

# Bond Brook NPS Reduction Project

#2003R-13

Waterbody Name: Bond Brook  
Location: Manchester and Augusta – Kennebec County  
Waterbody Status: NPS Priority Watershed, Impaired (1 tributary)  
Project Sponsor: Kennebec County SWCD  
Project Duration: September 2003 – January 2007  
319 Grant Amount: \$69,821  
Local Match: \$24,359



## PROBLEM:

Bond Brook, located in Manchester and Augusta, has a 20 square mile watershed. The upper reaches support a native brook trout fishery. Historically, the brook supported Atlantic Salmon habitat. Watershed land use varies from light residential, agricultural, and woodlands at the headwaters to dense residential, past gravel mining sites, and heavily urbanized further downstream. The removal of riparian buffers along some of the drainage in the watershed has eliminated shade, increased water temperatures, and reduced detritus and woody debris for fish and other aquatic organisms. One tributary of Bond Brook is listed on the State's list of impaired waters due to urban nonpoint source pollution.

In 1998 a stream survey identified 36 riparian buffer problem areas, 27 of which were determined to have either a high or medium priority. Sixteen bank erosion sites, all of which were high and medium priority sites, were also identified. In addition to these known sources of problems, the watershed is under increasing development pressure. The creation of a Watershed Management Plan for Bond Brook was funded in 2005.

## PROJECT DESCRIPTION:

The purpose of this project was to improve water quality and habitat in the Bond Brook watershed by reducing sediment loading through NPS pollution reduction activities and establishing buffers. Thirteen sites were fixed. Work included buffer plantings, installation of drainage swales and a retention pond, fencing a pasture to exclude cattle from crossing a tributary stream, and a major bank stabilization.

The project was well publicized, and outreach included mailings, newspaper articles, and public meetings. A significant number of landowner inquiries resulted from the publicity and outreach. Regardless of the extensive outreach, getting site projects completed proved difficult. Much effort was invested in projects that did not happen, and it was difficult to obtain match especially on expensive projects. For the major bank stabilization project, match funds were obtained through DEP's SEP program (uses environmental enforcement payments to fund site specific projects).



## PROJECT OUTCOMES:

- 13 NPS sites were treated, including installation of a retention pond and drainage swale, reshaping of a collapsed streambank, planting of trees and shrubs, and fencing to exclude cattle from the stream. An estimated 2,985 feet of streambank were protected in the Stone Brook tributary and Bond Brook mainstem.
- The Steering Committee meetings resulted in increased discussion about watershed-wide issues and mitigation of impacts from commercial development. This led to a successful proposal from the Kennebec Valley chapter of Trout Unlimited to write a watershed management plan in 2005.
- 33 landowners were contacted directly through site visits or phone calls. On-site technical assistance was provided to at least 21 landowners. 103 landowners were contacted through a mailing.
- The total estimated pollutant load reduction for the 13 installed BMPs was 29 tons sediment, 36.7 pounds phosphorus, and 112.1 pounds nitrogen each year (Methods used were USEPA Region 5: Urban Runoff, WEPP: Hillside and Road, and Reckhow 1980).
- Many lessons were learned about working in a stream watershed that will be helpful for future projects.



Riparian buffer planting on Stone Brook, from 319 work in the 1990s. Buffer is thriving, although there are some spots that need to be augmented.



October 2006: Volunteers from the new landowner (Maine General) were recruited to plant an additional 100 trees and shrubs.

## PROJECT PARTNERS:

Augusta Water District  
City of Augusta  
Kennebec Valley Chapter, Trout Unlimited  
Maine Department of Marine Resources  
Maine DEP Stream Team Program

## CONTACT INFORMATION:

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