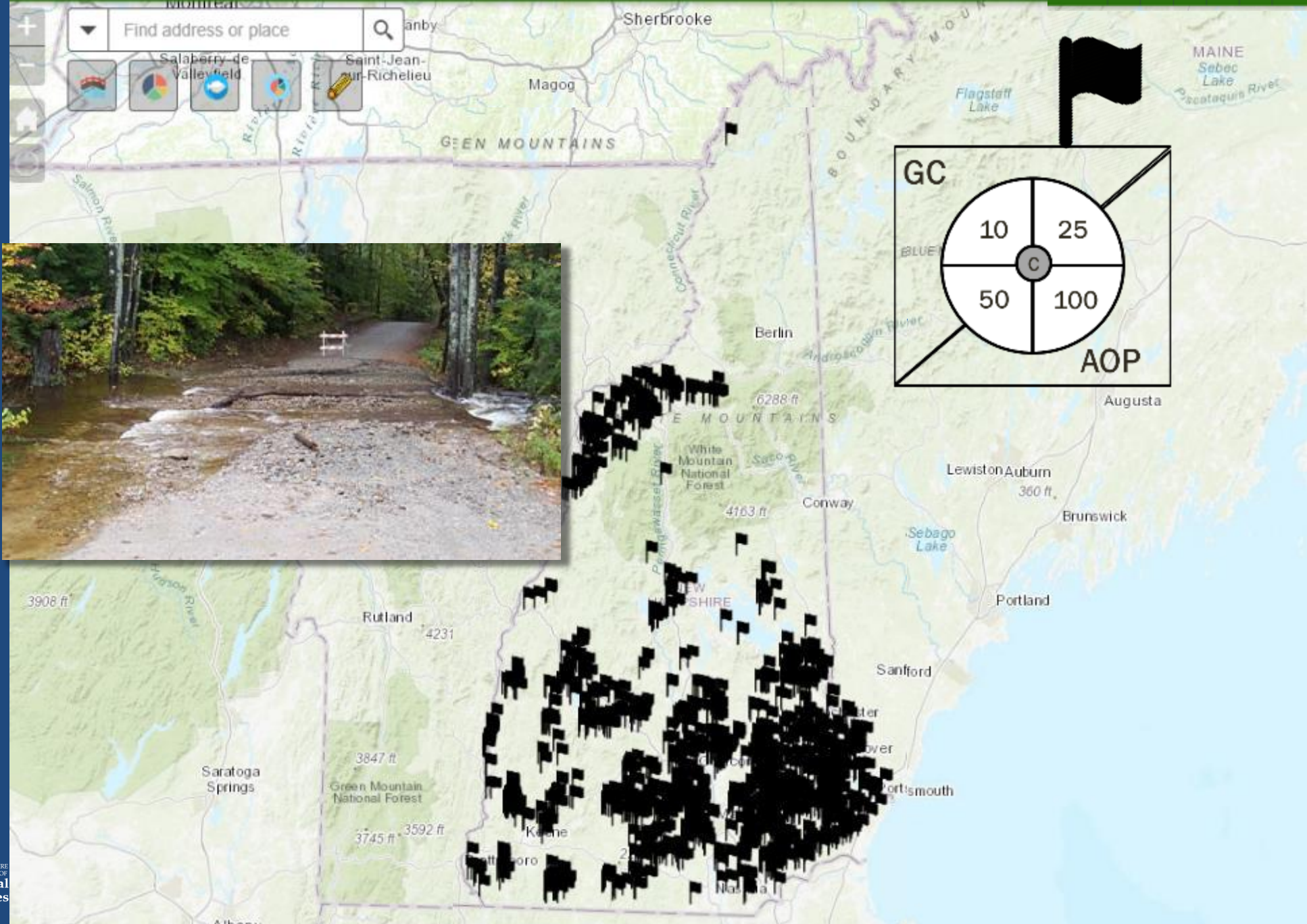




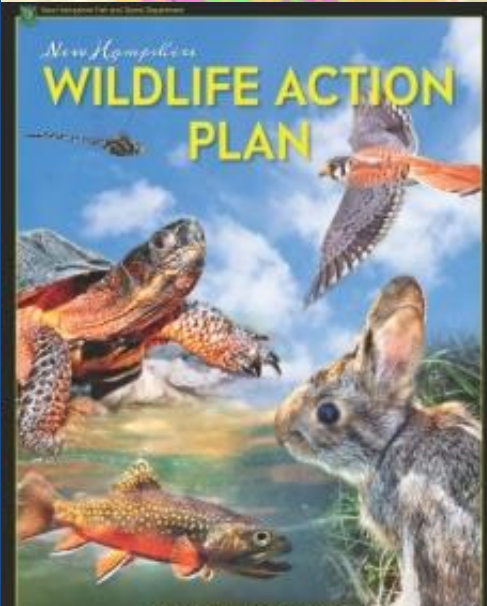
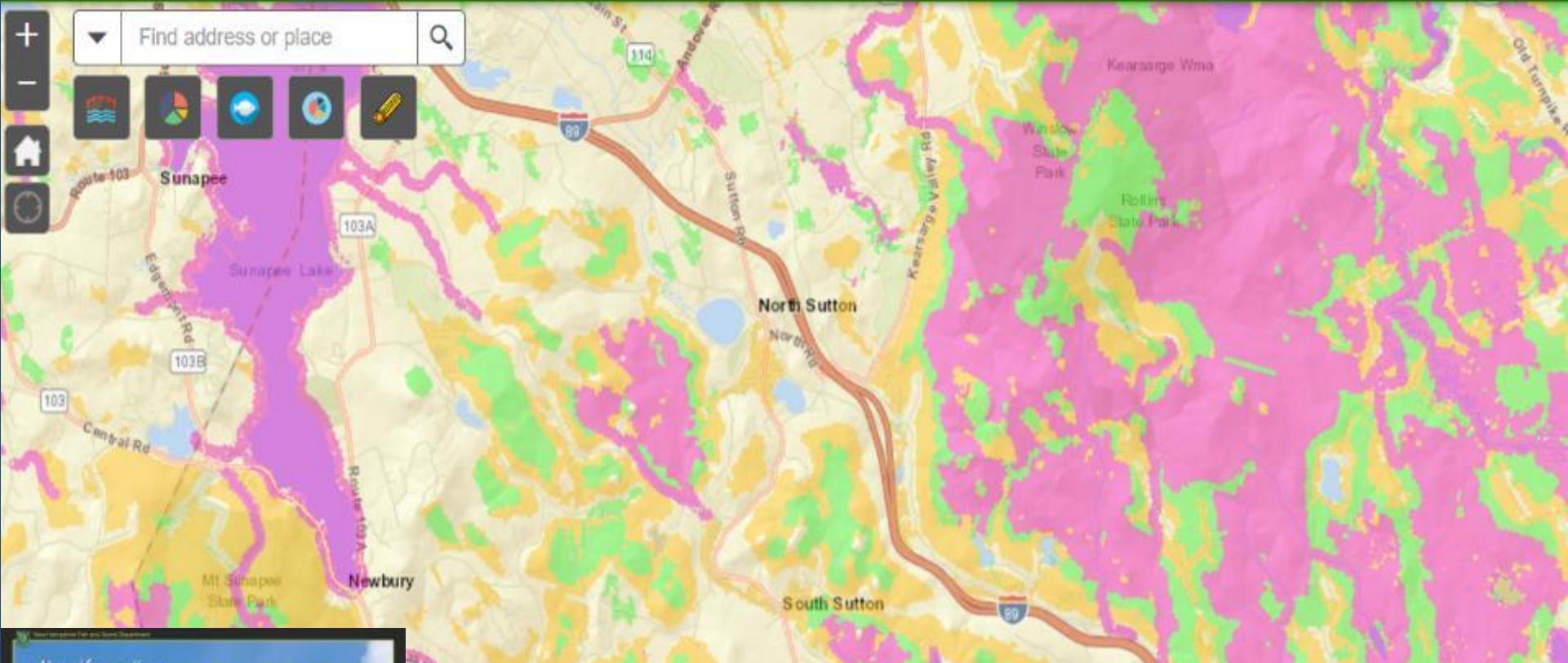


Interactive mapping tool to target preservation and restoration projects to improve wildlife habitat, stream connectivity, and flood resiliency.





