

2017-2023

New Hampshire Wetland Program Plan



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Introduction

The New Hampshire Wetland Program Plan (the Plan) provides a framework and direction over the next six years for the New Hampshire Department of Environmental Services (NHDES) and its partners to strengthen and improve the program and in doing so better protect wetlands and aquatic resources statewide. In order to prepare the Plan, NHDES brought together various internal and external programs that share common interests related to wetlands, most notably NH Fish and Game (NHFG), NH Department of Resources and Economic Development Natural Heritage Bureau (NHB), and the NH Department of Transportation (NHDT) to discuss shared goals. The Plan actions and activities are necessary to reach those goals. The Plan should be considered a work in progress that will be revisited and revised as needed.

Overall Goal Statement and Time Frame

This Wetland Program Plan is guided by the following general goals:

- 1) Sustain economic vitality.
- 2) Resilient to climate change.
- 3) Protect public safety and public health.
- 4) Protect and preserve wetlands, natural resources and water quality.

New Hampshire's wetlands are of great importance for flood control, water purification, water storage and recharge for both groundwater and surface waters. These functions are more valuable with the expected increase in occurrence and severity of storm events associated with climate change. Wetlands also support the food chain, providing food and shelter for a variety of aquatic and upland plants and animals. Although New Hampshire has lost fewer wetlands to filling and dredging than many coastal states, landscape change poses a significant challenge to the protection of New Hampshire's wetlands. Given the important functions and values of wetlands, there have been a number of attempts to place an economic value on wetlands resources. For instance, a 2006 EPA funded study estimated that the economic benefits generated by a single acre of wetland amount to \$150,000 to \$200,000 (NACO, 2006). The same study found that wetlands increase surrounding real estate values by an estimated 28% while enhancing the quality of life. In 2002, a study by the Clean Water Network (CWN) estimated the economic value of New Hampshire's remaining wetlands to be approximately \$1.2 billion (CWN, 2002).

New Hampshire's natural resources provide the foundation for many of the activities that drive New Hampshire's economy. Residents, businesses and visitors enjoy New Hampshire's wetlands, streams, lakes and seacoast because of their natural beauty and recreational opportunities. The primary state law that authorizes the permitting program to protect wetlands is RSA 482-A, the New Hampshire Fill and Dredge in Wetlands Act. The last complete rewrite of the NHDES wetlands rules was in 1991. Since then there have been many piecemeal changes in the laws and rules and improved understanding of our natural systems and advancement in engineering practices.

The state's wetland permitting program is the primary means of wetlands regulation in New Hampshire. First the applicant must demonstrate that the project addresses other lesser impacting alternatives (avoidance) and where alternatives are not practicable, implement minimization measures. For projects with significant wetland impacts, based on either square footage (>10,000 square feet) or the impact on sensitive species or habitats, NHDES requires the applicant to compensate for the unavoidable loss of wetland functions and values that will result from the proposed impact. There are four options an applicant can use to address mitigation: wetland construction in upland areas, restoration that re-establishes functions and values of an impacted wetland, protection of a wetland and associated uplands through a conservation easement, and for the fourth option, where applicants must first document that the other three options are not available. The Aquatic Resource Mitigation Fund (ARM Fund) may be considered. Established in 2006, the ARM Fund provides for payment into one of nine watershed-based service areas in lieu of the other three options.

The NH Coastal Risk and Hazards Commission Final report, November 2016 (<http://nhcrhc.org>) provides goals, recommendations, and actions for the coastal region. Additionally, NH and NHDES have developed Climate Action Plans. With the increase in frequency and severity in extreme weather events, New Hampshire is seeing increased road washouts from undersized culverts and increased erosion and damage from storm events. **Climate change is real, serious, and substantially anthropogenic and is responsible for many of the changing environmental conditions that put our New Hampshire's residents, communities, and sensitive natural resources and wildlife and their habitats at risk.** Working with local, state and federal partners and within our intra-agency programs to address climate change issues is more important than ever. As a FEMA study shows, a dollar spent on [impact] mitigation saves society an average of \$4 (https://c.ymcdn.com/sites/www.nibs.org/resource/resmgr/MMC/hms_vol1.pdf).

NHDES has identified overall goals (or "desired outcomes") related to wetland resources in the state. These outcomes are separated into environmentally based outcomes and programmatic-based outcomes that were used to guide the work to be accomplished under the Plan.

