

NHDES Wetlands Bureau Annual Report to U.S. EPA Region 1 for Calendar Year 2019



April 2020

**NHDES Wetlands Bureau Annual Report to
U.S. EPA Region 1
for Calendar Year 2019**

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April 2020

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INTRODUCTION

This annual report has been prepared for the United States Environmental Protection Agency (EPA) to provide a summary of the New Hampshire Department of Environmental Services (NHDES) Wetlands Bureau regulatory trends, activities and updates on the EPA grant-funded projects as part of the NHDES' priority and partnership agreement with the EPA. The NHDES Wetlands Bureau operates under the authority of the New Hampshire Revised Statutes Annotated (RSA) 482-A, the wetlands dredge and fill statute. The Wetlands Bureau oversees the NHDES' regulation of impacts to freshwater and coastal wetlands, surface waters and their banks, dunes, the tidal buffer zone, and areas adjacent to designated prime wetlands. The Wetlands Bureau also administers RSA 483-B, the Shoreland Water Quality Protection Act (SWQPA). Permitting and compliance activities for SWQPA are reported on within this report. The regulation of impacts is accomplished primarily through the permitting process.

The mission statement of the Wetlands Bureau is *"to protect, maintain and enhance the environmental quality in New Hampshire through the powers set forth in RSA 482-A to regulate impacts to those areas "wherever the tide ebbs and flows" or "freshwater flows or stands."*



EPA GRANT UPDATES

FFY 2018 Grant #1: Enhancing Wetland Mapping and Assessment Tools for Wetlands Protection in NH (CD00A00262) (October 2018-March 2021)

Under this Grant, the major goals are as follows:

1. Update and enhance National Wetland Inventory (NWI) Maps and publish the maps through the US Fish and Wildlife Service (FWS) and NH GRANIT.
2. Develop High Value Wetlands criteria, Map High Value Wetlands and Scope Update of Water Quality/Wetland Assessment Base Layer.
3. Natural Heritage Bureau (NHB)-Evaluate and document outdated exemplary wetland systems so they can be reliably used for environmental reviews and conservation planning.
4. NHB-Develop floristic quality assessment (Floristic Quality Assessment [FQA]) thresholds for wetland systems of high ecological value using vegetation data.
5. Grant administration, Quality Assurance, Outreach and Reporting (ongoing).

Task 1: Update and enhance NWI Maps and publish through USFWS and NH Granit (10/1/18-6/30/21).

NHDES has contracted with Ducks Unlimited (DU) to update the state's NWI map data and bring the state wide data up to NWI v2 standards (which includes polygons for streams). In addition, DU will develop LLWW data (landscape position, landform, water flow path, and waterbody type) and provide it to the NHDES with the updated spatial data.

As of September 30, 2019, DU completed 100% digitization and classification of the Year 1 area, after the fourth data set was submitted to the NHDES for review on April 23, 2019. See Figure 1 showing the Year 1 area boundary and the polygons digitized and classified.

Work began on data acquisition from GRANIT (including Lidar) to begin digitization and classification of the Year 2 area.

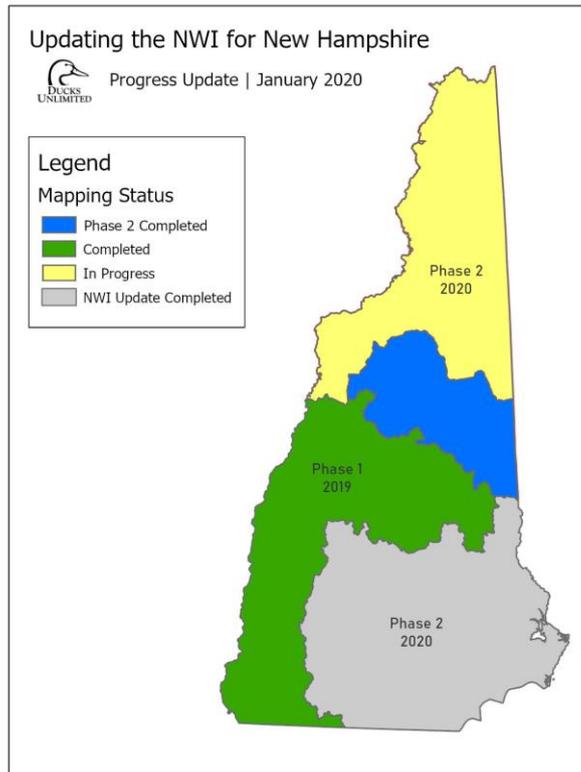


Figure 1. Map of New Hampshire with NWI Mapping status. The grey area labelled as phase 2 will have stream polygons added along with the full update to the rest of the state.

USFWS (Herb Bergquist) has provided guidance to the NHDES and DU, and is expected to continue involvement in responding to inquiries for guidance. In 2020, the NHDES expected to retain a contractor to verify the DU draft NWI data.

Task 2: Evaluate and document outdated exemplary wetland systems so they can be reliably used for environmental reviews and conservation planning (4/11/18-9/30/19).

Subtask 2: If warranted/practical, conduct field surveys to collect vegetation plot data for wetland systems lacking useable data (10/1/18-12/31/19).

The NHB conducted surveys during the summer of 2019 in the following wetland systems:

Sandy pond shore system:

- Willand Pond (July 18, 2019)

Sand plain basin marsh system:

- Willand Pond Basin Marsh (July 18, 2019)

High-gradient rocky riverbank system:

- Wild River (July 18, 2019)

Brackish riverbank marsh system:

- Salmon Falls River (July 25, 2019)
- Squamscott River (September 6, 2019)

Low-gradient silty sandy riverbank system:

- Pine River (August 6, 2019)
- Pine River (September 5, 2019)

Twenty-two existing digitized plots from *alpine/subalpine bogs* were found after additional searches in our records. Therefore, there was no need to conduct surveys for plot data in the *alpine/subalpine bog system*.

Task 3: Grant administration, Quality Assurance, Outreach and Reporting.

NHDES has conducted ongoing grant administration and monitoring of the budget, and reviewing and approving invoices, etc.

FFY 2016 Grant #2: Wetland Biocriteria and Outreach Tools in NH (CD00A00014).

Under this Grant, the major goals are as follows:

1. Investigate development of numeric biocriteria thresholds for aquatic life use support in wetlands.
 - a. Develop and test aquatic vegetation sampling protocols in Maine.
2. Evaluate and document historical exemplary wetland systems so they can be reliably used for environmental reviews and conservation planning (completed).
3. Develop thresholds for interpreting FQA scores that are specific to New Hampshire wetland types (completed).
4. Update NHWPP for 2017-2022 timeframe (completed).
5. Develop resources for new Wetlands Mitigation Preapplication Coordination Resources webpage (completed).
6. Develop new wetlands message and outreach tools that incorporate new published research and eLearning methods and tools for the public.
7. Grant administration, quality assurance, outreach, and reporting.

Task 1a: Investigate development of numeric biocriteria thresholds for aquatic life use support in wetlands.

- NHDES conducted various statistical analyses on the 2016-2017 field data and drafted part of the final report.

Task 1b: Develop and test aquatic vegetation sampling protocols with Maine to use with the standard wetland biomonitoring protocols being used by NH and Maine.

- Due to Maine Department of Environmental Protection's (DEP) priorities with the development of their wetland phytoplankton model, they were not able to provide vegetation data to NHDES for analysis.

Task 2: Evaluate and document historical exemplary wetland systems.

Completed in 2018.

Task 3: Develop thresholds for interpreting Floristic Quality Assessment scores.

Completed in 2018.

Task 4: Update NH Wetland Program Plan (NHWPP) for 2017-2023 timeframe.

Completed in 2017.

Task 5: Wetland Mitigation Preapplication Coordination Resources Webpage.

Completed (Link found [on the NHDES website](#)).

Task 6: New Wetlands Outreach Tools.

With the effective date of December 15, 2019, for the final wetlands rules rollout, a variety of new materials for outreach have been drafted, including fact sheets on new topics such as Priority Resource Areas, Protected Species and Habitat, and Concurrent Processing of Shoreland and Wetland Applications. Additional fact sheets and materials will be developed in the near future and posted on the NHDES website.

The online [Wetlands Permit Planning Tool \(WPPT\)](#), developed to help applicants conduct screening to plan projects in or near jurisdictional areas, is now posted on the NHDES Wetlands Bureau's "[Wetlands Bureau Rulemaking and Process Improvement Effort](#)" web page.

An image of some layer themes available with the WPPT to screen for certain regions (inlands vs. coastal) and permit application types (Forestry Notification and Utility Notification among them) is provided (Figure 2).

Before the end of the reporting period, NHDES conducted the first of several training sessions on the new rules, which included a presentation on the WPPT. Seventy-one (71) people (consultants, wetland scientists, engineers, conservation commission members, etc.) attended the 3.5 hour training session. NHDES used the Eventbrite.com online registration system for registering attendees.

Task 7: Grant Administration, Quality Assurance, Outreach and Reporting.

The project manager, Sandy Crystall, continued to monitor tasks, schedules and budget. A time extension was requested and approved in May, extending the grant end date to March 31, 2020.

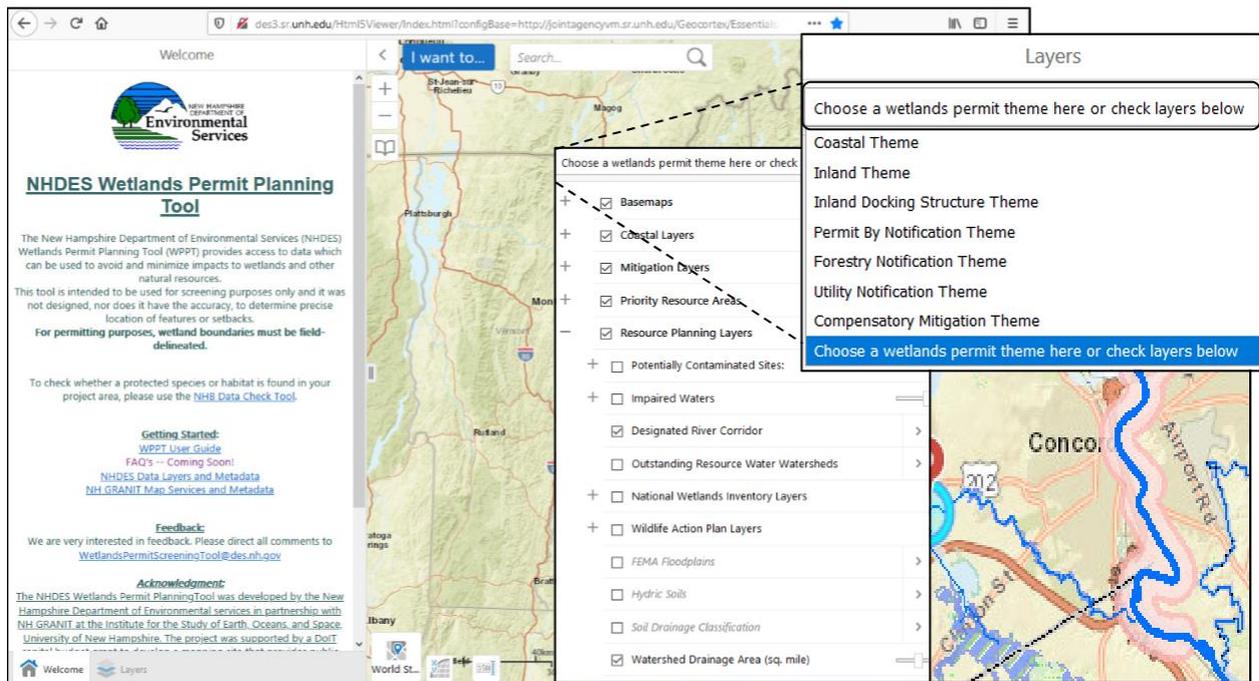


Figure 2. Wetlands Permit Planning Tool.

2019 Grant #3: Advancing Education, Wetland Functional Assessments and Data Systems.

This project is intended to support NHDES' core elements in their Wetland Protection Plan (regulation and enforcement, restoration and protection, monitoring and assessment and education and outreach).

The EPA Grant activities include:

1. Provide external training to the New Hampshire Department of Transportation (NHDOT) staff and to wetland scientists on the new wetland rules.
2. Establish wetland-water quality BMP team and update and adapt New Hampshire Stormwater BMP for NHDES wetlands permitting.
3. Develop new internal protocols for permit reviewers to track and report wetland and stream impacts.
4. Develop a data management system and perform a comprehensive geospatial analysis to evaluate the ecological performance of the in-lieu fee program's mitigation sites.
5. Resurvey wetlands of high ecological value with outdated records to verify the condition of these priority wetlands using Ecological Integrity Assessment method and Floristic Quality Assessment.

2019 Status:

In 2019, a discussion was held with Corps wetland assessment author and lead presenter Paul Minkin of the US Army Corps of Engineers regarding the New England wetland functional assessment. It was agreed upon to offer two 2-day training sessions to include: office presentation, computer model and field sessions. The dates are tentatively scheduled for August and September, 2020.

Over the past year, NHDES has developed a Wetland Functional Assessment Worksheet that serves as a cross-walk between the New Hampshire wetlands Statute RSA 482-A and the US Army Corps

1999 Highway Methodology Workbook Supplement. This worksheet will have to be modified for the 2020 training (new [Worksheet](#) and [Fact Sheet](#) here).

On December 2, 2019, NHDES requested and obtained Governor and Executive Council approval for a Memorandum of Agreement between NHDES and the NHB to carry out the work (Activity 4) under this EPA grant to:

- Survey exemplary wetlands and outdated records and assess conditions of these priority wetlands using the Ecological Integrity Assessment (EIA) and Floristic Quality Assessment (FQA) methods.
- Conduct a quantitative comparison of the two condition assessment methods to inform development of metrics and protocols to prioritize wetland restoration and protection projects in New Hampshire. Updating these records in the NHB’s database will aid in the protection of wetland complexes of high ecological value.

In 2019, NHDES hired a Mitigation Intern, Elizabeth Sibson.

