

Giving Nature a Second Chance

by Lois Winter

In 1999, when the George's River chapter of Trout Unlimited and other river restoration supporters began to advocate removing Sennebec Dam on the St. George River of Maine, it looked like the start of a classic environmental confrontation. River and sea-run fish restoration advocates wanted the dam removed to restore free passage and habitat for fish, including the endangered Atlantic salmon (*Salmo salar*) and other diadromous (migrating between fresh and salt water) species. However, members of the Sennebec Pond Association, who lived in homes surrounding the upstream pond, wanted to maintain the pond's water level.

Thanks to three years of careful negotiation and respectful dialog, both groups have received what they wanted. An engineering study identified costs and benefits of several alternatives. The

consultants demonstrated that the 18-foot (6-meter) high, 200-foot (65-m) long Sennebec Dam could be replaced with a low-head dam located 400 yards (365-m) upstream at the Sennebec Pond outlet. The new low-head dam, actually a roughened ramp constructed with a 20-to-1 slope, would maintain water levels in Sennebec Pond while allowing fish passage. "The study proved the incredible," said Susan Harris, president of the Sennebec Pond Association. "A high maintenance, high impact dam is not needed to keep the pond. The current water level can be maintained by a two-foot high rock wall. It's inexpensive and easy to maintain, it looks good, and it's good for the fish!" "Everybody's a winner," agreed Tom Whiting, a member of Trout Unlimited and one of the dedicated volunteers and driving forces behind the restoration project. "The Pond Association replaced a deteriorating structure with one that won't leak and will be cheaper to maintain, while the fish gain access to 17 miles of the St. George River above the Dam."

The new roughened ramp allows passage not only for Atlantic salmon but also for alewives (*Alosa pseudo-barengus*), blueback herring (*Alosa aestivalis*), American eel (*Anguilla rostrata*), rainbow smelt (*Osmerus mordax*), and American shad (*Alosa sapidissima*), all of which had largely been eliminated from the upper half of the St. George River at least since the 1910s, when the hydroelectric facility at Sennebec Dam was built. Sennebec Dam generated power into the 1950s, when the advent of larger electrical generation facilities made the dam obsolete. In 1961, the owners sold the dam to the Sennebec Pond Association for one

(below) Before it was replaced, Sennebec Dam was a barrier to endangered Atlantic salmon and other fish species.

USFWS photo

(opposite page) The St. George River, looking downstream from the newly installed roughened ramp that replaced the dam.

USFWS photo



dollar, ensuring the Association's ability to control the water levels. However, over next 40 years, the dam deteriorated, and by the late 1990s, the Pond Association found itself in the position of owning a derelict dam that posed threats to downstream property owners.

Historically, the St. George River was noted for its abundant fish. In 1605, the British explorer Captain George Weymouth and his crew visited the lower river, where they noted "plenty of salmon and other fishes of great bigness." Despite overfishing, loss of habitat, pollution, and dams, Atlantic salmon runs persisted for several centuries in the St. George River, and reports from the 1910s suggest that large schools of Atlantic salmon congregated at the base of the Sennebec Dam during its construction. In the 1990s, fishermen occasionally sighted a few Atlantic salmon and large numbers of alewives below the dam, sparking interest in river restoration. "With the federal declaration of Atlantic salmon as endangered, anything we can do to increase available habitat is critical," commented Jeff Reardon, Trout Unlimited's New England Conservation Director. With the removal of Sennebec Dam, Atlantic salmon now have access to more abundant and higher quality habitat throughout the entire St. George River watershed.

The State of Maine's Department of Marine Resources had long identified the removal of Sennebec Dam as a high priority. This dam was the only remaining fish barrier in the watershed. For years, Maine Department of Marine Resources had managed a limited "trap and truck operation" to move downstream alewives above the dam and maintain alewives in the watershed, but this approach was always regarded as a temporary measure until dam removal could be realized.

The removal of Sennebec Dam restores 1,100 acres (445 hectares) of Sennebec Pond and Quantabacook Lake as prime spawning habitat for a quarter-million alewives. In turn, restoring healthy alewife populations promises to

provide multiple benefits. In the ocean, alewife populations help support commercially important fish, seabird colonies, and marine mammals. When alewives return to the rivers, they provide abundant forage for resident and sea-run fish, waterbirds, and raptors. In addition, Maine's lobstering industry depends on a sustainable source of alewives as bait. Finally, healthy populations of alewives are critical for restoring Maine's Atlantic salmon. In the ocean and in the rivers, alewives provide important prey for Atlantic salmon, and in the spring, large numbers of immigrating alewives provide vital "cover" for out-migrating salmon smolts that are otherwise subject to predation.

State and federal agencies, working in partnership with regional and local organizations, completed the \$317,000 St. George River dam removal and restoration project in 2002. State agencies — the Maine Atlantic Salmon Commission and Maine Department of Marine Resources — provided staff to document habitat suitability and conduct biological surveys before and after restoration. Federal agencies provided technical support and more than half of the

funding through three block grant programs administered by the Gulf of Maine Coastal Program: the Service's Landowner Incentives Program, the National Fish and Wildlife Foundation's Maine Habitat Restoration Partnership, and the Foundation's Maine Atlantic Salmon Conservation Fund. In addition, NOAA Fisheries (U.S. Department of Commerce) and the Natural Resources Conservation Service (U.S. Department of Agriculture) also provided funds. Trout Unlimited and American Rivers provided the remainder of the funding, and regional and local representatives from Trout Unlimited spearheaded and coordinated the project.

Jack Tibbetts, a retired NRCS engineer and site manager for the restoration project, summed it all up. "I've been watching the alewives bang their noses on that dam. Now, I can watch them swim through!"

Lois Winter, conservation biologist/ outreach specialist, is with the Service's Gulf of Maine Coastal Program (lois_winter@fws.gov; 207-781-8364).

