STATE OF MINNESOTA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FISH AND WILDLIFE

IN THE MATTER OF PROPOSED ADOPTION OF

EXOTIC SPECIES RULES

MINNESOTA RULES, PARTS 6216.0100 TO 6216.0600

STATEMENT OF NEED AND REASONABLENESS

October 10, 1997

I. INTRODUCTION

Purpose

The primary purpose of the exotic species rules is to preserve and protect native species and communities of wild animals and aquatic plants, ensuring continued recreational opportunities and other uses of the natural resources of the state. Another purpose of the rules is to provide a public process for designating infested waters and classifying and designating exotic species of aquatic plants and wild animals.

Scope

The proposed rules, and amendments to existing rules, cover:

1) designation of infested waters, prohibited exotic species, regulated exotic species, and unregulated exotic species;

2) the conditions and procedures for the issuance of permits for the propagation, possession, importation, purchase, or transport of a prohibited exotic species for the purposes of disposal, control, research or education;

3) the conditions and procedures for the issuance of permits for the introduction of a regulated exotic species;

4) a process for the commissioner's review of introductions of unlisted exotic species and designation to appropriate classification;

5) restricted activities on infested waters;

6) the notification procedure requirements for persons that allow or cause the unauthorized introduction of an animal that is prohibited, regulated, or unlisted exotic species;

7) designations of limited infestations of Eurasian water milfoil, and conditions and procedures for marking and use of waterbodies with limited infestations of Eurasian water milfoil;

8)conditions and procedures for the appropriation, use, and transportation of water from infested waters.

The state is amending and proposing rules pertaining to harmful exotic species because they are current and potential threats to the state's natural resources. The reason that these rules are needed is because increasing numbers of harmful exotic species are being introduced and dispersed in the state through a variety of sources and means, and current state laws are not adequate to address many of the pathways of spread. The Minnesota Legislature gave the Department of Natural Resources (Department) the responsibility and authority to adopt rules regarding exotic species and infested waters.

The risk from several likely pathways of spread will be eliminated through the adoption of these rules. By developing these rules, it is hoped that the spread of harmful exotic species, such as Eurasian water milfoil, zebra mussels, and ruffe, can be minimized to avoid their distribution throughout Minnesota. Ecosystems, native species, industry, tourism, and recreation will benefit from the adoption and enforcement of these rules.

Harmful Exotic Species

The term "harmful exotic species" represents a large set of species that would not naturally be found in Minnesota. They are defined in Minnesota Statutes, section 84D.01 to mean "exotic species that can naturalize and either:

(1) causes or may cause displacement of, or otherwise threaten, native species in their natural communities; or

(2) threatens or may threaten natural resources or their use in the state."

According to Minnesota Statutes, sections 84D.04 and 84D.12, the commissioner shall use rulemaking to classify exotic species according to the following categories:

(1) prohibited exotic species, which may not be possessed, imported, purchased, sold, propagated, transported, or introduced (except as provided in section 84D.05);

(2) regulated exotic species, which may not be introduced (except as provided in section 84D.07);

(3) unlisted exotic species, which are subject to the classification procedure in section 84D.06; and

(4) unregulated exotic species, which are not subject to regulation under this chapter.

Pursuant to Minnesota Statutes, section 84D.04, subd. 2, the commissioner must consider the following criteria in classifying an exotic species:

(1) the likelihood of introduction of the species if it is allowed to enter or exist in the state;

(2) the likelihood that the species would naturalize in the state were it introduced;

(3) the magnitude of potential adverse impacts of the species on native species and on outdoor recreation, commercial fishing, and other uses of natural resources in the state;

(4) the ability to eradicate or control the spread of the species once it is introduced in the state; and

(5) other criteria the commissioner deems appropriate.

The following description and Table 1 (see page 5) explain the implications of a species being classified and designated:

1. *Prohibited* exotic species cause the highest concern because they are the most likely to be introduced, naturalize, and be harmful to the state's natural resources or their use.

2. Species designated as *regulated* exotic species have less chance of unintentional introduction, or ability to naturalize, and are less of a known or predicted threat to the state's resources and their use. *Regulated* exotic species may be possessed, transported, and sold, but may not be introduced into a free-living state except as allowed by these proposed rules.

3. An exotic species designated as *unregulated* has one or more of the following characteristics:

a. It is considered to be of minimal or no threat to the state's resources;

b. It is naturalized and so widely distributed that regulating it would be of minimal benefit;

c. It is exempt from the rules because it is a bird or mammal designated as livestock in statute or otherwise exempt according to statute;

d. It is a domestic, marine, tropical, or other similar species that is unlikely to naturalize in the state; or

e. It has been possessed in captivity in the state and other comparable locations and have not shown the ability to escape.

Table 1. Explanation of restrictions on exotic species according to classifications established in statutes.

Regulatory Classification	Transportation	Importation, Sale, Possession, Propagation	Introduction into a free living state	Response to unauthorized introductions (escapes)
Prohibited (current examples: Eurasian water milfoil, ruffe, and zebra mussel examples of proposed species: zander and Brazilian elodea)	Prohibited - except for research, disposal as part of control activities, or when transporting to DNR to report the presence of a species.	Prohibited - except under permit for disposal, control, research, or education.	Prohibited	For escaped animals, the individual must notify DNR within 48 hours with the information required in Minn. Rule, Ch. 6216 and is responsible for cost of capture.
Regulated (examples of proposed species: smelt and Sichuan pheasant)	Not prohibited by designation.	Not prohibited by designation.	Prohibited - unless excepted by rule, or under DNR permit (per Minn. Stat., sec. 84D.07).	For escaped animals, the individual must notify DNR within 48 hours with the information required in Minn. Rule, Ch. 6216 and is responsible for costs of capture if permit conditions were violated.
Unlisted (any exotic species that is not listed as prohibited, regulated or unregulated)	Not prohibited by designation.	Not prohibited by designation.	Prohibited - unless reviewed and permit issued (per Minn. Stat., sec.84D.06) or after review the DNR designates the species as unregulated.	For escaped animals, the individual must notify DNR within 48 hours with the information required in Minn. Rule, Ch. 6216.
Unregulated Species assigned to this category will most likely be very abundant and therefore not controllable through regulations, they will not be considered to be harmful, or are exempt from the rules for other reasons. (examples of proposed species: ring-necked pheasant and starling)	Not prohibited by designation. (These species are not subject to regulation under Minn. Stat., Ch. 84D, although they may be regulated through other laws.)	Not prohibited by designation. (These species are not subject to regulation under Minn. Stat., Ch. 84D, although they may be regulated through other laws.)	Not prohibited by designation. (These species are not subject to regulation under Minn. Stat., Ch. 84D, although they may be regulated through other laws.)	No requirements.

