

DEC 27 1995



Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, Minnesota 55155-40_45

December 22, 1995

Ms. Maryanne V. Hruby,
Executive Director
Legislative Commission to
Review Administrative Rules
55 State Office Building
St. Paul, MN 55155

RE: Proposed Permanent Rules Governing Aquatic Nuisance Control

Dear Ms. Hruby:

The Minnesota Department of Natural Resources intends to adopt permanent rules relating to aquatic nuisance control. We plan to publish a Notice of Intent to Adopt Rules Without a Public Hearing in the December 26, 1995 issue of the State Register.

As required by Minnesota Statutes, sections 14.131 and 14.23, the Department has prepared a Statement of Need and Reasonableness, which is now available to the public. Also as required, a copy of this Statement is enclosed.

For your information, we are also enclosing a copy of the Notice of Intent to Adopt Rules and a copy of the proposed rules.

If you have any questions on these rules, please contact Steve Enger (296-0782) or me (296-9564).

Sincerely,

A handwritten signature in cursive script that reads "Kathy A. Lewis".

Kathy A. Lewis, Attorney
Mineral Leasing Manager

cc: S. Enger



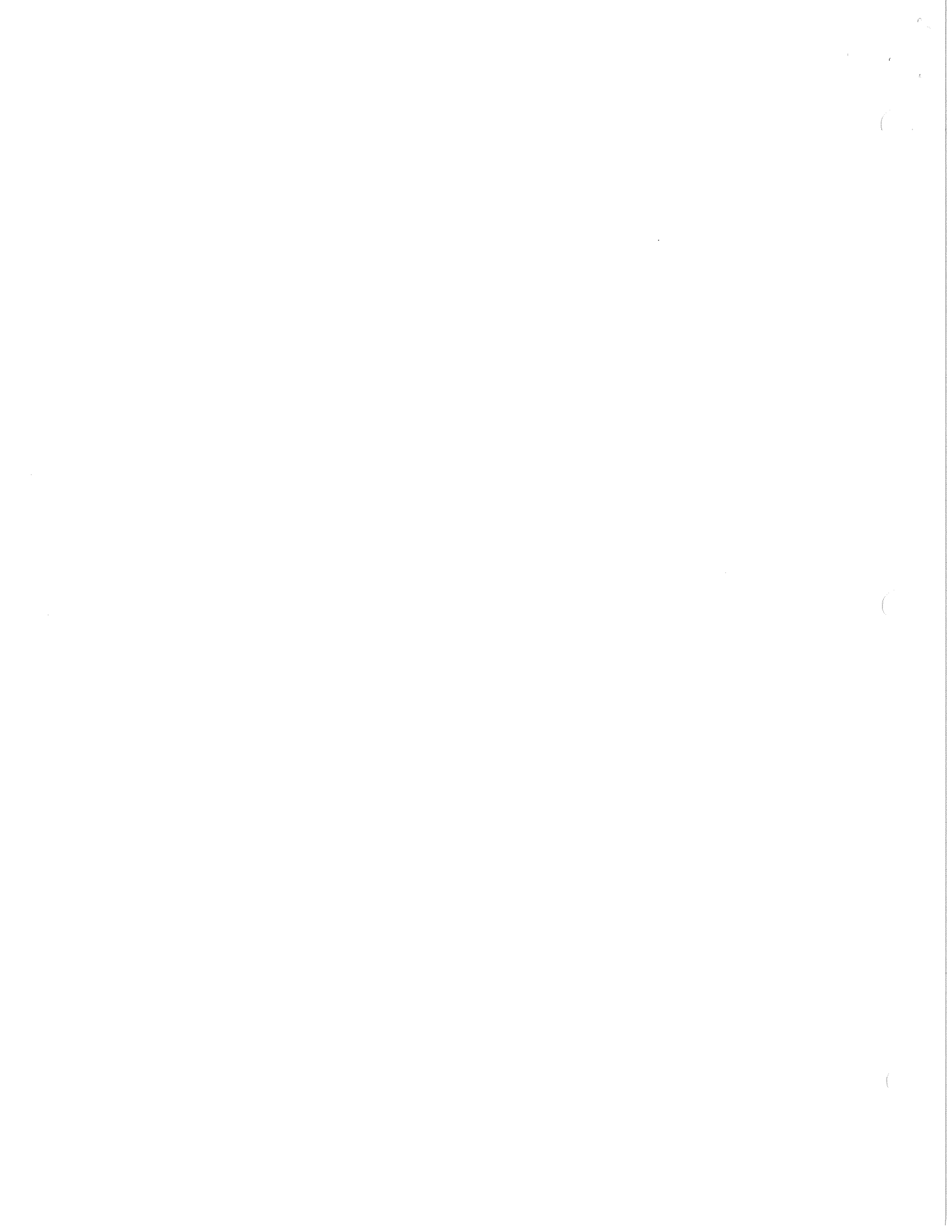
STATEMENT OF NEED AND REASONABLENESS

IN THE MATTER OF THE AMENDMENT OF PROPOSED RULES
RELATING TO AQUATIC NUISANCE CONTROL

CHAPTER 6280

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND WILDLIFE

DECEMBER 19, 1995



**STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND WILDLIFE**

**In The Matter Of Amendment of Proposed Rules
Of The Department of Natural Resources
Relating To Aquatic Nuisance Control**

**STATEMENT OF NEED
AND REASONABLENESS**

General Statement

Purpose: The rules relating to aquatic plant management and aquatic nuisance control describe how the Department of Natural Resources will balance its obligation to protect aquatic plants and wild animals while allowing riparian owners to gain access and use of public waters. The purpose of these rules is to protect aquatic plants, an essential component of the biological community of many Minnesota lakes, while allowing riparian property owners access and use of the water. To access and use public waters, certain types of control activities are allowed, which are detailed in these rules. The rules ensure that those control activities are done safely and in a manner that does not unduly harm valuable fish and wildlife resources.

Protecting aquatic plants is necessary because they are essential components of most freshwater ecosystems (Engel, 1990). Aquatic plants represent the base of the food chain in lakes (Wetzel 1975, p 355-356). The structure they provide in shallow water habitats is important to many members of both the aquatic and terrestrial community. They also perform important functional roles in lakes; stabilizing sediments, cycling nutrients and preventing shoreline erosion (Smart and Doyle 1995).

Many of Minnesota's most popular fish species depend heavily on aquatic vegetation throughout their life histories. Yellow perch, northern pike, muskellunge, panfish and bass all depend on aquatic vegetation to provide food, spawning habitat and nursery areas. Juvenile fish of most species feed on small crustaceans and insects, abundant in stands of aquatic vegetation (Miller et al 1989; Engel 1985). Even species that may not require vegetation for spawning depend on the cover and forage provided by aquatic vegetation. Aquatic vegetation is also a source of oxygen in lakes.

Many species of birds and mammals are likewise dependent on aquatic plants for food and nesting sites. Waterfowl eat the seeds and tubers produced by various water plants (Bellrose, 1976). Other aquatic plants which are not eaten directly by waterfowl support numerous insects and other aquatic invertebrates (Miller et al 1989) that are important sources of food (protein) for hens and their young (Moyle 1961). The reproductive success of waterfowl which nest near lakes is closely tied to available aquatic plants which provide food and cover for young birds and laying hens (Bellrose 1976).

Emergent aquatic vegetation provides nesting cover for a variety of waterfowl, shorebirds, wading birds and songbirds (Bellrose, 1976). The muskrat, an important furbearer, is almost entirely dependent on aquatic vegetation for food and shelter (Errington, 1941). Minnesota's largest mammal, the moose, also relies heavily on aquatic vegetation for food (Peek et al 1976).

Beyond providing food and shelter for fish and wildlife, aquatic vegetation is instrumental in maintaining a stable lake environment. Aquatic vegetation helps maintain water clarity by stabilizing bottom sediments, limiting the availability of nutrients, and preventing bottom materials from being suspended (Dieter, 1990; James and Barko, 1994). Aquatic plants protect the shore line from erosion by absorbing the energy from wave action (Wade 1994). A healthy native plant community is also important in preventing the establishment of undesirable exotic species of aquatic plants (Smith et al 1991).

These rules regulate the control of organisms which may pose a public health risk, such as snails infected with the swimmer's itch organism, leeches and plankton algae blooms. The DNR allows the control of these organisms when they cause a nuisance, so that the public can continue to use the lake. However, control of aquatic nuisance organisms often involves the application of pesticides which have the potential to harm fish and wildlife. These rules describe how the DNR regulates the control of aquatic nuisances so that control activities do not unduly harm valuable fish and wildlife resources.

These rules describe how the DNR reviews pesticides that are approved for use in Minnesota lakes. Pesticides intended for use in aquatic environments must be registered for that use by the United States Environmental Protection Agency. However, before these products can be sold in Minnesota they must first be registered with the Minnesota Department of Agriculture (MDA). The rule provides for the review, by the

DNR in consultation with MDA, of pesticides registered for aquatic use to determine if their use should be permitted in Minnesota public waters. The use of water where pesticides have been applied is often restricted for various uses for some period of time after application. These restrictions are determined by the manufacturer and are listed among the instructions on the pesticide label. The rules require that signs listing these restrictions be posted at the treated areas so that anyone approaching the treated area is informed of the water use restrictions. The rules provide the DNR, in cooperation with the Minnesota Department of Agriculture, the opportunity to place additional restrictions on the treated area. The rules require Department of Health's approval before a permit for pesticide use may be issued on lakes which are a public water supply.

Aquatic plants may also be controlled (physically removed) by mechanical methods. These regulations describe the permit requirements for firms engaging in the commercial harvesting of aquatic vegetation. The homeowner may also remove a small area of vegetation by hand or with power operated rakes or cutters without permit. These regulations describe the conditions under which the riparian property owner may remove aquatic vegetation without permit. The regulations also require that aquatic vegetation which has been cut or pulled be removed from the water.

History: Commissioner's orders regulating the destruction of aquatic plants have been in existence at least since June of 1945 (C.O.1089). Permit fees were first established by Commissioner's Order No. 1938 which went into effect in 1976. Commissioner's Order No. 1938 was revised in 1985, and became Commissioner's Order No. 2210. These Commissioner's Orders established criteria and fees for the issuance of permits and regulated the destruction of aquatic vegetation and the control of aquatic nuisance organisms, such as swimmer's itch, leeches and algae, in public waters.

Legislation passed in 1991 phased out the use of commissioner's orders to promulgate Department of Natural Resources (DNR) regulations and required the DNR to use the rule-making process, set forth in M.S. Chapter 14, when making regulations. The DNR consolidated all commissioner's orders into one document (Commissioner's Order No. 2450) which was ratified by the legislature and codified into Minnesota Rules, and was published in the State Register on April 26, 1993. The 1993 legislature excepted this published version from some of the requirements of the administrative procedures act and the new

rules were adopted effective July 19, 1993. At this time the aquatic nuisance control regulations became Minnesota Rule, Chapter 6280.

