
PUBLIC NOTICE



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Concord, MA 01742-2751

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This public notice is to share with the public the “Commonwealth of Massachusetts, Department of Fish and Game, In-Lieu Fee Program, 2017 Annual Report”. The program serves as an alternative form of compensation for impacts to aquatic resources in Massachusetts that are authorized by the New England District Army Corps of Engineers (Corps).

Compensatory mitigation occurs in circumstances where a permittee is required to compensate for the functions and values of aquatic resources lost as a result of the authorization after all efforts are made to avoid and minimize impacts. In Lieu Fee (ILF) is an option available to the applicant instead of completing permittee-responsible mitigation. Use of the ILF program is contingent upon Corps approval.

All ILF agreements in New England are available on the Corps’ website:
<http://www.nae.usace.army.mil> under “Regulatory/Permitting,” then “Mitigation,” and then “In-Lieu Fee Programs.”

A handwritten signature in black ink, appearing to read 'R. J. Desista'.

ROBERT J. DESISTA
Acting Chief, Regulatory Division

If you would prefer not to continue receiving Public Notices by email, please contact Ms. Tina Chaisson at (978) 318-8058 or e-mail her at bettina.m.chaisson@usace.army.mil. You may also check here () and return this portion of the Public Notice to: Bettina Chaisson, Regulatory Division, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751.

NAME: _____
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**Commonwealth of Massachusetts
Department of Fish and Game**

**In-Lieu Fee Program
2017 Annual Report**



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Introduction

The In-Lieu Fee Program (“ILFP”) of the Massachusetts Department of Fish and Game (“DFG”) was established in May 2014. The U.S. Army Corps of Engineers (“Corps”) approved DFG to be the sponsor of a statewide program that would provide In-Lieu Fee compensatory mitigation associated with Corps permits under §404 of the Clean Water Act and/or §§9 or 10 of the Rivers and Harbors Act of 1899 and related federal rule at 33 C.F.R. Part 332 (the federal Mitigation Rule). Specifically, on May 23, 2014 the Corps and DFG signed an Instrument developed by DFG that set forth a comprehensive description of how DFG will administer its ILFP in Massachusetts.

The availability of DFG’s ILFP allows permittees, with the Corps’ approval, to make a monetary payment in compensation for project impacts to aquatic resources of the U.S. in Massachusetts, in-lieu of on-site mitigation. When these In-Lieu Fee (“ILF”) payments are made to the ILFP, DFG assumes legal responsibility for implementing the required mitigation, which it does by aggregating and expending the ILF payments on approved mitigation projects. The ILFP goals include implementing in-kind mitigation in the same geographical area where impacts occurred. For the purposes of the ILFP, Massachusetts is divided into geographic Service Areas. Appendix A of this report includes a map showing the boundaries of ILF Service Areas and the locations of all permitted impacts for which an ILF payment has been made (from 5/23/14 – 12/31/17).

This calendar year (“CY”) 2017 Annual Report is provided in accordance with Section XVIII of the ILF Instrument, which requires that DFG submit an annual report that includes information on each Corps-permitted project for which an ILF payment was made to DFG, the ending balance of ILFP credits advanced and released at the end of the annual reporting period for each Service Area, and a related financial accounting ledger. This Annual Report includes information on all ILF payments and credits tracked from the date of the establishment of the DFG ILFP on May 23, 2014 through December 31, 2017. It provides an update on the ILFP’s first mitigation project, which began in CY 2017 (1/1/2017 - 12/31/2017), and a summary of DFG’s strategy and plans for identifying future mitigation projects. In addition, this 2017 Annual Report includes an update on four projects undertaken by the DFG Division of Marine Fisheries as part of a pre-2014 ILF Memorandum of Agreement with the Corps.

I. Executive Summary

Since the DFG’s ILFP was established in May 2014, forty-three (43) Corps permittees have made an ILF payment to the program (through 12/31/17). The payments received by DFG since the ILFP was established total \$2,641,830.69. These payments were required to provide compensatory mitigation for impacts to 4.00 acres of wetlands and 482.30 linear feet of river and stream. Section III below includes detail on the type of aquatic resource impacts for which ILF payments were received (Table 1).

During CY 2017, DFG's ILFP received payments from twenty-four (24) permittees who were required by the Corps to make an ILF payment. DFG received ILF payments totaling \$1,549,468.25 in CY 2017. The 2017 ILF payments were required to compensate for impacts to 2.37 acres of wetland resources and 232.30 linear feet of river and stream. Section III, Table 2 provides a summary of these 2017 payments and the corresponding credits sold statewide and within each Service Area. There has been no release of credits yet from ILFP mitigation projects although there have been credits released from the pre-2014 program which are available to be sold as mitigation credits for more recent impacts. See Table 3 for a summary of mitigation credits advanced, sold, and ending balance by Service Area.

Implementation of the first DFG ILF mitigation project began in CY 2017. The DFG's Division of Marine Fisheries (DMF) planted one-half acre of eelgrass in Salem Sound and has begun a 5-year monitoring program. Initial assessments indicate that the restoration is progressing well. Further detail is provided below in Section IV and in the DMF 2017 Annual Monitoring Report for the eelgrass restoration project.

Expenditure of program revenue from the ILF payments began in CY 2017, with total disbursements of \$76,387.13. This report includes an ILFP 2017 financial account ledger (Table 4) showing beginning and ending balances for the calendar year, with a summary of ILF payments received for each Service Area and a summary of expenditures for mitigation projects and administrative overhead. The ILFP continues to track all ILF payments received and credits sold by Service Area and by type of resource impact. See Appendix B (Table 5) for a listing of all forty-three ILF payments received (5/23/14 - 12/31/17) with corresponding details on permittee, Corps permit number, geographic location, and the type of resource impact for which an ILF payment was required.