Environmentally Based Outcomes:

- Wetland complexes of high ecological value, high-function, high condition are afforded adequate protections.
- Blocks of un-fragmented habitat are protected or connected to other habitats, protected land, or stream and wildlife corridors.
- Land development practices avoid and minimize cumulative and indirect impacts to wetland and aquatic resources.
- Natural stream flow regimes are maintained and stream crossings allow aquatic resources to stay connected.
- Streams and wetlands have adequate protective buffers.
- Retain or restore the condition of New Hampshire's wetlands to support aquatic life and wetland functions.

Programmatic-Based Outcomes:

- Wetland permit processes will be integrated with other land resources permits and water quality related permitting.
- Wetland protection efforts are well funded and wetland resources are protected and maintained to provide ecosystem services (reduce flooding, improve water quality, provide habitat and recreation opportunities) and the economic benefits they provide.
- There is a broad base of stewardship and public understanding of the multiple benefits of the functions and values of wetlands and aquatic resources. There will be a coordinated message from state and federal agencies, local governments, citizen volunteers and nongovernmental organizations.
- Wetland compliance and enforcement efforts are well funded, consistent and responsive.
- New Hampshire's wetlands are assessed for their condition on a regular basis consistent with the NH Wetland Monitoring Strategy and 305(b) reporting, once indicators and thresholds are developed.
- Environmentally based outcomes and measures are identified and are used for annual status and trends reporting and to influence proposed regulation, policy, and decision making.
- Resource management decisions are based on sound science and balance competing interests.

Core Elements of the New Hampshire Wetland Program Plan

NHDES identified four core program elements for the wetland planning process, which are as follows:

1. Regulation and Enforcement.
2. Restoration and Protection.
3. Data / Monitoring and Assessment / Water Quality Standards.
4. Outreach and Education / Local Capacity Building.

These elements were used to focus the discussion and help to set priorities for action. Each element was assessed to identify strengths and weaknesses. A prioritization process was used to identify the most important elements to initially focus on. However, it was acknowledged that all elements are important. Suggested actions and activities to pursue over time were identified and listed in the following pages by each element.

CORE ELEMENT #1: REGULATION AND ENFORCEMENT

Goals:

- Avoid and minimize wetland loss, preserve wetland functions, wetland condition, and replace unavoidable or illegal losses with healthy wetlands that are equivalent or greater in size and that function similar to or better than lost wetlands.
- Develop a process that moves beyond complaint-driven enforcement responses to a proactive landscape-level investigation to deter violations.
- Measure timeliness of NHDES response and level and rate of NHDES permit compliance.

Objectives:

- Continue to develop strong regulatory program by strengthening regulations, policies, and guidance documents, and develop and operate under consistent application procedures.
- Maintain consistency and coordination in order to create strategies to execute strong compliance and enforcement actions.

Action (a) Measure complaint response and permit compliance.							
Activity	2017	2018	2019	2020	2021	2022	2023
1. Develop standard operating procedure to track response to complaints.	✓	✓		✓			✓
a) Develop process to measure number of days to first field inspection.	✓						
b) Develop process to measure number of days to first NHDES action.							
c) Measure timeliness of NHDES complaint response.		✓	✓	✓	✓	✓	✓

2. Develop a permit compliance program to measure rate of permit compliance. a) Develop permit pre and post - construction inspection checklist. b) Develop a selection process for permits to monitor and develop system to track BMPs. c) Develop guidance on measuring permit compliance and BMP effectiveness. d) Provide training on field inspections. permit compliance, and BMP effectiveness and consistency in developing enforcement cases.	Pilot Program Started in 2016	✓	✓	✓	✓	✓	✓
3. Develop database tracking and reporting functions to summarize compliance and enforcement response and actions.			✓	✓	✓		
Action (b) Ensure permit compliance with NHDES wetland permits and water quality standards.							
Activity	2017	2018	2019	2020	2021	2022	2023
1. Provide plan and application review and water quality standards training and guidance to all technical staff.	✓	✓	✓		✓		
2. Develop criteria and standard operating procedure for when 401 review criteria is to be included in permit process and when projects are to be elevated for 401 certification.	✓	✓		✓		✓	
3. Provide selection criteria for permit inspection follow-up and link to permit compliance program above.	✓	✓		✓		✓	
4. Provide field training and guidance to technical staff on selected permits.	✓	✓	✓	✓			
5. Measure and track compliance rates.	✓	✓	✓	✓	✓	✓	✓

Action (c): Simplify, consolidate, and improve permit processes.

