NONPOINT SOURCE POLLUTION

EXISTING SOURCES

Report to the 118th Maine Legislature

Joint Standing Committee on Natural Resources

Prepared by:

Maine Department of Environmental Protection

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Introduction

On October 3, 1997, the Department of Environmental Protection (DEP) hosted the Nonpoint Source Water Pollution Forum at the State YMCA Camp in Winthrop. The Forum was held in response to a Resolve (1997 Resolve, Ch. 67) passed by the first session of the 118th Legislature, which requires that the Department report back to the Legislature by January 15, 1998 on "proposed measures that would reduce the contribution of nonpoint source pollution to Maine lakes, streams and coastal waters from existing sources." The Forum brought together 65 individuals knowledgeable about the contribution of nonpoint source (NPS) pollution from various land use activities, including development, roads, forestry and agriculture. Ideas were generated on what problems need to be addressed and on ways to improve the current situation.

Ideas on ways to address nonpoint source pollution problems included both non-regulatory and regulatory approaches. Participants, in general, favored emphasis on non-regulatory approaches, with increased emphasis on education and outreach as a strongly preferred approach. At the same time, however, there was general agreement that in some instances increased regulation may be necessary in order to achieve significant reduction in NPS pollution.

Following the meeting, the DEP prepared a preliminary draft of this report, which included ideas referred to as "possible measures to address problems." Many, though not all of these ideas, were proposed by participants at the NPS Forum. In the Forestry and Agriculture categories, ideas were, for the most part, developed by DEP staff. The ideas were not put forward as "recommendations" in this preliminary report as they had not at that time been subject to any public scrutiny.

Copies of the preliminary report were mailed to all participants of the Forum, as well as to all persons on the Stormwater Management Rule-Making mailing list with a request for comments. On December 19, 1997, the DEP held a public meeting in Augusta to answer questions and receive comments on the draft report. Approximately 40 people attended this meeting with the greatest representation coming from the forestry industry followed by agriculture. Following the meeting, 37 comments were received, again coming predominantly from forestry and agriculture interests. Comments from Soil & Water Conservation Districts accounted for nearly half of the written comments.

Concern was expressed by forestry and agriculture representatives during and after the meeting that the lists of "possible measures" were not indicative of the input received at the NPS Forum. Representatives of forestry were particularly concerned that the report narrative and ideas listed do not accurately reflect the level of NPS pollution resulting from forestry relative to the other land use categories. Forestry representatives commented that new regulations are not needed at this time, but rather implementation of existing laws should be improved, primarily through increased education, training and technical assistance. A representative of agriculture pointed out that two work groups are currently working on proposed measures to address nutrient management and concentrated animal feeding operations (CAFOs), and suggested that those recommendations, if implemented, would satisfy the need for any additional regulation. A few other commenters, however, stated that the list of "possible measures" are largely needed to address NPS problems.

After evaluating the comments received on the preliminary report, DEP staff prepared the list of recommendations that appear in this report. With each recommendation is a brief narrative explaining the basis for the recommendation. A number of these reference other recommendations, including several from the Great Ponds Task Force and the agriculture work groups on nutrient management and CAFOs. A number of the recommendations would require statutory changes to implement. For most of these, suggested statutory language is included in the Appendix to this report. A few ideas were considered worthy of inclusion, but require more work; in these cases, further study has been recommended. And in some cases, the recommendations call for continuing activities that are already

occurring to some extent. In these cases, the level of effectiveness is often directly linked to the funding level.

The remainder of this report is divided into three sections. The first section, "Common Problem Areas", discusses three NPS issues which are of concern under all of the major land use activities. One of these issues, "Lack of Public Awareness", addresses the need for more education and outreach at all levels. In the second section, "Existing Source Categories", NPS issues are addressed that are specific to a particular land use activity. The second and third sections both include the lists of "possible measures to address problems" that were listed in the preliminary report. However, the narratives for forestry and agriculture have been revised based on comments received. The third section lists the DEP's recommendations.

Common NPS Issues

Chronic Erosion

Description of problem: Erosion of poorly designed or maintained gravel driveways and parking areas, roads, and ditches; of inadequately stabilized cut and fill slopes; and of any areas where soil or fill is left exposed to concentrated stormwater runoff contributes large amounts of sediment and nutrient pollution to lakes and streams. In fact, these types of chronic sources contribute a high percentage of the annual phosphorus load to many of Maine's lakes. There are many sensitive lake and stream watersheds where these sources need to be addressed. Although there is much work underway, current technical and financial resources are only adequate to support programs in a small percentage. Property owners are not always willing to address their problems, even when offered technical and financial assistance.

What is being done: These problems are generally all repairable given adequate resources and landowner interest. The most successful program for addressing these problems involves a three step process: (1) Conduct a survey of the watershed, preferably by local volunteers, to identify and prioritize chronic erosion sources; (2) Develop a plan or strategy to address the priority sources; and (3) Implement the plan. This process is underway in a number of lake watersheds. Technical assistance in performing the survey, evaluating the data, developing the strategy and addressing the sources is provided by DEP, private consultants, Soil and Water Conservation Districts (SWCDs) or other regional watershed organizations. "Conservation Corps" of local high school students are often used as a very cost effective way of fixing many types of chronic erosion problems. Funding for these programs is typically a mix of local contributions, landowner cost share and NPS grants. Future funding will be aided by grants under the priority watershed program, provided a $500,000 bond issue is approved by the voters in June 1998.

Need:

- Improve capability to identify the watersheds, particularly lake watersheds, most in need of this type of protection, so limited resources can be focused in the best places.
- establishment and maintenance of local watershed management entities with technical capacity to address problems in priority watersheds.
- Incentives to encourage reluctant property owners to address their problems.
- Education and outreach to reach land use professionals on the importance and methods of preventing erosion.

Possible measures to address problems:

Note: The following list of ideas was compiled by the Department after the NPS Forum. They have not been revised based on comments received at the December 19 public meeting or in writing, and therefore, do not represent the Department's recommendations. Recommendations appear in the last section of this report.

1. Focused cooperative research - Support cooperative research efforts between the DEP, the University of Maine and the OGIS to improve capability to identify watersheds in greatest need of protection due to threats posed by erosion.

2. Watershed surveys - Promote volunteer watershed surveys and enhance state and regional capacity to support them.

3. Local/regional watershed management - Provide funds via the priority watersheds program and the NPS grant program to help establish local/regional watershed management entities, and support staff for such agencies as well as for SWCDs.

4. Un-grandfather the Erosion and Sedimentation Control Law - Make the Erosion and Sedimentation Control Law (Section 420-C) retroactive, so that it applies not only to newly exposed soil erosion but also to chronic historical erosion problems. For erosion problems in existence before July 1, 1997, provide a grace period with a deadline date by which the problems must be addressed with effective long term erosion control; e.g., a deadline of 2005 for particularly sensitive watersheds and 2010 for other sensitive watersheds. This would provide an incentive for reluctant property owners to take advantage of whatever assistance might be made available.

5. Enforcement - Provide additional Field Services staff at DEP with requirement that DEP report to Legislature on activities, including enforcement actions, taken to ensure compliance with the Erosion & Sedimentation Control Law and the Stormwater Management Law.

6. Financial Assistance - The State Revolving Loan Fund currently used to fund municipal wastewater treatment plants could be a valuable source of revenue to support landowner efforts to address chronic erosion problems in sensitive watersheds. Statutory authority is needed to make this program available to private, nonprofit entities.

7. Training & Certification - Continue to provide training to land use professionals through the Nonpoint Source Training Center at DEP; promote participation in the voluntary Contractor Certification Program.

8. Require certification of contractors on all state contract be certified as of January 1, 2001.

9. Tax break - Provide a tax break (property or income) for landowners who incorporate Best Management Practices (BMPs) to solve chronic erosion problems.

Lack of Adequate Buffers

Description of problem: Vegetated buffer strips adjacent to streams and lake shores are extremely important for protecting water quality. Historically, development, forestry and agriculture adjacent to streams and lake shores have often been poorly sited. The result has been: (a) destruction of riparian buffers which would have provided treatment of runoff from the land use area as well as shading of the stream, which is necessary for the survival of cold water fish species; (b) destabilization of natural stream banks and lake shores from fill and or drainage effects; (c) destruction of natural habitat and flood

storage capacity as streams are channeled or relocated and wetlands filled; and (d) loss of wildlife habitat and travel corridors.