The problems created by harmful exotic species are significant and have been increasing in Minnesota[1] , the nation[2] , and the world[3] in recent years. There are many harmful exotic species present in the state. Of those already here, 39 have been identified as posing a severe future threat and 42 as posing a moderate future threat. Also, at least 27 species not yet present in Minnesota have been identified as potential threats. Recent introductions in Minnesota include: ruffe (1985), Eurasian water milfoil (1986), spiny water flea (1988), zebra mussels (1990), and the round goby (1995).

Human actions, both intentional and accidental, are the primary source of introductions and spread of harmful exotic species. Foreign plants and animals are infiltrating and changing the ecological balance of the state's natural areas and aquatic ecosystems in locations such as local, state, and federal parks, wildlife areas, and wildlife refuges. They threaten the integrity of Minnesota's lakes, streams, and natural areas. They also threaten industrial, municipal, and other water systems, as well as water recreation and tourism.

The current federal framework is a patchwork of programs and regulations that is not adequate to protect the nation and the state from the introduction and spread of harmful exotic species. Without a comprehensive federal program, with no clear national policy, states are left to develop their own regulations and management plans.

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1 Minnesota Interagency Exotic Species Task Force. 1991. Report and Recommendations of the Minnesota Interagency Exotic Species Task Force.

2 U.S. Congress, Office of Technology Assessment. 1993. Harmful Nonindigenous Species in the United States.

3 Vitousek, P.M., C.M. D'Antonio, L.L. Loope, and R. Westbrooks. 1996. Biological Invasions as Global Environmental Change. American Scientist 84:468-478.

The State of Minnesota has recognized the importance of addressing the issue. It has established a state program and the Minnesota State Legislature passed several statutes to help minimize the introduction and spread of harmful exotic species. Rulemaking authority was given to the Department of Natural Resources to address many of the specifics needed to adequately combat the pathways of spread of ecologically harmful exotic species, designation and notification of infested waters, designation of exotic species, and other issues are not specifically addressed by statutes.

The first state laws regarding harmful exotic species were passed by the Minnesota Legislature in 1987 and pertained to purple loosestrife an exotic plant.[4] In 1989, legislation [5] established an Interagency Exotic Species Task Force to review the issue of harmful exotic species, rank the existing and potential exotic species threats, and make recommendations to the state legislature. That report [6] was submitted in 1991 and was the basis for new legislation that year. The Department was mandated to establish a statewide coordinating program to curb the spread of ecologically harmful exotic wild animal and aquatic plant species.[7] The Department was also given rulemaking authority to restrict the introduction, propagation, use, possession, and spread of ecologically harmful exotic species in the state.[8] The Department was also mandated to adopt rules to identify bodies of water with limited infestations of Eurasian water milfoil, where such infestations are to be

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[4] Minn. Stat., sec. 84.966.

[5] Laws of MN 1989, Ch 335, Art. 1, Sec. 268.

[6] Minnesota Interagency Task Force, Report and Recommendations of the Minnesota Interagency Exotic Species Task Force, 1991.

[7] Minn. Stat., sec. 84.968 - .969.

[8] Minn. Stat., sec. 84.9691 (a).

marked, and where general public use of marked areas is prohibited.[9]

In 1992, state legislation made the transport of zebra mussels on a public road a misdemeanor.[10] Civil penalties were established in 1993 for transporting Eurasian water milfoil, zebra mussels, ruffe and other undesirable exotic species on public roads.[11]

In 1996, permanent rules were adopted to designate prohibited exotic species; establish a process for the notice and marking of infested waters and limited infestations of Eurasian water milfoil; restrict activities on infested waters; and restrict transportation and appropriation of infested waters.[12] The 1996 Minnesota Legislature revised, expanded, and consolidated the statutes regarding harmful exotic species into Minnesota Statutes, chapter 84D. Included in the new chapter is the mandate for the Department to establish rules:[13]

(1) designating prohibited, regulated, and unregulated exotic species;

(2) governing the application for and issuance of permits under this chapter,;

(3) governing notification in the event of the unauthorized release or escape of exotic species; and

(4) designating, and governing the marking and use of, limited infestations of Eurasian water milfoil. (Since 1996, expedited emergancy rules have been used to designate infested waters using the authority in Minnesota Statutes, section 84D.12, subd. 3.)

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[9] Minn. Stat., sec. 84.9691 (b).

[10] Minn. Stat., sec. 18.317.

[11] Minn. Stat., sec. 84.9692.

[11] Minn. Rules, parts 6216.0100 to 6216.0600

[13] Minn. Stat., sec. 84D.12, subd. 1.

Notification to Persons and Classes of Persons Affected by the Proposed Rules

A request for comments was published in the State Register on June 24, 1996. This request described the specific areas to be covered by the proposed rules, the statutory authority for the rules, and the parties that could be affected by the rules.

The Department also provided additional notice to people who may be affected by the rules by sending them the request for comments. (The additional notice was summarized in a notice plan that was approved by the Office of Administrative Hearings on June 6, 1996.)

Organizations and individuals contacted under the notice plan included:
a) organizations representing private and commercial riparian owners in the state, such as the Minnesota Lakes Association and Minnesota Resort Association, because they have historically been very concerned with the spread of harmful exotic species and the new rules will affect the spread of harmful exotic species to inland waters in the state;
b) angling groups, such as the Minnesota Sportfishing Congress, which may be affected by rules that regulate the transport of watercraft, equipment, and bait from one lake to another;
c) educational institutions, such as the University of Minnesota and the Natural Resources Research Institute, that have historically conducted research on exotic species, whose research would be affected by the permit requirements to possess prohibited exotic species for research purposes;
d) organizations representing industries that conduct portions of their operations in waters of the state, such as the Minnesota Live Bait Association, Minnesota Aquaculture Association, Minnesota North Shore Commercial Fish Association, and Interstate Commercial Fish Association, since they will be affected by rules regarding use and transportation of water from infested waters;
e) zoos, game farms, and shooting preserves, because they will be affected by designations of prohibited, regulated, and unregulated exotic species and related

permit requirements;
f) organizations representing the horticulture, aquarium, and pet industries, such as the Minnesota Nursery and Landscape Association and the Minnesota Aquarium Society, which would be affected by the sale of species designated as prohibited exotic species, regulated exotic species, or unregulated exotic species; and
g) conservation and environmental groups, such as the Nature Conservancy, Sierra Club, and Audubon Society, because these organizations have interest in protecting native species and natural communities from harmful exotic species.

Only a few responses were received following the request for comments. A few parties requested copies of the draft rule when it became available. The only letter of comment, received from a lake association, recommended that the Department establish tight controls on exotic species, with few if any exceptions (see Exhibit 1). The letter stated that in addition to public education, rules and enforcement are an important tool in keeping harmful exotic species at bay.

Additional notice on the proposed rules will be provided to persons or classes of persons who could be affected. The Department's notice plan involves sending a notice of intent to adopt rules with or without a public hearing and a copy of the rules to all of the previously mentioned groups. News releases that detail the major parts of the rules will be released statewide to coincide as closely as possible with publication of the dual notice of intent to adopt rules.

