2007-2011 GOMC–NOAA Action Plan Cycle

HABITAT RESTORATION HIGHLIGHTS

Focus on Massachusetts

Gulf of Maine Council on the Marine Environment

NOAA — National Oceanic and Atmospheric Administration — U.S. Department of Commerce

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.

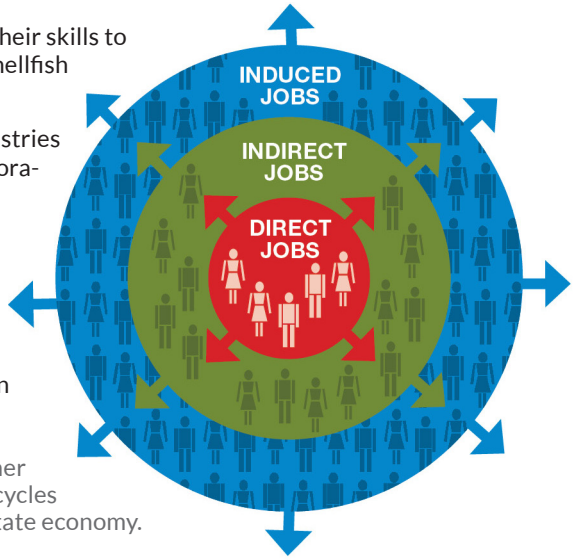
How Restoration Creates Jobs

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.

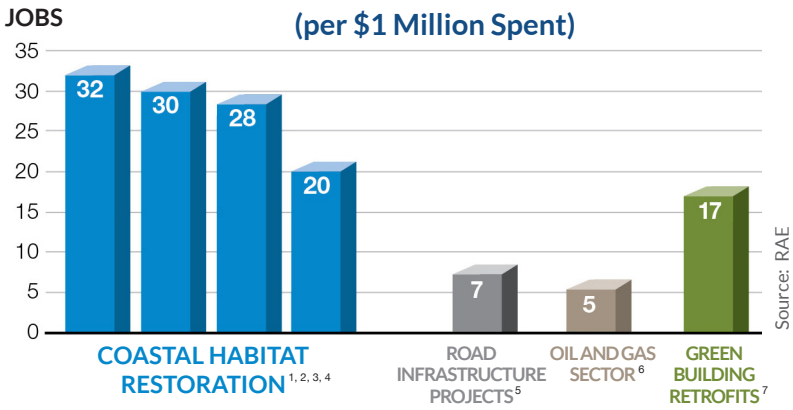
INDIRECT JOBS: Jobs in industries that supply materials for restoration projects, such as lumber, concrete, and nursery plants.

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
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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

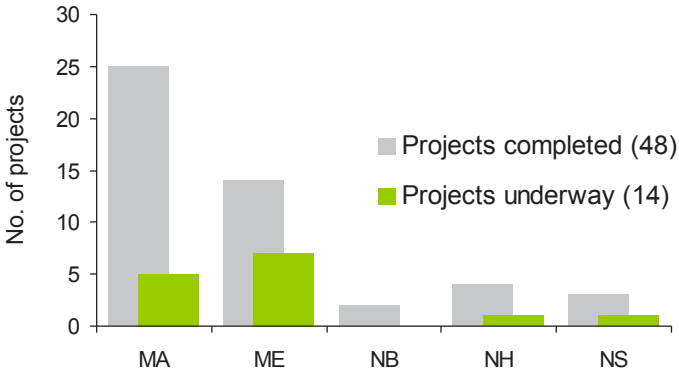
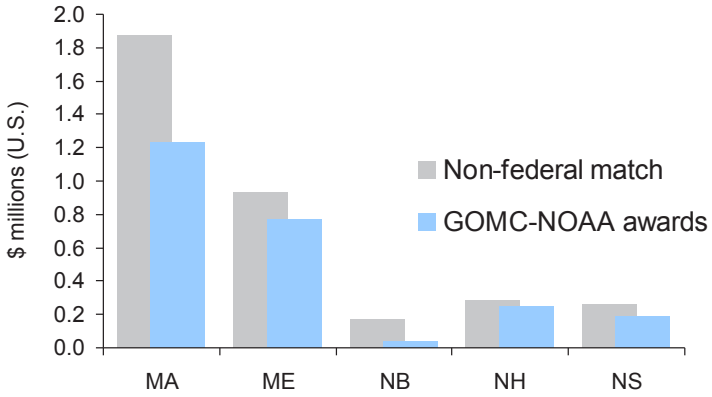


