

Fish Enhancement, Mitigation, and Research Fund (FEMRF)

~Project Highlights~

The 24-million-dollar Fish Enhancement, Mitigation, and Research Fund (FEMRF) was established as part of the Settlement Agreement reached in the licensing of the St. Lawrence-Franklin D. Roosevelt Power Project (Project), operated by the New York Power Authority, near Massena, NY. The FEMRF is managed by the U.S. Fish and Wildlife Service (Service), with the National Fish and Wildlife Foundation (NFWF) serving as the Trustee for the fund. The purpose of the FEMRF is to benefit fisheries resources in the Lake Ontario/St. Lawrence River Basin and to continue research on the American eel and other species that may be affected by the Project.

2018



Otter Creek Restoration

Funding in the amount of \$54,756 was awarded to the Service to complete a wetland restoration in Otter Creek near Alexandria Bay, NY. This project was also completed in collaboration with the Thousand Island Land Trust and helped restore about one acre of open water habitat for northern pike.



North Goose Bay Wetland Restoration

Funding in the amount of \$141,540 was awarded to the Service to complete a wetland restoration in Goose Bay near Alexandria Bay, NY. This project was completed in collaboration with the Thousand Island Land Trust and local landowners and helped restore over five acres of open water habitat for St. Lawrence River northern pike. A series of basking logs were placed throughout various excavated pools to benefit Blanding's Turtle.

2017



American Eel Track Study

Funding in the amount of \$67,094 was awarded to the Service's NYFO for the purchase of acoustic receivers as part of a collaborative American eel tracking study. The goal of the project is to document the natural migration route of eels through the Iroquois Water Control Dam. This information will be used to develop an in-water guidance and collection system for out-migrating silver eels to ultimately reduce turbine mortality.



Mullet Creek Fish Passage Project

Funding in the amount of \$25,000 was awarded to the Service and the Service's Partners for Fish and Wildlife Program to improve fish passage in Mullet Creek near Alexandria Bay, NY. This project was identified as part of the St. Lawrence River Tributary Assessment Effort. Restoration at two locations in Mullet Creek restored over 18 miles for fish communities.

2016



Dam Removal Effects: Initial Passage, Penetration, and Community Change

Funding in the amount of \$92,150 was awarded to the Saint Regis Mohawk Tribe and \$65,516 was awarded to the USGS-Tunison Laboratory of Aquatic Science for a joint project to evaluate the fisheries response to the removal of the Hogansburg Dam on the St. Regis River. The study will provide initial fish passage information, the extent of use of the newly available habitat, and any changes to the fish community.



Little Sucker Brook Walleye Spawning Enhancement Project

The Service's Partners for Fish and Wildlife Program, with Funding in the amount of \$50,000, constructed two engineered fish spawning riffles and stabilized 120 feet of streambank in Little Sucker Brook near Waddington, NY. This project's goals were to increase the abundance of high quality spawning habitat for walleye, as well as reduce excessive sediment inputs into the stream system. NYFO has successfully documented Walleye spawning on the constructed riffles and will continue to monitor the project.



Oswegatchie River Tributary Fish Passage Project

Funding in the amount of \$45,000 was awarded to the Service to improve fish passage in a tributary to the Oswegatchie River near Ogdensburg, NY. This project was identified as part of the St. Lawrence River Tributary Assessment Project completed by the New York Field Office and helped restore over 16 miles of stream habitat for fish.



Cranberry Creek Wetland Restoration

Funding in the amount of \$82,000 was awarded to the Service to complete a wetland restoration project in Cranberry Creek near Alexandria Bay, NY. This project was designed to improve fisheries habitat and improve water quality in a vital St. Lawrence River wetland system. At the completion of the project, over five acres of spawning pools and 4,700 feet of connecting channels were constructed. This project will be monitored by SUNY-ESF to evaluate fish response and productivity post-construction.



FEMRF/NRDAR Fish Barrier and Aquatic Habitat Assessment Project

FEMRF awarded the Service \$42,000 to provide baseline information including fish barrier evaluations and existing in-stream habitat conditions for the Grasse, Raquette, St. Regis, and Salmon Rivers. This was a collaborative effort between the FEMRF and the St. Lawrence River NRDAR. At the completion of the project, 374 crossings were evaluated for fish passage within these four major rivers.

2015



Kents Creek – Walleye Spawning Bed Project

NYFO Partners for Fish and Wildlife staff created a walleye spawning bed by constructing an artificial riffle in Kents Creek, Jefferson County, NY. The objectives of the project are to increase available spawning habitat and increase walleye abundance. The fish response to the site was monitored and evaluated by SUNY-ESF. Results of the study showed that the project was successful and produced thousands of larval walleye. The construction and the post-construction monitoring was funded by the Fish Enhancement, Mitigation, and Research Fund (FEMRF).



Delaney Bay Spawning Marsh and Butterfield Spawning Marsh – Minor Repair Project

Funding was provided to our NYFO Partners for Fish and Wildlife staff to conduct minor repairs on structures associated with two spawning marshes. Damage was a result of increased run-off from severe winter conditions coupled with spring rains.