As noted above, the ILFP accumulated substantial additional payments in CY 2017. DFG hired an ILF Program Administrator in October 2017. The role of the Program Administrator includes outreach and collaboration to identify and select suitable mitigation projects, tracking and reporting on fees and credits, coordination with the Corps, and overall ILFP management. Additional information on the status and plans for future ILF mitigation projects is provided in Section V. An update on pre-2014 DMF ILF projects is included in Section VI of this report.

II. Program Administration

The program is administered by the DFG Commissioner's Office in collaboration with the Department's Division of Marine Fisheries ("DMF"), Division of Fisheries and Wildlife ("DFW") and Division of Ecological Restoration ("DER"). As noted above, DFG recently hired a Program Administrator to manage and develop the ILFP. In addition to collaboration across DFG Divisions, the Administrator coordinates with other state agencies and potential partners to identify high priority opportunities for the use of ILF payments. The goal of the ILFP is to implement in-kind mitigation within the same geographic Service Area where the impact

occurred, including projects that permanently protect aquatic resources and their upland buffers and/or restore impacted aquatic resources.

DFG will select ILFP mitigation projects through its application of detailed prioritization criteria, as outlined in the ILFP Instrument. These criteria include consideration of a potential project's ability to achieve multiple mitigation objectives and its support of, or compatibility with, broader conservation or management initiatives. The first DFG ILFP project, an eelgrass restoration project in Salem Sound, began in CY 2017 and is being implemented by DMF. DFG is developing a strategy and plan for identifying and selecting ILFP mitigation projects during 2018 and future years, as discussed in Section V below.

Prior to the establishment of DFG's statewide ILFP in 2014, DMF served as the program sponsor for an ILFP established to provide mitigation for impacts to aquatic resources of marine and diadromous fish species in Massachusetts. That ILFP, which was in place from June 2008 to June 2013, was limited to providing mitigation associated with coastal alteration projects that altered less than one acre of aquatic resource and met the criteria for coverage under the Corps' General Permit ("GP") for Massachusetts. DFG's current statewide ILFP covers impacts to all types of aquatic resources from both small-sized projects covered under the GP and larger projects that require an individual permit ("IP") from the Corps. Section VI of this Annual Report provides an update on the status of mitigation projects funded by the DMF ILFP.

III. ILF Payments, Mitigation Credits Sold, and Calendar Year 2017 Financial Account Ledger

A total of 4.0 wetland credits and 482.30 stream credits have been sold since the establishment of the ILFP in 2014 (5/23/14 through 12/31/17). Wetland ILF payments and associated credit sales are calculated based on the area (square feet, acres) of impact. The sale of 4.0 wetlands credits represents ILF payments made in compensation for a total of 4.0 acres of wetlands impact (174,240 square feet). Stream credits are calculated based on linear feet of impact. The sale of 482.30 stream credits reflects the receipt of ILF payments for 482.30 linear feet of impact to riverine aquatic resources (1.0 credit would apply to 1.0 linear foot of impact to stream, including channel and both sides of bank).

Table 1 below provides a summary of the type and amount of resource impacts for which wetlands and stream credits were sold within each ILF Service Area. Note: the terms "Palustrine Freshwater" and "Marine Tidal" are used as general categories in cases where project-related impacts and credits sold are not further specified by sub-category (such as Marine Intertidal or Subtidal, Palustrine Forested or Emergent).

TABLE 1. Aquatic Resource Impacts – Mitigation Credits Sold and ILF Payments Received

Service Area Resource Type	Credits Sold		Total ILF Payments Received (5/23/14 – 12/31/17)
	Wetlands Credits	Stream Credits	
Berkshire/Taconic Riverine Freshwater	<u>0.00</u> 0.00	<u>54.33</u> 54.33	<u>\$16,300.00</u>
Connecticut River Riverine Freshwater	<u>0.00</u> 0.00	<u>131.66</u> 131.66	<u>\$21,500.00</u>
Quabbin/Worcester Palustrine Forested Palustrine Freshwater Riverine Freshwater	<u>0.12</u> 0.09 0.03 0.00	<u>202.00</u> 202.00	<u>\$132,645.79</u>
Coastal-North Estuarine Intertidal Marine Intertidal Marine Subtidal Marine Tidal Palustrine Emergent Palustrine Forested Palustrine Freshwater Riverine Freshwater Riverine Tidal	<u>1.45</u> 0.01 0.41 0.38 0.18 0.01 0.01 0.45 0.00 0.01	<u>30.3</u> 30.3	<u>\$923,668.54</u>
Coastal-Central Estuarine Intertidal Marine Intertidal Palustrine Forested Riverine Freshwater	<u>0.88</u> 0.16 0.01 0.71 0.00	<u>64.00</u> 64.00	<u>\$585,880.96</u>
Coastal-South Estuarine Intertidal Marine Intertidal Marine Subtidal Palustrine Emergent Palustrine Freshwater	<u>1.55</u> 0.05 0.01 0.01 0.42 1.07	<u>0.00</u>	<u>\$961,835.40</u>
Statewide Total	4.01	482.3	\$2,641,830.69

The total amount of ILF payments received since establishment of the ILFP is \$2,641,830.69. In Calendar Year 2017, the ILFP received payments in the amount of \$1,549,468.25. Table 3 below summarizes 2017 payments received and credits sold by Service Area and statewide.