Alternative Format

Upon request, this Statement of Need and Reasonableness can be made available in an alternative format, such as large print, Braille, or cassette tape. To make a request, contact Jay Rendall at Minnesota Department of Natural Resources, 500 Lafayette Rd., St. Paul, MN 55155-4020; phone 612-297-1464, Fax 612-297-7272. TTY users may contact the Department of Natural Resources at 1-800-657-3929.

Exhibit 1. Letter of comment received regarding proposed rulemaking.

II. STATUTORY AUTHORITY

Statutory authority for the various provisions of the amended and proposed rules is set forth in Minnesota Statutes, sec. 84D.12 (see Appendix A for complete language of statutes). The authority for each part of the rules is listed below:

Rules Part	Subject	Minnesota Statutes, section
6216.0100:	Purpose	84D.12
6216.0200:	Definitions	84D.12
6216.0250:	Prohibited Exotic Species	84D.12, subd. 1 (1)
6216.0260:	Regulated Exotic Species	84D.12, subd. 1 (1)
6216.0265:	Permits	84D.07 and 84D.12, subd. 1 (2)
6216.0270:	Unregulated Exotic Species	84D.12, subd. 1 (1)
6216.0280:	Escapes of Exotic Species	84D.12, subd. 1 (3)
6216.0290:	Review of Unlisted Species	84D.12, subd. 2 (1)
6216.0300:	Limited Infestations	84D.12, subd. 1 (4)
6216.0350:	Designated Infested Waters	84D.12, subd. 2 (2)
6216.0400:	Restricted Activities On Infested Waters	84D.12, subd. 1 (4) and subd. 2 (2)
6216.0500	Transport of Infested Water	84D.12, subd. 2 (2)
6216.0600	Violations; Confiscations	84D.12, subd. 1 (1) and subd. 2 (1)

The 1996 legislation enacting Minn. Stat., Sec. 84D.12 became effective May 1, 1996. In accordance with Minn. Stat., Sec. 17.125, the agency is required to publish notice of intent to adopt rules covering harmful exotic species within 18 months of May 1, 1996.

III. REGULATORY ANALYSIS

A. Description of the Classes of Persons Affected by the Proposed Rules

The rules may affect aquatic plant harvesters, boaters, anglers and other water recreationists that boat on, or remove boats and related equipment from, waters infested with harmful exotic species. Individuals and businesses that harvest bait and commercial fishing operators who work in infested waters may be affected. Lake associations, riparian owners, or others who desire to divert water from waters with populations of harmful exotic species for purposes of managing water levels may be affected. Irrigators, businesses, industries, and government agencies who desire to take or transport water from infested waters for uses such as fire suppression, agriculture, watering roadside plantings, and transporting live fish may be affected.

Businesses, zoos, pet stores, the aquarium trade, private aquaculture, horticultural interests, biological supply houses, individuals, and other parties who possess, import, purchase, sell, propagate, transport, or introduce exotic species would likely be affected by the designation of species as prohibited exotic species. Research and educational institutions that desire to conduct research on prohibited exotic species will be affected by the designation of prohibited exotic species and related permitting requirements and procedures. Parties who transport aquatic prohibited exotic species as part of harvest or control activities may be affected.

Businesses, game farm licensees and their customers, shooting preserves, zoos, pet stores, bird rehabilitation organizations, organizers of exotic animal sales and their participants, individuals, and other parties that possess or intend to introduce exotic species of wild animals in the state may be affected by the designation of species as regulated exotic species or as unregulated exotic species. Horticultural interests, their customers, and others who buy, sell, transport, or introduce exotic species of aquatic plants into a free-living state will be affected by

these designations as well.

Parties possessing exotic species of wild animals will likely be affected by notification provisions to be established for release or escape of exotic species into a free-living state. Businesses and individuals dealing with private aquaculture will likely be affected by designation of exotic species into the prohibited, regulated, and unregulated exotic species classifications. Individuals, businesses, groups, or any other parties whose actions are identified in the future as pathways of introduction and spread of harmful exotic species will likely be affected.

Classes of persons who will bear the costs of this proposed rule

Persons possessing, importing, propagating, or selling exotic species that are now proposed to be designated as prohibited exotic species may experience financial losses if they had intended to sell those species. Person possessing, importing, propagating, or selling species proposed for unregulated exotic species designation should not be impacted financially.

Persons who notify the Department of a request to introduce unlisted exotic species into a free-living state will incur costs to gather the information required to complete an application.

Persons possessing prohibited or regulated exotic animal species which escape or are otherwise introduced into the wild are responsible for the costs of recapturing the animals or responsible for costs incurred by the Department to capture or destroy the animals. These responsibilities for the costs incurred are established by Minn. Stat., sec. 84D.08.

B. Probable Costs to the Agency or Other Agencies from the Proposed Rules and Effect on State revenues

The amended and proposed rules will not result in additional costs to other agencies, however they will require additional costs to the Department for implementation and enforcement of this proposed rule.

Costs of implementation related to the designation of infested waters are posting notice of infested waters and conducting watercraft inspections at water accesses on infested waters. These waters are already posted and inspections are ongoing because the waters were designated previously through expedited rules. Signing costs between $500 and $1000 per year to replace signs at infested waters and to post new signs at newly designated waters. These costs will not be significantly affected by these rules. The number of hours that the department is required to conduct watercraft inspections are established in statute so the level of the inspection effort will not be affected by the rules. Costs of enforcing the rules at infested waters will be an ongoing responsibility of the Department's Division of Enforcement. These rules do not establish the enforcement responsibility, they establish whether waters of the state are infested or not.

Review of unlisted exotic species prior to introduction into the wild will require Department staff time to evaluate supplied information and determine if the department should approve the proposed introduction. It is difficult to know how many such requests will be made to the Department. It is anticipated that requests will be limited and that current Department staff will be able to conduct the reviews.

Review of requests for prohibited exotic species permits for allowed purposes and applications for regulated exotic species introductions will also require Department staff time to evaluate the information in permit requests. It is

anticipated that requests will be limited and that current Department staff will be able to review permit applications and issue appropriate permits without additional staff or funds. The permitting process may require redirection of staff time within the Department's Exotic Species Program.

There are no significant positive or negative anticipated direct impacts on state revenues as a result of these rules. It is hoped that implementation of these rules will help prevent introduction and spread of harmful exotic species that could cause long-term harm to the states resources, reducing their attractiveness for outdoor recreation and other uses.

C. Determination of Less Costly or Less Intrusive Methods for Achieving the Purpose of the Proposed Rules

The department considered whether or not permit fees should be required with applications for prohibited or regulated exotic species permits. It was determined that it would be less intrusive and less costly not to require permit fees for those permits because it would not raise significant funds and in most cases permits for prohibited exotic species would be for control and scientific purposes from which the state and public would be benefiting.

Classification and designation of exotic species as prohibited exotic species, regulated exotic species, and unregulated exotic species is required by statute. A less intrusive approach would be to classify and designate less species or designate them as a lesser classification. However, that approach would conflict with the use of the criteria established in statute by which the commissioner is required to classify the species. That approach would also result in higher risk to the state's natural resources.

