Appendix A

2007 WDNR Northern Region Aquatic Plant Management Strategy

AQUATIC PLANT MANAGEMENT STRATEGY

Northern Region WDNR
Summer, 2007

AQUATIC PLANT MANAGEMENT STRATEGY
Northern Region WDNR

ISSUES

- Protect desirable native aquatic plants.
- Reduce the risk that invasive species replace desirable native aquatic plants.
- Promote "whole lake" management plans
- Limit the number of permits to control native aquatic plants.

BACKGROUND

As a general rule, the Northern Region has historically taken a protective approach to allow removal of native aquatic plants by harvesting or by chemical herbicide treatment. This approach has prevented lakes in the Northern Wisconsin from large-scale loss of native aquatic plants that represent naturally occurring high quality vegetation. Naturally occurring native plants provide a *diversity of habitat* that *helps maintain water quality*, helps *sustain the fishing* quality known for Northern Wisconsin, supports common lakeshore wildlife from loons to frogs, and helps to provide the *aesthetics* that collectively create the "up-north" appeal of the northwoods lake resources.

In Northern Wisconsin lakes, an inventory of aquatic plants may often find 30 different species or more, whereas a similar survey of a Southern Wisconsin lake may often discover less than half that many species. Historically, similar species diversity was present in Southern Wisconsin, but has been lost gradually over time from stresses brought on by cultural land use changes (such as increased development, and intensive agriculture). Another point to note is that while there may be a greater variety of aquatic vegetation in Northern Wisconsin lakes, the vegetation itself is often *less dense*. This is because northern lakes have not suffered as greatly from nutrients and runoff as have many waters in Southern Wisconsin.

The newest threat to native plants in Northern Wisconsin is from invasive species of aquatic plants. The most common include Eurasian Water Milfoil (EWM) and CurlyLeaf Pondweed (CLP). These species are described as *opportunistic invaders*. This means that these "invaders" benefit where an opening occurs from removal of plants, and without competition from other plants may successfully become established in a lake. Removal of native vegetation not only diminishes the natural qualities of a lake, it *may increase the risk that an invasive species can successfully invade onto the site where native plants have been removed*. There it may more easily establish itself without the native plants to compete against. This concept is easily observed on land where bared soil is quickly taken over by replacement species (often weeds) that crowd in and establish themselves as new occupants of the site. While not a providing a certain guarantee against invasive plants, protecting and allowing the native plants to remain may reduce the success of an invasive species becoming established on a lake. Once established, the invasive species cause far more inconvenience for all lake users, riparian and others included; can change many of the natural features of a lake; and often lead to *expensive annual control plans*. Native vegetation may cause localized concerns to some users, but as a natural feature of lakes, they generally do not cause harm.

To the extent we can maintain the normal growth of native vegetation, Northern Wisconsin lakes can continue to offer the water resource appeal and benefits they've historically provided. A regional position on removal of aquatic plants that carefully recognizes how native aquatic plants benefit lakes in Northern Region can help prevent a gradual decline in the overall quality and recreational benefits that make these lakes attractive to people and still provide abundant fish, wildlife, and northwoods appeal.

GOALS OF STRATEGY:

1. Preserve native species diversity which, in turn, fosters natural habitat for fish and other aquatic species, from frogs to birds.
2. Prevent openings for invasive species to become established in the absence of the native species.
3. Concentrate on a" whole-lake approach" for control of aquatic plants, thereby fostering systematic documentation of conditions and specific targeting of invasive species as they exist.
4. Prohibit removal of wild rice. WDNR – Northern Region will not issue permits to remove wild rice unless a request is subjected to the full consultation process via the Voigt Tribal Task Force. We intend to discourage applications for removal of this ecologically and culturally important native plant.
5. To be consistent with our WDNR Water Division Goals (work reduction/disinvestment), established in 2005, to "not issue permits for chemical or large scale mechanical control of native aquatic plants – develop general permits as appropriate or inform applicants of exempted activities." This process is similar to work done in other WDNR Regions, although not formalized as such.

BASIS OF STRATEGY IN STATE STATUTE AND ADMINISTRATIVE CODE

State Statute 23.24 (2)(c) states:

"The requirements promulgated under par. (a) 4. may specify any of the following:

1. The **quantity** of aquatic plants that may be managed under an aquatic plant management permit.
2. The **species** of aquatic plants that may be managed under an aquatic plant management permit.
3. The **areas** in which aquatic plants may be managed under an aquatic plant management permit.
4. The **methods** that may be used to manage aquatic plants under an aquatic plant management permit.
5. The **times** during which aquatic plants may be managed under an aquatic plant management permit.
6. The **allowable methods** for disposing or using aquatic

plants that are removed or controlled under an aquatic plant management permit.

7. The requirements for plans that the department may require under sub. (3) (b). “

State Statute 23.24(3)(b) states:
“The department may require that an application for an aquatic plant management permit contain a plan for the department’s approval as to how the aquatic plants will be introduced, removed, or controlled.“

Wisconsin Administrative Code NR 109.04(3)(a) states:
“The department may require that an application for an aquatic plant management permit contain an aquatic plant management plan that describes how the aquatic plants will be introduced, controlled, removed or disposed. Requirements for an aquatic plant management plan shall be made in writing stating the reason for the plan requirement. In deciding whether to require a plan, the department shall consider the potential for effects on protection and development of diverse and stable communities of native aquatic plants, for conflict with goals of other written ecological or lake management plans, for cumulative impacts and effect on the ecological values in the body of water, and the long-term sustainability of beneficial water use activities.”

AQUATIC PLANT MANAGEMENT STRATEGY
Northern Region WDNR

APPROACH

1. After January 1, 2009* no individual permits for control of native aquatic plants will be issued. Treatment of native species may be allowed under the auspices of an approved lake management plan, and only if the plan clearly documents "impairment of navigation" and/or "nuisance conditions". Until January 1, 2009, individual permits will be issued to previous permit holders, only with adequate documentation of "impairment of navigation" and/or "nuisance conditions". No new individual permits will be issued during the interim.

2. Control of aquatic plants (if allowed) in documented sensitive areas will follow the conditions specified in the report.

3. Invasive species must be controlled under an approved lake management plan, with two exceptions (these exceptions are designed to allow sufficient time for lake associations to form and subsequently submit an approved lake management plan):
   a. Newly-discovered infestations. If found on a lake with an approved lake management plan, the invasive species can be controlled via an amendment to the approved plan. If found on a lake without an approved management plan, the invasive species can be controlled under the WDNR's Rapid Response protocol (see definition), and the lake owners will be encouraged to form a lake association and subsequently submit a lake management plan for WNDR review and approval.
   b. Individuals holding past permits for control of *invasive* aquatic plants and/or "mixed stands" of native and invasive species will be allowed to treat via individual permit until January 1, 2009 if "impairment of navigation" and/or "nuisance conditions" is adequately documented, unless there is an approved lake management plan for the lake in question.

4. Control of invasive species or "mixed stands" of invasive and native plants will follow current best management practices approved by the Department and contain an explanation of the strategy to be used. Established stands of invasive plants will generally use a control strategy based on Spring treatment. (typically, a water temperature of less than 60 degrees Fahrenheit, or approximately May 31st, annually).

5. Manual removal (see attached definition) is allowed (Admin. Code NR 109.06).

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* *Exceptions to the Jan. 1, 2009 deadline will be considered only on a very limited basis and will be intended to address unique situations that do not fall within the intent of this approach.*

AQUATIC PLANT MANAGEMENT STRATEGY
Northern Region WDNR

DOCUMENTATION OF IMPAIRED NAVIGATION AND/OR NUISANCE CONDITIONS

Navigation channels can be of two types:

- Common use navigation channel. This is a common navigation route for the general lake user. It often is off shore and connects areas that boaters commonly would navigate to or across, and should be of public benefit.

- Individual riparian access lane. This is an access lane to shore that normally is used by an individual riparian shore owner.

Severe impairment or nuisance will generally mean vegetation grows thickly and forms mats on the water surface. Before issuance of a permit to use a regulated control method, a riparian will be asked to document the problem and show what efforts or adaptations have been made to use the site. (This is currently required in NR 107 and on the application form, but the following helps provide a specific description of what impairments exist from native plants).

Documentation of *impairment of navigation* by native plants must include:

a. Specific locations of navigation routes (preferably with GPS coordinates)
b. Specific dimensions in length, width, and depth
c. Specific times when plants cause the problem and how long the problem persists
d. Adaptations or alternatives that have been considered by the lake shore user to avoid or lessen the problem
e. The species of plant or plants creating the nuisance (documented with samples or a from a Site inspection)

Documentation of the *nuisance* must include:

a. Specific periods of time when plants cause the problem, e.g. when does the problem start and when does it go away.
b. Photos of the nuisance are encouraged to help show what uses are limited and to show the severity of the problem.
c. Examples of specific activities that would normally be done where native plants occur naturally on a site but can not occur because native plants have become a nuisance.

AQUATIC PLANT MANAGEMENT STRATEGY
Northern Region WDNR

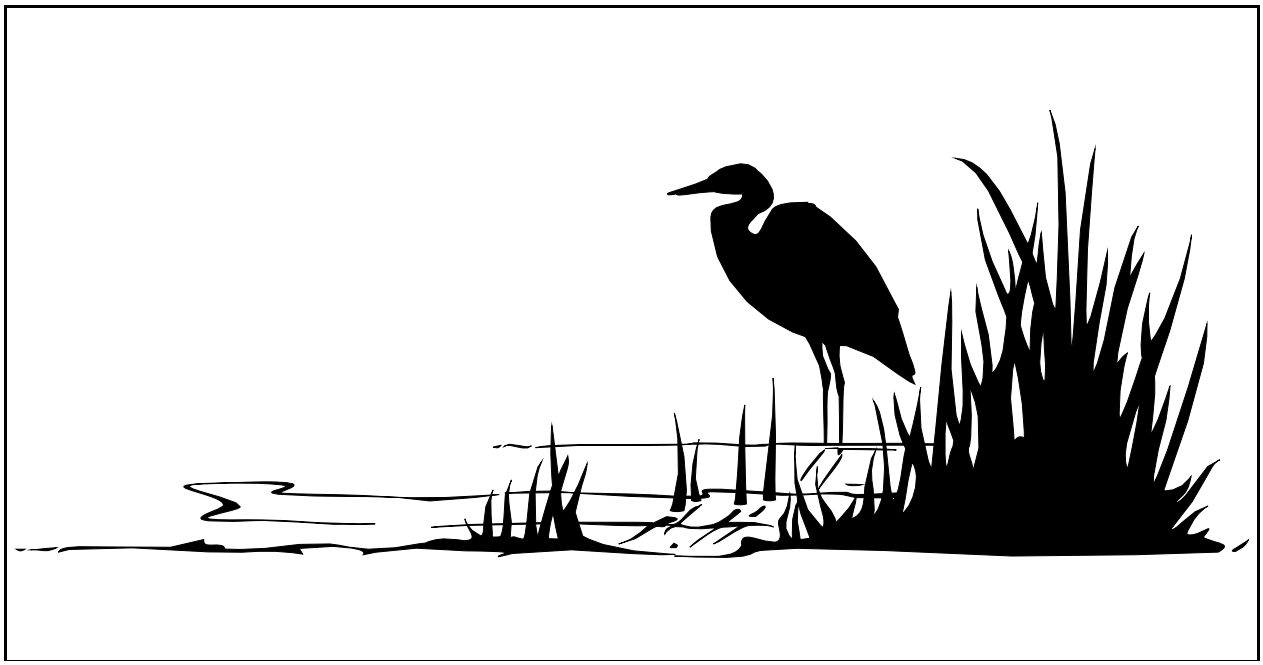
DEFINITIONS

Manual removal:	Removal by hand or hand-held devices without the use or aid of external or auxiliary power. Manual removal cannot exceed 30 ft. in width and can only be done where the shore is being used for a dock or swim raft. The 30 ft. wide removal zone cannot be moved, relocated, or expanded with the intent to gradually increase the area of plants removed. Wild rice may not be removed under this waiver.
Native aquatic plants:	Aquatic plants that are indigenous to the waters of this state.
Invasive aquatic plants:	Non-indigenous species whose introduction causes or is likely to cause economic or environmental harm or harm to human health.
Sensitive area:	Defined under s. NR 107.05(3)(i) (sensitive areas are areas of aquatic vegetation identified by the department as offering critical or unique fish and wildlife habitat, including seasonal or lifestage requirements, or offering water quality or erosion control benefits to the body of water).
Rapid Response protocol:	This is an internal WDNR document designed to provide guidance for grants awarded under NR 198.30 (Early Detection and Rapid Response Projects). These projects are intended to control pioneer infestations of aquatic invasive species before they become established.