Under task 4 of the Grant, the mitigation program retained Elizabeth Sibson to develop a data management system and perform a comprehensive analysis to evaluate the ecological performance of the in-lieu fee program’s mitigation sites to guide data-driven decisions on future mitigation prioritization and credit determination. This is a part-time position at 25 hours/week, which began on January 21, 2020, and will end on May 8, 2020.

Table 1 below shows a summary of the tasks for the FFY 2020 Grant:

Table 1: Project Tasks, Products, Schedule, Budget, Key Staff, and NHWPP Actions Addressed.

| Task Description & Method | Products (Outputs) / Objectives (Outcomes) | Time-line | Key Staff |
|---|---|-----------|--|
| <p>Task 1: Provide External Training to NHDOT staff, and wetland scientists, on new wetland rules.</p> <p>Project Partners:</p> <p>US Army Corps of Engineers (Paul Minkin)</p> <p>EPA (Erica Sachs)</p> <p>UNH Stormwater Center (Dr. James Houle)</p> <p>NH Coastal Program (Kirsten Howard)</p> <p>5 wetland scientist trainings (150 hours for training and curriculum adaptation)</p> | <p>Develop Training curriculum (Powerpoint, handouts, project examples)</p> <ul style="list-style-type: none"> • Overview and New processes • Avoidance & Minimization & permit evaluation criteria • Inland and Coastal Wetland Assessment • Permitting General Conditions & Water Quality BMPs • Stream Crossings • Vulnerability Assessment and Sea Level Rise <p>Published Training flyers and invitations</p> <p>Pre-and Post-training test results</p> <p>Sign in sheets</p> <p>NHWPP Actions Addressed: 1.c.2, 1.c.3, 1.c.4., 1.c.5, 1.c.6, 1.c.7, 1.c.8.</p> | | <p>TBD (lead)</p> <p>Mary Ann Tilton</p> <p>Craig Rennie</p> <p>Eben Lewis</p> <p>Kirsten Howard</p> |

| Task Description & Method | Products (Outputs) / Objectives (Outcomes) | Time-line | Key Staff |
|---|---|-----------|---|
| <p>Task 2: Establish Wetland- Water quality BMP team and Update and adapt NH Stormwater BMP for NHDES wetland permitting</p> <p><u>4 BMP meetings to review</u></p> | <ul style="list-style-type: none"> • Invitation for BMP workgroup • Revised drafts for circulation • Updated and Adapted <i>NH Stormwater BMP for Wetlands permitting</i> to be published by UNH with new chapters on: <ul style="list-style-type: none"> ➤ Well head protection areas ➤ Dredging and screening for contaminants ➤ Addressing stormwater on large subdivision and highway projects <p>Training by DES and UNH to stakeholdersWPPP:</p> | | <p>TBD (lead)</p> <p>Ridge Mauck</p> <p>Greg Comstock</p> <p>Karl Benedict</p> <p>Mary Ann Tilton</p> |

PERMITTING ACTIVITIES

Applications Received

The number of standard dredge and fill permit applications received by the Wetlands Bureau has overall remained relatively stable, though a slight increase occurred in 2019. Ninety (90) more standard dredge and fill permit applications were received in 2019 than in 2018, as illustrated in Table 2 and Figure 3. Two factors may have contributed to this slight increase: first, a new NHDES internal protocol for accepting applications was in place the summer of 2019 that was intended to ensure compliance with rules regarding administrative completeness. Second, the new wetland rules became effective on December 15, 2019, which led to a surge in applications submitted by consultants and other applicants to ensure administrative and technical review of their applications would occur under the rules still in effect.

Permit modifications, such as amendment requests, name changes and time extensions, may have been under-reported in previous years. This might have occurred by focusing on the initial dates applications were received, while over-looking the permitting actions taken on older, previously approved permits. In this report, all permit modification requests acted upon during the report year are tallied separately from the totals focused on applications initially received during the report year. Permit modifications under review at the close of the report year are excluded from the total until the permitting decision is made. Requests for an exemption for vested rights under shoreland rules are also tallied separately from the totals focused on applications initially submitted during the report year.

Table 2: 10-Year Trend of Wetland Standard Dredge and Fill Applications Received (2010-2019).

| 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|------|------|------|------|------|------|------|------|------|------|
| 514 | 485 | 501 | 501 | 581 | 527 | 581 | 572 | 589 | 679 |

Overall in 2019, the Wetlands Bureau received 77 more wetlands notifications and applications (3.5% increase) than in 2018. This is illustrated in Table 3 below. This number differs from the value graphed in Figure 3 because of the inclusion of six ARM Fund applications in Table 3.

Table 3: 10-Year Trend of All Wetland Permit Applications and Notifications Received (2010-2019).

| 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2,383 | 2,287 | 2,158 | 2,159 | 2,255 | 2,048 | 2,211 | 2,075 | 2,212 | 2,289 |

The number of shoreland permit applications received by the Shoreland Program has fluctuated over time. However, the number of shoreland permit applications received in 2019 was similar to 2018, with only 10 additional applications received. This is illustrated in Table 4 and Figure 4.

Table 4: 10-Year Trend of Shoreland Permit Applications Received (2010-2019).

| 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|------|------|------|------|------|------|------|------|------|------|
| 817 | 626 | 466 | 546 | 518 | 605 | 621 | 613 | 680 | 690 |

Similarly, the total number of all shoreland permit applications and shoreland permits by notification (PBNs) received by the Shoreland Program also fluctuated over time; 130 more were received in 2019 than in 2018. This is illustrated in Table 5 and Figure 4.

Table 5: 10-Year Trend of All Shoreland Permit Applications and Shoreland Permits by Notification Received (2010-2019).

| 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 823 | 781 | 915 | 1,075 | 1,086 | 1,196 | 1,167 | 1,250 | 1,205 | 1,335 |

Review of the 10-year trend of all wetland applications reveals that the total applications received each year remain fairly constant, between 9.3 and 10.8% of all wetlands files received during the 10-year period. Standard dredge and fill applications numbers were at their highest in 2019 (679 applications received), above the 10-year yearly average of 553 applications.

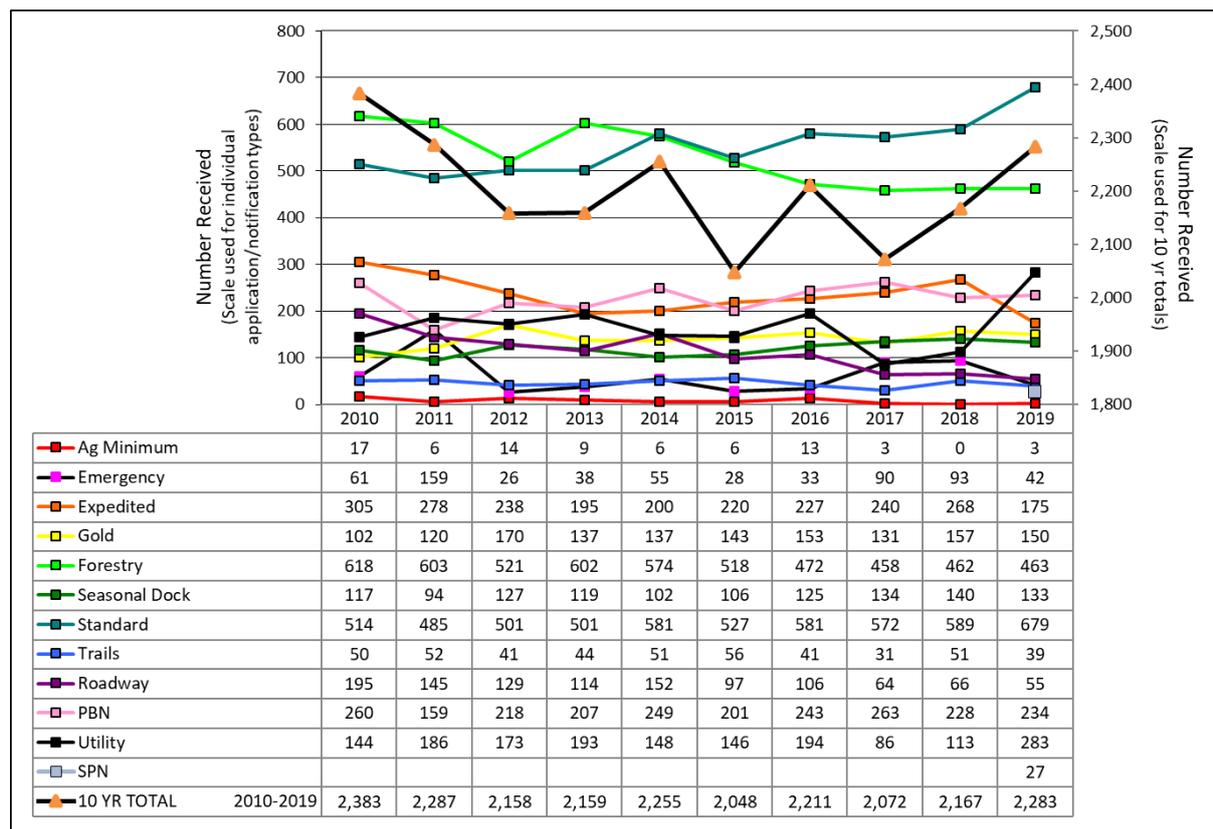


Figure 3: 10-Year Trend of All Wetland Permit Applications/Notifications Received (2010-2019).

Figure 3 illustrates the 10-year trend for shoreland permit applications and shoreland PBNs. There is an upward trend in the total number of applications/PBNs received over the last 10 years.

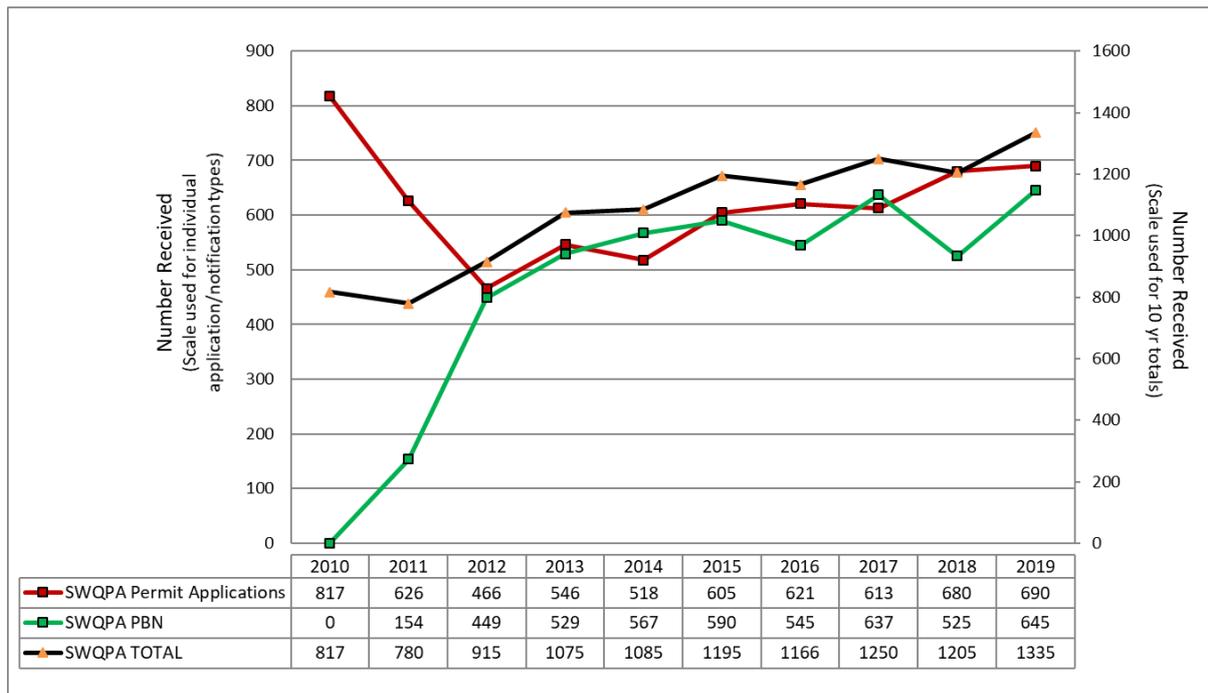


Figure 4: 10-Year Trend of All Shoreland Permit Applications/PBNs Received (2010-2019).

Modification Requests and Requests for Vested Rights

Table 6 summarizes permit modification requests acted upon in 2019. In addition, one request for exemption for vested rights under shoreland rules was also addressed in 2019.

Table 6: Permit Modification Requests Actions in 2019.

| APPLICATION TYPE | AMENDMENT | | NAME CHANGE | TIME EXTENSION |
|-------------------------|------------|----------|-------------|-----------------|
| | APPROVED | DENIED | APPROVED | APPROVED/AGREED |
| Wetlands - Ag Minimum | - | - | 1 | - |
| Wetlands - Expedited | 7 | - | 1 | 4 |
| Wetlands - PBN | - | - | 4 | 5 |
| Wetlands - Standard | 61 | - | 18 | 21 |
| Wetlands - Expedited | - | - | - | - |
| Shoreland - Application | 88 | 5 | 16 | 11 |
| Shoreland - PBN | - | - | 1 | 1 |
| TOTAL | 156 | 5 | 41 | 43 |

Pre-Application Meetings

The Wetlands Bureau provides technical assistance to applicants by providing pre-application review of proposed projects. The pre-application review process accomplishes the following:

- Provides clear and consistent direction to applicants.
- Improves communications between state/federal agencies and local entities.

- Ensures openness of the process.
- Reduces rework by all parties saving time and money.
- Promotes environmentally-sensitive land use planning.
- Provides an efficient process that serves as an incentive for applicants to pursue “environmentally-superior” designs.

In 2019, the technical staff participated in approximately 379 pre-application meetings (this number is an underestimate of the actual number, as pre-application meetings were under-reported). Please refer to Table 7. Of these 379 meetings, 40 were associated with NHDOT projects.