Need for rule revision: Several things have changed since the regulations governing aquatic nuisance control were last revised in 1985. A new method of aquatic plant control was developed which was not adequately addressed by the regulations. Minnesota's population continues to grow, placing increased demand for recreation on our lakes. In the last ten years the number of licensed watercraft in Minnesota has increased from 622,872 in 1983 to 728,116 in 1993 (Pers. Com. DNR License Bureau 1995). There has also been an increasing demand for lakeshore property. In some counties more than half of the new housing added between 1970 and 1980 was developed in shoreland areas (Cohen and Stinchfield 1984). To maintain the quality of Minnesota's lakes, and ensure that they may endure ever-increasing demands, it is necessary to protect aquatic plants. It is also necessary and reasonable to simplify the regulations to make it easier for riparian owners to comply with the regulations.

Rule Development Process: A Notice of Intent to Solicit Outside Opinion concerning possible changes to the rules was published in the State Register on October 17, 1994. The notice was also mailed to groups and individuals known to have an interest in aquatic plant management including: permittees of the 1994 season; all commercial aquatic plant harvesters and licensed aquatic pesticide applicators; environmental groups such as the Minnesota Lake Defenders and the Minnesota Herbicide Coalition; retailers of aquatic-labeled herbicides; conservation districts and municipalities. Phone and written comments were encouraged and have been accepted throughout the rule making process. These comments are summarized in Table 1 of the appendix.

In addition to the Notice of Intent to Solicit Outside Opinion, the rule was reviewed by an advisory task force comprised of representatives from the Minnesota Lakes Association (a group representing Minnesota lakeshore property owners), Minnesota Sport Fishing Congress (the MSC is a group representing organized angling interests), Minnesota Aquatic Management Society (a group representing commercial aquatic pest control applicators and commercial aquatic plant harvesters), Minnesota Pesticide Information and Education Organization (a group representing the pesticide industry and non-crop pesticide applicators), and DNR Divisions of Fish and Wildlife, Enforcement, and Waters. A summary of the discussions of the

advisory task force are found in the appendix.

A second Notice to Solicit Outside Opinion was published in the State Register on July 3, 1995 in accordance with the new requirements of the state's administrative procedures act. This notice was sent to groups and individuals requesting notification of DNR rule making activity. No responses were received in response to the second notice.

Statutory Authority

Minnesota Statutes, section 84.091, subdivision 1, establishes that aquatic plants growing in public waters belong to the state. Minnesota Statutes, section 103G.615 authorizes the commissioner of natural resources to issue permits with or without fee to gather or harvest aquatic plants or plant parts, transplant aquatic plants, destroy harmful or undesirable aquatic vegetation or organisms and by rules prescribe standards for such permits. Standards for the issuance of permits must be consistent with shoreland conservation ordinances, lake management plans and programs, and wild and scenic river plans (Minn. Stat., sec. 103G.615, subd. 3). Finally, Minnesota Statutes, section 103A.202 states "that it is in the public interest to conserve surface waters, maintain and improve water quality, preserve wildlife habitat, reduce runoff, provide for floodwater retention, reduce stream sedimentation, contribute to improved subsurface moisture, enhance the natural beauty of the landscape, and promote comprehensive and total water management planning."

Small Business Considerations

Minnesota Statutes, section 14.115 requires that DNR consider the impact of amendments to the rules on small businesses and that, where possible, reduce this impact. The amendments to the rules will have minimal impact on small businesses engaged in the commercial harvesting of aquatic plants or the commercial application of aquatic pesticides.

Section 14.115, subdivision 2, states in part:

"When an agency proposes a new rule, or an amendment to an existing rule, which may affect small businesses....., the agency shall consider each of the following methods for reducing the impact of the rule on small businesses:

(a) the establishment of less stringent compliance or reporting requirements for the small businesses;

(b) the establishment of less stringent schedules or deadlines for compliance or reporting requirements for small businesses;

© the consolidation or simplification of compliance or reporting requirements for small businesses;

(d) the establishment of performance standards for small businesses to replace design or operational standards in the rule; and

(e) the exemption of small businesses from any or all requirements of the rule."

Methods for reducing the impact of the rules on small businesses and others as well, have been considered. The impact of the rules have been reduced as follows:

a. Less stringent requirements: The scope of the rule is limited by statute to aquatic plants growing below the ordinary high water level of public waters. In-so-far as aquatic plants may grow in many other places the definition of aquatic macrophyte reduces the scope of the rule. The category of individuals who may apply for permit has been broadened to include lessees, easement holders, or others with interests in riparian land. This will have the effect of increasing the potential number of permittees who may hire commercial aquatic plant managers. Previously the maximum amount of area that could be allowed for treatment in lakes in rural areas was 10 percent of the littoral area. That limitation has been raised to 15 percent of the littoral area of lakes where treatment is permitted, this increases the area where control may be permitted. The amendments will relax restrictions on the harvesting of emergent vegetation by only requiring a one-time permit (previously

an annual permit was required to destroy any emergent vegetation) to create and maintain a narrow (15 foot) channel through emergent vegetation; subsequent mechanical channel maintenance would not require an additional permit.

b. Less stringent schedules: The previous rules required reports on commercial activities to be submitted by November 15. Required reports are now due by December 31 of each year.

c. Consolidation or simplification of requirements: The rules now provide the commissioner discretion regarding the inspection of new applications for permit. Previously all new applications required inspection, this could sometimes delay the work. The revised rules would allow the commissioner to issue a permit for an area not previously permitted without an inspection. Previously an inspection fee of \$60.00 could be imposed upon an application for permit. If the applicant did not wish to pay the fee the work would not be permitted. This could eliminate some work that might otherwise be done by commercial applicators or harvesters. We are eliminating this fee from the rules. No APM permit will be required where aquatic plant removal is incidental to a permit or license required by another division or bureau within DNR.

d. Performance standards. The rules do not focus on small business, but rather regulate the destruction of aquatic plants and aquatic nuisance organisms in public waters for use and access of the lake by riparian homeowners. Operational or design standards are not imposed on businesses hired to perform this work for riparian homeowners. With regard to pesticides, the use of these substances is regulated by state and federal statute.

e. Exemption. The exemption of small businesses from the rules would be contrary to statutory objectives that are the basis of the proposed rule making.

The net impact on commercial plant harvesters of reducing the amount of floating leaf vegetation to be harvested without permit is minimal because some floating leaf vegetation removal without permit will continue to be allowed.

Departmental Charges Imposed By The Rules

In accordance with Minnesota Statutes, section 16A.1285 pertaining to department earnings from charges for goods and services, licenses or regulation, the change in the inspection fee requirement was submitted to the Commissioner of Finance for the commissioner's review and comment. The commissioner's comments are attached to this statement.

Fiscal Impact

Minnesota Statutes, section 14.11 subdivision 1, does not apply because adoption of these rules will not result in additional spending by local public bodies in excess of \$100,000 per year for the first two years following adoption of the rules.

Agricultural Land Impact

Minnesota Statutes, section 14.11, subdivision 2, and 14.11 do not apply because adoption of these rules will not have an impact on agricultural land or farming practices.

Witnesses

If these rules go to public hearing, the witnesses listed below may testify on behalf of the Department in support of the need and reasonableness of the rules. The witnesses will be available to answer questions about the development and content of the rules. The witnesses for the Department of Natural Resources include:

Steve Enger, Coordinator
Aquatic Plant Management Program
Box 25, 500 Lafayette Road
St. Paul, MN 55155-4025
612-296-0782

Jack Skrypek, Chief
Section of Fisheries
Box 12, 500 Lafayette Road
St. Paul, MN 55155-4012
612-296-0792

Howard Krosch, Technical Advisor
Ecological Services Section
Box 25, 500 Lafayette Road
St. Paul, MN 55155-4025
612-296-0778

Mike Halverson, Specialist
Aquatic Plant Management Program
1200 Warner Road
St. Paul, MN 55106
612-772-7956

Terry Ebinger, Specialist
Aquatic Plant Management Program
1601 Minnesota Drive
Brainerd, MN 56401
218-828-2535

Rick Walsh, Specialist
Aquatic Plant Management Program
1200 Warner Road
St. Paul, MN 55106
612-772-7957

Jed Anderson, Specialist
Aquatic Plant Management Program
1110 North Lakeshore Drive
Glenwood, MN 56334
612-634-4573

Dan Swanson, Specialist
Aquatic Pesticide Enforcement
1601 Minnesota Drive
Brainerd, MN 56401
218-828-2553

Dave Wright, Supervisor
Monitoring and Control Unit
Box 25, 500 Lafayette Rd.
St. Paul, MN 55155
612-297-4886

And any other Department of Natural Resources employee. Other witnesses may be presented to respond to specific questions as necessary.

Rule by Rule Analysis

CHAPTER 6280

AQUATIC PLANT MANAGEMENT AND AQUATIC NUISANCE CONTROL

The title of the rules was changed to emphasize the importance of aquatic plants from "Aquatic Nuisance Control" to "Aquatic Plant Management and Aquatic Nuisance Control". Most parts of the rules are not new but have been in place since the early versions (1976) of the rules. However, the Department chose to reorganize the rules which resulted in the repeal and re-enactment of some parts of the rules. The reorganization also seeks to simplify the rules and remove duplication. The previous location of a repealed and re-enacted part will be referenced where appropriate.

6280.0100 DEFINITIONS:

Subp. 2. **Aquatic macrophytes.** Aquatic macrophytes is a general term which refers to all types of higher (vascular) plants growing in water. Woody vegetation normally grows above the ordinary high water level (OHWL). Since this rule pertains only to aquatic vegetation growing below the OHWL, it is necessary and reasonable to exclude woody vegetation from this definition.

Subp. 2a. **Aquatic plant management.** The term used previously to describe all activities under the rules was "aquatic nuisance control". These regulations also apply to the control and planting of aquatic vegetation, and therefore it is reasonable to modify the definition to include all types of

management activities. The term “aquatic plant management” is broader and more accurately reflects the scope of these rules. This term also recognizes the importance of the role of aquatic plants to the aquatic environment.

Subp. 2b. **Aquatic Plant Management Permit.** The rules govern the management of aquatic plants. The rules also govern the use of pesticides to control aquatic nuisances such as over-abundant plankton algae and the swimmer’s itch organism. To simplify the permit process, it is necessary and reasonable that a single permit is used for all activities regulated by these rules. It is also less confusing to use one term to describe permits issued under this rule.

Subp. 3. **Aquatic nuisance.** The definition of “aquatic nuisance” is revised to include only nuisance organisms such as swimmer’s itch, leeches and algae.