The proposed rules require that the applicant supply basic information needed to determine whether a permit should be issued to possess prohibited exotic species or introduce regulated exotic species. An alternative would be to require less

information from the applicant and have the Department seek more of the scientific based information itself. This alternative was rejected based on the recommendations of the Minnesota Interagency Exotic Species Task Force which recommended that, "the cost and responsibility for certifying that a potential introduction would not be ecologically harmful should be borne by the importer or breeder."[14]

Another less intrusive option for establishing the permit processes for prohibited exotic species in part 6216.0265 would be elimination of the Department's inspection of facilities prior to or after issuance of a permit. This was rejected because it is an essential part of the permitting process used to verify that the harmful exotic species are not likely to escape or otherwise be introduced by the applicant. It is easier to prevent an introduction rather that handle the costs and issues that arise after introduction.

D. Description of Alternate Methods for Achieving the Purpose of the Proposed Rules

The commissioner is required to designate prohibited, regulated, and unregulated exotic species according to Minn. Stat., sec. 84D.12 subd. 1, through the rulemaking process. An alternative method of using expedited emergency rules to designated exotic species was considered, but was not selected at this time because expedited emergency rules are only effective for 18 months. Also, the Department's permanent rulemaking authority to designate exotic species would expire under Minn. Stat., sec. 14.125 if the department did not initiate permanent rulemaking to designate species under the statutory mandate in Minn. Stat., sec. 84D.12, subd. 1.

There were two alternatives available for selecting the species proposed for designation: 1) leave them as "unlisted exotic species"; or 2) review information

14 The Minnesota Interagency Exotic Species Task Force. 1991. Report and Recommendations of the Minnesota Interagency Exotic Species Task Force.

about the species and select an appropriate classification for designation. Both alternatives were used. The "no action" alternative of not classifying species was considered and chosen for many currently "unlisted" exotic species until additional information can be gathered by the Department in order to determine the appropriate classification. Using the "no action" alternative would result in a similar result for the species proposed as regulated exotic species, however it would result in a much different result for species that should be prohibited exotic species or unregulated exotic species. Designation of species as unregulated exotic species will declare those species as unregulated by these rules and Minn. Stat. 84D, and will establish their classification as a "listed" species. The alternative of proposing the designations in this rule will result in a more comprehensive list of species that are classified and will make it clearer to the public what the regulations are for the listed species. This second alternative was choosen for these species because the purpose of the classification system is to develop increasingly comprehensive lists of species in the classifications established by statute.

The Department considered other alternatives regarding public comment periods for the proposed introduction of unlisted exotic species. The Department could: always allow public comment periods, never allow public comment periods, or consider the information provided in the application and then determine if a public comment period should be allowed. The alternative of never allowing any public comment period would be counter to established recommendations regarding proposed introductions that encourage public involvement. The option of always requiring a public comment period would be more preferable, but may not be necessary and would lengthen the response time to applicants if the department can promptly determine that the classification of an unlisted exotic species should be prohibited and therefore an introduction should not be allowed in the state because of potential risk of harm to the state's natural resources or their use in the state.

State statutes require the Department to designate infested waters.

Alternatives available to the Department to designate infested waters are expedited emergency rules and permanent rules. These following factors were considered to determine the best alternative: once waters are infested it is unlikely they will later become uninfested; the permanent rulemaking process will afford public review of these designations; and the term of expedited emergency rules is limited to 18 months. The department believes the best alternative is to designate infested waters in permanent rule, and at later dates either add or delete infested waters through expedited emergency rule.

An alternative was considered for the proposed changes regarding the requirements on aquatic farm or private hatcheries in artificaial water basins with populations of prohibited or regulated exotic species. The proposed alternative requires the Department to determine in an artificial water basin has populations of a prohibited or regulated exotic species and notify the licensee. An alternative that was rejected was to require the licensee to determine if populations of the prohibited or regulated exotic species are present in the artificial basins and follow the requirements in the rules to dry or freeze nets and other equipment before they are used in noninfested waters. The selected option places the burden of identifcation of the species and notifying the licensee of the infestations on the Department.

E. Probable Costs of Complying with the Proposed Rules

The proposed designations of exotic species will establish the degree to which exotic species are regulated and unregulated. Designation of a species as prohibited could mean the loss of value to an owner if the species were possessed for sale or propagation of others for sale. Alternatively, the designation of some species as unregulated may enhance the purchase of some species for ornamental or pet use and maintain income of those selling the species.

Establishment of the permit requirements for prohibited and regulated exotic species will result in minimal increased costs to the public. There are no permit

fees, although the process of preparing the permit application and preparing facilities to confine prohibited exotic species may result in some new costs to comply with the rules. Those conducting research on prohibited exotic species may incur costs associated with preventative processes to prevent escape or disposal of live specimens. These cost would vary depending upon the individual species.

Applicants who desire to introduce unlisted aquatic plants or wild animals into a free-living state will likely have costs associated with the collection of information to comply with the requirements in this rule. These costs to the applicant are somewhat analogous to the costs required for companies to register new pharmaceutical drugs, pesticides, or genetically engineered organisms that must be analyzed prior to use. The time and costs to gather the information may vary considerable depending upon the availability of information about the species. Some companies may desire to hire a biologist or other individual to gather the information. Costs could range from a minimum of $200 for one day's time to gather information and complete the form to a maximum of several weeks of information gathering and analysis at a cost of approximately $10,000.

The act of designating infested waters should not result in increased costs to the public, although the fact that the waters are infested may result in management costs for riparian owners. That however is a result of the infestation, not a result of the designation. Designation of infested waters should help prevent the spread of the species to other waters and reduce potential costs to riparian owners of other water bodies.

Assessment of Differences between the Proposed Rules and Existing Federal Regulations

The process for review of introductions of unlisted exotic species is not specifically addressed by federal law, although some of the requirements in this rule pertaining to proposed introductions of unlisted exotic species were developed

according to model state guidelines recommended in a federal report to Congress regarding intentional introductions of exotic species[15].

The proposed rules regarding the designation of infested waters, permits for prohibited and regulated exotic species, and the escape of exotic species are not addressed by federal law; therefore, this consideration is not applicable.

G. Regulatory, Licenses, or Other Charges in The Proposed Rules

Minnesota Statutes, section 16A.1285, does not apply because the rules do not set or adjust fees or charges.

H. Proposed Rules Affect on Farming Operations

The rules are not designed to affect farming operations and should not significantly affect farming operations to any extent beyond its affect on others. Regardless of the fact that the rules were not designed to affect farming operations, a copy of the draft rules was sent to the Department of Agriculture on September 26, 1997 for their review.

[15] Aquatic Nuisance Species Task Force. 1994. Findings, Conclusions, and Recommendations of the Intentional Introductions Policy Review. A Report to Congress.

