2007-2011 GOMC–NOAA Action Plan Cycle

HABITAT RESTORATION HIGHLIGHTS

Focus on New Hampshire

Gulf of Maine Council on the Marine Environment

Habitat Restoration

Patterns of land and water use in the Gulf of Maine region over hundreds of years have changed the structure and functioning of watersheds and nearshore systems, many of which now experience impaired tidal and stream flow, blocked fish passage, and colonization by invasive species. The practice of habitat restoration seeks to return impaired salt marshes, streams, and shellfish flats to diverse, productive natural systems that are the foundation of our coastal economy.

Economic Implications

Habitat restoration not only addresses impaired ecological conditions that influence the well-being of people, but also provides local economic benefits. Restoration of our coasts and estuaries involves planning, engineering, and on-the-ground construction work relying on skills and machinery from the local workforce. As a result, money spent on physical habitat restoration stays in the local economy. By way of example, over 80 cents of each dollar spent on watershed restoration projects in Oregon stayed in the county where the project was located, and over 90 cents of every dollar spent stayed in the state.

Gulf-wide Impacts of the GOMC–NOAA Habitat Restoration Program

Supported by NOAA and matching funds from across the Gulf, the GOMC-NOAA Habitat Restoration Partnership provides grants and technical assistance supporting community-based restoration. The Partnership is implemented with assistance from GOMC Habitat Restoration Subcommittee members representing each of the Gulf's jurisdictions. Most projects focus on feasibility/design, construction, and/or monitoring phases of projects seeking to remove barriers to tidal flow and/or fish passage.

For more information: http://restoration.gulfofmaine.org

The mission of the Gulf of Maine Council on the Marine Environment is to maintain and enhance environmental quality in the Gulf of Maine to allow for sustainable resource use by existing and future generations.

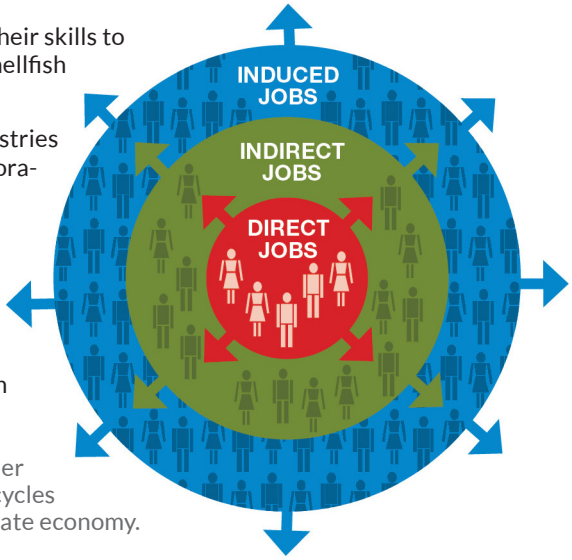
How Restoration Creates Jobs

Restoration improves coastal habitats (left), which have great value for fisheries and many other industries. Restoration projects also help local economies by creating jobs (right). Three different types of jobs are created:

DIRECT JOBS: People using their skills to restore damaged wetlands, shellfish beds, and fish passages.

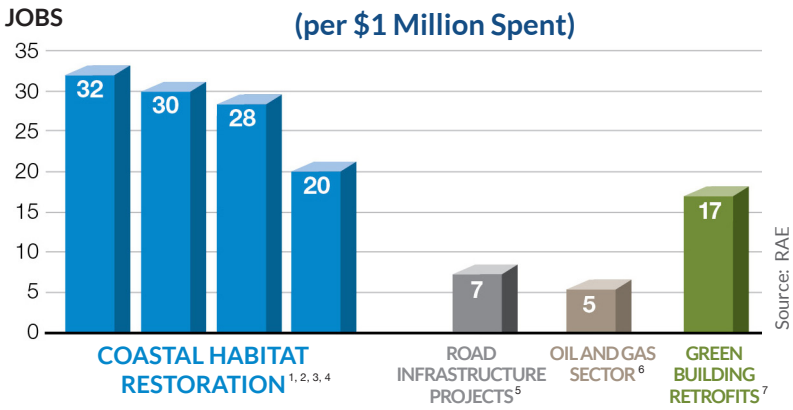
INDIRECT JOBS: Jobs in industries that supply materials for restoration projects, such as lumber, concrete, and nursery plants.

INDUCED JOBS: Jobs in businesses that provide local goods and services, such as clothing and food, to people working on restoration projects.



This is multiplied by other economic activity as it cycles through the local and state economy.

