Bear Pond
Watershed Survey Report

Oxford County Soil and Water Conservation District
Bear Pond Improvement Association
Maine Department of Environmental Protection

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Acknowledgments

The following people were instrumental in the Bear Pond Watershed Survey Project and deserve special recognition for their efforts:

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Introduction

Is there a water quality problem in the Bear Pond Watershed?

This watershed survey includes both Big Bear and Little Bear Ponds. Big Bear Pond appears on the Maine Department of Environmental Protection (DEP) list of **Nonpoint Source Priority Watersheds** due to its regional significance.

The Bear Pond Improvement Association has tested water quality in Big Bear Pond for more than 20 years. This testing has found that Big Bear Pond's water clarity has decreased. Also, both phosphorus and chlorophyll have increased, indicating that algae growth is on the rise. Increasing algae growth reduces water clarity. Based at observations at other Maine lakes, these trends forecast a future decline in water quality. Water quality data has been collected for six years at Little Bear Pond, which is not a long enough period to determine trends. However, anecdotal evidence suggests the clarity of this shallow lake has decreased.

WATERSHED

All the land that surrounds a lake that drains or sheds its water into the lake through streams, ditches, directly over the ground surface or through ground water.

The combined watershed that drains into Big and Little Bear Ponds is 6.9 square miles (Fig. 1).

NONPOINT SOURCE POLLUTION

Also called NPS or polluted runoff. Pollution that can not be traced back to a discharge from a particular direct source (e.g., an industrial outfall pipe).

One way to visualize NPS pollution is to think of rain and snow melt as a giant broom that sweeps over the watershed, moving debris and soil into the lake from the surrounding land and streams.

Declining water quality may be a result of the fast pace of development we are seeing in the Bear Pond Watershed. The biggest pollution culprit in Maine's lakes is **nonpoint source (NPS) pollution** found in storm water runoff from rain and snowmelt. During and after storms, soil, and nutrients like phosphorus and nitrogen, wash into lakes from the surrounding landscape by streams and overland flow.

In an undeveloped, forested watershed, storm water runoff is slowed and filtered by trees, shrubs and other vegetation. It then filters through the soil and soaks into the uneven forest floor. In a developed watershed, storm water velocity increases on impervious surfaces like rooftops, compacted soil, gravel camp roads and pavement, and does not always receive the filtering treatment the forest once provided.

The nutrients in storm water runoff can be bad news for lakes. **Phosphorus**, a nutrient that is common on land, is a primary food for all plants, including **algae**. In natural conditions, the scarcity of phosphorus in a lake limits algae growth. However, when a lake receives extra phosphorus from the watershed, algae growth increases dramatically. Sometimes this growth causes choking blooms, but more often it results in small, insidious changes in water quality that, over time, damage the ecology, aesthetics and economy of lakes.

Excess **phosphorus** can "fertilize" a lake and lead to nuisance **algal blooms**.