IV. RULE-BY-RULE ANALYSIS

Part 6216.0100 **Purpose.**

This part amends the statutory cite to reflect the changes in law since the rules were adopted in 1996 (The statutory cites are likewise changed throughout the rules.). Also, the amendment reflects the change of no longer using the term "undesirable" and the use of the new terms of "prohibited" and "regulated" exotic species. The amendments also point out that these rules provide a public process for classifying and designating exotic species according to criteria established by statute as well as designating infested waters. It is reasonable and necessary to state the objectives of the proposed rules to provide the reader with a general declaration of their purpose.

Part 6216.0200 **Definitions.**

Subpart 1. **Scope.**

This subpart directs the reader to the definitions found in Minn. Stat., sec. 84D.01 to define terms used in the proposed rules. For terms which are not defined in that statute, this part provides definitions which may not be generally recognized or to which special or scientific meanings are attached. It is reasonable to refer to those terms already defined in statute to avoid repetition in the proposed rules. It is also reasonable and necessary to define terms used in the rules which are not used elsewhere so a specific meaning is understood.

Subpart. 2. **Applicant.**

The term "applicant" is defined as a person who applies for one of several permits mentioned in the proposed rules or a person who requests a determination of the appropriate classification of an unlisted exotic species. It is necessary and reasonable to define this term to clarify its use throughout the rule.

Subpart 3a. **Free-living state.**

It is necessary to define "free-living state" because it is used in the statutory definition of "introduction" and could be interpreted in more than one way if not defined in rule. Under this definition, an animal species would be introduced if it is not in the control of a person or confined by fence or other means. It is reasonable to define free-living state in this way because a species that is not confined or in the control of a person is existing in a free-living state.

Subpart 6. **Introduction.**

It is reasonable to define "introduction" in rule as it is defined in statute and to clarify the limits of the definition. The addition of the clarifying sentence, stating that introduction does not include the immediate return of an exotic species to the waters of the state from which it was removed, allows individuals who catch regulated or unlisted exotic species while angling to have a legal option to return the species to the water. It is clearly reasonable to allow the return of regulated or unlisted exotic species caught while angling or removed from the water in other ways (such as cleaning aquatic plants from a propeller), because it is the same option provided in Minn. Stat., sect. 84D.05, subd. 1 (8) for prohibited exotic species. The return of the exotic species to waters from which it was removed would not likely affect populations that are already established in those waters. This clarification is necessary to avoid technical violations of these rules where an innocent party has removed a regulated species through other activities.

Subpart 7. **Littoral area.**

It is necessary to modify the definition of "littoral area" to be consistent with its definition in the aquatic plant management rules (Minnesota Rules, part 6280.0100, subp. 9). The proposed definition of littoral area as, "any part of a body of water 15 feet or less", has not changed the meaning of the term from the current definition in part 6216.0200. It s reasonable to make this change to avoid different definitions of the same term in rules administered by the department.

Subpart 8. **Person.**

"Person" is defined as in Minnesota Statute, section 645.44, subdivision 7 to include other entities beyond individuals. It is reasonable and necessary to use this definition as it ensures continuity between rules and statutes and clarifies the scope and applicability of the proposed rules.

Part 6216.0230 **Scientific taxonomic nomenclature.**

This part states the source documents for the scientific names and authorities for the names used in the parts 6216.0250, 6216.0260, and 6216.0270. It is necessary to clarify the sources of the scientific taxonomic nomenclature used in the rule because there are often multiple common names and synonyms for scientific names used throughout the world. It is reasonable to include the names of the documents used as the source for the scientific names in the rule to avoid misinterpretation of the rules and the species listed in the rules. Authorities for scientific names of species designated in previously adopted rules are added in the proposed rules to provide consistency and as with the proposed designations are necessary for clarification.

Part 6216.0250 **Prohibited Exotic Species.**

This part lists several additional prohibited exotic species that will be regulated by parts 6216.0265, 6216.0280, and 6216.0500, Subp. 5. of these rules and Minnesota Statutes, Chapter 84D. It is necessary and reasonable to designate the species in part 6216.0250 as prohibited exotic species based on: 1) their likelihood of release or escape if allowed in the state; 2) their likelihood of naturalization if released or escaped; 3) their magnitude of adverse impacts on native species, natural resources, or their use; and 4) the ability to control the species populations and its spread as described in the summary pages for each species. The list of prohibited exotic species is organized by taxonomic group and alphabetically by common name within the taxonomic groups. The summaries for each prohibited exotic species are

arranged in this document in the same order the species are listed in the rule. References, where available, are provided to substantiate the classification of each listed species.

Subpart 1. **Designation.**

The proposed rule designates any hybrids, cultivars, or varieties of the species designated as prohibited exotic species. It is necessary to designate hybrids, cultivars, or varieties of the prohibited species, as well as the species because hybrids, cultivars, or varieties may be very difficult to distinguish from the pure species. This is the case with purple loosestrife which can not be identified, and therefore not regulated, without regulating the entire group of hybrids, cultivars, and varieties. The hybrids, cultivars, and varieties of a prohibited exotic species are likely to be fertile and naturalize in the same way that the prohibited species would, and hybrids, cultivars, or varieties are likely to have the similar detrimental impacts as the pure species. For these reasons it is necessary and reasonable to designate a species that is genetically, either part or all prohibited exotic species, as a prohibited exotic species.

6216.0250 Prohibited Exotic Species, Subp. 2. (Aquatic Plants). Item (A):

COMMON NAME: **African oxygen weed, African Elodea**
SCIENTIFIC NAME: ***Lagarosiphon major*** (Ridley) Moss ex Wagner FAMILY: **Hydrocharitaceae**

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: African oxygen weed is a submersed, rooted, perennial species of aquatic plant which can grow to 6.5m depth (Howard-Williams and Davies 1988). It is native to Africa, and has established populations in New Zealand. It is not known to be present in the United States (Cook, 1985).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

LEGAL STATUS HISTORY: **Federal Noxious Weed List**

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of introduction:	**moderate**
B. Likelihood of naturalization if released or escaped:	**high**
C. Magnitude of potential adverse impacts if it naturalized:	**high**
D. Ability to: a) eradicate	**low**
b) manage naturalized populations:	**moderate**
c) control its spread to new locations:	**moderate**

A. Likelihood of introduction
The likelihood that African oxygen weed might be released or escape into a free-living state if allowed in the state is moderate because although it is illegal to import this plant into the United States, it is abundant in New Zealand lakes where aquarium plants are harvested for export (Clayton, 1997) and so could possibly contaminate imported aquarium plants.

B. Likelihood of naturalization
The likelihood that African oxygen weed might establish a self sustaining population in the wild if it is released or escapes into a free-living state is high because it has established populations in similar climates in New Zealand (Howard-Williams and Davies 1988), and because it can be spread to other water bodies by recreational boat traffic (Howard-Williams & Davies 1988).

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of African oxygen weed is high because once established, this species can form dense monotypic stands and surface mats that displace native plant species (Howard-Williams 1993). In addition, these dense stands have been known to affect commercial hydropower stations in New Zealand (Howard-Williams 1993) and interfere with water-based recreation (Howard-Williams and Davies 1988).