What is being done:

- Shoreland zoning has reduced many of these impacts, but since (a) it does no apply to the most sensitive small, first order streams, and (b) preexisting development and agricultural activity is grandfathered, its effectiveness is limited.

- The Natural Resources Protection Act, helps reduce the impacts of development on the shoreline, but it does not require a buffer and preexisting development is grandfathered.

Need:

- Incentives to reestablish buffer areas along lake shores and stream banks

- Technical and financial resources to assist in restoration of impaired stream and riparian habitat.

Possible measures to address problems:

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1. Buffer incentive - Modify criteria controlling additions and expansions under Shoreland Zoning to encourage the re-establishment of wooded buffers along lake shores. A Shoreland Zoning Work Group has been working on this issue; the Department is mandated to report to the second session of the 118th Legislature in January 1998.

2. Education - Encourage programs like "adopt - a - stream" to raise public awareness and local support on issues of stream and riparian impairment. Get local businesses involved in the program, perhaps by setting an example of converting developed area; e.g., lawn or parking area, to establish a buffer.

3. Easements - Encourage towns to issue property tax credits in trade for conservation easements in riparian areas designated by towns that will return a high level of water resources protection to benefit the community.

4. Natural Resources Protection Act (NRPA) Jurisdiction - Modify the NRPA to require a permit for cutting vegetation next to a stream.

5. Shoreland Zoning Jurisdiction - Expand jurisdiction of Shoreland Zoning to include first order streams.

Lack of Public Awareness

Education and Outreach for the General Public

Description: Most of the land in Maine is in private ownership and since NPS pollution is a land use based pollution source, it is essential to reach the landowners of the State in order to address the problem. In addition, these are the voters of the state who make decisions at the local and state level. It is imperative that landowners understand the relationship between landaus and water quality if they are to take the necessary protection measures. However, reaching such a large diverse group can be a real challenge, especially when the answer to the question, "How does this affect me?" is neither intuitive nor obvious.

What is being done: Since the start of DEP's NPS program there have been efforts to reach out to the general public through radio Public Service Announcements (PSAs), public speaking engagements, handout materials and most recently a NPS Awareness Campaign. The NPS Awareness Campaign is a joint effort between Maine DEP and the State Planning Office (SPO). It includes the production of a 30 minute television show that aired throughout the state, TV PSAs, posters, brochures and book covers under the "Clean Water Starts With You" theme. In addition, there was an Earth Day 1997 kickoff event with Governor King in the Damariscotta Lake area.

Staff have also been involved in speaking engagements at various environmental associations, staffed displays at fairs and sports shows, and presented information at workshops.

To help DEP & SPO track the effectiveness of their efforts, the agencies have participated in the Market Decisions Omnibus survey for the past two years. Comparison of the two surveys indicates there has been very little movement in the level of awareness, and no movement in behavior change. The survey also indicated that the pollution sources that the DEP feels are the greatest threat to water quality have not yet been recognized by the public. There is a long way to go in building public awareness of NPS issues.

Need: There continues to be a great need to both raise the public's awareness of the NPS pollution issues and to introduce them to BMPs that we all need to follow in order to protect and improve water quality.

Possible measures to address problems:

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1. Staff Support - Allocate and train DEP staff to market NPS stories to the media, and to speak to various interest groups.

2. Marketing - Continue a broad awareness campaign that includes purchasing air time, printing PSA's, and distributing information to lawn & garden centers and other retail stores for them to distribute to customers.

3. Partnering - Designate staff to work with businesses to combine advertising efforts with educational needs.

Education in Schools:

Description: Today's adult population is not adequately educated on water pollution issues. The old saying "our future is our children" holds true for water pollution as well. If DEP or other groups had gone into the schools when the first water pollution control legislation was passed, we would now be working with a fairly educated group of landowners and voters.

What is being done: For the past 15 years, DEP has gotten involved in schools on a limited basis. Recently, DEP has worked predominately with teachers, providing them the tools to work with their students, such as through curriculum guides and workshops. DEP has hosted teacher workshops and participated at professional educator meetings (Maine Science Teachers Assoc., Gulf of Maine Marine Educators Assoc.) In addition, DEP is part of Earthminders; Partners in Environmental Education, a group of environmental agencies and associations partnering to bring environmental education into the classroom. Earthminders has produced an Interactive television series for the past 4 years for teachers throughout the state.

DEP has also organized the Maine Children's Water Festival. This event has been held in the Portland and Bangor areas once or twice per year for the past 4 years. Approximately 900 fourth, fifth, and sixth grade students attend the one day event with their teachers to learn about water. While generally considered a success, the percentage of school children statewide that are able to participate in this program is small. Staff at the DEP have also actively participated in the Envirothon, a high school competition held each May.

Needs: Ways are needed to open the doors into schools. Programs on water pollution must be creatively marketed in order reach the average teacher and their students.

Possible measures to address problems:

1. Staff Support - Allocate and train staff to:

    a. Visit classrooms and make presentations.

    b. Continue to organize water festivals & workshops.

    c. organize continuing teacher workshops & partnering with other Environmental Education groups.

2. Educational Materials - Provide resources, such as Internet data bases, monitoring kits, and field guides, to enable & encourage teachers to take their kids outside. Will require funding for kits and field guides. Possibly partner with businesses to provide this, but takes staff time to develop the partnership.

Existing Source Categories

Developed Areas

Overview: Development of the land from natural vegetative cover to buildings, roads, parking, lawns, etc. changes both the quantity and quality of stormwater runoff. Problems with polluted runoff are exacerbated by poor planning, design and siting of development leaving inadequate space or infrastructure to correct runoff problems. As a result, these problems are difficult and expensive to correct.

High Density Urban Areas

Description: The stormwater runoff from densely developed areas with a high percentage of imperviousness is typically contaminated with sediments, nutrients, heavy metals, hydrocarbons and, in some instances, pathogens. Also, the volume and rate of discharge of the runoff from these areas is much greater than it naturally would have been. If this stormwater drains to a sensitive lake, the result is likely to be increased algal growth, loss of clarity and depletion of the deep water oxygen essential for salmonid fisheries. If a small stream watershed has greater than 10% impervious of area, it is likely that: (a) the stream bottom will be scoured and the stream banks unstable from high flows; and (b) sensitive insect and fish species will be impaired or eliminated as a result of toxic effects or habitat loss. If the stormwater drains to a poorly flushed coastal embayment, the result may be contamination of shellfish areas or accumulation of toxics in the bottom sediments.

What is being done: Retrofitting stormwater quantity and quality BMPs in these densely developed areas is a formidable challenge due to the difficulty of locating the BMPs (most of the land is already being intensively used) and the very considerable expense involved. Often these areas drain to the resource via storm sewers, some of which are combined sewers, so efforts to comprehensively address CSOs may provide some opportunities to deal with the issue in these instances. Other than stormwater management efforts associated with CSO abatement, little is being done to deal with stormwater quantity or quality in these situations.

Needs: Little information is available on the condition of streams which drain densely developed areas. A comprehensive assessment of which streams are already impaired or on the verge of impairment, as well as an evaluation of the feasibility of restoring these streams and their watersheds, is needed. DEP has initiated a program to address this, but the data gathered thus far is far from comprehensive. For those densely developed watersheds with sensitive water resources, there is a need for programs to raise funds to modify infrastructure (storm sewer systems) and implement BMPs.

Possible measures to address problems:

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1. Work with municipalities that are separating CSOs in order to address the need for treatment of stormwater after separation.

2. Stormwater Utilities -Provide incentives, perhaps in the form of reduced state regulation or targeted cost share funding, to encourage the establishment of stormwater utilities in urban areas.

3. Watershed Management - Promote and support watershed surveys identifying significant sources of NPS pollution (hot spots). With this information, develop watershed management strategies, which could focus on a collective, end of pipe solution, on hot spot BMPs, on pollution prevention activities such as street sweeping, or on a combination of these.