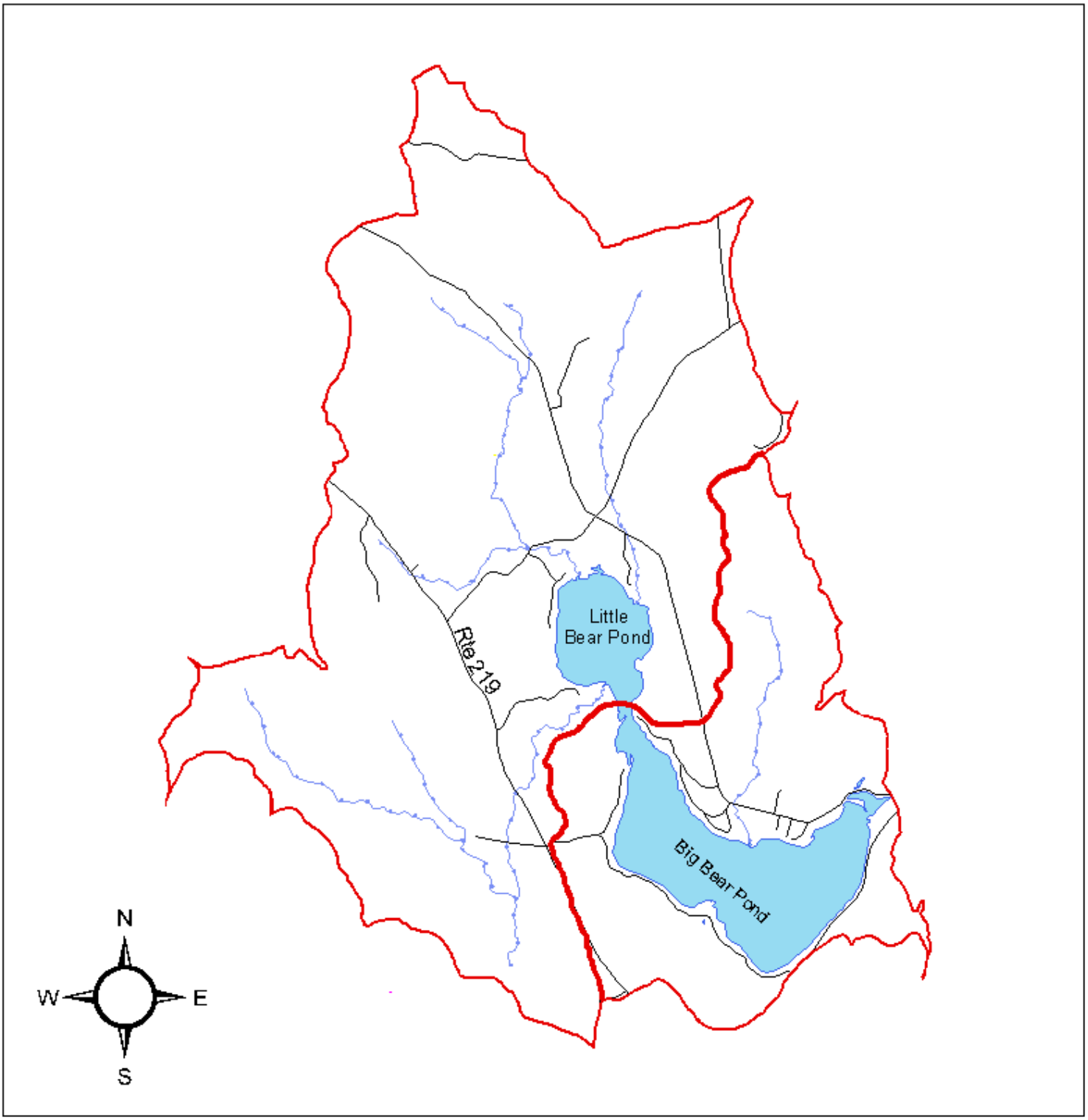


Figure 1:
Bear Pond Watershed

Miles
0 0.375 0.75 1.5 2.25

Watershed Boundary
Roads
Streams
Ponds

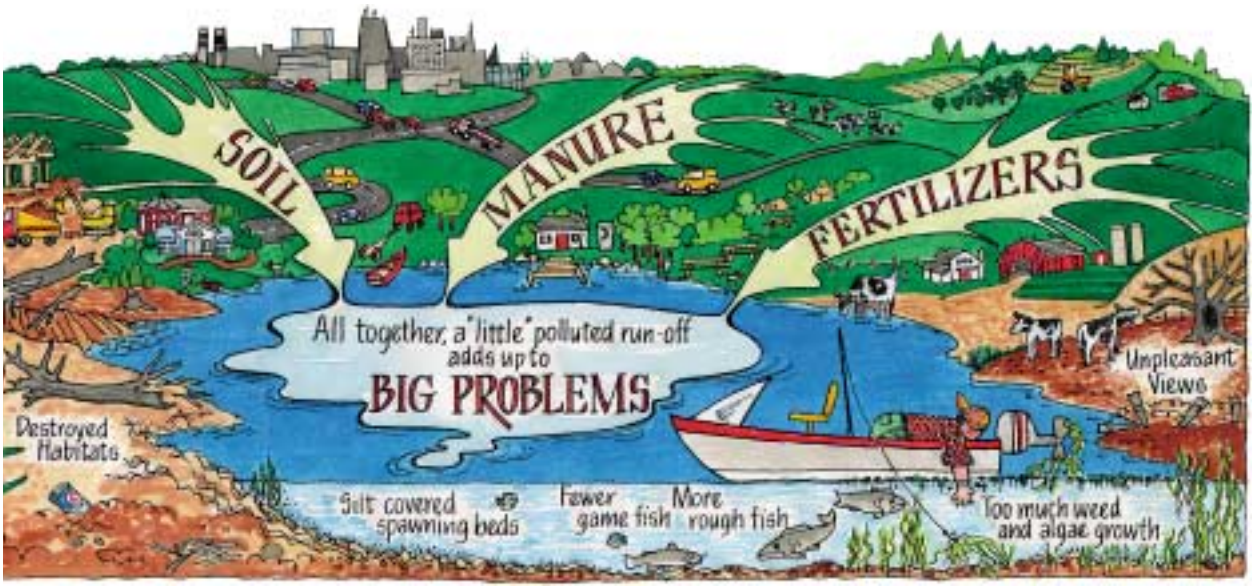
Why is it important to protect the Bear Pond Watershed from polluted runoff?

- Big Bear and Little Bear Ponds provide recreational opportunities to watershed residents and to visitors. They are important contributors to the local economy.

- The ponds contain valuable habitat for fish, birds and other wildlife, including a rare aquatic plant in Big Bear Pond.

- A 1996 University of Maine study demonstrated that lake water quality affects property values. For every meter (3 ft) decline in water clarity, shorefront property values can decline as much as 10 to 20 percent! Declining property values affect individual landowners as well as the economics of the entire community.

- Once a lake has declined, it can be difficult or impossible to restore.



What is being done to protect the Bear Pond Watershed?