Appendix B

Guidelines for Protecting Sensitive Areas

GUIDELINES FOR PROTECTING, MAINTAINING, AND UNDERSTANDING LAKE SENSITIVE AREAS AND CRITICAL HABITAT



A companion document to help understand lake sensitive area and critical habitat reports

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GUIDELINES FOR PROTECTING, MAINTAINING, AND UNDERSTANDING LAKE SENSITIVE AREAS AND CRITICAL HABITAT

A companion document to help understand lake sensitive area and critical habitat reports

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TABLE OF CONTENTS

INTRODUCTION TO PROTECTING, MAINTAINING, AND UNDERSTANDING LAKE SENSTIVE AREAS AND CRITICAL HABITAT AREAS

This document was originally designed to be used in conjunction with specific lake sensitive area survey reports; **but it can also be useful to other parties interested in protecting lakes by helping them understand important factors which affect water quality and lake ecosystem health**. This document will concentrate on several main areas within the lake and its' shoreline areas that can be protected or restored to maintain water quality and lake ecosystem health. These main areas include aquatic plant sensitive areas, shoreline land use and lakeshore buffers, gravel and coarse rock rubble habitat, large woody debris, and various water regulations and zoning concerns.

This document will not attempt to deal with land use problems that do not fall within the immediate shoreline areas; although it should be recognized that lakes may have problems that occur in these outlying areas of their watershed resulting in significant nutrient and sediments additions that threaten the overall health of the lake ecosystem and should be dealt with through land acquisition and subsequent deed restrictions and implementation of non-point source control best management practices.

UNDERSTANDING AQUATIC PLANT SENSITIVE AREAS

The importance of aquatic plant communities is frequently underappreciated and their importance to a lake's ecosystem health misunderstood. This is often evident by the way people refer to aquatic plant habitat as problem weeds or weed beds. A weed by definition is a plant that is out of place or a plant of no value. The vast majority of native aquatic plants grow where they should be growing based on available light (water clarity & light penetration), water depth, and bottom substrate or soils and are not out of place and as previously stated are extremely important for the proper functioning of a healthy lake ecosystem and are an integral part of the biotic integrity.

Aquatic plants (macrophytes & algae) are the primary energy source upon which the rest of the lakes food chain is based and dependent upon. Fisheries are dependent upon them for cover, spawning habitat, important habitat and cover for fingerlings and young of the year, critical habitat for aquatic insects and other important food or forage species (minnows). They also serve an important function in reducing the shoreline erosion associated with

wave action while stabilizing sediments in place, and aquatic plants lock up available phosphorus which would otherwise be available to drive undesirable algae blooms.

Aquatic plants also provide many important functional values for wildlife: Loons require aquatic vegetation for their nests, and waterfowl and furbearers require aquatic vegetation for food and cover. Songbirds, shoreline water-birds, frogs and other amphibians, reptiles, and a host of other wildlife require aquatic vegetation for some critical need throughout different life cycles.

Use of Aquatic Herbicides

Because the potential ecological risks associated with aquatic herbicide applications are so high, most aquatic herbicide applications must be approved through the DNR permitting system and the application must be completed by a DATCP certified aquatic herbicide applicator. Those herbicides that don't require a DNR permit are often inappropriate for the existing site conditions or species present resulting in potential impacts without real nuisance relief.

The herbicides that don't require a permit are restricted to granular or pelletized forms and usually will only work in a narrow set of environmental conditions. If the site conditions include much of any fine flocculent sediments effectiveness can be dramatically reduced or eliminated. Many of these herbicides will work on only a limited number of species which may not even occur on the site increasing the importance of having a qualified applicator capable of identifying the species present and the site conditions which can limit herbicide effectiveness. In the long run most people would be far better off trying to limit vegetation by hand pulling or raking and if these are not feasible contacting a DATCP certified aquatic herbicide applicator to have them assess the different control methods suitable for the site.

In most cases aquatic herbicide applications should be discouraged because:

I. Less invasive or less destructive methods of control are feasible for the site and may include one or more of the following: mechanical harvesting, hand pulling, hand raking, hand cutting, and nutrient controls within the watershed. All too often herbicide treatments are conducted adjacent to private docks in situations where hand pulling or raking were easily a viable option and should have been the only allowable practice.

Before taking action, a careful assessment of existing conditions should be conducted and should include: importance of existing habitat areas, actual needs for clearing of aquatic plant habitat (navigational access does not require removal of all vegetation; only a reduction in density), and consideration of the cumulative impacts of removing aquatic plant habitat or treating it and the organisms living in it or around it with herbicides.

II. Can result in an overall reduction or fragmentation of important native aquatic plant habitat.

III. Creates openings in areas that should be colonized by native aquatic plant species. These openings provide increased opportunities for exotic species to become established in the lake and once established provide opportunities for their expansion.

IV. Results in direct and indirect mortality of sensitive or intolerant immobile species such mussels and other invertebrates. Some treatments can also result in the gradual build up of copper in the lake bed sediments to the point of being toxic to aquatic organisms. Several lakes in Northwestern Wisconsin have already reached or are approaching copper concentrations or levels that would be toxic or considered a lethal dose to 50% (LD50) of selected aquatic organisms exposed to similar concentrations under laboratory conditions. A serious problem that needs to be carefully considered is that copper does not break down, and it continues to build in concentration in the lake bed sediments with each subsequent treatment containing copper.

If people are going to treat aquatic plants they must understand that the available phosphorus will be expressed in larger plants or algae. Any attempts to suppress the expression of the available phosphorus will usually be very short term (7 days). It is difficult to justify adding toxic chemicals which do not break down and continue to build up towards toxic levels with each subsequent treatment. For this reason, aquatic herbicide treatments containing copper should be restricted to exceptional circumstances and not used on a regularly reoccurring basis.

V. If the average landowner width is l00’ or less and the minimum effective herbicide treatment width of 30’ is applied by most shoreline property owners around a lake, the cumulative impacts of the treatment could eliminate or seriously impact greater than 30% of the available habitat. This reduction in available habitat can result in an even greater percentage reduction in the overall fish populations for the lake. Elimination of habitat in even a small percentage of a lake, especially in critical habitat areas, can cause the collapse of a fishery.

VI. Aquatic plants lock up available phosphorus which would otherwise be available to drive undesirable algae blooms.

VII. Aquatic plants serve an important function in reducing the shoreline erosion associated with wave action while stabilizing sediments in place.

VIII. Aquatic plant management staff routinely hears complaints from shoreline property owners who expected their contracted aquatic herbicide application to eliminate all of the vegetation from the treatment area for a significant portion of the summer period. Most aquatic herbicides are effective on only a portion of the total aquatic plant community at a given site (species selective).

Free-floating species such as coon tail (*Ceratophyllum* sp.) and duckweed (*Lemna* sp.) also often drift back into treated areas with the next pervasive wind, eliminating the benefits they had expected from the chemical treatment. Other species such as Elodea, curly-leaf pondweed, milfoil, and other species easily fragment at times of the year and also drift into treatment areas eliminating or reducing the benefits of the previous treatment.

Hand raking or pulling near docks and in front of private developed properties eliminates the guess work out of what will be removed or eliminated when compared to expensive herbicide treatments with health concerns, use restrictions, and limited effectiveness.

Recent changes affecting mechanical removal and hand pulling of aquatic vegetation

Prior to the passing of Senate Bill 55 in September 2001, mechanical removal of aquatic plants was unregulated provided the lake bottom was not disturbed, the cut plants were removed from the lake and not allowed to drift free, and the plants cut and removed did not include rice or those that are a part of a floating bog mat.

As exotic species, such as Eurasian Watermilfoil, expand their distribution within the state, more opportunities for spreading these exotics will occur. The risk of an exotic becoming established in a new lake is dramatically increased if the native species of aquatic plants that normally occupy a specific habitat type have been eliminated or reduced. When exotics are introduced into an area they have to find a suitable location to become established. If all the suitable growing sites are occupied by native species the exotic will have a much more difficult time establishing a reproducing population.

The Department has recently developed the necessary administrative rules within NR 109 to comply with the legislative mandates of SB 55. These focus on protecting native aquatic plant habitat to reduce the risk of exotic species invasions, while also recognizing the importance of protecting and maintaining the native aquatic plant habitat and the functions it performs in maintaining overall lake health. These rules limit shoreline removals of aquatic plant habitat without a permit to less than a 30' width; with the restrictions that this 30' width also include docks and other human activity areas that result in the loss or degradation of aquatic plant habitat.

If individual shoreline owners would like to consider removing vegetation by hand pulling or raking in widths greater than 30' they must apply for an aquatic plant management permit with their local DNR aquatic plant management specialist. It is unlikely that the Department will approve many alterations beyond the standard 30' width because of the concerns related to: creating more areas devoid of native vegetation which increases opportunities for possible colonization sites for exotics, cumulative losses of overall habitat, and the fragmentation and degradation that impairs the remaining habitat.

Summary of management recommendations for the protection and restoration of aquatic plant communities

The following management recommendations provide some basic concepts that can be used or implemented to insure the long term health of aquatic plant communities and the overall health of lakes ecosystems.

1. Prohibit chemical treatment of aquatic plants accept under extenuating circumstances such as:
    A. The habitat to be treated is a dominant feature in the lake and the cumulative treatment of small areas will not reduce the overall percentage of coverage from historic coverages.
    B. There is no other management alternative that will work to clear necessary navigational access channels identified in a Department approved management plan (post 2000)
    C. Treatment will not result in a loss of critical habitat
    D. It can be shown that chemical treatment will result in an improvement to the overall health of the ecosystem.
    E. A serious use problem clearly exists
2. Discourage mechanical harvesting of aquatic plants in most circumstances. Clear only Department approved NR 109 permitted navigational channels 20'-30' wide. If small areas adjacent to docks are to be cleared of vegetation hand raking or pulling should be used if at all possible. Please consider the cumulative impacts if everyone was to duplicate the actions you take on your property around the rest of the lake.
3. Educate lake users about the value and importance of native aquatic plant habitats. Lake districts and associations should try to educate new property owners as soon as possible about the value of critical habitat and the laws associated with protecting lakes and lake front property.
4. Apply aggressive erosion control measures to all bare soil areas
5. **Protect** existing natural plant cover in upland areas within at least a 50'-60' corridor of the water's edge and **reestablish** an **effective buffer** of natural plant cover where it has been eliminated. This corridor or buffer is an important component in protecting water quality and habitat against eutrophication and sedimentation and provides critical habitat for our shoreline species of wildlife. Lake districts and associations should try to educate new property owners as soon as possible about the value of **shoreline buffers** and the laws associated with protecting lakes and lake front property.

6. Encourage the strict enforcement of existing zoning regulations and encourage their strengthening and uniform enforcement.
7. Provide follow through and feed back with public officials when it comes to waivers and variances of existing zoning regulations and building codes
8. Encourage the requirement of mandatory erosion control plans for all building permits that require ground breaking
9. Filling, dredging, or other shoreline or littoral zone alterations covered by chapter 30, Wisconsin Statutes, should be prohibited unless there is clear evidence that such an alteration would benefit the lake's ecosystem.
10. Lake districts should carefully consider the value of purchasing shallow water bays with extensive aquatic plant communities to insure that future development does not result in an impact or a loss of this valuable habitat.

SHORELINE LANDUSE AND LAKESHORE BUFFERS

The impacts that can result from shoreline development can be greatly reduced if done carefully with respect to the many important functional values that must exist to maintain a healthy lakes ecosystem. Natural shoreline vegetation provides important protection for lake water quality as well as ecosystem health and should be maintained for at least a 50-60' buffer strip adjacent to any waterbody. If shorelines have a steeper gradient than 10-15% the buffer strip width should be increased. Access corridors through this buffer zone are restricted by most county zoning regulations. Restrictions usually prevent the clearing of woody vegetation and mowing to no more than a 30' width of the shoreline. Property owners that care about the health of their lake's ecosystem can go a step further by reducing the clearing of vegetation to a narrow foot path. The best design for a foot path is an irregular trail that does not go in a direct line to the lake but has irregular meanders much like a stream with small berms and humps to prevent runoff from flowing directly down the path and preventing the path from become an area of concentrated flow for the direct delivery of sediments and nutrients.