4. Stormwater Tax - A tax on untreated impervious area within sensitive watersheds could be both a source of funds to address stormwater collectively and an incentive for individual land owners to retrofit their properties with BMPs.

5. Assessment - Continued and enhanced efforts to identify and evaluate streams that are impaired or on the verge of impairment as a result of stormwater from densely developed areas will help focus the limited resources available to address these problems.

   (Note: There were many suggestions involving expansion of jurisdiction of the Stormwater Management Law (section 420-D) but these dealt only with new sources).

Landscaped Areas

Description: Stormwater draining from urban lawns can be a very significant source of phosphorus. Lawns, golf courses and ball fields in sensitive lake watersheds may be significant contributors of phosphorus, particularly if they receive indiscriminate use of fertilizers containing phosphorus. Since Maine soils generally contain sufficient phosphorus to support a healthy lawn without the addition of phosphorus fertilizers, this is an unnecessary source.

What is being done: DEP has included recommendations that landowners minimize use of fertilizers containing phosphorus in most of its efforts to educate shorefront property owners.

Need: More aggressive efforts to reduce fertilizer use in sensitive lake watersheds.

Possible measures to address problems:

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1. Prohibit phosphorus fertilizer use - Prohibit within "sensitive lake watersheds" or at least within lake shoreland zones, the use of fertilizers containing phosphorus except: (a) during the initial establishment of turf; or (b) when a soil test indicates phosphorus is needed to maintain a healthy stand of grass.

2. Education - With or without the above ban, provide more focused education (See discussion on Education & Outreach for the General Public, above).

Septic Systems

Description: When old, inadequately designed and installed septic systems within the shoreland zone are located in coarse, sandy soils with less than 10% fines, or suffer annual hydraulic failures due to flooding or breakout, they can contribute significantly to water quality problems. If located on the lake shore, these systems may add to the cumulative phosphorus load to the lake. If on coastal embayments

they may contribute to the bacterial contamination, and resulting closure, of adjacent shellfish harvesting areas.

What is being done:

- The subsurface wastewater disposal rules currently requires that new systems within the shoreland zone that are located in coarse, sandy soils install a loamy sand liner in the leach field. This liner provides the fine soil particles necessary to trap sewage phosphorus; particles which are lacking in the surrounding soil. The subsurface wastewater disposal rules only requires new systems to incorporate the liner. Old systems are only addressed if they fail visibly.

- The Over Board Discharge Program and the Small Community Grants Program provide some funding to help address these problems.

Need:

- Incentives are needed to encourage replacement of inadequate systems in sensitive situations.

- There is a need for an efficient means of identifying these systems.

- More information is needed on which lakes have coarse sandy soils in their shoreland areas, and the location of these soils.

Possible measures to address problems:

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1. Sunset clause for nonconforming systems - Require owners of systems located within the shoreland zone in coarse, sandy soils that do not meet the current subsurface wastewater disposal rules to upgrade these systems by a given deadline.

2. System upgrade on property transfer - Require owner of systems located within the shoreland zone in coarse, sandy soils that do not meet the current subsurface wastewater disposal rules to upgrade there systems when the property is sold.

3. Funding Assistance - Explore opportunities for funding assistance for subsurface disposal system upgrades.

4. Shoreland Soil Survey - Conduct survey of lakes to determine location of coarse sandy soils in shoreland zones, which may result in inadequate treatment of wastewater.

Marine-related discharges

Description: Usually located on or adjacent to coastal waters, lakes and rivers, boatyards and marinas are contributors of Nonpoint source pollution. Fueling, engine maintenance operations, scraping and painting, improper discharge of boat toilets, and other inconsiderate boating operations can all result in discharges of pollutants and affect water quality.

To date, outreach to the public is limited and many boat operators are still unaware or insensitive to the protection of Maine waters. Boat oil discharge goes unchecked and boat operation too close to shore causes the disturbance water bottoms and high wave actions which precipitate shore erosion.

What is being done: The most effective way to reduce polluted discharge is to prevent it with management practices and controls. To date:

- DEP has developed a "Best Management Practices for Marinas and Boatyard Manual" providing guidance for facilities' operators concerning environmental protection practices. Training for owners and operators was provided trough the Nonpoint Source Training Center in the 1996 and 1997 spring sessions.

- A pump-out program managed through the State Planning Office provides a financial incentive in the form of a grant to install a pump out system at marinas and boatyards to decrease the disposal of untreated sanitary waste from boats into marine waters. To date, some 25 to 30 systems have been installed.

Need: Enforcement capability is needed to ensure that boatyard and marina owners address stormwater runoff, and implement BMPs. More training is needed to encourage adoption of BMPs.

Possible measures to address problems:

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1. Gasoline Tax - Dedicate the gasoline tax from gasoline sold for boat operation to the maintenance and environmental protection of Maine waters. Currently, this tax is being collected by DOT for non-marine uses.

2. Training - Continue with NPS training, education and outreach to marinas through the NPS Training Center and working with the State Planning Office's Coastal Zone Management program. Upgrade the BMP manual as needed.

Roads

Public

Description: Roads generally cause nonpoint source pollution loading similar to that of urban areas in general. Runoff from the roads and highways can contain bacteria and other pathogens; hydrocarbons; heavy metals; toxic chemicals; suspended sediments; nutrients; and oxygen-depleting organic matter. In addition, maintenance activities can cause loadings of sand and salt; metals from paints; pesticides and nutrients; sediment from erosion; and solvents and oil.

Most all watershed surveys conducted to inventory significant sources in specific watersheds identify inadequately designed or maintained roadside ditches as a major cause of excessive sedimentation polluting lakes and small streams. In addition, modifications to stream hydrology frequently occur during road construction. Changes in flows can cause channels and stream banks to erode, as well as road washouts during high flow conditions.

Maine's roads are heavily sanded in the winter time. In the spring time, sediments are transported from ditches to streams and lakes. The road salt applied along with the sand is also toxic to vegetation and a risk to groundwater. Without regular maintenance, roadside ditches gradually lose their stormwater and erosion control efficiency.

To date, the maintenance and upkeep of the roadside portion of roads have been considered last in most road maintenance plans and budgets. The quality of the road traveling surface is usually more important than erosion control, ditch maintenance and winter sand removal.

What is and is not being done: The Maine Department of Transportation (MDOT) has developed a new erosion and sediment control manual to guide construction and maintenance activities. The addition of properly placed and sized culverts and the stabilization of ditches are some of the recommended practices. Adherence to the practices is proposed to become standard practice by MDOT work crews. No required standards exist, however, for work on local and private roads. Basic routine maintenance is the recommended practice but lack of time and funding at the municipal level is often the obstacle to proper roadside upkeep.

Need: More incentives must be available for roadside maintenance, repairs and erosion control. More training is also needed for contractors and road crews. Certification of training could be requested by DOT or municipalities before awarding any contract for road maintenance. Additional funding could be the incentive for town or DOT crews to get more training.

Street sweeping could be a cost effective alternative to ditch grading and roadside maintenance. Data should be collected to assess the value of this practice.

Possible measures to address problems:

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1. Incentive - Tie local road assistance to use of BMPs; either to qualify for a certain percentage of existing dollars, or to qualify for additional funds based on reallocation from gasoline tax. (certified to be required by MDOT).

2. Training - Provide NPS training to contractors and local road crews through the NPS Training Center.

3. Contractor Certification - Require certification of contractors on State contracts as of January 1, 2001.

4. Road Crew Certification - Require that local road crews be certified in erosion and sediment control by 2001 in order for municipalities to qualify for local road assistance.

Private (Camp) Roads

Description: Camp roads contribute significant amounts of phosphorus and sediments to our waterbeds. These roads were originally designed to handle summer traffic only, but as seasonal camps are being

converted to permanent, many of the camp roads are now being used year round. Most of the roads are gravel surfaced and have significant slopes for at least a portion of their length. Many of these "camp roads" display chronic erosion problems in large part due to poor location, design (lack of proper drainage), and maintenance. To correct these problems requires organization, money and technical expertise, all of which are not readily available to many camp road owners. This is particularly true since towns throughout the State of Maine have dropped the maintenance of privately owned camp roads due to costs, legal and liability concerns. Therefore, local tax dollars and road crew expertise for maintenance and repair of town roads are no longer available for camp roads. Since most camp roads lack an organized association to oversee maintenance, often only minimal work is carried out. Many camp roads have multiple owners; the lack of support from a few owners often stalls proposed improvements. Further, while many camp road residents are willing to improve their road, they aren't aware of possible places to go to for assistance.