Subp. 3a. **Automated untended aquatic plant control device.** It was necessary and reasonable to define this class of control devices (that can be operated remotely using a timer) because they did not exist when the aquatic plant management regulations were last revised in 1985.

Subp. 4. **Bog.** The term “aquatic” was added to clarify that the definition of “bog” refers to mats that are found in lakes, rivers, or other aquatic habitats. The previous definition made no mention of water, so where the mats of vegetation were found was unclear.

Subp. 8. **Label and labeling.** This subpart is changed to conform with the definition in statute.

Subp. 11. **Ordinary High water level.** This subpart is changed to conform with the definition in statute.

Subp. 12. **Pesticide.** This subpart is changed to conform with the definition in statute.

Subp. 13. **Public waters.** This subpart is changed to conform with the definition in statute.

Subp. 14. **Storm water retention ponds.** Small public water bodies within city limits are often used to receive storm water runoff from surrounding development. The definition was changed to clarify that, if a pond is to be considered a storm water retention pond, then it must be specifically managed for that purpose.

6280.0250 STANDARDS FOR AQUATIC PLANT MANAGEMENT PERMIT ISSUANCE.

Subpart 1. **Actions not requiring a permit.** Previously this rule was found in part 6280.0200, subp.3. Its location has been changed to provide this important information earlier in the rules. Items A-F describes those activities which **do not** require an aquatic plant management permit.

A. Waterfowl hunters often pull or cut by hand aquatic plants to camouflage their boats or blinds. The small amount of vegetation they remove for this purpose is unlikely to harm the aquatic plant community or change the character of the lake. Therefore it is reasonable to exempt this activity from the permit requirement. This is not a change from the previous version.

B. This item allows aquatic plants to be gathered for personal use without a permit; to further clarify what personal use is, the language "not for resale" has been added. It is intended that the amount of vegetation allowed to be taken for personal use be limited to a small quantity and not commercially harvested for resale. It is reasonable to allow this activity to take place without a permit since the impacts are minimal and it would be difficult to monitor and regulate.

C. The rules have always provided riparian owners the opportunity to physically remove some aquatic vegetation without permit to facilitate access and use. However, floating leaf vegetation, such as water lilies (*Nuphar* spp. and *Nymphaea* spp.) and water shield (*Bresinia* sp.), have been excluded from the types of vegetation which can be removed without permit. Some mechanical floating leaf vegetation control will still be allowed without permit (see item F below); however, the size of the area allowed is much reduced. Water lilies are restricted to sheltered areas in many lakes and the amount allowed previously to be removed without permit could result in substantial loss of floating leaf vegetation in lakes with limited areas of these plants.

Subitems 1-3, listed below, describe the conditions under which aquatic plants may be physically removed without an aquatic plant management permit. These conditions remain largely unchanged with exception of their location in the rules and use of the term "APM permit" in place of "aquatic nuisance

control permit” and the term “aquatic macrophytes” in place of the term “aquatic plants”.

(1) The rules require aquatic plant control work not requiring a permit to be done by hand with rakes, scythes or power operated cutters, or other similar equipment. It is reasonable that equipment such as draglines , bulldozers, backhoes, hydraulic jets, suction dredges or other power operated earth moving equipment may not be used because of the destructive capabilities of such equipment. This language is unchanged from the previous rule.

(2) The area allowed for control without permit must remain in the same location each year, as the previous rules required. This is needed so that the rules are not used to destroy all vegetation along the shoreline piecemeal a year at a time.

(3) This requirement is the same as in the previous rules . Aquatic plants that have been cut or pulled must be removed from the water immediately. If they are not removed from the water, it is likely that the plants will drift in front of someone else’s property causing a nuisance for them, and it is therefore reasonable and necessary to require the plants to be taken from the water after they have been cut or pulled.

D. The Division of Waters regulates work in public waters through permit authority. During the execution of these permits aquatic vegetation may be removed. It is reasonable to allow this incidental removal of aquatic vegetation without additional permit. This exception was also found in the previous version of the rules.

It was recognized during the revision of the rules that the Bureau of Real Estate Management issues licenses permitting the passage of utilities over public lands and waters. DNR field staff have opportunity to review these permits. Therefore, it is reasonable to allow the incidental removal of aquatic vegetation which may be associated with these crossing licenses to occur without an additional permit.

E. Purple loosestrife is designated as a noxious weed by Minnesota Statute (Minn. Stat. sec. 18.78 and 84.966). As a noxious weed, private landowners and the state are required to undertake efforts to control or eradicate it. Because control efforts are required, the cutting or pulling of purple loosestrife was allowed without permit by the previous version of the rules and is maintained in these revisions.

F. In the previous version of the rules, a riparian owner could, by mechanical methods, and without permit, remove 2,500 square feet of water lilies (*Nuphar* spp., *Nymphaea* spp.) or water shield (*Bresinia*) (floating leaf vegetation). This item reduces the size of the area where these plants may be removed without permit.

Water lilies may occupy a relatively small area in most lakes (Wetzel 1975, p 362) and it is likely that an individual or a group of individual riparian owners could cause a significant reduction in the water lily population in a lake by destroying them in a small area. Because water lilies usually occupy a small area, it is reasonable and necessary to reduce the size of the area where water lilies can be removed without permit.

Item F and subitems 1-3 provide that a channel 15 feet wide through water lilies, water shield and submerged vegetation extending to open water may be maintained by mechanical methods provided the channel takes the most direct route to open water, the channel is maintained by cutting or pulling, and the channel remains in the same location from year to year.

Subp. 2. **Actions requiring a permit.** Previously this rule was found in part 6280.0200, subp. 2, items A-F. Its location has been changed to make the rules easier to read and follow. This section describes those aquatic plant management and nuisance control activities that require a permit from DNR.

A. This requirement remains the same as in the previous rules; all use of pesticides below the ordinary high water level of public water requires a permit from the DNR. This requirement is needed to ensure that the public is informed of pesticide use so they can avoid accidental exposure. To accomplish this the department provides all permittees with uniform signs and posting instructions. In addition, the U.S. Environmental Protection Agency requires that pesticides must be labeled as to their lawful uses and that they may only be used in accordance with label provisions (Federal Insecticide, Fungicide, and Rodenticide Act, 7 USC secs 136-136y). The permit allows DNR to ensure permittees use only those pesticides that are labeled for aquatic use and in a manner and location where their use is appropriate. Subitems 1-6 lists the plants and other aquatic organisms where the use of a pesticide may be an appropriate method of control.

(1) this subitem was repealed and reinserted. Previously this language was found in 6280.0400 subpart 1, item A.

(2) this subitem was repealed and reinserted. Previously this language was found in 6280.0400, subpart 1, item C and item F. Language regarding the control of floating bog was repealed because floating bogs are dealt with in item B. This subitem was revised to include a broader definition of recreational use.

(3) this language was repealed and reinserted without change. Previously this language

was found in 6280.0400, subpart 1, item D.

(4) this language was repealed and reinserted. The term "plankton" was inserted to more accurately describe "algae bloom". Previously this language was found in 6280.0400, subpart 1, item E.

(5) this language was repealed and reinserted without change. Previously this language was found in 6280.0400, subpart 1, item G.

B. Item B remains essentially unchanged from the previous version of the rules. This item requires a permit for the transplanting or removal of aquatic plants or bog in public waters. Lakeshore homeowners may desire to plant aquatic vegetation in the lake adjacent to their property for esthetic or other reasons. A permit gives the DNR the opportunity to discuss the riparian owner's plans with them to avoid the accidental or intentional introduction of an undesirable species which may become a problem for the lake. The introduction of exotic aquatic plants and the subsequent need to remove or control them can be expensive to the state, lakeshore homeowners, and other organizations (MN DNR 1994a).

Floating bog is a problem in many Minnesota lakes, especially during years of rising water levels. Pieces of floating bog can be a hazard to navigation and destructive to private property. When this occurs, it is important that the bog either be removed from the lake or anchored in a suitable location. A permit for this condition allows the DNR opportunity to ensure that the bog is securely fastened in a suitable location or removed from the lake and properly disposed of, not merely pushed back out into the lake.

C. This item remains essentially unchanged from the previous version of the rule. Emergent plants make up a small portion of the plant community in many lakes but are valuable habitat to fish and wildlife. These plants are important habitat for waterfowl and fur bearers (Fritzell 1989; Murkin 1989), protect shoreline from erosion and help to sustain water quality by stabilizing sediments (Wade 1994). No emergent vegetation may be destroyed without permit and it is necessary to provide these plants with the protection provided by a permit, because they can be limited in their distribution and area within a lake and they are difficult to re-establish once lost (van der Valk 1981).

D. Previously, water lilies and water shield were described as floating leaf vegetation and they could be removed mechanically without a permit from a 2,500 square foot area. However, several species of submersed aquatic plant possess floating leaves (e.g. pondweeds, or *Potamogeton spp.*), so it is reasonable and necessary to clarify by describing these particular plants by name. Because a small area of control may have significant impact on the amount of floating leaf vegetation in a lake it is reasonable and necessary to require a permit for removing more water lilies (*Nuphar spp.* and *Nymphaea spp.*) and

water shield (*Bresinia sp.*) than allowed by subpart 1 item F above (a channel 15 feet wide to open water).

E. This item was added to regulate automated untended devices for aquatic plant control (e.g. Crary WeedRoller) which can be placed on a timer or operate remotely. In 1985 when the regulations for aquatic plant control were revised these devices did not exist. Physical methods of removal available when the regulations were first developed were labor-intensive and time-consuming, they did not disturb all propagules (e.g. seeds, tubers, and over wintering buds) and root systems thus allowing plants to regrow. As a result, riparian owners typically used physical methods sparingly or in small areas, which allowed vegetation to recover. Little long-term damage was done to aquatic plant beds and the plants would usually grow back.

Remotely operated devices require little effort to operate after the initial installation. Therefore they are more likely to be used in a manner that may cause long-term destruction of aquatic vegetation. In addition, these devices cause fine silt and soft organic substrates to be resuspended and transported elsewhere by wave action. Because these devices roll over the bottom, they may also disrupt fish nesting sites. It is reasonable and necessary to require a permit for these devices to determine if their use is appropriate at a given location within the lake based on the aquatic plants present and the nature of bottom materials and to insure that they are used during times of the year that will minimize harm to fish populations.

F. Emergent vegetation can be limited in area and is important to lakes as described earlier. However, lakeshore homeowners may desire and are entitled to access through emergent vegetation. To protect emergent vegetation and provide incentive to homeowners to be conservative in the amount of emergent vegetation removed, it is reasonable to allow a permit of continuing duration for mechanical control of a channel to open water and annual maintenance provided: the channel is not more than 15 feet wide, is maintained by mechanical means and remains in the same location from year to year. These permits are not transferrable, but a new owner may obtain a permit for the same area.