Table 7: Summary of 2019 Pre-Application Meetings.

| Number of NHDES Wetlands Bureau Staff Attendees per Meeting (A) | Number of Pre-Application Meetings Held (B) | Total Number of Instances Wetlands Bureau Staff Attended a Pre-Application Meeting (A*B) |
|---|---|--|
| 1 | 256 | 256 |
| 2 | 91 | 182 |
| 3 | 22 | 66 |
| 4 | 10 | 40 |
| TOTAL | 379 | 544 |

In addition to the pre-application meetings, the Wetlands Bureau provides general guidance to the public over the phone, by email, and in person. For example, it is not uncommon for a shoreland/shoreline specialist to answer over 20 daily requests from the public.

Permitted Wetland Impacts, Restoration and Enhancement

Table 8 below illustrates the amount of impacts permitted based on project type for 2018 and 2019. Overall, the impacts NHDES permitted decreased from 62 acres in 2018 to 29 acres in 2019.

Table 8: Permitted Permanent Wetland Impacts by Project Type for Calendar Years 2018 and 2019.

| Project Type | 2018 Acres | Project Type Percent | 2019 Acres | Project Type Percent |
|---|------------|----------------------|------------|----------------------|
| Restoration / Enhancement | 23.2 | 37% | 6 | 20.5% |
| Dredge | 6.6 | 11% | 1.5 | 5.1% |
| Road Access/ Bridge/ Stream Crossings | 15.1 | 24% | 9.3 | 32.1% |
| Lot Development/ Commercial / Residential | 12.8 | 20% | 6.9 | 23.7% |
| Bank Stabilization | 2.3 | 4% | 2.6 | 9.1% |
| Other / Fill | 0.4 | 1% | 1.3 | 4.4% |
| Shoreline Structures | 2 | 3% | 1 | 5.0% |
| Total | 62 | 100% | 29 | 100% |

It should be noted that 20.5% of all impacts in 2019 were for Restoration and Enhancement projects. The total permitted impacts by wetland types are shown in Figure 5 below. Non-tidal wetlands are subject to the greatest loss at 14.2 acres (62%). Tidal impacts are the lowest at 2.4 acres (11%) of the permitted impacts. Surface water impacts were 6 acres (27%) of the total impacts.

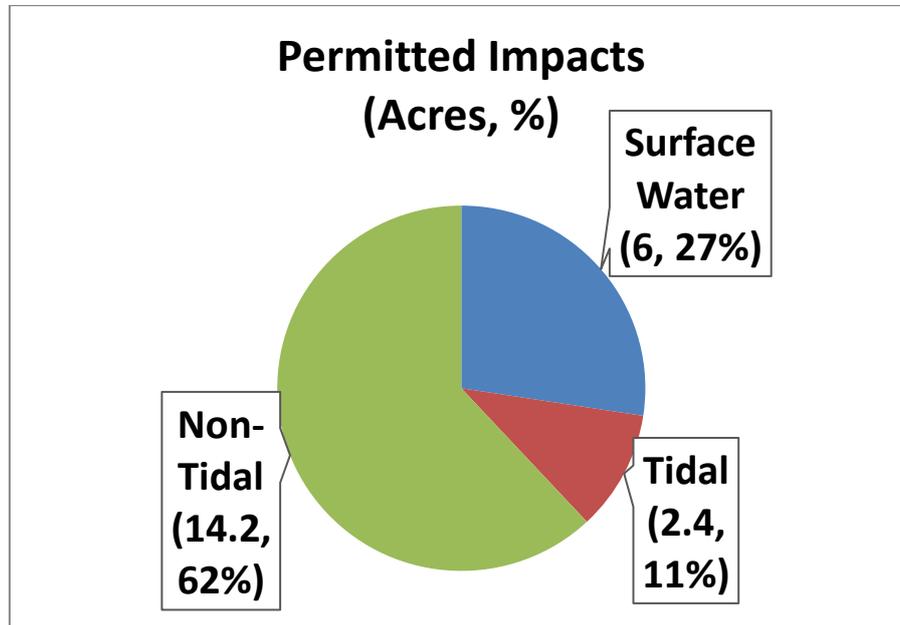


Figure 5: Permitted Wetland Impacts by Wetland Type for 2019.

Figure 6 illustrates permanent impacts, by Cowardin wetland type, which required payment into the ARM Fund in 2019. The total amount of permanent non-tidal wetland impacts which required mitigation was 10.42 acres and tidal wetland impacts totalled 0.69 acres. In addition, there were approximately 10.6 acres of temporary non-tidal impacts and 6.2 acres of temporary tidal impacts associated with projects that paid into the ARM Fund. These projects are generally linear utility upgrade projects that use matting for access across wetlands or convert forested wetlands to scrub-shrub wetlands. In addition, 2,350 linear feet of freshwater stream bank or channel, and 185 linear feet of tidal stream were impacted.

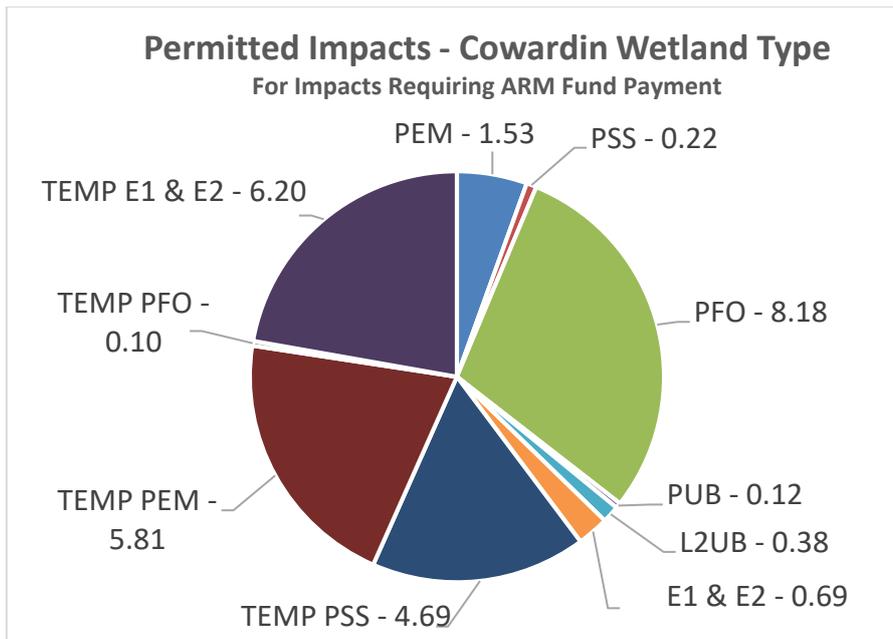


Figure 6: Types of Wetland Impacts in Acres that required payment into the ARM Fund in 2019 by Cowardin classification.

Figure 7 illustrates the large percentage of impacts that were a result of temporary utility projects, with municipal and roadway projects contributing a major portion of permanent wetland loss.

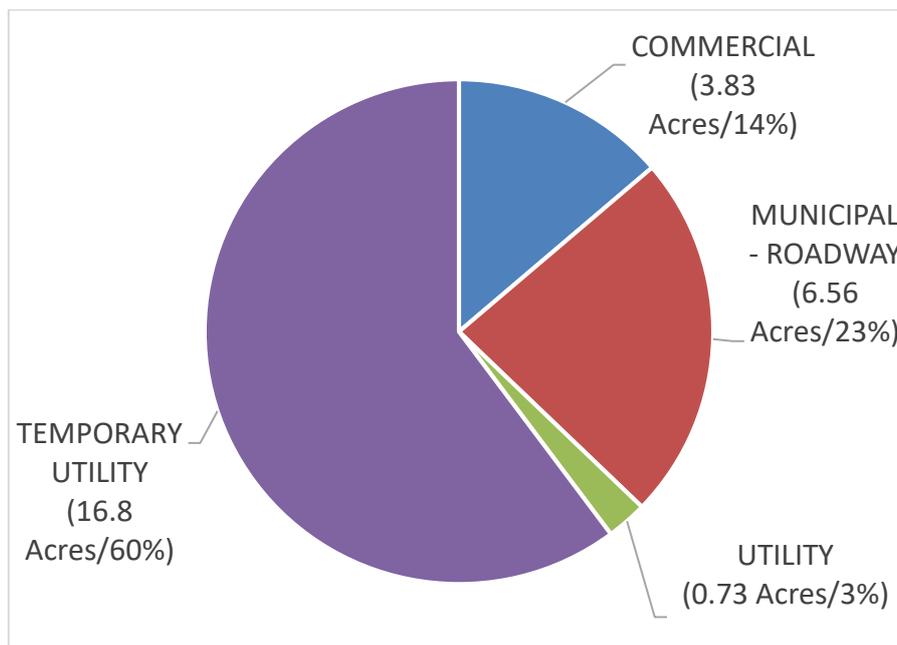


Figure 7: Summary of 2019 Wetland Impacts Requiring ARM Fund Payment by Project Type.

Table 9 lists the total Applicant Compensatory Mitigation separate from payments into the Aquatic Resources Mitigation Fund. Permit #2019-01424 has compensatory mitigation efforts currently in progress that is likely to add approximately 100+ acres of conservation to the numbers tallied in Table 9.

Table 9: Applicant Compensatory Mitigation for 2019.

| | Conservation (Acres) | Restoration (Square Feet) | Construction (Square Feet) |
|-----------------------------------|-------------------------|------------------------------|-------------------------------|
| Applicant Compensatory Mitigation | 104 | 0 | 0 |

Compliance Activities

Complaints Received

In 2019, the Wetlands Bureau received 283 written complaints. Approximately half were for alleged violations of wetlands (RSA 482-A), approximately one-quarter for Shoreland (SWQPA), and the balance were for other alleged violations of dock, shoreline, alteration of terrain or water quality laws.

Of the 174 complaints alleging violations of RSA 482-A, 135 complaints (48%) related to the dredge and fill of wetlands, 25 complaints (9%) related to docking structures, 5 complaints (2%) related to beaches or retaining walls, and 9 complaints (3%) related to forestry and logging operations. In addition, 85 complaints (30%) related to the Shoreland Water Quality Protection Act, and four complaints (1%) related to water quality or turbidity issues. Table 10 and Figure 8, below, includes a breakdown by percentage:

Table 10: Number and Percentage of Complaints by Type for CY 2019.

| Category | Description | Number | Percentage |
|----------|--|------------|-------------|
| WET | Wetlands (Dredge and Fill) | 135 | 48% |
| SWQPA | Shoreland Water Quality Protection Act | 85 | 30% |
| DOCK | Dock | 25 | 9% |
| AOT | Alteration of Terrain | 20 | 7% |
| SHORE | Shoreline: Beaches, Retaining Walls | 5 | 2% |
| FORESTRY | Forestry / Logging | 9 | 3% |
| WQ | Water Quality | 4 | 1% |
| | | 283 | 100% |

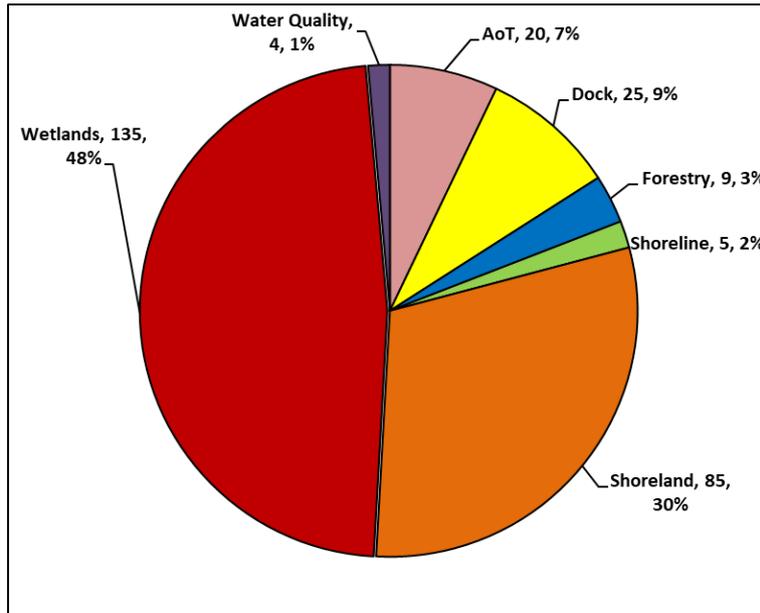


Figure 8: Number and Percent of Complaints by Type for CY 2019.

The number of complaints decreased from 2010 to 2011 due to the economic downturn, and remained at that lower level until 2018, when complaints started to increase again. However, complaints received in 2019 were at their highest number since 2010. This is depicted in Figure 9 below.

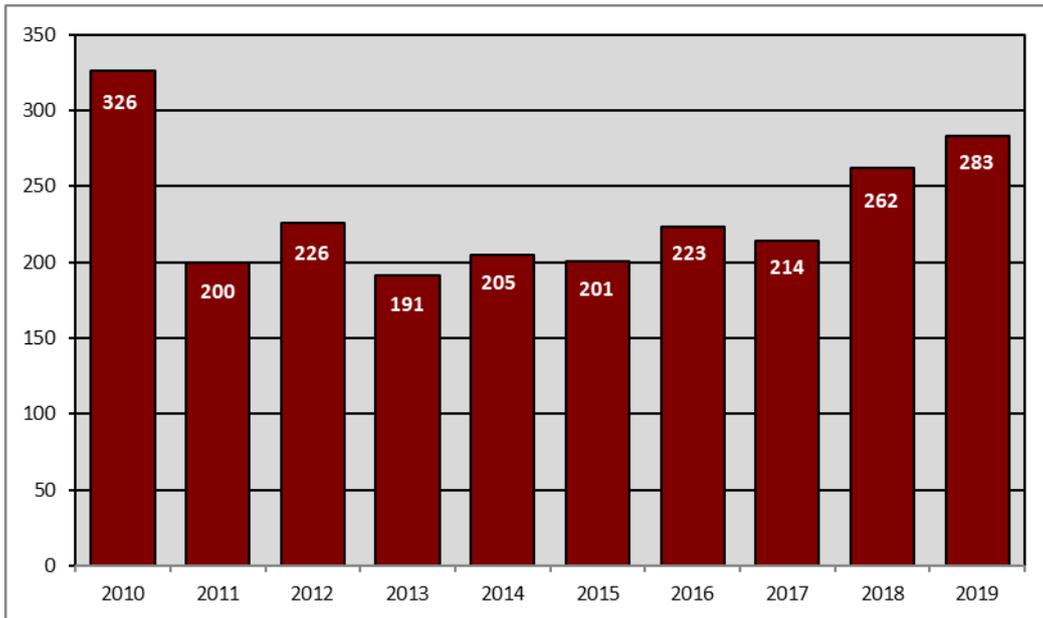


Figure 9: 10 Year Trend of Number of Complaints Received (2010-2019).