TABLE 2. Calendar Year 2017 ILF Payments Received and Credits Sold (1/1/17 – 12/31/17)

ILF Service Area	2017 Wetland Credits Sold	2017 Stream Credits Sold	2017 ILF Payments Received (1/1/17 – 12/31/17)
Berkshire/ Taconic	0.00	0.00	\$0.00
Connecticut River	0.00	0.00	\$0.00
Quabbin/Worcester	0.12	202.00	\$132,645.79
Coastal-North	0.68	30.30	\$444,120.50
Coastal-Central	0.44	0.00	\$273,734.96
Coastal-South	1.13	0.00	\$698,967.00
2017 Statewide Total	2.37	232.30	\$1,549,468.25

When the ILFP was established in 2014, advanced credits (essentially a loan to the program) were allocated to the Service Areas. Table 4 outlines credits advanced, sold, released, and the ending credit balance for 2017.

TABLE 3. Calendar Year 2017 Ending Balance of Credits by ILF Service Area

ILF Service Area	Credits Advanced		Credits Sold		Credits Released		2017 Ending Balance (12/31/17)	
	Wetland	Stream	Wetland	Stream	Wetland	Stream	Wetland	Stream
Berkshire/ Taconic	50.00	5,741	0.00	54.33	0.00	0.00	50.00	5,686.67
Connecticut River	50.00	2,500	0.00	131.66	0.00	0.00	50.00	2,368.34
Quabbin/ Worcester	52.00	2500	0.12	202.00	0.00	0.00	51.88	2,298
Coastal	50.00	162,819	3.88	94.30	3.00	0.00	46.12	162,727.70
Statewide Total	202.00	173,560	4.05	582.30	3.00	0.00	198.00	173,080.71

The Financial Account Ledger for Calendar Year 2017 is presented in Table 4 below. The ledger shows the beginning balance for 2017, ILF payments received in 2017, and total ILF payments received within each Service Area and statewide. Beginning and ending balances for the Coastal sub-areas are also included. Project expenditures in 2017 were used for the DMF eelgrass restoration project, located within the Coastal-North sub-area, and for ILFP administrative overhead costs. The administrative expenditures are included in the statewide total (CY 2017 Expenditures). The Instrument allows for 17.5% of ILF payments to be used for ILFP administration.

TABLE 4. Calendar Year 2017 ILFP Financial Account Ledger

ILF Service Area	Beginning Balance (1/1/17)	CY 2017 Payments Received	Total ILF Payments (5/23/14 – 12/31/17)	CY 2017 Expenditures	Ending Balance (12/31/17)
Berkshire/ Taconic	\$16,300.00	\$0.00	\$16,300.00	\$0.00	\$16,300.00
Connecticut River	\$21,500.00	\$0.00	\$21,500.00	\$0.00	\$21,500.00
Quabbin/Worcester	\$0.00	\$132,645.79	\$132,645.79	\$0.00	\$132,645.79
Coastal	\$1,054,562.44	\$1,416,822.46	\$2,471,384.90	\$44,619.01	\$2,426,765.89
<i>Coastal-North</i>	<i>\$479,548.04</i>	<i>\$444,120.50</i>	<i>\$923,668.54</i>	<i>\$44,619.01</i>	
<i>Coastal-Central</i>	<i>\$312,146.00</i>	<i>\$273,734.96</i>	<i>\$585,880.96</i>	<i>\$0.00</i>	
<i>Coastal-South</i>	<i>\$262,868.40</i>	<i>\$698,967</i>	<i>\$961,835.40</i>	<i>\$0.00</i>	
Statewide Total	\$1,092,362.44	\$1,549,468.25	\$2,641,830.69	\$76,387.13¹	\$2,565,433.56¹

IV. ILFP Mitigation Projects Underway – DMF Eelgrass Restoration Project

There is currently one ILFP mitigation project underway. This is the DFG Division of Marine Fisheries (DMF) eelgrass restoration project, which was approved by the Corps in December 2016. DMF is using ILFP payments to restore approximately 0.5 acres of eelgrass (2,023.4 square-meters) within the ILFP’s Coastal-North Service Area. The five-year project began in Calendar Year 2017. The first Annual Monitoring Report for the eelgrass restoration project is being submitted to the Corps, concurrently with this ILFP 2017 Annual Report.

Based on site selection results, DMF chose Middle Ground (MG) in Salem Sound to plant two sites each of 0.25 acre for a total 0.5 acre area. Middle Ground is the shoal northeast of the mouth of Salem Harbor situated between a rocky area known as Great Aquavitaie and Great Haste Island (see the DMF 2017 Annual Monitoring Report for additional details and maps). The shoal is approximately 6-12 feet deep at mean low water for nearly 125 continuous acres.

After the first 6-months, the MG West site had a 74% survival of the planting units (burlap discs) and at MG East the survival rate of the planting units after the first month was 82%. This survival rate is expected and is similar to what DMF found during previous restoration at Middle Ground. Next season DMF will continue monitoring and additional planting to augment the developing plots.

¹ The Statewide Total CY 2017 Expenditures includes the Coastal-North project expenditures (\$44,619.01) and statewide administrative overhead expenditures of \$31,768.12 incurred during Calendar Year 2017. These administrative costs are also accounted for in the Statewide Total Ending Balance (12/31/17).

The credit release schedule for the eelgrass restoration project provides for 40% of the credits to be released upon planting of the 0.5-acre, and subsequent release of the remaining credits over time, based on the results of annual monitoring. DFG will continue discussions with Corps in 2018 regarding project outcomes and the assessment and release of credits for the project.

V. Future ILFP Mitigation Projects – Identification and Selection Strategy

DFG is in the process of developing and implementing its strategy for ILFP project selection, and intends to present a suite of project recommendations to the Corps in April 2018. New mitigation projects would be implemented once the Corps and Interagency Review Team review and approval process is complete, with the goal of having all new, approved projects underway by Fall 2018. The suite of projects presented to the Corps will include preservation and restoration projects to meet specific resource mitigation requirements for each of the four Service Areas (including coastal sub-areas). In addition to the immediate focus on identifying suitable projects that could be ready to implement in 2018, DFG will continue to work with its Divisions and other potential partners to identify and develop proposals for 2019 and beyond.

