LONG ISLAND SOUND STUDY HABITAT RESTORATION INITIATIVE

ANNUAL SUMMARY FOR THE YEAR 2001

Technical Support for Coastal Habitat Restoration

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BACKGROUND

This report summarizes the accomplishments of the Long Island Sound Study's (LISS) Habitat Restoration Initiative (HRI) for year 2001, the fourth year of implementation. The HRI is a bi-state, multi-organizational effort to restore estuarine coastal habitats in Connecticut and New York. The HRI members meet several times a year to discuss progress, share new technologies, and identify emerging issues. In 1997, the LISS HRI established the following goals:

- Restore the ecological functions of degraded and lost habitats;
- Restore at least 2000 acres of coastal habitats and 100 miles of riverine migratory corridor habitat over the next 10 years; and
- Use partnerships to accomplish the restoration objectives and to leverage limited state, local, and federal funds.

Potential restoration sites were identified through interviews with individuals knowledgeable with the states' ecosystems, and the public was provided an opportunity to nominate sites as well. These data were compiled into a Habitat Restoration Geographic Information System and an Access database and published in a brochure called "Restoring Long Island Sound's Habitats." Implementation of restoration projects began in 1998. Twelve priority coastal habitat types have been identified by the HRI members as particularly important to sustaining the living resources of the LIS ecosystem: Tidal Wetlands, Freshwater (non-tidal) Wetlands, Riverine Migratory Corridors, Submerged Aquatic Vegetation, Coastal Grasslands, Intertidal Flats, Estuarine Embayments, Coastal and Island Forests, Shellfish Reefs, Cliffs and Bluffs, Rocky Intertidal Zones, and Coastal Barriers, Beaches, and Dunes.

In 2000, eleven state, federal, municipal and non-governmental organizations signed a Memorandum of Understanding (MOU) that codified their commitment to work cooperatively on the LISS HRI goals. To view the MOU, please visit the LISS website: http://www.longislandsoundstudy.net/archive/misc/mou.pdf. For more information on the habitat restoration initiative, go to: http://www.longislandsoundstudy.net/habitatteam.htm.

The Long Island Sound Study plays a major role in habitat restoration by providing annual funding to the New York State Department of Environmental Conservation's Bureau of Marine Resources and to the Connecticut Department of Environmental Protection's Office of Long Island Sound Programs (OLISP).

In New York, due to limited in-house capacity for construction projects, most restoration projects are being carried out by local governments who have received funding under the 1996 New York State Clean Air / Clean Water Bond Act, Environmental Protection Fund and other state, federal, and private grants. Projects receive technical and planning assistance from state staff, and other members of the Habitat Restoration Workgroup.

The OLISP provides a coordination function for habitat restoration efforts in Connecticut. To that end, four habitat teams have been formed which meet several times a year. These are Tidal Wetlands, Riverine Migratory Corridors, Coastal Barriers/Beaches/Dunes, and Eelgrass (Submerged Aquatic Vegetation). The teams, composed of representatives from federal and state agencies, scientists, and non-governmental organizations, establish annual work plans. The lead agency or organization varies from project to project.

2001 PROGRESS REPORT

Although the ultimate goal of habitat restoration is the implementation of projects, it can take several years of planning, design, obtaining permits and applying for grant funds before a project is ready for construction. For this reason, restoration acreages can vary considerably from year to year, and acreage alone is not a true measure of progress in the field of habitat restoration. Progress is reported by major habitat types with emphasis placed on completed projects. An introduction to each section is provided to summarize the overall work effort.

In calendar year 2001, significant progress was made toward the restoration goals. Three tidal wetland projects were completed, resulting in 24.4 acres restored. Three riverine migratory corridor projects were completed which now provide access to an additional 3.2 miles of migratory passageways. Progress on other habitat types included restoration of 1.0 acres of freshwater wetland, 11 acres of coastal forest, and 5 acres of coastal grassland.