Fig. 2: Project Awards and Matching Funds



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**

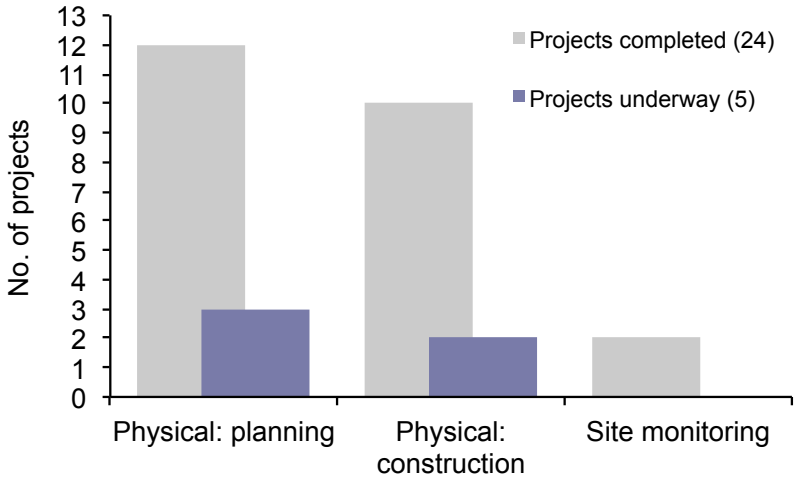
Table 1: Acres and miles of habitats restored or enhanced through GOMC-NOAA project contributions from 2007 through 2011, by project status (completed or active as of December 2011).

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**

MASSACHUSETTS FOCUS

Twenty-nine Massachusetts restoration projects were managed by Partnership Project Teams during the 2007-2011 Action Plan cycle (Figure 3). Most (27) projects focused on barrier removal planning or construction benefitting salt marshes, streams, and the species that depend on these systems. Other projects conducted monitoring to assess shifts in ecological structure and function at select coastal restoration sites. Projected awards and the value of matching contributions for Massachusetts projects completed and underway during the 2007-2011 cycle are $1,227,459 and $1,866,496, respectively.

Fig. 3: Massachusetts Projects 2007-2011



Project Highlight: Newman Road Salt Marsh Restoration *Newbury, Massachusetts*

The Newman Road crossing of a tidal tributary to the Little River in Newbury dates back at least to the 1890s and possibly much further to the early days of salt marsh haying. In recent times, flow beneath the crossing was conveyed by an aging 48-inch diameter culvert. The undersized structure pinched the flow of incoming tide, restricting drainage as well as the peak tide height within the upstream marsh. This allowed invasive plant communities to colonize the system and reduced its ability to support fish and wildlife. Pinching the flow also increased water velocities moving through the culvert, limiting upstream movements of fish and causing severe erosion and scouring. The culvert also represented a barrier to upstream fish passage because the structure was perched above the stream.

Before (left) and after (right) replacement of the Newman Road crossing. The old culvert interfered with tidal flow, which allowed invasive plants to colonize the marsh and reducing the habitat's ability to support fish and wildlife. The culvert was also a barrier that blocked fish from swimming upstream.

With a $60,000 GOMC-NOAA Partnership grant (value of match contributions: $84,182) and support from other key organizations, including the Massachusetts Division of Ecological Restoration (DER), the Town of Newbury replaced the existing crossing with a 6-foot x 12-foot box culvert in 2010. The project restored natural tidal range to the upstream marsh, eliminated impounded waters, and reduced channel velocities and marsh erosion during ebb and flood tides. Key to the town's interests, the project also addressed the aging infrastructure that degraded the road's structural integrity.

In addition to the GOMC-NOAA Partnership grant, key contributions to the project were provided by: a $400,000 North American Wetlands Conservation Act grant secured by Essex County Greenbelt Association and DER, NOAA-Restore America's Estuaries-Conservation Law Foundation Partnership, Town of Newbury, NOAA Restoration Center, U.S. Fish and Wildlife Service, Massachusetts Corporate Wetlands Restoration Partnership, and The Trustees of Reservations.

Project Highlight: South Middletown Dam Removal Study *South Middleton, Massachusetts*

With the construction of dams on the Ipswich River, once bountiful migratory fish runs were faced with a devastating loss of access to upstream spawning habitat. The dams, which were built to power industry, no longer serve their intended purpose, but continue to block the movements of fish, drown historical riffles and natural rapids, and represent a source of water quality degradation. Removing the Ipswich River dams is a multi-year process requiring careful consideration of ongoing ecological, economic, and potential public safety impacts weighed against the costs of repairing/maintaining the dams and also the potential short-term ecological impacts associated with dam removal in an industrial landscape. Dam removal feasibility studies provide local communities and dam owners with thoughtful consideration of these factors and how best to proceed.

South Middleton Dam blocking downstream flow (left) and choked with vegetation (right).

Concerned with long-term maintenance, liability and environmental costs, owners of the South Middleton Dam began exploring removal of the 100 year-old, 110-foot long structure. In 2009 the GOMC-NOAA Habitat Restoration Partnership awarded Ipswich River Watershed Association with a $21,000 grant (match value: $21,762) to study the feasibility of removal. With completion of the study, project proponents have the information necessary for moving to the next phase of restoration, which would result in re-establishing river herring and eel access to nearly 60 miles of the Ipswich River.