What is being done: A camp road manual was developed by Kennebec County SWCD and limited technical assistance is currently provided by DEP and some conservation districts. Additionally NPS grants are provided to nonprofit groups for demonstration projects, some of which include camp road maintenance demonstrations. This money is far from adequate however, to address the thousands of camp road problems in the state.

Need: The need exists to convince camp road owners that roads contribute significant phosphorus and sediment to lakes and streams and also that a well designed and constructed road which minimizes NPS pollution is actually cheaper to maintain in the long run. The need also exists to make sources of financial and technical assistance available to them.

Possible measures to address problems:

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1.Education - Improve understanding of impacts to water quality by developing a specific program that addresses camp road erosion and maintenance aimed at lake associations and individuals on camp roads;

2.Education - Convince people that fixing erosion problems is in their own interest by showing benefits versus costs for road maintenance.

3.Focus Group - Establish a focus group consisting of individuals knowledgeable on camp road issues to develop additional ideas for improving road construction and maintenance.

4.Technical Assistance - Fund positions at SWCD's which focus on water quality and camp roads. Positions should actively recruit camp road resident's participation and begin with assessing a road and developing a long-term plan. The positions should also be available for site visits, design recommendations and work with the camp road owners and contractors to install BMPs correctly.

5. Technical Assistance - Develop a "clearing house" at the state level for information and sources of assistance.

6. Funding Assistance - Provide funding assistance by:

a. Making the State Revolving Load Fund available to private, nonprofit organizations;

b. Establishing a fund for camp road capital projects through water craft tax, fishing license or pollution fines;

c. Giving tax breaks for environmental road improvements.

Forestry

Overview: Areas of concern for NPS pollution include skidder trails, lack of buffers, haul and access roads, closing out harvested sites (putting harvest sites to bed), clearcuts, and timing of harvests. All of these topics relate to using forestry Best Management Practices, or "BMPs".

Many efforts are ongoing across the state that promote the use of BMPs and other measures to protect water quality during forest management operations. These efforts, whose target audience is largely loggers and forest landowners, include the Sustainable Forestry Initiative, Low Impact Forestry Project, Certified Logging Professional Program and the Forest Resource Advisory Team. In addition, the Maine Forest Service delivers several BMP workshops to loggers across the state every year, and the DEP offers training on erosion and sedimentation control through the NPS Training Center. Outreach and technical assistance efforts are seen as highly beneficial. However, the need exists to improve upon the use of BMPs, including their proper installation and maintenance.

Standards do exist at both the Land Use Regulation Commission (LURC) and DEP through administration of the Protection and Improvement of Waters Act, the Natural Resources Protection Act, and Shoreland Zoning. These standards provide some limitations on harvesting activities that are occurring in or adjacent to wetlands and other water resources. The standards have gaps, however, particularly for small streams, and vary between municipalities and unorganized territory creating confusion for all of those people involved in forest management activities.

Skidder Trails

Description: The primary cause of skidder problems is the large amount of disturbed soil area they create (especially a problem in erodible soils or on steep slopes), and the funneling effect that such trails have on runoff water (encouraging scouring and significant loss of soil, especially on steep slopes). These problems are of particular concern in areas that contain or are adjacent to water resources.

What is Being Done?: Training of loggers and forest operators is continuing on a large scale via the Certified Logger Training Program (CLTP) and NPS Training Center. Efforts are ongoing by the Maine Forest Service to determine if skidder BMPs represent a priority area for future outreach efforts.

Needs: Better and more frequent application of skidder BMPs in the field and better compliance efforts.

Buffers

Description of Problem: As noted above, buffers are of special concern in protecting water quality because the operation of heavy equipment creates conduits for sediment-ladened runoff to directly enter stream resources. Small streams, in particular, usually do not receive protection through maintenance of buffer strips or Stream-side Management Zones (SMZs), and yet are efficient conveyers of water pollution to important aquatic habitat further downstream.

What is Being Done: Current practice is to allow limited harvesting within SMZs. Standards (both LURC and DEP) currently exist for providing buffers along larger streams, but are lacking for small streams.

Needs: More information is needed as to whether harvesting within SMZs compromises the ability of buffers to protect streams against polluted runoff. Further consideration is also needed for improving the level of protection on small streams.

Haul Roads

Description: Because of their cumulative size and propensity to intercept, concentrate, and transport runoff from large areas for long periods of time, forestry haul roads and their associated ditch systems are perhaps the single greatest source of NPS pollution related to forestry operations. Their impacts are greatest in areas where stream crossings (culverts, bridges and fords) are abundant within a harvest area. The quality and extent of water control devices used to direct captured runoff into vegetated filter strips before it reaches waterways, particularly at stream crossings, is critical to preventing NPS problems. Use of waterbeds, ditch turnouts, road crown techniques, catch basins, check dams, seed/mulch, and other water control devices (part of forestry BMPs) is key to how much, or how little, a road system impacts protected resources. The length of time that roads remain open and unstabilized is also an important consideration with regard to NPS control.

What is Being Done: Training of loggers and forest operators is continuing on a large scale via the Certified Logger Training Program (CLTP) and NPS Training Center. Efforts are ongoing by the Maine Forest Service to determine if haul road BMPs represent a priority area for future outreach efforts. To date, however, there is no state program that reaches the small logging companies.

Needs: Better erosion and sediment control for NPS problems associated with roads and ditches and better compliance efforts. Also need a way to reach the small operations that do not presently benefit from the certified loggers program.

Site Closure (Putting Sites to Bed)

Description: Just as haul roads represent the single greatest contributor to forestry NPS pollution, so do site closure activities represent a major opportunity for controlling NPS pollution from forest management activities. This is true because site closure, or "putting sites to bed", is the final action taken by operators at a given site, often for a period of many years. Once this phase is implemented and operators have left, the likelihood of discovering and repairing significant pollution sources at the site is extremely low.

What is Being Done: Training sessions including site closure BMPs are being offered throughout the state. However, it is inconclusive whether such training is being satisfactorily implemented in the field.

Needs: Site closure requires effective implementation of a number of separate BMP categories (haul road BMPs, skid trail BMPs, stream crossing BMPs, etc.), acting collectively to permanently stop erosion throughout all phases of a harvest. Proper site closure represents the last defense for insuring that erosion and resource impacts do not begin or continue indefinitely once operations have stopped. Emphasis on this BMP category is critical to long-term NPS control, especially in steep terrain and in areas where duff disturbance is substantial and vegetative cover is limited immediately after the harvest.

Harvesting

Description: There is confusion regarding the role of clearcuts and clearcut buffers in affecting stream resources and site productivity. Public concerns regarding clearcuts relate more to the negative

aesthetics inherent to the harvest (i.e., they look bad). Of perhaps greater environmental importance are the physical impacts to streams, stream buffers, and site productivity that can result from improper harvesting in sensitive areas and steep terrain. Current buffer practice near clearcuts is to apply large buffers (SMZs) to larger waterways while providing relatively small protective buffers, or no buffers, to smaller streams. However, limited harvesting is allowed within these areas. This approach has significant implications to streams adjacent to clearcuts where soil disturbance, runoff volumes, nutrient leaching, and thermal pollution tend to be magnified relative to harvests on smaller areas or areas using less rigorous harvest strategies.

What is Being Done: Current standards (LURC and DEP) exist for harvest activities in and adjacent to wetlands and other water resources. These standards, for the most part, do not address harvesting activities adjacent to small streams.

Needs: Because of their sensitivity, smaller streams actually require greater buffer protection than do larger waters near clearcut areas, including wider buffer strips and/or procedural and seasonal restrictions on harvesting within and adjacent to the buffers.

Timing of Harvests

Description: The timing of harvests can be critical to controlling pollution relative to erosion, sedimentation and nutrient leaching at harvested sites. Harvesting operations that occur under wet conditions (such as during spring thaw or during fall rains) can create greater NPS problems than activities occurring throughout the rest of the year, especially in steep terrain and/or on sites with soils that erode easily. Soils are often unstable under these conditions, so where soil disturbance occurs, additional erosion and sedimentation, can be expected.

What is Being Done: Current training approaches encourage operators to harvest during frozen or dry condition whenever possible.

Needs: Harvesting during winter months when ground and stream surfaces are frozen can prevent or minimize duff and soil disturbance that could otherwise create pollution problems for streams during heavy runoff periods. Customizing BMPs to address special circumstances at individual sites may be a viable means of minimizing wet weather harvesting impacts when an operation cannot wait until winter.

Possible measures to address problems:

Note: The following list of ideas was compiled by the Department after the NPS Forum. They have not been revised based on comments received at the December 19 public meeting or in writing, and therefore, do not represent the Department's recommendations. Recommendations appear in the last section of this report.

1. Forest Management Planning - Increase the role, authority, and ability of state agencies in planning, developing, implementing and monitoring forest practices, including forest operations compliance and enforcement.

2. Erosion Control - Require harvest applicants to submit an Erosion Control Plan which includes the use of BMPs as part of harvest notification procedures.

3. Funding Assistance - Increase the availability of state, federal, and private grants and other funding for qualified interested parties, to improve forestry planning, training, BMP development, BMP implementation, and site monitoring/assessment. Provide updated lists of available funding sources for interested parties.

4. Incentives - Establish and publicize incentives for forestry operators and managers to avoid or correct NPS pollution problems, with possibilities including lowered property taxes or tax credits, reduced penalties in formal enforcement actions, penalty rebates for cooperative violators, and public recognition/awards for outstanding forestry NPS pollution control practices and achievements.

5. Forestry BMP Information - Encourage incorporation of forestry BMP descriptions, pollution avoidance incentives, and technical assistance source lists directly into harvest plans and notifications, and in watershed management plans involving harvest operations.

6. Mandatory Training - Make certified forest practice and forest BMP training mandatory for all operators and management personnel for which harvesting timber is their primary means of livelihood.

7. Stakeholder Groups - Create formal stakeholder groups between state, public, private, and federal entities to identify and address NPS pollution causes and problems before, during, and after harvest operations (i.e., form stakeholder groups with common goals).

8. Best Management Practices - Develop a single set of "Maine Forestry BMPs" including mandatory minimum standards to be followed by all managers/operators and site-specific BMPs mandatory for all harvest operations that are adjacent to or contain protected water resources. Based on these minimum standards, propose guidelines and provide technical assistance to allow individual landowners to develop site or season-specific BMPs that maximize water quality protection for a given area or time frame, including clearcuts, steep slopes, and periods of heavy runoff. Consider that some sites should not be harvested.

9. Buffers - Enlarge stream side management zones (SMZs) to increase protection of small streams, and/or prohibit harvesting within existing SMZs especially where slopes are steep and/or where the adjacent harvested site is clearcut or contains significant areas of exposed soil.

10. Data Collection - Support ongoing efforts and create new efforts to collect baseline water quality data on 1st, 2nd, and 3rd order streams throughout the state, with special emphasis on areas with planned or ongoing forest harvesting activities and in areas identified as priority watersheds. Utilizing baseline stream data where appropriate, initiate long-term projects to quantitatively measure and assess how effective forestry BMPs are in protecting stream water quality.

11. Training - Increase education, outreach, and technical assistance efforts statewide through the NPS Training Center, to a level where logger knowledge of forestry BMPs and simple erosion control methods is reasonably assured. Include small logging companies in this outreach effort.

12. Reporting - Involve state agencies, private forestry consultants, industry and other entities who are interested in timber harvesting, in developing a reporting process that documents NPS control successes and failures in forestry activities and presents this information in a format useful for informing the public of priority forestry NPS issues and status.

13. Technical Assistance - Provide one-on-one assistance for landowners interested in developing site or season-specific BMPs. Consider soils, slope, type of water resource, time of year, type of harvest, and size of harvest in creating site-specific BMPs.

14 BMP Information - Develop a "Forestry BMP Users' Manual" that is easy to understand, including illustrations, drawings, and clear examples of when, where, how, and why to install each

Agriculture

Overview of Problem: Agricultural practices have the potential to adversely impact land resources (overgrazing, soil erosion, degradation of riparian areas) and water quality (chemical , physical and biological contamination of surface and groundwater through nutrient, sediment and /or pathogen inputs or excessive water withdrawals). Agricultural practices can be categorized into the following nonpoint source types: erosion from cropland; confined animal facilities; application of nutrients to cropland; application of pesticides to cropland; livestock grazing; and irrigation of cropland.

Overview of What is Being Done: The Maine Department of Agriculture (MDA) is the designated State management agency for agricultural nonpoint sources. In 1991, MDA developed a strategy to implement BMPs on farms. The strategy document includes sets of BMPs guidelines for the following activities: erosion and sediment control; manure management; pesticide management; and nutrient (fertilizer) management. This strategy has two components: voluntary usage and mandatory compliance. Most emphasis is on achieving voluntary usage of BMPs through education, technical assistance and the limited amount of financial assistance under USDA cost share programs.

The mandatory compliance portion of the strategy includes two tiers of enforcement. The first tier is a complaint response system operated by the MDA. Under this system, all agriculture complaints are received and investigated by MDA. In consultation with other experts, MDA recommends site-specific BMP's to remedy and prevent any water quality concerns. If the farmer uses the BMPs, the farmer is granted protection from nuisance liability (17 MRSA § 2805). If the farmer does not use these BMPs, the case is referred to DEP or the Attorney General for the second tier of enforcement. DEP enforces under the Waste Discharge Law (38 MRSA § 413). This law prohibits the discharge of any pollutant into waters of the state. There is an exemption for agricultural erosion, however, if the farmer prepares an erosion and sedimentation control plan approved by the DEP. Cases involving pesticides are referred to the Board of Pesticide Control for enforcement. Finally, the Attorney General can require BMPs as a civil remedy in a nuisance lawsuit.

Erosion From Cropland

Description of Problem: Periodic soil disturbance necessary for crop production exposes the soil surface causing erosion to exceed undisturbed land soil loss rates. Soil erosion occurring during surface water runoff events allows the movement of sediment and associated pollutants in runoff waters. During each of the numerous water runoff events every year a portion of eroded soils are deposited in brooks, streams, rivers, lakes, or coastal waters.

What is Being Done: Most commercial farmers, and many part-time farmers and other landowners are enrolled as cooperators with county Soil and Water Conservation Districts. The SWCDs, with help from the USDA Natural Resources Conservation Service, provides technical assistance to cooperators in

order to help voluntarily develop Soil & Water Conservation Plans and implement soil & water conservation practices (BMPs) to reduce soil erosion. The federal USDA has provided some financial assistance to individuals to share the cost of certain qualifying conservation practices. Federal funding support for conservation practices and NRCS staff support has steadily declined in recent years.

Needs: The SWCDs need funding for staff to provide technical assistance to develop and implement soil & water conservation plans for farmers and other cooperating landowners.

Confined Animal Facilities

Description of Problem: Confined animal facilities include areas used to grow or house the animals, areas used for processing or storage of product, and manure handling and storage areas. Significant amounts of animal manure are accumulated on farms during production of farm animal products. Water runoff from heavy animal use areas, manure storage areas and facility wastewater are potential sources of pollutants. All sizes of animal feeding operations, from a few horses in the backyard to a 600 head dairy farm, are potential source of NPS pollutants. As the number of confined animals increases there is an increasing potential for nonpoint source pollutant releases especially if the operation does not have an adequate land base and use BMPs.

What is Being Done: Persons managing confined animal facilities need to implement BMPs to be granted protection form nuisance liability under the "Right to Farm " law. The MDA and SWCDs promote voluntary usage of BMPs and respond to complaints. Over many years the USDA and SWCDs has provided considerable technical and financial assistance to help farmers install BMPs such as (animal) heavy use area protections, manure storage and handling systems, etc. The SWCD Advisory Council in consultation with the MDA has developed a report that details recommendations to implement a manure management program based on mandatory nutrient management plans that would be needed for all confined animal facilities. The report address issues related to manure production, storage, and utilization. In a separate but related development, at the request of the legislature, the MDA has convened a work group to develop a plan to regulate "concentrated animal feeding operations" (CAFOs). CAFOs generally are expected to be quite large confined animal facilities.

Needs: All confined animal facilities, small through large, need adequate land and implementation of BMPs to minimize pollutant transport to surface or groundwater. BMPs applicable to confined animal facilities need to be reviewed and updated to increase the overall usage and effectiveness of the management practices. Some specific BMPs regarding adequate manure handing and storage should be made mandatory for all sized operations. For large numbers of animals, a person should be required to obtain a permit prior to building a new or expanding into a large confined animal facilities. Jurisdiction thresholds, appropriate permit standards and procedures need to developed and integrated appropriately with any existing State and federal requirements.

Application of Nutrients to Cropland

Description of Problem: Nutrients, fertilizers and manure have to be applied to crop and hay fields to grow crops. There is an significant cost avoidance saving incentive to apply only enough nutrients to meet the agronomic needs of a crop. Excessive applications or improper timing of applications does result in significant export of nutrients from farmland to surface and groundwater. Nutrients on farmland can be picked up by water runoff or percolation and become pollutants entering state waters.

What is Being Done: Persons applying nutrients to cropland need to implement BMPs to be granted protection form nuisance liability under the "Right to Farm " law. The MDA and SWCDs promote voluntary usage of BMPs and respond to complaints. A 1992 statute (38MSRA 417-A) prohibits application of manure on lands within the watershed of a Great Ponds (about 50% of Maine) when the ground is frozen. The University of Maine Cooperative Extension (UMCE), SWCDs, USDA, MDA and DEP have provided assistance to promote voluntary usage of nutrient management . Active nutrient management

helps: maintain crop yields and soil quality ; reduce production costs; and minimize losses of nutrients from farmland that then becomes pollutants in surface or ground waters. The SWCD Advisory Council in consultation with the MDA has developed a report that details recommendations to implement a manure management program based on mandatory nutrient management plans for farms producing or receiving over 100 tons per year of manure or other residuals that are to be applied as nutrients to cropland.

Needs: The MDA, SWCDs, UMCE, and USDA need to continue to progress in demonstrating the value of nutrient management methods. Nutrient management could be prompted by requiring implementation of nutrient management plans. The MDA should conduct outreach, compliance assistance, and enforcement to achieve full compliance with the 1992 statute prohibiting spreading of manure on frozen ground. The state could consider expanding the winter spreading prohibition to all of Maine and specify calendar dates instead of using "when the ground is frozen".

Application of Pesticides to Cropland

Description of Problem: Pesticides are applied to help produce crops. If improperly handled, pesticides can contaminate ground or surface waters.

What is Being Done: Mandatory requirements are in effect for pesticide use. Commercial pesticide applicators, private pesticide applicators who apply restricted or limited use pesticide, dealers, and monitors must be certified and licensed by the Board of Pesticide Control (22MRSA 1471-d). These certification and licensing procedures require training and compliance with standards of competency in the use of pesticides.

Needs: The State should continue the current mandatory regulatory system.

Livestock Grazing

Description of Problem: Animal grazing on pasture land can disturb vegetation, expose lands to excessive erosion, and destroy riparian areas. The most significant impact is that soil and stream bank erosion from overgrazed or severely disturbed riparian areas and streams can cause excessive sedimentation. Also grazing on stream banks or direct livestock watering in waters results in the direct discharge of manure that increases bacteria and nutrient levels.

What is Being Done: Persons managing livestock grazing need to implement BMPs to be granted protection form nuisance liability under the "Right to Farm " law. The MDA and SWCDs promote voluntary usage of BMPs and respond to complaints. The current BMP is fencing to control livestock access. Fencing is used on some grazed lands to exclude animals and to direct animals to specific watering locations in a water body. Fencing is used on some grazed lands to totally exclude animals from watering directly in surface waters. In those cases, water is withdrawn from surface water or groundwater and provided to animals.

Needs: Agricultural BMPs should be developed to specify that grazing or confined animals be excluded from all water bodies except for crossings. Agricultural BMPs should specify that confined or grazing livestock should not directly access drinking water from a classified stream or a lake. Water should be withdrawn for the water body and provided to livestock in a location that is fenced and excludes animals from the water body. A phase-in period will be needed to allow enough time for existing operations to develop alternative reliable livestock watering facilities.

Surface Water Withdrawals for Irrigation of Cropland

Description of problem: Excessive water withdrawals for crop irrigation can lower water levels impairing essential habitat (water) for aquatic life. Crop irrigation is an increasing practice in blueberry, vegetable and potato production.

What is being done: The DEP is collaborating with the Aroostook Water Management Board to work out specific BMPs, such as man made irrigation water storage ponds, for potato farmers to prevent excessive stream water withdrawals during dry summer periods.

Needs: DEP needs to work with the MDA to provide information and guidance for farmers that irrigate crops to help them prevent excessive stream water withdrawals to could violate water quality standards.

Possible Measures to Address Problems:

Note: The following list of ideas was compiled by the Department after the NPS Forum. They have not been revised based on comments received at the December 19 public meeting or in writing, and therefore, do not represent the Department's recommendations. Recommendations appear in the last section of this report.

1. **Implementation of the 1991 Agriculture NPS Strategy - Provide resources for the MDA to take additional actions to implement the 1991 Strategy which relies primarily on voluntary usage of BMPs, including: a. BMP Information - Revise the BMPs to make the information more accessible and understandable; b. BMP Outreach - Conduct outreach to inform Farmers about the BMPs; and c. Complaints - Improve capacity for the Agriculture complaint response program;**

2. Manure Spreading - Conduct outreach, compliance assistance, and enforcement to achieve full compliance with the 1992 statute (38MSRA 417-A) that prohibits application of manure on lands within the watershed of a Great Ponds (about 50% of the area of Maine) when the ground is frozen.

3. **Whole Farm Management Plans - Create incentives to accelerate implementation of BMPs based on Whole Farm Management Plans prepared in collaboration with NRCS & SWCDs. Incentives could include: Maine income tax credit; use of existing property tax exemptions for BMPs as "water pollution control facilities"; no interest loans for BMPs under the Clean Water Act funded State Revolving Loan Fund, coordinated access to USDA financial assistance programs and institution of a proactive Farm Business Compliance Assistance Program to provide farm business financial planning advice to help optimize business.**

4. Financial Assistance - Financial assistance is used to share the cost of installing BMPs. The State does not have any financial assistance programs to help farmers implement BMPs. The USDA operates federal programs that cost share with farmers who enter cooperative agreements to install and use BMPs. The 1991 State strategy calls for an expansion of state and federal assistance, especially in situations where the use of BMPs would remove land from production or threaten the economic viability of the farm.

5. Compliance - Conduct BMP usage inspections by on-site reviews of all commercials farms (5700 estimated, 1992 census of agriculture) on a 5 year rotation to determine whether the farmer is using BMPs sufficiently to qualify for protection under the Right to Farm Act, and take actions to enforce compliance with any mandatory requirements of State law.

6. Concentrated Animal Feeding Operations (CAFOs) - Federal and State efforts are currently underway to minimize environmental and public health impacts of CAFOs through a mix of voluntary and regulatory measures. The US EPA has scheduled development and implementation of a new national strategy for addressing public health impacts from animal feeding operations. EPA anticipates finalizing the strategy in 1998. The Maine Department of Agriculture will report to the legislative committee on Agriculture, Conservation and Forestry in January 1998 with recommendations on how to regulate CAFOs.

7. Nutrient Management - Since January 1997, the Maine Department of Agriculture has been working with the Manure Subcommittee of the SWCD Advisory Council to consider revisions to manure management guidelines. The Council issued a report in the fall of 1997 that recommends a number of specific actions to manage animal waste storage and handling that will serve to reduce the amount of pollutants entering Maine waters. One recommendation is to require permits for farms with animal feeding operations over a certain threshold and to implement nutrient management planning for storage and handling of manure according to rules adopted by the MDA over a phase-in period.

8. Mandatory Implementation of "Accepted Agricultural Management Practices" - Require persons engaged in farming to use agricultural land management practices specified in rules adopted by the MDA, modeled after the approach used in the State of Vermont since 1994.[1]

9. Buffers - Require minimum vegetative buffer strips where water runs over from cropland to streams.

10. Livestock watering - Prohibit livestock from directly watering in state surface waters by the end of a 5 year phase in period. Provide technical assistance and financial cost share assistance to qualifying farm businesses over the implementation period.

11. Surface Water Withdrawals for Irrigation of Cropland - Determine appropriate management policy in Maine to prevent excessive water withdrawals for crop production.

12. Technical Assistance for BMPs - Increase support of Maine's SWCDs in order to deliver practical technical assistance to help farmers develop and implement Conservation Plans to conserve soil and water resources and viable farm operations.

13. Work with Pesticides Control Board to address pesticide handling adjacent to streams.

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[1] Rules would include definitions of 2 categories of performance standards for land management practices: Accepted Agricultural Management Practices (AAP) and Site-Specific Agricultural Management Practices (SAP). AAPs would clearly describe basic, verifiable management practices that all farms should use to be presumed to meet State water quality standards. Examples of possible AAPs: no direct discharge of pollutants, severely limit or prohibit winter spreading of manure; manure storage or stacking facility minimum standards; nutrient inputs to farm lands commensurate with crop needs; prohibit or limit livestock access to State surface water; require vegetative buffer strips where water runs over from cropland to streams; soil loss rates cropland limited to a specified soil loss tolerance rate.

All Farm Operations would be required to use the AAP by a certain date. SAP can be required to be implemented on a farm by the Department on a case by case basis in order to abate a discharge of water pollutants. Before requiring a SAP, the MDA must determine that sufficient financial assistance is available to assist the farmer to comply. Both categories of Agricultural Practices must be practical and cost -effective to implement.

Recommendations

The Department recommends implementation of the following ideas; those appearing in bold type would require statutory change.

Non Regulatory - Education, Training, Technical Assistance & BMP Implementation

1. Continue to support watershed management activities through annual appropriation of bond money for the Priority Watershed Program. Support volunteer watershed surveys and the establishment of local or regional watershed management entities through this or other funding sources.

   Basis: The $500,000 bond, if approved by the voters in June, will support the development and implementation of a few management plans in priority watersheds. Many more watersheds will remain on the list for needed funding. Annual support of this program is needed if it is to benefit more than the initial few projects.

2. Increase the capacity of Soil & Water Conservation Districts to provide technical assistance. Support the recommendation of the Great Ponds Task Force (LD 1730) to allocate $100,000 for the purpose of placing at least two "resource specialists" in Soil & Water Conservation Districts to provide technical assistance for nonpoint source reduction projects, especially in priority watersheds (including streams and coastal waters as well as great ponds), where local projects need support that is not currently available. In addition, the Department, in conjunction with the Maine Department of Agriculture should report to the First General Session of the 119th Legislature on recommendations for increasing staff support at the Soil & Water Conservation Districts in order to provide technical assistance on NPS issues.

   Basis: Soil and Water Conservation Districts (SWCDs) are a vital link in the delivery system for many of the water quality programs undertaken by a number of state agencies. SWCDs are effective because they are run by volunteers who are local residents working to solve local soil and water conservation problems, both through technical assistance, where BMPs are applied to the land, and though education of the local community. SWCDs are now facing even greater work loads with new federal and state initiatives forthcoming, such as Concentrated Animal Feeding Operations, Total Maximum Daily Loads, and Manure Management Planning. However, SWCDs are operating on a shrinking budget due to cutbacks in federal assistance.

   The idea of providing technical assistance through strengthening the Soil & Water Conservation Districts received strong support at the NPS Forum.

3. **Amend state law to enable the State Revolving Loan Fund to be used by private, nonprofit entities for the purpose of reducing NPS pollution.**

   Basis: Private, nonprofit entities, such as lake associations responsible for camp road upkeep, are eligible to receive loan assistance under the State Revolving Loan Fund under Federal guidance, but not under State law. Currently, the fund is available only to municipalities and sewer districts for municipal wastewater treatment facilities.

4. By January 1, 2001, all state agencies should be directed to include the following language as standard bid specifications for all state contracts involving earth movement, excavation, construction or fill, unless the agency determines that erosion control is unnecessary for the proposed project:

"Vendors bidding on the contract must possess current certification in erosion control practices by the Department of Environmental Protection, and shall ensure that any subcontractors they employ for earth moving, excavation, construction or filling also possess current certification in erosion control practices. Proof of certification must be submitted as part of bid documents, along with a list of proposed subcontractors."

Basis: The Maine Department of Environmental Protection began operating the voluntary contractor certification program in 1997. The program requires that a contractor complete two training courses and have a work site pass inspection by the local SWCD. The program has generally been well received. Requiring certification of contractors will ensure that the State of Maine sets the right example on how work should be done, and provides the incentive to contractors to receive the required training and get certified.

5. Support Great Ponds Task Force recommendation (LD 1730) for establishing an education position at DEP to promote lakes education and outreach efforts.

Basis: Participants at the NPS Forum were nearly unanimous in their recommendation for more effort on education and outreach. Existing staff at DEP do include education and outreach activities in their work plans, but are unable to increase the limited time currently allocated due to other work responsibilities.

Roads

6. Provide incentive for municipalities to provide proper erosion and sedimentation control on local roads and associated facilities, including sand and salt storage, by making additional funding available and dedicated for this purpose.

Basis: Roads have been identified in many areas as significant sources of NPS pollution, often due to eroding ditches. Municipal budgets for local road work often do not include sufficient funds to ensure proper maintenance, including erosion and sedimentation control. A source of funding is needed that is dedicated to water quality protection work. Potential sources of funding could include dedicating money for environmental work through the Local Road Assistance Program, if additional funds become available, or a bond issued for "capital improvements for water quality protection".

Regulatory

General

7. **Amend the Erosion and Sedimentation Control Law (Section 420-C) to make it applicable not only to newly exposed soil erosion, but also to chronic historical erosion problems. For erosion problems in existence before July 1, 1997, provide a deadline date by which the problems must be addressed with effective long term erosion control of January 1, 2005 in "most at risk" watersheds and 2010 for other watersheds. This would provide an incentive for reluctant property owners to take advantage of whatever assistance might be made available.**

Basis: The Erosion and Sedimentation Control Law currently applies only to activities begun after July 1, 1997. However, erosion from previously developed sites is a significant source of NPS pollution. Over the long-term, the law should require stabilization of a site regardless of whether it was disturbed before or after July 1, 1997. The proposed period to phase in this provision of the law

provide strong technical assistance support during this period, a logical role for SWCDs if given the needed capacity (see recommendation #2).

8. Modify criteria controlling additions and expansions under Shoreland Zoning to encourage the re-establishment of wooded buffers along lake shores. A Shoreland Zoning Work Group has worked on this issue; the Department has filed a separate report on this topic to the Legislature.

   Basis: Buffer strips have been recognized as one of the most effective means for preventing or reducing NPS pollution. This proposal provides an incentive for establishing a buffer in front of some lakeside structures.

9. Establish a work group to evaluate options for improving the implementation and maintenance of buffer strips along water resources, particularly small streams, including consideration of amending Shoreland Zoning to include first order streams, or amending the Natural Resources Protection Act to include the cutting of vegetation adjacent to streams, as well as consideration of non-regulatory approaches. The work group should report back to the First General Session of the 119th Legislature.

   Basis: Buffer strips have been recognized as one of the most effective means for preventing or reducing NPS pollution. Commenters made several recommendations on ways to increase the usage of buffer strips, including amendments to Shoreland Zoning or the Natural Resources Protection Act. There needs to be a thorough evaluation of these and other options, including non-regulatory approaches.

Development

Lawns

10. **Enact a law to prohibit the use of fertilizers containing phosphorus within lake and pond watersheds, except: (a) during the initial establishment of turf; or (b) when a soil test indicates phosphorus is needed to maintain a healthy stand of grass.**

    Basis: Phosphorus is often added to lawns in fertilizer when it is not really needed. While phosphorus-free fertilizers do exist, they are not always readily available. A prohibition on the use of phosphorus in fertilizer, except when needed, will create a demand for phosphorus-free fertilizer, which should then become locally available.

Septic Systems

11. The Department of Environmental Protection, in cooperation with the Department of Human Services, Division of Health-Engineering, and in consultation with other interested parties, should develop recommendations on how to identify and facilitate upgrade or replacement of substandard subsurface disposal systems. The study should include a recommendation as to whether an evaluation program should be limited to systems located in any Shoreland Zone, or only in the Shoreland Zone of a Great Pond. The Departments should jointly report back to the First General Session of the 119th Legislature.

    Basis: Old, substandard septic systems can be significant pollution sources, but if never inspected may continue in service for years to come. Systems located on shallow to bedrock and sandy soils

are of particular concern near great ponds as they can be a significant source of phosphorus to the lake.

Forestry

12. The Maine Forest Service (MFS), the Land Use Regulation Commission and the Department of Environmental Protection should coordinate to ensure adequate enforcement of water quality laws as they relate to timber harvesting. The agencies should enter into a MOA to clarify the roles of the agencies in jointly enforcing these laws.

    Basis: The MFS has concern that DEP has not acted on cases of water quality violations reported by Forest Rangers. Since DEP lacks the field presence provided by staff of the MFS, DEP staff needs to rely on these MFS field staff to help ensure compliance with the laws. The MOA should address these issues.

13. **The Department of Conservation and the Department of Environmental Protection, in consultation with a stakeholder group, should develop a set of standards governing timber harvesting that would apply statewide (municipalities and unorganized territories) with a single notification procedure. The evaluation should include consideration of existing LURC standards as a basis for statewide standards.**

    Basis: LURC standards with respect to timber harvesting and associated activities for protecting water quality have largely succeeded. However, they apply only in the unorganized territory. Separate standards apply in municipalities. This has created confusion for the landowners and the forest industry, and has led to inadequate protection for water quality in some instances.

Agriculture

14. Support an existing, legislatively created stakeholder group process to develop recommendations to regulate large concentrated animal feeding operations (CAFOs).

    Basis: In May 1997 the Joint Standing Committee on Agriculture, Conservation and Forestry directed the MDA to serve as the lead agency in convening and staffing a work group to develop a plan to deal with CAFOs. The committee wanted the work group to assess the potential impacts of CAFOs and to develop a process to regulate CAFOs in a manner that will responsibly protect natural resources and not unnecessarily discourage livestock production. The DEP is participating in the work group. A progress report was submitted by the work group on 1/27/98. A final report with recommended actions will be presented to the First General Session of the 119th Legislature.

15. Support the recommendations to develop and implement a manure management program based on mandatory nutrient management plans.

    Basis: The State Conservation District Advisory Council, Manure Management Subcommittee issued a Final Report , 12/4/97 that details recommendations to implement a manure management program based on mandatory nutrient management plans. The report address issues related to manure production, storage, and utilization. Overall, the DEP supports these recommendations as an important step to reducing NPS pollution from agriculture.

16. The Maine Department of Agriculture (MDA), through the State Conservation District Advisory Council, should place high priority on developing a BMP for providing livestock access to drinking water without directly accessing a classified stream or lake. Water should be withdrawn for the water body and provided to livestock in a location that is fenced and excludes animals from the water body.

    Basis: Direct access to water bodies by livestock results in NPS pollution through destruction of vegetated riparian buffer strips and the discharge of animal waste in or adjacent to the water. The Manure Management Subcommittee Final Report recommends development of BMPs for providing livestock access to drinking water while minimizing water quality impacts. This should be a priority task for the Council.

Appendix - Draft Statutory Language

Recommendation 3:

ACT TO AMEND THE LAWS REGARDING THE REVOLVING LOAN FUND FOR WASTEWATER FACILITIES

Be it enacted by the People of the State of Maine as follows:

Sec.1. 30-A MRSA §5903, sub-§7-A is amended to read:

7-A. Municipality. Municipality means:

A. Any city, town, special district, county, plantation or municipal village corporation within the State;

B. For the purpose of section 5953, subsection 1, paragraph D only, any water utility as defined in subsection 13; ~~or~~

C. For the purpose of section 5953, subsection 1, paragraph D, section 5953-B and section 6006-B, any public water system as defined under Title 22, section 2601, subsection 8~~.~~; or

D. For the purpose of section 5953, subsection 1, paragraph D only, any nonprofit organization.

Sec. 2. 30-A MRSA §5903, sub-§14 is enacted to read:

14. Nonprofit organization. "Nonprofit organization" means an entity that is exempt from taxation under Section 501 of the United States Internal Revenue Code.

SUMMARY

This bill will allow tax exempt organizations under Section 501 of the United States Internal Revenue Code to finance and construct non-point source projects to abate discharges of pollutants to the waters of the State of Maine through the State Revolving Loan Fund for wastewater facilities.

Recommendation 7.

Sec. 1. 38 MRSA 420-D is amended to read:

§ 420-C. Erosion and sedimentation control

A person who conducts, or causes to be conducted, an activity that involves filling, displacing or exposing soil or other earthen materials shall take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource as defined in section 480-B. Erosion control measures must be in place before the activity begins. Measures must remain in place and functional until the site is permanently stabilized. Adequate and timely temporary and permanent stabilization measures must be taken and the site must be maintained to prevent unreasonable erosion and sedimentation.

A person who owns or controls property on which an activity involving filling, displacing or exposing soil or earthen materials occurred prior to July 1, 1997 shall take measures necessary to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource as defined in section 480-B. Adequate permanent stabilization measures must be taken and the site must be maintained to prevent unreasonable erosion and sedimentation. This paragraph applies on and after July 1, 2005 to property located in the watershed of a body of water most at risk from new development as identified in the department's storm water rules adopted pursuant to Section 420-D. This paragraph applies on and after July 1, 2010 to property located outside of the watershed of a body of water most at risk from new development.

This section applies to a project or any portion of a project located within an organized area of this State. This section does not apply to agricultural fields. Forest management activities, including associated road construction or maintenance, conducted in accordance with applicable standards of the Maine Land Use Regulation Commission, are deemed to comply with this section. This section may not be construed to limit a municipality's authority under home rule to adopt ordinances containing stricter standards than those contained in this section.

Sec. 2. Report. By January 15, 2004, the Department of Environmental Protection shall provide to the joint standing committee of the Legislature having jurisdiction over natural resource matters a report concerning past and project compliance with Section 420-C. The report may include recommendations concerning staffing requirements necessary to ensure compliance with Section 420-C.

Recommendation 10:

An Act to Restrict the Use of Fertilizers Containing Phosphorus within Lake Watersheds

Sec. 1. 38 MRSA §419-B is enacted to read:

§ 419-B. Restriction on the use of fertilizer containing phosphorus on lawns or similar landscaped areas in lake watersheds

1. Definitions. As used in this section, unless the context otherwise indicates, the following terms have the following meanings.

A. "Fertilizer" means a substance used to make soil more fertile, such as manure or a chemical mixture .

B. "Lawn or similar landscaped area" means an area that is kept mowed and is covered with vegetation such as grass, fescue, legume or vetch. It does not include agricultural fields.

C. "Watershed" means the area of land that drains to a lake or pond.

2. Prohibition. No person may use fertilizer containing phosphorus on a lawn or similar landscaped area within a lake or pond watershed except:

A. During the initial establishment of the lawn or similar landscaped area; or

B. When a soil test indicates that phosphorus is needed to maintain healthy vegetation.

SUMMARY

This bill restricts the use of fertilizer containing phosphorus on lawns and similar areas within lake watersheds. Fertilizer containing phosphorus would only be allowed to be used during the initial establishment of the lawn, or when a soil test indicated that it was needed. This provision is not intended to apply to agricultural fields.