

# Watershed Protection Project Final Report

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#2016RR01 - Alamoosook Lake

Final Project Report

February 5, 2019



**Grantee:** Hancock County Soil & Water Conservation District

192 Main Street, Suite 11, Ellsworth, ME 04605

(207) 667-8663

**Contact Person:** Zachary Steele

**Project Start Date:** January 15, 2016

**Project Completion Date:** December 31, 2018

Funding for this project, in part, was provided by the U.S. Environmental Protection Agency under Section 319 of the Clean Water Act. The funding is administered by the Maine Department of Environmental Protection in partnership with EPA.



# Alamoosook Lake Watershed Protection Project Final Report

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## I. Project Overview

### **Purpose**

The purpose of the Alamoosook Lake Protection Project was to significantly reduce erosion and the export of sediment and phosphorus in the watershed. This was accomplished by implementing a variety of Best Management Practices (BMPs) on road sites and residential sites, developing and implementing an Education and Outreach Plan to guide protection efforts, and by providing technical assistance (TA) and financial assistance (FA) to interested watershed residents.



Photo Courtesy of Alamoosook Inn

### **Key Personnel**

The key project staff included Megan Facciolo, Hancock County Soil and Water Conservation District, District Manager / Project Coordinator: January 2014-June 2016), Zachary Steele, HCSWCD Executive Director / Project Coordinator: August 2016-December 2018), Jeffrey Norment, 2018 Project Manager, May – December 2018, Robin Gropp, Maine Conservation Corps, Field Technician, Summer 2017, Art Grindle, Kennebec County Soil and Water Conservation District (KCSWCD) Field Technician 2016-2017, and Greg Beane, Department of Environmental Protection (DEP) Agreement Administrator. Community project support was provided by the Town of Orland, Alamoosook Lake Association (ALA), US Fish and Wildlife Service, Craig Brook National Fish Hatchery (USFWS CBNFH), Great Pond Mountain Conservation Trust (GPMCT) and residents of the watershed.

### **Highlights**

- Installed BMPs at 12 private road, 5 town, 5 residential and 2 federal sites in the watershed to reduce erosion and help protect water quality. Some of the best management practices (BMPs) installed included, but was not limited to: shoreline stabilization, new culverts with armored outlets and inlets, plunge pools, road super-elevation, ditches, water bars, and turnouts.
- Technical assistance (TA) was provided to 54 landowners (24 TA + FA, 30 TA only; Appendix A) in the watershed.
- Cost-share agreements (CSA) resulted in an estimated annual reduction of 46.6 tons of sediment, 43.0 pounds of phosphorus, 86.2 pounds of nitrogen, and 120 feet of streambank, and 80 feet of shoreline was protected.

### **Project Successes**

- This project created relationships between landowners, municipal officials, road commissioners, non-profit private conservation organizations, federal agencies, and



# Alamoosook Lake Watershed Protection Project Final Report

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natural resource professionals to work together towards protecting the water quality of Alamoosook Lake.

- The total non-federal match for this project was \$55,898 (Appendix B).

## II. Task Summary

### **Task 1: Project Management**

HCSWCD established a contract outlining project goals, responsibilities, and arrangements concerning overall funding with Maine DEP. HCSWCD has tracked project progress, expenses, matching funds, and submitted all semi-annual Progress Reports and this Final Project Report. HCSWCD submitted detailed estimates of pollutant reductions for completed BMP sites and a Pollutants Controlled Report annually each year of the grant. HCSWCD used the “319 Site Tracking” Excel spreadsheet to record and track all NPS sites encountered during the project. Site Tracker will be used cooperatively with the ALA with the intent of continued use of the Site Tracker Excel spreadsheet after the grant has ended. The spreadsheet was used to generate Appendix A. In addition, HCSWCD has a separate Excel spreadsheet to document project match, which was used to generate Appendix B.

*Completed:* More detail is provided in Section III. Deliverables Summary.

### **Task 2: Steering Committee**

This project was guided by a Steering Committee consisting of District staff, members of the Alamoosook Lake Association (ALA), Maine DEP, the Town of Orland, Craig Brook National Fish Hatchery, Great Pond Conservation Trust, and watershed residents. The Steering Committee helped guide project, provided valuable educational and outreach opportunities, enabled public comment, and interacted personally with Alamoosook Lake residents. The Steering Committee met more than the required six times.