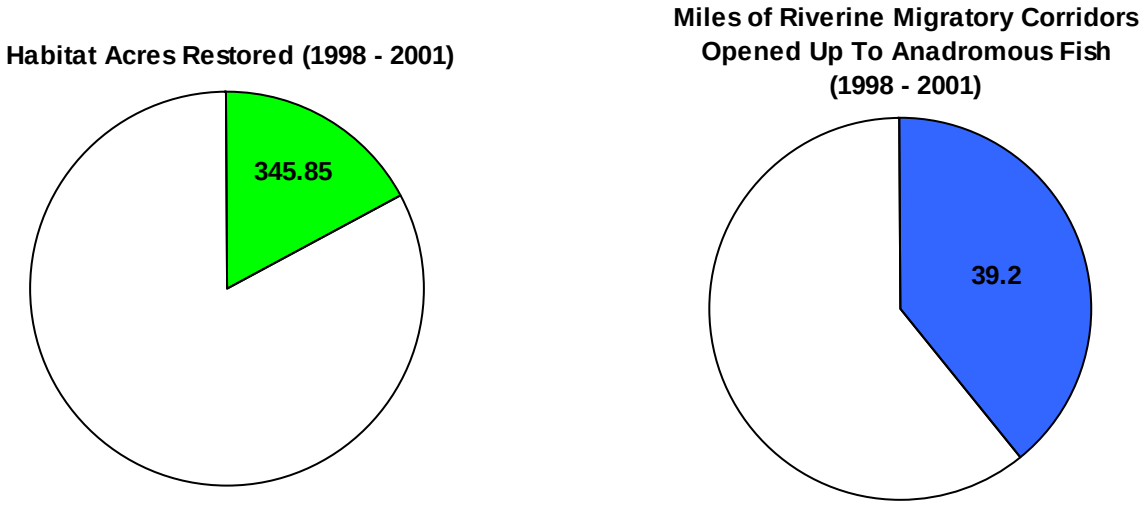


FIGURE 1. Acres and miles restored relative to HRI goals – we are currently at 17.3% and 39.2% of the goals of 2000 acres of coastal habitats and 100 river miles, respectively.

The following sections summarize restoration projects completed in 2001 by the states of Connecticut and New York. The habitat types included are tidal wetlands; riverine migratory corridors; submerged aquatic vegetation; coastal barriers, beaches, and dunes; freshwater wetlands; coastal forest, and coastal grasslands.

TIDAL WETLAND RESTORATION

Three tidal wetland restoration projects were completed in 2001, for a total of 24.4 acres restored:

- Calf Pen Meadow, Milford, CT 17.7 acres
- Tuttles Point, Guilford, CT 6.0 acres
- Pelham Bay Park Lagoon, Bronx, NY 0.7 acres

24.4 acres of tidal marsh

Project summary pages follow.

Completed tidal wetland project acreage for 1998–2001 are presented in **Figure 2.**

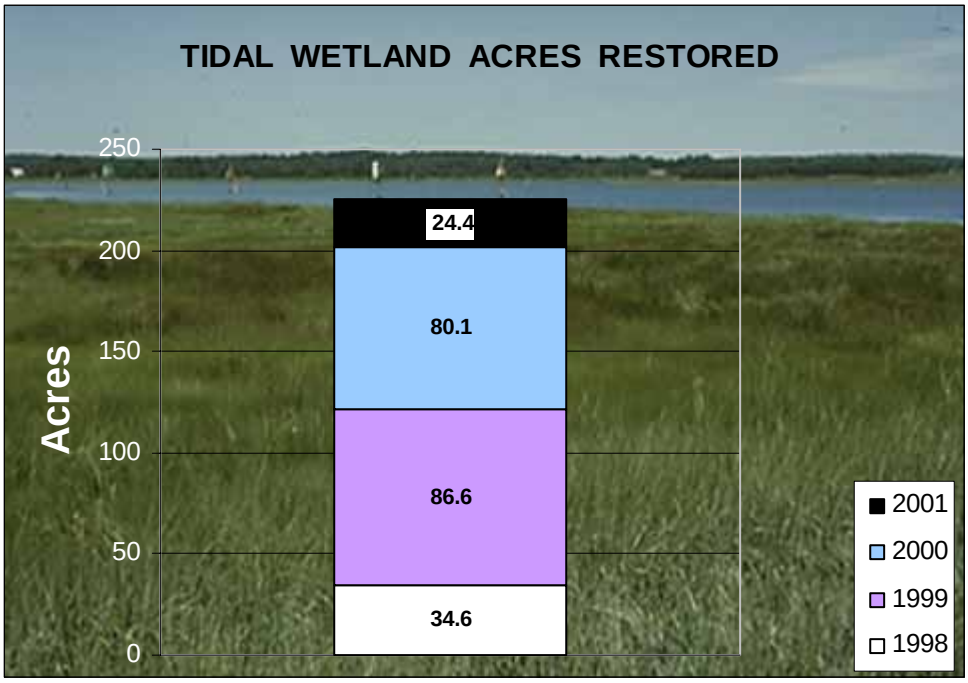


FIGURE 2. Acres of tidal wetlands restored (225.7 acres) between 1998–2001. This updated total differs from the total acres as listed in the 2000 annual report, as it was recently discovered that several completed restoration projects previously had gone unreported.

