

**T**hanks in part to Maine Audubon grassroots activists who contacted Maine's congressional delegation this spring, plans to restore 500 miles of wildlife habitat along the Penobscot River received a boost this summer when the Senate approved \$2.5 million for the restoration project and the House of Representatives passed a resolution that lets the U.S. Army Corps of Engineers begin reviewing how to restore the river.

In June 2004, Maine Audubon signed an unprecedented agreement with five other conservation groups

as well state and federal government agencies, a hydropower company, and the Penobscot Indian Nation to reconfigure hydroelectric generation on the Penobscot River in order to restore its remarkable natural resources.

Considered one of the most ecologically significant and innovative river restoration efforts in the country, the Penobscot River Restoration Project has already raised \$4.5 million in private funds as well as \$200,000 from the Department of Commerce, \$20,000 from the Maine Outdoor Heritage Fund, and \$18,000 from the Atlantic Salmon Commission.

But more funding—approximately \$55 million—is needed, which is what members of the Penobscot River Restoration Trust, including Maine Audubon, will tell Secretary of the Interior Dirk Kempthorne at a listening session in Brewer on September 20 (see Help Restore the Penobscot, right).

What will benefit when the river is restored?

According to Cheryl Daigle, community liaison and outreach coordinator for the trust, just about everything—and everyone—along the legendary river.

## Restoring the Penobscot: What wildlife will benefit?

By Cheryl Daigle

Photos by Penobscot Indian Nation member Joe Dana

### Water

With realization of the Penobscot River Restoration Project, the inland woods and waterways of the Penobscot watershed will once again be reconnected to the sea.

Restoring the natural flow of the lower Penobscot River and enhancing fish passage around dams further upstream will improve water quality, boost year-round productivity and food sources for fish and wildlife, and provide multiple cultural and economic benefits for people living along the Penobscot.

When the Great Works and Veazie dams are removed, much of the river upstream will settle back into its natural contours. Floodplain wetlands will re-emerge, along with riffles and pools that provide a mosaic of intimately connected micro-habitats for insects and young fish, the basis of a healthy river ecosystem.

### Insects

Recovery begins with the smallest of creatures.

Aquatic insects will take advantage of new niches exposed between rocks and boulders as well as the silts and granular sands that will settle beneath riffles and slow-water pools.

Insects tend to colonize suitable habitat fairly quickly, so when free-flowing stretches of the river are restored, it won't be long before insect diversity and abundance increase. Experts suggest it may take a year or two to see significant changes in insect populations, but on the Kennebec River, state biologists saw improved water quality and an increase in insect diversity within a few months of removal of the Edwards Dam in 1999.

### Fish

The return of Atlantic salmon, alewives, American shad, striped bass, and seven other species of sea-run fish will reconnect vital ecological threads that once existed from deep within the Penobscot watershed to the sea. Sea-run fish returning to spawn will bring nutrients from the ocean that will boost productivity in the entire river.



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Restoring the river is also the last, best chance for restoring a self-sustaining population of Atlantic salmon in the U.S.

### Birds

Burgeoning populations of the many and varied insects that rely on aquatic habitats for at least part of their life cycle will provide excellent foraging for the multitude of songbirds that frequent the river's banks and woodlands.

"Birds that people don't usually associate with rivers are actually found along rivers in large numbers," says Judy Markowsky, director of Fields Pond Audubon Center in Holden. "Orioles, flycatchers, kingbirds, phoebes, and killdeer migrate along the Penobscot River and feed on insect hatches in spring and summer. Restoring the many habitats created by a naturally flowing river system will greatly benefit these birds."

Metamorphosing insects released from the water's surface will become satisfying meals for tree swallows, eastern phoebes, and great crested flycatchers. Insects that settle in trees and shrubs along the river may find themselves caught in the beaks of the resident veery or waterthrush.