The number of complaints received by month tends to follow the seasons, as shown here for 2019. Complaints received typically increase in the spring after snowmelt when construction season begins, peak during the summer months, remain high in early autumn, and drop off significantly over the late fall and winter months as depicted in Figure 10 below.

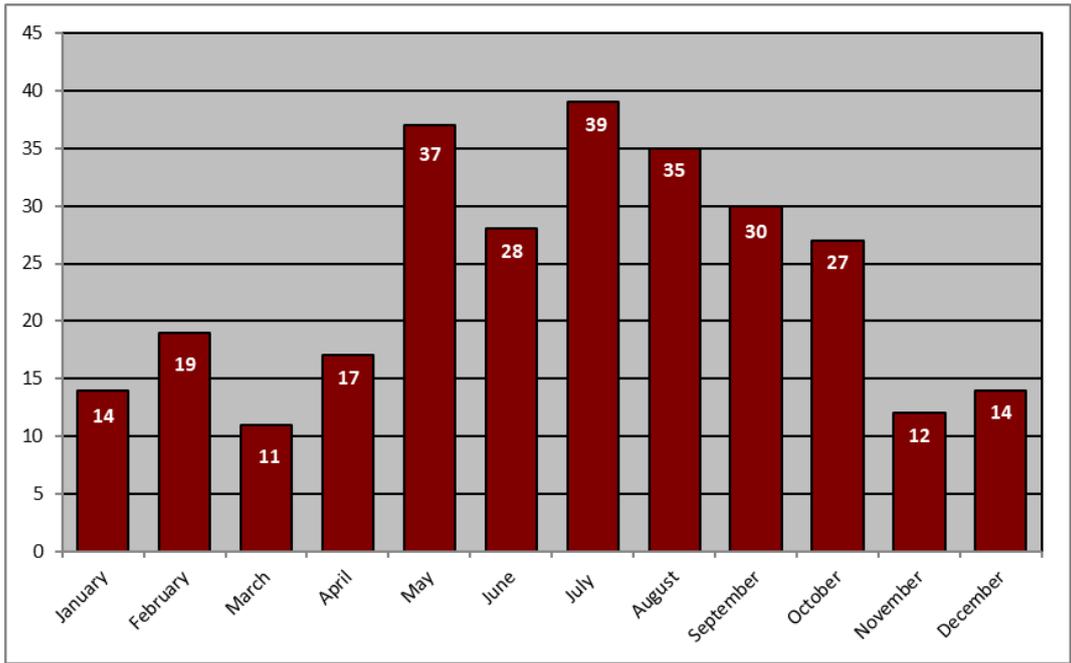


Figure 10. Complaints Received in 2019 by Month (Total: 283).

The type of complaint also tends to be correlated with the seasons. Wetlands (WET) complaints typically peak in June. However, in 2019 there were more wetlands complaints in late summer and early fall than the typical year. SWQPA complaints were highest May through September, and dock complaints peaked in July. The seasonality of complaints is depicted in Figure 11 below.

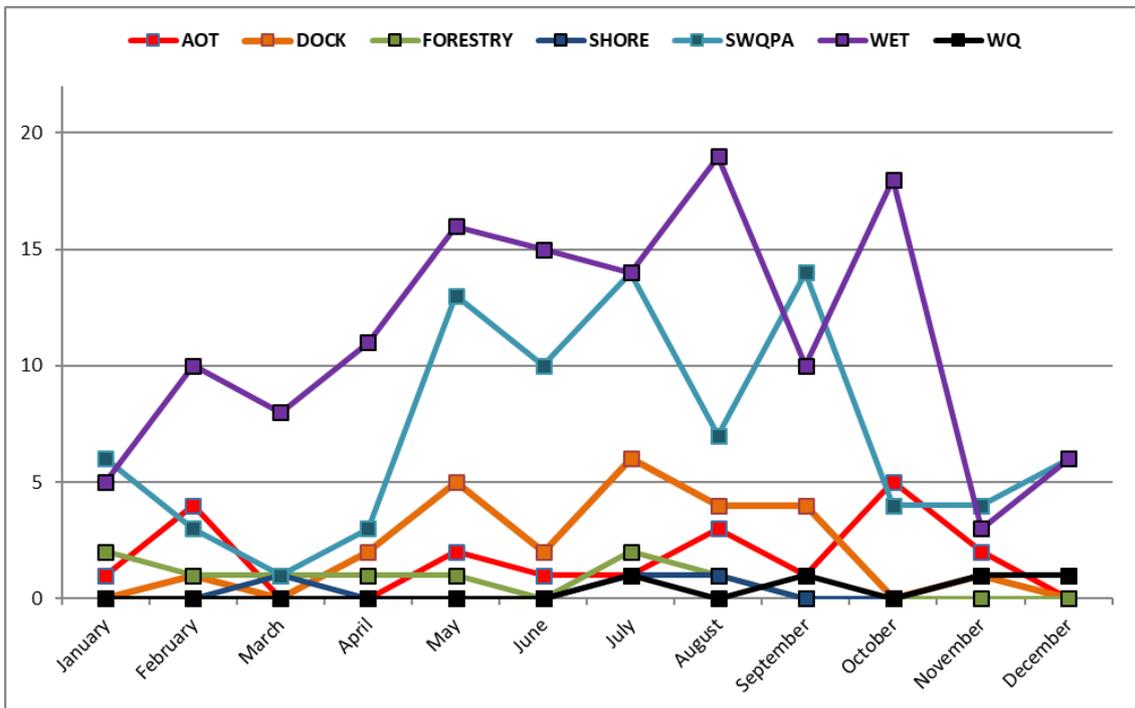


Figure 11: Complaints Received in 2019 by Type and by Month (Total: 283).

Compliance Actions Taken

When possible, the Wetlands Bureau attempts to resolve violations considered as minimum environmental impact during or immediately following a site inspection through informal means by issuing an on-site restoration request or by issuing a Letter of Deficiency. In cases where the impact is larger or more environmentally damaging, where the violator has a prior enforcement history, or if the violator is unwilling to work cooperatively with the Wetlands Bureau to correct the deficiencies, more formal action(s) may be taken in the form of an Administrative Order, referral to the New Hampshire Department of Justice, or imposition of administrative or civil penalties. A 10-year trend of wetland compliance actions by type is illustrated in Table 11.

Table 11: 10-Year Trend of Wetland Compliance Action by Type (2010-2019).

| Compliance Action Type | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|-----------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Complaints Received* | 326 | 200 | 226 | 191 | 205 | 201 | 223 | 214 | 262 | 283 |
| Informal Actions / Requests | 41 | 40 | 20 | 22 | 265 | 337 | 276 | 273 | 284 | 308 |
| Notices of Past Violations | 05 | 12 | 07 | 58 | 49 | 20 | 07 | 07 | 13 | 11 |
| Letters of Deficiency** | 70 | 23 | 29 | 25 | 45 | 43 | 41 | 46 | 49 | 34 |
| Administrative Fines | 11 | 10 | 04 | 01 | 03 | 03 | 05 | 00 | 01 | 3 |
| Administrative Orders | 23 | 14 | 04 | 03 | 17 | 06 | 03 | 07 | 09 | 3 |
| Referrals to the DOJ | 05 | 03 | 01 | 02 | 05 | 09 | 05 | 03 | 05 | 10 |
| TOTALS | 481 | 302 | 291 | 302 | 589 | 619 | 560 | 550 | 622 | 652 |

*Complaints received include those alleging violations of RSA 482-A, NH Wetlands Statute and applicable rules, RSA 483-B, Shoreland Water Quality Protection Act and applicable rules, and RSA 485-A:17, Alteration of Terrain and applicable rules. Alteration of Terrain complaints are included since many times there are associated wetland allegations and / and or violations. Complaints received do not include those alleging violations of RSA 485-A relative to septic systems and waste disposal.

**Letters of Deficiency totals include those issued for RSA 482-A, NH Wetlands Statute and applicable rules, RSA 483-B, Shoreland Water Quality Protection Act and applicable rules, and RSA 485-A:17, Alteration of Terrain and applicable rules. Letters of Deficiency for Alteration of Terrain are included since many times there are associated wetland and / or Shoreland violations also involved. Letters of Deficiency do not include those alleging violations of RSA 485-A relative to septic systems and waste disposal.

The Wetlands Bureau will also seek fines consistent with its statutory authority and the Compliance Assurance Response Policy (CARP). In 2019, the Wetlands Bureau collected approximately \$217,875 in administrative fines and civil penalties. This increase in penalties was the result of one significant case totaling a \$170,000 in fines. A 10-year trend of civil penalties and administrative fines collected for violations of RSA 482-A are illustrated in Figure 12.

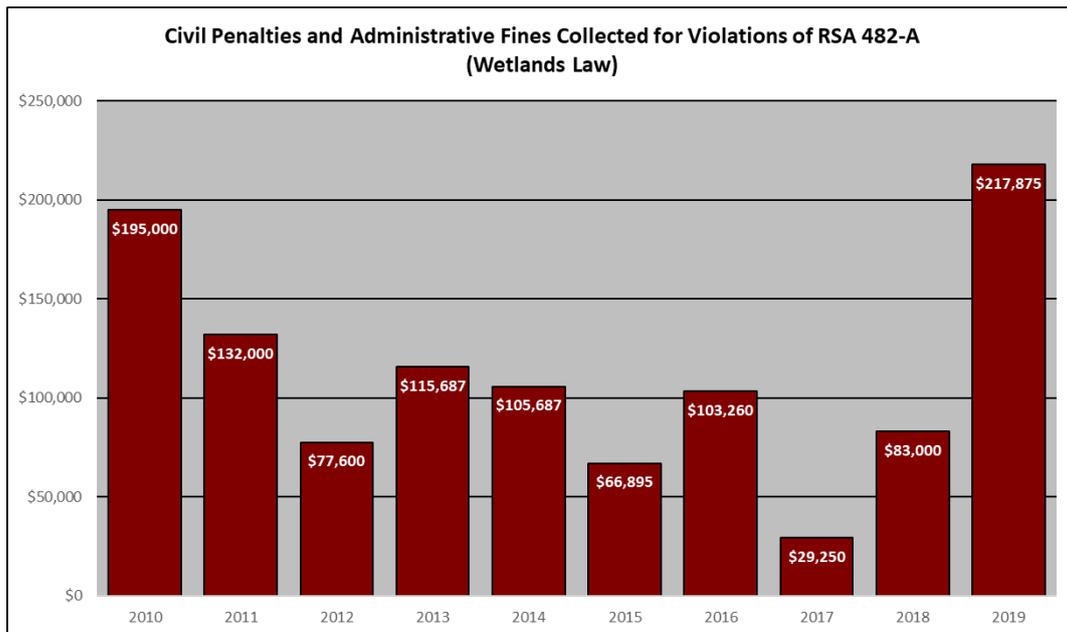


Figure 12: 10-Year Trend of Civil Penalties and Administrative Fines Collected for Violations of RSA 482-A.

2019 Permit Compliance Initiative

The compliance section has historically relied on the public to report suspected wetland violations. This “complaint-based” system, while effective, has resulted in a “reactive” approach to compliance. In response to new initiatives within the Land Resources Management Program (LRM), in 2016 the permitting and compliance section began to conduct inspections of various permitted projects. Conducting field inspections of permitted projects created a proactive NHDES field presence, ensuring that projects adhere to the plans and conditions specified in the corresponding permit.

Thus, in 2019, in addition to performing complaint-based inspections, the Wetlands Bureau conducted inspections of permitted projects. The purpose of these inspections was to ensure compliance with permits and permit conditions, perform inspections that are not solely complaint-based, and respond to stakeholder comments. A cross-section of permit types (notifications, standards, etc.) and towns were selected. During the inspections, staff used program-specific checklists to determine whether the completed projects were consistent with the approved plan, consistent with permit conditions, and therefore in compliance with the permit.

Summer interns performed 155 inspections of approved/issued wetland and shoreland notifications/permits. Of those 155 inspections, 83 (53.5%) were in full compliance, 39 (25.2%) were in partial compliance, 1 (0.6%) were in non-compliance, and 32 projects (20.6%) had not been started.

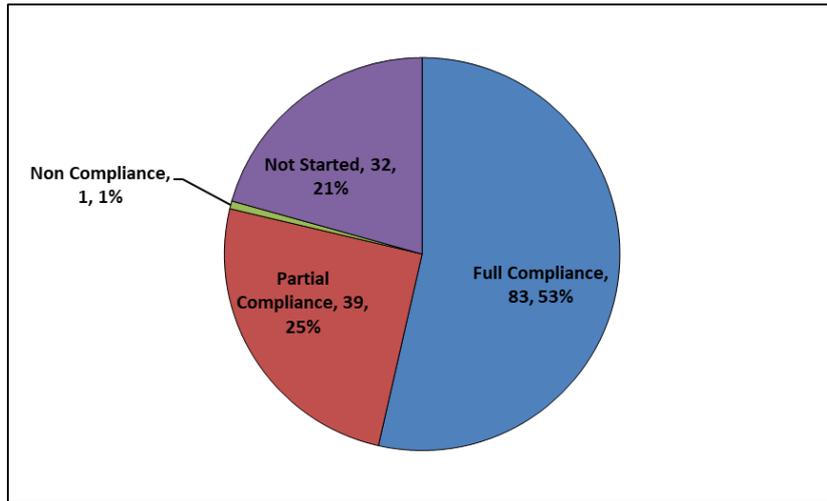


Figure 13: Outcome of 2019 Wetland and Shoreland Permit Compliance Inspections.