Additional progress was made on more than 22 other on-going projects in such areas as securing funding, initiating engineering design, and conducting preliminary tidal studies. Some of the highlights include:

- Bride Brook: The Army Corps of Engineers submitted the final project report for the Bride Brook tidal marsh and estuarine embayment at Rocky Neck State Park. This study determined that the existing twin culverts create a hydromodification with deleterious effects upstream. Specifically, the culverts reduce the height of the spring high tides and elevate the position of low tide. Based upon these studies, the Connecticut Department of Environmental Protection is exploring the replacement of the culverts with an open channel.
- Wilson Cove: The Connecticut Department of Environmental Protection assisted the City of Norwalk in completing the first adaptive management phase at Wilson Cove. Specifically, the stone/rubble berm that impeded the drainage of stormwater was removed from the mouth of the creek. Restoration of this marsh began circa 1986, when the town removed the concrete vault chamber that was once used to drain the marsh with a tide gate. Save the Sound was awarded a grant from the NOAA-RAE Partnership to complete the funding for the second phase.

- Great Meadows: Sediment testing, mandated for the fill removal portion of a project in the Great Meadows tidal wetland complex in Stratford, CT, was completed.
- Mill River: An EPA 319 grant was awarded for a design study of the Mill River in New Haven, CT. The study will identify the preferred design alternative to the existing tide gates.
- Five Mile River: A NOAA-RAE Partnership grant was awarded to Save the Sound to design and install a pilot project to restore a drowned marsh on the Five Mile River in Darien.

Phragmites australis *Control*

In marshes that are diked and drained, the non-native genetic strain (haplotype) of common reed (*Phragmites australis*) can become the dominant plant, in large part due to the reduced concentrations of salt and sulfides that are otherwise toxic for this grass. Phragmites invades otherwise healthy natural tidal marshes where the salinity is less than 18 parts per thousand (this includes brackish and tidal fresh marshes). The Connecticut Department of Environmental Protection (CTDEP) is conducting a series of experiments to control Phragmites, including manipulation of the hydromodications caused by mosquito ditches.

One Phragmites control technique is application of the same herbicide that is used in the over-the-counter backyard dandelion herbicide. To date, CTDEP has found that single treatments of glyphosate only are effective for a period of five years or so, after which additional treatment is required. Many wetlands in the Connecticut River that are being invaded are designated as Wetlands of International Importance. Given the wetlands' ecological significance, CTDEP is making a long-term commitment to Phragmites control. Because these treatments are not long lasting, the restoration effort is reported here, but the acreage of wetland treated with herbicide is not included in the cumulative wetland restoration statistics.

A 200-acre Phragmites control project in Lords Cove, Old Lyme, CT, that began in 1999 with spraying herbicide on 150 acres, continued this year with mulching the 150 acres and spraying an additional 40 acres. In cooperation with The Nature Conservancy, a 50-acre Phragmites control project was undertaken in the Lieutenant River, a tributary to the Connecticut River.

In contrast to strictly spraying and mowing operations, projects that include significant modifications to marsh hydrology that result in long-term improvements in fish and wildlife habitat and Phragmites reduction are classified as restoration projects. For instance, there is a large-scale, marsh restoration project underway on a 96.5-acre section of Great Island and Upper Island (part of the Lower Connecticut River tidal marsh complex). Here, different combinations of treatments (creating ponds, plugging ditches, herbiciding and mulching Phragmites) are being tested to determine the most effective method(s) for reducing the amount of Phragmites and enhancing fish and wildlife habitat.

CALF PEN MEADOW RESTORATION

State: Connecticut
Town: Milford
Habitat Type: Tidal Wetland
Acres Restored: 17.7 acres

Cause of Degradation: The cause of degradation at Calf Pen Meadow was a bridge over Calf Pen Meadow Creek that connected Bayshore Drive to Melba Street. Originally built in 1926, the bridge opening's cross-sectional area was too small; it therefore acted as a tidal flow restriction. A pair of tide gates was mounted to this bridge as well, but it is unclear how often they actually were closed.