In order to ensure a comprehensive approach to project identification, DFG's ILFP is coordinating with staff in its three Divisions and with other state agencies to discuss the ILF program and identify potential synergies with ongoing programs and projects. Because of the nature of DFG's mission and program goals, there are already many ongoing Department initiatives that strategically evaluate preservation and restoration opportunities. Potential partnerships with non-government entities and municipalities are also being explored. The ILFP strategy is to leverage these existing efforts and staff expertise to identify those areas where high priority sites and project ideas correlate well with the aquatic resource outcomes that the ILFP is seeking. This type of approach also makes it more likely that projects identified will provide multiple mitigation benefits and support broader conservation and habitat management goals because in their decision-making processes, Department staff considers issues such as landscape connectivity, the presence of state-listed species, water quality, development threats, climate change and resiliency. These considerations in identifying and selecting priority sites for preservation and restoration are consistent with the selection criteria outlined in the ILFP Instrument.

During the October-December 2017 period, the ILFP conducted outreach and discussions to:

- Share information about the ILFP, including payments received and the types of resource preservation and restoration needed to fulfill mitigation requirements in each Service Area
- Evaluate DFG priority conservation sites and restoration projects in the context of the ILFP selection criteria
- Exchange information regarding data and tools to inform project evaluation and selection

- Develop ideas for future projects to recommend for funding by the ILFP and
- Establish mechanism and lines of communication that continue to support a comprehensive evaluation and selection process

Inventory of Potential ILF Mitigation Projects

The ILFP is compiling an inventory of potential projects based on discussions and input from:

- DFG Lands Committee and land staff
- DFG's Division of Ecological Restoration
- DFG's Division of Fisheries and Wildlife (including the Division's Natural Heritage and Endangered Species Program)
- DFG's Division of Marine Fisheries
- EEA Interagency Lands Committee
- EEA Interagency Stewardship Committee
- EEA Office of Coastal Zone Management
- EEA Division of Conservation Services
- EEA Massachusetts Environmental Trust

In addition to the discussions highlighted above, the ILFP is exploring opportunities to partner with other state and federal grant programs that focus on aquatic resource protection and restoration. In such cases, use of ILF payments could be important to take a project from the design and permitting stage to actual implementation and/or to support a community's matching fund requirement. While the focus to date has been on identifying opportunities within DFG and other Executive Office of Energy and Environmental Affairs (EEA) agencies, the ILFP going forward may solicit proposals through other avenues; e.g. joint Request for Proposal (RFP) to help identify projects that best fit the mitigation and geographic needs of the ILFP.

The selection criteria laid out in the ILFP Instrument will serve as the guide for evaluating and ranking projects. DFG has also developed a flexible, data-driven GIS tool that can be used to help prioritize wetland and upland areas for land acquisition. The benefit of this parcel prioritization tool is that it allows the end-user to identify unprotected land with important aquatic resource and buffer areas in each of the ILF Service Areas. The tool provides for overlay of many datasets that support assessment of potential preservation sites in the context of ILFP selection criteria. A datalayer containing the locations of permitted projects (for which ILF payments have been received) has recently been created to enable mapping of resource impact locations and associated data (see Appendix A- ILFP Map). The ILFP outreach and discussions to identify potential projects have also been beneficial in terms of sharing information on valuable datasets, modeling tools, and available expertise to support the ILFP selection process.

VI. DMF ILFP Project Updates

This section of the ILFP 2017 Annual Report provides an update on four mitigation projects that were undertaken by DMF prior to the 2014 DFG ILFP Instrument. The 2016 Annual Report included information on the history and status of DMF's ILFP, which operated from June 2008 - June 2013 and was a predecessor to the current statewide MA DFG ILFP. DMF allocated the total amount of ILF payments made to its ILFP to fund four (4) mitigation projects that DMF selected through a Request for Proposals (RFP) process initiated in September 2012. An update on these four ongoing DMF ILFP projects is provided below. There have been no changes in the authorized impacts or accounting details as reported in the 2016 Annual Report, with the exception of credit releases for the Great Marsh project as described below (Project 3). Also, as noted under Project 4 below, the cost for the Draka Dam project is expected to increase. Below is a summary description of these DMF ILFP-funded mitigation projects as well as links to project-related documents available on the Regulatory In-Lieu Fee and Bank Tracking System (RIBITS) cyber repository.

Project 1. Off Billington Street Dam Removal Project – Plymouth

The Town of Plymouth was awarded \$128,202.00 in ILFP funds for vegetation planting associated with the removal of the Off Billington Street Dam. Specifically, the ILFP contribution to the project was used to vegetate the exposed stream banks once the impoundment behind the dam was drained. The dam structure was replaced with an arch bridge. In order to improve water quality, contaminated sediment from behind the dam was removed. The completed mitigation project provides unimpeded fish passage for alewife, blueback herring, and American eel and is part of a larger comprehensive approach to restoring the historic anadromous fish run at Town Brook, eventually re-establishing river herring access to 269 acres of spawning habitat once all phases of the project are completed. The project also opened up an additional 400 linear feet of stream habitat at a total estimated cost of almost \$1.5 million. The "[Off Billington Street Final Report](#)" outlining completed work activities to date was received by DMF on October 9, 2014. Site visits were subsequently conducted by representatives from the Corps in May 2015 and September 2016, noting the seasonal condition of vegetation along the banks and the progression of the work at the site, including complete removal of the next upstream impediment, the Plymco Dam.