Additional permit compliance inspections were conducted by full-time permitting and compliance staff, but were not consistently tracked and thus, are not included in these numbers. The tracking of inspections was limited due to a reduction in compliance staff for the 2019 calendar year.

AQUATIC RESOURCE MITIGATION FUND PROGRAM

Since the ARM Fund was established in 2006, 201 applicants have used this form of compensatory mitigation and these funds have been used to support projects that restore, enhance, and preserve aquatic resources and associated upland buffers. The program has been very successful for grant applicants and has resulted in approximately 24,000 acres of land conservation, 100 acres of wetland restoration/enhancement, 15 acres of tidal restoration/enhancement, and approximately 70 miles of stream passage improvements. The ARM Fund in-lieu fee option has become a good option for applicants needing to provide compensatory mitigation. The total funds collected since the program was established equals \$20,104,000 and has funded 106 projects.

In State Fiscal Year 2019 (7/1/2018 through 6/30/2019), 22 permits involving a payment were issued that resulted in 8.12 acres of wetland loss, 1,333 linear feet of stream loss, and 22.11 acres of temporary impacts including secondary impacts due to conversion of forested wetlands to emergent or scrub shrub wetlands. The ARM Fund received approximately \$2,290,000 in the payments collected. During this time frame, ARM Fund grants were awarded to 26 projects that provided 1.5 acres of wetland enhancement, 7.18 miles of restored stream connectivity, 0.36 acres of tidal enhancement, and preserved an additional 8,177 acres of land. For the total of funds collected in the 2019 fiscal year, over \$9,845,000 of additional funds were leveraged to complete the grant projects.

Program Initiatives

The 2019 ARM Fund grant round resulted in 26 awards to projects ranging from land protection, stream connectivity improvement, and two culvert replacements. During state fiscal year 2019, the program advertised grant funds in the Merrimack River service area for ARM Fund wetland conservation and restoration. During the fiscal year a number of 2015 grants were still in progress, and several restoration projects from previous years were being completed.

The Regulatory Division of the U.S. Army Corps of Engineers (USACE) performed an audit of the ARM Fund to assess the overall in-lieu fee process to determine whether management of the Administrative Fees was in compliance with federal regulations (33 CFR Parts 325 and 332), New Hampshire State laws (Section 482-A:29), and the New Hampshire ARM Fund Final In-Lieu Fee Program Instrument. The report, published in June 2019, concluded that the internal controls for the program, specifically for the processing and management of administrative fees, required some areas of improvement. Based on these four observations the following corrective actions were taken:

- 1) ARM Fund payments were deposited in an independent ILF account.
- 2) NHDES developed an SOP on ensuring adequate controls for Mitigation Review.
- 3) NHDES developed an SOP to ensure independent review of the ARM Fund calculator.
- 4) NHDES reviewed NHDES file 2016-1952 with issued raised by the Corps.

NHDES views an audit as an important opportunity to improve by receiving an independent, outside, fact-based perspective on its performance. These improvements will be included in the updated Federal Instrument due in 2022.

FY 2019 Permits Issued with ARM Fund as Compensatory Mitigation Component

In FY 2019, 22 permits involving an ARM Fund payment were issued that resulted in 8.12 acres of wetland loss, 1,333 linear feet of stream loss or impacts, and 22.11 acres of temporary impacts

including secondary impacts due to conversion of forested wetlands to emergent or scrub-shrub wetlands. Table 12 provides a list of the projects permitted from July 1, 2018, to June 30, 2019, indicating wetland permit holders that selected payment to the ARM Fund to satisfy mitigation requirements.

Table 12: Wetland Permits Issued in FY 2019 Using ARM Funds (07/01/2018-06/30/2019).

| DES PERMIT NUMBER/ TOWN | SERVICE AREA | WETLAND LOSS (Sq Ft) | LOSS ACRES | STREAM LOSS (linear feet) | TEMPORARY IMPACTS | | ARM FUND | |
|----------------------------|--------------------------------|----------------------|------------|---------------------------|-------------------|-------|--------------|--------------|
| | | | | | (Sq Ft) | ACRES | REVENUE | ADMIN FEE |
| 2017-1156/ Londonderry | Merrimack | 34,077 | 0.78 | | | | \$168,198.91 | \$28,031.65 |
| 2018-882/ Northfield | Merrimack | | 0.00 | 49 | | | \$12,136.32 | \$2,022.74 |
| 2018-498/ Loudon | Merrimack | 7,966 | 0.18 | 433 | 15,060 | 0.35 | \$106,102.32 | \$17,683.72 |
| 2018-1249/ Hampton | Salmon Falls - Piscataqua | 60 | 0.00 | | | 0.00 | \$604.99 | \$100.83 |
| 2018-2664/ Brentwood | Salmon Falls - Piscataqua | | 0.00 | 31 | | 0.00 | \$7,678.08 | \$1,279.00 |
| 2016-1953/ Londonderry | Merrimack | | 0.00 | | 311,625 | 7.15 | \$82,724.17 | \$16,544.83 |
| 2018-595/ Ossipee | Saco | | 0.00 | 183 | 87,106 | 2.00 | \$61,643.35 | \$7,473.72 |
| 2018-2234/ Canaan | Lower CT | | 0.00 | 34 | | 0.00 | \$8,421.12 | \$1,403.52 |
| 2018-1604/ Concord | Merrimack | | 0.00 | 108 | | 0.00 | \$26,749.44 | \$4,458.24 |
| 2018-253/ Derry | Merrimack | 11,015 | 0.25 | | | 0.00 | \$55,532.50 | \$9,255.43 |
| 2017-3475/ Salem | Merrimack | 1,975 | 0.05 | | | 0.00 | \$9,990.98 | \$1,665.16 |
| 2018-3478/ Litchfield | Merrimack | 525 | 0.01 | | 155,217 | 3.56 | \$78,907.49 | \$13,151.25 |
| 2018-986/ Dummer | Androscoggin | 24,1150 | 5.54 | 219 | | 0.00 | \$892,620.62 | \$149,747.88 |
| 2018-2181/ Alexandria | Pemigewasset- Winnipesaukee | | 0.00 | 99 | | 0.00 | \$24,520.32 | \$4,086.72 |
| 2018-1689/ Bethlehem | Middle CT | | 0.00 | 77 | | 0.00 | \$18,868.08 | \$3,144.68 |
| 2018-2050/ Lancaster | Upper CT | | 0.00 | 84 | | 0.00 | \$20,805.12 | \$3,467.52 |

| | | | | | | | | |
|--|------------------------------|----------------|-------------|--------------|----------------|--------------|-----------------------|---------------------|
| 2007-2429/ Berlin | Androscoggin | | 0.00 | | | 0.00 | \$2,000.00 | \$0.00 |
| 2018-2051/ Durham | Salmon Falls - Piscataqua | 34,120 | 0.78 | | | 0.00 | \$208,862.54 | \$34,810.43 |
| 2013-2918/ Newington | Salmon Falls - Piscataqua | 9,310 | 0.21 | | | 0.00 | \$87,162.64 | \$14,527.11 |
| 2016-965/ Durham, Madbury, Portsmouth, Newington | Salmon Falls - Piscataqua | 778 | 0.02 | | 393,924 | 9.04 | \$349,834.26 | \$58,305.72 |
| 2018-2251/ Barrington | Salmon Falls - Piscataqua | | 0.00 | 16 | | 0.00 | \$3,962.88 | \$660.48 |
| 2019-862/ Hudson | Merrimack | 12,515 | 0.29 | | | 0.00 | \$63,094.92 | \$10,515.82 |
| 2019 TOTALS | | 353,491 | 8.12 | 1,333 | 962,932 | 22.11 | \$2,290,421.05 | \$354,304.80 |

ARM Fund Disbursements in FY 2019

The ARM Fund program grants funds to projects involving wetland or stream restoration, wetland enhancement, and preservation of upland buffers associated with high quality aquatic resources. The projects that were provided payment during FY 2019 are noted in Table 13, as well as active projects with encumbered funds to be spent in the coming year.

Table 13: ARM Fund Disbursements for Projects in FY 2019 and Active Projects.

| Project Name | Applicant | Award Year | Award Amount | Funds Previously Disbursed | FY 2019 Disbursements | Remaining Award |
|---|----------------------------------|------------|--------------|----------------------------|-----------------------|-----------------|
| SACO SERVICE AREA | | | | | | |
| World Fellowship Center | Upper Saco Valley Land Trust | 2018 | \$41,600 | \$0.00 | \$0.00 | \$41,600.00 |
| PEMIGEWASSET-WINNIPESAUKEE SERVICE AREA | | | | | | |
| Great Meadow Phase II | Town of Tuftonboro | 2018 | \$76,500 | \$0.00 | \$0.00 | \$76,500.00 |
| PEMIGEWASSET-WINNIPESAUKEE & SALMON FALLS-PISCATAQUA SERVICE AREAS | | | | | | |
| Birch Ridge Community Forest | Southeast Land Trust | 2018 | \$207,870 | \$0.00 | \$202,420.00 | \$5,450.00 |
| SALMON FALLS-PISCATAQUA SERVICE AREA | | | | | | |
| Multi-Habitat Restoration in Cutt's Cove | UNH/Jackson Estuarine Laboratory | 2015 | \$134,736 | \$61,558.00 | \$73,178.00 | \$0.00 |
| Horsburgh Project | Southeast Land Trust | 2016 | \$85,000 | \$0.00 | \$85,000.00 | \$0.00 |

| | | | | | | |
|--|--|------|-----------|--------------|--------------|--------------|
| Governor's Run - Sanderson | Southeast Land Trust | 2018 | \$200,000 | \$0.00 | \$200,000.00 | \$0.00 |
| Living Shoreline -Wagon Hill Farm | Town of Durham | 2018 | \$250,000 | \$0.00 | \$0.00 | \$250,000.00 |
| Lubberland Creek Restoration Project | Town of Newmarket | 2018 | \$200,000 | \$0.00 | \$0.00 | \$200,000.00 |
| Mathes Family Limited Partnership | Southeast Land Trust | 2018 | \$158,000 | \$0.00 | \$0.00 | \$158,000.00 |
| MERRIMACK SERVICE AREA | | | | | | |
| McQuesten Brook Restoration Project | NH Rivers Council | 2015 | \$345,000 | \$321,870.00 | \$13,600.00 | \$9,530.00 |
| Upper North Branch River Property | Southeast Land Trust | 2016 | \$30,000 | \$0.00 | \$30,000.00 | \$0.00 |
| Hitchiner Town Forest | Town of Milford | 2016 | \$8,260 | \$0.00 | \$750.00 | \$7,510.00 |
| Tower Hill Pond | Society for Protection of NH Forests | 2016 | \$400,000 | \$0.00 | \$400,000.00 | \$0.00 |
| Salem Town Forest | Southeast Land Trust | 2016 | \$150,000 | \$0.00 | \$150,000.00 | \$0.00 |
| Country Hill Estates | City of Concord | 2018 | \$350,000 | \$0.00 | \$0.00 | \$350,000.00 |
| Robert French Fee | Piscataquog Land Conservancy | 2018 | \$185,000 | \$0.00 | \$185,000.00 | \$0.00 |
| Jennings Conservation Easement | Piscataquog Land Conservancy | 2018 | \$94,000 | \$0.00 | \$94,000.00 | \$0.00 |
| Piscataquog South Branch Connectivity Project | Francestown Land Trust | 2018 | \$185,000 | \$0.00 | \$0.00 | \$185,000.00 |
| LOWER CONNECTICUT SERVICE AREA | | | | | | |
| Ashuelot River Floodplain Protection & Restoration Project | Monadnock Conservancy & The Nature Conservancy | 2015 | \$147,615 | \$60,000.00 | \$0.00 | \$87,615.00 |
| Smith Pond Shaker Forest | Upper Valley Land Trust | 2015 | \$362,385 | \$0.00 | \$362,385.00 | \$0.00 |
| Ticknor Woodlands Addition | Upper Valley Land Trust | 2016 | \$168,500 | \$0.00 | \$165,315.11 | \$3,184.89 |
| North Branch Sugar River Land Conservation Project - Ruger | NH Fish and Game Department | 2018 | \$475,000 | \$0.00 | \$475,000.00 | \$0.00 |
| Cranberry Bog Culvert Replacement/Stream Restoration Project | Town of Winchester | 2018 | \$215,488 | \$0.00 | \$0.00 | \$215,488.00 |

| | | | | | | |
|---|--|------|-----------|--------|------------|--------------|
| Granite Lake Headwaters | Harris Center for Conservation Education | 2018 | \$200,000 | \$0.00 | \$0.00 | \$200,000.00 |
| Thompson Brook Restoration | Cheshire County Conservation District | 2018 | \$74,195 | \$0.00 | \$0.00 | \$74,195.00 |
| Tunis District Headwater & Wetland Protection Project | Upper Valley Land Trust | 2018 | \$299,645 | \$0.00 | \$0.00 | \$299,645.00 |
| UPPER CONNECTICUT SERVICE AREA | | | | | | |
| Brunault/Floodplain Protection & Restoration Project | The Nature Conservancy | 2016 | \$79,800 | \$0.00 | \$2,466.20 | \$77,333.80 |

ARM Fund Awards Announced in January 2019

NHDES announced the availability of funds in the Merrimack River service area in February 2019. The amount of funding available included \$1,281,661 in carry-over funds and an additional \$398,339 from payments received for a total advertised at \$1,680,000.

Twelve pre-proposals were submitted on May 31, and reviewed by NHDES, USACE and the Site Selection Committee (SSC). Feedback was provided. Six full application submittals were received on August 30, 2019.

The members of the SSC, representatives from USACE, EPA, the Natural Resources Conservation Service, and NHDES staff visited the sites on September 24 and October 1, 2019. On October 10, 2019, the SSC and federal agency representatives convened to evaluate and rank the applications and determined funding amounts for the projects. SSC's recommendations were approved by USACE and the Wetlands Council. The summaries in Appendix 1 provide details of the awards announced by SSC, and a brief description of the gain in resources from each project that was awarded funds according to the service areas.