*Completed:* More detail is provided in III. Deliverables Summary.

### **Task 3: Private Road NPS Mitigation Projects**

Twelve NPS mitigation CSAs with operation and maintenance plans were signed and implemented. Best Management Practices were installed by contractors certified through the DEP Nonpoint Source Training Center. All practices installed followed applicable MDEP or other Maine BMP recommendations. The District coordinated site selection and BMP implementation with the ALA, resident landowners and a road association to optimize opportunities and project funds. The Maine DEP’s “Using Project Funds for Construction of BMPs at Road-related Sites: Guidance for NPS Watershed Projects”, was followed when selecting sites for road work. The HCSWCD completed 8 NPS site reports for 12 projects where NPS mitigation work was done under a cost-share agreement.

The grant goal was 32 private road projects with CSAs, but there barriers to success were encountered. The goals enumerated in the proposal over-estimated interest of and commitment by watershed residents. The lack of road associations within the watershed significantly impeded efforts to implement projects on roads with multiple landowners. Without a road association to distribute implementation costs and tax-liability equitably among landowners



# Alamoosook Lake Watershed Protection Project Final Report

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using the road network, one landowner would have to be willing to assume the tax liability. In most cases without an existing road association, the tax liability issue was an insurmountable barrier. In discussions with landowners, it also became apparent there is some resistance to committing government programs, especially those with links to environmental protection agencies. Given these constraints and concerns, the offered 2:1 government to private dollar project was not a sufficient attractant. During 2018 the HCSWCD, with MDEP approval, raised the government to private dollar match to 3:1, which made a significant difference. Finally, as discussed with MDEP's Grant Administrator, to increase administrative efficiency current HCSWC leadership prefers to lump interrelated sites into a single cost-share agreement. Conversely, as reflected by original goal of 32 projects, under previous leadership there was a tendency to split inter-related sites into separate project agreements. For the aforementioned reasons, the achieved number of private road projects did not equal the original grant for this deliverable.

*Completed:* More details is provided in Section III. Deliverables Summary and Appendix A.

## **Task 4: Town Road NPS Mitigation Projects**

The HCSWCD coordinated site selection and BMP implementation with municipal officials (road commissioners and selectmen) to optimize opportunities and project funds. Five NPS mitigation CSAs with operation and maintenance plans were signed with the Town of Orland and implemented. Best Management Practices were installed by contractors certified through the DEP Nonpoint Source Training Center. All practices installed followed applicable MDEP or other Maine BMP recommendations. The Maine DEP's "Using Project Funds for Construction of BMPs at Road-related Sites: Guidance for NPS Watershed Projects", was followed when selecting sites for road work. The HCSWCD completed one NPS site report for five projects where NPS mitigation work was done under a cost-share agreement. The goal was six town projects completed. Five projects were completed with an addition project under consideration late in the grant cycle, but due to time constraints and previous Town commitments the last project was not realized.

*Completed:* More details is provided in Section III. Deliverables Summary and Appendix A.

## **Task 5: Residential Property NPS Mitigation Projects**

The ALA cooperated with HCSWCD to help publicize the cost-share program to watershed residents. Working with 30 residential property owners, the HCSWC identified NPS pollution concerns and recommended applicable BMPs to minimize existing or potential impacts. Only five of these residential property owners ultimately decided to use grant financial incentives for implementation of recommended BMPs. Each cost-share recipient signed a formal cost-share agreement, to specify how work will be done and what future maintenance will be required to keep the BMP(s) in good working order. Cost-share assistance were not provided to landowners in violation of existing permits. The HCSWCD completed a NPS site report each of the five projects where NPS mitigation work was done under a cost-share agreement.

The grant goal was 20 residential projects installed using grant financial assistance, but the majority of residents did not want to commit to a formal agreement for monies linked to federal and state environmental agencies with the originally required 1:1 government to private dollar match. Raising the project match ratio to 3:1 was helpful, but occurred too late to make much



# Alamoosook Lake Watershed Protection Project Final Report

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difference. In addition, the potential tax liability associated with receiving government financial assistance was a deterrent to some.