In December 2017 the Town of Plymouth submitted a Vegetation Community Monitoring Report to DMF. The report describes the vegetative community composition for four growing seasons post-restoration. The Town has been working with the DFG Division of Ecological Restoration and the MassBays Program to annually assess and describe the vegetation community development at the site. The Vegetation Community Monitoring Report found substantial improvement and diversification of the vegetative community that supports a range of species and habitat values across the site. Each year has shown a stronger representation of native species adapted to the range of soil moisture and sun exposure across the former dam impoundment. DFG continues working with the Corps to provide additional detail on the

amount and type of restored wetlands to support the assessment of credits that could be released as a result of streambank restoration.

Management of purple loosestrife continues to be a challenge for the Town. Substantial effort has gone in to manual control of this invasive plant, but a longer-term, more sustainable method may be appropriate. The report notes that long-term sustainable management approaches to control invasive plants at the site may include the cultivation of *Gallerucella* beetles. The continuous purple loosestrife seed source from the watershed may never allow complete elimination of the plant from lower Town Brook.

Project 2. Rough Meadows - Rowley

The Massachusetts Audubon Society (Mass Audubon) was awarded \$14,704.00 in ILFP funds for a mitigation project that contributed to the restoration of salt marsh and immediately adjacent brackish marsh at Rough Meadows Wildlife Sanctuary in Rowley, Massachusetts. This funding was used over a three-year period for treatments necessary to accomplish the eradication or near eradication of targeted common reed. Successful implementation was expected to result in the restoration of approximately 5.5 acres of marsh habitat and reduce the likelihood of the spread of common reed to additional areas. As discussed below, the actual marsh area being restored is greater than anticipated. Elimination of the targeted common reed colonies will improve marsh ecosystem health and reduce the spread of common reed as the result of disturbance associated with climate change and coastal alterations throughout the region. In addition, the control of common reed should facilitate the migration of salt marsh as sea level rises as predicted by climate change models.

According to an October 2013 project status report, the Rough Meadows Sanctuary was explored on foot to locate and map all common reed stands present in May 2013. Twenty-seven stands, ranging in size from 0.01 to 2.91 acres, were located and mapped. The total mapped area of common reed was 15.05 acres, exceeding the 5.5-acre estimate of the area of common reed present as identified in the Mass Audubon application for a grant from the ILFP. Mass Audubon estimates that approximately 9 acres of salt marsh habitat at Rough Meadows Wildlife Sanctuary will be restored using the ILFP funds. Herbicide treatment was conducted in Summer 2013.

To assess the success of treatment, the site has been monitored annually. Vegetation monitoring quadrats are randomly located in several areas where the common reed was present prior to the 2013 treatment to quantitatively document the colonization of these areas by native plant species. In September 2016, a site visit noted reductions to the spatial extent of all treated stands but also the potential threat of *Phragmites* recolonization from *Phragmites* stands existing on nearby properties. Follow-up herbicide treatments were performed in 2014 and 2015 increasing the estimate of common reed reduction from 92% to 94% in cover compared to pre-treatment conditions as needed.

Mass Audubon continues to monitor the common reed stands treated under this grant as well as other areas of the Rough Meadows Wildlife Sanctuary. The Rough Meadows November 2017 Monitoring Report provides estimates of common reed stand density reductions for each of the 27 stands that were treated. The success of treatment varies from 60% to 100%, with 16 of the stands showing cover reductions in the 90-100% range after treatment. The 2017 Monitoring Report also identifies follow-up control activities, including additional herbicide treatments, to prevent any resurgence of common reed and/or the establishment of new common reed colonies on the sanctuary. A summary of the status of common reed in both fresh and salt marsh at Rough Meadows is provided below. This information is based on Table 2 of the Rough Meadows 2017 Monitoring Report and indicates successful treatment of 76.3% of the common reed acreage that was identified in 2013.

Summary - common reed at Rough Meadows Wildlife Sanctuary

(from Table 3 of the Rough Meadows 2017 Monitoring Report, November 2017)

Habitat	Original Acres Common Reed 2013	Acres Remaining 2017	Acres Successfully Treated 2017	% Common Reed Treated
Fresh Marsh	5.38	1.22	4.16	77.3
Salt Marsh	9.67	2.61	7.33	75.8
Total	15.05	3.83	11.49	76.3

In December 2017 representatives from Mass Audubon coordinated with representatives from the Corps and DFG to schedule a final site visit in March / April 2018 time period to determine final credits.

Credit Ledger Summary (RIBITS, Last Transaction 12/20/2012)

Resource Type	Available Credits	Withdrawn Credits	Released Credits	Potential Credits
Wetland E2EM	0	0	0	0.97

E2EM = Salt marsh

Project 3. Upper Great Marsh – Newbury

The Merrimack Valley Planning Commission (MVPC) was awarded \$23,800.00 in ILFP funds for a common reed (Phragmites) control project located in the Upper Great Marsh in Newbury. The goal of this mitigation project is to return a large section (approximately 1,000 acres) of the northern end of the Great Marsh in Plum Island Sound to a healthy, natural state. As Phragmites is removed from the open, high marsh, native vegetation is expected to naturally re-colonize these areas and the natural functions of the marsh (that have been impaired by invasive monocultural growth) including vegetative, benthic, finfish, shellfish, and avian diversity is expected to return.

In a November 2013 project report, MVPC noted that a preliminary monitoring survey of an approximately 600-acre study area occurred in May 2013 to determine the extent and status of Phragmites in the 2013 treatment area. The 2013 treatment area coincides with the areas previously mapped and treated in 2012. Newly mapped stands in the open marsh were treated in late September, 2013. Preliminary visual post-monitoring in the months of September and October 2013 indicated a successful kill of treated Phragmites stands over an approximately 30-acre area. A detailed report outlining work activities completed to date entitled Upper Great Marsh -"DMF ILF Final Report" was received by DMF in November 2013.