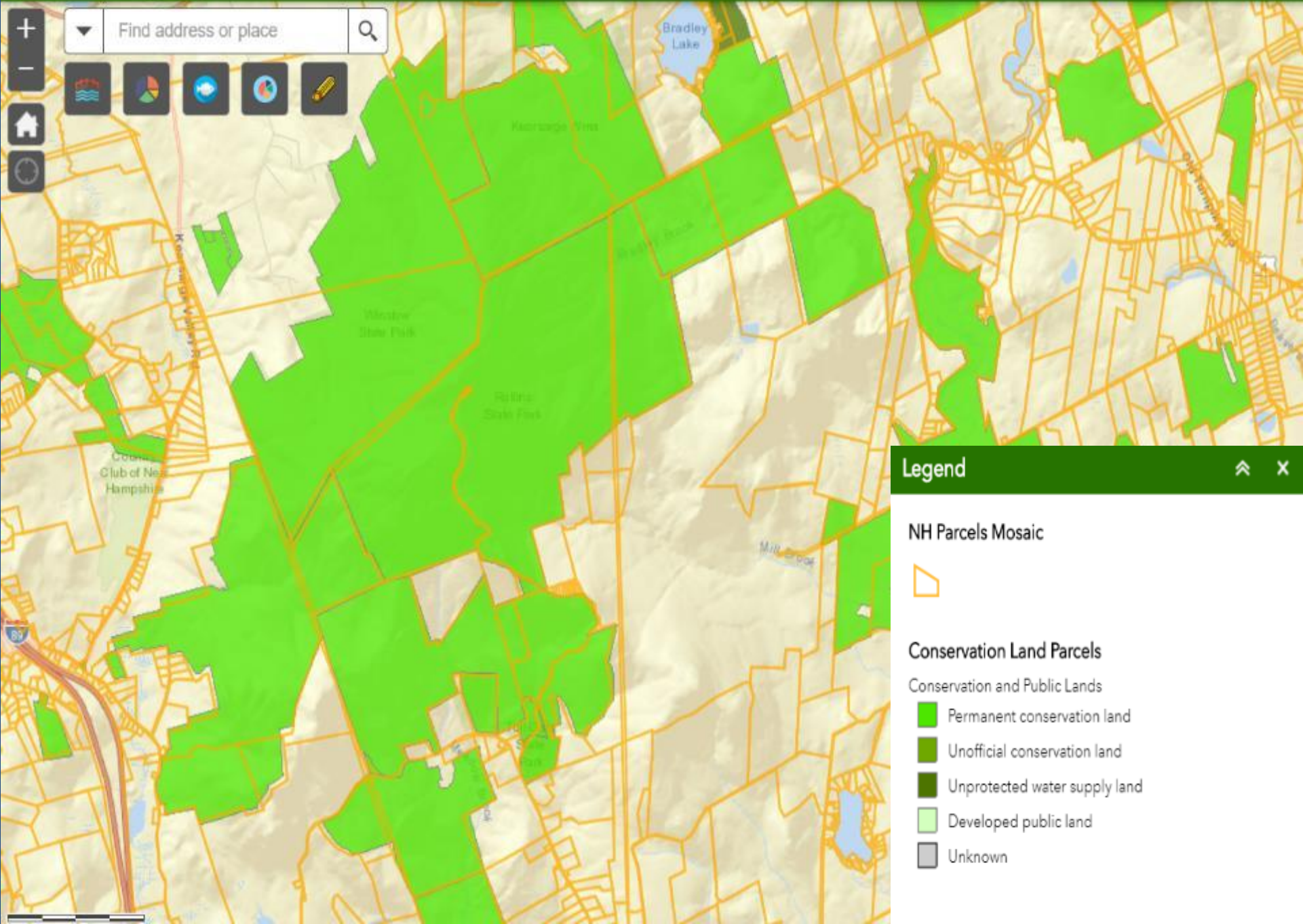




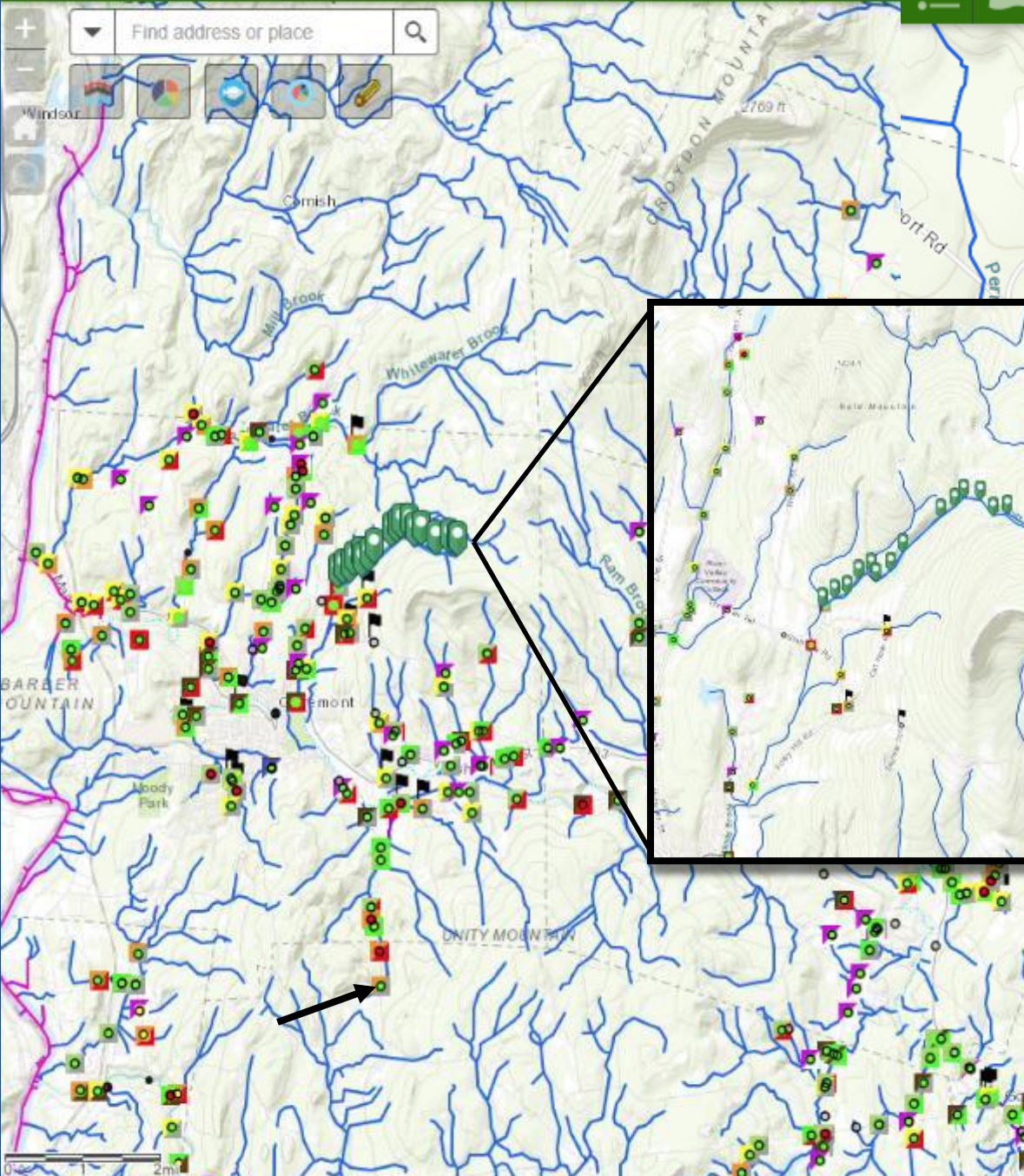
### Legend

- Wildlife Action Plan Habitat Tears**
- WAP 2015: Highest Ranked Wildlife Habitat
  - Not Top Ranked
  - Highest Ranked Habitat in NH
  - Highest Ranked Habitat in Region
  - Supporting Landscape