Lake Sturgeon Restoration Project

Funding was provided to the Service's Genoa National Fish Hatchery to produce lake sturgeon to support the New York Department of Environmental Conservation's (NYSDEC) lake sturgeon restoration program. This 10-year project has an annual production target of 5,000 fall fingerlings. In 2015, we stocked approximately 20,500 lake sturgeon fingerlings throughout New York.



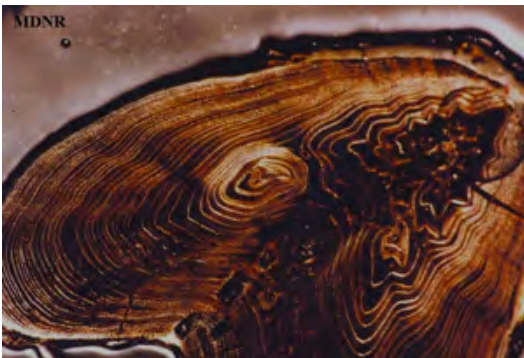
FEMRF/NRDAR Fish Barrier and Aquatic Habitat Assessment Project

This project is in partnership between the FEMRF and the St. Lawrence Environment Natural Resources Damage Assessment and Restoration (NRDAR) Trustees. The objective of the project is to provide baseline information to the NRDAR Trustees to assist with restoration project selection. Project outcomes will include barrier assessments and ranking, as well as in-stream habitat assessment. In 2015, we evaluated 220 crossings and assessed over 2,000 square meters of fish habitat on the St. Regis and Raquette Rivers.



Population and Habitat Characteristics of the Pugnose Shiner in Embayments of the St. Lawrence River, New York

Funding was awarded to the State University of New York College at Brockport for the study of the pugnose shiner in the St. Lawrence River. This 2-year study will advance the understanding of habitat conditions and population characteristics at three locations of apparently healthy populations of pugnose shiners. The species is currently state-listed in New York as endangered. Interim reports will be provided annually and the final project report will be published in March 2017.



St. Lawrence River Lake Sturgeon Microchemistry Project

Funding was awarded to Southeast Missouri State University, through the Missouri Conservation Heritage Foundation, to assist with microchemistry analysis of water and fin ray samples of lake sturgeon from the St. Lawrence River Basin. The overall goal of this 2-year project is to determine the contribution of stocked sturgeon to the overall population in the upper St. Lawrence River. Interim reports will be provided annually and the final report will be published in 2016.



Lake Sturgeon Tagging Project

Funding was used to purchase lake sturgeon tagging supplies. The goal of this 4-year project is to ensure that all of the lake sturgeon being handled by our partners are being properly tagged and evaluated for previous tagging efforts to further enhance our long-term sturgeon monitoring activities. The equipment purchased includes PIT tags and injectors, as well as several Coded-Wire Tag detectors. The equipment will be loaned out to project partners.



Juvenile American Eel PIT tagging project

Funding was provided to purchase 3,500 PIT tags for placement in juvenile American eels captured at the eel ladder in Beauharnois Dam on the St. Lawrence River, Quebec, Canada. Eel tagging will allow us to understand upstream migration timing, eel ladder preference, and ladder passage efficiency.

2014



FEMRF Program Boat/Motor

Funding in the amount of \$23,962 was awarded to the Service's New York Field Office for the purchase of a jon boat, motor, and trailer. The purchase was made to meet the on-water research needs of our FEMRF project awardees. The boat will be housed at the Service's New York Field Office and loaned out through agreements.



Brandy Brook Fish Passage Project

Funding in the amount of \$50,000 was awarded to the Service's New York Field Office, Partners for Fish and Wildlife Program (Project Lead) for the Brandy Brook Fish Passage Project. The 1-year fish passage project involved the removal of a collapsed agricultural crossing that was identified as a fish barrier and was replaced with a bottomless arch culvert. Our Partners for Fish and Wildlife Program staff conducted the design of the project and a local contractor conducted the installation of the new culvert. This project opened up over 16 kilometers (9.94 miles) of riverine spawning habitat for migratory fishes from the St. Lawrence River. Monitoring will be conducted by the Service.



Lake Sturgeon Restoration Project

Funding in the amount of \$250,000 was awarded to the Service's Genoa National Fish Hatchery to produce lake sturgeon to support the New York Department of Environmental Conservation's (NYSDEC) lake sturgeon restoration program. This 10-year project has an annual production target of 5,000 fall fingerlings. A hatchery and disease testing report will be provided on an annual basis.



Population and Habitat Characteristics of the Pugnose Shiner in Embayments of the St. Lawrence River, New York

Funding in the amount of \$123,635 was awarded to the State University of New York College at Brockport for the study of the pugnose shiner in the St. Lawrence River. This 2-year study will advance the understanding of habitat conditions and population characteristics at three locations of apparently healthy populations of pugnose shiners. The species is currently state-listed in New York as endangered. Interim reports will be provided annually and the final project report will be published in March 2017.