In September 2016 representatives from the Corps and DMF conducted a site visit to the Upper Great Marsh Phragmites Removal project location, noting that some treated Phragmites patches still contain Phragmites shoots, but the shoots themselves were much smaller and the patches less dense. MVPC indicated they would be returning to patchy areas in the fall to treat using backpack sprayers. In 2017 the entire 600-acre ILF treatment area of the Great Marsh was surveyed for Phragmites australis. The survey found no high density stands and approximately 50 low density (10-100 stems) stands. Funding is being sought for 2018 treatment of mapped sites to ensure Phragmites does not become re-established. More information is available in the 2017 Great Marsh Monitoring report. The most recent credit ledger summary is included below indicating a release of 3.0 credits for this mitigation project.

Credit Ledger Summary (RIBITS, Last Transaction 9/28/2016)

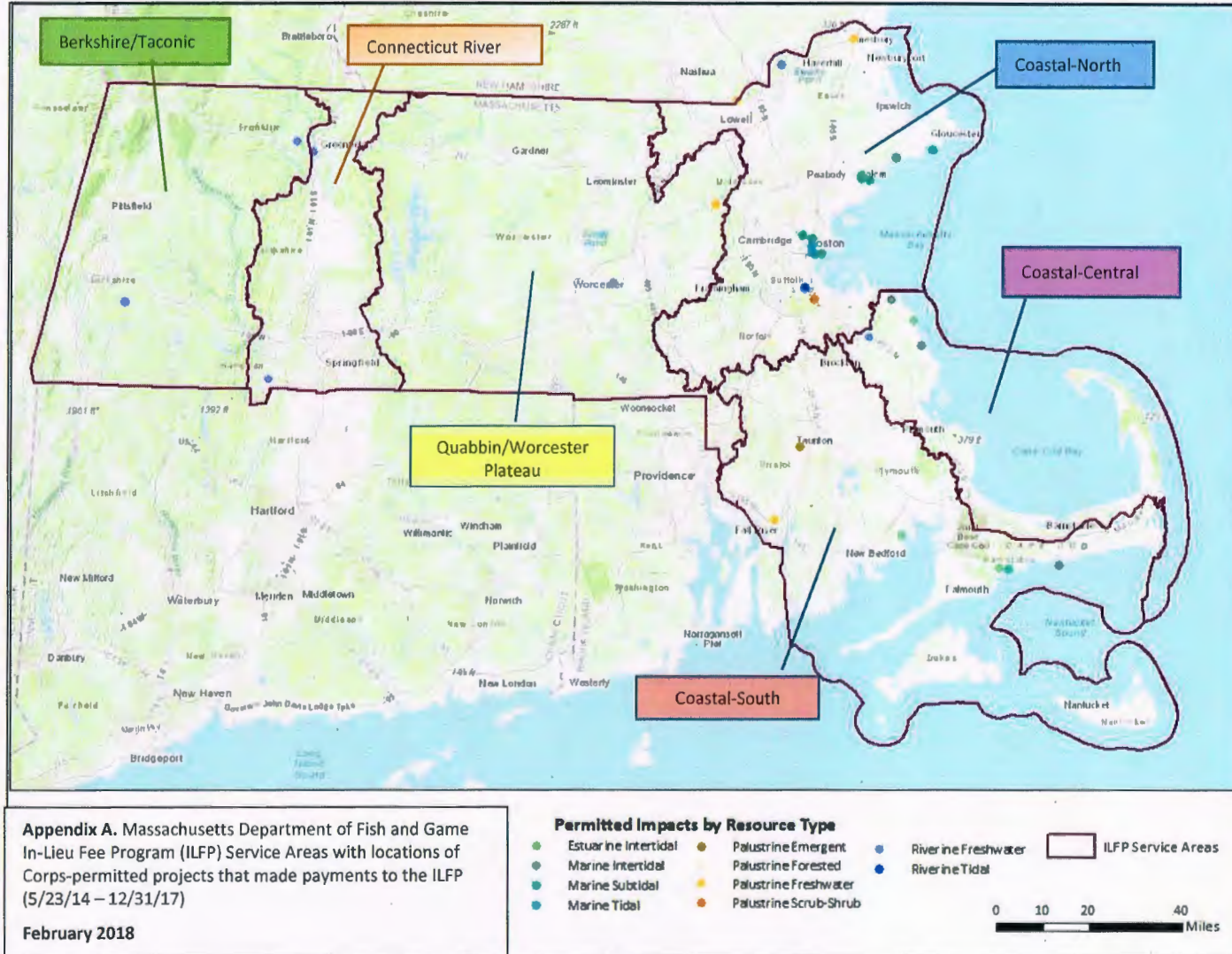
Resource Type	Available Credits	Withdrawn Credits	Released Credits	Potential Credits
Wetland <u>E2</u>	3	0	3	3

E2 = Estuarine Fringed

Project 4. Draka Dam Fish Passage – Three mile River, Taunton

The DMF Diadromous Fish Project was awarded partial ILFP funding (\$34,916.96) to help restore diadromous fish passage on the Three Mile River. The goal of this mitigation project is to provide spawning access for river herring to Mount Hope Pond by installing a fishway at the Draka Dam, which will restore the historic connection between the Taunton River and Narragansett Bay. This will allow diadromous fish to reach approximately 45 acres of spawning and nursery habitat upstream of the Draka Dam in Mount Hope Pond. Significant progress has been made on this project. In April 2016 the project received a permit from the Department of Conservation and Recreation, Office of Dam Safety, pursuant to M.G.L. c. 253, §45A authorizing construction of a fish passage ladder on the Draka Dam. The Massachusetts Environmental Trust separately provided \$40,000 in funding to Save the Bay for this project. Bids for constructing the fish ladder were requested by DMF in January 2018. The successful bidder will be required to complete all fish passage construction work between August 1, 2018 and November 15, 2018. The projected cost for the project is expected to increase. DFG is exploring another source of non-ILF mitigation funds to fill the estimated shortfall of \$37,000.