### Measure Tool

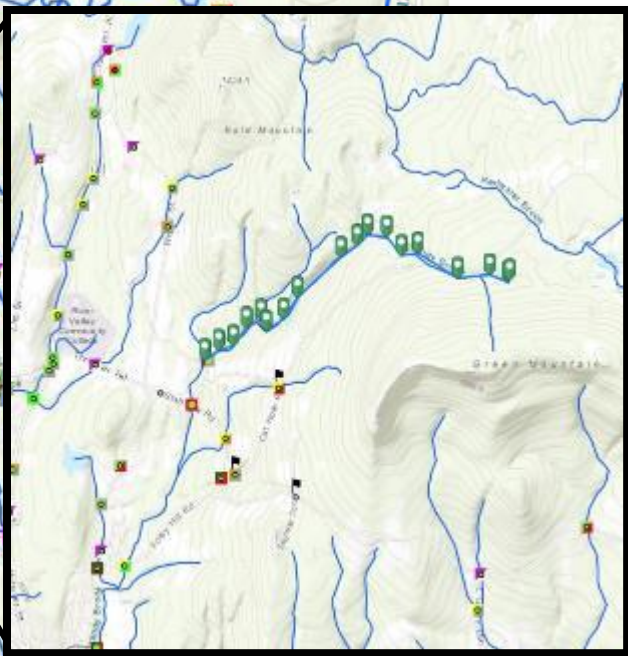
Miles

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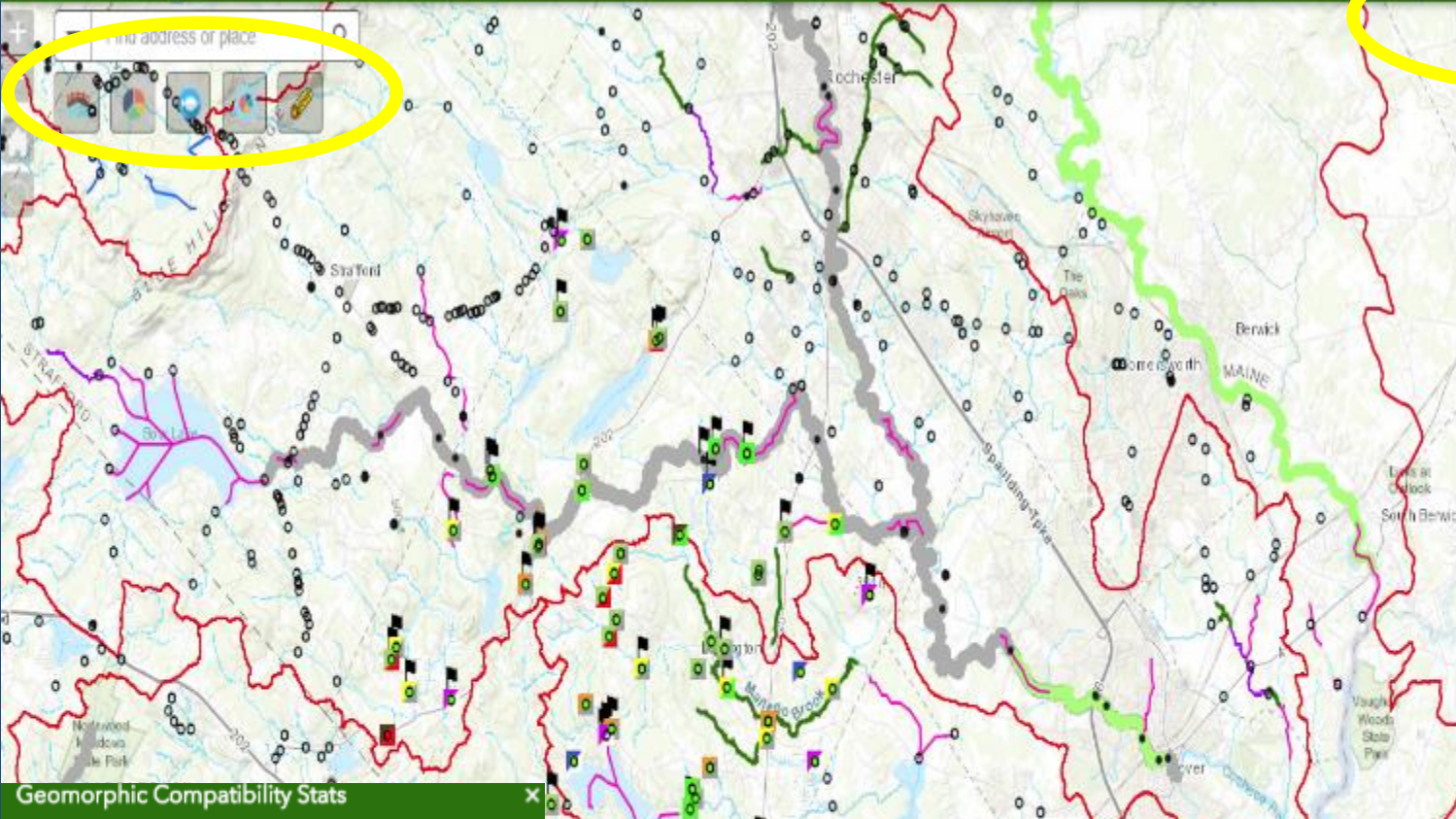
Measurement Result