St. Lawrence River Lake Sturgeon Microchemistry Project

Funding in the amount of \$6,223.43 was awarded to Southeast Missouri State University, through the Missouri Conservation Heritage Foundation, to assist with microchemistry analysis of water and fin ray samples of lake sturgeon from the St. Lawrence River Basin. The overall goal of this 2-year project is to determine the contribution of stocked sturgeon to the overall population in the upper St. Lawrence River. Interim reports will be provided annually and the final report will be published in 2016.



Lake Sturgeon Tagging Project

Funding in the amount of \$19,315 was awarded to the Service's New York Field Office to purchase tagging supplies. The goal of the 4-year project is to ensure that all of the lake sturgeon being handled by our partners are being properly tagged and evaluated for previous tagging efforts to further enhance our long-term sturgeon monitoring activities. The equipment purchased includes PIT tags and injectors, as well as several Coded-Wire Tag detectors. The equipment will be loaned out to project partners.

photo credit: Maxwell



Beadle Point Fish Passage Project

Funding in the amount of \$13,800 was awarded to the Service's New York Field Office, Partners for Fish and Wildlife Program (Project Lead) for the Beadles Point Fish Passage Project. The project was identified, through our partnership with the State University of New York College of Environmental Science and Forestry (SUNY-ESF), as being a complete barrier for northern pike and muskellunge to access a historic spawning site. The 1-year project included the design, construction, and installation of a fishway to facilitate fish passage to an adjacent wetland and opened up over 3 kilometers (1.86 miles) of tributary. Fish spawning and the use of the site will continue to be monitored and reported on by SUNY-ESF as part of our ongoing work.



Passive Acoustic Monitoring of Lake Sturgeon in the St. Lawrence River Basin

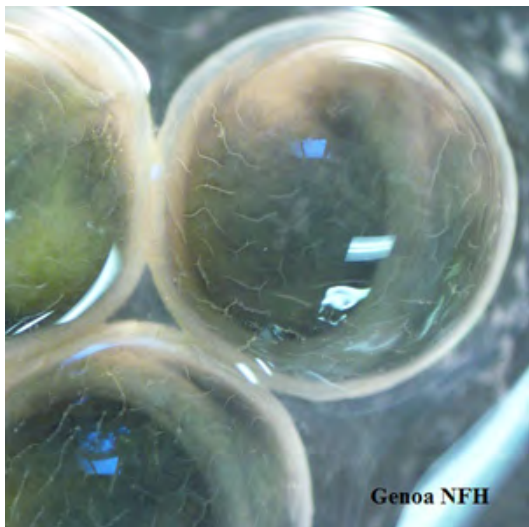
Funding in the amount of \$9,684 was awarded to Cornell University to conduct a 2-year acoustic monitoring "proof-of-concept" study on the created lake sturgeon spawning beds near Ogdensburg, New York. The goal of the study is to fully investigate all sturgeon sounds produced both during the pre-spawning and spawning period. These recorded sounds will be compared to sturgeon abundance from underwater video survey data from the same periods. Interim reports will be provided annually and the final project report will be published in 2015.

2013



St. Lawrence Tributary Assessment – TILT

Funding in the amount of \$32,975 was awarded to the Thousand Islands Land Trust (TILT) to assist with the Three Component Mitigation Approach for the St. Lawrence River Tributaries Project, led by the Service's New York Field Office. In this partnership, TILT provided two technicians to assist with field surveys of St. Lawrence River tributaries including fish barrier, in-stream habitat, and fish community assessments. A final financial report will be provided. The research findings will be reported by the Service's New York Field Office.



Lake Sturgeon Restoration Project – Service’s Hatchery Assistance

Funding in the amount of \$22,400 was awarded to the Service’s Genoa National Fish Hatchery (Service-GNFH) to produce lake sturgeon fingerlings to support the New York State Department of Environmental Conservation’s (NYSDEC) lake sturgeon restoration program. Although the target goal was 5,000 fish, the Service-GNFH reared 11,000 fish. All reared sturgeon were stocked in the St. Lawrence River and its tributaries. This project is in cooperation with the NYSDEC and is intended to match the maximum production of sturgeon that can be reared within the New York State’s hatchery system resulting in twice the number of fall fingerlings stocked into New York waters. A final hatchery report will be provided. In addition, transportation of the fish back to New York and a disease testing report will be provided.



Blind Bay Wetlands Protection Project – Thousand Islands Land Trust

Funding in the amount of \$94,250 was awarded to the Thousand Islands Land Trust (TILT) to permanently protect the natural resources of the Blind Bay wetland complex. The parcel acquired is 22.4 acres in size and will protect 1,535 linear feet of wetland along the St. Lawrence River. The site will be monitored and managed by TILT. A baseline monitoring report will be provided in 2014. In addition, the Service conducted a fish spawning habitat restoration project on the parcel in 2010 and this acquisition opportunity affords long-term protection of the restored habitat. As part of the 2010 restoration project, fish spawning and use of the site will continue to be monitored by the State University of New York College of Environmental Science and Forestry (SUNY-ESF).