Subp. 3 . **Justification required for issuance of permit.** Previously this rule was found in part 6280.0400, subp. 2. Its location has been changed to make the rules easier to understand and follow. Language has been added to clarify sufficient justification.

The lake in front of a person's property is a valuable public resource for all to enjoy. It is not an extension of private property. The destruction of aquatic vegetation must be given careful consideration and

the lake ecosystem disturbed as little as possible. It is necessary for the permit applicant to identify a valid reason or need before allowing the destruction of aquatic vegetation. It is necessary for the commissioner to evaluate each site in an objective manner and limit the destruction of vegetation while balancing the needs of the riparian owner.

Subp. 4. **Prohibitions.** Previously this rule was found in part 6280.0300 items A-D. Its location has been changed to make the rules easier to read and follow. Items A-D are essentially unchanged. Items E-H have been moved from other parts of the previous rules to improve organization and readability.

This subpart identifies activities that will not be allowed even under permit.

A. Covering bottom substrate with various materials or bottom barriers to prevent plant growth is prohibited because the materials most readily available for such activities are not gas permeable (and even pores of gas permeable materials will clog). Gases trapped under the bottom barrier lift the material off the bottom of the lake creating an unsightly mess and a hazard for lake users.

B & C. The destruction of aquatic vegetation is justified when necessary to provide access for lakeshore homeowners. However, it is not reasonable to allow the destruction of this important public resource to improve the appearance of either undeveloped shoreline (B) or developed shoreline when no other use or benefit is enhanced (C).

D. The vegetation in scientific and natural areas is protected by Minnesota Statutes, section 84.033 and 86A.05 subd.5, and Minnesota Rules parts 6135.4000-.5000 . To maintain the natural characteristics of scientific and natural areas, it is necessary to protect the integrity of the plant community.

American lotus (*Nelumbo lutea*) is a protected plant in Minnesota (Minnesota Statutes section 17.23) and may not be harmed. It is also necessary and reasonable for the commissioner to have the authority to protect other rare species or sensitive areas if required.

E. This item was previously found in part 6280.0400, subp. 5, item C. It was moved to this location to consolidate information on prohibited activities. Herbicide treatment of natural environment lakes was prohibited in the previous rules. It is reasonable and necessary to maintain this prohibition because these water bodies are small and shallow with "limited capabilities for assimilating the impacts of development and recreational use" (6210.3000, Subp. 1a, A.) In keeping with the intent of Minnesota Rules part 6120.3000, subp.1a, A, the Statewide Standards for the Management of Shoreland Areas, the use of herbicides for the destruction of aquatic plants in lakes designated as natural environment lakes is

prohibited.

The language in item C which prohibited the pesticide control of aquatic macrophytes in waterfowl feeding and resting areas established in Minnesota Statutes, section 97A.095 and 97A.101 and lakes designated as waterfowl management lakes (Minn. Stat., sec. 97A.101, Subd.2) has been repealed. The prohibitions have been eliminated because these designations are not static over time and lakes may added or removed from the list at any time during the treatment season. This prohibition might also interfere with appropriate management activities, therefore it is reasonable and necessary to repeal this language.

F. The prohibition on issuance of APM permits for water courses classified as wild under either the Minnesota or federal Wild and Scenic Rivers Acts was previously found in part 6280.0400, subpart 5, item D. It was moved to this location to consolidate the information on prohibited activities. This language was repealed and reinserted without change. This prohibition is consistent with the intent of these laws.

G. Previously this rule was found in part 6280.0200 subp. 2, item D. Few areas are posted as fish spawning areas. An area is posted only when it is identified as particularly important habitat for spawning (Fisheries Management Operational Guidelines 1994). Because these areas can be of significant importance to fish populations it is reasonable and necessary to offer them the protection of this prohibition. Minnesota Statutes section 97C.025 authorizes the DNR to post these areas.

H. Previously this rule was found in part 6280.0200, subp. 2, item F. This item limits acceptable aquatic plant and nuisance control methods to those methods described and authorized by these rules. The department anticipates that new methods will be developed to control aquatic plants or nuisance organisms or that techniques already in existence will be adapted to control aquatic plants or nuisances. It is therefore reasonable and necessary to restrict new or modified approaches until the method is properly evaluated and it is determined that it will not cause unnecessary harm or risk to the aquatic environment or the public. Exceptions may be allowed by variance pursuant to part 6280.1000.

Subp. 5. **Pesticide treatment of drinking water.** Previously this rule was found in part 6280.0400, subp. 7. Its location has been changed to make the rules easier to understand and follow. The language has remained essentially the same with the exception that “*may not issue*” has been replaced with “*shall not issue*”, and “*permit*” has been replaced with “*APM permit*”.

Lakes are often used for potable water supplies for municipalities. It is necessary and reasonable to require the Department of Health's approval prior to the use of pesticides in these waters to protect the health and safety of persons using this water for consumption.

6280.0350 AQUATIC PLANT MANAGEMENT PRACTICES.

Subp. 1. **Inspection, supervision and monitoring.** Previously this rule was found in part 6280.0500, subp. 2, items B and C respectively. Its location has been changed to make the rules easier to understand and follow. Subp. 2 item A was a provision for an inspection fee of \$60.00 which could be charged, once, to new permittees. It is reasonable and necessary to eliminate this fee because the imposition of an inspection fee, in addition to the permit fee, would encourage disregard for the permit requirement and have an adverse effect on public safety and Minnesota lakes.

A. This language has remained essentially unchanged from the original version of the rules. It requires the supervision of initial lake-wide plankton algae treatments performed by lake associations. Copper sulfate treatments to control plankton algae have the potential to cause fish kills if done improperly (Cooke et. al. 1986). It is reasonable to have a department employee present to ensure the pesticide is used properly and in accordance with its labeling and the APM permit, and that precautions are taken to avoid a fish kill. This item also provides the opportunity to waive the supervision if the association or organization demonstrates that they have the experience necessary to perform the application without undue risk to the environment.

B. This item describes when field inspections of areas on applications proposed for treatment or harvest would be required. Previously all new applications for permit required inspection. This has been revised to give the commissioner some discretion over which applications for permit receive inspection. It is necessary and reasonable to provide that a department employee may inspect proposed control areas to identify the types of aquatic vegetation present and to determine if nuisance conditions exist. It is also necessary and reasonable, due to staff constraints and the large number of requests, that the department have some discretion over which new applications are inspected and to provide that department staff may inspect any areas under permit to evaluate conditions and need for continued control measures.

Subp. 2. **Lake vegetation Management Plan.** Addressing aquatic plant management issues on a

whole lake basis is often preferred over attending to issues one at a time, or riparian owner by riparian owner. A lake vegetation management plan can, save time and money, identify problems and reduce environmental harm (Nichols, Engel and McNabb 1988) . It is therefore necessary and reasonable to provide lakeshore homeowner associations, and other concerned groups the option of developing a "lake vegetation management plan" which considers, fish and wildlife concerns, and as many potentially affected interests as possible to resolve aquatic plant management issues on a lake wide basis. It is also reasonable and necessary to require the plan to be approved by commissioner of the DNR as the agency responsible for managing this important public resource. It is also reasonable and necessary that when such a plan has been approved by the commissioner that APM permits will be issued pursuant to its guidelines.

Subp. 3. **Mechanical control.** Previously this rule was found in part 6280.0400, subp 3. It has been moved to make the rules easier to understand and follow. This subpart provides the conditions for mechanical harvesting aquatic vegetation.

A. This language remains essentially unchanged from the previous rule. It is necessary and reasonable to require persons cutting, or pulling aquatic vegetation either by hand or with a motorized harvesting equipment to collect and remove the cut vegetation from the lake to prevent it from drifting into someone else's property.

B. This language, which establishes the maximum area of aquatic vegetation that can be removed by organized lakewide harvesting efforts, remains nearly the same as in the previous rule. Detrimental effects can result from harvesting aquatic vegetation. Aquatic plant harvesting equipment removes fish and invertebrates as well as aquatic plants (Wile 1978; cited in Engel 1990). The abundance of some species of aquatic plant may increase in response to harvesting and shifts in plant species composition can be observed after intense harvesting of aquatic macrophytes (Engel 1990). It is therefore, necessary and reasonable to establish a maximum amount of vegetation which may be permitted for removal because aquatic plants provide many benefits to lakes and lake communities and removing too much of the vegetation would be detrimental. It is also necessary and reasonable to consider the characteristics of the control method when establishing a maximum amount. Aquatic plant harvesting equipment essentially mows aquatic vegetation in designated areas. Only the upper portion of the plant is typically cut so that harvested areas recover quickly (Engel 1990). Harvested areas often need to be cut a

second time to provide season-long access to open water. Most aquatic vegetation cut by harvesting equipment is collected by the harvester and removed from the lake, not left in the lake to decompose, consume dissolved oxygen and release nutrients (Engel 1990). Harvested areas can be precisely defined. For these reasons, aquatic plant harvesting is the preferred method of control for lakes where a large area of control work is proposed.

The limit of up to 50% of the littoral area allowed to be harvested was established in the previous version of the rules. This limit has been repealed and reinserted without change.

This item also contained language allowing devices which sifted debris to be used for aquatic vegetation control when no other method was possible. This language was repealed because there have not been requests for the use of these machines for aquatic plant control.

C. This language remains essentially unchanged from the previous rule. It is necessary and reasonable to require a plan and a map of proposed areas to be harvested to properly evaluate the proposal. To protect important aquatic habitat and to avoid destruction of desirable stands of plants it is necessary and reasonable that the commissioner have the ability to reduce the amount of area harvested. It is also reasonable and necessary to require signatures to verify that the property owners listed want to be included on the permit.

Subp. 4. **Pesticide control of aquatic macrophytes.** Previously this rule was found in part 6280.0400, subp. 5. This subpart provides the conditions for the pesticide control of aquatic macrophytes.

A. Because aquatic vegetation is important to the lake environment, it is necessary to limit the amount destroyed for access and use. Pesticide use for aquatic vegetation control can cause dissolved oxygen reductions and nutrients released may cause localized algae blooms as dead vegetation decomposes in treated areas (Engel 1990). Elimination of vegetation in treated areas can enhance the probability of unwanted species, such as Eurasian watermilfoil, becoming established (Smith, Barko, and McFarland 1991). The precise amount of vegetation required by lakes for habitat, shoreline erosion protection, and to stabilize bottom sediments is unknown and the amount of vegetation required to perform these functions is likely to vary from lake to lake. The area of the littoral zone which supports vegetation will also vary between lakes. Therefore, it is necessary and reasonable to be conservative when setting limits on the amount of vegetation allowed to be treated with herbicides. In 1976, the DNR established the maximum limit at, the lesser of 15% of the littoral area or 100 feet of shoreline per site belonging to an

individual riparian owner in lakes which were entirely within a city limits, and the lesser of 10% of the littoral area or 100 feet per site belonging to an individual riparian owner in rural lakes. The language which established the 10% limit has been repealed to eliminate the confusion caused by having two different limits. The 15% limit on littoral area allowed for treatment has allowed lakeshore homeowners to obtain access and adequate use on the majority of lakes where this type of management is done. When additional area may be required for access and use a variance to this restriction can be allowed by part 6280.1000 . Exceptions to these restrictions are listed in the subitems below.