Appendix A. ILFP Map – Service Area boundaries & locations of projects that made ILF payments



Appendix B. Complete Listing of ILF Payments Received and Mitigation Credits Sold

Table 5. ILF Payments Received & Mitigation Credits Sold (5/23/14 – 12/31/17)									
Service Area	Permittee & Project location	Permit # & Date issued	Payment amount	Admin (17.5%)	Non-admin (82.5%)	Wetland credits sold	Stream credits sold	Resource Impacted	Payment received
Berkshire Taconic	Tennessee Gas Pipeline Company <i>Tyringham</i>	NAE-2014-01945 10/17/14	\$2,500.00	\$437.50	\$2,062.50	0	8.33	Riverine Freshwater	11/6/14
	MassDOT Highway Division <i>Shelburne</i>	NAE-2015-01572 9/1/16	\$13,800.00	\$2,415.00	\$11,385.00	0	46	Riverine Freshwater	12/9/16
	Subtotal	Berkshire	\$16,300.00	\$2,852.50	\$13,447.50	0	54.33		
Connecticut River	Tennessee Gas Pipeline Company <i>Southwick</i>	NAE-2014-01772 10/10/14	\$12,500.00	\$2,187.50	\$10,312.50	0	41.66	Riverine Freshwater	10/24/14
	Exxonmobil Corp <i>Greenfield</i>	NAE-2013-01364 10/8/13	\$9,000.00	\$1,575.00	\$7,425.00	0	90	Riverine Freshwater	12/09/14
	Subtotal	CT River	\$21,500.00	\$3,762.50	\$17,737.50	0	131.66		
Quabbin Worcester	James White <i>Concord</i>	NAE-2016-00820 12/7/16	\$16,810.00	\$2,941.75	\$13,868.25	0.028	0	Palustrine Freshwater	4/12/17
	John D. Noblin, Ledge Hill Development Company LLC <i>North Attleboro</i>	NAE-2005-03968 12/15/16	\$55,235.79	\$9,666.26	\$45,569.53	0.092	0	Palustrine Forested	1/13/17
	MassDOT Highway Division <i>Northborough, Shrewsbury</i>	NAE-2016-02614 3/3/17	\$60,600.00	\$10,605.00	\$49,995.00	0	202	Riverine Freshwater	5/30/17
Subtotal	Quabbin-Worc	\$132,645.79	\$23,213.01	\$109,432.78	0.12	202			

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Service Area	Permittee & Project location	Permit # & Date issued	Payment amount	Admin (17.5%)	Non-admin (82.5%)	Wetland credits sold	Stream credits sold	Resource Impacted	Payment received
Coastal-North	Global Companies, LLC <i>Chelsea</i>	NAE-2011-00106 8/1/14	\$19,265.00	\$3,371.38	\$15,893.63	0.01 0.02	0	Marine Subtidal Marine Intertidal	9/11/14
	Charles Loutrel <i>Marblehead</i>	NAE-2014-02637 4/20/15	\$2,623.84	\$459.17	\$2,164.67	0.004	0	Marine Subtidal	5/15/15
	Algonquin Gas Transmission, LLC <i>Salem</i>	NAE-2014-00114 4/1/15	\$151,554.00	26,521.95	\$125,032.05	0.244	0	Marine Subtidal	6/24/15
	City of Salem <i>Salem</i>	NAE-2005-01095 12/21/15	\$2,852.00	\$499.10	\$2,352.90	0.005	0	Marine Intertidal	1/11/16
	Nicholas Iselin for Lend Lease Development. <i>Boston</i>	NAE-2004-00525 4/4/16	\$5,040.00	\$882.00	\$4,158.00	0.008	0	Marine Tidal (non-specific)	4/27/16
	Lisa Martinez and Chris Williams <i>Manchester</i>	NAE-2015-01169 3/16/16	\$812.00	\$142.10	\$669.90	0.001	0	Estuarine Intertidal	6/28/16
	New England Power/National Grid. <i>Andover, Dracut, Tewksbury</i>	NAE-2015-00875 3/23/16	\$227,009.00	\$39,726.58	\$187,282.43	0.365	0	Palustrine (non-specific)	8/5/16
	Economic Development and Industrial Corp. <i>Boston</i>	NAE-2016-01170 7/26/16	\$18,623.00	\$3,259.03	\$15,363.98	0.03	0	Marine Subtidal	8/19/16
	MA Dept. of Conservation and Recreation <i>Canton</i>	NAE-1999-03185 6/30/2016	\$3,000.00	\$525.00	\$2,475.00	0.005	0	Palustrine Scrub-Shrub	10/14/16
	Wynn MA LLC <i>Everett</i>	NAE-2013-01026 12/12/16	\$48,769.20	\$8,534.61	\$40,234.59	0.079	0	Marine Subtidal	12/14/16