Status of the ARM Fund Account

The State FY 2019 ended with all nine ARM Fund service areas having a positive balance. Table 14 describes revenues, expenses, encumbered funds and a balance for each service area.

Table 14: Status of ARM Fund Accounts According to Service Area.

| Services Areas | Beginning Balance (7/1/2018) | Revenues | Expenses | Encumbered | Interest earned | Ending Balance (6/30/2019) |
|--------------------|---------------------------------|--------------|----------|------------|-----------------|-------------------------------|
| Androscoggin River | \$17,816.00 | \$745,852.74 | \$ - | \$ - | \$126,948.03 | \$890,616.77 |

| | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|-----------------------|
| Saco River | \$42,550.36 | \$54,169.63 | \$ - | \$41,600.00 | \$9,210.53 | \$64,330.52 |
| Pemigewasset to Winnepesaukee Rivers | \$92,767.08 | \$20,433.60 | \$17,500.00 | \$76,500.00 | \$3,474.44 | \$22,675.11 |
| Salmon Falls to Piscataqua Rivers | \$1,489,618.16 | \$548,421.82 | \$469,920.00 | \$919,576.92 | \$93,350.89 | \$741,893.95 |
| Merrimack River | \$3,498,324.40 | \$527,159.86 | \$867,150.00 | \$673,055.00 | \$87,942.57 | \$2,573,221.83 |
| Lower Connecticut River | \$2,287,966.21 | \$7,017.60 | \$847,372.50 | \$880,126.89 | \$1,212.77 | \$568,697.19 |
| Contoocook River | \$115,409.63 | \$ - | \$ - | \$24,000.00 | \$ - | \$91,409.63 |
| Middle Connecticut River | \$217,854.78 | \$15,723.40 | \$ - | \$ - | \$2,687.77 | \$236,265.95 |
| Upper Connecticut River | \$97,539.39 | \$17,337.60 | \$ - | \$77,333.80 | \$2,949.99 | \$40,493.18 |
| Total All Watersheds | \$7,862,312.37 | \$1,936,116.25 | \$2,204,408.70 | \$2,692,192.61 | \$327,777.00 | \$5,229,604.31 |

Status of Administrative Assessment Account

One component of an ARM Fund payment is an administrative assessment established by RSA 482-A:30, III and RSA 482-A:30-1,II. The status of the account is noted in Table 15. Given the increased volume of mitigation award and tracking needs, the NHDES is planning to develop a mitigation database to enhance efficiency, impact tracking, and address additional reporting requirements.

Table 15: Status of Administrative Assessment Account.

| Beginning balance (7/1/2018) | Revenues | Expenses | 2019 Fiscal Year Ending Balance |
|------------------------------------|--------------|--------------|------------------------------------|
| \$659,187.81 | \$413,876.21 | \$247,157.62 | \$856,053.00 |

LEGISLATION AND RULEMAKING

Legislation

The Wetlands Bureau had a busy year in the legislature. The 2019 wetlands legislation is listed below in Table 16:

Table 16: NHDES-Wetlands Legislation CY 2019.

| Bill Number | Topic | Status | Last Hearing |
|-------------|--|--|--------------|
| HB 219 | Structures on Non-tidal Public Waterways Commission | House: Inexpedient to legislate | 01/22/2019 |
| HB 228 | Extension of Commission to study current statutes related to management of non-tidal public waterways and the construction or placement of structures within them and relative to the New Hampshire rivers management and protection program | Senate: Passed/Adopted with Amendment House: Concurred Governor: Signed | 03/26/2019 |
| HB 475 | Shoreland Septic Commission | Senate: Passed/Adopted House: Passed/Adopted Governor: Signed | 04/11/2019 |
| HB 645 | Dock Registration | Senate: Passed/Adopted with Amendment Governor: Vetoed (07/19/2019) House: Veto sustained (09/18/2019) | 04/23/2019 |
| HB 682 | Water Resources Fund | House: Passed/Adopted with Amendment Senate: Died on the table; Passed under HB 4 (9-25-19) | 04/23/2019 |

Passage of House Bill 4, signed September 25, 2019, contained changes to the required fees for certain Wetlands, Shoreland Protection, and Alteration of Terrain permits. These fee increases were necessary for program sustainability.

Rulemaking

In 2019, NHDES achieved a significant milestone in wetlands rulemaking. The New Hampshire Joint Legislative Committee on Administrative Rules (JLCAR) issued final approval of the new wetland rules on May 17, 2019. This approval was the culmination of a significant, multi-year initiative to improve the technical review standards and decision-making processes of the NHDES Wetlands Bureau through consensus-based rulemaking, while ensuring consistency with the New Hampshire wetlands statute, and NHDES' mission. The initiative engaged a variety of groups and individuals with diverse interests in wetland rules, including the Associated General Contractors, Local River Advisory Committees (LAC's), the Nature Conservancy, the New Hampshire Association of Conservation Commissions, the New Hampshire Association of Natural Resource Scientists, the New Hampshire Farm Bureau, the New Hampshire Association of Timberland Owners Association, utility providers, and New Hampshire state agencies such as the Fish and Game Department, the

Department of Transportation, and the Department of Natural and Cultural Resources. NHDES' activities included substantial outreach, numerous public meetings, several rulemaking hearings, and response to 2,000 public comments on the proposed rules.

The new rules, outlined in Table 17, align New Hampshire wetland regulations with state statutory and federal requirements. They reflect the many revisions to RSA 482-A that have been enacted since the last major rules overhaul in 1991, and they capture existing practices and help to achieve consistency between state and federal program requirements. Specifically, the new rules include many existing USACE requirements in the state programmatic permit process, which in many cases eliminates the need to apply for separate approval from USACE, and streamlines the permitting process for applicants.

The new rules support public safety and coastal resiliency, which is essential for assisting New Hampshire's preparedness for ongoing increases in rainfall intensity and sea level rise associated with climate change. Due to the demonstrated increased frequency of flooding in floodplain wetlands and coastal areas, and associated risks to public safety, the rules require additional vulnerability assessments for these areas.

Additionally, the new rules provide clarity and consistency in the permitting process by clarifying existing terms, defining new terms and processes, adding project-specific criteria and general permit conditions, referencing updated and new best management practices, and incorporating references to scientifically recognized technical manuals and methods.

The new rules will better serve regulated entities and the environment by streamlining permitting, enhancing clarity and consistency, and ensuring scientifically-based decisions that protect public safety, public health, and valuable aquatic resource areas.

Table 17: 2019 Wetlands Adopted Rules.

| Date Adopted/Effective | Name | Topic |
|------------------------|--------------------------------|--|
| 12/15/2019 | Wetland Env-Wt 100-900 | <u>100</u> : Definitions <u>200</u> : Hearings, Appeals & Waiver requests <u>300</u> : Permit Types & Procedure, Standard Conditions, Criteria for Standard Permits <u>400</u> : Delineation & Classification of jurisdictional areas & General Project Classification <u>500</u> : Project specific requirements (e.g. docks, utility, forestry, residential, commercial) <u>600</u> : Coastal Lands & Tidal Waters/Wetlands <u>700</u> : Prime Wetlands <u>800</u> : Compensatory Mitigation <u>900</u> : Stream Crossings |
| 12/15/2019 | Shoreland Env-Wq 1405.02-03 | Shoreland rules relative to construction of accessory structures. |

| | | |
|------------|--|---|
| 12/23/2019 | Emergency rule changes to Wetlands Rules Env-Wt 306.05(a)(1) and Env-Wt 406.03(a) | Clarifies when a wetland delineation is required for shoreline structure projects. |
| 12/24/2019 | Amendments to Wetland Rules (Env-Wt 100, 200, 300, 600, and 900) | Corrections and clarifications to definitions; Processing Timelines for Routine Roadway Maintenance Registrations; Clarifications on: PBN and EXP submission requirements and review procedures; Wetlands Dredge and Fill application requirements; Emergency Authorization procedures; Water Access Structure Requirements; Bank/Shoreline Stabilization requirements; and Residential, Commercial, and Industrial project requirements. |

Prior to the rules rollout, the NHDES Wetlands Bureau provided extensive public outreach. Please see details on dates and audiences in the Education and Outreach section. From September 26, 2019 – December 10, 2019 the Wetlands Bureau provided over 14 training sessions. Of these, four were either day-long or half-day events. Through these trainings, NHDES reached over 750 people.

COMMUNICATIONS AND OUTREACH/EDUCATION

Prior to the NHDES Wetlands Bureau providing external outreach on the new wetland rules, the Bureau conducted 15 internal staff training sessions ensuring a clear and consistent understanding of the new processes, definitions, standards, and requirements.

Table 18: NHDES Wetlands Bureau Internal Trainings on the Amended Wetlands Rules.

| Date | Topic | Presenter |
|------------|--|-------------------|
| 5/22/2019 | Organization & Concepts Overview | Mary Ann Tilton |
| 5/23/2019 | Overview of the rules | Mary Ann Tilton |
| 6/5/2019 | Public Purpose | Mary Ann Tilton |
| 6/12/2019 | New Rules Processes | Marie-Eve Jacques |
| 6/26/2019 | Required Planning - WPPT | Stef Giallongo |
| 7/11/2019 | New Notice Processes (SPN) | Ryan Duquette |
| 7/24/2019 | PBN, EXP, Processes | Joe Schmidl |
| 7/31/2019 | Avoidance & Minimization & Permit Conditions | Marie-Eve Jacques |
| 8/15/2019 | Water Access Structures | Marie-Eve Jacques |
| 8/21/2019 | Wetland Assessment | Mary Ann Tilton |
| 9/11/2019 | Stream Crossings | Karl Benedict |
| 9/18/2019 | Residential/Commercial | Seta Detzel |
| 9/19/2019 | Bank Stabilization | Karl Benedict |
| 11/19/2019 | ARC Processes | Joe Schmidl |
| 11/20/2019 | ARC Processes | Joe Schmidl |

In addition to performing their daily regulatory duties, the Wetlands Bureau and Shoreland Program staff conducted 48 training sessions around the state, presenting to over 2,000 attendees.

Wetlands training presentation topics included changes to the wetlands rules, the role of the Conservation Commission, the ARM Fund, the NH Coastal Climate Summit, and Shoreland protection. Table 19 lists the dates, topics and locations of the training sessions.

Table 19. Wetlands Presentations for Calendar Year 2019.

| Date | Topic | Location |
|-------------------|--|----------------------------|
| <u>9/26/2019</u> | <u>NHDES Training on New Wetland Rules General Topics Session</u> | <u>Concord</u> |
| <u>10/2/19</u> | <u>NHDOT professionals- All Day Training</u> | <u>Concord</u> |
| <u>10/10/2019</u> | <u>NHDES Training on New Wetland Rules Coastal Topics Session</u> | <u>NHDES Pease Office-</u> |
| <u>10/16/2019</u> | <u>NHDES Training on New Wetland Rules Project-Specific Session (Stream Crossings, Tidal Wetland Rules, Bank Stabilization, Water Access Structures, Residential/Commercial)</u> | <u>Concord</u> |

| | | |
|-----------------|--|-----------------|
| <u>11/2/19</u> | <u>NH Association of Conservation Commissions- three presentations:</u> - <u>NHDES Wetland Rules and the Conservation Commission's Role in the Permit Process</u> - <u>Wetlands Permit Planning Tool</u> - <u>The Role of BMPs in NHDES' Wetlands Rules</u> | <u>Pembroke</u> |
| <u>12/4/19</u> | <u>NH Coastal Climate Summit</u> | <u>Concord</u> |
| <u>12/10/19</u> | <u>NHDES Training on New Wetland Rules Lake and Pond Projects</u> | <u>Concord</u> |

Through rules training sessions, the NHDES reached important stakeholder meetings, as shown in Table 20 below. The stakeholder trainings were tailored to each audience, and covered regulation changes that impact wetland scientists, Local River Advisory Committees, septic designers and installers, conservation commissioners, loggers, foresters, landowners, town officials, land surveyors, and marine contractors.

Table 20: Rules Overview Sessions, CY 2019.

| Date | Sponsor | Location |
|-------------------------|---|--------------|
| 1/25/19 (2 sessions) | NHANRS annual meeting nhanrs.org | Concord |
| 3/23/19 (3 sessions) | LAC workshop ARM Fund Mitigation/ Rules updates | Concord |
| 10/23/19 | NH Timberland Owners Association - Timber Talk 1 www.nhtoa.org | Lancaster |
| 10/24/19 | Granite State Designers and Installers www.gsdia.org | |
| 11/2/19 (3 sessions) | NH Association of Conservation Commissions - Annual Mtg. and Conference www.nhacc.org/ | Pembroke |
| 11/6/19 | NH Timberland Owners Association - Timber Talk 2 www.nhtoa.org | Concord |
| 11/14/19) | NH Municipal Association Annual Conference http://www.nhma.org | Manchester |
| 12/4/2019 | NH Timberland Owners Association - Timber Talk 3 www.nhtoa.org | Hillsborough |
| 12/5/19 | NH Association of Natural Resource Scientists (NHANRS) - Quarterly Mtg. nhanrs.org | Concord |
| 12/6/19 (2 sessions) | NH Land Surveyors Association Annual Mtg. www.nhlsa.org | Concord |
| 1/24/20 (2 sessions) | NHANRS Annual Conference | Concord |

The Wetlands Bureau provided Shoreland outreach at the following events, displayed in Table 21:

Table 21: Shoreland Outreach Events CY 2019.

| Event | Date | Topic | Location | Attendees |
|---|-----------|--|---------------------|-----------|
| UNH Cooperative Extension – Shade and Ornamental Trees | 2/18/2019 | Wetlands and Shoreland (SWQPA) Law basics | Concord | 20 |
| Logging and the Law w/ NH Timber Owners Association | 4/18/2019 | Wetlands Law as it relates to Timber Harvesting | Conway | 30 |
| Granite State Designers and Installers (GSDI) | 4/26/2019 | NH SWQPA, the Enforcement Process and Erosion Controls | Manchester | 60 |
| Wilton/Lyndeborough Sustainability Fair | 5/4/2019 | NH SWQPA | Wilton/Lyndeborough | 10 |
| Deerfield Lake Association | 5/18/2019 | NH SWQPA | Deerfield | 20 |
| Canaan Lake Association | 7/20/2019 | NH SWQPA | Canaan | 35 |
| NRCS – Pond Construction | 7/24/2019 | Pond Construction and wetlands permitting | Temple | 15 |
| NRCS – Pond Construction | 8/8/2019 | Pond Construction and wetlands permitting | Canterbury | 15 |
| Clough Pond Association | 8/18/2019 | NH SWQPA | Canterbury | 40 |
| UNH Cooperative Extension – Pesticide Applicator Training | 9/19/2019 | Wetlands Law and SWQPA basics | Goffstown | 15 |
| NH Association of Conservation Commissions Annual Meeting | 11/2/2019 | NH SWQPA and the Enforcement Process | Pembroke | 45 |

The Aquatic Resource Mitigation (ARM) program team provided outreach throughout the year regarding various topics including interactive workshops to inform participants about the ARM Fund grant program, how to use the online mapper tool developed in 2018, how to identify and prioritize eligible projects, and how to navigate the application process, as shown in Table 22 below.