The importance of maintaining the zone of no disturbance of the natural vegetation along the lake shoreline is important for several reasons. As land is cleared and developed irregular surface areas are lost, leveled, and filled in by earth moving equipment, reducing infiltration and increasing runoff. The natural spongy layer of decaying leaves and plant matter is also

removed further reducing infiltration and increasing runoff. Soil porosity is also decreased, decreasing infiltration and increasing runoff. As we lose or simplify the layers present (trees, shrubs, and unmowed herbaceous ground cover) in the shoreline areas we decrease the layers present for the interception of rainfall; each layer present reduces the energy and volume of rainfall striking the grounds surface thereby reducing what is available for the mobilization and transport of sediments and nutrients from the ground's surface to the lake. The greater the volume of runoff the more energy available for the transport of nutrients and sediments from surrounding land uses into the lake to drive algae blooms and bury important shoreline habitats.

Shoreline buffers also increase the buildup of leaf litter forming a spongy layer to absorb more precipitation and runoff reducing the amount of sediment and nutrients reaching the lake and negatively impacting water quality and habitat. The denser unmowed vegetation also filters sediments and nutrients from runoff.

Each of these three layers (trees, shrubs, and herbaceous ground cover) provides different important habitat components for different life cycle requirements of various wildlife. If any one layer is missing the ability of certain wildlife species to survive may be compromised. Leaving wider areas of uncut vegetation (Buffer Zones) increases the likelihood that adequate habitat will exist for many species of songbirds, which are at risk from the loss of this valuable lake shoreline habitat. Furbearers, raptors, frogs, deer, and other wildlife also benefit from these wider natural areas.

The aesthetic perspective also needs to be evaluated. Everyone likes to look out and see the lake, but very few people like to look at an intensively developed shoreline that reminds them of the urban yards and hectic pace they were trying to get away from. Maintaining the natural wild character of a lake should be the highest priority guiding any development activities. Both man and wildlife will lose if the natural character is allowed to be manipulated to the point our lakeshores begin to resemble urban yards and lawns. This emphasizes the importance of insuring that development is done carefully to maintain as many of the important functional values that the natural undeveloped shoreline had.

The restoration of a naturally vegetated buffer for at least 50'-60' from water's edge should be a very high priority for properties that have been cleared or converted. As previously stated a healthy buffer includes the native trees, shrubs, and herbaceous ground cover that would naturally have

existed on a given site or location. The native species can usually be identified by looking at undeveloped shoreline areas.

Summary of management recommendations for the protection and restoration of natural vegetative shoreline buffers

1. Educate landowners about the importance of a healthy lakeshore buffer
2. Encourage the strict enforcement of existing zoning regulations and encourage their strengthening and uniform enforcement.
3. Provide follow through and feed back with public officials when it comes to waivers and variances of existing zoning regulations and building codes
4. Encourage the requirement of mandatory erosion control plans for all building permits that require ground breaking
5. Provide direct oversight of all building crews and insure that as little as possible of the natural plant cover is disturbed during the construction phases.
6. Utilize only the native indigenous species for shoreline buffer restoration efforts and carefully consider site limitations (soil type, soil moisture regime, and shade preferences of plantings) when selecting appropriate species. Restoration efforts should follow a least disturbance scenario; by first halting mowing within at least the shoreline buffer zone (35' back from the water's edge and with no more than 30' width of the shoreline cleared for access purposes; landowners that care about the health of their lake ecosystem are encouraged to go beyond the minimum requirements of the law and increase buffer width and decrease the length of shoreline cleared of vegetation for access). It is important to remember that any ground breaking activities increases the opportunity for transport of sediments and nutrients into the lake; especially within the lakeshore buffer zone.

   Landowners should expect that initial recovery of the natural vegetation within the ground cover layer may take one or two full growing seasons, after halting mowing activities. Vegetation can usually re-establish itself from the natural seed bank available within the existing soils and from the seeds and rootstalks of adjacent plant communities. Plug plantings of the native herbaceous groundcover species can be used to achieve adequate density and diversity if recovery appears to be sparse in successive years. Supplemental

plantings to establish adequate densities for the tree and shrub layer will have to be used in most situations.

The native species that should be used to restore the lakeshore buffer in order to provide the proper habitat and water quality protection functions necessary to insure a healthy Northern Wisconsin lake ecosystem are available through County Land and Water Resources District Conservation staff; please refer to the list of contact names and numbers at the end of this document.

ZONING AND REGULATION CONSIDERATIONS FOR LAKE PROTECTION

Filling, dredging, or other shoreline or littoral zone alterations covered by chapter 30, Wisconsin Statutes, should be prohibited unless there is clear evidence that such an alteration would benefit the lake's ecosystem. Sea-walls should not be used and sand blankets should not be allowed in almost all situations. Rock rip-rap should be used only when anchoring difficult shorelines with problematic erosion which cannot be handled with just restoration of the native vegetation. If questions arise or problem areas exist, lakeshore property owners should call their local DNR Water Regs Staff for assistance or to report a problem area which may be negatively impacting lake water quality or habitat. A list of locally available technical assistance contact names and phone numbers is provided at the end of this document for easy reference.

County shoreland and wetland zoning regulations apply to the areas within 1000 feet of lakes, ponds, and flowages and within 300 feet of rivers, streams, and creeks. The intent of zoning regulations is to promote wise land use planning while allowing careful development around our precious surface water resources. Most of the counties in northwestern Wisconsin now have lakes classifications which require or prescribe certain setbacks for all structures and the maintenance or re-establishment of shoreline buffers to protect water quality and habitat needs. Most of them **as a minimum** allow for reasonable use of shoreline areas by allowing a 30' wide access/viewing corridor through the buffer. The remainder of the lot from the water's edge back 35'should be restored to a natural condition with trees, shrubs, and unmowed herbaceous ground cover including various grasses, sedges, forbs, and wildflowers.

On more sensitive lakes, county classifications may require or prescribe a wider buffer width and lakeshore property owners are encouraged to contact

their **local county conservationist** and determine what the specific requirements are for shoreline buffers on their lake. A list of locally available technical assistance contact names and phone numbers is provided at the end of this document for easy reference.

In all cases during development, the maintenance of a naturally vegetated buffer zone is critical to preserve a healthy lake ecosystem. In situations where the vegetation has been removed or altered landowners are encouraged to reestablish a buffer zone composed of the natural plant communities that belong there. For technical assistance in restoring your shoreline buffer please contact your local county conservationist or county shoreline BPM technician using the names and numbers provided at the end of this document. This ensures that you not only get water quality protection, but you also get the important functional values that the native plants provide for food and cover for shoreline species of wildlife dependent upon them.

EROSION CONTROL DURING LOT DEVELOPMENT

This is one area that can have a dramatic effect on water quality and habitat if it is not done correctly. The volume of sediments and nutrients that can be transported to a lake during the construction phase can equal the amount that would normally have only come off from the same parcel of land over a period of hundreds of years. The compounding effect of this nutrient load can have a dramatic effect on long term lake water quality. By following some basic rules during the construction phase we can keep most of these sediments and nutrients in place and prevent them from becoming a part of the lakes internal nutrient cycle that could cause a shift from a clear lake to one that has ample nutrients to drive extensive algae blooms each year.

Adequate soil erosion control measures and their proper maintenance during construction are very important and should become a very high priority for individual property owners. Lake association members could play an active part in reaching property owners before the damage is done or minimizing impacts by identifying active sites that need erosion control measures and contacting property owners to encourage proper implementation of erosion control measures. County zoning staff and officials need public support to get more effective zoning regulations on the books. Public support needs to be expressed if adequate county staff are to be hired to meet the increasing demands that are being placed on them by expanding development. As is most counties suffer from inadequate staff to deal with existing work demands. Mandatory erosion control plans should be a requirement for all

building permits that will involve ground breaking. This needs to be coupled with adequate staff to insure that erosion control plans are being followed and properly implemented and that erosion control measures are properly maintained. More recently county governments have begun to deal with these difficult issues.

Until county wide erosion control ordinances can be established it is strongly recommended that individuals require contractors to develop erosion control plans prior to the initiation of any construction, then the landowner should ensure that it is adequate. Aggressive follow through after construction has begun is also important to insure erosion control practices are properly implemented and maintained.

By giving erosion control careful consideration prior to construction serious impacts to our lakes and streams can be minimized or avoided entirely. Yards can be designed with subtle berms to divert runoff into internally drained areas or into constructed depressions to allow sediments and nutrients to settle out and be trapped before reaching our streams and lakes. Silt screen fences, properly installed during construction can protect against "sheet" runoff. Other erosion control methods are required on steep slopes or difficult sites. Your county land conservation staff or DNR technical support can provide expert advice about erosion control.

Protect all top soil piles by properly locating them away from drainage ways and as far away from the lake as possible. Surround them with a ring of silt screen fence while also seeding them down with an annual rye grass to provide additional stabilization until they are needed.

Never divert rainfall runoff from driveways, roofs, or access roads directly to the lake through drain tiles, culverts, or waterways. Instead, divert runoff into internally drained areas, constructed depressions to allow for settling of sediments and nutrients, or at least into a thickly vegetated site that will provide some degree of filtration and infiltration of runoff.

Management recommendations for constructions site erosion control

1. Minimize disturbance of natural plant communities within shoreline areas (50'-60' from water's edge) so they can continue to act as a buffer protecting lake water quality by filtering runoff and providing for infiltration before it reaches the lake.
2. Provide direct oversight of the construction crew during development. Insure that clearing of vegetation is kept to the minimum needed to accomplish the desired construction and avoid any disturbances within at least 50'-60' of any shoreline
    A. Insure that silt screen fences are installed and maintained.
    B. Apply mulch to all bare soil areas that may be exposed to precipitation during none work hours, and especially make sure mulch is applied before weekends. Purchase and use excelsior erosion control mats and other products where necessary.
    C. Provide coarse gravel and crushed rock cover for all areas that have regular heavy equipment traffic, i.e. driveways. Keep all vehicle traffic confined to these protected road surfaces.
    D. Include landscape designs for the protection of water quality i.e., such as holding ponds and depressions which provide for the opportunity to capture and hold runoff while maximizing infiltration and allowing sediments and nutrients to settle out.
    E. Try to eliminate or minimize areas of concentrated flow by reducing the surface area draining through a single path or channel and encouraging flow over multiple paths into depressional areas through the use of berms and other best management practices (BMPs).
3. Report serious erosion control problems that aren't being dealt with in a timely manner; before, they can result in significant impacts to water quality and habitat.

PROTECTION OF GRAVEL AND COARSE ROCK RUBBLE HABITAT

Gravel and coarse rock rubble free of silt and sediments are critical to the successful reproduction of some walleye stocks. Gravel and coarse rock rubble free of silt and sediments are also critical to the survival of different components of the aquatic food chain that supports a healthy lake ecosystem, including aquatic insects, crayfish, and other forage or food species. The greatest threat to these critical habitats is shoreline development that is not accomplished in a manner that maintains an adequate buffer of undisturbed land and does not implement and maintain proper erosion control measures. This buffer is particularly important during ground breaking and construction of lake shoreline areas, because it traps sediments and nutrients within the vegetation and irregular surface areas and small depressions preventing them from reaching the lake and driving algae blooms or burying important habitat.

Summary of management recommendations for the protection of rock rubble *walleye spawning* habitat

1. Educate landowners about the importance of a healthy lakeshore buffer (filter out sediments)
2. Encourage the strict enforcement of existing zoning regulations and encourage their strengthening and uniform enforcement.
3. Provide follow through and feed back with public officials when it comes to waivers and variances of existing zoning regulations and building codes
4. Encourage the requirement of a mandatory erosion control plan for all building permits that require ground breaking
5. Provide direct oversight of all building crews and insure that as little as possible of the natural plant cover is disturbed during the construction phases.
6. Do not use sand blankets to convert natural bottom types to sterile beach sand.
7. Filling, dredging, or other shoreline or littoral zone alterations covered by chapter 30, Wisconsin Statutes, should be prohibited unless there is clear evidence that such an alteration would benefit the lake's ecosystem.