*Completed:* More details is provided in Section III. Deliverables Summary and Appendix A.

## **Task 6: Craig Brook National Fish Hatchery NPS Mitigation Projects**

The HCSWCD worked cooperatively with select staff of the Craig Brook National Fish Hatchery to identify NPS pollution sources that could be addressed through this grant. Four sites with issues were identified. Ultimately, two of the sites were deemed worthy of a NPS mitigation cost-share agreement. Formal cost-share agreements with operation and maintenance plans were entered into with the Friends of Craig Brook Hatchery. Two projects is one short of the three originally targeted; however, the two sites chosen were most appropriate for grant funds. The HCSWCD completed a NPS site report for both projects.

*Completed:* More details is provided in Section III. Deliverables Summary and Appendix A.

## **Task 7: Education & Outreach**

The HCSWCD worked with the Steering Committee members, ALA members, town officials, and watershed residents to develop an Education and Outreach Plan, to help guide future education and outreach efforts. HCSWCD kept interested parties informed of the grant project through the District's newsletter, website, and social media accounts. Project events included an Alamoosook shore buffer planting field day, Orland River Day with an Alamoosook Lake 319 grant booth, and grant outreach and progress updates at ALA's 2016, 2017, and 2018 annual summer meeting. Copies of the education and outreach plan developed will be sent to the Town of Orland and to the Alamoosook Lake Association. A final draft of the Education and Outreach Plan will be reviewed by the Alamoosook Lake Association Board on February 6. The grant objective of 3 events, development of key education and outreach materials for the grant and a watershed outreach and education plan was exceeded.

*Completed:* More detail is provided in III. Deliverables Summary.

## **Task 8: Pollution Reduction Estimation**

The HCSWCD estimated NPS pollutant load reductions for sites after BMPs were installed. During design of BMPs at NPS sites, field measurements were recorded for later use with the EPA Region 5 Load Estimation Model. The HCSWC used conservative pollutant BMP removal efficiency rates for use with the Region 5 model to generate reduction estimates. Based on model results, BMPs installed under CSAs will result in annual sediment, phosphorus and nitrogen reductions of 46.6 tons/year, 43.0 pounds/year and 86.2 pounds/year, respectively. Site-specific load reduction estimates results were annually provided to the MDEP in a "Pollutants Controlled Report".

*Completed:* More detail is provided in III. Deliverables Summary.

## **Task 9: Provide Technical Assistance**

The HCSWCD provided technical assistance for 54 sites, 24 of which resulted in signed conservation agreements to install detailed BMPs with operation and maintenance requirements.

# Alamoosook Lake Watershed Protection Project Final Report

---

The HCSWCD provided technical assistance at no charge for 30 other sites; exceeding the grant goal of 20.

***Completed:*** More detail is provided in Appendix A.



# Alamoosook Lake Watershed Protection Project Final Report

## III. Deliverables Summary

List of Deliverables	Date Sent to DEP2/5/19	Value
1) Signed Project Contract	1/15/16	Contract was useful for documenting expectations.
2) Semi-Annual Progress Reports and Final Project Report	7 progress reports: 5/2/16, 10/3/16, 5/18/17, 11/16/17, 05/15/18, 11/08/2018, 11/8/18; final report:2/5/19	Reports helped track current grant status and for tracking outcomes.
3) Steering Committee Meetings	5/17/16, 10/3/16, 1/12/17, 2/21/17, 3/21/17, 4/18/17, 6/20/17, 9/19/17	Useful for education and outreach and for keeping project momentum moving forward
4) NPS Site Reports for Private Road Project	8 reports for 12 sites: 11/17/17, 9/7/18(2), 9/12/18, 10/11/18, 11/1/18, 11/8/18 (4), 11/23/18, 12/7/18	Useful for creating a record of site work that was done
5) NPS Site Reports of Town Road Projects	One report for five sites: 12/27/18	Useful for creating a record of site work that was done
6) NPS Site Reports of Residential Projects	Five reports: 11/17/17, 11/17/17, 9/6/18; 9/12/18, 9/21/18	Useful for creating a record of site work that was done
7) NPS Site Reports of CBNFH Projects	Two reports: 11/17/17, 10/22/18	Useful for creating a record of site work that was done
8) Key Education & Outreach Materials and Events	Materials: 5/17/16, 8/29/17, 11/17/17, 6/26/18, 2/4/19 Events: 5/17/16, 6/27/17 & 6/26/18 (ALA meetings), 6/10/17 (Shore Buffer Planting), 6/20/17 (Orland River Day)	Useful in documenting what outreach was done and for assessing the outreach.
9) Annual Pollutants Controlled Report	11/3/16, 2/28/18, 11/8/18	Useful for trying to give a quantitative number for environmental results.
10) Summary of Technical Assistance	See Appendix A	Useful for tracking technical assistance provided.