Habitat Restoration Creates More Jobs (per $1 Million Spent)



[1] NOAA Restoration Center; ARRA Economic Impact Summary Report (In preparation)
[2] http://www.doi.gov/news/pressreleases/2010_02_23_release.cfm
[3] http://www.americanprogress.org/issues/2011/02/pdf/beyond_recovery.pdf
[4] http://wilderness.org/files/Green-Jobs-Fact-Sheet.pdf
[5] http://www.bikeleague.org/resources/reports/pdfs/baltimore_Dec20.pdf
[6] http://www.americanprogress.org/issues/2011/02/pdf/beyond_recovery.pdf
[7] http://adpartners.org/tables/Job_Creation_for_Investment_-_Garrett-Peltier.pdf

HABITAT RESTORATION HIGHLIGHTS
Focus on New Hampshire

During the 2007-2011 GOMC Action Plan cycle the Partnership contracted forty-nine new projects (annual range: 8-12 projects) and managed a total of 62 projects (13 originated during the previous cycle), of which 48 were completed and 14 are underway (Figure 1). Grant awards made to projects managed during this period totaled $2.5 million, with $3.8 million in matching non-federal support (Figure 2). Annual total funds awarded each year ranged from $306-510K.

Fig. 1: Projects Completed and Underway

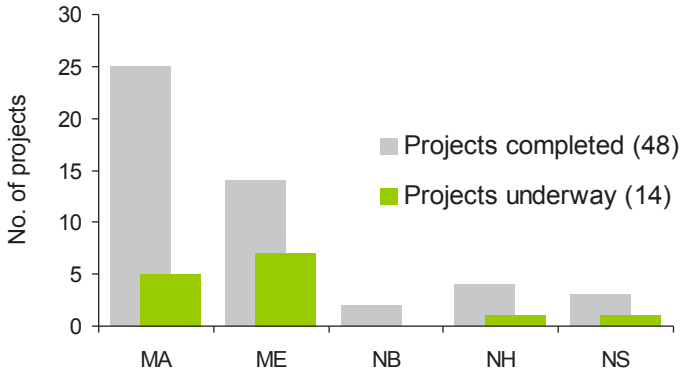
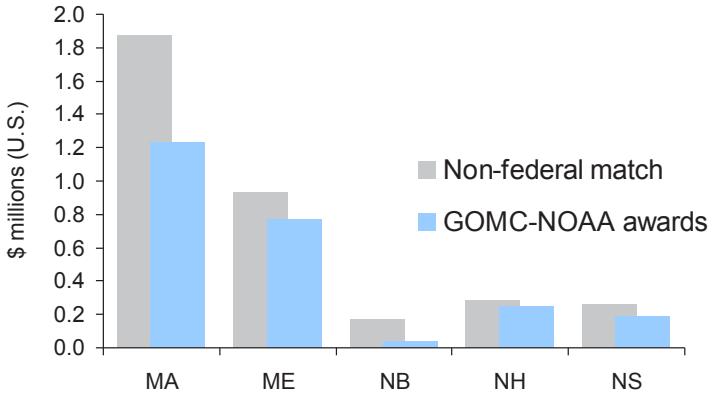


Fig. 2: Project Awards and Matching Funds



Habitats Restored

Projects completed during the 2007-2011 Action Plan cycle restored 335 salt marsh acres and approximately 126 miles of barrier-free streams, in addition to improving other subtidal, intertidal, and channel-riparian habitats (Table 1). The projects opened an estimated 145 miles of streams to fish passage and made 1,562 acres of lakes re-accessible to spawning alewife (Table 2).

Notes: Potential tributary miles listed are potential minimums, when road barrier surveys have not been conducted and because most projects before 2010 did not calculate network length including tributary streams. The length of upstream tributary opened to fish passage is often less than reported due to road-stream crossings that are barriers to fish movements. The tables do not show numbers for non-construction grants that advanced projects toward subsequent implementation.

Table 2: Fish passage improvements through GOMC-NOAA project contributions from 2007 through 2011, by project status (completed or active as of December 2011).

State / Province	Stream miles (minimum)		Stream miles (potential)		Alewife spawning acres	
	Completed	Active	Completed	Active	Completed	Active
MA	2.0	0.2	2.0	0.2	20.9	0.0
ME	47.3	4.5	129.0	4.5	1541.0	219.0
NB	0.0	0.0	0.0	0.0	0.0	0.0
NH	14.0	7.0	14.0	7.0	0.0	0.0
NS	0.0	4.2	0.0	7.8	0.0	0.0
Total	**63.3**	**15.9**	**145.0**	**19.5**	**1561.9**	**219.0**

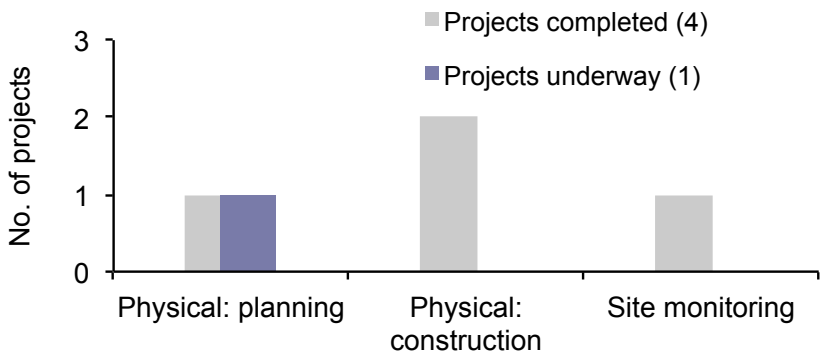
Table 1: Acres and miles of habitats restored or enhanced through GOMC-NOAA project contributions from 2007 through 2011, by project status (completed or active as of December 2011).