Project Description: The entire bridge was replaced with a pre-cast concrete, 3-sided box culvert. Restoration of the tidal wetlands upstream of the road was not part of the original plan, but the new opening was 25% greater than the cross-sectional area of the original bridge. This increase in tidal flow that resulted from the larger box culvert has set in motion the gradual restoration of the marsh's functions and values.

Implementation Partners: City of Milford (lead and construction); Connecticut Department of Environmental Protection - Office of Long Island Sound Programs (permitting).

Funding Provided By: City of Milford.

TUTTLES POINT MARSH RESTORATION

State: Connecticut
Town: Guilford
Habitat Type: Tidal Wetland
Acres Restored: 6 acres

Cause of Degradation: The mouth of the tidal creek had become filled with sand and shell hash, resulting in a greatly reduced tidal exchange. Sand had reached approximately 200 feet upstream of the mouth, raising the streambed elevation.

Project Description: To restore tidal exchange in the marsh, sand was excavated from the creek, beginning at the mouth and extending 200 feet upstream. The sand then was placed onto the adjacent beach.

Implementation Partners: Connecticut Department of Environmental Protection - Office of Long Island Sound Programs (lead), and Wildlife Division (construction); Tuttles Point Association; Private Landowners.

Funding Provided By: Connecticut Department of Environmental Protection - Wildlife Division.

The mouth of the tidal creek (arrows) had completely filled with sand after a spring storm in 2000.

Tidal exchange was restored after the sand was excavated and placed onto the adjacent beach.

PELHAM BAY PARK LAGOON MARSH RESTORATION

State: New York
Town: Bronx
Habitat Type: Tidal Wetland
Acres Restored: 0.7 acres

Cause of Degradation: Filling.

Project Description: This project restored tidal flow to a formerly filled marsh dominated by *Phragmites australis*. The fill was excavated to a depth that allows a greater volume of higher salinity water to inundate the site and suppress the *P. australis*, while supporting a low marsh fringe and small section of high marsh. The first 4.3 acres were completed in 2000 during phase 1 of the project, and 0.7 additional acres were completed in 2001.

Area of fill before excavation.

Project area after excavation and planting.

Implementation Partners: New York City Department of Parks and Recreation; New York State Department of Environmental Conversation; and New York State Department of State, Division of Coastal Resources.

Funding Provided By: New York State Department of Environmental Conservation and City of New York.

RIVERINE MIGRATORY CORRIDOR RESTORATION

The Connecticut Riverine Migratory Corridor (RMC) team, led by the Department of Environmental Protection (CTDEP) Inland Fisheries Division, completed three migratory fish passage projects, resulting in the restoration of access to an additional 3.2 river miles for anadromous species of fish. Fishways were built at Pond Lily, Clark Pond, and Lees Pond Dams (project summary pages follow).

New York completed a number of riparian buffer restoration projects, which involved plantings for bank stabilization. New York's portion of the Long Island Sound shoreline presents significantly fewer opportunities for riverine migratory corridor restoration. However, those opportunities that do arise are very important to the overall health of migratory and riverine species, and in the reduction of sediment and nutrients reaching Long Island Sound. Because the projects are riparian or streambank enhancements, and not migratory fish restoration projects that consist of dam removals or fishway installations, the miles for New York's projects are not included in the totals for riverine migratory corridors.

The 10-year goal (1998–2007) for this habitat type is to open up 100 currently inaccessible river miles to diadromous fish. To date, 39.2 river miles have been restored through fish passage projects, such as dam modifications or dam removal. River mileage for projects completed in 1998–2001 is presented in **Figure 3**.