Eel Passage Research Center

Funding in the amount of \$1,150,000 was awarded to the Electrical Power Research Institute (EPRI) to develop and manage the collaboratively-funded Eel Passage Research Center. This 5-year project is a multi-national effort that will build upon previous American Eel research conducted on the St. Lawrence River to investigate and develop means to guide and collect adult migrating eels for transport below hydroelectric facilities. The overall goal of the project is to reduce eel mortality associated with hydroelectric turbines at two facilities on the St. Lawrence River. Research projects will investigate behavioral cues to guide adult migrating eels to potential collection sites, as well as methods for collecting eels. Our project partners include Ontario Power Generation and Hydro-Quebec and each will contribute a matching \$1,150,000 in total for the 5-year project term. Interim reports will be provided annually and the final project report will be published in 2018.



Butterfield Marsh – Water Control Structure Repair Project

Funding in the amount of \$59,700 was awarded to the Service's New York Field Office Partners for Fish and Wildlife Program for repairs to the Butterfield Marsh water control structure. The project was identified by SUNY-ESF under the FEMRF Fish Habitat Conservation Strategy and was ranked as the highest priority project. The earthen berm water control structure was breached by muskrats burrowing into the berm. The project objective is to install plastic sheetpile along the 1,000 foot berm to repair the water control structure and prevent future muskrat related impacts. Butterfield Marsh is a managed marsh with the goal of providing northern pike spawning habitat. All monitoring post-construction will be conducted by SUNY-ESF and will be included in their required reporting under the St. Lawrence River Fish Habitat Conservation Strategy Project listed above.



The St. Lawrence River Fish Habitat Conservation Strategy: Evaluation of Habitat Enhancements and Development of Novel Restoration Approaches

Funding in the amount of \$610,073 was awarded to the State University of New York College of Environmental Science and Forestry (SUNY-ESF) for the continuation and development of the Fish Habitat Conservation Strategy, an adaptive approach. Objectives of this 3-year project include: 1) conduct site visits in the U.S. and Canada and prioritize sites (a minimum of 10 per year) for enhancement of critical reproductive habitats; 2) continue to develop the GIS spatial database; 3) continue to develop toolkit including habitat management options designed to benefit fish reproduction and recruitment processes with focus on muskellunge spawning, nursery, and walleye tributary spawning habitat; 4) assess impact of macroalgae on muskellunge nursery habitat characteristics; 5) develop baseline assessment for walleye larval emigration; 6) continue to monitor/evaluate channel excavation enhancement projects; and, 7) evaluate habitat enhancement at Delaney managed spawning marsh. The project focuses on northern pike, walleye, and muskellunge. Annual reports will be provided detailing progress. A final report will be published in September 2015.

Photo credit: Farrell



Evaluation of Threatened, Endangered, and Declining Species of the Major Tributaries to the St. Lawrence River (Phase II)

Funding in the amount of \$318,400 was awarded to the U.S. Geological Survey (USGS) (Great Lakes Science Center, Tunison Laboratory of Aquatic Sciences) and \$278,315 was awarded to the St. Regis Mohawk Tribe (SRMT) for the evaluation of threatened, endangered, and declining species of the major tributaries of the St. Lawrence River. These are two separate projects working in collaboration. Objectives of this 2-year project include: 1) locate populations of New York State listed Species of Greatest Conservation Need (SGCN) and record observations of migratory species within the major tributaries of the U.S. St. Lawrence River basin; 2) determine relative abundances and optimal habitat conditions of these species; and, 3) identify threats and population status to assist with identifying conservation priorities. The USGS will focus sampling efforts in the Oswegatchie River upstream to Heuvelton, NY, and in Black Lake in the Indian River watershed. The SRMT will focus sampling efforts in the Salmon River up to the High Falls dam below Malone, NY, and the St. Regis River upstream to Brasher Falls, NY. Both agencies will submit reports annually.



Lake Sturgeon Restoration in New York

Funding in the amount of \$7,690 was awarded to the New York State Department of Environmental Conservation (NYSDEC) for a 3-year lake sturgeon restoration project. The funding for this project will support the procurement of 30,000-80,000 fertilized lake sturgeon eggs on an annual basis for a minimum of 3 years. Final fingerling production would be approximately 2,880-7,680 fish, measuring 6.5-8 inches, annually. Total fingerling production for the project duration (3 years) would be approximately 8,640-23,000. In addition, the funding will support a juvenile assessment to document whether natural reproduction has taken place from 2009-2011. The intended outcome of the project is to stimulate recovery of depressed lake sturgeon populations in the St. Lawrence River and Lake Ontario. Population supplementation will likely allow delisting of lake sturgeon from the New York State threatened list in an accelerated time frame. The NYSDEC will provide a report of activities annually.