State / Province	Subtidal acres (non-stream)		Intertidal acres (non-marsh)		Intertidal acres (salt marsh)		Channel-riparian acres		Channel-riparian miles		Barrier-free stream miles (minimum)		Barrier-free stream miles (potential)	
	Completed	Active	Completed	Active	Completed	Active	Completed	Active	Completed	Active	Completed	Active	Completed	Active
MA	8.0	10.7	0.0	0.3	135.0	5.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2
ME	0.1	0.0	0.0	0.0	200.0	17.0	1.0	4.0	0.0	0.2	30.4	4.5	111.9	4.5
NB	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.6	0.0	0.0	0.0	0.0	0.0
NH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	14.0	7.0	14.0	7.0
NS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	4.2	0.0	7.8
Total	**8.1**	**10.7**	**0.0**	**0.3**	**335.0**	**22.0**	**1.7**	**6.6**	**0.9**	**0.2**	**44.4**	**15.9**	**125.9**	**19.5**

NEW HAMPSHIRE FOCUS

Five restoration grants awarded to New Hampshire organizations were managed by Partnership Project Teams during the 2007-2011 Action Plan cycle (Figure 3). Two projects focused on dam removals benefitting streams and the species that depend on those systems. The remaining projects conducted site-specific feasibility and planning for stream barrier removals. Total awards and value of matching contributions for New Hampshire grants completed and underway during the 2007-2011 cycle are $251,000 and $581,654 respectively.

Fig. 3: New Hampshire Projects 2007-2011



Project Highlight: Merrimack Village Dam Removal *Merrimack Village, New Hampshire*

Since the 1730s, a series of dams at the same Souhegan River site in Merrimack Village provided power for a variety of industrial activities including manufacture of milled grain, lumber, cotton, nails, wool, and shoes. During that same period, the Merrimack Village dams had also blocked passage of long-distance resident fish species and long-distance migrants like Atlantic salmon, American shad, and alewife for over 250 years. With time, the old mill buildings were removed and the Merrimack Village Dam fell out of use and into disrepair. After the New Hampshire Department of Environmental Service's Dam Bureau determined that the structure did not meet dam safety criteria, the dam owner determined that the costs of repair and maintenance exceeded that dam's utility.

Before (left) and after (right) removal of the Merrimack Village dam.

Planning and execution of the dam removal was led by the New Hampshire Department of Environmental Services Dam Bureau with a $75,000 GOMC-NOAA Partnership grant (value of matching contributions: $84,660) and other support. The project resulted in re-establishing fish access and free flowing conditions to over 14 miles of river.

Key project contributors:

- Pennichuck Water Works
- U.S. Fish & Wildlife Service
- NOAA Restoration Center
- NOAA-Open Rivers Initiative
- American Rivers
- New Hampshire Department of Environmental Services
- New Hampshire Department of Fish and Game
- New Hampshire Corporate Wetlands Restoration Program
- Coastal Conservation Association – New Hampshire

Project Highlight: Exeter River Great Dam Removal Impact Analysis/Feasibility Study *Exeter, New Hampshire*

The Town of Exeter has owned the Exeter River Great Dam since 1981, which was constructed in 1914, although historic documentation indicates that there has been a dam of some sort at the site since the 1600s. Much like other dams, this structure has long-generated discussions regarding public safety, flooding, ecological, and economic concerns. Used as an alternative water supply and for recreation, the dam allows some upstream passage of diadromous fish, but there are not passage facilities for American eels. Likewise, efficient downstream fish passage is not provided. In addition to fish passage concerns, waters impounded by the Exeter River Great Dam are impaired due to low dissolved oxygen levels. Furthermore, the dam may represent a liability to the Town and local community because of its deteriorated condition and predicted inability to pass runoff resulting from a 50-year storm. To meet established safety standards, the Town would need to modify the existing dam at considerable cost and then maintain it in a functional condition.

As a result of these concerns, citizens voted to partially support a study that would allow them to make a well-informed decision on the dam's fate. In 2010, the GOMC-NOAA Habitat Restoration Partnership contributed to the dam removal feasibility study and impact analysis by awarding the Town of Exeter with a $40,000 grant (predicted non-federal match value: $45,000). The study, scheduled for completion in late-fall 2012, will provide information focused on site characteristics, ecological and socio-economic considerations. If the study suggests that removal of the dam is warranted and the public selects that alternative, an "on-the-ground" restoration phase could re-establish upstream fish access to 8 mainstem river miles and considerably more tributary miles. The river reach subject to free-flowing conditions will also be increased, as will the connectivity between the river and estuary. Each of these consequences will compliment the decades of investment made in restoration of this river by state agencies. Along with the Town of Exeter, key project partners include The New Hampshire Department of Environmental Services' Dam Bureau and Watershed Assistance Section, NOAA Restoration Center, US Fish and Wildlife Service, and New Hampshire Fish and Game Department.

Exeter River Great Dam