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Service Area	Permittee & Project location	Permit # & Date issued	Payment amount	Admin (17.5%)	Non-admin (82.5%)	Wetland credits sold	Stream credits sold	Resource Impacted	Payment received
Coastal-North, continued	Rustom Cowasjee 140 Northern Ave LLC Boston	NAE-2002-02261 11/17/16	\$106,950.00	\$18,716.25	\$88,233.75	0.172	0	Marine Tidal (non-specific)	1/25/17
	MassDOT Highway Division Amesbury, Salisbury	NAE-2009-00539 1/20/2015	\$50,880.00	\$8,904.00	\$41,976.00	0.082	0	Palustrine (non-specific)	2/1/17
	Arunas Martinonis Gloucester	NAE-2016-02158 12/1/16	\$4,705.00	\$823.38	\$3,881.63	0.008	0	Marine Subtidal	5/30/17
	Massachusetts Port Authority Boston	NAE-2017-00101 5/4/17	\$4,939.00	\$864.33	\$4,074.68	0.008	0	Marine Subtidal	6/21/17
	Kai Juel, III Manchester	NAE-2011-01084 5/3/16	\$4,791.36	\$838.49	\$3,952.87	0.008	0	Marine Intertidal	8/03/17
	Martin Hahn and David Crosby Manchester	NAE-2009-01173 5/13/16	\$5,147.86	\$900.88	\$,246.98	0.008	0	Marine Intertidal	8/03/17
	Peter Creighton Manchester	NAE-2009-00146 5/3/16	\$7,557.80	\$1,322.62	\$6,235.19	0.012	0	Marine Intertidal	8/14/17
	Randy Wood Manchester	NAE-1994-02959 5/3/16	\$1,611.38	\$281.99	\$1,329.39	0.003	0	Marine Intertidal	8/14/17
	Manchester Marine Corporation Manchester	NAE-2012-00558 11/10/16	\$49,339.60	\$8,643.43	\$40,705.17	0.08	0	Marine Intertidal	8/14/17
	Ledyard McFadden Manchester	NAE-2013-02022 5/13/16	\$2,452.72	\$429.23	\$2,023.49	0.004	0	Marine Intertidal	8/17/17
Sunset Rock, LLC	NAE-2012-00557	\$24,997.78	\$4,374.61	\$20,623.17	0.04	0	Marine Intertidal	8/22/17	

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Service Area	Permittee & Project location	Permit # & Date issued	Payment amount	Admin (17.5%)	Non-admin (82.5%)	Wetland credits sold	Stream credits sold	Resource Impacted	Payment received
	Mass Bay Transportation Authority <i>Boston</i>	NAE-2010-02461 3/22/17	\$3,900.00	\$682.50	\$3,217.50	0.006	0	Riverine Tidal	8/25/17
	Eversource Energy <i>Sharon, Walpole</i>	NAE-2013-02187 11/23/16	\$ 14,130.00	\$2,472.75	\$11,657.25	0.015	0	Palustrine Forested	10/4/17
	MassDOT Highway <i>Haverhill</i>	NAE-2017-00669 4/28/17	\$18,180.00	\$3,181.50	\$14,998.50	0	30.3	Palustrine Emergent	12/13/17
	Tyler Deaton, 140 Northern Ave LLC <i>Boston</i>	NAE-2002-02261 5/5/17	\$144,538.00	\$25,294.15	\$119,243.85	0.06	0	Riverine Freshwater	12/20/17
						0.17	0	Marine Subtidal Marine Intertidal	
	Subtotal	Coastal-North	\$923668.54	\$161641.99	\$762026.55	1.45	30.3		
Coastal-Central	Town of Scituate <i>Scituate</i>	NAE-2006-03754 5/30/08	\$ 99,820.00	\$17,468.50	\$82,351.50	0.161	0	Estuarine Intertidal	9/8/15
	MassDOT Highway Division <i>Norwell</i>	NAE-2016-01044 8/17/16	\$212,326.00	\$37,157.05	\$175,168.95	0.28	0	Palustrine Forested	12/9/16
	Michael Solimando <i>Scituate</i>	NAE-2008-01239 3/9/17	\$1,711.20	\$299.46	\$1,411.74	0	64	Riverine Freshwater	
	Provincetown Airport Commission <i>Provincetown</i>	NAE-2006-04281 1/10/17	\$ 269,777.81	\$47,211.12	\$222,566.69	0.003	0	Marine Intertidal	3/16/17
	Cohasset Yacht Club, <i>Cohasset</i>	NAE-1995-00532 10/17/17	\$2,245.95	\$393.04	\$1,852.91	0.434	0	Palustrine Forested	8/1/17
	Subtotal	Coastal-Central	\$587,288.96	\$102,775.57	\$484,513.39	0.88	64		

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Service Area	Permittee & Project location	Permit # & Date issued	Payment amount	Admin (17.5%)	Non-admin (82.5%)	Wetland credits sold	Stream credits sold	Resource Impacted	Payment received
Coastal-South	Mary C. Kariotis Osterville	NAE-2014-01583 1/2/14	\$ 1,408.00	\$246.40	\$1,161.60	0.002	0	Marine Subtidal	11/5/15
	Great Island Homeowner's Assoc. Inc. W. Yarmouth	NAE-2002-00169 11/2/16	\$570.40	\$99.82	\$470.58	0.01	0	Marine Intertidal	11/8/16
	US Army Corps of Engineers Taunton	NAE-2015-00827 11/1/16	\$ 260,890.00	\$45,655.75	\$215,234.25	0.42	0	Palustrine Emergent	12/21/16
	Robert Benedetto Cotuit	NAE-2014-01348 1/14/17	\$ 1,369.00	\$239.58	\$1,129.43	0.01	0	Estuarine Intertidal	1/25/17
	Town of Marion Marion	NAE-2014-01310 2/27/17	\$ 33,539.00	\$5,869.33	\$27,669.68	0.05	0	Estuarine Intertidal	6/29/17
	MassDOT Highway Division Fall River, Somerset	NAE-2008-03185 12/20/17	\$664,059.00	\$116,210.33	\$547,848.68	1.07	0	Palustrine (non-specific)	12/21/17
	Subtotal	Coastal-South		\$960427.4	\$168074.8	\$792352.61	1.55	0	
		Statewide Total	\$2,641,830.69	\$462,320.37	\$2,179,510.30	4.0	482.3		