Photo credit: J. Jock



A Three Component Mitigation Approach for St. Lawrence River Tributaries: Fish Barrier, In-Stream Habitat, and Fish Community Assessments

Funding in the amount of \$294,659 was awarded to the Service's New York Field Office for a 3-year project to comprehensively evaluate tributaries including fish barriers, in-stream habitat, and fish communities. Project outcomes will include barrier evaluations and ranking, quantity/quality of suitable spawning habitat, and existing fish communities (i.e. migratory/resident fish communities). These outcomes will facilitate more efficient and effective means to identify tributaries and fish barriers for mitigation. In addition, this project will serve to aid future restoration and monitoring efforts within Lake Ontario and the St. Lawrence River Basin. The project follows a phased approach, each year 3 tributaries are assessed for fish barriers and 3 tributaries, from the previous year (fish barrier surveys completed), will be sampled to document the fish community (migratory/resident) and available fish habitat present. Interim annual reports will be provided as well as a final report published in March 2015.



Seasonal Assessment of Fish Community Structure in Tributaries, Coastal Wetlands, and Littoral Habitats of the St. Lawrence River: an Evaluation of Restoration Projects

Funding in the amount of \$200,277 was awarded to University of Illinois-Champaign (\$99,651) and Carleton University (\$100,626) to evaluate fish-habitat relationships across key tributaries (12 sites), estuaries (12 sites), and littoral regions (14 sites) within the Cornwall Area of Concern. The objective of this 2-year project is to evaluate fish community structure and fish condition from different restoration sites across multiple seasons. Research efforts will benefit fisheries resources directly by evaluating the utility of existing habitat classification schemes. The research efforts will enable the prioritization of potential restoration sites by producing a prioritized list of sites for restoration as an end product. The research will also focus on evaluating existing restoration efforts (e.g. , artificial reefs, embayments) and determine which have a greater benefit to fish communities and individual fish conditions. Interim reports will be provided annually and the final project report will be published in March 2014 coupled with a summary workshop.

2011



FEMRF - Fish Habitat Conservation Strategy – Minor Project Repairs

Funding in the amount of \$12,710 was awarded to the Service's New York Field Office (NYFO) for minor repairs to existing FEMRF-funded fish habitat projects. The objectives of this repair work included repairing the water control berm on Delaney Bay on Grindstone Island and re-establishing an excavated channel through monotypic cattail marsh at Blind Bay Marsh. Both projects were completed by the NYFO Partners for Fish and Wildlife Program. The ongoing monitoring of these projects will be conducted by SUNY-ESF with FEMRF funding.

Photo credit: B. Henning



Energy Content of Downstream Migrating American Eels

Funding in the amount of \$45,000 was awarded to University of Massachusetts – Dartmouth to evaluate energy content of downstream migrating American eels. The objectives of this 2-year study include determining the energy content of American eels in the St. Lawrence River and the influence energy content may have on timing of metamorphosis and migration. Eels for the study will be collected from ongoing programs in Ontario, Quebec, and Nova Scotia. Data collected may also serve as a means of evaluating current stocking programs to determine if silver eel, resulting from stocked elvers, have the same energy reserves and, therefore, a probability of migratory success as naturally occurring eels. Reports will be provided on an annual basis and will be incorporated into a master's thesis, as well as at least one scientific publication in a peer reviewed journal.



Monitoring the Use of Excavated Channels by Fish with Passive Integrated Transponders (PIT) in a Cattail Dominated Marsh

Funding in the amount of \$16,275 was awarded to SUNY College of Environmental Science and Forestry (SUNY-ESF) to evaluate fish use of excavated channels in a cattail dominated marsh as part of the ongoing FEMRF Fish Habitat Conservation Strategy. The objective of this 2-year (2011-2012) project is to quantify, identify, and describe fish movements through newly created excavated channels in Blind Bay and Club Island marshes and to study the efficacy of the restoration design as a viable option for increasing wetland habitat linkages. Funding was provided to purchase PIT tags and PIT tag antennas. Two excavated channel project locations were selected for monitoring, including Blind Bay/Chippewa Bay channels and Flynn Bay/Lindley Bay (Club Island) channels. Fish were collected with trap nets, PIT tagged, and their movements monitored from April 1 – June 31. Reports will be provided on an annual basis and will be incorporated into a master's thesis, as well as a scientific publication in a peer reviewed journal.

2010



Evaluation of Threatened, Endangered, and Declining Species of the St. Lawrence River and its Tributaries – Data Entry and Management

Additional funding in the amount of \$7,500 was awarded to the U.S. Geological Survey (USGS) (Great Lakes Science Center, Tunison Laboratory of Aquatic Sciences) for additional data entry and management for the previously awarded (\$175,250) Evaluation of Threatened, Endangered, and Declining Species of the St. Lawrence River and its Tributaries Project. The additional funding provided will enable data collected on threatened, endangered, and declining fish species to be entered into both the NYSDEC's fish database as well as the Natural Heritage Database. This will make the data available to agency programs that target the conservation or protection of habitat for species benefits. Data entry will be completed in 2011.