D. Ability to control
The ability to reduce populations of African oxygen weed once naturalized would be moderate because both harvesting and herbicides have been used successfully to control this species (Howard-Williams 1993). The ability to limit spread of African oxygen weed is moderate because like many other undesirable or harmful aquatic plants it can be spread by plant fragments, and because this species is able to quickly establish itself in situations where light is limiting (Rattray et al. 1994).

REFERENCES:

Clayton, J. 1997. New Zealand native plants for use in aquariums and ponds. New Zealand Institute of Water & Atmospheric Research.

HTTP://www.cs.waikato.ac.nz/~trigg/clayton-aquarama.html (September 24,1997).

Cook, C.D.K. 1985. Range Extensions of Aquatic Vascular Plant Species. J. Aquat. Plant Manage. 23:1-6.

Howard-Williams, C. 1993. Plenary Address Process of Aquatic Weed Invasions: The New Zealand Example. J. Aquat. Plant Manage. 31: 17 - 23.

Howard-Williams, C. and J. Davies. 1988. The Invasion of Lake Taupo by the submerged water weed *Lagarosiphon major* and its impact on the native flora. New Zealand J. Ecology. 11:13-19.

Rattray, M.R. , C. Howard-Williams, and J.M.A. Brown. 1993. Rates of early growth or propagules of *Lagarosiphon major* and *Myriophyllum triphyllum* in lakes of differing trophic status. New Zealand J. Marine and Freshwater Research. 28: 235-241.

6216.0250 Prohibited Exotic Species, Subp. 2. (Aquatic Plants). Item (B):

COMMON NAME: **Aquarium watermoss , giant salvinia**
SCIENTIFIC NAME: ***Salvinia molesta*** Mitchell FAMILY: **Salviniaceae**

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: Giant salvinia is a species of floating aquatic moss native to Brazil (Oliver, 1993). Giant salvinia has become established in India, Australia, Africa, and Papua New Guinea, and has been reported in the Caribbean, South America, and Asia (Oliver, 1993). It is unknown if the plant is found in the U.S. at present. A small infestation was found and eradicated in two aquatic plant nurseries in Florida (Oliver, 1993).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

LEGAL STATUS HISTORY: Federal Noxious Weed List

BASIS FOR PROPOSED CLASSIFICATION:	Ranking
A. Likelihood introduction:	**moderate**
B. Likelihood of naturalization if released or escaped:	**low**
C. Magnitude of potential adverse impacts if it naturalized:	**high**
D. Ability to: a) eradicate	**low**
b) manage naturalized populations:	**moderate**
c) control its spread to new locations:	**low**

A. Likelihood of introduction
The likelihood that giant salvinia might be released or escape into a free-living state if allowed in the state is moderate because although it is illegal to import this plant into the United States it occasionally contaminates shipments of other aquatic plants which come into the United States (Oliver, 1993).

B. Likelihood of naturalization
The likelihood that giant salvinia might establish a self sustaining population in the wild if it is released or escapes into a free-living state is low because this species has no perennating organs or dormant spores, so its existence depends on survival of its buds. Experiments indicate that it is killed when its buds are exposed to temperatures less than -3 C (Whiteman and Room 1991). In addition, the world wide distribution of giant salvinia extends to regions experiencing frost but not the formation of ice on freshwater (Whiteman and Room 1991).

C. Magnitude of adverse impacts on native species, natural resources, and their use
The magnitude of potential adverse impacts of giant salvinia is high because it has caused significant problems in other countries. For example giant salvinia can form mats up to one meter thick on stationary and slow moving waters (Whiteman and Room 1991). Mats of giant salvinia can impede the flow of water in irrigation channels, can outcompete other aquatic plants, and can hinder transportation by fouling boat props (Abassi 1993:7-8).

D. Ability to control
The ability to reduce populations of giant salvinia once naturalized would be moderate because it is susceptible to the herbicide diquat, and various mechanical methods of control (Oliver, 1993). In addition, there is a biological control organism, the beetle *Crytobagous singularis*, which has been used successfully in Australia to control giant salvinia (Room et al. 1981). The ability to limit spread of giant salvinia is low because it can spread rapidly by vegetative reproduction (Oliver 1993) so it could be moved from water body to waterbody by trailered watercraft. Because it is a floating species, it can move with water currents to uninfested waters (Oliver 1993).

E. Other considerations

While it is very unlikely that the plant could survive winters outdoors in Minnesota, the potential of this plant to cause serious problems elsewhere make it reasonable to place it on the prohibited list.

REFERENCES:

Abassi, 1993. World's Worst Weed (Salvinia) - It's Impact and Utilization. International Book Distributors, Dehradun, India. 226pp.

Oliver, J.D. 1993. A review of the biology of Giant Salvinia (*Salvinia molesta* Mitchell). J. Aquatic Plant Mgmt. 31:227-231.

Room, P.M., K.L.S. Harley, I.W. Forno, and D.P.A. Sands. 1981. Successful biological control of the floating weed salvinia. Nature. 294:78-80.

Whiteman, J.B. and P.M. Room. 1991. Temperatures lethal to *Salvinia molesta* Mitchell. Aquatic Botany. 40: 27-35.

6216.0250 Prohibited Exotic Species, Subp. 2. (Aquatic Plants). Item (C):

COMMON NAME: **Australian stone crop**
SCIENTIFIC NAME: ***Crassula helmsii*** (Kirk) Cockayne FAMILY: **Crassulaceae**

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: Australian stone crop is a species of aquatic plant that is native to Australia and New Zealand (Cook 1985). Australian stone crop has several growth forms adapted to a wide range of habitats from emergent plants in dry soils and shallow water conditions (<.5 meters deep) to a submerged form in deeper water (1-3 meters deep) (Dawson 1994). It is not known to be present in the United States.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

LEGAL STATUS HISTORY:
This plant is on USDA's list of plants prohibited from entry into the country. (How diff from Pod Nox Weed?)

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of release or escape if allowed in the state:	**high**
B. Likelihood of naturalization if released or escaped:	**high**
C. Magnitude of potential adverse impacts if it naturalized:	**moderate**
D. Ability to: a) eradicate	**low**
b) manage naturalized populations:	**low**
c) control its spread to new locations:	**moderate**

A. Likelihood of introduction
The likelihood that Australian stone crop might be released or escape into a free-living state if allowed in the state is high because the species could be used as a water garden plant which was the main mechanism of introduction and spread in Great Britain (Dawson and Warman 1987; Dawson 1994. Most likely methods of introduction would be direct palntings into lakes and streams, and secondary spread form thesee sites by plant fragments and turions.

B. Likelihood of naturalization
The likelihood that Australian stone crop might establish a self sustaining population in the wild if it is released or escapes into a free-living state is high because it has been introduced and naturalized in Europe (Cook 1985; Dawson and Warman 1987).