1.92 Miles

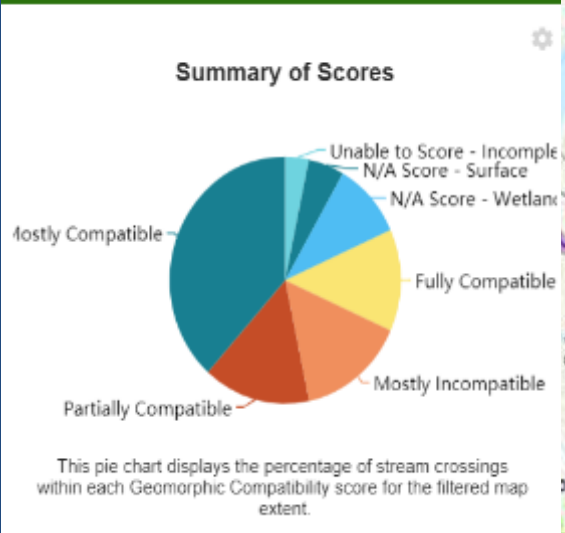
Clear







Geomorphic Compatibility Stats



**Data Summary**

**Stream Crossing Summary**

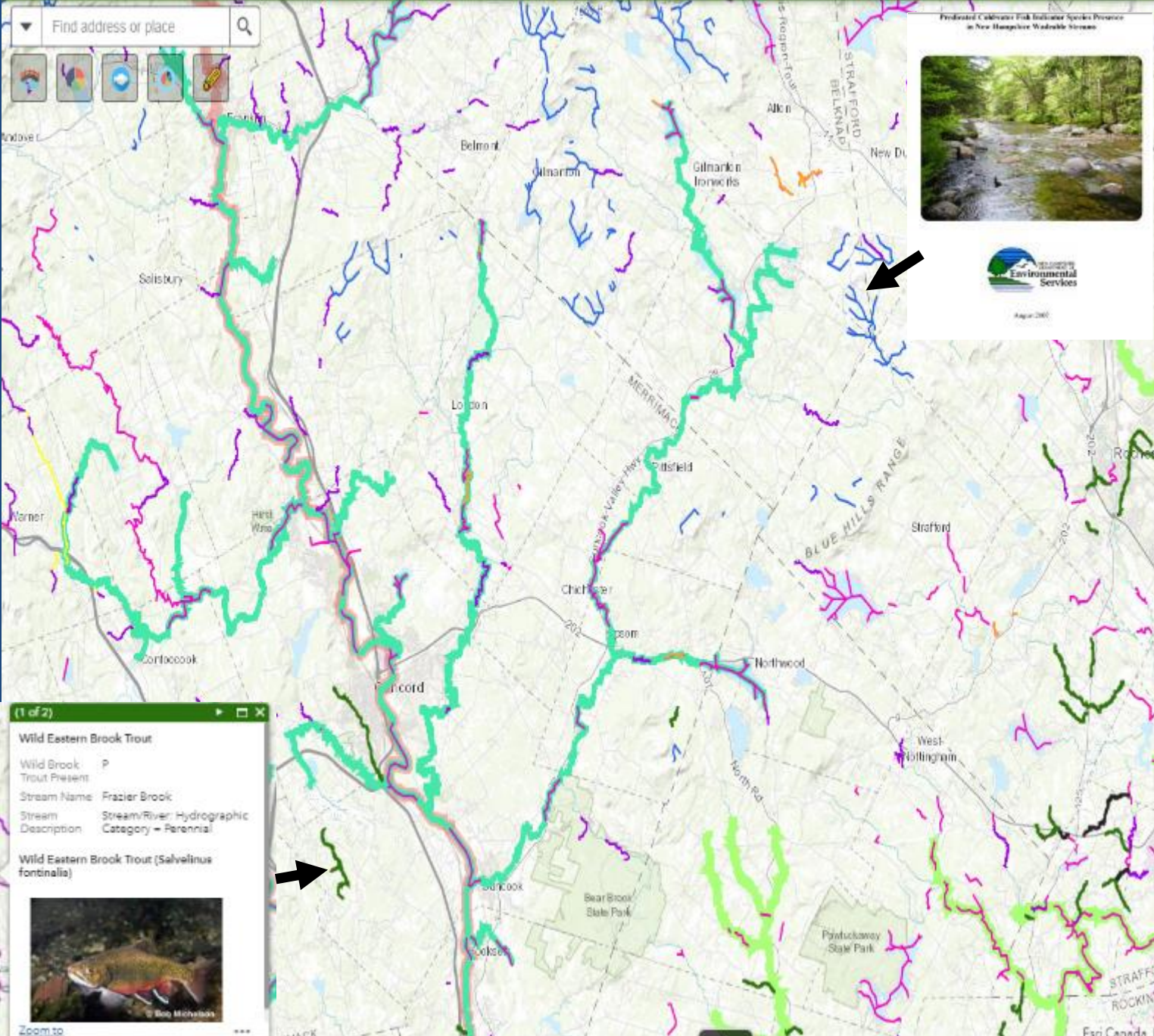
	Flood Reports Available	33
Flood		
	Road flood	12
	Washout	5
	Geomorphologic Compatibility Summary	63
Fully Compatible		
	Mostly Compatible	25
	Mostly Incompatible	10
	N/A Score - Wetland	6
	undefined	1
	N/A Score - Surface	3
	Partially Compatible	9
	Unable to Score - Incomplete	2
	Aquatic Organism Passage Summary	63
Full AOP		
	No AOP except adult salmonids	1
	No AOP including adult salmonids	16