The Bear Pond Improvement Association (BPIA) tests water quality in both Big Bear and Little Bear Ponds as part of the Maine Volunteer Lake Monitoring Program. BPIA also works with agencies and watershed residents to promote environmental stewardship.

Volunteer watershed surveys have been found to be one of the most effective ways to protect lake water quality by getting citizens involved in identifying existing and potential sources of polluted runoff. During the spring and summer of 2001, the BPIA worked with the Oxford County Soil & Water Conservation District (SWCD), Cumberland County SWCD and DEP to conduct a watershed survey.

This report is specifically designed for citizens living in the Bear Pond Watershed. It contains a summary of the survey findings and recommendations to protect the health of the lakes.

Purpose of the Watershed Survey

The primary purpose of the watershed survey was to identify and prioritize **existing** sources of polluted runoff, particularly soil erosion sites, in the Bear Pond Watershed. However, of equal importance was to:

- Raise public awareness of the connection between land use and water quality, and the impact of polluted runoff.
- Inspire people to become active stewards of the watershed.
- Use the information gathered as one component of a long term lake protection strategy.
- Make general recommendations to landowners for fixing erosion problems on their properties

Local citizen participation was essential in completing the watershed survey and will be even more important in upcoming years. Through the leadership of the Bear Pond Improvement Association, and with assistance from groups and agencies concerned with lake water quality, the opportunities for stewardship are limitless! We hope that you will find this report interesting and informative.

Numerous lakeshore properties were observed to have little or no **vegetated buffer** at the water's edge. It is important to note that buffers of shrubs and trees do a much more effective job than bare ground or grass at keeping **NPS** pollution from entering lakes. Deep shrub and tree roots also help hold the shoreline.

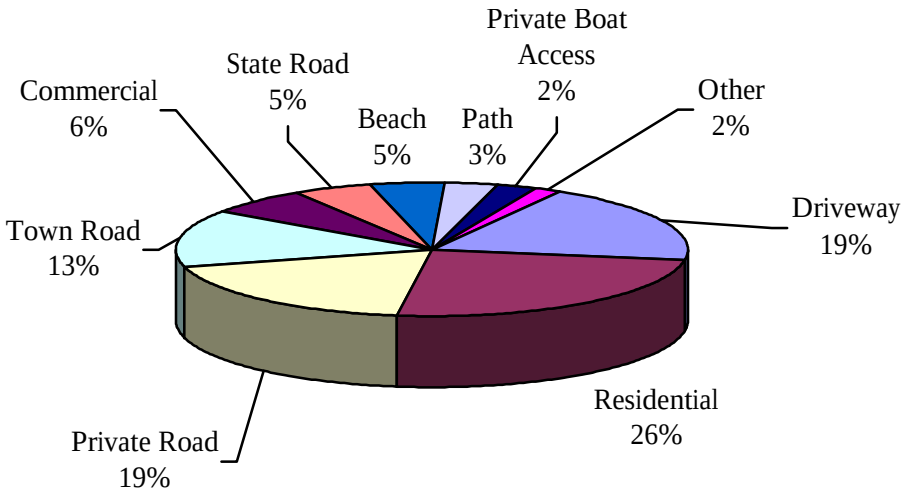
Buffers can be installed inexpensively. You can either stop mowing (as in the picture on the right) and raking to the water's edge and let plants grow up naturally. Or you can plant the area with native trees and shrubs.

Buffers enhance the appearance of shorefront property and attract birds and other wildlife, without ruining the landowner's view.

Summary of Watershed Survey Findings

Volunteers and technical staff identified 173 sites that are currently impacting or have the potential to impact water quality in Big Bear and Little Bear Ponds.

Percentages of Sites by Land Use



Land Use Breakdown

A total of nine land use types were associated with the identified sites. The largest number of problems were associated with residential areas, driveways, private roads, town roads and commercial areas. Detailed descriptions of these sites are on the following pages. The remaining problems were associated with the following land uses:

Private Boat Access and Beach—Four private boat access sites were found, two with low impact (see page 10 for ranking criteria), one with medium impact and one with high impact. Eight beach sites were found, five with low impact and three with medium impact. Most private boat access and beach sites can be fixed easily, with low to moderate cost.

State Roads and Paths—Nine state road sites were found, five with low impact, three with medium impact and one with high impact. Six path sites were found, three with low impact, two with medium impact and one with high impact. Most state road and path sites can be fixed easily, with low to moderate cost.

Other—Three sites were documented in the survey. One was a sediment delta in Little Bear Pond, the second was the brook that feeds that sediment delta, and the third is a dumpsite along State Route 219. The sediment delta was found to have a high impact, and the brook was found to have medium impact. Both sites can be addressed by reducing NPS pollution from higher up in the watershed, primarily the Bear Mountain Road. However, to do so may be expensive and require a high degree of planning. The dumpsite has a low impact and can be fixed by cleaning up the site, which may be costly.

Residential

Of the 43 sites associated with residential areas, 16 were low impact, 22 were medium impact, and 5 were high impact. Over half of the sites can be fixed with little technical expertise and low cost.