Photo credit: T. David



Blind Bay Fisheries Restoration

Funding in the amount of \$19,000 was awarded to the Service's PFW (New York Field Office) for the Blind Bay Fisheries Restoration Project. This project restored approximately 40 acres of monotypic cattail marsh by creating ecological diversity throughout the marsh, as well as enhancing water quality in the marsh and Blind Bay. This restored wetland habitat will likely increase northern pike spawning and nursery habitat, as well as habitat for waterfowl and other wetland dependent birds. All restoration will take place in the marsh area using an amphibious excavator equipped with a ditching head to restore the historic channels and to create oxbow benches to increase habitat diversity. The project was completed in 2010 and continued monitoring will take place in 2011.



Fish Barrier Assessment and Mitigation: Phase II- Barrier Mitigation

Funding in the amount of \$40,411 was awarded to the Service's PFW (New York Field Office) for the replacement of a fish barrier on Little Sucker Brook. The submitted Phase II barrier mitigation plan identified the highest ranked barrier for removal, which was replaced with a bottomless-arch culvert to restore fish passage. The barrier was located approximately 2.5 miles from the mouth of the stream and replacing the barrier effectively opened up 18 miles of stream to possible fish migration and habitat utilization. The project will likely benefit American eel, walleye, northern pike and other riverine species. The project was completed in 2010 and continued monitoring will take place in 2011.



Fish Barrier Assessment and Mitigation 2010

Funding in the amount of \$162,300 was awarded to the Service's Partners for Fish and Wildlife Program (PFW) (New York Field Office) for a 3-year (2010-2012) continuation of a Fish Barrier Assessment and Mitigation Project. The scope of the project includes tributaries to Lake Ontario and the St. Lawrence River. For each contract year, work will be divided into the following three phases: Phase I) selecting and assessing barriers to fish passage in a minimum of 3 watersheds; Phase II) submit barrier mitigation plans to the FAC for funding approval for the removal/replacement of the selected barriers; and, Phase III) reassessment of mitigated sites to ensure that new structure and stream parameters meet successful fish passage criteria. An annual report will be submitted by the Service, including barrier mitigation proposal(s), for the following year.



Lake Sturgeon - Passive Integrated Transponder (PIT) Tag Project

Funding in the amount of \$8,000 was awarded to the New York State Department of Environmental Conservation (NYSDEC, Region 6) to purchase PIT tags and PIT tag equipment to create a long-term record of lake sturgeon growth, movement, and relative abundance within the New York waters of the St. Lawrence River and eastern basin of Lake Ontario. The objective for this project is to PIT tag up to 1,000 lake sturgeon in the upper St. Lawrence River and eastern Lake Ontario over a 5 year period. In addition, this project will help to identify trends in site fidelity and potential genetic mixing of stocks which will be useful for future population enhancement activities. The NYSDEC will provide a report of activities annually.



Salmon River Restoration: Out-of-Scope Post-Dam Removal Activities

Funding in the amount of \$55,000 was awarded to the Town of Fort Covington (Fort Covington, NY) for the Salmon River Restoration: Out-of-Scope Post-Dam Removal Activities. Funding was provided to cover agency required post-dam removal regulatory activities associated with the previously awarded (\$75,000) Fort Covington dam removal project (FEMRF funded, in-part). The activities included emergency stream bank stabilization and scour protection of the Route 37 bridge. All field activities were completed in 2010 and a final report will be submitted in 2011.

2009



Amphibious Excavator Power Pack

Funding in the amount of \$46,230 was awarded to the Service for the purchase of a power pack for the amphibious excavator, previously purchased by the FEMRF. The power pack consists of an external engine that independently provides power to drive attachments such as the ditcher head. The addition of the power pack will allow the equipment to operate as designed and will allow for more efficient project implementation. The amphibious excavator and power pack are utilized for the implementation of FEMRF-related projects, including those related to the Fish Habitat Conservation Strategy.



Fish Habitat Conservation Strategy: An Evaluation of Toolkit Implementation

Funding in the amount of \$563,836 was awarded to the SUNY-ESF for the continuation and development of the Fish Habitat Conservation Strategy. The study will continue to provide guidance to the Fish Enhancement, Mitigation, and Research Fund via a strategy for fish habitat restoration with a focus of habitats necessary for reproduction. Although numerous species will benefit, the targeted species are northern pike, muskellunge, and walleye. The objectives of the study include: 1) continue to visit and prioritize sites (a minimum of 5 sites per year) for enhancement and to create critical reproductive habitats, 2) continue to develop a toolkit including habitat management options designed to benefit fish reproduction and recruitment processes, 3) continue to develop the GIS spatial database, and 4) evaluate implementation of specific projects by assessing the potential impact of these actions on the fisheries resource (through development of a baseline), and by providing feedback to implementation and design processes.



Lake Sturgeon Restoration

Funding in the amount of \$4,914 was awarded to the New York State Department of Environmental Conservation (NYSDEC, Region 6) for the facilitation of the State's lake sturgeon restoration program. The objective for this project is to obtain 30,000-80,000 fertilized lake sturgeon eggs on an annual basis for a minimum of 3 years. Final fingerling production would be approximately 3,000-8,000 fish per year, measuring 6.5-8 inches in length. Awarded funds will be used for materials associated with the egg-take process to ultimately stimulate recovery of depressed lake sturgeon populations in the St. Lawrence River and Lake Ontario. Materials include the holding facility (tanks/pumps) and LHRHa hormone to induce gamete production. The NYSDEC will provide a report of activities annually.