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of Australian stone crop is moderate because once established, the plant is limited to forming dense monotypic stands in waters less than 0.5 meters deep and typically does not exceed 0.5 meter in height (Dawson 1994). This can can crowd out native plants growing on the magins of open water (Dawson and Warman 1987). Plants growing in deeper water (up to 3 meters deep) may grow to 1.2 meters in length and becomes more isolated (Dawson 1994). Australian stone crop can form free floating surface mats that may impede water flow, and interfere with water-based recreation.

D. Ability to control
The ability to reduce populations of Australian stone crop once naturalized would be low because like many other undesirable or harmful aquatic plants, it is an aggressive invader and spreads rapidly by plant fragments and turions. The ability to limit spread of it is low, because there is little evidence of suitable control methods for this plant. Herbicide trials in Great Britain produced mixed results depending on plant form and density (Dawson 1996)

REFERENCES:

Cook, C.D.K. 1985. Range extensions of aquatic vascular plant species. J. Aquat. Plant Manage. 23: 1-6.

Dawson, F.H. 1996. *Crassula helmsii*: attempts at elimination using herbicides. Hydrobiologia 340: 241-245.

Dawson, F.H. 1994. Spread of *Crassula helmsii* in Britain. In L. De Waal, L. Child, P.M. Wade and J.H. Bock (eds). J. Wiley & Sons, Chichester: Ecology and Management fo Invasive Riverside plants: 1-4.

Dawson, F.H., E.A. Warman. 1987. *Crassula helmsii* (T. Kirk) Cockayne: Is it an Agressive Aquatic Plant in Britain? Biological Conservation. 42: 247-272.

6216.0250 Prohibited Exotic Species, Subp. 2. (Aquatic plants). Item (D):

COMMON NAME: **Curly-leaf pondweed**
SCIENTIFIC NAME: ***Potamogeton crispus* L.** FAMILY: **Potamogetonaceae**

SPECIES DESCRIPTION AND NATIVE RANGE: Curly-leaf pondweed is a species of submersed aquatic plant native to Europe, Asia, Australia, and Southern Africa (Cook 1985, Catling and Dobson 1985). It is also found as an exotic New Zealand and North America (Cook, 1985). Curly-leaf pondweed was first noted in Minnesota in 1910 (Moyle and Hotchkiss 1945:37), and is currently found in most counties in the state (Exotic Species Program 1996:63).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of introduction:	**high** (it has been introduced)
B. Likelihood of naturalization if released or escaped:	**high** (it has naturalized)
C. Magnitude of potential adverse impacts if it naturalized:	**high**
D. Ability to control if introduced: a) naturalized populations:	**moderate**
b) its spread to new locations:	**low**

A. Likelihood of introduction
Curly-leaf pondweed has escaped into a free-living state in the Minnesota. Its high likelihood of continued introduction is based on the fact that it is sometimes used as an aquarium plant (Booth and Frank 1994). In addition, the benefits of curly-leaf pondweed to fish and water fowl have been noted by several authors (Catling and Dobson 1985, Rogers and Breen 1990). This may encourage intentional introduction if possession and sale of the plant are not a prohibited.

B. Likelihood of naturalization
The likelihood that curly-leaf pondweed might establish a self sustaining population in the wild if it is released or escapes into a free-living state is high because curly-leaf pondweed has established naturalized populations in many waters in the state of Minnesota (Exotic Species Program 1996:62).

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of curly-leaf pondweed is high because it forms surface mats in littoral areas of infested waters; these mats can shade native vegetation and cause nuisances for water recreation (Catling and Dobson 1985). In addition, curly-leaf pondweed dies back mid-summer which can contribute to internal nutrient loading within a lake (Bolduan et al. 1994), which in turn may cause an increase in algal growth.

D. Ability to control
The ability to manage populations of curly-leaf pondweed once naturalized is moderate because although curly-leaf pondweed is susceptible to a number of herbicides (Westderdahl and Getsinger 1988:69), as well as a variety of mechanical control methods (Bolduan et al. 1994), these methods generally do not produce long term control (Nichols 1994, Bolduan et al 1994). The ability to limit spread of curly-leaf pondweed is low because curly-leaf pondweed is already well distributed within the state on Minnesota (Exotic species program, 1996:63)

E. Other considerations: Although curly-leaf pondweed is already well distributed within the state of Minnesota, the severity of the problems associated with this species make it reasonable to put it on the prohibited list to reduce potential spread from commercial sale or other intentional distribution.

REFERENCES:

Bolduan, BR., G.C.Van Eeckhout, and H. Quade. 1994. *Potamogeton crispus* - The other invader. Lake and Reserv. Manage. 10(2): 113-125.

Booth, G. and N. Frank. 1994. References for aquatic plant illustrations. The Aquatic Gardener. 7(5): 157-170.

Catling, P.M., and I. Dobson. The biology of Canadian Weeds. 69. *Potamogeton crispus* L. Can J. Plant Sci. 65:655-668.

Exotic Species Program. 1996. Harmful Exotic Species of Aquatic Plants and Wild Animals in Minnesota: Annual Report for 1996. Minnesota Department of Natural Resources, St. Paul, MN.

Moyle, J.B. and N. Hotchkiss. 1945. The aquatic and marsh vegetation of Minnesota and its value to waterfowl. MN Dept. Conservation. Tech Bulletin 3. 122pp.

Nichols, S.A. 1994. Evaluation of invasions and declines of submersed macrophytes for the upper great lakes region. Lake and Reserv. Manage. 10 (1):29-33.

Rogers, K.H. and C.M. Breen. 1990. Waterfowl of a subtropical African floodplain. Wetland Ecology and Management. 1(2):99-109.

6216.0250 Prohibited Exotic Species, Subp. 2. (Aquatic Plants). Item (I):

COMMON NAME: **Indian swampweed**
SCIENTIFIC NAME: ***Hygrophila polysperma*** (Roxburgh). T. Anders. FAMILY:

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: Indian swampweed is a species of aquatic plant native to India and Southeast Asia (Cook 1985). Indian swapweed is primarily a rooted, submersed aquatic plant that can grow to the surface in up 10 feet in depth, but also can be an emergent in moist soil conditions (Schmitz and Nall 1984). It has been found growing in canals, rivers, marshes, ponds, and lakes (Reams 1953). It has been introduced in North America and is recorded in Florida, Texas, and Virginia.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

LEGAL STATUS HISTORY: **Federal Noxious Weed List**

BASIS FOR PROPOSED CLASSIFICATION:

		Ranking
A. Likelihood of release or escape if allowed in the state:		**high**
B. Likelihood of naturalization if released or escaped:		**moderate**
C. Magnitude of potential adverse impacts if it naturalized:		**high**
D. Ability to:	a) eradicate	**low**
	b) manage naturalized populations:	**low**
	c) control its spread to new locations:	**moderate**

A. Likelihood of introduction
The likelihood that Indian swampweed might be released or escape into a free-living state if allowed in the state is high because it is a popoular and widely distributed aquarium plant that is still cultivated in the U.S. (Schmitz and Nall 1984). Most likely method of introduction would be release of Aquarium stock and cultivation of plant in lakes and ponds, and secondary spread form these sites by plant fragments.