1. It is necessary and reasonable that areas such as public swimming beaches, apartments or condominiums which provide recreation to a large number of people to be allowed exceptions to the 100 foot restriction. This was allowed by the previous version of these rules.

2. Prior to 1976 there were no basin-wide limits on the amount of aquatic vegetation that could be controlled with pesticides. The revision of Commissioner's Order 1938 adopted in 1976 established 15% of the littoral area as the maximum amount of vegetation that could be treated with pesticides in lakes within city limits. At this time there were lakes in the Metropolitan area with extensive areas of shallow water and abundant vegetation along developed shoreline with a long history of aquatic plant control permits issued for areas greater than 15% of the littoral area. These permits were "grand-fathered" in the 1976 revision of the regulations. It is reasonable and necessary to clarify which permits are "grand-fathered" by stating the year that bounds these permits.

3. Previously this rule was found in 6280.0400, subp. 5, item A, subitem 4. This rule, regarding the control of aquatic vegetation in storm water retention ponds, remains essentially the same. The definition of storm water retention pond was modified to clarify that the retention of storm water is the primary public benefit of such ponds. Because these public waters receive urban runoff, they tend to grow abundant aquatic vegetation. Too much aquatic vegetation can interfere with a stormwater retention pond's ability to retain or discharge stormwater and therefore it is reasonable and necessary to allow more liberal control of aquatic vegetation in public waters which are specifically managed for the primary public value of retaining storm water.

B. It is necessary to require a plan and map of areas proposed for treatment to properly and fully evaluate the permit application. It is also important to receive signatures from those people listed on the application to verify their desire to be included in the pesticide treatment. Because many lake shore homeowners do not live year-round at their lake shore residence, signatures can be difficult to obtain every

year. Lakeshore properties change hands, and people's opinions regarding the control of aquatic vegetation can change so it is important to ensure that the individual does want the lake adjacent to their property treated. Therefore, it is reasonable and necessary to require updated signatures every 3 years.

Subp. 5. **Control of Algae.** Previously this rule was found in part 6280.0400, subp. 6. Its location has been changed to make the rules easier to read and follow. Because it is necessary to treat an entire lake or bay for effective plankton algae control, it is reasonable to require signatures to determine that a majority of homeowners are in favor of a lakewide application of copper sulfate for algae control. The provisions concerning applicants signatures are the same as in subpart 4.

Subp. 6. **Treatment notice.** Previously this rule was found in part 6280.0800, subp. 2. Its location has been changed to make the rules easier to read and follow. This rule remains essentially the same. It is reasonable and necessary for holders of APM permits to notify the DNR prior to performing aquatic plant control work, as instructed on their permit, so that the department may have opportunity to observe the application to ensure that the work is done in accordance with pesticide labeling and the APM permit and answer questions from the public about the destruction of aquatic vegetation taking place in a public water.

6280.0450 PERMIT APPLICATION, FEES AND ANNUAL REPORT.

Subpart. 1. **Application process.** Previously this rule was found in part 6280.0200 subpart 1. Its location has been changed to make the rule easier to understand and follow. This rule clarifies who may apply for aquatic plant management permit and describes application procedures. The previous version of the rules allowed only riparian property owners to apply for aquatic plant management permit. It is reasonable and necessary to provide holders of interests in riparian lands other than owners, such as a lessee, or an easement holder, the ability to apply for permit to manage aquatic plants. It is also reasonable and necessary for persons wishing to destroy aquatic vegetation to complete an application describing their intentions and the rationale for doing so. For consistency's sake and to ensure that all information necessary to evaluate the request is provided, the DNR requires that application be made on the appropriate form and that all information requested is included.

Subp. 2. **Deadline for permit application.** Previously this rule was found in part 6280.0200, subp.

4. Its location has been changed to make the rules easier to understand and follow. This rule was repealed and reinserted in its new location without revision. The deadline for permit application is August 1. Herbicides are most effective when applied to plants which are actively growing. There is little benefit from the application of herbicides to dormant or dying vegetation and most aquatic vegetation is no longer actively growing after August 1(Engel 1985). However, it is also reasonable to provide for the later application of herbicide when there is sufficient reason provided to the commissioner.

Subp. 3. **Duration of permits.** It is necessary and reasonable to state the expiration date of these annual permits. Because the control of submerged aquatic plants is the most common type of permit issued and the majority of the control work is completed before September 1 this is a reasonable expiration date. Applications after September 1st are primarily for cattail control. It is also reasonable and necessary that the rules allow extensions when appropriate.

Subp. 4. **APM Permit application fees.** Previously this rule was found in part 6280.0500 subp. 1. Its location has been changed to make the rules easier to understand and follow. Minnesota Statute section 103G.615 subd. 2 (b), prescribes the fee for chemical control of aquatic vegetation at "\$20.00 for each contiguous parcel of shoreline owned by an owner." Statute also gives the commissioner authority to issue permits with or without fee for control of various other types of aquatic organisms. These fees were established by the previous rules, no changes to permit fees are suggested.

A. An administrative change was made to have checks made out to the Department of Natural Resources rather than the State Treasurer. This will create less confusion on part of the applicant, but will cause no change in the handling or depositing of the fees .

(1) Language changed to accurately represent statutory language. Previously the fee for pesticide control of aquatic vegetation included a fee of \$0.40 per shoreline foot proposed to be treated. The reference to the charge per shoreline foot has been repealed because the permit fee was changed to \$20.00 by the legislature in 1994 (Minn. Stat., sec. 103G.615, subd. 2).

(2) thru (7) The language is repealed and reinserted with no revisions

B. Repealed and reinserted with no revision.

C. This item was changed to allow a refund of permit fees if the application is withdrawn before the permit has been issued. Previously the permit fee was non-refundable. It is reasonable to

refund the fee to the applicant if no action has been taken or no permit is required.

Subp. 5. **Fees for state and federal agencies.** Previously this rule was found in part 6280.0500, subp.3. Its location has been changed to make the rules easier to understand and follow. Language has been repealed and reinserted with no revision.

Subp. 6. **Annual report.** Previously this part was found in 6280.0800 subp. 1. Its location has been changed to make the rules easier to understand and follow. To help monitor the amount of pesticides actually applied in Minnesota lakes, and the size of the areas treated or harvested it is necessary to require commercial aquatic applicators, commercial aquatic plant harvesters, and homeowners to report on the work that has been done. To ensure that adequate time is provided for the reports to be completed the date that reports are due has been changed from November 15 each year, to December 31 each year.

Subp. 7. **Regulations of other programs apply.** Previously this rule was found in part 6280.0200, subp. 5. Its location has been changed to make the rules easier to understand and follow. There are other agencies which have jurisdiction over public waters, and they may also have regulations that riparian owners need to comply with. It is necessary and reasonable to remind permittees that a permit from the DNR for aquatic plant management does not supersede these other agencies' regulations or requirements.

6280.0600 APPROVAL OF PESTICIDES AND METHODS USED FOR AQUATIC PLANT MANAGEMENT OR AQUATIC NUISANCE CONTROL.

Subpart 1. **Pesticides must be labeled for use in aquatic sites.** This section of the rules was changed to more clearly describe the authority of the various agencies with responsibilities regarding the registration and approval of pesticides labeled for aquatic use. The United States Environmental Protection Agency (USEPA) regulates pesticides at the federal level. The Minnesota Department of Agriculture (MDA) is the state agency responsible for the regulation of pesticides in Minnesota. The Federal Insecticide Fungicide and Rodenticide Act 7 USC secs. 136-136y, and 40 CFR subch. E, parts 150-189, requires that pesticides be registered for specific sites. Therefore, it is necessary and reasonable that only pesticides registered with USEPA and labeled for use in aquatic sites, approved for use in Minnesota by the MDA and

DNR, be allowed to be applied to Minnesota lakes.

Subp. 2. Instructions and precautions of pesticides must be followed. Changes made to this section of the rule clarify the MDA authority in pesticide regulation and terms used incorrectly have been corrected. Pesticide manufacturers are required to provide instructions for proper use in the product label and labeling 7 USC secs. 136-136y; MN Stat secs. 18B.13, .26-28. These instructions must be precisely followed to use the pesticide safely and effectively. It is a violation of state and federal law to use a product in a manner inconsistent with its label. The manufacturer of aquatic labeled pesticides may require that use restrictions be placed on the area treated. The DNR requires persons using aquatic labeled products in public waters to post signs notifying other lake users of the water use restrictions, (e.g. fishing, swimming, drinking, irrigation or animal watering restrictions) in place for the treated area. To further protect the aquatic resource and public health it is reasonable and necessary that the DNR, in cooperation with the MDA, may place additional use restrictions on the treated area. It is also necessary for the individual or the person's agent to remove the signs upon the expiration of water use restrictions.

Subp. 3. Pesticide control of aquatic macrophytes in water courses. Previously this rule was found in 6280.0400, subp. 4. Its location has been changed to make the rules easier to read and follow. Language stating that permits may be issued was removed because permits are required for pesticide use in public waters in part 6280.0250, subp. 2.

Flowing water presents a unique problem for pesticide application. The pesticide applied must remain in place long enough to kill the target organism and not be carried downstream at a rate that will cause damage to plants or organisms downstream (Fox and Haller 1993). Therefore it is reasonable to require that the target plant be abundant enough to impede the flow of water so that the pesticide is not carried downstream. These pesticides must also be labeled for use in flowing water by the USEPA.

6280.0700 COMMERCIAL APPLICATORS AND OPERATORS

Subpart 1. Pesticide applicators. This section describes requirements for individuals in the business of applying pesticides to control aquatic vegetation or nuisances in public waters. The MDA, to ensure that pesticide applicators have adequate training and knowledge to use products safely and effectively, requires that persons applying pesticides for hire be commercially licensed. DNR endorsement of aquatic pest control licenses issued by the Department of Agriculture is not necessary and as a matter of

practice has not been required for many years. Therefore it is reasonable and necessary to strike this language. It is necessary and reasonable to update the title given from "pesticide applicators license" to "aquatic pest control license" to remain current with statute. The term "public" waters is used to remain consistent with terms defined in these rules.

Subp. 2. **Commercial aquatic plant harvesters.** This part requires persons engaging in the commercial harvesting of aquatic plants to obtain a permit from the DNR. It is reasonable and necessary to require that individuals who harvest aquatic vegetation commercially understand the regulations and will perform this work within established guidelines. In the previous version of the rules these businesses were referred to as "non-chemical operators". The name has been changed to "commercial aquatic plant harvester" to more accurately reflect the activity.