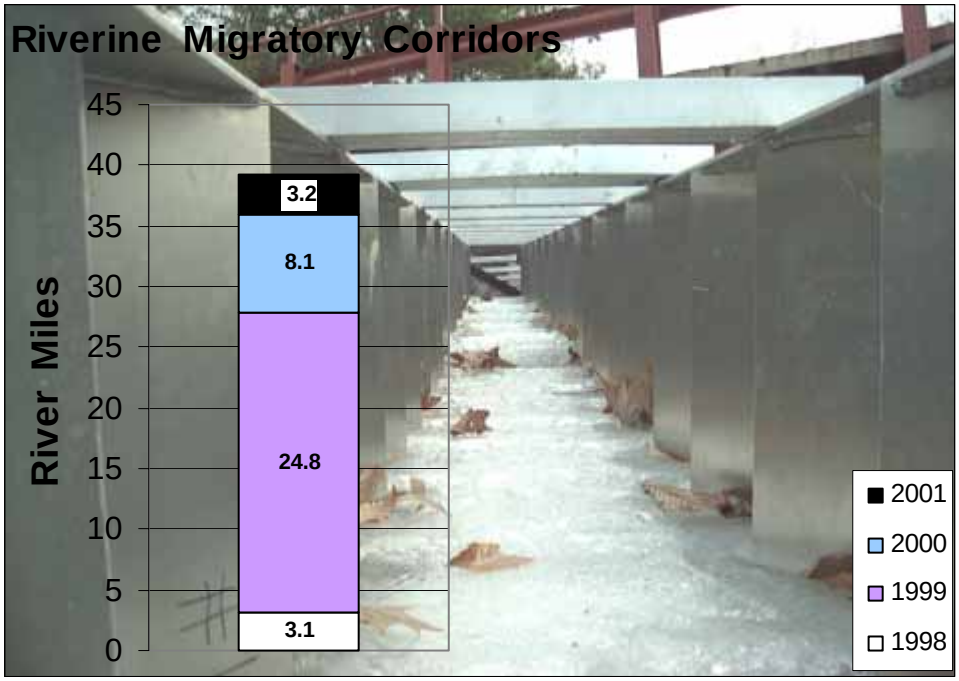


FIGURE 3. Cumulative river mileage (39.2 miles) for projects completed between 1998–2001. This updated total differs from the total miles as listed in the 2000 annual report, as it was recently discovered that several completed restoration projects previously had gone unreported.

The RMC team also worked on 17 other projects that were in various stages of development. Highlights of progress include:

- Naugatuck River: Final design was completed on a fish and canoe bypass at the Tingue Dam, Naugatuck River, Seymour, CT.
- Jordan Brook: Final Design was completed for a proposed steeppass fishway at the Jordan Millpond Dam on Jordan Brook, Waterford, CT.
- Norwalk River: Preliminary design and cost estimate were completed for proposed dam removal at Merwin Meadows Dam on the Norwalk River.

POND LILY DAM FISHWAY

State: Connecticut
Town: New Haven
Habitat Type: Riverine Migratory Corridor
Stream Name: West River
Miles Restored: 0.8 miles opened up to migratory fish

Cause of Degradation: A five-foot high dam, the first on the West River.

Project Description: Construct a steeppass fishway that allows fish to pass beyond the dam into Lily Pond, and further upstream into Konold's Pond, which is excellent spawning and nursery habitat. A pre-fabricated aluminum exit and turn pool was bolted to the notched concrete spillway. That unit includes a viewing window that can be locked shut when not in use. Two steeppass fishway units extend downstream at a 1 on 5 slope and run parallel to the dam's spillway. Two large concrete blocks stabilize the entrance of the fishway.

Targeted Fish Species: Alewives, blueback herring, sea lamprey, and sea-run brown trout.

Implementation Partners: New Haven Land Trust (lead); Connecticut Department of Environmental Protection - Inland Fisheries Division; U.S. Department of Agriculture - Natural Resources Conservation Service.

Funding Provided By: U.S. Fish and Wildlife Service Southern New England - New York Bight Coastal Program; Long Island Sound Fund ("License Plate Fund") as administered by the Connecticut Department of Environmental Protection – Office of Long Island Sound Programs; Corporate Wetland Restoration Partnership; and Natural Resources Conservation Service WHIP (Wildlife Habitat Incentive Program) grant.

A view of the fishway installed on the Pond Lily Dam, looking upstream (north) into Lily Pond.

CLARK POND DAM FISHWAY

State: Connecticut
Town: Milford
Habitat Type: Riverine Migratory Corridor
Stream Name: Indian River
Miles Restored: 0.7 miles opened up to migratory fish

Cause of Degradation: A town-owned fishway on the Indian River in Milford did not function as intended and repairs were needed.

Project Description: An existing town-owned steeppass fishway on the Indian River in Milford did not function as intended and repairs were needed. Clark Pond was restored (after the flood of 1982 destroyed the dam/road) by building an earthen causeway across the brook, which is passed via two box culverts. Attached to the upstream end of each culvert is a concrete, 5-foot high, rectangular drop structure. Five sets of channels were lagged into the walls of the eastern drop structure and weir boards were inserted to create a series of pools, each 9 inches higher than the previous one. Offset baffles (6" x 6") were installed in the floor of the culvert downstream of the drop structure to allow fish to approach that pool-and-weir fishway. There is also netting draped over the wall to assist elvers with climbing over the damp walls.