Diving ducks like common and Barrow's goldeneyes will find more opportunities to feed on insect larvae as the riffles and pools created by free-moving water leave varied and more abundant openings in the ice cover during the long winter months, when food is scarce.

Eagles and osprey are the more visible birds of prey that will directly benefit from self-sustaining runs of river herring, eels, salmon, and other fish. While eagles in particular have seen tremendous recovery since the 1970s, populations along the Penobscot River have not rebounded as well as in other areas of the state.

Other fish-eating birds will also thrive as alewives, American shad, Atlantic salmon, rainbow smelt, tomcod, striped bass, and other sea-run fish return to fresh water reaches of the river, its tributaries, and the network of ponds and lakes that comprise the Penobscot watershed. Juvenile eels entering the river and making their way



As the diversity of habitat increases for spawning adult fish and developing juvenile fish, greater numbers of great blue herons, mergansers, and kingfishers will return to the river to feed each year.



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Bald eagles will directly benefit from self-sustaining runs of river herring, eels, salmon, and other fish.

upstream and deeper inland will add to the bonanza of food resources a restored river will provide.

“Great blue herons, mergansers, and kingfishers feed on fish of different size and tend to seek prey in different water depths,” says Markowsky. As the diversity of habitat increases for spawning adult fish and developing juvenile fish, greater numbers of these birds will return to the river to feed each year.

**Mammals and More**

As thousands of sea-run fish return to the river and its many tributaries to spawn, reptiles and amphibians as well as woodland and riverine mammals like otter, mink, and fisher will thrive.

Of course, humans are part of the Penobscot River ecosystem, too: the Penobscot Indian Nation has drawn from the river’s rich resources for many thousands of years, European settlers worked and recreated on the river, and people continue to enjoy and make a living from the Penobscot.

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ing a healthier ecosystem but also enhancing opportunities for wildlife watching and sport.

Our actions, particularly those in the last several hundred years, have shaped the river, often for the worse. But through the Penobscot River Restoration Project, we have a chance to turn back some of the more harmful actions and breathe new life into the river.

The cycle of life along the Penobscot may never return to the wildness that first made the river a legend, but we can reconnect the most vital threads of the waterway and its landscape, inviting back both the smallest creatures as well as what may be noblest, the bald eagle, which will soon fly above the river again with no doubts as to the abundance below.

*For more information on the Penobscot River Restoration Project, visit [www.penobscotriver.org](http://www.penobscotriver.org).*

*Members of the nonprofit Penobscot River Restoration Trust include the Penobscot Indian Nation, American Rivers, Atlantic Salmon Federation, Natural Resources Council of Maine, Maine Audubon, The Nature Conservancy, and Trout Unlimited.*

**Paddle the Penobscot with Maine Audubon**

While canoeing a nine-mile, scenic, and largely undeveloped stretch of the Penobscot River, learn more about the Penobscot River Restoration Project as well as the natural history and culture of this legendary waterway. Led by Registered Maine Guide and Penobscot Nation member Chris Francis, we’ll keep an eye out for bald eagles and a variety of migratory waterfowl and songbirds, afterwards enjoying a discussion with project staff and tribal members.

**From Old Town  
Saturday, September 23  
11 a.m.-3 p.m.  
Led by Chris Francis  
\$45/member Maine Audubon or Penobscot River Restoration Project, \$55/nonmember  
Limited to 12 participants**

**Help Restore the Penobscot**

Join members of the Penobscot River Restoration Trust in asking U.S. Secretary of Interior Dirk Kempthorne for additional federal funding to restore the Penobscot River.

**When:**

4 p.m., Wednesday, September 20

**Where:**

Jeff’s Catering Banquet and Convention Center in Brewer

**Why:**

One of the most ecologically significant and innovative river restoration efforts in the country, the Penobscot River Restoration Project will dramatically improve over 500 miles of river habitat.

**For more information:**

Contact Cheryl Daigle at (207) 232-9969 or [cpdaigle@penobscotriver.org](mailto:cpdaigle@penobscotriver.org)



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