MAINTENANCE OF LARGE WOODY DEBRIS

Large woody debris or trees should be left in the lake as they naturally collapse and fall into the lake. Large woody debris is often overlooked for its importance in providing critical fish habitat. Species such as largemouth bass require some sort of cover to successfully nest and rear offspring. Bluegills and other species also benefit from the presence of large woody debris. The conversion or removal of natural plant cover within a 50'-60' corridor of the lake reduces or eliminates completely the opportunity for the replacement of large woody debris as well as other important functional areas important the any lake's ecosystem health and should be discouraged. The way we look at large woody debris should in the context of its importance to the health of the lake ecosystem. Pre-formulated perceptions drawn from urban experiences or practices used in urban areas can be very destructive to the way natural environments function in a complex interconnected fashion. A shoreline ringed with fallen trees should not be looked at as untidy or unkempt but one that is providing important habitat for fish and wildlife. Fishermen have recognized for decades that fallen trees are often some of the best habitat to fish for bass and panfish. This emphasizes the need to re-assess our value system and begin leaving them for important habitat. Fisheries managers in recent years have begun to increase their educational efforts in this particular area but still have a majority of the public to reach with this important message.

Management recommendations for woody debris

1. Educate lake shore owners about the value of allowing trees to fall into the lake naturally in order to provide valuable habitat for fish and wildlife.
2. Encourage lake shore property owners to become involved in the long term planning for woody debris on their property. Plant young trees for the replacement of older trees.

USE OF FERTILIZERS ON LAKE SIDE LAWNS

From a water quality standpoint lawn fertilizers are a recognizable source of nutrients that property owners can eliminate or control through proper application. More is not better. Landowners are also encouraged to strongly consider the consequences of having a large lawn that extends into the recommended buffer area (within 50'- 60' of the lakeshore). By reducing your lawn size you not only reduce the amount of sediments and nutrients entering the lake you also provide important habitat necessary to support Wisconsin's wildlife species dependent upon this important shoreline habitat that is quickly disappearing in the face of increasing development pressures. Another benefit to decreasing lawn size is the reduction in work load necessary to maintain it; hence you can spend more time relaxing and enjoying your property.

If you feel the need to fertilize your lawn have your soil tested for phosphorus and potassium levels. When applying fertilizers consider the need to have soil phosphorus levels at the maximum recommended level. By applying fertilizers at a lesser rate you can still enhance your lawn without the increased risk of having excess drain into the lake to drive undesirable algae blooms. Remember that fertilizer suppliers are in the business to sell chemicals. The recommended bag application rates are often too high. Get advice from your county or university extension offices and remind them that you are applying the fertilizers to a lakeshore lawn and do not want to over-apply.

Never burn brush or leaves, especially along the lakeshore, in road ditches, or in drainage ways that drain into the lake. The ashes are very high in phosphorus and nitrogen and are soluble in rainwater. The best way to deal with leaves is to compost them. Spreading them in a wooded area that does not drain to the lake is also a good way to deal leave disposal. If neither of these is an option, bag your leaves and take them to a yard waste collection site for proper disposal.

Do not remove grass clippings from lawns. They contain all the nitrogen and phosphorus your lawn needs which you will not have to replace with annual fertilizer applications. Use a mulching lawnmower it recycles the clippings into your lawn more efficiently. Never spread wood stove ashes in areas draining to the lake; instead dispose of them with your household garbage during normal refuse pickup times.

Management recommendations for fertilizer use

1. Apply fertilizers only if a soils test has determined that it is nutrient deficient and add less than the maximum recommended.
2. The use of a low phosphorus content fertilizers or no-phosphorus fertilizers is strongly recommended if the fertilizer is to be applied on lakeshore property.

SEPTIC SYSTEM MAINTENANCE AND NECESSARY REPLACEMENT OF OLD FAILING SYSTEMS

Failing septic systems can pose a significant threat to water quality, especially when large portions of shoreline are developed and when the overall percentage of a lakes watershed is dominated by lakeshore properties. Septic systems that are older than 20 years should be looked at to insure that the filtration field is properly functioning and that waste is not perching above the drain field and entering the lake directly without adequate filtration of nutrients and other components. There is no specific rule that septic systems have to be evaluated to determine if they are functioning properly, unless there is a complaint filed.

It is generally recommended that you have your septic system pumped of the normal sludge buildup every two to three years. This sludge removal is essential for maintaining the absorptive capacity of your drain field.

Inspect your system regularly for surfacing effluent around the drain field. Are there wet areas or strong odors? Do the drains in your home seem to work properly or are they sluggish? Do they make noisy gurgling sounds? If your septic system has any of these systems you should have it inspected by a licensed installer.

Never make any changes to your sanitary system or wastewater piping. This work must be done by a licensed installer. It is not only dangerous to health and human safety, as well as water quality, it is also illegal and can result in fines or penalties.

Avoid using a garbage disposal with private septic systems. Put kitchen scraps in a compost pile if at all possible; otherwise, as a last resort put them in with your household garbage. Limit the use washing machines, if possible. Laundry wash water is high in lint, synthetic fibers, and pet hair all of which can cause premature failure of your drain field. Use a commercial laundry if possible or if you are a weekend resident with a lakeshore septic

system wait until you return to your midweek residence with public water and sewer.

A septic system is only intended to break down organic wastes. Never put solvents, furniture stripping solutions, degreasers, petroleum compounds, oil based paints and stains, or other chemicals into your sanitary system.

Diverting sink and shower drains (so called gray water) to lawns and other properties adjacent to the lake will not only impact lake water quality it is also illegal. Gray water must be run through your septic system to allow for the proper filtration of pollutants. There are no exceptions to this without first obtaining necessary permits.

Appendix C

NR 109

Chapter NR 109

AQUATIC PLANTS: INTRODUCTION, MANUAL REMOVAL AND MECHANICAL CONTROL REGULATIONS

NR 109.01 Purpose. The purpose of this chapter is to establish procedures and requirements for the protection and regulation of aquatic plants pursuant to ss. 23.24 and 30.07, Stats. Diverse and stable communities of native aquatic plants are recognized to be a vital and necessary component of a healthy aquatic ecosystem. This chapter establishes procedures and requirements for issuing aquatic plant management permits for introduction of aquatic plants or control of aquatic plants by manual removal, burning, use of mechanical means or plant inhibitors. This chapter identifies other permits issued by the department for aquatic plant management that contain the appropriate conditions as required under this chapter for aquatic plant management, and for which no separate permit is required under this chapter. Introduction and control of aquatic plants shall be allowed in a manner consistent with sound ecosystem management, shall consider cumulative impacts, and shall minimize the loss of ecological values in the body of water. The purpose of this chapter is also to prevent the spread of invasive and non−native aquatic organisms by prohibiting the launching of watercraft or equipment that has any aquatic plants or zebra mussels attached.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03; **correction made under s. 13.92 (4) (b) 7., Stats., Register March 2011 No. 663.**

NR 109.02 Applicability. A person sponsoring or conducting manual removal, burning or using mechanical means or aquatic plant inhibitors to control aquatic plants in navigable waters, or introducing non−native aquatic plants to waters of this state shall obtain an aquatic plant management permit from the department under this chapter.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03.

NR 109.03 Definitions. In this chapter:

(1) "Aquatic community" means lake or river biological resources.

(2) "Beneficial water use activities" mean angling, boating, swimming or other navigational or recreational water use activity.

(3) "Body of water" means any lake, river or wetland that is a water of this state.

(4) "Complete application" means a completed and signed application form, the information specified in s. NR 109.04 and any other information which may reasonably be required from an applicant and which the department needs to make a decision under applicable provisions of law.

(5) "Department" means the Wisconsin department of natural resources.

(6) "Manual removal" means the control of aquatic plants by hand or hand−held devices without the use or aid of external or auxiliary power.

(7) "Navigable waters" means those waters defined as navigable under s. 30.10, Stats.

(8) "Permit" means aquatic plant management permit.

(9) "Plan" means aquatic plant management plan.

(10) "Wetlands" means an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03.

NR 109.04 Application requirements and fees. **(1)** Permit applications shall be made on forms provided by the department and shall be submitted to the regional director or designee for the region in which the project is located. Permit applications for licensed aquatic nursery growers may be submitted to the department of agriculture, trade and consumer protection.

Note: Applications may be obtained from the department's regional headquarters or service centers. DATCP has agreed to send application forms and instructions provided by the department to aquatic nursery growers along with license renewal forms. DATCP will forward all applications to the department for processing.

(2) The application shall be accompanied by all of the following unless the application is made by licensed aquatic nursery growers for selective harvesting of aquatic plants for nursery stock. Applications made by licensed aquatic nursery growers for harvest of nursery stock do not have to include the information required by par. (d), (e), (h), (i) or (j).

(a) A nonrefundable application fee. The application fee for an aquatic plant management permit is:

1. $30 for a proposed project to manage aquatic plants on less than one acre.

2. $30 per acre to a maximum of $300 for a proposed project to manage aquatic plants on one acre or larger. Partial acres shall be rounded up to the next full acre for fee determination. An annual renewal of this permit may be requested with an additional application fee of one−half the original application fee, but not less than $30.

(b) A legal description of the body of water including township, range and section number.

(c) One copy of a detailed map of the body of water with the proposed introduction or control area dimensions clearly shown. Private individuals doing plant introduction or control shall provide the name of the owner riparian to the management area, which includes the street address or block, lot and fire number where available and local telephone number or other pertinent information necessary to locate the property.

(d) One copy of any existing aquatic management plan for the body of water, or detailed reference to the plan, citing the plan references to the proposed introduction or control area, and a description of how the proposed introduction or control of aquatic plants is compatible with any existing plan.

(e) A description of the impairments to water use caused by the aquatic plants to be managed.

(f) A description of the aquatic plants to be controlled or removed.

(g) The type of equipment and methods to be used for introduction, control or removal.

(h) A description of other introduction or control methods considered and the justification for the method selected.

(i) A description of any other method being used or intended for use for plant management by the applicant or on the area abutting the proposed management area.

(j) The area used for removal, reuse or disposal of aquatic plants.

(k) The name of any person or commercial provider of control or removal services.

(3) (a) The department may require that an application for an aquatic plant management permit contain an aquatic plant management plan that describes how the aquatic plants will be introduced, controlled, removed or disposed. Requirements for an aquatic plant management plan shall be made in writing stating the reason for the plan requirement. In deciding whether to require a plan, the department shall consider the potential for effects on protection and development of diverse and stable communities of native aquatic plants, for conflict with goals of other written ecological or lake management plans, for cumulative impacts and effect on the ecological values in the body of water, and the long−term sustainability of beneficial water use activities.

(b) Within 30 days of receipt of the plan, the department shall notify the applicant of any additional information or modifications to the plan that are required. If the applicant does not submit the additional information or modify the plan as requested by the department, the department may dismiss the aquatic plant management permit application.

(c) The department shall approve the aquatic plant management plan before an application may be considered complete.

(4) The permit sponsor may request an annual renewal in writing from the department under s. NR 109.05 if there is no change proposed in the conditions of the original permit issued.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03.

NR 109.05 Permit issuance. (1) The department shall issue or deny issuance of the requested permit within 15 working days after receipt of a completed application and approved plan as required under s. NR 109.04 (3).

(2) The department may specify any of the following as conditions of the permit:

(a) The quantity of aquatic plants that may be introduced or controlled.

(b) The species of aquatic plants that may be introduced or controlled.

(c) The areas in which aquatic plants may be introduced or controlled.

(d) The methods that may be used to introduce or control aquatic plants.

(e) The times during which aquatic plants may be introduced or controlled.

(f) The allowable methods used for disposing of or using aquatic plants that are removed or controlled.

(g) Annual or other reporting requirements to the department that may include information related to pars. (a) to (f).

(3) The department may deny issuance of the requested permit if the department determines any of the following:

(a) Aquatic plants are not causing significant impairment of beneficial water use activities.

(b) The proposed introduction or control will not remedy the water use impairments caused by aquatic plants as identified as a part of the application in s. NR 109.04 (2) (e).

(c) The proposed introduction or control will result in a hazard to humans.

(d) The proposed introduction or control will cause significant adverse impacts to threatened or endangered resources.

(e) The proposed introduction or control will result in a significant adverse effect on water quality, aquatic habitat or the aquatic community including the native aquatic plant community.