It is reasonable and necessary to add an exclusion for persons or firms that may remove aquatic vegetation incidental to the execution of work under a license permitting the passage of utilities over public lands or waters. This work is already performed under permit and DNR field staff have opportunity to review those permit applications.

Persons harvesting aquatic plants for hire often work in several lakes. To prevent the spread of undesirable plants from one lake to another it is necessary to require that commercial aquatic plant harvesting equipment be cleaned of aquatic vegetation before transporting the equipment to another water body. To eliminate confusion and reduce problems of enforcement, it is reasonable and necessary to remove the reference to viable plant parts.

6280.0900 AMENDMENTS AND REVOCATION.

Subpart 1. **Amendments and revocation.** It is reasonable and necessary to revise this portion to eliminate language referring to a DNR endorsement of aquatic pest control license since the license is issued by the Department of Agriculture and DNR endorsement is not necessary. It is also reasonable and necessary to provide the commissioner opportunity to amend a commercial harvesting permit or aquatic plant management permit without prior notice to protect human life, fish, wildlife and aquatic plants.

Subp. 2. **Amendments by request.** It is reasonable and necessary to add a provision which would allow permits to be amended upon request from the permit holder if the commissioner concurs with

the request.

6280.1000 VARIANCE.

Subp. 1. **Variance.** To manage aquatic plants effectively may require a variance from some of the practices and policies outlined in these rules.

Subp. 2. **Lake vegetation management plan.** Addressing lake vegetation management issues on a lake wide basis is preferred over attending to issues one at a time. A lake vegetation management plan considers fish and wildlife concerns as well as other interests. It is therefore, necessary and reasonable to allow a variance when required by a lake vegetation management plan which has been approved by the commissioner.

6280.1100 REVIEW AND APPEAL OF PERMIT DETERMINATION.

Subp. 1. **Commissioner's review of permit determination.** The season for the control of aquatic plants and nuisance organisms is relatively short and most work is completed by the end of July. The contested case hearing procedure is a lengthy process and the season for control work is likely to be over before a final decision is made through this process. It is reasonable and necessary to provide individuals whose application for permit has been modified or denied the opportunity to have the permit decision reviewed by the commissioner.

Subp. 2. **Contested case hearing.** The contested case hearing procedure is available to permit applicants to provide unbiased third party review of their permit decision. This part clarifies that after commissioner's review the next and final review of their permit decision is through the contested case hearing process under the state's administrative procedure law.

6280.1200 PENALTY.

These penalties are statutory: Minnesota Statutes, sections 84.0894, 84.091, 103G.615 and 645.241. It is necessary and reasonable to provide information on the penalties for violation of terms of a permit.

REPEALER. Minnesota Rules, parts 6280.0100, subpart 15; 6280.0200; 6280.0300; 6280.0400; and

6280.0500 , are repealed. Most repealed parts have been reinserted. The purpose of this reorganization is to provide a structure which makes the rules clearer, and easier to understand and follow.

Part 6280.0100, subpart 15 which defines the term viable, is stricken because it can cause difficulty enforcing regulations prohibiting the transport of aquatic plants. It is difficult to determine if an aquatic plant is viable or not. The intent is to ensure that aquatic vegetation, including undesirable species, are not being distributed to lakes around the state on aquatic plant harvesting equipment. The term adds confusion and complicates enforcement; therefore it is reasonable and necessary to remove it from the rule.

6280.0200, subp. 2, E. Required a permit for the operation of machines that sift lake bottom material from public waters. These machines are not common in Minnesota and they may not be operated below the ordinary high water level; therefore it is reasonable to remove this language from the rules.

6280.0400, Subpart 1, B, is repealed because it is repetitive, control of nuisances is allowed below the ordinary high water level, which includes swimming beaches.

6280.0400, subp 3, B. Language that allowed the use of sifting machines if no other method was possible in that location was repealed because these devices are not common in Minnesota in past few years there have been no requests for their use below the OHWL. They are designed to sift broken glass and other debris from sand beach areas no permit is required for this work above the OHWL.

6280.0400, subp. 5, C, repealed language which prohibited the control of submerged vegetation in waterfowl feeding and resting areas established pursuant to Minnesota Statutes, sections 97A.095 and 97A.101 and lakes designated as wildlife management lakes. Few permits are requested for aquatic plant control in these waters and the permit system is adequate to protect vegetation in lakes with these designations. It is therefore reasonable and necessary to repeal this language.

6280.0500, subp. 5, Item a, subitem 3, has been repealed. Providing for lake vegetation management plans (6280.0350, subp. 2) accomplishes the same thing that this provision was intended to provide, LVMP's will allow riparian owners the same latitude as allowed by this subitem. In addition, there are

prohibitions which provide protection to spawning areas and protected plants. Therefore this subitem is redundant and has been repealed.

6280.0500, subp. 5, B. Language that allowed a notarized signature from an officer of a riparian owners' association to be substituted for the signatures of other property owners authorizing treatment has been repealed. Notarized signatures did not provide any additional protection from mistakes. It is reasonable to remove this provision from the rules.

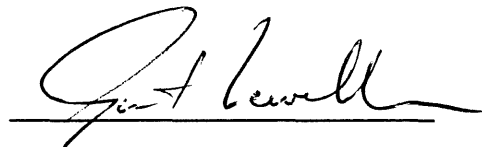
6280.0500, subp.2, A. Repealed language which provided for the imposition of a \$60.00 fee for initial inspection. This fee has not been imposed because of the potential to encourage non-compliance with the permit requirement. It is reasonable and necessary to repeal this requirement because the imposition of this fee would have a negative impact on the resource and on public safety.

Conclusion

Based on the foregoing, the Department of Natural Resources proposed amendments to rules are both necessary and reasonable.

12/21/95

Date



Gail Lewellan, Assistant Commissioner
of Human Resources and Legal Affairs
Department of Natural Resources

LITERATURE CITED

- Bellrose, F.C. 1976. Ducks, geese and swans of North America. Stackpole Books, Cameron and Keller Streets, Harrisburg, PA, 17105.
- Cohen, P., and Joe Stinchfield. 1984. Shoreland development trends. Minnesota Department of Natural Resources, Shoreland Update Project Report No. 4. St. Paul, MN 55155.
- Cooke, G. D. et al. 1993. Restoration and management of lakes and reservoirs. Lewis Publishers, Raton, Florida 33431.
- Dieter, C. D. 1990. The importance of emergent vegetation in reducing sediment resuspension in wetlands. *Journal of Freshwater Ecology* 5(4):467-473.
- Engel, S. 1985. Aquatic community interactions of submerged macrophytes. Wisconsin department of Natural Resources. Technical Bulletin. No. 156, 79pp. Box 7921 Madison Wis 53707.
- Engel, S. 1990. Ecosystem responses to growth and control of submerged macrophytes: A Literature Review. Wisconsin Department of Natural Resources. Technical Bulletin No. 170. Box 7921, Madison, WI 53707.
- Errington, P.L. 1941. Versatility in feeding and population maintenance of the muskrat. *Journal of Wildlife Management* 5:68-89.
- Fox, A. M. and W. T. Haller. 1993. Herbicide application technique development for flowing water. Miscellaneous Paper of the Aquatic Plant Control Research Program. Vol A-93-2. US Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS 39180.
- Fritzell, E. K. 1989. Mammals in prairie wetlands. PP 268-301 in A. G. Van der Valk, ed. Northern prairie wetlands. Iowa State University Press, Ames, Iowa 50010.
- James, W. F., and J.W. Barko. 1994. Macrophyte influences on sediment resuspension and export in a shallow impoundment. *Lake and Reservoir Management*. 10:95-102.
- Miller, A. C., D.C. Beckett, C.M. Way, and E. J. Bacon. 1989. The habitat value of aquatic macrophytes for macroinvertebrates. Technical Report of the Aquatic Plant Control Research Program. Vol. A-89-3. US Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS 39180.
- MN DNR. 1994a. Annual Report. Ecologically harmful exotic aquatic plants and wild animal species in Minnesota. Minnesota Department of Natural Resources, Ecological Services Section, 500 Lafayette Rd. St. Paul, MN 55155.
- MN DNR. 1994b. Fisheries Management Operational Guidelines. Unpublished report. Minnesota Department of Natural Resources, Section of Fisheries, 500 Lafayette Rd., St. Paul, MN 55155.
- Moyle, J. B. 1961. Aquatic invertebrates as related to larger water plants and waterfowl. Minnesota Department of Conservation Investigational Report 233. 24pp.
- Murkin, H. R. 1989. The basis of food chains in prairie wetlands. pp. 316-339 in A. G. van der Valk, ed. Northern prairie wetlands. Iowa State University Press, Ames, Iowa 50010.
- Nichols, S.A., S. Engel, and T. McNabb. 1988. Developing a plan to manage lake vegetation. *Aquatics* 10(3): 10, 14-19.
- Peek, J. M., D. L. Urich, and R. J. Mackie. 1976. Moose habitat selection and relationships to forest management in northeastern Minnesota. *Wildlife Monographs* 48:1-78.

Smart, M. and R. Doyle. 1995. Ecological theory and the management of submersed aquatic plant communities. Bulletin of the Aquatic Plant Control Research Program. Vol. A-95-3. US Army Corps of Engineers, Waterways Experiment Station, Vicksburg MS 39180.

Smith, C. S., J. W. Barko, and D. G. McFarland. 1991. Ecological considerations in the management of Eurasian watermilfoil in Lake Minnetonka, Minnesota. Technical Report of the Aquatic Plant Control Research Program. Vol. A-91-3. US Army corps of Engineers, Waterways Experiment Station, Vicksburg, MS 39180.

van der Valk, A. G. 1981. Succession in wetlands: A Gleasonina approach. Ecology 62: 688-696.

Wade, P.M. 1994. Management of macrophyte vegetation. Pages 363-385 in P. Calow and G.E. Petts, (eds.) The Rivers Handbook, Vol. 2. . Blackwell Scientific Publications, Cambridge, MA 02142.

Wetzel, R. G. 1975. Limnology. W. B. Saunders, Philadelphia, PA USA 743pp.