Common Problems Identified:

- Slight or moderate surface erosion
- Bare and sparsely vegetated soil
- Lack of vegetated buffer along shoreline
- Direct flow of runoff to lake
- Roof runoff causing erosion
- Stockpiled soil
- No erosion controls at construction sites

Recommended Solutions:

- Seed and mulch bare soil
- Establish or enhance buffer
- Limit foot traffic in eroding areas
- Install dripline trench to catch roof runoff
- Install silt fence around construction sites
- Install waterbar, open-top culvert, rubber razor or other runoff diverter
- Place mulch or stone on footpaths

Problems:

- Ineffective silt fence
- Bare soil with direct flow to lake
- Lack of buffer

Solutions:

- Properly install and maintain silt fence
- Seed and mulch bare areas
- Remove stockpiled soil
- Establish buffer along shoreline

Residential areas were associated with 26% of the identified sources of polluted runoff to Big Bear and Little Bear Ponds. These problems pose a significant threat to lake water quality. Fortunately, most of these sites can be corrected with easy, low cost fixes.

It's the cumulative impact of all the sites that causes water quality to decline.

Driveways

Of the 33 driveways, 11 were low impact, 20 were medium impact, and two were high impact. Most of the sites could be fixed with low to medium cost and technical expertise.

Common Problems Identified:

- Slight to moderate surface erosion
- Direct flow to lake or ditch
- Poor shaping
- Poor (too sandy) surface material

Recommended Solutions:

- Crown road so that water flows to either side
- Build up road with cohesive surface material
- Install diverters such as waterbars, open top culverts or rubber razors to get water off road
- Install turnouts to direct water into wooded depressions

Problems

- Poor driveway shaping and ruts cause water to concentrate and erode the surface
- Direct flow of sediment to ditch

Solutions

- Add new surface material
- Reshape and crown driveway so water moves quickly from the surface
- Install diverters such as waterbars, open top culverts or rubber razors to get water off driveway

Preserve water quality and save time, money, and wear and tear on your vehicle by having a well crowned driveway. Use adequate surface material and add diversions to direct runoff into buffers.

It's great for watershed residents and it's great for the lakes!

Private Roads

Of the 32 private road sites, eight were low impact, nine were medium impact and 15 were high impact. The problems are more expensive to fix and would require technical assistance.

Common Problems Identified:

- Slight to moderate surface erosion
- Direct flow to lake or stream
- Slight to moderate ditch erosion
- Undersized ditches
- Poor (too sandy) surface material
- Unstable culvert inlet and outlet
- Clogged ditches and culverts

Recommended Solutions:

- Crown and reshape road to get water off road
- Install diverters such as waterbars, open top culverts or rubber razors to get water off road
- Build up road with cohesive surface material
- Clean out culverts
- Clean, reshape and armor ditches with stone rip rap or plant grass
- Remove grader berms and winter sand to allow proper drainage
- Install culverts and stabilize ends with stone

Problems:

- Grader berm at edge of road traps water and causes erosion
- Surface erosion

Solutions:

- Remove grader berm
- Reshape and crown (material in berm can be spread back onto road)

Unpaved roads are one of the biggest sources of pollution to Maine lakes.

While a one time fix may cost more up front, it will reduce lake pollution and reduce maintenance costs on your road, ditches and vehicle.

Town Roads

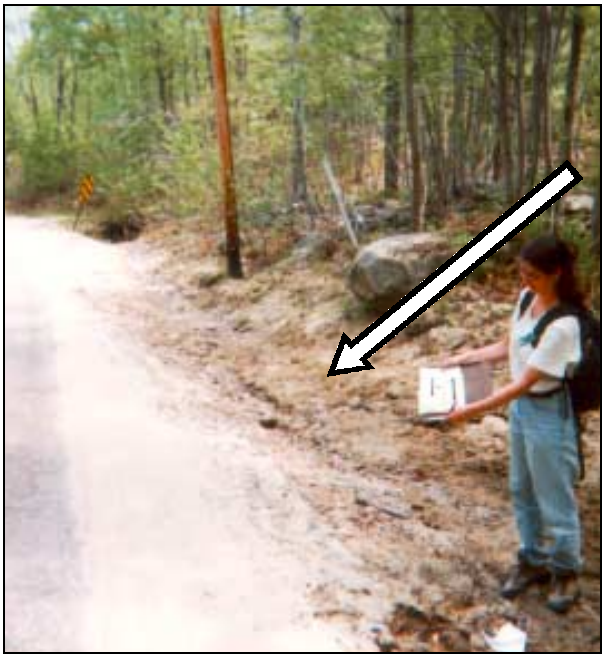
Of the 24 town road sites, 12 were low impact, seven were medium impact and five were high impact. Over half of the problems can be fixed with low technical expertise and low cost.