## IV. Project Outcomes

### Major Outcomes

- Installed BMPs at 12 private road, 5 town, 5 residential and 2 federal sites.
- Installed BMPs included, but were not limited to: ditching, road super-elevation, new HDPE culverts with armored inlets/outlets, plunge pools, a stream smart stream

# Alamoosook Lake Watershed Protection Project Final Report

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crossing, level-lip spreader, turnouts, water bars, buffer plantings, mulching, shore and bank stabilization, ditches and swales.

- This project resulted in an annual reduction in the addition of sediment and pollution to Alamoosook Lake. In addition, some private lakeshore and streambank habitat was stabilized. See Environmental Results section below.
- Alamoosook Lake brochures and outreach materials were developed cooperatively by the HCSWCD and ALA, and mailed to lakeside residents. The outreach material produced educated residents on NPS pollution threats and available 319 grant TA and FA to address identified watershed pollution problems.
- An outreach and education plan was developed and provided to the ALA to be disseminated to association members, watershed residents and lake users.
- The total non-federal match for this project was \$55,898.
- 30 sites, including 25 residential, received technical assistance even though they did not ultimately enter into a CSA to install recommended BMPs.

## Environmental Results

- An estimated annual reduction of 46.6 tons of sediment, 43.0 pounds of phosphorus, and 86.2 pounds of nitrogen was achieved through CSAs, as well as stabilization of 120 feet of streambank and 80 feet of shoreline.

## Lessons Learned

- Commitment of the Steering Committee, local Lake and road association is critical to effective education and outreach and recruitment of watershed projects.
- A greater scoping effort is needed to help set realistic watershed-based project goals (e.g., projects and match), to identify barriers affecting potential project recruitment and implementation, and to identify education and outreach needs, and financial incentives needed to effectively overcome existing barriers.
- Lumping of related sites into one cost-share agreement increases administrative efficiency while not reducing BMP numbers or associated environmental gains, but can reduce perceived numerical outcomes when measure in agreements signed.
- Staffing levels, continuity between years, and staff technical proficiency can greatly influence: administrative efficacy, maintenance of project momentum between years, and achievement of project goals and meaningful outcomes.

## V. Summary of Total Expenditures

	NPS Grant	Non-Federal Match
Grant Agreement Amount	\$132,217	\$88,145,
Funds Expensed	\$132,217	\$55,898
Funds Balanced	\$0	\$32,247



# Alamoosook Lake Watershed Protection Project Final Report

## VII. Non-federal Match Documentation/Certification

Non-federal match is detailed in Appendix B.

### **Grantee Information:**

Name: Hancock County Soil and Water Conservation District  
Address: 192 Main Street, Suite 11  
Ellsworth, ME 04605  
Telephone: (207) 667-8663  
Contact Person: Zachary Steele, Executive Director [zsteele@hancockcountyswcd.org](mailto:zsteele@hancockcountyswcd.org)

### **Project Information:**

Project Title: Alamoosook Lake Watershed Protection Project  
Project ID#: 2016RR01  
Match Amount Planned Under the Grant Agreement: \$88,145  
Match Amount Claimed: \$55,898

### **Certification Statement:**

I certify that the non-federal match detailed in the attached information were expended in the course of completing work described in the Grant Agreement for the Project referenced above, and that detailed documentation of the match information is on file and available for review at the Grantee address shown above.

  
\_\_\_\_\_  
Signature of Grantee-Authorized Official

2-5-19  
\_\_\_\_\_  
Date