(f) The proposed introduction or control is in locations identified by the department as sensitive areas, under s. NR 107.05 (3) (i) 1., except when the applicant demonstrates to the satisfaction of the department that the project can be conducted in a manner that will not alter the ecological character or reduce the ecological value of the area.

(g) The proposed management will result in significant adverse long−term or permanent changes to a plant community or a high value species in a specific aquatic ecosystem. High value species are individual species of aquatic plants known to offer important values in specific aquatic ecosystems, including Potamogeton amplifolius, Potamogeton Richardsonii, Potamogeton praelongus, Stuckenia pectinata (Potamogeton pectinatus), Potamogeton illinoensis, Potamogeton robbinsii, Eleocharis spp., Scirpus spp., Valisneria spp., Zizania spp., Zannichellia palustris and Brasenia schreberi.

(h) If wild rice is involved, the stipulations incorporated by *Lac Courte Oreilles v. Wisconsin*, 775 F. Supp. 321 (W.D. Wis. 1991) shall be complied with.

(i) The proposed introduction or control will interfere with the rights of riparian owners.

(j) The proposed management is inconsistent with a department approved aquatic plant management plan for the body of water.

(4) The department may approve the application in whole or in part consistent with the provisions of sub. (3). A denial shall be in writing stating the reasons for the denial.

(5) (a) The department may issue an aquatic plant management permit on less than one acre in a single riparian area for a 3−year term.

(b) The department may issue an aquatic plant management permit for a one−year term for more than one acre or more than one riparian area. The permit may be renewed annually for up to a total of 3 years in succession at the written request of the permit holder, provided no modifications or changes are made from the original permit.

(c) The department may issue an aquatic plant management permit containing a department−approved plan for a 3 to 5 year term.

(d) The department may issue an aquatic plant management permit to a licensed nursery grower for a 3−year term for the harvesting of aquatic plants from a publicly owned lake bed or for a 5−year term for harvesting of aquatic plants from privately owned beds with the permission of the property owner.

(6) The approval of an aquatic plant management permit does not represent an endorsement of the permitted activity, but represents that the applicant has complied with all criteria of this chapter.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03; reprinted to restore dropped language from rule order, Register October 2003 No. 574.

NR 109.06 Waivers. The department waives the permit requirements under this chapter for any of the following:

(1) Manual removal or use of mechanical devices to control or remove aquatic plants from a body of water 10 acres or less that is entirely confined on the property of one person with the permission of that property owner.

Note: A person who introduces native aquatic plants or removes aquatic plants by manual or mechanical means in the course of operating an aquatic nursery as authorized under s. 94.10, Stats., on privately owned non−navigable waters of the state is not required to obtain a permit for the activities.

(2) A riparian owner who manually removes aquatic plants from a body of water or uses mechanical devices designed for cutting or mowing vegetation to control plants on an exposed lake bed that abuts the owner's property provided that the removal meets all of the following:

(a) 1. Removal of native plants is limited to a single area with a maximum width of no more than 30 feet measured along the shoreline provided that any piers, boatlifts, swimrafts and other recreational and water use devices are located within that 30−foot wide zone and may not be in a new area or additional to an area where plants are controlled by another method; or

2. Removal of nonnative or invasive aquatic plants as designated under s. NR 109.07 when performed in a manner that does not harm the native aquatic plant community; or

3. Removal of dislodged aquatic plants that drift on−shore and accumulate along the waterfront.

(b) Is not located in a sensitive area as defined by the department under s. NR 107.05 (3) (i) 1., or in an area known to contain threatened or endangered resources or floating bogs.

(c) Does not interfere with the rights of other riparian owners.

(d) If wild rice is involved, the procedures of s. NR 19.09 (1) shall be followed.

(4) Control of purple loosestrife by manual removal or use of mechanical devices when performed in a manner that does not harm the native aquatic plant community or result in or encourage re−growth of purple loosestrife or other nonnative vegetation.

(5) Any aquatic plant management activity that is conducted by the department and is consistent with the purposes of this chapter.

(6) Manual removal and collection of native aquatic plants for lake study or scientific research when performed in a manner that does not harm the native aquatic plant community.

Note: Scientific collectors permit requirements are still applicable.

(7) Incidental cutting, removal or destroying of aquatic plants when engaged in beneficial water use activities.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03.

NR 109.07 Invasive and nonnative aquatic plants. (1) The department may designate any aquatic plant as an invasive aquatic plant for a water body or a group of water bodies if it has the ability to cause significant adverse change to desirable aquatic habitat, to significantly displace desirable aquatic vegetation, or to reduce the yield of products produced by aquaculture.

(2) The following aquatic plants are designated as invasive aquatic plants statewide: Eurasian water milfoil, curly leaf pondweed and purple loosestrife.

(3) Native and nonnative aquatic plants of Wisconsin shall be determined by using scientifically valid publications and findings by the department.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03.

NR 109.08 Prohibitions. (1) No person may distribute an invasive aquatic plant, under s. NR 109.07.

(2) No person may intentionally introduce Eurasian water milfoil, curly leaf pondweed or purple loosestrife into waters of this state without the permission of the department.

(3) No person may intentionally cut aquatic plants in public/navigable waters without removing cut vegetation from the body of water.

(4) (a) No person may place equipment used in aquatic plant management in a navigable water if the person has reason to believe that the equipment has any aquatic plants or zebra mussels attached.

(b) This subsection does not apply to equipment used in aquatic plant management when re−launched on the same body of water without having visited different waters, provided the re−launching will not introduce or encourage the spread of existing aquatic species within that body of water.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03.

NR 109.09 Plan specifications and approval. (1) Applicants required to submit an aquatic plant management plan, under s. NR 109.04 (3), shall develop and submit the plan in a format specified by the department.

(2) The plan shall present and discuss each of the following items:

(a) The goals and objectives of the aquatic plant management and protection activities.

(b) A physical, chemical and biological description of the waterbody.

(c) The intensity of water use.

(d) The location of aquatic plant management activities.

(e) An evaluation of chemical, mechanical, biological and physical aquatic plant control methods.

(f) Recommendations for an integrated aquatic plant management strategy utilizing some or all of the methods evaluated in par. (e).

(g) An education and information strategy.

(h) A strategy for evaluating the efficacy and environmental impacts of the aquatic plant management activities.

(i) The involvement of local units of government and any lake organizations in the development of the plan.

(3) The approval of an aquatic plant management plan does not represent an endorsement for plant management, but represents that adequate considerations in planning the actions have been made.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03.

NR 109.10 Other permits. Permits issued under s. 30.12, 30.20, 31.02 or 281.36, Stats., or under ch. NR 107 may contain provisions which provide for aquatic plant management. If a permit issued under one of these authorities contains the appropriate conditions as required under this chapter for aquatic plant management, a separate permit is not required under this chapter. The permit shall explicitly state that it is intended to comply with the substantive requirements of this chapter.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03.

NR 109.11 Enforcement. (1) Violations of this chapter may be prosecuted by the department under chs. 23, 30 and 31, Stats.

(2) Failure to comply with the conditions of a permit issued under or in accordance with this chapter may result in cancellation of the permit and loss of permit privileges for the subsequent year. Notice of cancellation or loss of permit privileges shall be provided by the department to the permit holder.

History: CR 02−061: cr. Register May 2003 No. 569, eff. 6−1−03.

Appendix D

Outline of Aquatic Plant Management Goals, Objectives, and Actions

Horseshoe Lake, Washburn County Aquatic Plant Management Plan

Outline of Goals, Objectives, and Actions 2014-2018

- Goal One: Native Plant Protection, Preservation, and Enhancement
    - Objective 1 – Limit removal of native aquatic plants around property owner docks and beaches
        - Action: Educate riparian owners about the AIS risk posed by removal of native aquatic plant
    - Objective 2 – Promote Wild Rice Awareness in lake property owners and users
        - Action: Provide educational and informational materials related to wild rice
        - Action: Invite a speaker to talk about wild rice at an annual education event
        - Action: Monitoring the lake for the presence of wild rice at least once annually
    - Objective 3 – Support the designation of critical habitat in Horseshoe Lake
        - Action: Support WDNR, should they reactivate the program
    - Objective 4 – Minimize aquatic plant management impacts to the existing fishery
        - Action: Implement no aquatic plant management actions except physical removal in areas of the lake < 3-ft deep
    - Objective 5 – Maintain or enhance the amount of coarse woody debris in Horseshoe Lake
        - Action: Riparians will not remove woody debris from their shoreline unless it interferes with lake use
        - Action: Promote and pursue lake projects that may increase the level of woody debris in the lake
- Goal Two: Eurasian Watermilfoil Management and Monitoring
    - Objective 1 – Complete pre and post treatment aquatic plant surveying and fall bed-mapping of EWM annually
        - Action: Contract with a resource professional to complete pre and post treatment aquatic plant surveying
        - Action: Contract with a resource professional to complete fall EWM bed mapping
    - Objective 2 – Incorporate and integrated approach to EWM management
        - Action: Complete physical removal
        - Action: Complete diver removal
        - Action: Complete limited, early season herbicide application in areas too big to control with physical or diver removal
    - Objective 3 – Complete herbicide residual testing

        - Action: Partner with WDNR and USACOE programs to complete a residual testing program at least once during the five years included in this APM Plan.
    - Objective 3 – Incorporate an EWM weevil monitoring program if the amount of EWM increases to >10 acres
        - Action: Implement the CLMN Weevil Monitoring Program
- Goal Three: Aquatic Invasive Species (AIS) Education, Prevention, and Planning
    - Objective 1 – Maintain and update an AIS Rapid Response Plan
        - Action: Use the AIS Rapid Response Plan to guide responses to any new AIS that may be discovered in Horseshoe Lake
    - Objective 2 – Implement a watercraft inspection and AIS signage program at the public access
        - Action: Incorporate CLMN/UW-Extension Lake Clean Boat Clean Water Program at the public access
        - Action: Participate in the annual 4th of July Landing Blitz
        - Action: Install and maintain current AIS boat landing signage at the public access
    - Objective 3 – Implement an in-lake and shoreland AIS monitoring program on Horseshoe Lake
        - Action: Incorporate CLMN/UW-Extension Lakes AIS Monitoring Program in the lake
    - Objective 4 – Host and/or sponsor annual lake community education events
        - Action: Sponsor AIS identification and education workshops
        - Action: Distribute information and education materials to lake property owners and lake users
        - Sponsor or participate in at least one public education event annually
- Goal Four: Promote Wildlife Appreciation
    - Objective 1 – Encourage education and participation in wildlife appreciation programs
        - Action: Provide program information materials related to wildlife monitoring
        - Action: Promote and recognize property owner participation in wildlife monitoring programs like Loon Watch
- Goal Five: Promote Lake Community Understanding
    - Objective 1 – Promote shoreland restoration and habitat improvement
        - Action: provide education and information materials to property owners and lake users
        - Action: Sponsor workshops and related public events to encourage participation

        - Action: Recognize property owners who participate in and/or complete shoreland restoration and habitat improvement projects
    - Objective 2 – Implement Shoreland Best Management Practices
        - Action: Promote implementation of best management practices that reduce runoff and nutrient loading from properties into the lake
    - Objective 3 – Implement a consistent, uninterrupted water quality monitoring program on Horseshoe Lake
        - Action: Incorporate the CLMN volunteer water quality monitoring program on the lake, both water clarity and expanded monitoring when possible
        - Action: Purchase a dissolved oxygen/temperature meter to aide in collecting data
    - Objective 4- Implement a lake water level and precipitation monitoring program on Horseshoe Lake
        - Action: Purchase and install a staff gauge and record lake level on a weekly basis
        - Action: Record precipitation amounts by installing at least two rain gauges on Horseshoe Lake
        - Participate in the Community Collaborative Rain, Hail, and Snow Monitoring Program
- Goal Six: Aquatic Plant Management Plan Maintenance and Operation
    - Objective 1 – Complete timely reporting of management actions taken on the lake
        - Action: Complete annual reports summarizing activities completed during the year and there results
        - Action: Share annual reports with resource professionals, property owners, and lake users
    - Objective 2 – Complete annual management proposals based on previous year data and historic management actions
        - Action: Submit management proposals early in the season
        - Action: Solicit public input on all management proposals
        - Action: Share management proposals with resource professionals, property owners, and lake users
    - Objective 3 – Complete a five year management summary of all management actions
    - Objective 4 – Repeat an aquatic plant point-intercept survey after 3-5 years of active aquatic plant management