Common Problems Identified:

- Slight to moderate shoulder erosion
- Slight to severe ditch erosion
- Direct flow of sediment to stream or ditch
- Undersized ditches
- Unstable culvert inlet and outlet
- Clogged and undersized culverts
- Winter sand

Recommended Solutions:

- Clean out culverts
- Install culverts and stabilize ends with stone
- Clean, reshape and armor ditches with stone rip rap or plant grass
- Remove grader berms and winter sand to allow proper drainage
- Build turnouts to divert runoff off road
- Install ditches
- Install plunge pools below culverts or detention basins to hold runoff and catch sediment



Problems:

- Moderate to severe ditch and road shoulder erosion
- Direct flow of sediment and winter sand into stream

Solutions:

- Reshape ditch and shoulder
- Armor ditch and shoulder with stone riprap or plant grass
- Install detention basin to trap sediment before it reaches the stream
- Remove winter sand

Working with the Towns of Hartford and Turner to fix and maintain priority road sites will save money and improve water quality by keeping eroding soil and phosphorus out of Big Bear and Little Bear Ponds.

Commercial

Of the 11 commercial sites, five were low impact, five were medium impact and one was high impact. Nine of the 11 sites involve easy, low cost fixes.

Common Problems Identified:

- Slight to moderate surface erosion
- Bare soil
- Direct flow to lake or stream
- Lack of vegetated buffer
- Sediment from unpaved parking areas enters stream
- Possible addition of sand to beach
- Moderate ditch erosion

Recommended Solutions:

- Seed and mulch bare soil
- Establish or enhance buffer
- Stabilize culvert inlet and outlet with stone
- Remove stockpiled sand from beach area. Do not add sand to beach.
- Armor ditches with stone riprap or plant grass
- Reshape and add new surface material to parking lots

Protecting Big and Little Bear Ponds makes good business sense!

Problems:

- Direct flow of sediment off parking area and into stream
- Moderate surface erosion
- Bare soil

Solutions:

- Reshape and add new surface material to minimize erosion
- Create more of a buffer between parking area and stream

This sediment delta in Little Bear Pond, approximately two acres in size, is the result of erosion from roads, driveways and other activities in the watershed.

The cumulative impact of many small problems can spell disaster for a lake.

However, there is still time to reduce sources of pollution and prevent further decline in Big and Little Bear Ponds.

Important Points!

Summaries of the NPS sites identified in the survey are contained in a **spreadsheet** that is available from the Oxford County SWCD or BPIA. Sites are grouped in alphabetical order by land use or type. Each listing shows the map site number, the type of problem(s) encountered, location, and size or area.

In addition to the surveyed sites, numerous lakeshore properties were observed to have little or no vegetated buffer at the water's edge. These sites were not included in the survey results, but it is important to note that buffers of shrubs and trees do a much more effective job than bare ground or grass to keep NPS pollution from entering lakes.

Some watershed residents expressed concern that fluctuating water levels aggravated shorefront erosion problems on Big Bear Pond. This survey did not specifically include these areas as NPS sites. However, it is recommended that the Bear Pond Improvement Association, which owns the dam on Big Bear Pond, and landowners monitor the situation and take appropriate action.

Site Rankings

Sites in the spreadsheet were ranked according to three criteria:

- **Technical level to install** describes the degree of technical expertise needed to address a problem. A "low" tech level requires little or no specific technical assistance. For example, seeding and mulching an area that is relatively stable, but which requires vegetative cover to prevent additional soil loss from occurring. Sites with a "medium" tech level need to be visited by a technical expert who can make recommendations. A "high" tech level requires an engineered design.

- **Impact** was assigned by considering factors such as the size of disturbed area, slope, soil type, amount of soil that's eroding, proximity to water or buffer, and size of buffer. "Low" impact eroding sites are those with limited transport off-site even if the site is large or a small site with no evidence of rills or gullies (channels cut into the soil). At "medium" impact sites, sediment is transported off-site, but the erosion does not reach a high magnitude. Large sites where there is significant erosion that flows directly into a stream, lake or ditch, were rated "high" impact.

- **Cost** is an important factor in planning for restoration. "Low" cost sites were estimated to cost less than $500 to fix. An estimate of $500 to $2,500 was rated "medium". If the estimated cost to fix a site exceeded $2,500, a "high" rating was assigned.

With a few exceptions, virtually all of the sites identified in the survey are significant to one degree or another. The cumulative effect of many "low" and "medium" impact sites can exceed that of any one "high" impact site. This should be considered when a strategy is developed to address problems in the watershed.

Next Steps ~ Where Do We Go From Here?

Fixing the erosion sites identified in this survey will require efforts by individuals, the Bear Pond Improvement Association, road associations and municipal officials.

Individual Citizens

- Prevent runoff from washing sediment into the lakes. Detain runoff in depressions or divert flow to vegetated areas. Call the Oxford County SWCD or DEP for free technical assistance.
- Minimize the amount of cleared land and road surfaces on your property.
- Stop mowing and raking, and let lawn and raked areas revert back to natural plants. Deep shrub and tree roots help hold the shoreline.
- Avoid exposing bare soil. Seed and mulch bare areas.
- Don't bring in sand or rebuild beaches without permits and technical assistance.
- Call the Town Code Enforcement Officer before cutting vegetation within 250' of the shore.
- Maintain septic systems properly. Pump septic tanks (every 2 to 3 years for year round residences; 4-5 years if seasonal) and upgrade marginal systems.
- Join the BPIA.