Effect of Dam Removal on Aquatic Communities in the Salmon River, New York

Funding in the amount of \$99,400 was awarded to Cooper Environmental Research to investigate the effect of dam removal on aquatic communities in the Salmon River, New York. The Fort Covington Dam was removed in July 2009. This post-dam removal study will allow for the testing of predictions made using the pre-dam removal study data, and will provide information on the effects of dam removal on water quality and aquatic communities. The aquatic communities studied will include aquatic macroinvertebrate, unionid, and fish communities. Field sampling will take place in 2010 and 2012, with a final report being completed in 2012.



Evaluation of Threatened, Endangered, and Declining Species of the St. Lawrence River and its Tributaries (Part II)

Funding in the amount of \$96,200 was awarded to the Saint Regis Mohawk Tribe (SRMT) Environment Division for the evaluation of threatened, endangered, and declining species of the St. Lawrence River and its tributaries. Objectives of this study include: 1) locate populations of rare, threatened, and endangered species within the St. Lawrence basin and Akwesasne Territory with the aid of new tools and data to provide the most efficient surveys, 2) estimate their relative abundances and identify the associated optimal habitat conditions, and 3) use those findings to clarify threats and population status and assist with ranking priority areas for protection and possible restoration. The SRMT will focus sampling efforts from Ogdensburg, New York, downstream through the Akwesasne Territory. The scope of the project will include the main St. Lawrence River and tributary habitats up to the first barrier, or 2 km upstream of lotic habitat not influenced by the St. Lawrence River. Field sampling will take place in 2009 and 2010, with a final report being completed in 2011.



Evaluation of Threatened, Endangered, and Declining Species of the St. Lawrence River and its Tributaries (Part I)

Funding in the amount of \$175,250 was awarded to the U.S. Geological Survey (USGS) (Great Lakes Science Center, Tunison Laboratory of Aquatic Sciences) for the evaluation of threatened, endangered, and declining species of the St. Lawrence River and its tributaries. Objectives of this study include: 1) locate populations of rare, threatened, and endangered species within the St. Lawrence basin with the aid of new tools and data to provide the most efficient surveys, 2) estimate their relative abundances and identify the associated optimal habitat conditions, and 3) use those findings to clarify threats and population status and assist with ranking priority areas for protection and possible restoration. The USGS will focus sampling efforts from the head of the St. Lawrence River downstream to Ogdensburg, New York. The scope of the project will include the main St. Lawrence River and tributary habitats up to the first barrier, or 2 km upstream of lotic habitat not influenced by the St. Lawrence River. Field sampling will take place in 2009 and 2010, with a final report being completed in 2011.

2008



Fish Barrier Assessment and Mitigation

Funding in the amount of \$77,500 was awarded to the Service to assess barriers to fish passage in three watersheds: Kent's Creek, Sandy Creek, and Brandy Brook. All barriers, including road culverts and natural and anthropogenic obstructions will be delineated and scored for significance. The barriers will then be prioritized for future removal/replacement.



St. Lawrence River/Lake St. Francis Walleye Spawning Proposal

Funding in the amount of \$17,600 was awarded to the Raisin Region Conservation Authority to identify where in the life cycle of Raisin River/Lake St. Francis walleye that populations are vulnerable, and to identify associated habitat restoration and enhancement measures.



French Creek Restoration/Enhancement

Funding in the amount of \$351,138 was awarded to Ducks Unlimited to implement a long-term strategy for restoration projects by testing potential restoration/enhancement options from the “toolkit” that is being developed. The three areas selected for testing include the French Creek Wildlife Management Area, Pt. Vivian Marsh, and Delaney Marsh. Among the toolkit options to be tested are micro-topography enhancement (excavating potholes and meandering channels), mowing, flooding, establishing stable over-winter levels for muskrat populations, herbicides, and burning. Ducks Unlimited’s partners include the SUNY College of Environmental Science and Forestry and the Service.



Crooked Creek/Butterfield Marsh Acquisition

Funding in the amount of \$262,000 was awarded to the Thousand Islands Land Trust (TILT) for the acquisition of the 354-acre Butterfield Marsh property, which includes 9,500 linear feet of emergent wetlands. This parcel will be added to the existing 1,200 acre Crooked Creek Preserve and managed by TILT.



A Conservation Strategy for Enhancement of Lake Sturgeon

Funding in the amount of \$32,826.00 was awarded to the State University of New York College of Environmental Science and Forestry (SUNY-ESF) for a one year study to determine ecosystem responses to increased lake sturgeon stocking in the upper St. Lawrence River to improve food web dynamics and the overall health and resiliency of the river ecosystem. Products from this feasibility study will include modeling population responses to determine stocking levels; evaluating hatchery facilities needed and related costs; and investigating egg sources, disease risk and genetic concerns. The results of Phase I will determine whether or not stocking levels should be increased and what locations would support an increase (Phase II). Phase III would consist of monitoring population responses to the enhancement actions.