Activity	2017	2018	2019	2020	2021	2022	2023
1. Draft rules, new forms, and initiate rulemaking to simplify, reduce, and clarify existing processes.	Started	✓	✓				
2. Develop flow charts and guidance for staff and public relative to new streamlined permitting processes.	Started		✓	✓		✓	
3. Develop business plan for in-house staff or vendor to enhance existing database to accommodate new processes.			✓	✓		✓	
4. Implement database plan, test and train staff.				✓	✓		✓
5. Develop training plan to educate staff and public on new processes.			✓	✓		✓	
6. Draft rules and initiate rulemaking to include GIS screening to facilitate pre-filing coordination by applicant.	✓	✓	✓				
7. Develop data-screening web-based tools to guide applicant with submission of permit applications.			✓	✓	✓		
8. Provide joint applications and One-Stop checklists for certain application processes.		✓	✓		✓	✓	
9. Develop new database tools to enhance efficiency in tracking and reporting resource impacts.		✓	✓		✓	✓	
10. Continue to use LEAN processes to improve the wetlands permit process.	✓		✓		✓		✓
11. Continue to use Balanced Scorecard approaches to measure program effectiveness.	✓	✓	✓	✓	✓	✓	✓

Action (d): Implement changes to improve wetland protection.

Activity	2017	2018	2019	2020	2021	2022	2023
1. Identify opportunities to strengthen and clarify state wetlands statute.	✓		✓		✓		✓
2. Identify opportunities to strengthen and clarify administrative rules that support state wetlands statute.	Ongoing	✓	✓	✓	✓	✓	✓
3. Pursue implementation of integrated land development.			✓	✓	✓		
4. Expand approaches to define and address indirect and cumulative impacts of landscape change.						✓	✓
5. Develop follow-up process to review and report Fish and Game, Natural Heritage Bureau, and other partner permit conditions.	✓	✓	✓	✓		✓	
6. Update Wetland BMP Manuals (Agriculture, Forestry, Routine Roadway, Trails, Utility).	Ongoing	✓				✓	✓

CORE ELEMENT #2: RESTORATION AND PROTECTION

Goal: Prioritize and implement protection and restoration of aquatic resources of high ecological value and function that are connected to other habitats and that are sustainable.

Objectives:

- Continue to develop a strong ARM Fund Program to maximize efficiency, mitigate impacts to valuable wetlands and aquatic resources, and continue use of funds for ecologically significant and sustainable projects.
- Develop tools for NHDES and natural resource professionals to use to better assess wetlands pre- and post-restoration.

Action (a): Develop new and use existing tools and science to inform regulatory decisions.							
Activity	2017	2018	2019	2020	2021	2022	2023
1. Incorporate the Wildlife Action Plan, Natural Heritage Bureau, and other science-based documents into permit application review.	✓	✓	✓	✓	✓	✓	✓
2. Identify priority wetland wildlife habitats for protection where enhanced buffers would be required.		✓		✓		✓	✓
3. Evaluate the need for buffer protection associated with water quality, flood control, and other functions and values.		✓		✓		✓	
4. Evaluate methodologies for modeling vernal pool locations that uses latest LiDAR and other technologies.	✓	✓		✓		✓	
5. Utilize and adapt existing tools to inventory and assess existing stream crossings.		✓	✓	✓	✓	✓	
6. Upgrade and enhance the Natural Heritage Bureau Data Check tool.		✓	✓		✓		
7. Establish Ecological Integrity Assessment (EIA) as a regulatory tool to evaluate pre- and post- construction impacts to aquatic resources.		✓	✓	✓			

Action (b): Continue development of ARM Fund Program to maximize efficiency of program/use of funds for ecologically sustainable projects.