The ARM program team also presented at the Mid-Atlantic Stream Restoration Conference on “Improving aquatic connectivity for compensatory mitigation in New Hampshire.” To offset stream impacts that generate funds, the ARM Fund program supports stream restoration projects that restore aquatic connectivity, including stream crossing upgrades and replacements, and dam removal projects. Due to the sheer number of potential aquatic barriers throughout the state, it is critical that stakeholders prioritize the projects that maximize the environmental benefits to mitigate for the stream impacts in the watershed.

In collaboration with the *New Hampshire Stream Crossing Initiative*, information on this multi-agency partnership was noted with the goal to inventory stream crossings throughout the state to identify opportunities to restore aquatic connectivity, enhance stream habitat, and increase flood resiliency. Since 2008, information on fish passage, geomorphic compatibility, and flood vulnerability

has been collected at 7,000 stream crossings across the state. To assist ARM Fund grant applicants in identifying suitable stream restoration projects, the ARM Fund program established evaluation criteria, and created the interactive web mapping tool to aid in prioritization, and to be used to target mitigation opportunities. Since 2010, the ARM Fund program has disbursed \$1,593,000 to stream restoration projects, including three dam removals, five culvert upgrades, and two instream improvement projects, to restore aquatic connectivity and enhance stream habitat. These projects regained access to 62 miles of upstream habitat, removed tidal barriers for diadromous fish migrations, and opened passage for coldwater fisheries to headwater tributaries. Examples of ARM-funded stream restoration projects, and the mitigation credits generated from these various projects, were discussed with other program staff members and the larger consulting community.

Table 22: ARM Fund Outreach Events CY 2019.

| Event | Date | Location | Attendees |
|--|------------------|-----------------------|-----------|
| ARM Mapper Computer Lab Program | 3/11/2019 | Merrimack Watershed | 35 |
| LAC Annual Meeting | 3/23/2019 | State LAC's | 60 |
| NH Conservation Grant Programs | 4/9/2019 | State land trusts | 45 |
| ARM Grant Program and Mapper | 4/23/2019 | Hampton | 12 |
| Stream Mitigation and Mapper Training | 5/24/2019 | Belknap County | 45 |
| Corps ILF Summit | 6/26/2019 | State Program Meeting | 35 |
| Southeast Land Trust Event | 7/13/2019 | New Durham | 55 |
| TNC Event – Lubberland Creek ARM Project | 9/4/2019 | Newmarket | 22 |
| NHANRS Stream Restoration Conference | 9/27/2019 | Bartlett | 35 |
| Mid-Atlantic Stream Restoration Conference | 11/18-11/20/2019 | Baltimore | 225 |
| Climate Action Workgroup Summit | 12/4/2019 | Seacoast communities | 55 |

The NHDES updated many fact sheets in 2020, and their associated hyperlinks are listed below:

- [Bank and Shoreline Stabilization Projects in Non-Tidal Areas](#)  (Fact Sheet WB-11) **UPDATED 2020**
- [Obtaining Authorization for Emergency Wetlands Impacts](#)  (Fact Sheet WD-WB-9) **UPDATED 2020**
- [Compensatory Mitigation Information and Checklist](#)  (Fact Sheet WD-WB-16)
- [Aquatic Resource Mitigation](#)  (Fact Sheet WD-WB-17)
- [Wetlands Permitting: Protected Species and Habitat](#)  (Fact Sheet WD-WB-20) **NEW 2020**
- [Wetlands Permitting: Avoidance, Minimization and Mitigation](#)  (Fact Sheet WD-WB-21) **NEW 2020**
- [Concurrent Processing of Related Shoreland/Wetlands Permit Applications](#)  (Fact Sheet WD-WB-22) **NEW 2020**
- [Stream Crossing Design: Building Structures that are Compatible with People, Streams and Wildlife](#)  (Fact Sheet WD-WB-23) **NEW 2020**
- [Wetlands Permitting: Priority Resource Area](#)  (Fact Sheet WD-WB-25) **NEW 2020**
- [Functional Assessments for Wetlands and Other Aquatic Resources](#)  (Fact Sheet WD **NEW 2020**)

PROGRAM IMPROVEMENTS

Database Changes:

Over the last year, as a result of the dedicated work of the NHDES Land Resources Management (LRM) Business Analyst, changes were made to the wetlands and shoreland Oracle database system to enhance the database functionality to reflect revised wetland permit processes, and new permit process reports. The NHDES Wetlands Bureau relies on the database for permit descriptions, applicant requests, issuance of NHDES administrative and technical review letters, and generation of permit application decisions. NHDES filed the adoption of the new rules in June 2019 allowing NHDES time to make necessary changes to the database before the rules became effective in December 2019. The database categories were modified and updated to include: new permit statuses, new application types, and new application impact action types. Additionally, all new database templates were updated and include:

- Over 200 new Standard Permit Conditions (including rule citations).
- Over 400 new Standard Findings (including rule citations).
- Over 200 new Standard Request for More Information (including rule citations).

To ensure bureau-wide, long-term consistency, the wetlands database modification includes a two-level organizational structure to facilitate user-friendly selections, including drop down menus to increase ability to locate organized selections grouped by project specific type and/or by general resource or program categories.

The wetland supervisor and a wetland specialist took the lead in organizing and drafting all standard permit conditions and permit findings under the new rules, and in accordance with the audit recommendations. They reviewed and edited more than 230 new permit conditions with 48 groupings, and 437 standard findings with 54 groupings (including rule citations). Additionally, draft Request for More Information (RFMI) categories are currently being finalized, including 858 RFMI items with 65 groupings, and will be added to the database upon completion.

As a result of the work done by the LRM Business Analyst to increase efficiency and transparency under the database changes, all NHDES wetlands and shoreland permit action letters are now being published to the NHDES OneStop website. All 80+ permit decision letters are updated to reflect the statute and rules changes. These letters are published through the Oracle database, eliminating the need of administrative staff scanning and uploading letters to the OneStop website. Additionally, the automated letter publication, upon issuance, allows the public a more complete access to the NHDES permit decision making process via the internet.

New Reports

The LRM Business Analyst took the lead in developing many new reports. These reports allow tracking of valuable information needed by technical staff and managers. Standard database reports were created for tracking processing timeliness. The new reports include: administrative completeness, time extensions and emergency authorizations. Additionally, a new Permit Dashboard was developed to track statutory timeliness for standard wetland applications, shoreland applications, and Alteration of Terrain applications.

ARC Process Changes

The Application Receipt Center (ARC) was created in 2009 to combine the administrative review process of applications to include all Land Resources Management Program (Alteration of Terrain Bureau, Shoreland Program, Subsurface Systems Bureau and Wetlands Bureau). The ARC staff complete an administrative review checklist of each LRM application to determine if the application meets the requirements for technical review. To prepare for implementation of the revised wetland rules, the ARC administrative intake process standard operating checklists were revised.

GIS Screening Moved Up-front

Under the new process, the Geographic Information System (GIS) screening is done before administrative completeness is finalized. The NHDES now notifies the applicant early in the process of required application information before the NHDES finds a project administratively complete. For example, the NHDES will determine if a project is located within a Designated River Corridor which requires RSA 482-A notification to the Local River Advisory Committee (LAC) of the project. GIS coarse screening is also done for protected species or habitat, prime wetlands, tidal wetlands, and impaired waters.

A/C Checklists

The administrative checklists used by the ARC staff were updated for each of the LRM programs to match the state statutes and rules. The shoreland checklist and letters were revised to match the statute. All of the wetland processes were reviewed and updated to match the newly adopted wetland rules.

New Forms:

As part of the major wetlands rules rewrite, the NHDES updated all of the wetland forms. These forms were submitted to the Office of Legislative Services as part of their rules review. The NHDES developed new forms to ensure compliance with existing statutes and rules. The new rules were developed on a new N-form platform and included optional checklists and a form finder to facilitate locating forms. [Checklists](#)

The wetland rules reference many new types of required checklists and worksheets to facilitate applicant submission of required information. The new checklists and worksheets include: Amendment Request, Avoidance and Minimization, Coastal Resource, Construction Notice, Emergency Authorization, Permittee Responsible Mitigation Worksheet, Prime Wetland Waiver, Stream Crossing Worksheet, Rule Waiver, Wetlands Functional Assessment Worksheet, Stream Crossing Worksheet, and Project Specific Worksheets (21 for PBNs and 25 for Standard projects).

Shoreland Updates:

All Shoreland forms and fact sheets, as well as the Vegetation Management for Water Quality Fact Sheet, were revised for clarity in early 2019. The Shoreland Permit Application Form, the Shoreland Permit by Notification form, and several shoreland webpages were subsequently updated in November 2019 to reflect new application fees effective November 15, 2019.

Amendments to shoreland rules Env-Wq 1405.02 and Env-Wq 1405.03 became effective on December 15, 2019. These rules were amended to create more cohesion between wetlands and shoreland rules, and further clarify regulations on accessory structures within 50 feet of the reference line of public waterbodies. A new fact sheet was created in 2019, and finalized in 2020, to describe a new process allowing the concurrent processing of related shoreland/wetlands permit applications for pre-determined project types.

An internal training seminar for staff was held on August 15, 2019 regarding the amended shoreland rules, as well as wetlands rules Env-Wt 511 (Construction of Water Access Structures and Beach Replenishment). An outreach presentation with similar content, was also developed and recorded as a voiceover PowerPoint, and became available to the public on November 6, 2019, on [YouTube](#), with 173 views as of April 1, 2020. Different versions of this presentation, adapted for different audiences, were presented in person on:

- October 16, 2019, as part of the NHDES Training on New Wetland Rules - Project-Specific Session.
- October 30, 2019, for the Lakes Management Advisory Committee (LMAC).
- December 10, 2019, as part of the NHDES Training on New Wetland Rules for Lake and Pond Projects.

Staff from the Shoreland Program and Wetlands Bureau participated in the NHDES Training on New Wetland Rules for Lake and Pond Projects. The intended audience for this 8:30am-3pm training was marine contractors submitting wetlands permit applications to the NHDES. See Table 23 below:

Table 23: Agenda for the NHDES Training on New Wetland Rules for Lake and Pond Projects

| Time | Topic | Presenter |
|---------------|--|------------------|
| 8:30 - 8:45 | Welcome | S. Yuhas Kirn |
| 8:45 - 9:45 | Introduction to the Standard Wetlands Application Form | D Forst |
| 9:45 - 10:00 | Break | |
| 10:00 - 11:00 | Wetland Permit By Notification | J. Aube |
| 11:00 - 12:00 | Avoidance and Minimization: Docks and Shoreline Structures | C. Diessner |
| 12:00 - 1:00 | Break for lunch | |
| 1:00 - 2:00 | Project Plan Requirements | R. Aures |
| 2:00 - 3:00 | Water Access Structures | M-E. Jacques |

Lean Events were held in 2019 for application review process focused on Joint Wetland/Shoreland Applications for a LRM Wetland/Shoreland Combined Permit. The Lean Events were held on May 24, June 4, June 13 and June 24. The Lean Event Team members included: Sarah Yuhas Kirn (LRM Manager at the time of the event), Dan Hrobak and Muriel Lajoie (Project Management and Innovation Unit), Darlene Forst (Supervisor, Shoreland Program), Stefanie Giallongo (Permit Specialist, Wetlands Bureau), Eben Lewis (Supervisor, Wetlands Bureau Pease Office), Rosemary Aures (Permit Specialist, Shoreland Program), Ram Chhetri (LRM GIS Analyst), Deb Brown (ARC staff, LRM), Robert Cole (NHDES DoIT), and Thomas Taggart (LRM Business Analyst). Although the LRM Wetlands Shoreland Combined Permit is currently unavailable, these events provided recommendations to design applications to facilitate data entry by ARC staff.

Website Updates

Efforts began at the end of 2019 to completely redesigned the NHDES website in 2020. The NHDES Public Information and Permitting (PIP) Office of the Commissioner coordinated NHDES-wide reorganizing and restructuring of the website overall. The NHDES Wetlands Bureau created new website content related to wetlands, mitigation, coastal, shoreland, shoreline stabilization, and shoreline structures to improve the appeal and the ease of use of its webpages.

As part of the changes to forms, wetland rules and an overall NHDES website redesign, the Wetlands Bureau staff reviewed over 150 webpages, over 15 fact sheets, and numerous guidance documents (Figure 14). New web content was drafted for the Wetlands Bureau, the Shoreland Program, and the Mitigation program, and is under review through the PIP Office.

