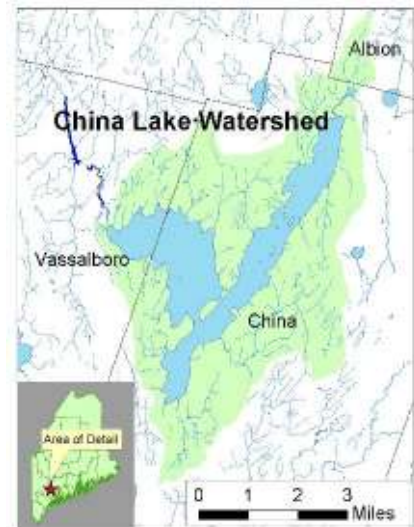


China Lake NPS Reduction Project, Phase II

#2007RT28

Waterbody Name: China Lake
Location: China and Vassalboro – Kennebec County
Waterbody Status: Impaired, NPS Priority Watershed, Most at Risk
Project Grantee: China Region Lakes Alliance
Project Duration: May 2008 – December 2010
319 Grant Amount: \$102,590
Local Match: \$128,465



PROBLEM:

China Lake covers 3,848 acres, and it has a 32 square mile watershed. China Lake was once crystal clear and well-known for its cold water fishery of salmon and trout. In 1983 the lake suffered a rapid decline in water quality with the onset of seasonal nuisance algae blooms and loss of its cold water fishery. In the 1980's shoreland property values declined. The lake was placed on the State's list of impaired waters due to nonattainment of water quality standards. Overall, the water quality of China Lake has only slightly improved over the past decade, with intense blue-green algae blooms prevalent during most summers since the mid-1980s. The lake is the community and economic focal point for the Town of China and the public drinking water supply for the greater Waterville area. It has three public boat launches and is heavily used for recreation, boating, fishing and swimming.

According to the TMDL report (2001), blooms are caused by nutrient enrichment due to excess phosphorus loading from watershed soil erosion and internal phosphorus recycling. Major land uses contributing to the external phosphorus load include residential and commercially developed areas, roadways, agriculture and commercial forestry. The China Region Lakes Alliance (CRLA) and China Lake Association have carried out 319 grant projects, and a summer Youth Conservation Corps (YCC) program has installed hundreds of BMPs on watershed erosion sites.

PROJECT DESCRIPTION:

In Phase II, CRLA designed and implemented conservation practices to reduce phosphorus export from the watershed into China Lake. Kennebec County SWCD provided technical services. Phase I had identified agricultural and forest lands as significant sources of external phosphorus loading. Phase II focused on assessment of agricultural lands to identify opportunities to work with landowners; construction of BMPs on high priority agricultural sites; development of CRLA capacity to inspect timber harvest sites to help ensure needed erosion control BMPs are used; and installation of BMPs at nine priority erosion sites (camp roads, boat launch, unstable stream banks, etc).



Vegetated strip (2 acres) filters runoff from a dairy farm in the watershed

PROJECT OUTCOMES:

- Conservation practices were installed at 14 high priority sites. Work included stream bank stabilization at 2 sites (450 feet), delineating a vegetative buffer strip along 1000 feet lake shore, and redirecting road runoff to buffers. A large (2 acre) vegetated filter strip with three 80 foot wide level lip spreaders in series was installed to treat runoff from a dairy farm livestock heavy use area, silage bunker and manure storage site.
- Over \$154,000 was invested in on-the-ground construction of needed conservation practices. This included \$61,091 from landowners, \$30,147 from CRLA, and \$63,159 from the 319 grant.
- Due to effective CRLA and Kennebec County SWCD collaboration with landowners, several farmers requested USDA-NRCS technical and financial assistance under the Environmental Quality Improvement Program (EQIP). In 2009 - 2010, farm operations invested approximately \$575,000 in EQIP funds and additional landowner matching funds for improved conservation practices in the watershed. By contrast, in 2004 - 2005 less than \$5,000 in EQIP funds was invested.
- Pollutant loading to China Lake from watershed sources was reduced by an estimated 53 tons of sediment and 284 lbs of phosphorus per year (Region 5 Method and WEPP Model). Substantial additional load reductions were accomplished by agricultural conservation practices installed through the EQIP program.



Before – Sediment from this eroding camp road washed sediment into the lake.



After - 900 feet of road rebuilt using BMPs to prevent sedimentation into lake.

PROJECT PARTNERS:

China Lake Association
CRLA Youth Conservation Corps
Kennebec County SWCD
Kennebec Water District
Town of China
Town of Vassalboro

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