Bear Pond Improvement Association

- Develop an active membership, and provide educational materials and guidance to members of the Bear Pond watershed community.
- Organize workshops and volunteer "work parties" to start fixing identified erosion problems and teach citizens how to fix similar problems on their own properties.
- Educate municipal officials about pond issues and work cooperatively to find solutions.

Road Associations (or private roads without associations)

- Minimize road runoff by doing regular, comprehensive maintenance. Form a road association if one does not already exist.
- Get a copy of "Camp Road Maintenance Manual – A Guide for Landowners." This reference is a must for anyone managing a gravel road. (Call the DEP at 822-6300 to order a free copy.)
- For more extensive problems, seek free technical help. Contact the Oxford County SWCD or DEP to request technical assistance.

Municipal Officials

- Enforce shoreland zoning ordinance to assure full protection of Big and Little Bear Ponds.
- Conduct regular maintenance on town roads in the watershed, and fix town road problems identified in this survey.
- Participate in and support long term watershed management projects.
- Promote training for road crews, planning boards and conservation commissions.

Permitting ABC's

Protection of the Bear Pond Watershed is ensured through the good will of residents around the lakes and through laws and ordinances created and enforced by the State and Towns.

How do you know when you need a permit?

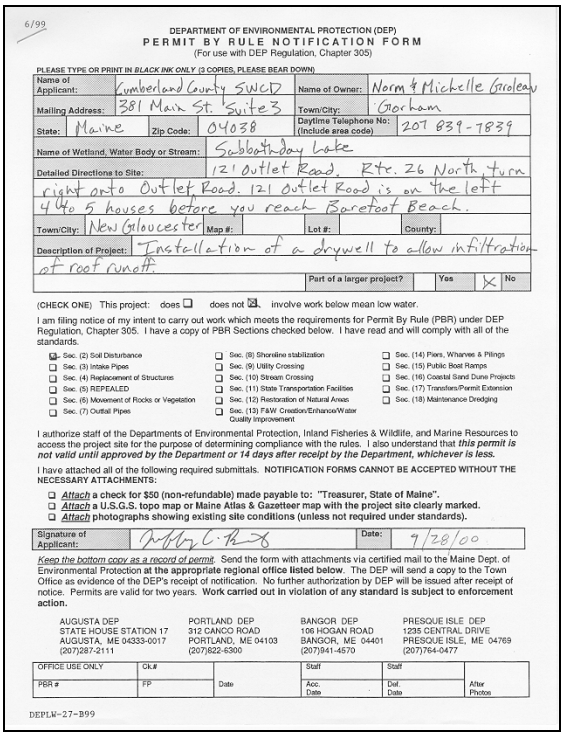
- Construction, clearing of vegetation and soil movement within 250 feet of the lake shore falls under the Shoreland Zoning Act, which is administered by the Towns through the Code Enforcement Officer and the Planning Board.

- Soil disturbance within 100 feet of the lakeshore or 75 feet of a stream also falls under the Natural Resources Protection Act, which is administered by the DEP.

  To ensure that permits for projects that will not result in significant disturbance are processed swiftly, the DEP has established a streamlined permit process called **Permit by Rule**. These one page forms (shown below) are simple to fill out and allow the DEP to quickly review the project.

> The Natural Resources Protection Act seeks to establish reasonable regulation in order to assure responsible development that does not harm Maine's precious natural systems.
>
> ~from Protecting Maine's Natural Resources~Volume 1, DEP 1996

The project partners encourage you to contact the DEP and Town Code Enforcement Officer if you have any plans to construct or relocate a structure, clear vegetation, create a new path or driveway, stabilize a shoreline or otherwise disturb the soil on your property. Even if projects are planned with the intent of enhancing the environment—such as installing some of the practices mentioned in this report –contact the DEP and Town to be sure. See last page for contact information.



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DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)
PERMIT BY RULE NOTIFICATION FORM
(For use with DEP Regulation, Chapter 305)

PLEASE TYPE OR PRINT IN *BLACK INK ONLY* (3 COPIES, PLEASE BEAR DOWN)

Name of Applicant:	Cumberland County SWCD	Name of Owner:	Norm & Michelle Girolean
Mailing Address:	381 Main St. Suite 3	Town/City:	Gorham
State: Maine	Zip Code: 04038	Daytime Telephone No: (include area code)	207 839-7839
Name of Wetland, Water Body or Stream:	Sebbathday Lake		
Detailed Directions to Site:	121 Outlet Road. Rte. 26 North turn right onto Outlet Road. 121 Outlet Road is on the left 4 to 5 houses before you reach Barefoot Beach.		
Town/City: New Gloucester	Map #:	Lot #:	County:
Description of Project:	Installation of a drywell to allow infiltration of roof runoff.		
		Part of a larger project?	Yes ☒ No

(CHECK ONE) This project: does ☐ does not ☒ involve work below mean low water.