APPENDIX

Type	Comment	# of Replies
1	Should not have to pay for and renew permit, should issue permits for more than 1 year	11
2	Too restrictive: a.) should allow more emergent veg control, b.) should allow more shoreline feet	13
3	Wish to continue doing control as I have in the past	29
4	More aggressive control of Eurasian watermilfoil	8
5	Amend rules to allow a path through water lilies and wild rice by hand without permit	2
7	Stricter control and reduction in the use of herbicides (5). Permit for all mechanical harvester work (2).	7
8	More help from the DNR to control weeds	4
9	Allow some use of bottom barriers	3
10	Program treats symptoms not problem educate people; too much fertilizer getting into lakes and ponds	1
11	Should be allowed to use herbicides in natural environment lakes	2
12	Send copy of current rule	10
13	What are you proposing to change?	5
14	Notice is too hard to make.	6
15	Miscellaneous	7

Table 1. A compilation of comments received in response to the DNR's notice of intent to solicit outside opinion in the matter of amending aquatic plant management rules. The notice was published in the State Register on October 17, 1994 and mailed to over 1,300 interested parties. More than one type of comment may have been expressed per response; therefore the total number of

SONAR

MnDNR

7 February 1995

comments recorded above will not add up to the number of phone calls and letters received. A total of 98 replies, 62 by telephone and 36 letters, were received as of 7 February 1995.

A synopsis of the discussions of the Aquatic Plant Management Rule Advisory Task Force.

To better protect the state's aquatic resources, the Department of Natural Resources (DNR) determined that it was necessary to revise the rules which regulate the destruction of aquatic plants and nuisance organisms in public waters. The first step of the revision process is to publish a "Notice of Intent to Solicit Outside Opinion" in the State Register (published October 17, 1994). In addition to the "Notice" the DNR also formed an advisory task force to provide input regarding areas of the rule requiring revision.

The following organizations participated on the advisory task force: Pat Wulff, Minnesota Lakes Association; Dick Nelson, Minnesota Sport Fishing Congress; Kevin Kretsch, Tom Gertz and Don Pennings, Minnesota Aquatic Management Society; Terry Ambroz, Minnesota Pesticide Information and Education Organization; Jim Konrad, Division of Enforcement; Ron Anderson, Division of Waters; Dirk Peterson, Terry Ebinger, and Mike Halverson, Section of Fisheries; Tom Landwehr, Section of Wildlife; Howard Krosch, Steve Enger, and Dave Wright, Ecological Services Section; Bruce Hawkinson of Ecological Services Section, Facilitator; Kathy Lewis, Attorney, Division of Minerals.

The group met four times between December 14, 1994 and March 1, 1995 to review the existing rule and suggest changes. The following is a synopsis of the highlights of those the meetings:

Several members of the group suggested that the name of the rule should be changed from "Aquatic Nuisance Control" to "Aquatic Plant Management and Aquatic Nuisance Control". The reason expressed this change was to raise public perception of the importance of aquatic plants to the aquatic environment. (from a nuisance (weeds) to an important component of the aquatic environment.)

6280.0100 Definitions (Scope).

- 1.) The MN Pesticide Information and Education Organization, and Minnesota Power

were concerned that the rule could be interpreted to include rights-of-way pest control near public waters. Their position is that language should be added to the rule specifically excluding rights-of-way work from these regulations. DNR representatives were unaware of any past permits issued for right-of-way work. The DNR does not require a permit for pest control above the ordinary high water level of public waters. However, under the current rules, if right-of-way pest control includes the destruction of aquatic vegetation below the ordinary high water level of public waters (as defined by the rule), then a permit is required. This issue has been referred to the Attorney General for interpretation/advice.

2.) Several members of the group felt that a definition of **aquatic plant management** was necessary. The suggested language is found in the draft rule on page 1.

3.) Several of the other definitions were discussed. Some, like the definitions of "label" or "pesticide", are defined in statute so the proper citation is all that is required.

6280.0200 Aquatic Plant Management and Aquatic Nuisance control permits.

Subp. 1. At a side meeting, the issue of who could apply for permit was discussed. The present language may be too limiting because some people requiring a permit may not be able to apply (e.g. right-of-way herbicide applications below the ordinary high water level, the applicant would be the company maintaining the right-of-way, not the property owner). This issue has been referred to the Attorney General's Office.

Subp. 4. Deadline for permit application. This subpart establishes the deadline for applying for a permit as 1 August, but consideration after that date is allowed if justification is provided. The rationale for the provision is that aquatic plants are senescent at this time and it makes little sense to apply herbicides to dying vegetation, the recreation season is nearly over and any benefit received from these

late applications is short lived. Commercial aquatic pesticide applicators feel that with new methods of plant control being developed and some control work taking place in the fall this deadline should be extended. DNR's position is that all applications will be reviewed when they are received, and if a reasonable explanation for doing the work after August 1st is given the permit is generally issued. This provision has worked well in the past. I do not believe this is an issue of major importance.

6280.0300 Prohibited activities. No significant changes suggested.

6280.0400 Standards for issuing permits.

Subp. 5. A. This subpart places limits on the size of the control area. Commercial applicators feel it is unfair that 50% of the littoral area may be harvested while only 15% of the littoral area of a public water may be treated with herbicide. They believe that the use of herbicides is no more detrimental to the environment than harvesting. DNR's position is that harvested vegetation is removed from the lake; it is not left to decompose and consume dissolved oxygen; harvesting is less efficient, plants are not killed down to the sediment surface and they usually re-grow in the same season; the substrate surface is not left open for an invasive nuisance species to become established. There is public sentiment that herbicides should not be allowed to control aquatic vegetation. Harvesting is preferred by DNR and the additional area allowed is a small incentive.

In addition to the limitation on littoral area allowed for treatment in a lake, the commercial applicators also object to restricting the control to a maximum of 100 shoreline feet per property as well. The DNR's position is that 100 feet is more than adequate, perhaps even excessive in some instances, for nearly all types of recreation. The applicators are also concerned about adherence to the 100' limit when it results in small "skips" between properties they believe this may impair the effectiveness of control in the treated area.

APM staff initially suggested to add language which would exclude exotic species control from the 15% littoral area restriction, but later withdrew that suggestion because exotic species are regulated by statute and will be regulated by a rule which is currently under development. The designation of exotic species and the definition of terms is still uncertain and to attempt to address these issues in the APM rule is premature. Discussions of this issue with exotic species program staff indicated that they would like this suggestion withdrawn as well. Commercial aquatic applicators wanted the language to remain.

Subp. 5, A. (2). This section has been referred to as the grandfather clause. Aquatic plant management specialists feel that this should be stricken as it applies to only a few lakes. Commercial applicators feel that on those few lakes where this applies the vegetation problem merits the continued control of more than 15% of the littoral area to provide the home owners access and recreation. Since the permits in question were prior to 1976, it was suggested that the grandfather clause language specifically state that it only applies to those permits.

6280.0500 Permit fees.

There was much debate over permit fees, especially eliminating the \$200.00 ceiling on permit fees. The DNR position is that the rule should accurately reflect statute. Since the permit fee for chemical control was set in statute by the 1993 legislature (\$20.00 maximum, per property, for herbicide control of vegetation) the appropriate statutory citation is all that is required. The DNR is requesting that the \$200.00 ceiling be removed from statute.

6280.0600 Approval of pesticides and methods...

Subpart 1. Most of the discussion here was centered around being consistent with the use of terms ie. "chemical" should be replaced with "pesticide" in all cases.

Where the Department of Agriculture has authority DNR must work or consult with MDA.

Subpart 2. The main point of discussion was to ensure that any additional restrictions that the DNR wishes to impose are consistent with state and federal law. DNR agreed to add language "the DNR in consultation with MDA may require water use restrictions in addition to those on the product label". MDA has agreed to work with the DNR to address this concern.

6280.0700 Commercial applicators and operators.

Subpart 1. It was suggested that the reference to an endorsement on aquatic pesticide applicators licenses be eliminated because the endorsement is not provided for in statute. The rule should reference the MDA revocation process.

Subp. 2. Non-chemical operators, should be referred to as commercial aquatic plant harvesters.

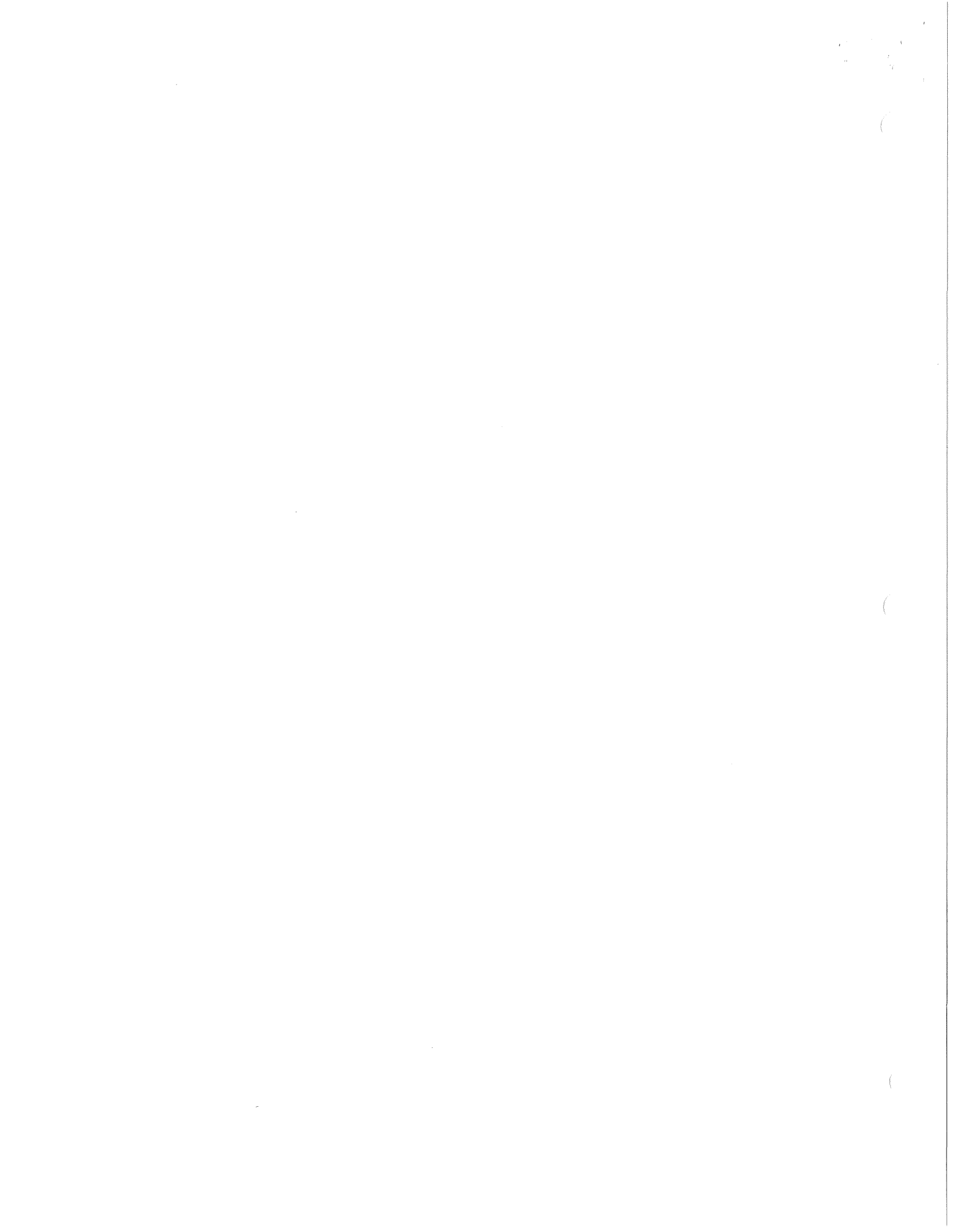
6280.0800 Annual reports. No significant changes suggested.

6280.0900 Revocation. Should also provide for amendment of permits in this part.

Again remove this language which refers to the revocation of aquatic pest control applicators license DNR endorsement and cite the MDA process of revocation or suspension.

6280.1000 Variance. No significant changes suggested.

6280.1100 Appeal of permit determination. No significant changes suggested.



Office Memorandum

Department: of Finance

Date: December 18, 1995

To: Kathy Lewis, Mineral Leasing Manager
Department of Natural Resources

From: Michelle Harper *MH*
Budget Operations

Phone: 296-7838

Subject: Departmental Earnings Rate Change Response-Aquatic Nuisance Control Field Inspection Fee



Pursuant to provisions of M.S. 16A.1285, the Department of Finance has reviewed and approved the attached departmental earnings proposal submitted by the Department of Natural Resources on 12/6/95. If you have any questions or concerns, please call me at the above number.

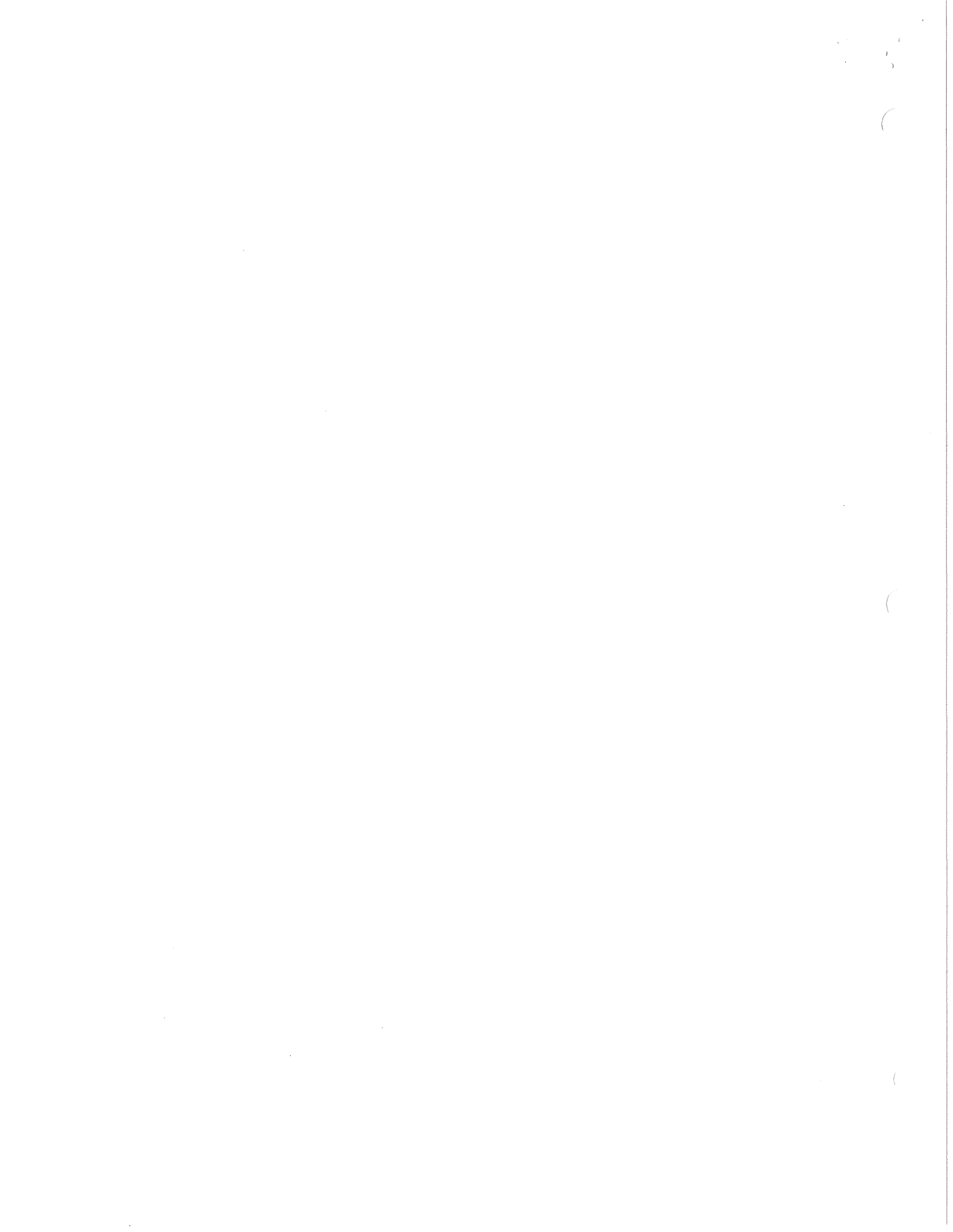
cc Bruce Reddemann
Lyle Mueller

Department of Finance
Departmental Earnings: Reporting/Approval

Additional materials received 12/6/95 prior to final review.

Part A: Explanation

Earnings Title: Aquatic nuisance control field inspection fee.	Statutory Authority: M.S. 103G.615	Date: Nov. 9, 1995
Brief Description of Item: Remove fee for inspection, supervision and monitoring of aquatic plant control activities provided for in MN Rule Chapter 6280, part 0500, subp. 2 (see attached) from the rules.		
Earnings Type (check one): 1. <input checked="" type="checkbox"/> Service/User 2. <input type="checkbox"/> Business/Industry Regulating 3. <input type="checkbox"/> Occupational Licensure 4. <input type="checkbox"/> Special Tax/Assessment 5. <input type="checkbox"/> Other (specify):		
Submission Purpose (check one): 1. <input checked="" type="checkbox"/> Chap. 14 Review and Comment 2. <input type="checkbox"/> Approval of Allowable Inflationary Adjustment 3. <input type="checkbox"/> Reporting of Agency Initiated Change in Departmental Earnings Rate 4. <input type="checkbox"/> Other (specify):		
If reporting an agency initiated action (option 3 above), does agency have explicit authority to retain and spend receipts? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, cite pertinent statutes:		
Impact of Proposed Change (change in unit rate, number of payees impacted, etc.): The commissioner will continue to require permit application fees as provided for in 6280.0500, subpart 1. Although the commissioner has the authority to impose fees for inspection and monitoring of aquatic plant management activities these fees have not been charged. There is no fiscal impact from the proposed change. The goal of the aquatic plant management program is to protect the aquatic resource and public safety while allowing riparian owners to control aquatic vegetation to obtain access and use of the public water adjacent their property. Permit fees were reduced by the legislature in 1994 in response to a request from the Minnesota Lakes Association. The DNR believed that this reduction would encourage greater participation in the program. Typical fees before this reduction were \$40 to \$60.00 dollars for the individual riparian property owner. It was believed that the high permit fees were a disincentive to apply for permit and as a consequence a considerable amount of control work was being done without permit. The department believes that the imposition of the inspection fee would further encourage non-compliance and have an adverse impact on public safety and Minnesota lakes. For this reason the inspection fee has not been imposed and the department recommends removing the language from the rules.		



Department of Finance

Departmental Earnings: Reporting/Approval (Cont.)

(\$1,000,000 = 1,000)

Part B: Fiscal Detail

Game & Fish Fund

APID: Fund 230; Org. 0000		AID: NA		Rev. Code(s): NA		___ Dedicated ___ Non-Dedicated ___ Both	
Item	F.Y. 1991 Revenues:	F.Y. 1992	F.Y. 1993	F.Y. 1994 As Shown in Biennial Budget	F.Y. 1995 As Shown in Biennial Budget	F.Y. 1994 As Currently Proposed	F.Y. 1995 As Currently Proposed
Inspection Fee	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Expenditures: An estimate of 1994 program expenses is attached, however the amount spent on inspections alone is unknown.						
Direct							
Indirect							
Total	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Current Deficit/Excess							
Accumulated Excess/Deficit*							

Departmental Earnings: Reporting/Approval (Cont.)

(\$1,000,000 = 1,000)

As necessary, attach detailed schedule/listing of proposed changes in departmental earnings rates.

Agency Signature:

[Handwritten Signature]

* F.Y. 1991 beginning accumulated balance to include amount of accumulated excess/deficit (if any) carried forward from F.Y. 1990.

EBO Comments

The inspection fee referred to here is a fee for the inspection, supervision or monitoring of aquatic nuisance control programs.

Statute specifies the amount of the fee for a permit to harvest or destroy aquatic plants. Further, statute directs the commission to adopt rules for the standards under which it is necessary to issue (or deny) such permits.

A fee for inspection was originally established in rule, and not referred in statute.

Although this form does not show FY96-97 or outyears FY98-99 revenues ~~have~~ ^{will} all be zero. The inspection fee has never been implemented or collected, and the current proposal is to remove it from rule.

Since no revenue has ever been collected for the inspection fee, no revenues ^{or estimates} were included in the biennial budget or departmental earnings report.

Recommendation: Approve DNR's request.

*Lyle P. Mueller
Budget Officer*

Estimated Aquatic Plant Management Program Expenses (salaries include fringe) by DNR region in 1994.

Region	Personel involved in APM Program¹	Amount of Salary Coded to APM activities (Game and Fish Account)	Overhead: Fleet, Postage, in-state travel, equipment, incidental salaries, other
I	1 NR Spec. 7 (includes regional manager and clerical)	\$41,000	\$7,000
II	Area Supervisors Perform APM Duties		
III	1 NR Spec. 7 1 NR Tech. 1 Clerk Typist 2	\$47,000 \$35,000 \$16,000	\$22,500
IV	Area Supervisors Perform APM Duties		
V	Area Supervisors Performs APM Duties		
VI	1 NR Spec. 7 1 NR Spec. 5	\$35,000 \$31,000	\$6,700
Eco. Services	1 Program Supervisor	\$22,000	\$6,000
	Total Program Expenses	\$227,000²	\$42,200

¹ Only those regions which receive numerous requests for aquatic plant control permits have designated people to administer the program. These personel may also perform other functions at the request of the Regional Fisheries Manager. Regions II, IV and V handle few permits by comparision and Area Fisheries Supervisors administer those permits. Program expenses include: office space and supplies, telephone, fleet (vehicle), equipment and in-state travel.

² In FY94 a total of \$223,180 in salary expense, directly attributable to the aquatic plant management permit program, was incurred by staff; Section of Fisheries \$177,808; Ecological Services \$45,372.