Activity	2017	2018	2019	2020	2021	2022	2023
1. Promote high quality protection / restoration projects through criteria development, prioritization, and dissemination of information to towns, land trusts, partners etc.	✓	✓	✓	✓	✓	✓	
2. Develop a strategy for watershed-based plans that identify protection and restoration priorities for the ARM Program.	✓		✓		✓		✓
3. Continue revisions to the permit application process and ranking criteria to accommodate range of protection and restoration activities.		✓	✓	✓		✓	
4. Continue permit application announcement and review to improve efficiency for NHDES and the Aquatic Resource Management Program selection committee.	✓	✓					
5. Develop coordinated approach with other existing programs to ensure aquatic resource protection.		✓		✓		✓	
6. Identify a method to prioritize stream restoration and protection projects.	✓	✓	✓		✓		✓
7. Continue prioritization of stream crossing upgrades.	✓	✓	✓	✓	✓	✓	✓

Action (c): Mitigate impacts to wetlands and aquatic resources.

Activity	2017	2018	2019	2020	2021	2022	2023
1. Assist NH Fish and Game to protect and mitigate significant regulated wildlife resources and assist with update and implementation of NH Wildlife Action Plan.	✓	✓	✓	✓	✓	✓	✓
2. Participate in Wildlife Action Plan revisions to incorporate change in species list, climate change, and stream program improvements.		✓		✓		✓	

Action (d): Use data to inform regulatory decisions related to mitigation.

Activity	2017	2018	2019	2020	2021	2022	2023
1. Continue development of Aquatic Resource Mitigation Program.	✓	✓	✓	✓	✓	✓	✓
2. Incorporate wetland monitoring and assessment information in regulatory decision-making.		✓	✓	✓	✓	✓	✓
3. Develop new tools and database improvements to evaluate mitigation program, protection, and restoration potential and success.		✓		✓		✓	

Action (e): Build capacity at the local level to enhance protection efforts.

Activity	2017	2018	2019	2020	2021	2022	2023
1. Develop a strategy to address buffers through local and state processes.		✓		✓	✓		
2. Identify opportunities for conservation through land trusts, local commissions, and state and regional initiatives.	✓		✓		✓	✓	

Action (f): Continue identification of wetlands and aquatic habitat of high ecological value

Activity	2017	2018	2019	2020	2021	2022	2023
1. Reassess and resurvey known exemplary natural communities and systems with outdated records.	✓	✓		✓	✓		✓
2. Identify and evaluate previously unsurveyed wetlands / aquatic habitats that have the potential to be high quality.	✓	✓	✓	✓	✓		✓
3. Continue identification of valuable vernal pool complexes.	✓	✓	✓				

Action (g): Develop metrics and field protocols for wetland restoration and protection

Activity	2017	2018	2019	2020	2021	2022	2023
1. Strategize development of a professional restoration workgroup.	✓	✓	✓		✓		✓
2. Identify restoration opportunities and methods to monitor and review data pertaining to restoration projects.	✓	✓	✓		✓		
3. Identify protocols reviewing recent science and climate change information.	✓	✓	✓		✓		✓

CORE ELEMENT #3: DATA / MONITORING AND ASSESSMENT / WATER QUALITY STANDARDS

Goal: Ensure that wetlands are monitored and assessed as other “waters of the state” and effectively protected under Sec 401 and state authorities.

Objective: Develop methods for monitoring and assessing wetland condition and facilitate the establishment of numeric water quality standards for wetlands.

Action (a): Establish regulatory background for wetland monitoring in New Hampshire.							
Activity	2017	2018	2019	2020	2021	2022	2023
1. Implement 2013 wetland monitoring strategy and test assessment methods for wetland water quality standards to establish thresholds and designated uses.	In Progress	✓	✓	✓	✓		
2. Based on assessment method results and thresholds, adopt numeric criteria that represent wetland-specific biological parameters to protect or restore designated uses.						✓	✓
Action (b): Update natural resource map information.							
Activity	2017	2018	2019	2020	2021	2022	2023
1. Update NWI wetland maps to inform existing models and tools, including wetland monitoring and assessment, wetlands permitting, and ARM Fund programs.	✓		✓		✓		

2. Update wetland maps to assist decision-making to include plant communities, aquatic resource corridors, habitat, fishery, flood storage, fluvial erosion hazard zones, public water supply, contamination sites, groundwater mapping information, and University and regional mapping initiatives.		✓		✓		✓	
3. Update coastal resource information including storm surge, groundwater mapping, sea level rise, contamination sites, fisheries, and habitat maps.	✓		✓		✓		✓
Action (c): Provide foundation for a wetland monitoring Level II assessment.							
Activity	2017	2018	2019	2020	2021	2022	2023
1. Test and implement the EIA and Floristic Quality Assessment (FQA) to develop a rapid FQA. Incorporate rapid FQA as an assessment tool, or develop Index of Biological Integrity (IBI).	In Progress	✓	✓	✓	✓	✓	✓
2. Use Level III methods to validate/calibrate Level II methods.	In Progress	✓	✓	✓	✓		
3. Train NHDES staff and natural resource professionals in tools and protocols once developed.					✓	✓	✓