Targeted Fish Species: Alewife, blueback herring, white perch, American eel, sea-run brown trout.

Implementation Partners: Save the Sound, Inc. (lead); Connecticut Department of Environmental Protection - Inland Fisheries Division; Town of Milford; National Oceanic and Atmospheric Administration (NOAA) – Restoration Center.

Funding Provided By: Save the Sound/NOAA Partnership Funds - Restore America's Estuaries Program.

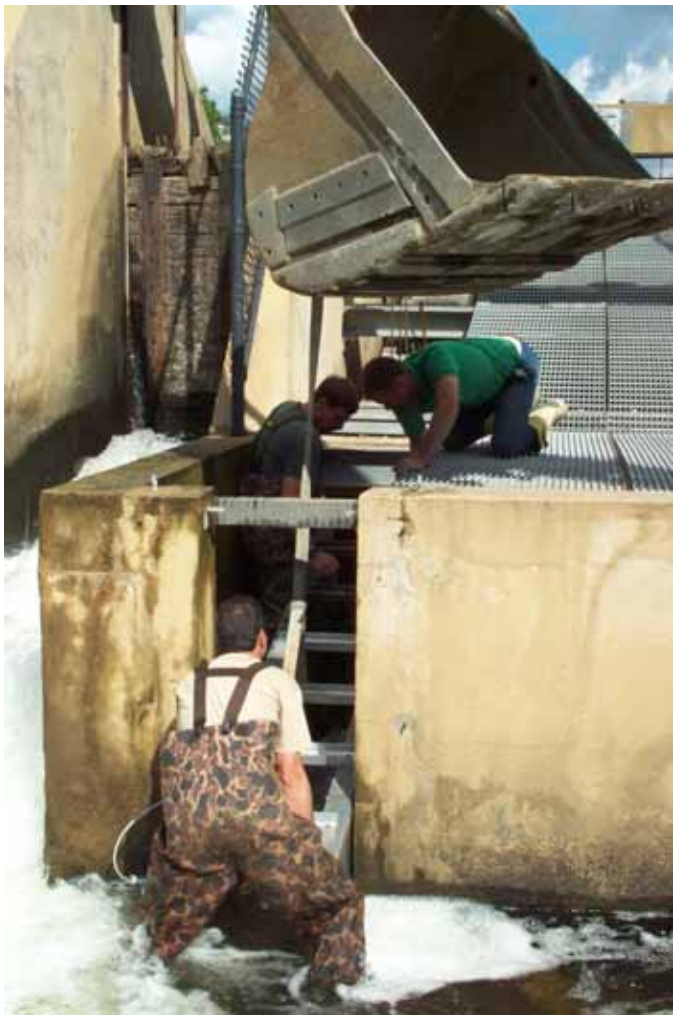
Clark Pond Dam Fishway as seen from above.

LEES POND DAM FISHWAY

State: Connecticut
Town: Westport
Habitat Type: Riverine Migratory Corridor
Stream Name: Saugatuck River and West Branch Saugatuck River
Miles Restored: 1.7 miles opened up to migratory fish (including 0.5 miles of West Branch Saugatuck River)

Cause of Degradation: A state-owned fishway on the Saugatuck River in Westport was too steep and did not function to pass fish as intended.

Project Description: Rehabilitation of an existing steeppass fishway: an additional section of steeppass was installed on the existing fishway to reduce the slope and improve fish passage. The 1 on 3 slope of the fishway was reduced to 1 on 4 and an additional unit of steeppass fishway was added to the bottom of the fishway. The fishway exit was raised 15 inches to improve water control. An eel pass also was added to the facility. Improvements were made to the access and appurtenances.



Targeted Fish Species: Alewife, blueback herring, and sea-run brown trout.

Implementation Partners: Save the Sound, Inc. and Trout Unlimited (lead agencies); Connecticut Department of Environmental Protection - Inland Fisheries Division; Westport YMCA; National Oceanic and Atmospheric Administration (NOAA) – Restoration Center.

Funding Provided By: Save the Sound via the NOAA Restoration Center's Community-Based Restoration Program partnership with the Fish America Foundation; Connecticut Department of Environmental Protection - Supplemental Environmental Project (SEP) funds; Westport YMCA.

CTDEP Inland Fisheries staff install a new unit of steeppass to improve fish passage at Lees Pond Dam, in the Saugatuck River, Westport, CT.