I am filing notice of my intent to carry out work which meets the requirements for Permit By Rule (PBR) under DEP Regulation, Chapter 305. I have a copy of PBR Sections checked below. I have read and will comply with all of the standards.

- ☒ Sec. (2) Soil Disturbance
- ☐ Sec. (3) Intake Pipes
- ☐ Sec. (4) Replacement of Structures
- ☐ Sec. (5) REPEALED
- ☐ Sec. (6) Movement of Rocks or Vegetation
- ☐ Sec. (7) Outfall Pipes
- ☐ Sec. (8) Shoreline stabilization
- ☐ Sec. (9) Utility Crossing
- ☐ Sec. (10) Stream Crossing
- ☐ Sec. (11) State Transportation Facilities
- ☐ Sec. (12) Restoration of Natural Areas
- ☐ Sec. (13) F&W Creation/Enhance/Water Quality Improvement
- ☐ Sec. (14) Piers, Wharves & Pilings
- ☐ Sec. (15) Public Boat Ramps
- ☐ Sec. (16) Coastal Sand Dune Projects
- ☐ Sec. (17) Transfers/Permit Extension
- ☐ Sec. (18) Maintenance Dredging

I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules. I also understand that ***this permit is not valid until approved by the Department or 14 days after receipt by the Department, whichever is less.***

I have attached all of the following required submittals. **NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS:**

- ☐ ***Attach*** **a check for $50 (non-refundable) made payable to: "Treasurer, State of Maine".**
- ☐ ***Attach*** **a U.S.G.S. topo map or Maine Atlas & Gazetteer map with the project site clearly marked.**
- ☐ ***Attach*** **photographs showing existing site conditions (unless not required under standards).**

Signature of Applicant:	[illegible]	Date:	9/28/00

Keep the bottom copy as a record of permit. Send the form with attachments via certified mail to the Maine Dept. of Environmental Protection **at the appropriate regional office listed below**. The DEP will send a copy to the Town Office as evidence of the DEP's receipt of notification. No further authorization by DEP will be issued after receipt of notice. Permits are valid for two years. **Work carried out in violation of any standard is subject to enforcement action.**

AUGUSTA DEP	PORTLAND DEP	BANGOR DEP	PRESQUE ISLE DEP
STATE HOUSE STATION 17	312 CANCO ROAD	106 HOGAN ROAD	1235 CENTRAL DRIVE
AUGUSTA, ME 04333-0017	PORTLAND, ME 04103	BANGOR, ME 04401	PRESQUE ISLE, ME 04769
(207)287-2111	(207)822-6300	(207)941-4570	(207)764-0477

OFFICE USE ONLY	Ck.#		Staff	Staff	
PBR #	FP	Date	Acc. Date	Del. Date	After Photos

DEPLW-27-B99

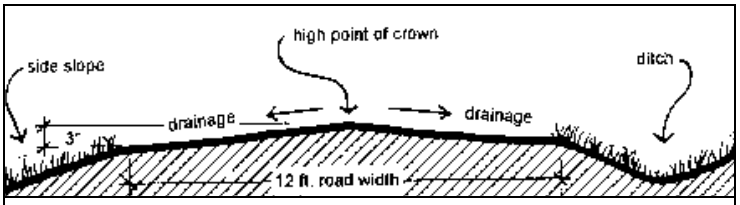
How to apply for Permit by Rule with DEP:

1. Fill out a notification form. Forms are available from your town code enforcement officer or the Maine DEP offices in Portland or Augusta.

2. Permit by Rule requires that you follow certain standards such as installing silt fence. It is important that you obtain a copy of the standards so you will be familiar with the law's requirements.

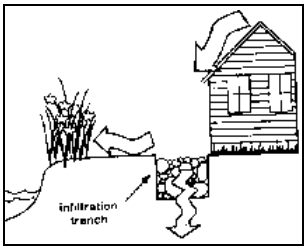
3. The permit will be reviewed within 14 days. If you do not hear from DEP within 14 days, you can assume your permit is valid. If you bring the permit directly to a DEP office, you may be able to get your permit approved immediately.

Glossary of Common Conservation Measures



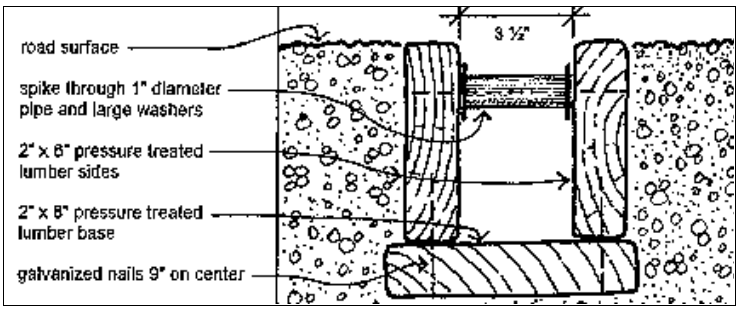
Crown profile: 1/4" of crown per foot of road width (e.g., 1/4" x 12' road—3' crown)