CORE ELEMENT #4: OUTREACH AND EDUCATION / LOCAL CAPACITY BUILDING

Goals:

- Partner with volunteers to create and disseminate education / outreach materials that result in accomplish environmental outcomes.
- Inform local decision makers so they can then make good decisions.
- Provide education / outreach materials to better educate the legislature.

Objective: Improve public understanding of wetlands value and understand wetland permitting process.

Action (a): Develop an outreach program that educates the public on value of aquatic resources to sustain economic vitality, to protect public safety and public health, to protect water quality, and to protect fish and wildlife habitat.							
Activity	2017	2018	2019	2020	2021	2022	2023
1. Establish full-time dedicated outreach position.		✓	✓				
2. Develop guidance and outreach materials that correlate significance of wetlands and the economy such as what is our water worth, business and tourism, and the threat of development on the WAP.		✓	✓	✓			
3. Develop outreach steering committee with stakeholders such as applicants, AGC, BIA, conservation commissions, Fish and Game, NHB, and NH Geology Unit.		✓		✓		✓	

<p>4. Develop an Outreach Plan that includes regional watershed approach:</p> <ul style="list-style-type: none"> a. Work with steering committee and stakeholders to seek input on Outreach Plan. b. Implement Outreach Plan. c. Develop outreach materials library on intranet that can be shared with other NHDES programs and events. 		✓	✓		✓		✓
<p>5. Create Outreach Calendar and tracking mechanism to identify date, location, type of event, and type of outreach for all staff.</p>		✓		✓			
<p>6. Create and distribute regular newsletter to inform applicants on process updates and issues observed on permit applications.</p>	✓	✓	✓	✓	✓	✓	✓
<p>7. Publish and distribute wetlands message and outreach tools (fact sheets, presentations, etc.) focused on important functions and values (wildlife, flood protection, and water quality) on website and through social media and municipal eco-link tools.</p>	✓	✓		✓		✓	
<p>8. Measure success of outreach through survey and quiz of attendees and customer satisfaction tools.</p>	✓	✓		✓		✓	

Action (b): Enhance and integrate outreach, education and technical assistance to municipal officials, conservation commissions, and watershed organizations (and land use planning commissions).

Activity	2017	2018	2019	2020	2021	2022	2023
1. Create on-line training products in wetland outreach and assessment tools.	✓	✓		✓		✓	
2. Pursue and secure outreach and education partnerships and training opportunities with EPA and other project partners.	✓	✓		✓		✓	
3. Coordinate with other state partner outreach teams.			✓		✓		
4. Coordinate with Public Affairs Division of Fish and Game to provide tools to relay messages (Discover Wild NH Day, fairs, “train the trainer” opportunities, etc.)			✓	✓	✓		

Action (c): Influence and inform local decision making.

Activity	2017	2018	2019	2020	2021	2022	2023
1. Develop Avoidance and Minimization BMP Manual for applicants and municipalities, and provide outreach on manual.	Started	✓	✓				
2. Educate the public on wetland / riparian functions, water quality, and minimization and avoidance of impacts.		✓	✓	✓	✓	✓	✓
3. Distribute information to municipalities related to wetland outreach efforts, assessment tools, and reporting on the ecological integrity of wetlands (including NWCA).		✓	✓		✓		✓
4. Develop and distribute vernal pool guidance to municipalities via outreach or Municipal Ecolink.		✓	✓				
5. Develop vernal pool data tracking exchange network or database to facilitate identification of vernal pools to be published for community access and develop GIS vernal pool layer using LiDAR.			✓	✓	✓		
6. Develop stream culvert prioritization outreach and Identify key stakeholders for distribution of such outreach.	✓	✓		✓		✓	
7. Encourage pre-application coordination with Local River Advisory Committees (LACs) and conservation commissions to receive design comments early in the planning process.	✓	✓		✓		✓	