Appendix E

Five Year Implementation Timeline

Recommended Implementation Plan for the Horseshoe Lake Aquatic Plant Management Plan

	Objectives/Activities	AIS Grant Eligibility	LPL Grant Eligibility	Implementers	2014	2015	2016	2017	2018
Native Plant Protection, Preservation, and Enhancement									
1	Native Plant Awareness	x	x	HLPA, CO, RP, WDNR	x	x	x	x	x
2	Wild Rice Awareness	x	x	HLPA, RP, CO, GLIFWC, UW-Ex	x	x	x	x	x
3	Critical Habitat	x	x	HLPA, RP, CO, WDNR	?	?	?	?	?
4	Minimize Impacts to the Fishery	x	x	HLPA, RP	x	x	x	x	x
5	Protect and Promote Woody Debris	x	x	HLPA, CO, WDNR, Riparians	x	x	x	x	x
2. EWM Management									
1	Pre and Post Treatment Survey and Fall Bed Mapping	x		HLPA, RP, WDNR	x	x	x	x	x
	a) Only required if management exceeds 10 acres or 10% of the littoral zone								
2	Management Alternatives								
	a) Physcial (hand, rake and diver) removal - inc. annual coordinated effort	x		Riparians, HLPA, RP	x	x	x	x	x
	c) Chemical herbicide application (early season, systemic or contact herbicide as determined on an annual basis)	x		HLPA, RP, WDNR	?	?	?	?	?
3	Residual Testing	x		HLPA, RP, WDNR	?	?	?	?	?
	a) Not required, but highly recommended if management exceeds 10 acres or 10% of the littoral zone								
4	EWM Weevil Survey	x		HLPA, RP, UW-Ex, CLMN	?	?	?	?	?
	c) Only if EWM exceeds 10 acres or 10% of the littoral zone								
3. AIS Education, Planning, and Prevention									
1	Watercraft inspection at the public access (inc. participation in 4th of July Landing Blitz)	x		HLPA, CLMN, CO, UW-Ex	x	x	x	x	x
2	In-lake and shoreline aquatic invasive species monitoring	x		HLPA, CLMN, RP	x	x	x	x	x
3	Education events	x		HLPA, RP, UW-Ex	x	x	x	x	x
4	Distribution of information and education materials	x		HLPA, RP, UW-Ex	x	x	x	x	x
4. Wildlife Appreciation									
1	Provide education opportunities and information on wildlife and wildlife monitoring programs	x		HLPA, RP, CBE, SOEI	x	x	x	x	x
2	Particpation in wildlife monitoring programs like Loonwatch	x		HLPA, Riparians	x	x	x	x	x
5. Lake Community Understanding									
1	Sshoreland Restoration and Habitat Improvement	x	x	HLPA, CO, RP, WDNR, UW-Ex	x	x	x	?	?
2	Riparian Owner Best Management Practices	x	x	HLPA, CO, RP, WDNR, UW-Ex	x	x	x	x	x
3	Water Quality Monitoring	x	x	HLPA, RP, CLMN, WDNR	x	x	x	x	x
4	Precipitation and Lake Level Monitoring	x	x	HLPA, RP	x	x	x	x	x
6. Aquatic Plant Management Plan Maintenance									
1	Successful reporting and data sharing	x		HLPA, RP	x	x	x	x	x
2	Annual reports (summary of events/activities, suggested strategy revisions, future management plans)	x		HLPA, RP	x	x	x	x	x
3	Whole-lake point intercept aquatic plant survey	x		RP, HLPA, WDNR	x	x	x	x	x
4	End of project report (review successes/failures, revise APM plan)	x		HLPA, RP	x	x	x	x	x

Implementers: HLPA, Horseshoe Lake Property Association; RP, resource professionals/consultant; CO, Washburn County AIS Coordinator/LWCD; GLIFWC, Great Lakes Indian Fish & Wildlife Commission; Riparian, property owner or appointee; UW-Ex, UW-Extension, WDNR, Wis. Department of Natural Resources; CLMN, Citizen Lake Monitoring Network program; CBM, Wis. Citizen-based Monitoring Network; SOEI, Sigurd Olson Env. Institute;

Note: Implementer list is not exhaustive and may change

Appendix F

AIS Rapid Response Plan

EWM Rapid Response Plan for Horseshoe Lake, Washburn County, Wisconsin

Monitoring

Continuous monitoring of the lake and the public access points for the presence of AIS will be completed by trained Horseshoe Lake Property Association (HLPA) volunteers, Citizen Lake Monitoring Network (CLMN) volunteers, watercraft inspectors, and others. HLPA volunteers will patrol the shorelines of Horseshoe Lake at least three times annually from May through October. In-lake inspection at all boat access sites will be completed at least once a month from May through October by HLPA, CLMN, and other lake volunteers. Volunteers completing any monitoring will collect suspicious plants and document where they were found. Suspicious plants will be submitted to designated HLPA personnel, this consultant, Washburn County AIS representatives, or the WDNR for vouchering.

Specimen Vouchering

Volunteers are asked to collect at least two samples of the suspicious plant including roots if possible and place them in a zip-lock bag marked with the date, time, and location in the lake where it was found. The samples should be kept refrigerated until they can be submitted to one of the following appropriate personnel:

Horseshoe Lake Property Association	
Edward Wink	612-239-8722
SEH	
Dave Blumer, Lake Scientist	715.861.4925
Jake Macholl, Lake Scientist	715.861.1944
Washburn County Soil and Water Conservation Department	
Lisa Burns, County AIS Coordinator	715.468.4654
Wisconsin Department of Natural Resources	
Craig Roesler, Water Resources Biologist - Spooner	715.637.4076
Kris Larsen, AIS Specialist - Spooner	715.635.4072
Pamela Toshner, Lakes Coordinator - Spooner	715.635.4073
Mark Sundeen, Aquatic Plant Management Permits - Spooner	715.635.4074

Positive Identification

If an AIS is positively identified in Horseshoe, the WDNR and HLPA volunteers will install AIS warning signs at all private and public access points.

APM Plan Modification

If new AIS are identified in the lake, the existing aquatic plant management plan will need to be modified to include the treatment of that AIS. An evaluation will be completed to determine and implement the most effective short-term management option. If necessary, a WDNR AIS Early Detection and Response grant will be applied for to help implement recommendations made in the modified plan.

AIS Activity Funding

The HLPA collects annual dues from its members. If these monies are not enough to cover the cost of an AIS treatment program, the HLPA will seek donations from its constituency and benefactors, undertake fundraisers and apply for an AIS Rapid Response and Early Detection grant if appropriate to obtain funds. AIS Rapid Response and Early Detection grants can be applied for at any time as they are not subject to pre-determined application dates. Up to $20,000.00 is available for management implementation and planning activities.

Table 1. Volunteer Monitoring Timetable. Life stages of some invasive plant and animal species and the best times of the open water season to monitor for them.

	April	May	June	July	August	September
Eurasian watermilfoil						
Sprout						
Growth						
Bloom						
Die Back						
Curly-leaf pondweed						
Sprout	→					
Growth	→					
Bloom						
Die Back						
Purple Loosestrife						
Sprout						
Growth						
Bloom						
Die Back						
Zebra mussel						
Rusty crayfish						
Spiny water flea						

Source: Scholl, C., 2006. Aquatic Invasive Species: A Guide for Proactive and Reactive Management. Wisconsin Department of Natural Resources Project No. ASPL-001-04. Available at: http://dnr.wi.gov/Aid/documents/AIS/AISguide06.pdf (last accessed 2012-06-12).

Appendix G

Public Input Record

From: Edward Wink
To: Dave Blumer
Subject: Re: Draft APM Plan
Date: 03/11/2013 05:39 PM

Dave,

Thanks for the draft copy. I will look through it and I will also share it with the Board members to get them engaged in the process. I be back to you with questions and comments.

I think it would be a good idea to have Matt recheck the infested areas for return growth of EWM and then follow up with the littoral survey as you suggest. If we want to stay ahead of EWM, we need to be vigilant and I think that Matt is more effective at spotting EWM than our volunteers. If possible, I am going to try to ride along with him again to become more accustomed to spotting it myself. I think I'll float the idea of the surveys with the Board and then get on Matt's calendar as soon as possible.

Thank you so much for all your work--the plan is impressive even in its draft form.

Ed

On Mon, Mar 11, 2013 at 5:06 PM, Dave Blumer <dblumer@sehinc.com> wrote:

> Hi Ed,
>
> Something for you to page through. This is not a final by any means, but it gives you an idea of the content. Take a few days to read through it, and jot down questions and concerns.
>
> There are some things to add like a 2013 treatment proposal, and a 5-year implementation timeline, but you get the idea.
>
> Matt did not find any EWM in his fall 2012 survey. Are you planning on doing a spring survey for EWM growth? Do you want me to set up/propose a pre-treatment plant survey? This would be contracting with Matt (ERS) to come in and sample a designated number of points within the areas that were treated last year, to determine if there is any EWM growth in these areas this spring. I suspect there is. Also, do you want Matt to do an early summer survey of the littoral zone of the lake? OR do you feel comfortable as a volunteer looking for new sites where EWM might be getting a foothold?
>
> Lots of questions, sorry, but it is time to think about 2013 management options.
>
> Dave Blumer | Lake Scientist
> SEH | 1701 West Knapp Street, Suite B | Rice Lake, WI 54868
> 715.861.4925 direct | 715.651.7174 cell | 715.234.4069 fax

dblumer@sehinc.com
www.sehinc.com
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--
Edward F. Wink
127 14th Avenue NW
New Brighton, MN 55112-7322
Phone: 612-239-8722

From: ewink University of Minnesota
To: Dave Blumer
Subject: Re: Horseshoe Lake 5-Year Aquatic Plant Management Plan
Date: 03/27/2013 06:33 PM

Dave

We are not involved in the Citizen Lake Monitoring Network. I will try to find a volunteer and get that started.

Ed

On Wed, Mar 27, 2013 at 12:20 PM, Dave Blumer <dblumer@sehinc.com> wrote:

> It would be worth their time, as the workshops that Lisa puts on are generally very good. Another question for you. Have you officially been added to the WDNR/UW-Extension Citizen Lake Monitoring Network to complete basic water quality testing? The contact for this is Kris Larsen with the WDNR in Spooner 715-635-4072 or kris.larsen@wisconsin.gov. The lake group will have to designate a volunteer to work with this program, and there is some training involved, but it is not very difficult.
>
> Dave Blumer | Lake Scientist
> SEH | 1701 West Knapp Street, Suite B | Rice Lake, WI 54868
> 715.861.4925 direct | 715.651.7174 cell | 715.234.4069 fax
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>
> From: ewink University of Minnesota <ewink@umn.edu>
> To: Dave Blumer <dblumer@sehinc.com>,
> Date: 03/26/2013 05:21 PM
> Subject: Re: Horseshoe Lake 5-Year Aquatic Plant Management Plan
>
> ---
>
> Dave,
>
> Your timetable sound great. Thank you for the heads up about Clean Boats training session. I work for a CPA firm during the tax season so I won't be able to attend but I'll see if others could.
>
> Ed
>
> On Tue, Mar 26, 2013 at 2:57 PM, Dave Blumer <dblumer@sehinc.com> wrote:
> Hi Ed,

Thanks for the nice comments. I will work on the edits you highlighted and complete the other pieces of the plan over the course of the next couple of weeks. As soon as this is done, I will send a new version to you, and with your approval, also send it to the WDNR for their first review. Assuming approval is gained, you will likely be eligible to apply for an AIS Control grant to continue your efforts to manage the EWM in the lake as early as August 2013.