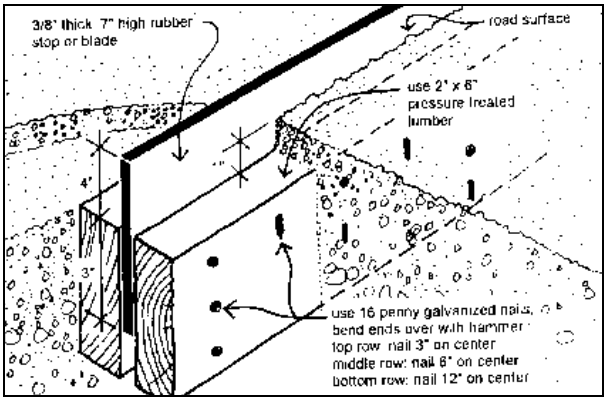
Crown—High point that runs lengthwise along the center of a road or driveway. The high point slopes gently away from the center toward the outer edge of the road, allowing water to drain off the road and preventing erosion of the road surface.



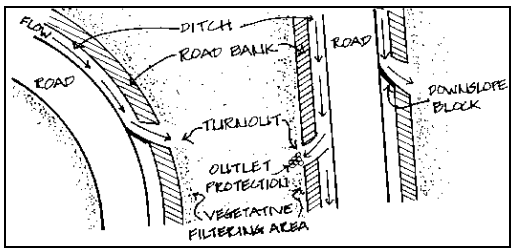
Dripline Trench—Rock-filled trench beneath the roof edge dripline that collects and stores roof runoff until it soaks into the ground. Helps control erosion and reduce wear on the house by preventing backsplash. A typical trench is 6-8" deep and 12-18" wide and filled with 3/4" stone. Can also be used along the edges of driveways to encourage infiltration of runoff.

Open Top Culvert—Box-like structure that collects and diverts road surface runoff away from a sloped driveway or camp road. They are seldom recommended for year-round roads due to the likelihood of plow damage. Install at a 30º angle to the road and direct the outlet into a stable buffer. Clean out leaves and debris periodically.

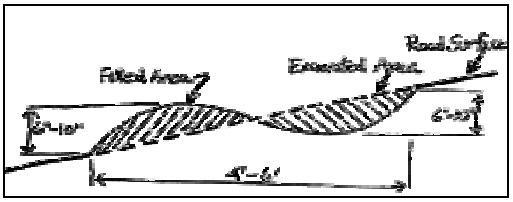




Rubber Bar—Structure that protrudes above the road surface high enough to intercept and collect water, while allowing traffic to pass over it. It is generally used on seasonal roads and driveways because of the likelihood of plow damage. Install at a 30º angle to the road and direct the outlet into a stable buffer. The rubber conveyor belts can be purchased at some hardware stores or Augusta Rubber (582-6200).



Turnout—A conservation practice used to direct runoff from a ditch (or road ruts) into a vegetated buffer. The turnout should have a flared end section that is level and lined with rock to spread out the flow.



Waterbar—Ridge (like a speed bump) that runs diagonally across a road, driveway or path, typically at a 30º angle. Stops water from running down the road and diverts it to the side. Easy to construct and most appropriate for roads with low traffic volume. Needs to be rebuilt periodically.

Where Do I Get More Information?

Contacts

Bear Pond Improvement Association
P.O. Box 4, North Turner, ME 04266
(207) 224-7763

Provides educational materials and directs individuals to appropriate agencies.

Oxford County Soil and Water Conservation District
1570 Main Street, Suite 10, Oxford, ME 04270
(207) 743-5789, ext. 3

Offers assistance with watershed planning and survey work, environmental education, engineering support, seminars and training sessions, and education on the use of conservation practices.

Maine Department of Environmental Protection
312 Canco Road, Portland, ME 04103
Toll Free (888) 769-1036 or (207) 822-6300

17 State House Station, Augusta, ME 04333
Toll Free (800) 452-1942 or (207) 287-7688

Provides permit applications and assistance, numerous reference materials, technical assistance, environmental education, project funding opportunities, and stewardship activities for lakes.

Publications

Androscoggin Valley SWCD and Lake and Watershed Resources Management Associates. 1998. *The Buffer Handbook: A Guide to Creating Vegetated Buffers for Lakefront Properties.* 20 pgs. plus inserts.

Kennebec County SWCD and Maine DEP. June, 2000. *Camp Road Maintenance Manual: A Guide for Landowners.* 54 pgs.

Maine DEP. December, 1997. *A Homeowner's Guide to Environmental Laws Affecting Shorefront Property in Maine's Organized Towns.* DEPLW-38-B98. 28 pgs.

Maine DEP. 1999. *Maine Shoreland Zoning—A Handbook for Shoreland Owners.* DEPLW 1999-2. 34 pgs.

University of Maine Cooperative Extension. *Gardening to Conserve Maine's Native Landscape: Plants to Use and to Avoid.* Bulletin #2500. June, 1999. Folded leaflet.

Remember, the long term health of the watershed depends on <u>you</u>!