Find address or place

Map style selection icons: Topographic, Satellite, Street View, etc.



**Predicted Coldwater Fish Indicator Species Presence in New Hampshire Walkable Streams**

Environmental Services  
August 2005

- Legend**
- American Brook Lamprey —
  - Bridle Shiner Habitat —
  - Springfed Wild Brook Trout — Y
  - Wild Eastern Brook Trout — P
  - Species of Concern — P
  - NH Fish and Game Fishery Restoration Interest —
  - Predicted Coldwater Fishery — Coldwater
  - Herring Stock Location or Migratory Path — M  
— Y
  - Seacoast Anadromous Fish Habitat —
  - American Shad Spawning Habitat — Y

(1 of 2)

**Wild Eastern Brook Trout**

Wild Brook: P  
Trout Present

Stream Name: Frazier Brook  
Stream/River: Hydrographic Category - Perennial

Wild Eastern Brook Trout (*Salvelinus fontinalis*)

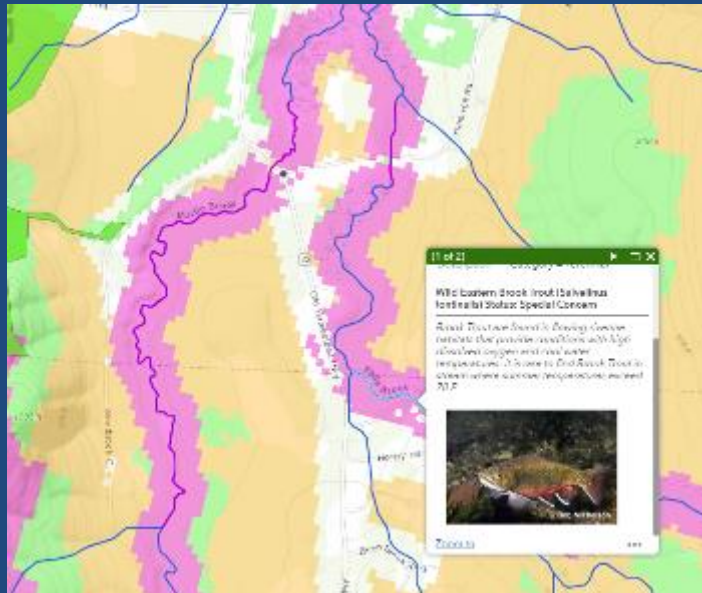
Zoom to





# SUCCESSFUL CULVERT REPLACEMENTS

- Undersized, 50-foot long metal pipe causing bank and bed erosion
- A barrier to local eastern brook trout



## FALL BROOK CULVERT SWANZEY, NH

ARM Funding: \$165,000  
Total Project Cost: \$250,572

### Project Objectives:

- Restore instream aquatic habitat
- Reconnect coldwater stream for brook trout
- Support high ranked wildlife habitat
- Increase resiliency

### Project Partners:

Trout Unlimited, Cheshire County Conservation District, Town of Swanzey, NRCS, Fish & Game, Harris Center

# SUCCESSFUL DAM REMOVAL

- Remove first barrier for migrating diadromous fish
- Open more than 13 river miles of freshwater spawning and nursery habitat for River Herring.