SUBMERGED AQUATIC VEGETATION (SAV)

Eelgrass Update

In 2001, Connecticut Department of Environmental Protection (CTDEP) was awarded a grant by the EPA Long Island Sound Study to re-map eelgrass (*Zostera marina*) in eastern Long and Fishers Island Sounds in New York and Connecticut. The National Wetlands Inventory Program staff of the U.S. Fish and Wildlife Service will use the funds to (a) acquire low-altitude aerial photography, (b) perform photointerpretation of eelgrass beds, and (c) ground-truth those areas interpreted as possible eelgrass beds. Aerial photography was scheduled for June of 2002. The results of this survey will be compared to mapping of eelgrass that was done during 1993 and 1994 to identify trends (gains/losses) in LIS eelgrass beds, and potentially identify restoration opportunities.

The SAV restoration team has not yet begun implementing restoration projects. The current data are insufficient to show that water quality is adequate to sustain new eelgrass beds. There are many examples of failed projects from other states where planting was done without an adequate understanding of eelgrass' water quality requirements.

Water Chestnut Removal

Restoration of the Hockanum, Connecticut, and Podunk Rivers

CTDEP completed a third year of control efforts for the highly invasive aquatic plant, water chestnut (*Trapa natans*). Water chestnut was first documented in Connecticut in 1999, when it was discovered in Keeney Cove, a freshwater tidal cove of the Connecticut River in Glastonbury. Infestations in the Hockanum River and Podunk River were first treated in 2000. Although these infested sites are well outside the LISS Project area, there is a real possibility that the weed could spread to the tidal coves of the lower Connecticut River.

During a two-day period in July 2001, all water chestnut plants were removed from the Connecticut and Hockanum rivers by aquatic weed harvester and hand-pulling. Eight CTDEP employees and four non-agency volunteers participated. Removal of water chestnut before the plants can drop seeds is proving to be a very effective means of controlling this non-native invasive plant. Last year's removal efforts yielded an estimated 50 tons (wet weight) of plant material. This year the total harvest amounted to only 4.25 tons (a 91% decrease in the biomass of plants). No plants were found this year in Vinton's Millpond, an impoundment in the Podunk River, South Windsor, CT.

Water Chestnut Expansion

A new infestation of water chestnut was found in Budd's Pond in Eastford, CT. Details about the extent of the infestation and biomass of water chestnut removed are unknown. Control efforts are being coordinated by the Eastford Conservation Commission.

The use of a mechanical aquatic weed harvester was needed to help remove the bulk of the water chestnut infestation from the Hockanum River in 2000 and 2001.

COASTAL BARRIERS, BEACHES, AND DUNES

In July of 2000, the Connecticut Department of Environmental Protection assembled a committee to oversee the restoration of barrier beaches, dunes and coastal grassland. Short-term goals of the group include identifying potential restoration sites by on-site evaluation and assigning priority. The main causes of degradation identified thus far are loss of vegetation due to human disturbance (trampling of vegetation) and displacement of native vegetation by invasive weeds.

A beaches and dunes geographic information system (GIS) project, created to simplify sharing information with team members, will be used to set restoration priorities. Updates to the GIS project in 2001 include a functioning linking tool which allows access to scanned photos, summary reports, and other documents of particular restoration sites with a simple point and click interface.

- Sheffield Island: In 2000, a University of Connecticut graduate student completed a comprehensive inventory of invasive weeds on Sheffield Island in Norwalk, CT.

In September of 2001, the coastal barriers, beaches and dunes committee visited Sheffield Island to evaluate the conditions of the cobble and sandy beach, as well as the adjacent coastal forest system. Invasive weeds (e.g. Asiatic bittersweet and winged euonymus) have overrun several portions of the island, and birds are utilizing several species of invasives for nesting. Heavy grazing by the local deer population is making it even more difficult for native grasses and shrubs to compete with the invasive species.

In 2003, the U.S. Fish and Wildlife Service Region 5 office will develop a Comprehensive Conservation Management Plan (CCMP) for the entire Stewart B. McKinney National Wildlife Refuge, to which Sheffield Island belongs. The refuge office will receive input on future restoration plans and priorities at that time from its stakeholders and partners. A restoration plan for Sheffield Island, which focuses on invasive species, is not a priority until the current vegetation and its relationship to migratory birds are better understood.

No dune restoration projects were completed in either New York or Connecticut during 2001.