Purchase of an Amphibious Excavator

Funding in the amount of \$320,000.00 was provided to the Service to purchase an amphibious excavator. This unique excavator will to be used for implementing the variety of restoration options identified in Phase I of the Conservation Strategy for Enhancement of St. Lawrence River Native Fish Populations, and is also capable of performing numerous aquatic construction tasks expected to be implemented through the fund.



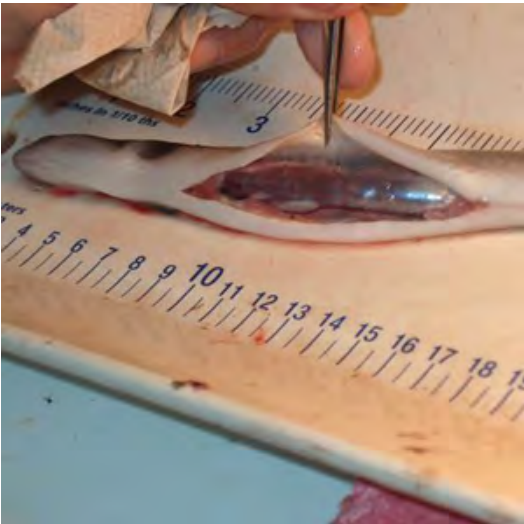
A Conservation Strategy for Enhancement of St. Lawrence River Native Fish Populations

Funding in the amount of \$298,000.00 was awarded to the State University of New York College of Environmental Science and Forestry (SUNY-ESF), to fund Phase I of a multi-year Conservation Strategy to restore northern pike, muskellunge, and walleye populations in the St. Lawrence River. During the next two years, Dr. John Farrell will evaluate quantity and quality of available habitat, create bathymetric maps of suitable spawning habitat, and develop models to provide a toolkit of restoration options. The results of Phase I will determine where implementation (Phase II) should occur to maximize benefits to these native fish populations. Phase III will consist of monitoring population responses to the restoration actions.



French Creek Watershed Protection

A 46-acre parcel adjacent to the French Creek Wildlife Management Area was acquired to enhance the protection of the French Creek watershed for the benefit of fisheries and other water-related species. The FEMRF funded \$70,000 towards the acquisition and \$165,000 was contributed from private donors and a non-governmental organization. The total cost of the acquisition was \$165,000.



American Eel Swimbladder Parasite Research

This 2-year study will examine the presence/absence and dispersion of a swimbladder parasite in American eel along the eastern seaboard of the United States and Canada as well as the St. Lawrence River. This work will provide background information on the distribution and prevalence of the parasite. The FEMRF funded \$22,000 for this project and \$500 was matched with in-kind services, for a total project cost of \$22,500.

Photo credit: K Oliveira



Delaney Bay Wetland Restoration

This project involved creation of a water control structure to maintain a more stable water level regime in this 180-acre wetland area in the upper St. Lawrence River. The FEMRF funded \$75,900 for this project and \$55,000 was matched with funds and in-kind services from private landowners and non-governmental organizations, for the total project cost of \$130,900.



Salmon River Restoration

This project involves removal of the Fort Covington Dam to restore access to 35 miles of the Salmon River for migratory fish, to enhance recreational boating opportunities, to eliminate a public safety concern, and to reduce flooding in the Town of Fort Covington. The FEMRF funded \$75,000 for this project and \$562,000 in matching funds and in-kind services were provided from the Town of Ft. Covington, federal and state agencies, the St. Regis Mohawk Tribe, and non-governmental organizations, for the total project cost of \$637,000.

Photo credit: J Cooper



Reproduction of Lake Sturgeon

This project involved a 3-year program to collect and fertilize eggs from lake sturgeon – a New York State threatened species – in 2006, 2007, and 2008. Young produced from these eggs will be stocked in the St. Lawrence River to enhance the lake sturgeon population. This effort was led by the New York State Department of Environmental Conservation. The FEMRF funded \$54,100 for this project and \$27,350 in matching funds and in-kind services were provided, for the total project cost of \$81,450.

2005



Establishment of the FEMRF

The U.S. Fish and Wildlife Service (Service) made significant progress towards establishing a process for managing the Fish Enhancement, Mitigation and Research Fund (FEMRF) in 2005. At mid-year, the Service hired the Project Manager that was authorized in the FEMRF Settlement Agreement (Agreement). All of the entities named in the Agreement accepted the invitation to join the Fisheries Advisory Committee (FAC), and the FAC was established. The Service convened the first FAC meeting in August 2005. Tasks undertaken by the Service and the FAC in 2005 included development of the FAC Operating Procedures, discussions of draft proposal criteria, and preliminary discussions of ways to solicit proposals, including outreach to the public. During this period of process development, the only activities funded were related to administration of the FEMRF, specifically the Project Manager, FAC meetings, and the National Fish and Wildlife Foundation. A subgroup of the FAC, comprised of former members of the Eel Working Group, was also established to begin discussions on potential areas of research specific to American eel in the St. Lawrence River/Lake Ontario.