## GREAT DAM EXETER, NH

ARM Funding: \$100,000

Total Project Cost:  
\$1,968,854

Project Partners:

Town of Exeter, VHB, NOAA, USF&WS,  
NHFG NH Coastal Program





# SUCCESSFUL CULVERT REPLACEMENTS

## MCQUESTEN BROOK MANCHESTER, NH

- Replaced upstream crossing with a 15-foot open-bottom box culvert
- Downstream culvert was completely removed
- Full aquatic organism passage

**ARM Funding:**  
\$354,000

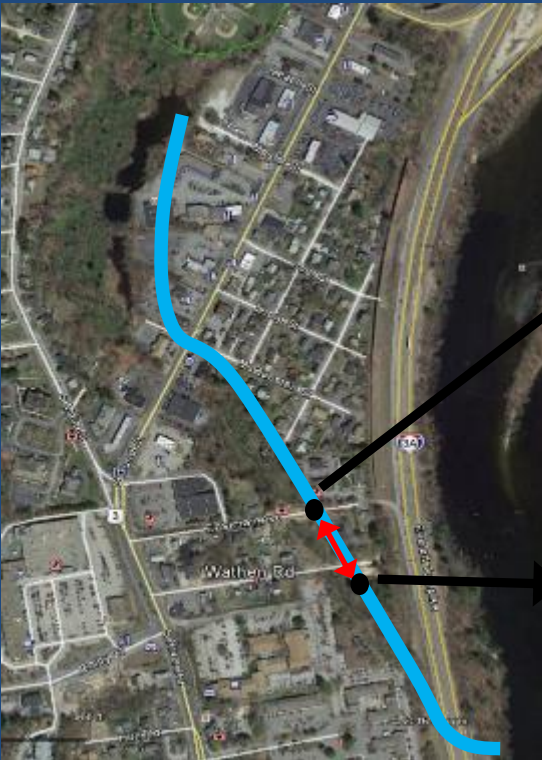
**Total Project Cost:**  
\$800,000

### Project Objectives:

- Open access to 1,950 feet of stream
- Reconnect 2.6 acres of wetland habitat
- Floodplain reconnection and stormwater treatment

### Project Partners:

NH Rivers Council,  
Town of Bedford, Fish & Game





# Regulatory Lessons Learned -1

- ❖ 1. Hosting Listening Sessions helped to identify concerns and recommendations of general public, road agents, town officials, different businesses, contractors, loggers, farmers, and different regions.
- ❖ 2. Vetting Concepts and Draft rules helped to guide the DES development of official published rules
- ❖ 3. Use of parallel science teams, Legislative study findings, legislative science groups helped identify consensus-based recommendations.

## Regulatory Lessons Learned -2

- ❖ 4. Published draft maps, guidance, and tools help public understand regulatory changes
- ❖ 5. Independent facilitators and break-out sessions, online anonymous comment tools ensure 'quiet' public comments are collected.
- ❖ 6. Existing stakeholder membership groups are useful to help organize DES trainings.
- ❖ 7. Ensure overall goals are achieved through the process.



## Regulatory Lessons Learned -3

- ❖ 8. Ensure public comments & schedules are published
- ❖ 9. Ensure Stakeholder is an authorized representative
- ❖ 10. Ensure Right to Know laws, advisory group laws are met.
- ❖ 11. Limit scope of changes to bite size chunks
- ❖ 12. Where conflicts exist between state and stakeholder – consider perspectives and context of goals, sister states and impact to regulated community. Compromises are an important part of the process.
- ❖ 13. Process and costs need to be carefully considered.

## Teams & Tools Lessons Learned -4

- ❖ 14. Establishing multi-agency, diverse Team with stake in the products is key.
- ❖ 15. Subcommittees to address data protocols and training work and Training survey manual to ensure consistent data collection.
- ❖ 16. Target data collection areas with greatest environmental impact.
- ❖ 17. Outreach to potential grant applicants in service areas highlights significance of the tool and the benefits overall.



# Any Questions ?

Mary Ann Tilton  
Assistant Administrator  
Wetlands Bureau  
(603) 271-2929  
[MaryAnn.Tilton@des.nh.gov](mailto:MaryAnn.Tilton@des.nh.gov)