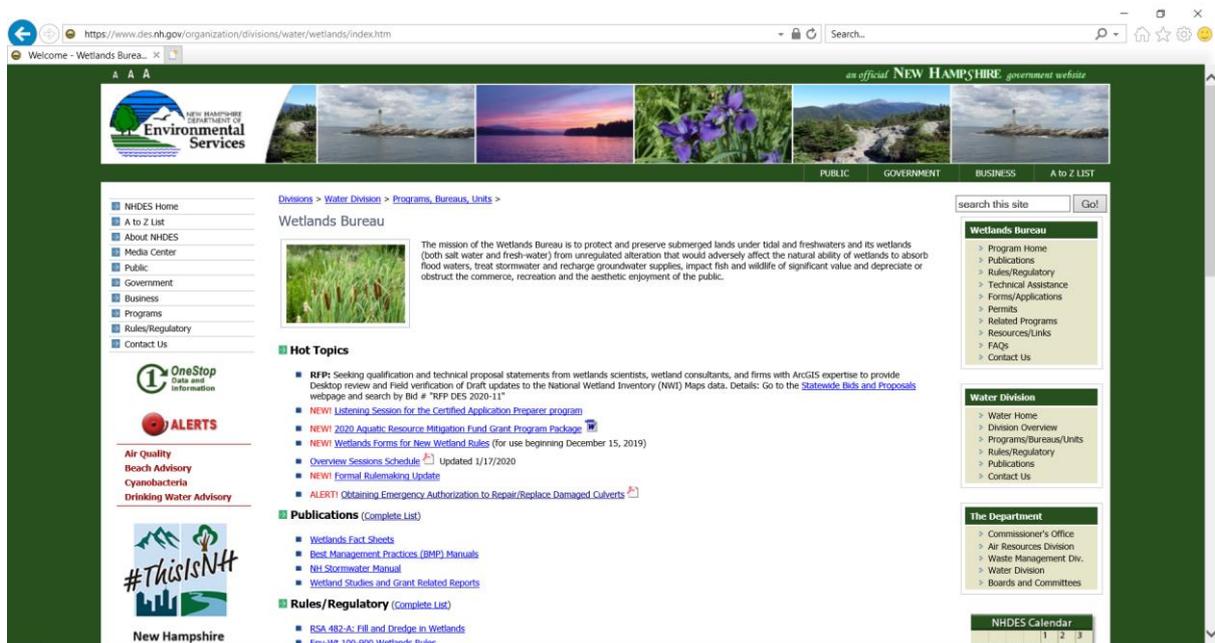


Figure 14: Screenshot of Updated Wetlands Website.

Best Management Practices (BMP)

As part of the adoption of the wetland rules, NHDES worked with partner agencies to ensure that the following manuals were updated in time to be referenced in the updated rules. [Best Management Wetlands Practices for Agriculture](#) [Best Management Practices for Routine Roadway Maintenance Activities in NH](#) [Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire](#)

Additionally, with EPA funding, NHDES worked with partners to develop a new manual on avoidance and minimization. This manual was recognized by EPA headquarters for program excellence.

[Wetlands Best Management Practice Techniques for Avoidance and Minimization](#)

NH Wetlands Permitting Audit

The State of New Hampshire Joint Legislative Performance Audit and Oversight Committee conducted an audit to determine how effectively NHDES managed Wetlands Bureau permitting

during the state fiscal years 2016 and 2017. In May, 2019 the audit was published and included 60 observations and 264 recommendations. NHDES views the audit as an important opportunity to improve by receiving independent, outside fact-based perspective. NHDES has been making progress in this multi-year corrective action plan.

Awards

NHDES Employee of the Year Candidate – Stephanie Giallongo

Stephanie Giallongo, Wetlands Bureau Specialist, exemplified teamwork, flexibility and leadership by serving as the lead developer of the Wetland Permit Planning Tool (WPPT). This tool publishes wetlands and shoreline permit data through GIS online maps, develops enhanced prime wetland mapping, and works with teammates to develop a new GIS floodplain wetlands resource layer. The WPPT that Stephanie developed provides coastal resource layers, mitigation layers, shoreline docking layers, utility layers and forestry layers. Stephanie worked with the staff and the public to design this tool to guide applicants through the permit planning process. The tool also includes mapping, data query, and resource planning functions. The WPPT was developed to support the wetland rules rollout. In addition to this work, Stephanie also served on the NHDES Website Development Team, the Wetland Rules Rollout Team, the Shoreland Lean Team, and has conducted over ten trainings to demonstrate the new WPPT. Stephanie demonstrated enthusiasm, leadership, and excellent work ethic. For those achievements and more, Stephanie was recognized as a candidate for the 2019 NHDES *Employee of the Year Award*.

NHDES Team Excellence Award

Many members of the Wetlands Bureau were recognized for excellent teamwork for the Team Excellence Award: “Through extensive teamwork, collaboration, outreach, training, and partnerships, NHDES filed the wetland rules for adoption this summer”(2019). After 30 public listening sessions, three lean events, 50 public meetings, two public comment periods, seven public hearings, consideration of over 2,000 public comments, 85 formal comment letters, and three JLCAR administrative hearings, the wetland rules were adopted by Commissioner Scott effective December 15, 2019.

The new rules enhance clarity; predictability and transparency; increase streamlining of temporary, maintenance, and small projects; increase consistency and standardization; and ensure scientifically-based decisions that protect important aquatic resource areas. The new rules reflect changes to the statute that have not been made since 1991.

The new rules increase the number of projects that can be streamlined without a permit and through statutory notices. Over 100 new terms and definitions are provided. The rules also require planning using GIS mapping tools. The rules establish 32 new project-specific standards, clarify permit conditions, and update all technical reference manuals and BMP’s. A new wetlands BMP was published by the New England Interstate Water Pollution Control Commission (NEIWPCC) based on NHDES input consistent with state law and rules.

NHDES coordinated with a variety of stakeholders with diverse interest in the rules, including the Associated General Contractors, the NH Timberland Owners Association, The Nature Conservancy, the NH Association of Natural Research Scientists, the NH Association of Conservation Commissions, the Lakes Advisory Committee, the Farm Bureau, the NHDOT, and various utility providers.

EPA Merit Award – Individual/Government Category

Collis Adams, former Wetlands Bureau Administrator received a Lifetime Achievement Award for his work leading the Wetlands Bureau. He retired on August 1, 2019.

Mary Ann Tilton, Assistant Wetlands Bureau Administrator received the EPA Merit Award for her work and publication on the wetlands rules, *Wetlands Best Management Practice Techniques for Avoidance and Minimization*.

Conclusion

In 2019, the NHDES Wetlands Bureau made significant progress in achieving milestones under its Wetland Program Plan (2017–2023). A previous EPA grant project supported the update to NWI data in the Contoocook River and Merrimack River watersheds, and work is well under way to update the NWI data for the remainder of the state.

As a result of an EPA grant, over the last year, the Wetlands Bureau developed a new Wetland Permit Planning Tool (WPPT) to assist applicants planning projects in and near wetlands and other jurisdictional areas, to identify riparian floodplain wetlands, sand dunes and tidal resource areas, and offers other important information for applicant planning. This tool was developed to be in conjunction with the new wetland rules, to assist applicants in project planning.

At the 2019 annual Mid-Atlantic Stream Restoration Conference held in Baltimore, Maryland, on November 18, 19 and 20, 2019, the NHDES ARM Program presented “Improving aquatic connectivity for compensatory mitigation in New Hampshire.” The presentation was well received, and demonstrated the success NHDES has achieved to offset stream impacts that generated funds. The ARM Program supports stream restoration projects that restore aquatic connectivity, including stream crossing upgrades and replacements, and dam removal projects.

In 2019, the NHDES Wetlands Bureau achieved a significant milestone in wetlands rulemaking. After hosting over 16 external training seminars educating over 750 individuals, and receiving significant stakeholder review and feedback, the NHDES Wetlands Bureau adopted the revised wetland rules in December 2019. Most notably, in addition to performing their daily regulatory duties, the Wetlands Bureau and Shoreland Program staff, conducted 48 training sessions around the state, presenting to over 2,000 individuals. See Tables 19, 20 and 21 above.

In summary, the NHDES Wetlands Bureau made improvements in the administrative processing of applications through 20+ application forms and checklist development, new fact sheets, new database enhancements and reports, GIS screening, and new website improvements. Additionally, changes were made to the database through development of a two-level organizational structure to ensure bureau-wide, long-term consistency and to facilitate user-friendly selections. In 2019, the Wetlands Bureau received regional recognitions from EPA; and the Wetlands Bureau staff was recognized for excellent teamwork by the NHDES Commissioner at the annual NHDES awards ceremony.

Appendix 1- Projects receiving funds in the Merrimack watershed (2019):

Campbell Hill Preserve, Frankestown, NH

\$233,700 was awarded to protect the 130-acre Campbell Hill Preserve and manage the property and its natural resources as forever-wild; providing perpetual protection of the land in its wild state. The property encompasses both the summit of Campbell Hill as well as lower elevation wetlands, ensuring long term protection of the wetland system's upland buffer. There are 9 acres of palustrine wetlands on the property and have active beaver. The project will protect 1,400 linear feet of Brennan Brook which is a headwater stream of the designated South Branch Piscataquog River. The preserve will protect important wildlife habitat and is mapped as 95% "Supporting Landscape" and 5% as "Highest Ranked Habitat in Biological Region" by the New Hampshire Fish and Game Wildlife Action Plan. The preserve contributes to landscape connectivity efforts and is directly adjacent to the conserved Brennan Falls Preserve (149 acres) and lies within the largest forest block within the HUC 10 watershed.

Lyndeborough Road Crossing of Meadow Brook/ New Boston, NH

\$250,000 will be used to upgrade a deficient stream crossing on Meadow Brook to restore aquatic connectivity and increase flood resiliency on a tributary to the designated South Branch Piscataquog River. The existing road crossing consists of twin plastic culvert pipes that are severely undersized and often overtop during flood events. The current culvert is also a barrier to aquatic organism passage and does not accommodate the natural water and sediment transport processes of the stream. Meadow Brook has a high fishery restoration potential with a local population of native brook trout and is identified as "Highest Ranked Habitat in Biological Region" by the New Hampshire Fish and Game Wildlife Action Plan. The ARM grant funds will be used to install a new 26-foot wide by 8.5-foot tall open-bottom span that meets current safety standards and the New Hampshire Stream Crossing Guidelines. The new crossing will have the hydraulic capacity to pass a 100-year flood event, and will provide full aquatic organism passage for fish and turtles. By restoring the natural stream bed through the crossing, this project will reconnect 4,150 feet of upstream habitat for fish and wildlife to the downstream South Branch Piscataquog River.

Murray Mill Brook/ Auburn and Candia, NH

\$300,000 to permanently protect 220 acres in the Massabesic Lake watershed with a conservation easement. Protection of this parcel has significant benefits to a diversity of aquatic resources and public drinking water quality. The property contains 40 acres of wetlands, all of which drain into Little Lake Massabesic and Massabesic Lake — a public drinking water supply for more than 160,000 residents in the City of Manchester and neighboring towns. There are more than 30 distinct wetlands scattered across the property, including 12 confirmed vernal pools that support spotted salamander and wood frog breeding habitat. The project will protect 5,912 linear feet of stream, including significant frontage along Murray Mill Brook, the largest tributary to Little Massabesic Lake. The project contributes to ongoing landscape connectivity efforts in the region by protecting areas of riparian habitat along Murray Mill Brook that have been identified as a critical

wildlife corridor in The Nature Conservancy's "Connect the Coast" study. The project protects important wildlife habitat identified by the New Hampshire Fish and Game Wildlife Action Plan as "Highest Ranked Habitat in NH" (2 acres), "Highest Ranked Habitat in the Biological Region" (30 acres) and "Supporting Landscape" (144 acres).

Nissitissit River Headwaters/ Mason, NH

\$500,000 to permanently protect a 274-acre parcel with high-quality aquatic and terrestrial wildlife habitat, as well as provide significant benefits to downstream water quality through headwater protection. The property contains a diversity of valuable aquatic resources including 25 acres of wetlands, 10 confirmed vernal pools, and 9,600 feet of perennial and intermittent streams. This project would protect several headwater streams to the Nissitissit River, which is registered as a National Wild & Scenic River. The project will protect. The project has significant wildlife habitat benefits and will protect 135 acres (49%) of "Highest Ranked Habitat in NH", and 14 acres as "Highest Ranked Habitat in Biological Region," identified by the New Hampshire Fish and Game Wildlife Action Plan. Protecting this parcel builds upon on a larger conservation effort in the Nissitissitt, which to date has protected over 1,700 acres held by local partners, and lies within a larger 6,934 acre unfragmented forest habitat block.

Piscataquog South Branch Connectivity Project / Frankestown, NH

\$104,108 to protect 10 acres of riparian buffer and upland forests along approximately 1,200 feet of the designated South Branch Piscataquog River. This project will protect both upland buffer and riparian important riparian corridors, including a perched seepage swamp, floodplain forest and an overflow channel. The parcel has significant wildlife value with 8 acres classified as the "Highest Ranked Habitat in NH" by the New Hampshire Fish and Game Wildlife Action Plan, coldwater habitat for native brook trout, and suitable habitat for special concern species in the vicinity of the project. This project contributes to a local conservation effort to protect land in the South Branch Piscataquog watershed as part of the *Headwaters-South Branch Initiative* by adding to a total 448 acres of previously protected floodplains, wetlands and uplands along the South Branch Piscataquog River.

Pollard Road Culvert Replacement/ Plaistow, NH

\$135,000 to replace an undersized culvert on Seaver Brook and restore aquatic organism passage and hydrologic connectivity of the stream. The current stream crossing is an old, 24" concrete pipe that is a persistent flood hazard, overtopping at the 5-year storm event and depositing road material into the stream. The existing undersized culvert is preventing sediment transport and floodplain conveyance, which has led to sediment buildup upstream and scour of downstream banks. Furthermore, the culvert is perched several inches above the stream, creating a barrier to fish and wildlife passage. Restoring aquatic connectivity at this location would have significant fishery benefits and the area surrounding Seaver Brook is designated as "Highest Ranked Habitat" by the New Hampshire Fish and Game Wildlife Action Plan. Seaver Brook is a perennial headwater stream that is habitat for American eel, (species of concern) and bridge shiner (state threatened). Funds from the ARM grant will be used to install a new 18-foot box culvert that is embedded using natural stream substrate, including a wildlife shelf through the culvert, to allow for full terrestrial and

aquatic animal passage. In-stream rehabilitation will include removal of the road material from the stream and restoring the streambed and banks to a natural condition.