FRESHWATER WETLAND RESTORATION (non-tidal)

In New York, one freshwater wetland restoration project was completed during 2001, for a total of 1.0 acres restored (project summary follows), while several other projects were in various stages of development. No freshwater wetland restoration projects were completed in Connecticut. The State of Connecticut currently has no program dedicated to the restoration of freshwater (non-tidal) wetlands.

The following freshwater wetland restoration project was completed in 2001:

- Alley Pond Park: Douglaston (Queens), NY 1.0 acres of freshwater wetland

ALLEY POND PARK FRESHWATER WETLAND RESTORATION

State: New York
Town: Douglaston (Queens)
Habitat Type: Freshwater Wetland
Acres Restored: 1 acre

Cause of Degradation: Non-native plant species dominated the three kettle pond margins, allowing the slope to destabilize. The destabilized slope, in turn, contributed large amounts of sediment, excess nutrients, and other non-point source pollutants to the three kettle ponds, and eventually to Little Neck Bay.

Project Description: Non-native species were removed, including multiflora rose, Asiatic bittersweet, and Norway maple. Jute fabric was placed on the bare slopes surrounding the ponds, which then were planted with native herbaceous plants. A cedar railing also was installed along a pedestrian walkway to focus foot traffic away from the slopes. Additional sedimentation control methods were used, including a cellular confinement system planted with native grasses, adjacent to one of the kettle ponds.

Implementation Partners: New York State Department of Environmental Conservation; City of New York, New York City Department of Parks and Recreation; New York State Department of State, Division of Coastal Resources; and Alley Pond Environmental Center. Additional volunteers from New York University, Mineola High School, and Boy Scouts of America assisted with the project.

Funding Provided By: New York State Department of Environmental Conservation and City of New York.

Upland edge of the freshwater wetlands at Alley Pond Park.

COASTAL FOREST RESTORATION

In New York, two coastal forest restoration projects were completed during 2001, for a total of 11 acres restored, while several other projects were in various stages of development. No coastal forest restoration projects were completed in Connecticut. The State of Connecticut currently has no program dedicated to the restoration of coastal forest habitat.

The following coastal forest restoration projects were completed in 2001:

- Pelham Bay Park: Bronx, NY 5.0 acres
- Alley Pond Park: Douglaston (Queens), NY 6.0 acres

11.0 acres of coastal forest

PELHAM BAY PARK FOREST INITIATIVE

State: New York
Town: Bronx
Habitat Type: Coastal Forest
Acres Restored: 5 acres

Unfortunately, there is no additional information available regarding the restoration of this site.

Cause of Degradation:

Project Description:

Implementation Partners:

Funding Provided By:

ALLEY POND PARK COASTAL FOREST RESTORATION

State: New York
Town: Douglaston (Queens)
Habitat Type: Coastal Forest
Acres Restored: 6 acres

Cause of Degradation: Non-native plant species dominated the upland habitat surrounding the kettle ponds of Alley Pond Park, impeding the ability of native species to grow successfully.

Project Description: The non-native species were removed, including multiflora rose, Asiatic bittersweet, and Norway maple. In the case of Norway maple, some individual trees were girdled; resulting die-back would allow sunlight to penetrate the canopy. Red oak, tulip trees, and black birch were planted to provide a new tree canopy, and shrubs were planted to provide a healthy understory. Planted shrub species include elderberry and arrowwood viburnum.

Implementation Partners: New York State Department of Environmental Conservation; City of New York, New York City Department of Parks and Recreation; New York State Department of State, Division of Coastal Resources; and Alley Pond Environmental Center. Additional volunteers from New York University, Mineola High School, and Boy Scouts of America assisted with the project.

Funding Provided By: New York State Department of Environmental Conservation and City of New York.

A view of the planted understory of Alley Pond's forest. Photo provided by New York City Department of Parks and Recreation, Natural Resources Group.

COASTAL GRASSLAND RESTORATION

In New York, one coastal grassland restoration project was completed during 2001, resulting in the restoration of 5 acres of habitat, while several other projects were in various stages of development. No coastal grassland restoration projects were completed in Connecticut. The State of Connecticut currently has no program dedicated specifically to the restoration of coastal grassland habitats.

The following coastal grassland restoration project was completed in 2001:

- Pelham Bay Park, Bronx, NY 5.0 acres of coastal grassland restoration

PELHAM BAY PARK GRASSLAND

State: New York
Town: Bronx
Habitat Type: Coastal Grassland
Acres Restored: 5 acres

Unfortunately, there is no additional information available regarding the restoration of this site.

Cause of Degradation:

Project Description:

Implementation Partners:

Funding Provided By: