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CHAPTER 3

MAJOR RESOURCE ISSUES

This chapter outlines priority resource issues in the basin that the Department must address. These issues were generated by: 1) the Land, Water and Forestry Divisions, 2) our Partner Group, 3) in County Land and Water Conservation Plans 4) in Statewide Resource Plans including the Strategic Fisheries, Wildlife and Habitat Management Plan for Wisconsin (1999) and 4) Northern Initiatives (1996-99).

Fisheries

Fisheries issues range from the need to augment DNR staff work with volunteer data collection to the complex community structure issues of maintaining self-sustaining brook trout populations or implementing the state's walleye management plan.

Education

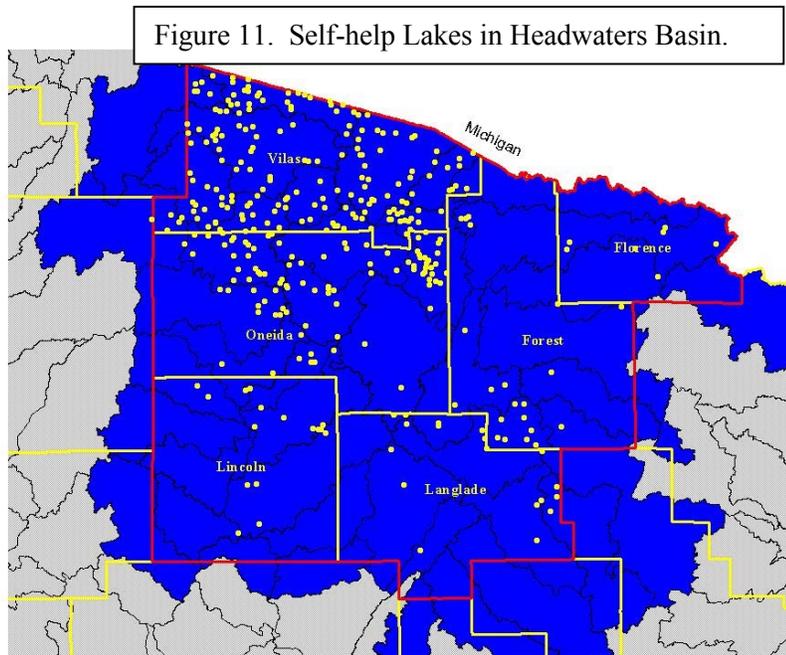
Promote education/information about area waters specific species and survey results etc. to the public. This will inform the angler about the status and management of the fishery resource.

Volunteer water quality monitoring

With over 7,400 lakes in our area and limited FTE staffing to conduct water quality monitoring, we need to tap into the

volunteer workforce. At present we have around 300 lakes being monitored by volunteers. We need to expand these efforts and add more lakes and volunteers in the self-help Program. This includes the need to expand the types of monitoring including generating increased fixed resources so water clarity volunteers can take on water quality monitoring. This program is a voluntary effort with the goal of promoting public understanding of lake ecology, while building quality

information on Wisconsin lakes. Volunteers are trained in various data collection techniques and equipped with necessary measuring devices. Volunteers measure water clarity, an indicator of water quality, by using a secchi disk. Some volunteers record temperature profiles, measuring water temperature and dissolved oxygen at pre-selected depths. Some volunteers collect water samples, which are analyzed for chlorophyll a and total phosphorus. Volunteers may also identify and map plants, and watch for exotic species, such as Eurasian Water Milfoil, zebra mussels, and purple loosestrife. Each year volunteers receive a report with summary information that they collected throughout the field season. During the year 2000 there



are over 900 volunteers statewide and 281 active volunteers in the Headwaters Basin. Refer to Appendix 4 for a complete listing of self-help lakes and Figure 11 for their location.

Exotics

Aquatic Nuisance Species, or Exotics, is an imminent threat to the ecological health of Wisconsin's waterways. Prior to 2001, the Department documented the issue, collecting information as it was reported, but with the exception of a few educational products, lacked a budget to take proactive measures to prevent or reduce the spread. In 2001, the state developed a Governor's Task Force on Nuisance Species, which will investigate and make recommendations for legislation and budgets in this area. The DNR has also developed an Exotics Team, which is an internal DNR team of experts and program staff that will develop strategies and concrete work tasks including monitoring and research on high priority species in the state. The Headwaters Basin, specifically, needs to provide awareness to the public concerning exotics (zebra mussels, EWM, purple loosestrife, etc.) and to participate in long-term solutions to prevent their spread.

Shoreline Development

The current rate of shoreline development will within a short time change the aesthetics of our northern lakes and adversely impact the aquatic communities present in them. Shoreline development patterns in recent years have brought changes to lake shoreland and littoral areas that we know are potentially damaging to not only water quality and aquatic habitat, but impacts natural scenic beauty as well. Other DNR regions have successfully utilized Sensitive Area Designations (SAD) to protect critical habitat areas from development impacts when working with local land use officials.

Stocking Guidelines

Ensure that stocking provides a good return to the angler, is biologically sound, cost effective and maintains the genetic integrity of naturally reproducing populations.

Private stocking of fish

Stocking of fish by private individuals, lake associations, other government agencies, and fishing clubs needs to be more tightly regulated to prevent introductions of questionable genetics, exotics, and diseases. In many cases, these stockings are based on social perceptions and politics, not biological need. Stocking guidelines should be reviewed and evaluate the return to the angler and overall impact to fish populations and community structure.

Sport fishery investigations

A large proportion of effort is spent each season collecting data for monitoring waters in the Ceded Territory; thus our less popular waters are largely overlooked. More work needs to be conducted in these waters.

Promote quality fishing opportunities/evaluate current special regulations

Considering the vast number of lakes and streams in the Basin, the overall percentage of waters managed for "quality opportunity" is very small. There is a real need to include additional waters into this category, while evaluating the effectiveness of current regulations already in place.

Bioaccumulation of contaminants (mercury) (Fish Health Advisory)

Because of the vast number of lakes and their recreational value, it's important that we continue to monitor fish from our Basin lakes for mercury and provide information to the public concerning health risks. Because of the public health concern this program must be continued. See Appendix 2 for a list of mercury (impaired) lakes in Headwaters Basin.

Implement baseline-monitoring strategy

We must collect information on our area lakes and streams that will establish baseline conditions and allow us to detect long term trends. Implementing this program will help meet this goal.

Identify Critical Habitat

Its important to identify and protect (prevent habitat loss) critical fish habitat for fish.

Identify in stream habitat restoration sites or stream bank protection sites

It's important to identify sites suitable for stream habitat restoration or stream bank protection. This will improve or protect the quality of our streams. Maintain past habitat development.

Beaver control on coldwater streams

Nothing can deteriorate trout habitat quicker than uncontrolled beaver dams. We need to continue to control beaver with our own programs or in cooperation with APHIS (Animal and Plant Health Inspection Service).

Restore natural reproducing native brook trout and associated cold water communities

Continue to evaluate sites that are suitable for brook trout restoration.

Large river sportfish communities

More work needs to be conducted on large rivers because of their sportfish value. Non-wadeable monitoring will evaluate the impact of harvest and regulation on sportfish in large river systems.

Lake Sturgeon

The basin's native Lake Sturgeon must be preserved or enhanced as naturally reproducing populations. We should also look at re-establishing populations in waters within their original range.

Inland lake trout recovery plan

Maintaining inland lake trout populations in northern Wisconsin is a high priority, especially in Trout Lake.

Native mussel salvage operations

Where possible, remove native mussels if they are in danger and restock in suitable locations.

Statewide walleye management plan:

Implement this plan in the basin.

Species evaluations

Continue surveys of northern pike, walleye, muskellunge, and bass populations in basin lakes.

Facilities Planning

Maintain or develop fisheries properties through facilities planning.

Northern Rivers Strategy

Implement this strategy of protecting Northern Regions highest quality river reaches. Inform department and county staff as well as the public about which rivers ranked the highest for protection. Promote the program.

Aquatic Habitat Protection

(Direct Threats)

Staffing

Our staffing is inadequate, compromising our ability to protect habitat.

Shoreline Protection and Restoration:

The Department is beginning to take a closer look at how and where we issue rock riprap permits. The tremendous increase in the number of riprap applications received in the last several years indicates that rock riprap is being overused in the lakes and streams of Wisconsin. All too often property owners come to the lakefront with traditional landscaping ideas; vegetation and shrubby growth is removed to make way for a manicured lawn to the water's edge. These alterations and the subsequent use of riprap has profound negative impacts to the environment. The changes reduce the natural scenic beauty of our shorelines, cause soil erosion problems that harm water quality and eliminate habitat for fish and wildlife. The Department is proposing a new administrative rule, "Shore Protection for Inland Lakes and Flowages," to help address this shoreline issue. This also goes beyond riprap. There is an overall need to restore and protect shoreline vegetative buffer zones on lakes, rivers and streams. There is also a need for continued research and documentation of impacts of shoreline development, and continued assistance to counties as they develop/revise waterbody use classification systems and more stringent shoreland zoning ordinances.

Oversized Piers

Construction of large private dock structures in our basin's waterways has occurred sporadically in the past and increased in occurrence during the last 10 to 15 years. These structures are not merely piers for navigational access, but unlawfully extend private decks out into public waterways. We have identified oversized piers primarily on large waterbodies or lake chains with higher, or more dense, levels of development. These structures negatively affect habitat. While recent evaluations of near-shore habitat demonstrate a good diversity of habitat around these oversized piers, a notable lack of vegetation or other aquatic life underneath the structures exists. Oversized piers cause detrimental impacts on habitat, natural scenic beauty and navigation in our waterways. If not addressed, cumulative impacts will continue and increase into the future.

Dams

- Many dams in the Headwaters Basin are in an unsafe or unauthorized condition.
- The ratio of dams-to-staff makes annual inspections unrealistic. Inspection schedules should be prioritized according to environmental impacts.
- Some dams create multiple habitat and water quality problems and block fish migration.
- There is a general misunderstanding about dam impacts, costs of maintaining and operation, and engineer requirements.
- There is a lack of compliance with repair and/or maintenance schedules.
- Public sentiment attached to dams that may be unsafe and that may need to be removed.
- Dams need to be inspected/evaluated with a whole ecosystem approach including staff from multiple disciplines necessary to protect the Public Trust.
- Consider removing dams as a means of improving stream habitat on streams and rivers.
- Private landowners may be building small dams without following any design standards (Lincoln County).

Wetlands

Evaluate wetlands in need of protection, restoration or enhancement. Evaluate using biotic index techniques for wetland integrity.

(Indirect Threats)

Fiscal Constraint

Shortage of funds in the habitat area may require staffing and/or service reductions.

Changes in Zoning Ordinances

Changes in local shoreline zoning ordinances may reduce the ability to protect shoreland areas.

Watershed, Wastewater and Stormwater

Inplace Pollutants & Wildlife Health Assessments

As contaminated sites are identified, assess the extent of contamination, including sediment and water sampling and the effects of contaminants on fish and wildlife health.

Stormwater & Construction Site Erosion

Increased development in Northern Wisconsin makes this a priority issue. Many sites need to be permitted by the Department to control stormwater runoff and erosion. There is a lack of staff to meet the current needs of the stormwater/construction site program.

WPDES Permit Issuance

Permitting wastewater treatment facilities in a timely manner is a priority to prevent additional permit backlogs.

Total Maximum Daily Loads (TMDLs)

This is a fairly new program that will continue to grow. We are currently working on a TMDL project on the Wisconsin River above Rhinelander. TMDL projects are developed for impaired waters (on the state's "303(d) list"). This is a program that we should continue to develop projects for over the next 6 years.

Non Point Source Priority Watershed Program

The watersheds in the Headwaters Basin have been evaluated and ranked for non-point source impacts (Appendix 5). Many of the watersheds have been ranked for protection rather than restoration indicating that unique resources exist and that development should occur in an environmentally safe manner. Protection projects should be made eligible for funding under the Targeted Runoff Management Program (not eligible at the present time).

There is limited water resources data on many watersheds. More data needs to be collected.

Non metallic mining (NMM)

We should implement a program that looks at NMM impacts on groundwater and surface water. This should be coordinated with county zoning and Land Conservation Departments.

Education

Watershed staff should provide the public with more information concerning shoreline zoning ordinances, regulations and shoreline development impacts. Wastewater staff should provide more educational opportunities for the public concerning wastewater issues.

Sewer Service Area Planning (SSAP)

Larger communities in the Basin should consider SSAP as a means of identifying their sewer service area and to direct development away from environmentally sensitive areas.

Drinking Water/Groundwater

- Community Wellhead protection/Prevent development in recharge areas.
- Development pressures leading to water quantity concerns: increased use and multiple uses of groundwater from a single aquifer including decreasing baseflow to streams.
- Groundwater contamination due to concentration of onsite septic systems, improper well construction or improper abandonment of old wells.
- Improper application of wastes, by-products, agricultural chemicals, etc.
- Chemical spills and leaking underground or above ground storage tanks.

Wildlife

Lack of knowledge regarding wildlife by the public

- Property owners
- General public
- Youth

It is important to provide the public a more aggressive informational and educational program pertaining to wildlife and the science of wildlife management to improve their understanding and support of the wildlife programs.

Loss of wildlife habitat

- Grasslands
- Forest Habitat
- Wetlands
- Shoreline
- Wild rice

Both terrestrial and aquatic wildlife habitats continue to be fragmented, degraded and destroyed by land and water use practices.

How to maintain a deer herd at population goals

- Population management
- Public understanding of management
- Feeding and baiting
- Habitat destruction

Managing Wisconsin's deer herd continues to create a struggle both biologically as well as socially.

Loss of opportunity for public to recreate

- Purchasing of development rights
- Completion of present property boundaries
- Implement agricultural land plan fee title acquisitions, as well as purchase of development and/or habitat rights, must continue. A trend toward the breaking up of large industrial forestlands will only compound fragmentation and degradation of habitats. Acquisitions are becoming more important to sustaining contiguous habitats.

Lack of wildlife staffing to properly manage the resource

- Position in Florence
- Additional \$ for LTE's

Wildlife Management staffing has not kept pace with increasing demands from the public, nor increases in land and facility ownership.

Protection of endangered resources

- Implement recovery plans
- Monitor work through Natural Heritage Inventory (NHI) data base
- Contribute to NHI database.

We must continue to monitor, protect, and improve habitats for endangered resources.

How to maintain current wildlife properties

- Develop integrated planning of wildlife properties
- Maintain present management level on current wildlife properties
- Develop Memorandum of Understanding (MOU's) with partners
- Maintain current working relationship with counties

Maintenance and upgrading of well managed Wildlife Areas, facilities, and equipment must continue.

How to maintain viable wildlife populations:

- Manage hunting seasons
- Conduct surveys of game species
- Conduct surveys of non-game species
- Elk reintroduction

It is important to continue, and in some instances increase, monitoring and management of specific wildlife populations.

Recreation

Recent user group surveys for the state forests have indicated the following issues and concerns for recreation. The primary issues on recreators' minds are motor/non-motor conflicts, crowding issues, personal safety, the appropriate type of campground amenities (like showers and flush toilets) for state forests campgrounds and timber harvesting (its impacts on recreation).

Silent-sports versus Motorized Sports

Over the next decade the most dominant recreation management issues will most likely revolve around the tug-of-war between motorized and non-motorized recreation interests. Recreational motorized vehicles include snowmobiles, ATVs, motor boats and jet skis. Many silent-sport recreators, including hikers, bikers, bird watchers and skiers, are opposed to motorized recreation, particularly that which conflicts with their activities. There is a great, increasing demand for developed bike trails especially linked, paved or compacted trails.

ATV use is especially contentious. ATV riding is currently among the fastest growing sports in Wisconsin. Many ATV riders feel there is a distinct lack of ATV trails and are looking primarily to public lands for places to expand their riding opportunities. Currently, there is no allowed use of ATV's on the Northern Highland-American Legion (NH-AL) State Forest, and only limited use on some town roads within the Nicolet National Forest. Staff on the National Forest and the State Forest is considering factoring this type of use into new management plans for those properties. Water quality/erosion impacts from ATV's should also be evaluated.

The difficult problem facing recreation managers and planners in this time of increasing recreational use and conflict is how to appropriately provide opportunities for all without one style of recreation dominating, displacing or overly impacting the experiences of others. Increasingly, recreational providers will need to work together—each providing that part of the recreational pie that they can best provide—in order to meet our wide and ever-increasing outdoor recreation demands in the north.

Crowding

In a land of seeming abundance, larger numbers of visitors will invariably lead to an increase in user conflicts, heightening conflicts among participants in the same activity as well as among participants in different activities. The principal problems reported in a recent survey of state forest visitors were people problems: too many people making too much noise and leaving too much litter. Increasing levels of recreational intensity in the north will increase pressure on the northern state forests to both provide more recreational opportunities and maintain the expected quality of experience.

Personal Safety

Personal safety is another concern that will increase with the number and variety of recreators using the same area. Swimmers are concerned with jet-skiers that ride close to swimming areas. Hikers report worrying about meeting mountain bikers on shared trails. Safety is also a concern for snowmobile and ATV riders due to speed and crowding on some trails.

Camping and Campground Amenities

Campers have highly diverse preferences for camping styles and experiences. It is no surprise that they strongly disagree on which amenities are appropriate for state forest campgrounds. In general, there appear to be two types of campers: those who want flush toilets, showers and electricity, and those who do not. Some campers say amenities like showers and flush toilets are critical for them or their family. A substantial number of campers, however, see rustic and primitive style camping as the most fitting for state forests, and they feel that state forests are an important provider of these types of camping opportunities. Camping style preferences aside, nearly all campers agree that secluded campsites and privacy are valued more highly than any other campground attributes.

Timber Harvesting

A high percentage of people are concerned about timber harvesting in areas where they recreate. Their greatest concern about timber harvesting is that it not disturb their recreational activities in any way. They are most opposed to large-scale visual changes (i.e. openings) in the forest landscape. Forest thinning and harvesting that creates small openings are more acceptable. Silent-sport enthusiasts (e.g. hikers, bird watchers) as a group, are the most concerned about the visual impacts of harvesting, while hunters and motorized users are somewhat less concerned.

Other Recreational Issues

Members of the public from the Headwaters Basin region also provided advise on recreational issues affecting the basin. They include:

- Completion of master planning on state properties (i.e. NHAL State Forest)
- Tourism demand vs. resource protection
- Motorized recreation – ATV's
- Demand for more access sites
- Overcrowding and user conflicts

- Increase in water based recreation conflict
- Aging population and what type of recreation will they want?
- Growing interest in “silent” sports vs. conflict with motorized recreation
- Value clashes – more and more urban types moving in and bringing different values with them which often clash with “locals”
- Demand for more services such as people wanting to be able to reserve a campsite rather than take a chance on first come first serve
- The need for more Law Enforcement (LE) hours to monitor, patrol, and investigate problems on ATV trails
- As the baby boomer sector retires, we need a revision in our campgrounds to accommodate larger RV’s and associated recreational equipment such as boats. This will also include pressure to provide more electrical sites.
- Increased staffing for keeping property gates open year round to accommodate rising “off season” park users such as cross country skiing, hunting, sightseeing and winter camping.
- Increasing staff not possible with proper facilities. Possibly combine Merrill Ranger Station with Council Grounds State Park work locations to new, larger DNR office/park office/contact station providing better employee and public facilities.
- As the city of Merrill continues to expand, adjacent property acquisition will be vital to maintain “green space around the park (Council Grounds) according to the park’s master plan
- Adjacent Wisconsin River quality and regulatory issues will affect park clientele and ultimately the amount of revenue generated. These include indirect as well as the direct recreational opportunities afforded to anglers, swimmers and watercraft operators.

Forestry

Lack of knowledge on forestry by individuals using forests

- Landowners
- General public
- Youth

During the past several decades, individuals have become more and more removed from the land. People lack knowledge of how and where food, clothing and housing actually come from. Somehow the connection between a product and its origin needs to be reestablished.

Lack of Forest Management Planning on non-industrial private forests

Approximately 40% of the forest ownership in the Headwaters Basin are classified as private non-industrial. Studies have shown that less than 30% of the private non-industrial forest owners have management plans for their property. In order for these forests to meet the future objectives of their owners there needs to be integrated resource management plans developed for these properties.

Conflicting demands on public owned forestlands

The demands on public owned forests continue to increase. Many of these demands are in conflict with one another. Publicly owned forest managers continue to struggle with how to balance these demands on public properties.

Public questioning of Silvicultural practices

Several of the Silvicultural practices used by foresters to maintain important forest communities are not well accepted by the general public. Efforts are needed to explore ways to mitigate this conflict between the need to maintain a healthy ecosystem and the public perception.

Lack of support staff to do non-forestry work

DNR foresters are having difficulty meeting workload needs for forestry.

Inability of staff to meet Managed Forest Law workload

As more landowners take advantage of the managed forest tax law, associated workload continues to increase with no corresponding increase in staff.

Smoke from legal burning

With the increasing number of homes and secondary homes within the forested areas of the Basin, the smoke generated by legal burning is becoming an increasing conflict.

Partner Group Priorities

Staff from the Headwaters Basin meets regularly with a Basin Partner Group. This group which is made up of local citizens, conservation organizations and other environmental agencies advises the department on priority issues they feel the department should be working on. This group has developed the following list of top 11 priority issues out of list of 68.

Lake/Shoreline Development

Demand for lake frontage is increasing in the basin. Long-time owners of cottages and summer homes are forced to sell due to an inability to pay the higher taxes. People from urban areas who build homes on water bring values and an aesthetic that conflicts with the landscape they are living in.

Use Conflicts

There are many differing demands on both the Land and Water natural resources of the Basin. Examples include ATV enthusiasts and hikers both wanting to utilize the same trail; public wanting to build in areas traditionally managed for timber, nature viewing versus hunting and jet skis versus fishing. These conflicts make it difficult for the Department and governmental officials to meet the needs of all the users and residents.

Land Use

Demand to develop land is increasing. As more forested land is converted into condominiums and subdivisions, the character of the land is changed. Timber production, hunting and outdoor recreation are no longer feasible on these small parcels with high home densities. Comprehensive planning for most towns and counties in the Basin has not been completed.

Septic Effluent Impacts

Many older cottages and summer homes on water frontage have failing or malfunctioning septic systems. The effluent discharge into lakes and rivers can alter habitat and negatively impact wildlife populations. There is also some concern over how effective the “new” systems will be.

Education

Many new residents of the Basin have never lived in or near a natural ecosystem. They do not understand the impacts their activities have on habitats and wildlife populations. Understanding the mechanisms that drive the natural world and tools that can be used to protect will assist all residents in decision making and planning the future of their towns and counties.

Highway Buffers

There is a huge concern that the northwoods has lost or is losing the “look of the northwoods” along the highways. One example is the **inappropriately large monstrous** elevated advertising signs constructed on Hwy 51 between Merrill and Tomahawk.

Rivers Management

Lakes have long been recognized as needing protection, but the management of rivers is important as well. River water quality has been monitored and improved but now development is moving from the lakes to the rivers and threatens both the aesthetics and water quality. Care must be taken to protect these resources from over development in the near shore areas.

Habitat Loss

Loss of natural shorelines, wetlands and parcelization of large tracks of forest, have fragmented and reduced the habitat needed to maintain wildlife populations. Continued growth and lack of planning will exasperate the loss.

Trail Development

Development of recreational trails (hiking, biking, skiing, etc.) is felt to be important in providing recreational opportunities for a wide spectrum of users and to broaden the attraction of the northwoods area.

Preserving Wild Lakes

There are very few lakes with little or no development. The high demand for water frontage has put increasing pressure on the remaining undeveloped shorelines. Protecting wild lakes from development is critical for the maintenance of habitat for wildlife and recreational enjoyment.

Non-hunting/Hunting Issues

More people are taking part in outdoor recreational activities other than hunting. Hunting is the primary mechanism to control wildlife populations. The expansion of old or the creation of new hunting seasons conflicts with the use of recreational trails by non-hunters. There needs to be the realization that hunting is important and acceptable even though there are those that would like to have it banned.

Land Use

Protect Water Resources

Protect undeveloped or lightly developed shorelands, protect water quality and quantity, and protect wetlands.

Protect the pearls

Protect the last remaining high-quality and unique natural areas.

Protect functioning ecosystems in each part of the state

Protect representative, functional natural landscapes that help keep common species common.

Maintain accessibility and usability of public land

Protect land close to where people live and establish buffers that ensure these lands remain useable and enjoyable.

Think Big

Protect large block of land.

Connect the dots-Improve the trail network

Link public lands through a network of corridors.

Promote Partnerships

Leverage state money and effort through partnerships with other agencies and organizations.

Diversify protection strategies

Where feasible, utilize options other than outright purchase to accomplish conservation and recreation goals.

County Land and Water Resource (Vilas, Oneida, Florence, Lincoln, Forest, and Langlade Counties)

- Improve shoreland management to reduce nonpoint pollution (See appendix 5 for rankings).
- Retain, enhance and restore vegetative shoreline buffers on lakes, rivers, and streams.
- Protect wetlands by eliminating their loss and degradation and encourage the restoration of Wetlands.
- Minimize the adverse effects of urban sprawl and land fragmentation on water resources.
- Reduce nonpoint pollution and environmental risks to water quality through proper animal waste and nutrient management.
- Reduce erosion from construction sites.
- Improve, enhance and promote forestland management to protect wildlife habitat, water quality, control sediment and erosion.
- Improve town and forest road maintenance and construction to reduce nonpoint pollution.
- Support the sustainability of agricultural lands.
- Protect surface and groundwater from pollutant and nutrient inputs from septic systems.
- Make information more readily available to the public.
- Improve inter-program coordination between county and other partners.
- Protect Lake Ecosystems from the degradation from recreational pressures.
- Illegal dumping of waste products.
- Reduce total phosphorus loading to surface water.

CHAPTER 4

MAJOR RESOURCE RECOMMENDATIONS

These recommendations are broad in nature and not site specific. This is a 6-year plan, so department programs will review recommendations each year. High priority recommendations will be selected for implementation during work planning. Site specific details, costs, and hours to accomplish these activities will be identified during work planning. See Appendix for a more detailed review of County Land and Water Resource Plan goals and recommendations.

Fisheries

Education

Print one or more fish, fishing or habitat related success story about a major project each year. Inform the angler about the state and management of the fishery resource through online services or printed material.

Volunteer Water Quality Monitoring

Make self help monitoring easier through new technology such as the integrated water sampler and temperature probes. Progress is being made, but we need to keep up with technology. Work with the development of the self help web site so that volunteers can give us data easier and retrieve and voucher their own data in the forms of graphs and reports. Recruit, train and retain volunteers including advanced volunteer monitoring (water chemistry). Add in more lakes to the self-help Monitoring Program via the lake grant or other fiscal resources.

Exotics

Work with the Sea Grant on getting information out to the public on exotics. Work with landscape nurseries and fish farms/distributors on education of exotics. Recruit, train and work with the self-help volunteers on tracking the spread of exotics. Work on Lake Fairs and with lake associations/districts on the prevention of introduction of exotics.

Shoreline Development

Increase public awareness and water regulation and zoning enforcement. Work with lake associations, county government or land trusts to promote shoreline preservation and restoration on both lake and stream/river systems. The state should consider land acquisition as a method for shoreland preservation.

Stocking Guidelines

Ensure that stocking provides a good return to the angler, is biologically sound, cost effective and maintains the genetic integrity of the naturally reproducing population.

Private Stocking of Fish

Develop Basin policies on private stocking and educate the public on the facts behind stocking. Also evaluate the return to the angler. Our stocking of state fish should also be held to these same standards.

Sport Fishery Investigations

Plan fisheries surveys on a minimum of 20 lakes < 200 acres in size to manage these waters more effectively. Focus attention on lakes that have no previous survey information, and attempt to collect fish population, size distribution, and age data. Evaluate current fishing regulations as

applicable to each lake. Plan fisheries surveys on a minimum of 20 classified trout waters to determine impacts of current regulations or to investigate the need for future regulations.

Promote Quality Fishing Opportunities/Evaluate Current Special Regulations

Plan regulation evaluations for all waters managed under the “quality opportunity” category and report on effectiveness of special regulations. Conduct files searches and fieldwork to locate other potential waters to be included for future management in this category.

Sensitive Area Designations

In the next biennium, develop SAD capability in the Basin with multi-program input and Develop a list of SAD candidate sites with local county and town officials.

Bioaccumulation of Contaminants (Mercury)/Fish Health Advisory

- Continue to collect fish from area lakes.
- Prepare and send to the State Lab of Hygiene (SLOH) for mercury analysis.
- Provide the public with consumptive advisory information.

Baseline Monitoring Strategy

Continue to implement the baseline monitoring strategy for wadable, non-wadable streams and lakes. Include baseline toxics monitoring (fish and sediment) at selected sites.

Stream Habitat Restoration/and or Stream Bank Protection

- Select 2-3 locations each year to conduct stream habitat restoration projects.
- Identify candidate sites for streambank protection through easements/ or land acquisition.

Identify Critical Fish Habitat

Identify and protect critical fish habitat through stream surveys, Sensitive Area Designations or the Northern Rivers Strategy.

Beaver Control

Continue to control beaver at priority locations.

Native Brook Trout Restoration

Identify and work on restoring native brook trout populations at one site each year.

Large River Fish Communities (Wisconsin River)

Look at evaluating the impact of harvest and regulations on sportfish in large river systems by 2007.

Facilities Planning

Develop a facilities plan to address maintenance or development of fisheries properties or boat landings.

Lake Sturgeon

- Evaluate the lake sturgeon fishery in the Headwaters Basin.
- Can we enhance existing naturally reproducing populations?
- Can we re-establish populations within their original range?

Inland Lake Trout Recovery Plan

Implement the Inland Lake Trout Recovery Plan, especially on Trout Lake.

Native Mussel Salvage Operations

Where possible, remove native mussel populations and restock at suitable locations (protect native populations).

Statewide Walleye Management Plan

Implement the Walleye Management Plan on area waters.

Species Evaluations

Continue to evaluate the musky, northern pike, walleye, and bass fisheries on area lakes.

Northern Rivers Strategy

Promote and implement the Northern Rivers Strategy.

Aquatic Habitat Protection

The Headwaters Basin will continue to work with Region and Bureau to secure additional positions and funding for the vast shoreland and wetland resources within the Headwaters Basin.

Shoreline Protection and Restoration

Over the next five years, Basin staff should provide information to lakefront property owners and contractors on the importance of maintaining a vegetated buffer zone mandated by local Shoreland Zoning ordinances. The staff should educate lakefront property owners and contractors on new products that are available and that will bring their shoreline back to a natural state.

The Basin should provide a range of public educational opportunities to address shoreline protection and restoration, including seminars, public presentations and fact sheets. Educating property owners, Lake Associations, contractors and developers to the value of natural vegetation along the shoreline will help to achieve the goals of this plan and the northern initiative. Emphasis should be placed on the benefits of the following actions.

- Re-establish or maintain a natural buffer strip of land along the shoreline (this helps sustain wildlife diversity and preserve water quality, as well as protect the shoreline from erosion).
- Minimizing soil disturbance and vegetation removal (this helps prevent erosion from occurring at an accelerated rate by encouraging landowners to leave existing native vegetation)
- Minimizing the placement of riprap (less permits issued).
- Promote shoreline restoration using Biostabilization methods (e.g. coir fiber logs).
- Continue research on impacts of development on water quality, erosion.
- Evaluate the effectiveness of shoreline restorations.
- Consider incentives for restoration (i.e. county cost share).

The Department should provide an integrated permit effort between Waterway and Wetland; Water Resources, Fisheries and Wildlife programs to prevent over-use of riprap on lakes in Northern Wisconsin. Riprap permits should be reduced in numbers to minimize habitat loss and minimize impacts to natural scenic beauty. The Department should provide landowners with

alternative methods to riprap. The Department should also coordinate with local zoning to ensure property owners maintain compliance with the local zoning ordinance.

Oversized Piers

Over the next five years, Basin staff should provide public education about proper sizing and placement of piers, should seek to reduce the number of existing oversized piers, and should advocate for better regulations and other mechanisms to allow staff to address this issue efficiently.

The Basin should provide a range of public education to address pier issues including news releases, public presentations, mailings and fact sheets. We should educate waterfront property owners, Lake Associations, pier contractors, pier manufacturers and pier distributors about our pier regulations and guidelines, and about the importance of balancing private use of the shoreline with proper stewardship and protection of the water resources.

Basin staff should identify the most significant oversized piers, and develop strategies to address them. These strategies should include: evaluating the impacts of individual structures, notification and exchange of information with oversized pier owners, negotiation towards eventual downsizing of the structures, development of stipulated agreements, and enforcement action through circuit court or administrative hearing as necessary.

Basin staff should integrate their efforts with staff in the Bureaus of Watershed, Integrated Science Services, Law Enforcement and Fisheries and Habitat Protection. Together we can develop statewide educational materials, research impacts of oversized piers, undertake negotiation and enforcement, and advocate for more detailed regulations and mechanisms to allow staff to address these issues more efficiently.

Dams

- Increase the number of dam inspections that should take place every year.
- More evaluations of dam impacts on aquatic habitat.
- Additional Information and Education (I&E) efforts
- Make Dam Safety Awareness Week better known.
- More education on safety hazards effects on habitat, and cost and maintenance of dam ownership.
- Implement new fish passage policies after new codes are in force.
- Develop a Regional Dam Team that takes a regional approach to evaluating dams taking advantage of local talent and authority (WMS's, fish managers, etc.), experience from throughout the region and state, and utilizes the expertise of an established experienced team.
- Consider Dam removal as a means of restoring river/stream habitat.

Zoning Ordinances

The Basin will work with the Bureau to provide shoreline zoning support and education on the benefits of zoning ordinances.

Wetlands

Protect, enhance or restore wetlands in the Headwaters Basin.

Watershed Management

Inplace Pollutants/Fish and Wildlife Health Assessment:

- Continue to work on existing sites (i.e. old city of Rhinelander landfill)
- Work with Remediation and Redevelopment to assess contamination at newly discovered sites.

Stormwater/Construction Site Erosion

- Work on obtaining more staff to work in the stormwater program.
- Attack problem areas during work planning.

Wisconsin Pollution Discharge Elimination System (WPDES) Permit Issuance

Maintain 10% backlog of expired permits.

Total Maximum Daily Loads (TMDL)

- Continue to work on TMDL modeling and monitoring of the upper Wisconsin River (From Hat Rapids north to Eagle River).
- Identify other impaired waters where a TMDL project would be beneficial

Non-Point Source Priority Watershed Program

- Continue to investigate possibilities of protecting watersheds through the Priority Watershed Program.

Non-Metallic Mining

- Monitor the effects of non-metallic mining on surface waters.
- Document water quality improvement as a result of site reclamation.

Wastewater Facility Operation/Compliance (Education)

- Work to increase the time spent with wastewater treatment plant operators.
- Spend more time educating communities about wastewater issues.

Sewer Service Area Planning (SSAP)

- Larger communities in the Headwaters Basin (>5,000) should consider developing a SSAP.

Drinking Water/Groundwater

- Encourage larger communities to develop Community Wellhead Protection Plans.
- Satisfy our commitments under the Safe Drinking Water Act for surveillance and sampling of public water supply systems.
- Work with well drillers and pump installers to ensure well construction practices that are used minimize the potential for contamination. Teach proper abandonment of old wells.
- Provide water system and groundwater-related I&E activities to citizens and water well contractors.
- Implement new SDWA rules as they are phased in. Some of these include new microbial/disinfecting by-products regulations, the ground water rule, operator certification, arsenic, radionuclides, radon, sulfate, and revisions to the lead/copper rule.
- Encourage long range planning for locating adequate supplies of high quality drinking water. Many of the communities in the basin can locate water but it is typically high in iron and tannins. To avoid costly treatment, communities may locate wells close to streams and rivers, some of which are trout streams. To avoid use conflicts, communities should start looking for water in advance of need.
- Provide information and education on septic system impacts to groundwater and surface water, including nutrient loading from properly functioning systems.

- Provide information and education on private well water systems and testing.

Wildlife

Information & Education

- Continue to support and recommend internal staff attendance of professional and technical workshops, conferences, and training sessions in an effort to ensure competency.
- Provide opportunity at least twice per year for Headwaters Basin Wildlife staff to meet at sites within the Basin in order to discuss issues from a Basin perspective and share ideas and strategies.
- Assist Forestry staff with the Private Lands program by providing technical support in developing management plans that include wildlife management recommendations on private lands.
- Develop ideas and strategies for a Basin initiative to educate the public and external partners on the significance of forest management and maintenance of diverse community types.
- Provide technical support to private landowners as requested.
- Report wildlife and endangered resources accomplishments to the public in an effort to acknowledge and promote Wildlife Management.
- Promote the importance of a professional Wildlife Management program through existing youth outreach programs. (Hunters Education, Sports Clubs, School Forests, etc.)
- Utilize the Naturalist positions to help reach a more diverse segment of our customers.

Habitat Management

- Protect, maintain, enhance, and restore grassland communities where and when opportunities to do so are presented.
- Educate internal staff and the public on the necessity of prescribed burning and the safe use of this technique.
- Maintain full spectrum of forest ecosystems with range of succession stages, patch sizes, geographic distribution, involving public and private partners. Continue to incorporate wildlife needs through the private tax law.
- Support maintenance of large, contiguous forest for ecological, economic and social reasons.
- Identify forest ownerships of 1000 acres or more and plan for those parcels to remain forested.
- Attempt to restore under-represented elements of Northern Forest communities.
- Identify and prioritize wetland complexes in need of protection, enhancement, and restoration within the Headwaters Basin.
- Attempt to implement protection, enhancement, and restoration projects on the identified wetlands.
- Continue to work with internal programs and local units of government to further protect lakes, rivers and their riparian corridors.
- Support and further promote Forestry Best Management Practices for water quality.
- Identify, map and expand upon existing beds of emergent aquatics (Wild Rice). Continue monitoring quality of those beds.

White-tail Deer Program

- Implement an aggressive harvest management strategy to lower the size of the deer herd to over winter goals.
- Work with co-operating deer registration stations to ensure high levels of harvest reporting.

- Continue working with internal and external partners to ensure high levels of quality data collection from aging surveys and summer deer observations.
- Develop and provide at least one Deer Management Workshop every two years at locations throughout the Headwaters Basin in an effort to educate the public and gain support for the Deer Management program.
- Work with Research to enhance existing surveys and models, and develop new research initiatives.

Land Acquisition

- Actively pursue acquisitions within existing project boundaries. Develop and expand new project boundaries where necessary.
- Assist in completion of the Land Acquisition Plan, and once completed, implement that plan.
- Continue to explore and identify conservation easements and purchasing development rights as an alternative to fee title acquisitions.

Staffing

- Implement staffing plan within the Headwaters Basin.
- The designation and subsequent filling of a Florence County Biologist is the most critical staffing need within the Headwaters Basin.
- Attempt to obtain funding for at least two Limited Term Employee positions to be used within the Headwaters Basin.

Endangered/Threatened Resources

- Implement existing species management and recovery plans.
- Contribute to the Natural Heritage Inventory by recording and reporting known occurrences of listed species.
- Monitor proposed work activities for associated impacts to species listed in the Natural Heritage Inventory.

Property Management

- Manage State Wildlife Areas at a high level and provide safe, reasonable access to those well-managed properties.
- Promote and provide safe, reasonable access to public waters.
- Maintain working relationship with Individual County Forestry programs, and implement the Ten-Cent Per Acre program.
- Develop Memorandums of Understanding with partners in an effort to manage and protect habitats and communities that exist on lands other than those under public ownership.
- Actively participate in the Master Planning process for State owned properties.

Wildlife Population Management

- Manage established hunting and trapping seasons so as to manage populations near population goals.
- Continue conducting surveys and monitoring of both game and non-game species.
- Continue and assist in a strong program of disease monitoring, including surveillance of all significant species to detect changes in disease patterns and enhanced monitoring of emerging diseases.
- Work with the Elk Biologist in an effort to identify and assess suitable elk range within the Headwaters Basin, and proceed with the pursuit of an additional elk release in the Basin if suitable range and support exists.

- Integrate shorebird management into management of wildlife impoundment's.
- Develop and implement management guidelines for habitats supporting forest raptors.
- Participate in studies to determine the status of the northern goshawk.
- Implement ruffed grouse management plan.
- Implement waterfowl management plan.

Recreation

Silent sports vs. Motorized sports

All recreation providers (including the department) must work together so that each provide a part of the recreational pie in order to meet our wide and ever changing outdoor demands in the north.

Crowding

Recreational providers should consider the need to provide more recreational opportunities at the expense of losing the expected quality of the experience.

Personal Safety

Personal safety concerns need to be addressed in the future (i.e. ATV's and snowmobiles using the same trails).

Land Acquisition

The department should consider purchasing lands adjacent to Council Grounds State Park to maintain green space around the park.

Canoe/Kayak Designated Areas

The department needs to determine how to utilize our rivers and streams for canoe/kayak trails and interpretive opportunities.

Forestry

Lack of Knowledge on Forestry by Individuals Using Forests Including Silvicultural Practices

Work with partners to increase percent of private landowners who receive professional forestry advice before conducting a timber harvest or other land management practice. Develop an outreach program that provides information to new landowners that will increase their knowledge of natural resource management and land stewardship. Inform the public why certain silvicultural practices are used.

Lack of Forest Management Planning on Non-Industrial Private Forests

Work with private landowners to develop integrated resource management plans for their properties.

Conflicting Demands on Public Owned Forestlands

Identify and address the conflicting demands on public owned Forestlands.

Staffing

- Work to increase support staff at field stations.
- Work to increase staffing to address the workload associated with the managed forest tax law.

Outreach

- Work with partners to implement Smart Growth.

- Work with partners to address the issue of fragmentation of large, contiguous blocks of industrial Forestlands.
- Work with partners to provide for protection of habitat for threatened and endangered forest species.
- Work with partners to provide structural protection during wildland fires within the wildland/urban interface.

Partner Group

Lake/Shoreline development

- Increase public awareness over the value of near shore habitat.

User Conflicts

As demands on our public resources increase, user conflicts should be addressed through Master Planning, Smart Growth Planning and through local units of government.

Land Use

Promote Smart Growth Planning which supports comprehensive land use planning for most townships, cities and counties within the basin.

Septic Effluent Impacts

County government to determine the extent of failing septic systems around lakes should conduct a study.

Education

The Department of Natural resources should improve efforts to educate the public about important resource issues.

Rivers Management/Protection

Protect rivers/streams from over development in the near shore areas.
Implement the Northern Rivers Initiative.

Habitat Loss

Promote sound land use planning through Smart Growth to protect habitat needed to maintain wildlife populations.

Reduce fragmentation of large tracts of land.

Trail Development

Promote the development of recreational trails (hiking, biking, skiing etc.).

Preserving Wild Lakes

Protect the remaining lakes (with little or no development) through the Wild Lakes Program. This is critical for maintaining wildlife habitat and recreation enjoyment.

Non Hunting/Hunting Issues

Promote public information/education on the merits of hunting.

Land Use

- Protect undeveloped or lightly developed shorelands along lakes, rivers, and streams.
- Work in partnership with Lake Organizations, land trusts and other conservation organizations and agencies, and local and county governments.
- Utilize stewardship, lake and river protection grants to assist with funding purchases of land or easements.
- Protect water quality and quantity:
 - The state should attempt to buy as much land as possible within watersheds that have the highest ecological value.
 - Buy strips of land along each stream.
 - There is a need to protect groundwater recharge areas.
- Protect Wetlands
 - Protect high priority wetlands, those adjacent to rivers, streams, and lakes, and wetlands that contribute to groundwater recharge.
 - Restoring large wetlands that have been converted to agricultural use would provide multiple resource and recreation benefits.
- Protect the last remaining high-quality and unique natural areas in the state:
 - Protect biologically rich assemblages of plants and animals, unique geologic features, endangered and rare species, archeological and cultural resources, significant scenic views, and old growth forests.

Protect representative, functional natural landscapes

- Protect large blocks of land in each general ecological region of the state harboring unique environmental conditions and characteristics.
- There has to be efforts made for restoration of these areas.
- Need to maintain and preserve Wisconsin's rural landscape. (Need to "keep Wisconsin Wisconsin")

Purchase blocks of land close to where people live

- Need to purchase areas that provide reasonable access to natural areas where people can see native plants and animals.
- Purchase property in areas experiencing heavy development pressure (This is costly, however the lands close proximity leads to other social, environmental and economic benefits that partly offset these large costs)
- Purchase development rights on agricultural land surrounding state properties could provide an adequate buffer and help maintain our agricultural heritage.

Public lands need to be located, managed, and of an adequate size to reduce or avoid conflicts between users

- There is a need to provide opportunities for people to recreate in different ways on lands suited for certain activities.
- People need adequate recreational access in different areas of the state.

Protect large blocks of land:

- Expanding existing public properties enables the state to capitalize on its existing investment
- Continue purchasing properties to add to the Northern Highland American Legion State Forest boundary, as they are available.

Connect public lands with a network of corridors (Trails):

- Existing corridors that seem most obvious to utilize and incorporate into a trail network are railroad right-of-ways, rivers and streams.

Leverage Stewardship money

- There is a need to partner with other federal, state, and local agencies, private conservation and recreation organizations to leverage Stewardship money.

The state should seek to purchase

- Access rights along streams and rivers for anglers and as a means to develop a trails network.
- Development and access rights in large industrial forests to help maintain large blocks of unfragmented northern forests.
- Development rights on farmland surrounding public properties to help maintain our agricultural heritage and to help buffer public lands from incompatible uses.
- Conservation easements on high-quality natural areas where the advantages to keeping the property in private ownership outweigh the costs of enforcing the easement and management considerations.

County Land and Water Resource Plans

Improve shoreland management to reduce nonpoint pollution

- Establish cost-sharing programs for fencing of agricultural shorelands.
- Establish demonstration cost-share program for restoration of shoreline buffers for nonpoint pollution control, aesthetics, and improved wildlife and fish habitat.
- Protect critical habitat through permanent easements, transfer or purchase of development rights, land trusts or outright purchase of land.

Retain, enhance and restore vegetative shoreline buffers on lakes, rivers, and streams

- Educate riparian landowners about the values of vegetative shoreline buffers and the best management practices to protect and restore them.
- Utilize cost sharing programs to encourage and develop best management practices on shoreland demonstration sites to restore and maintain riparian habitat.
- Protect critical habitats and reduce development pressures on sensitive water bodies.
- Establish Florence County buffer standards
- Study the effectiveness of shoreland vegetative buffers in reducing sediment and phosphorus concentrations in runoff.

Protect wetlands by eliminating their loss and degradation and encourage the restoration of Wetlands

- Increase public awareness about the role wetland play in protecting water resources.
- Restore wetlands through private, local, state, and federal cost sharing and easements programs.
- Update countywide ordinance for wetland protection.
- Develop upgraded wetland inventory mapping and data/map accessibility through G.I.S.

Minimize the adverse effects of urban sprawl and land fragmentation on water resources:

- Educate boaters on proper boating techniques to prevent damage to sensitive lake ecosystems.
- Use tools such as property tax incentives, transfer of development rights, land trusts, and other incentives to limit the impact of residential and commercial development on water resources.
- Encourage municipalities to adopt water resource related standards in their County Comprehensive Land Use Plans.

- Develop water resource management activities that are consistent with the land use plan.
- Develop standards that limit the impact of residential and commercial development on water resources.
- Provide educational brochures on the impacts of spilled gas on water quality at boat landings.

Reduce nonpoint pollution and environmental risks to water quality through proper animal waste and nutrient management:

- Recognize landowners who follow animal waste best management practices
- Provide technical assistance to promote animal waste best management practices.
- Develop funding sources for a county cost share program to assist existing agricultural operators in complying with state rules.
- Educate landowners on improved fertilization techniques to reduce phosphorus loading to water resources.

Reduce erosion from construction sites:

- Increase the knowledge of landowners, contractors, Realtors, and public officials about the impact of construction site erosion on water quality and the practices available to reduce erosion.
- Assess and improve the effectiveness of enforcement of erosion control (excavation plan) provisions of the Shoreland Zoning Ordinance.
- Develop countywide construction site erosion control ordinance.

Improve, enhance and promote forestland management to protect wildlife habitat, water quality, control sediment and erosion:

- Develop and expand educational programming for forestry practices.
- Reduce erosion and habitat degradation caused by ATV use.
- Encourage sustainable forestry practices on private land and public lands.
- Develop ecosystem based Forest Land Management Goals.
- Improve forest road maintenance and construction methods through educational workshops.
- Control illegal garbage dumping on commercial, County, State and Federal Forestlands.

Improve town and forest road maintenance and construction to reduce nonpoint pollution:

- Complete two erosion control demonstrations for roads.
- Provide technical assistance on erosion control to town officials upon request.
- Draft a model erosion control policy for towns.
- Encourage landowners and land management agencies to properly construct and **maintain** forestry roads by using BMPs.

Support the sustainability of agricultural lands:

- Develop non-metallic mining ordinance.
- Provide education about exotic species, beef management, and dairy farm conversion to other uses.
- Develop a demonstration project for buffalo farms.

Protect surface and groundwater from pollutant and nutrient inputs from septic systems

- Promote reduction of nutrient loading to surface waters from conventional septic systems.
- Monitor new technology/new state-approved septic systems.
- Encourage upgrading of failing and polluting septic systems.

Make information more readily available to the public:

- Develop database and mapping system for natural resource information.
- Provide information and education to non-industrial private woodland owners on forestry management.

- Promote good forest management policies.

Improve inter-program coordination between counties and other partners:

Protect Lake Ecosystems from the degradation of recreational pressures:

- Encourage town governments to adopt boating ordinances to reduce user conflicts and pressure on the resources.
- Encourage Lake Associations to take a lead on this issue by establishing courtesy codes on lakes.
- Organize a committee of stakeholders to deal with this issue.
- Educate boaters through local media.
- Encourage boater safety courses to include a section on environmental stewardship.
- Work with Lake Associations to identify sensitive areas on lakes.
- Minimize impacts on our natural resources from mining activities.
- Work with local units of government to encourage the county to revise and update the ordinance.
- Inventory non-metallic mining sites throughout the county.
- Work with surrounding counties and bring together EPA and necessary State agencies to change laws on reclamation of non-metallic mining sites.