There is a Clean Boats Clean Waters (water craft inspection) training session being conducted by Lisa Burns, the Washburn County AIS Coordinator scheduled for April 13, 2013 at the Spooner Agricultural Research Station on Hwy 70 just east of Spooner. For more information about it contact Lisa at 715-468-4654 or lburns@co.washburn.wi.us

Dave Blumer | Lake Scientist
SEH | 1701 West Knapp Street, Suite B | Rice Lake, WI 54868
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From: ewink University of Minnesota <ewink@umn.edu>
To: Dave Blumer <dblumer@sehinc.com>,
Cc: "Al & Sheri Angen" <al@visi.com>, "Bob & Peggy Holman" <holman.bob23@gmail.com>, "Dino & Gayle Pierotti" <gayle.pierotti@yahoo.com>, "Heidi & Mark Reeves" <markreeves4@gmail.com>, "Laura & Russ Cragin" <cragin@wwt.net>, Laurie Johnson <Lfayej@gmail.com>, "Steve & Brenda Peterson" <peterson@visi.com>, "Steve & Carole Burval" <sburval@earthlink.net>
Date: 03/25/2013 08:11 PM
Subject: Horseshoe Lake 5-Year Aquatic Plant Management Plan

Hi Dave,

I shared your draft of the Aquatic Plant Management Plan (APM Plan) with our Board of Directors. Everyone was impressed with its thoroughness and detail. Some of our Board members characterized it as comprehensive and I agree.

There is quite a bit work that we will have to undertake to implement it, but we believe it will be necessary in order to preserve our lake's condition as the water resource we have known for many years. We have contacted Matt Berg to get on his schedule again for this year with an initial spring survey of the treated beds and a meandering survey to look for other possible areas of EWM infestation. With our late spring, his survey may be late in

May or early June. He has suggested a fall survey too as your APM Plan suggests. We will have to develop a watercraft inspection program although I am not certain what all that entails and we will need our lake residents to be educated to watch for further signs of invasive species in our lake. Interestingly, it was our citizens who first identified EWM so they are an effective tool. I think all five goals set out in the plan can and should be achieved. I'm sure they are pretty standard for lakes like ours that have been infected with AIS.

I agree that we need to better utilize our website as an education and communication tool. I have been delinquent in getting meeting minutes and other updates to our webmaster.

I have a couple of small comments about the APM Plan. The legal name of our Association is: Horseshoe Lake Property Association, Inc. I think we should probably have that changed in the Plan and use HLPA as the acronym.

On page 3, section 3.0, Public Participation and Input, second paragraph, that sentence needs to be modified to say: "In 2012, the HLPA participated with Minong area lake associations to sponsor...."

Otherwise, I didn't see any other corrections nor did I receive any other from the Board members who reviewed the APM Plan. Let me know what the next steps are so that we can move forward with finalizing and implementing the APM Plan.

Ed Wink
Secretary/Treasurer
Horseshoe Lake Property Association, Inc.

--
Edward F. Wink
127 14th Avenue NW
New Brighton, MN 55112-7322
Phone: 612-239-8722

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--
Edward F. Wink
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New Brighton, MN 55112-7322
Phone: 612-239-8722

From: ewink University of Minnesota
To: Dave Blumer
Subject: Re: Horseshoe Lake APM Plan - Draft for Public Comment
Date: 09/20/2013 03:52 PM

Dave,

It is a big document to read. I have it posted on our website and I intend to let folks know that it is there and to read it and comment. Let's give it a little more time. You could send it to the DNR for their review and let them know that we are in the process of reviewing the plan and we will provide pubic comment. At this time of year it is difficult to get people's attention as many have left the lake for the season. I will suggest to the chairwoman of the Minong Lakes committee that they review it as well.

I'll be back in touch.

Ed

On Fri, Sep 20, 2013 at 9:01 AM, Dave Blumer <dblumer@sehinc.com> wrote:

> Hi Ed,
>
> How is the review going? I have not sent this to the WDNR yet, but probably could. The one thing I know they will ask about is the public input and review. And eventually before the WDNR approves it, they will be looking for some form of formal acknowledgement that the Lake Association approves of the plan.
>
> Dave Blumer | Lake Scientist
> SEH | 1701 West Knapp Street, Suite B | Rice Lake, WI 54868
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>
> From: ewink University of Minnesota <ewink@umn.edu>
> To: Dave Blumer <dblumer@sehinc.com>,
> Date: 09/07/2013 04:56 PM
> Subject: Re: Horseshoe Lake APM Plan - Draft for Public Comment
>
> ---
>
> Dave,
>
> I have begun to read the plan and I will send it to our board members to see if there is a time when we could still get folks together to discuss with you as a public presentation. I'll let you know what I hear from the board. Thanks for all

your effort--the plan looks good. I read the first 12 pages and it looks good. I'll keep going on it though.

Ed

On Sat, Sep 7, 2013 at 3:57 PM, Dave Blumer <dblumer@sehinc.com> wrote:
Hi Ed,

Attached is a "final" draft of the APM Plan for Horseshoe Lake. It took me way longer than I intended to get to putting together this final draft. This is still a draft though. However it is ready for positng on your webpage and to start trying to solicit additional public comment about its content. I would really like to have a record of any comments that may be made about it. So if you post the document, please encourage people to send comments not only to you, but also to me.

Furthermore, if it is not too late, we could try to set up a public presentation of the document to your membership.

I know, to date, no additional EWM has been identified in the lake, but don't let this lull you to inactivity. Once introduced, I am not aware of any lake where EWM has been eradicated. It will be back, if not this year, then another.

This is a large document.

Pleae tell me what you think. Thanks

Dave Blumer | Lake Scientist
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--
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--
Edward F. Wink
127 14th Avenue NW
New Brighton, MN 55112-7322

From: ewink University of Minnesota
To: Dave Blumer
Subject: Re: Draft Aquatic Plant Management Plan for Horseshoe Lake in Washburn County (Minong Township)
Date: 09/23/2013 10:41 AM

Thanks Dave.

I have posted the draft plan on our website and I sent emails to our members asking for comment. We may also send a copy to the Minong Town Lakes Committee for their comment.

Incidentally, Matt didn't find any EWM this weekend. It is probably still there but in deeper water where he or we cannot see it. No fragments were found either.

We will keep chugging along.

Ed

On Sep 23, 2013 9:22 AM, "Dave Blumer" <dblumer@sehinc.com> wrote:

> Hi Pamela,
>
> Attached is a draft APM Plan for EWM management in Horseshoe Lake, Washburn County. It has gone through one round of Lake Association comment earlier in the summer, and is currently in the hands of the Lake Association for additional comment. When I have comments backs from the Association, there may be some changes to the APM Plan, but I don't expect anything real substantial.
>
> I would appreciate it if you would give the APM Plan an initial look to see if there are any issues the WDNR may have with the plan. I intend to add a whole lot more into the Public Input section when I get it. Also, management plans for 2014 will be added, once fall plant survey work is done. I believe Matt Berg was on the lake this past weekend so there may be some maps and locations of EWM soon. The Lake Association will also have to decide whether they approve the plan.
>
> If all goes well, the Lake Association will apply for an AIS Control grant to help manage the EWM in the lake.
>
> Thanks
>
> Dave Blumer | Lake Scientist
> SEH | 1701 West Knapp Street, Suite B | Rice Lake, WI 54868
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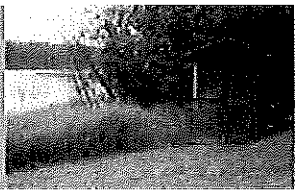
HorseshoeLake.org

a site dedicated to Horseshoe Lake and the surrounding area of Minong, Wisconsin



It's 9:23 AM on 12/12/2013 at the lake, the fish are biting

MAIN MENU

Home
Channel Dredging
The Lake Book
Video
Misc. Images
Forums
Email Webmaster

HORSESHOE LAKE PROPERTY OWNERS ASSOCIATION

Annual Meetings
Newsletters
Member List

LINKS (NOT THE BROS.)

Fishing Report
Hunting Report
Wisconsin DNR
DNR Outdoor Report
Lake-Link.com
Washburn County Visitors Guide
DOT Construction Info
Misc Minong Links

Minong, WI
-5 °F
Clear
at 08:53 AM
Click for Forecast

Welcome!

Draft Horseshoe Lake Five Year Aquatic Plant Management Plan - 9/17/13 (updated 10/7/13)

A very important message from Mr. Edward Wink, Secretary-Treasurer, Horseshoe Lake Property Association, Inc.: "*As part of our grant from the Wisconsin DNR we are obligated to develop a plan to manage our aquatic plants for the next five years.*"

A summary version of the draft plan is available in Adobe PDF® format here.

A full version of the draft plan is available in Adobe PDF® format here.

Horseshoe Lake Property Association 2013 Annual Meeting Minutes - 8/23/13

Minutes from the 2013 Horseshoe Lake Property Association annual meeting are now available here. Topics of discussion included Eurasian watermilfoil (EWM) mitigation efforts, funding for lake management, and more. A very special thank you to all stewards of this very special lake.

2011 & 2012 Annual Meeting Minutes, and 2012 Fall Newsletter Now Online - 5/2/13

Click here for a list of all meeting minutes available online.

Click here for the newsletter which includes updates on the Eurasian watermilfoil (EWM) mitigation efforts, and the Association's 501(c)(3) designation.

2011 Horseshoe Lake Property Owners Association Annual Meeting

The 2011 meeting is tentatively planned for the second or third week of July, 2011.

2010 Horseshoe Lake Property Owners Association Annual Meeting / Channel Dredging Project Donations

The 2010 meeting was held on 7/17/2010 and meeting minutes are now available here. During the meeting, a call for the motion to proceed with the channel dredging project was made by the Horseshoe Lake Property Owners Association Board of Directors. The motion was seconded. The motion passed unanimously by voice vote of the members present, and the project is currently underway.

West-side homeowners have assessed each lot a maximum of $350.00 per lot to cover whatever cannot be covered with donations from Horseshoe Lake owners. Donations will be needed in order to provide sufficient funding for the project which is estimated at $13,000.00. Donations can be sent in the form of a check or money order to the Horseshoe Lake Property Owners Association Treasurer, Ed Wink, at 127 14th Avenue NW, New Brighton, MN 55112-7322.

Click here for more information regarding the channel dredging project, including some photos.

Governor to sign slow no wake bill this Friday, July 10th, 2009

Governor Jim Doyle will sign a bill (SB 12) that establishes a statewide slow no wake zone for motorboats within 100 feet of a lake's shoreline at 10 AM this Friday, July 10th at Totogatic County Park. The Governor will also sign a bill designating the Totogatic as a Wild River.

The Wisconsin Association of Lakes has been working to advance a statewide slow-no-wake bill for several years, and would like to thank the Governor, Sen. Robert Jauch and Rep. Gary Sherman for their leadership on this important issue.

The new law establishes a statewide slow-no-wake speed zone extending 100 feet from the shoreline, while balancing different local recreational uses with natural resource needs by enabling extension or reduction of slow no wake zones through local boating ordinances.

Boating too close to shorelines can contribute to shoreline erosion problems, reduce water clarity by stirring up lake bed sediments, release phosphorus-the nutrient responsible for algae blooms-from lake bed sediments, and harm fish habitat when propellers uproot shore land plants.

This bill will not solve the long-term problem of lake water quality, but a reduction in boat speed in the near shore area is a helpful step in the right direction.

The new law will take effect seven months after official publication.

The public is invited to attend the ceremony.

Totogatic County Park is 8 miles west of Minong. From Hwy 53, go west on Hwy 77 to CTH I. Take CTH I to Tota Road. (Click here for map/directions.)

There are signs marking the route. To get the final time and other details, please call 1-715-635-4050 for a recorded message giving up-to-date details.

2009 Lakes Fair Announced!

"Come One, Come All To The Summer Event In The NorthWoods!

We live here or have cabins in the Northwoods, because this is one of the best places on the planet to be. Our lakes, woods and wildlife offer us experiences we could never duplicate in the suburbs.

For the last year lake representatives from Minong Township, who are probably your "up North" friends and neighbors, have been planning an educational event, called a LAKES FAIR. This Lakes Fair is geared toward families, so some very special activities have been planned. Activities of the day will focus on 'putting in (stewardship)' and 'getting out (more enjoyment)' on our local lakes.

For the young ones - the future stewards of our lakes - there will be activities geared around building a duck nesting box, minnow races, making fish prints, hands-on casting lessons, and learning about the creepy, crawly critters in our lakes.

For the adults, presentations related to Rules on the Water, Invasive Species, Citizen Involvement, Canoe Building / Restoration and a talk from the Lake Doctor will be on the agenda.

Of general interest, there will be interactive talks on Fish, Frogs, Loons and Raptors and photographic displays on the history of our areas lakes. There will also be a demonstration on carving wooden fish lures. Washburn County Lakes and Rivers Association, the only county-wide association committed to preserving our lakes and rivers, will also be represented.

