

## Annabessacook Lake Watershed Restoration – Phase II

### #2011RT15

Waterbody Name: Annabessacook Lake

Location: Monmouth & Winthrop- Kennebec County

Waterbody Status: Impaired, NPS Priority Watershed, Most at Risk

Project Grantee: Cobbossee Watershed District

Project Duration: January 2011 – December 2013

319 Grant Amount: \$68,450

Local Match: \$63,876



### PROBLEM/NEED:

Annabessacook is a 1,391 acre lake with a direct watershed area of 21.2 square miles. There is a considerable amount of developed land in the watershed near the lake, including the urban center of Winthrop, 182 shorefront residences, and a 100-site campground. The urban centers of Monmouth and North Monmouth are located adjacent to lake tributaries.

Lake water quality improved significantly since it was severely polluted by discharges of sewage and polluted runoff in the 1960s and 1970s. Since 2000 throughout the summer period, the mean annual secchi disk transparency has exceeded four meters. However, Annabessacook experiences occasional nuisance algal blooms during the fall turnover period, reducing water clarity to less than 2.0 meters, thus it remains on Maine's list of impaired lakes. Today, water clarity and dissolved oxygen problems are attributed primarily to NPS pollution that washes into the lake from the surrounding watershed. With agriculture on the wane in the watershed, and a deceleration in the internal recycling of phosphorus from lake sediments (PCAP-TMDL 2004), soil erosion and stormwater runoff from the developed areas of Winthrop and Monmouth are critical source areas needing further attention.

### PROJECT DESCRIPTION:

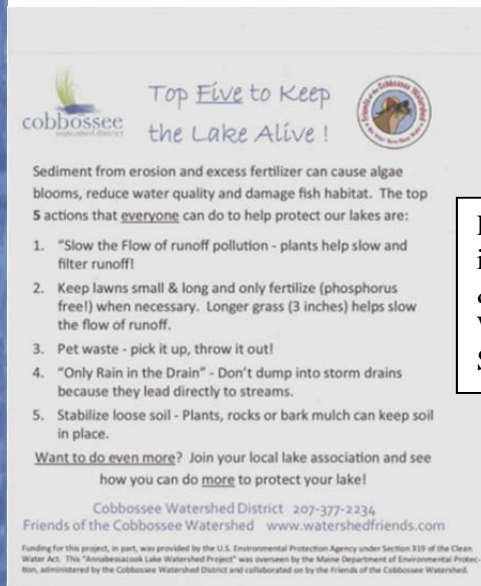
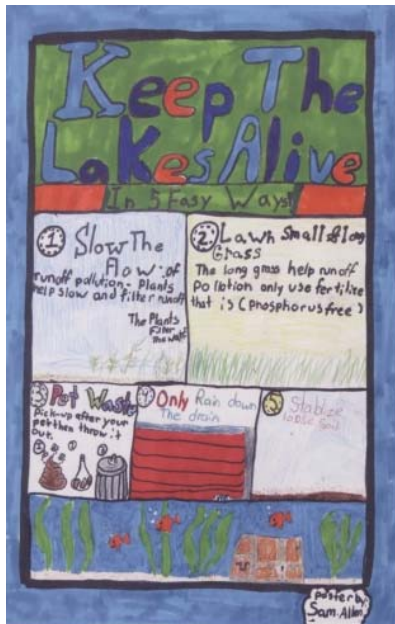
The project continued a long-term effort described in the Annabessacook Lake Watershed-based Plan (2007) to restore water quality. Improvement of Annabessacook Lake was promoted by reducing soil erosion and phosphorus runoff to the lake through installation of BMPs on documented NPS sites (gravel camp roads, public roads, and shorefront), and raising public awareness about watershed and lake water quality issues. A major thrust of the project was to implement BMPs on the most severely eroding gravel camp roads to prevent sediment from entering the lake.



One of 12 filtration BMP catch basin inserts installed on Highland Avenue to trap phosphorus & other pollutants.

## PROJECT OUTCOMES

- CWD oversaw BMP implementation on five private roads, reducing sedimentation from 21 sites. BMPs included road surface improvements (hyper-elevating and crowning), ditches (grassed and rock-lined) with check dams, culverts with rock inlets and outlets, rock-lined plunge pools, settling basins, and wooded buffers.
- Filtration BMP units (StormBasin) were installed at all 12 catch basins on Highland Avenue in Winthrop which collect runoff from a 15 acre watershed. The catch basin retrofits are expected remove approximately 50% (3.9 lbs/yr) of the dissolved phosphorus in the runoff from the watershed.
- 2070 lineal feet of eroding shorefront on 18 properties were stabilized by the Friends of the Cobbossee Watershed's Youth Conservation Corps (YCC), through their *Slow-the-Flow* Program.
- Pollutant loading to Annabessacook Lake was reduced by an estimated of 5.4 tons of sediment and 6.95 pounds of total phosphorus per year (WEPP model and Region 5 Method).
- More than two dozen property owners received expert recommendations on how to stabilize their shorefronts to prevent erosion and sedimentation.
- The watershed community, including the more urban (i.e., non-shorefront) neighborhoods of Monmouth and Winthrop, gained a better understanding of how polluted water runoff from the watershed can adversely impact the lake.



Postcard mailed to 700 households in the "urban" sections of Winthrop & Monmouth. (Artwork by Winthrop Middle School student, Samantha Allan).

## PROJECT PARTNERS:

Annabessacook Lake Improvement Association  
Friends of the Cobbossee Watershed  
Town of Monmouth  
Town of Winthrop

## CONTACT INFORMATION:

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Suggested Citation:

Maine Department of Environmental Protection (2014) "Nonpoint Source Management Program 2013 Annual Report," Document # DEPLW-1269. Augusta: MDEP.