All these activities are scheduled for Saturday, July 25, 2009 from 9am to 3pm. To be held on the grounds of the Minong Town Hall, on Nancy Lake Road (click here for map/directions).

A fabulous pig roast will be served at noon.

We all value and protect our time when we come up north for rest and relaxation. This one-time summer event is an opportunity for your whole family to learn and enjoy all the benefits and responsibilities of living on a lake. So, stewards of Lakes Nancy, Gilmore, Pokegama, Horseshoe, Kimball and the Flowage,

Plan on joining us for the 2009 Lakes Fair."

Information brochure:

Download brochure in Adobe PDF® format

2009 Horseshoe Lake Property Owners Association Annual Meeting Announced!

The 2009 annual meeting will be held on Sunday, June 7th, 2009 at the Minong Town Hall on Nancy Lake Road (click here for map/directions).

Business Meeting - 9:00am - Noon

The association will provide coffee & donuts. No alcohol or smoking is allowed in the Town Hall. Annual dues are $10.00, please pay your dues at the meeting or send them to the treasurer. Dues allow us to help with improvements needed to the lake and host the annual meeting. The annual meeting is for all property owners on Horseshoe Lake.

2005 Annual Meeting Minutes Now Online - 7/21/06

Click here.

Updated Content! - 7/19/06

Check out the updated images section for new postcard images along with a couple of photos submitted by a homeowner. Also, if you want to learn more about the lake ecology, you will want to read this post regarding the DNR's

reply to a homeowner's questions about the management of Horseshoe Lake.

An answer to the infamous question! - 8/11/03

On 7/2/01 I posed the question "will Camp Horseshoe for boys ever reopen?" Well, it seems that the answer to that question is an exciting "yes, but not in the location it originally stood". Fran and Jordan Shiner are opening a camp with the same name, built in the same image as the original, but located in Rhinelander, WI (about 125 miles ESE of Minong) rather than on the now residentially developed Northern shores of Little Horseshoe. Pop on over to http://www.camphorseshoe.com and/or read about this exciting topic at our forum to learn more! Who knows, perhaps we will be able to hear the laughter of the boys and the sound of the siren all the way from Rhinelander...

Summer Is Coming...(although I notice that the temp. is 28 deg. F in Hayward as I type this, brrr!) - 4/25/02

The fish house in the ULHC of the page is back in anticipation of a fun-filled summer. (By the way have you ever noticed that the colors, images and some text on this site change based on the current hour of the day at Horseshoe Lake? Visit again later today to see what we mean. The colors used on the site are designed to mesh with the fish house photo to the upper-right (if you can't see it that should be because it is night, hence dark). View the entire day in the life of a fish house here...)

I have been collecting a miriad of neat postcards related to Minong that I hope to post soon as well, please stay tuned...

The Camp Horseshoe Forum has some interesting posts available for your reading pleasure - including a recent one regarding an ex-camper's desire to open a camp in kind with the late, great Camp Horseshoe for Boys.

Sad News... - 8/2/01

We have just learned that we have lost one of the lake's most beloved and respected residents. George Becherer passed away this week. A wake was held for Mr. Becherer on the afternoon of Thursday, August 2nd, 2001. Our best wishes go out to his wife, children, friends (no doubt each and every resident of Minong), and family.

Happy Fourth O' July! - 7/4/01

Welcome! - 7/2/01 12:15 AM

Welcome to the HorseshoeLake.org website Ver. 0.9. This is Brent Burval typing from my grandfather's cabin on the lake here in Minong, WI. I am one of potentially many HorseshoeLake.org's webmasters that will be working on this site. This is a work in progress and I hope you will all contribute in any way that you can. We welcome any comments, email us.

Our goal is to make this page fun and dynamic for all. Please take the time to look at some of the features.

- **Local News** - here is where you come in. We need news from you: how many loons are around, is the fishing good, did someone pull the plug out of the bottom of the lake causing it to drain completely, will Camp Horseshoe for boys ever reopen, how many .22 holes are there in the "Horseshoe Lake" sign, is the lake's name really being changed to "Water Site 22",..., etc? We will post any interesting news regularly. Email us with your news!

- **General News Feeds** - on the right side of the homepage you should see Top Headlines, etc. These refresh throughout the day. (Click your reload or refresh button if you are having trouble seeing new headlines). Minnesota residents will want to take special note of the Minneapolis/St. Paul headlines.

- **Up to the minute weather** - click on the weather information for a detailed forecast!

By the by, this site is optimized for version 4.0 browsers and above. You can download and install a new browser at www.browsers.com

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Horseshoe Lake gets a domain name?!? - 10/17/00

Scary but true. HorshoeLake.org was registered today. I figured if I am going to do this I might as well do it right. - Brent

designed and maintained by burval.com

From: Laurie Johnson
To: ewink University of Minnesota
Cc: dblumer@sehinc.com
Subject: Re: Horseshoe Lake APM Plan - Draft for Public Comment
Date: 09/30/2013 10:24 AM
Attachments: APM comments.doc

I have read the entire APM Plan, and made these comments as I went along! As requested, sent to both Ed and Dave Blumer.

On Sat, Sep 7, 2013 at 4:58 PM, ewink University of Minnesota <ewink@umn.edu> wrote:

> Hi All,
>
> Attached is the email and attached Aquatic Plant Management Plan that I received from Dave Blumer our contractor who drafted our plan. Please read the plan and as Dave asks, send your comments to him and me. I'll record all your comments for our records. I am going to ask our webmaster to post this draft so people can look at it and give us public comment. I think the biggest hurdle we have is to form a boat monitoring system. You will see that in the plan.
>
> Once the plan is posted to our website, I can alert people about it and solicit their comments too. What do you think about having a meeting with the membership and Dave Blumer to discuss the plan? I suppose a lot of people are getting ready to depart for the season. Maybe at least the board ought to meet with Dave Blumer. Let me know your thoughts and we can plan what's next.
>
> Ed
>
> ---------- Forwarded message ----------
> From: **Dave Blumer** <dblumer@sehinc.com>
> Date: Sat, Sep 7, 2013 at 3:57 PM
> Subject: Horseshoe Lake APM Plan - Draft for Public Comment
> To: Edward Wink <ewink@umn.edu>
>
> Hi Ed,
>
> Attached is a "final" draft of the APM Plan for Horseshoe Lake. It took me way longer than I intended to get to putting together this final draft. This is still a draft though. However it is ready for positng on your webpage and to start trying to solicit additional public comment about its content. I would really like to have a record of any comments that may be made about it. So if you post the document, please encourage people to send comments not only to you, but also to me.
>
> Furthermore, if it is not too late, we could try to set up a public presentation of the document to your membership.
>
> I know, to date, no additional EWM has been identified in the lake, but don't let this lull you to inactivity. Once introduced, I am not aware of any lake where EWM has been eradicated. It will be back, if not this year, then another.

This is a large document.

Pleae tell me what you think. Thanks

Dave Blumer | Lake Scientist
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SEH—Building a Better World for All of Us™

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New Brighton, MN 55112-7322
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LJ

Laurie Johnson Comments

1) Effect of increasing jet ski activity on native plants(large increase in surface carpet (aquatic moss?) seen as amount of jet ski activity increases)
2) Difficulty involving property owners; some spend little time here, some come from a great distance. Out of sight, out of mind
3) Meandering shoreline surveys recommended on a continuing schedule twice a year? Forever?
4) Soil conditions are not good for septic system absorption? (pg 11) General information from builder was that sand was very good for the system operation, and a new kind of drain pipe in the absorption area was used. Wi. code seems to allow drain fields quite close to the lake.
5) Water clarity monitoring—should work with some full time residents, or interested seasonal owners
6) Is Small Purple Bladderwort a negative concern or a positive occurrence as identified in HS in 2011? (pg 20)
7) Are we to be doing something about the curly leaf pondweed?
8) How to determine that weevils may work in HS as ongoing control? (p. 39)
9) Physical removal by property owners doesn't seem to be an option, for various reasons (p. 47)
10) Goals: we will be fortunate to involve some owners with basic suggestions for involvement, and planning a wild rice info session, while acknowledging the importance, may bog a simplification plan)(pg.49)
11) If Fall, or subsequent surveys show EWM, require immediate removal or management (pg. 50), yet surveys not required. We may need to show owner support for surveys.
12) We need to disseminate the Rapid Response Plan—appendix F—and charts from Appendix E.
13) Could property owners "sign-in" to a Lakes Fair session to validate required education volunteer time? The annual meeting, in general, draws a pretty small % of property owners. (pg. 52)
14) any online webinars or workshops qualify?
15) Bob's Loon Ranger interest = Wildlife Appreciation education component?
16) If Al would do the suggested 2 sites, 4 times/yr., water quality readings, & send me results, I'd maintain a spreadsheet (pg. 53)
17) What is an example of a type of permanent and unchanging structure on the shore that could hold a staff depth (and a rain) gauge? (pg. 53)

18) Owner participation will be required to create each end of season report, and following year management actions; like a hot potato, that no one wants, who will do these? (pg. 54)
19) Lake maps are from 1966? (pg.54)
20) To property owner's credit, Horseshoe lots predominantly possess a vegetative buffer zone along much of the shore. There could be improvement, however. (pg 8 of the Guidelines; pg. 86 overall)
21) Good to remind owners to leave fallen trees along the shore in the lake (p. 15 of guidelines, 94 of 110 overall). This would be a simple step!
22) Camp fire and leaf burning location choices may be new information, or good reminders (pg.16, 95 of 110 overall)
23) 2014-18 Plan: meetings and seminars have been very sparsely attended; my impression is that most owners have limited time or times they can be at the lake, and at any one time, most are not at HS. I don't completely equate this with lack of interest or concern, and I do think emphatic suggestions in list form of concrete actions people can take when they are here would be appreciated. If explanation is desired, the APM document is available on the web site for reference.

Examples:
~~Leave fallen trees in the lake
~~look in calm waters for possible milfoil (carry ID card)
~~ post AIS card on cupboard or refrigerator, beside boating rules
~~leave native plants on shoreline and back 50-60' except for walking path to lake
~~seek shoreline restoration help if you have erosion or excessive clearing
~~donate to the HS fund for monitoring surveys and treatment
~~maybe a water quality and lake level volunteer
~~attend information sessions at 2014 Minong Town Lakes Fair

From: ewink University of Minnesota
To: Dave Blumer
Subject: Aquatic Plant Management Plan Comments
Date: 10/19/2013 10:19 PM

Dave,

Below are comments that I received from our Association member. I think Laurie Johnson sent her comments to already. Oct 5

1)
Bob Holman

to me, Heidi, Steve, Laurie, Laura, Dino, Steve

Ed....sorry for my tardiness in responding. One suggestion I have is to compile a complete list of volunteer jobs (eg loon monitoring, precipitation and lake level monitoring, etc). Then, ask for individual volunteers for each job. I think it would be prudent to expect each volunteer to report back at our annual mtg. This would hold them accountable for making sure the job was completed.

As for me, I'm certainly open to volunteering for some of the jobs (precipitation monitoring and others that require a full time resident).

Thanks for the opportunity to comment and for the time you put into this plan.

- Bob

Sent from my iPhone

2)

Mark Reeves Oct 4

to me, Bob, Dino, Laura, Laurie, Steve, Steve

Ed.

I read those pages containing the detailed plan. There are a lot of things expected of us, but they all appear doable, with some communication and also additional equipment.

Could we pull that section out of the report, place it into a separate document, then send that to the members database, for review? That would be less intimidating and also have a higher probability of getting. A request to have some volunteers for some of these activities, would be great. For example, I would assume the lake level and precipitation monitoring activity already happens, informally, from discussions at breakfasts and meetings. We do not lack for closet weather people on our lake. Let's just ask a couple to formally submit this info, going forward.

I think a couple times a year, we as the board should host education sessions, maybe even out on the lake, to share info on the plan and also the concerns if new

patches crop up.

3) My comments:

I think that our Association has a number of members who will be willing to help make the APM Plan a reality. We have asked folks to help with boat monitoring and we have a number of volunteers. This year the landing was covered by paid monitors provided by the Minong Township's grant, but future monitoring will be our responsibility. Given that the plan defines various tasks, these can be broken down to small groups and we should be able to find volunteers to accept a specific responsibility.

By the way there is one typo that I found in paragraph 9.6.1 on the third line of text: ....it also keeps invasive species ay (should be at) bay.

Ed

--
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Phone: 612-239-8722