B. Likelihood of naturalization
The likelihood that Indian swampweed might establish a self sustaining population in the wild if it is released or escapes into a free-living state is moderate because it is not known if it would be winter hardy in Minnesota. Indian swampweed is a tropical plant that can survive some freezing temperatures but may not survive extreme cold for prolonged periods of time, (Schmitz and Nall 1984; Reams 1953).

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of Indian swampweed is high because once established, the plant forms dense monotypic stands and surface mats that displace native plant species, impede water flow, and interfere with water-based recreation.

D. Ability to control
The ability to reduce populations of Indian swampweed once naturalized would be low because like many other undesirable or harmful aquatic plants, it is an aggressive invader and spreads rapidly by seeds and plant fragments. The ability to limit spread of Indian swampweed is moderate because it is difficult to control with numerous aquatic herbicides (Schmitz and Nall 1984; Sutton et al 1994).

REFERENCES:

Cook, C.D.K. 1985. Range extensions of aquatic vascular plant species. J. Aquat. Plant Manage. 23: 1-6.

Sutton D.L., L.E. Bitting, W.H. Moore and G.E. Baker. 1994. Summer treatment of *Hygrophila* with endothall in south Florida. Aquatics 16(1):4, 6, 8.

Schmitz, D.C. and L.E. Nall. 1984. Status of *Hygrophila polysperma* in Florida. Aquatics 6:11-14.

Reams, W.M., Jr. 1953. The occurrence and ontogeny of hydathodes in Hygrophila polysperma T. Anderson. New Phytologist 52:8-13.

U.S. Department of Agriculture Natural Resource Conservation Services website. (Http://plants.usda.gov/plants)

6216.0250 Prohibited Exotic Species, Subp. 2. (Aquatic Plants). Item (K):

COMMON NAME: **water aloe, water soldiers**
SCIENTIFIC NAME: ***Stratiotes aloides*** Linnaeus FAMILY: **Hydrocharitaceae**

SPECIES DESCRIPTION AND NATIVE RANGE: Water soldier is a species of aquatic plant native to Central Asia, Central and Northern Europe (Cook 1985). The plant has two growth forms emergent and submerged (Kornatowski 1976 cited in Renman 1988). Water soldier often occurs in large monotypic stands (de Geus- Kruyt & Segal 1973, cited in Renman 1988). Although seed production occurs it is not believed to be an important form of reproduction because of the low rate of recruitment from seed, however seeds may be important as a means of dispersal (Smolders et. al. 1995).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

BASIS FOR PROPOSED CLASSIFICATION:

		Ranking
A. Likelihood of release or escape if allowed in the state:		**high**
B. Likelihood of naturalization if released or escaped:		**high**
C. Magnitude of potential adverse impacts if it naturalized:		**high**
D. Ability to:	a) eradicate	**low**
	b) manage naturalized populations:	**low**
	c) control its spread to new locations:	**moderate**

A. Likelihood of introduction
The likelihood that water soldiers might be released or escape into a free-living state if allowed in the state is high. The most likely means of escape or spread of this plant is by seed or other vegetative means. Water soldier is dioecious and seed production is not possible unless both sexes are present. The plant also produces clones from turions and offsets (plantlets produced at the ends of runners or stolons) which are less likely to spread, but might be discarded by the potential owner, their final resting place left up to chance. If that happens to be a lake or stream then the chance of survival is high.

B. Likelihood of naturalization
Likelihood of naturalization is high if the plant is released or escapes because in Europe it grows as far north as the Lapland region of Sweden. Populations of water soldier have been studied in Lapland (about 63° north latitude), where ice cover begins in November and break-up starts about the beggining of May. It would seem that the plant is capable of surviving Minnesota winters.

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of water soldiers is high. The growth habits of water soldier are similar to other floating plants such as water hyacinth and water lettuce which are a great nuisance in many countries as well as the southern United States. Although rare over much of Europe the plant has recently become a serious pest in drainage and irrigation channels in East Slovakia (K.J. Murphy et. al. 1993) .

D. Ability to control
The ability to control populations of water soldiers is unknown. The plant is uncommon or rare and protected in much of Europe. Review of this plant did not reveal literature with any discussion of attempts to eliminate or reduce the abundance of this plant species. The opportunity / ability to control the destiny any plant once it has entered the state under private ownership is severly limited.

REFERENCES:

Cook, C.D.K. 1985. Range extensions of aquatic vascular plant species. J. Aquat. Plant Manage. 23: 1-6.

Renman, G. 1989. Life histories of two clonal populations of Stratiotes aloides. Hydrobiologia 185:211-222.

Smolders, A.J.P., C. Den Hartog and J.G.M Roelofs 1995. Germination and seedling development in *Stratiotes aloides* L. Aquatic Botany 51: 269-279.

Murphy K. J. and A.H. Pieterse 1993. Aquatic Weeds, The Ecology and Managmement of Nuisance Vegetation. Oxford University Press.

6216.0250 Prohibited Exotic Species, Subp. 3. (Fish). Item (A):

COMMON NAME: **Bighead carp**
SCIENTIFIC NAME: ***Aristichthys nobilis*** Richardson FAMILY: **Cyprinidae**

SPECIES DESCRIPTION AND NATIVE RANGE: The bighead carp is one of the so-called "Chinese carps" that have been widely translocated and introduced for aquaculture both within and outside of its native range (Lever 1996). It is native to eastern Siberia and southern China.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

BASIS FOR PROPOSED CLASSIFICATION:		Ranking
A. Likelihood of release or escape if allowed in the state:		**moderate**
B. Likelihood of naturalization if released or escaped:		**moderate**
C. Magnitude of potential adverse impacts if naturalized:		**moderate**
D. Ability to:	a) eradicate	**low**
	b) manage naturalized population	**low**
	c) control its spread to new locations	**low**

A. Likelihood of introduction - The likelihood that bighead carp might be released or escape into Minnesota waters is moderate. Adult bighead carp have been taken in the wild in Alabama, Arkansas, Florida, Illinois, Indiana, Kansas, Kentucky and Missouri (Courtenay et al. 1991), having escaped or been deliberately released from aquaculture centers (Courtenay 1993), but have established a breeding population only in the Missouri River. Because of their high commercial aquaculture value, there is the risk that this species will be illegally introduced.

B. Likelihood of naturalization - The likelihood that bighead carp might establish a self sustaining population in Minnesota waters is moderate. Temperature may limit the establishment of breeding populations in Minnesota waters.

C. Magnitude of adverse impacts on native species, natural resources, and their use - The magnitude of the potential adverse impacts of bighead carp are considered moderate because of the potential to compete with native cyprinids.

D. Ability to control - The ability to reduce or eliminate populations of bighead carp will vary based on where they are found. Populations established in major river systems have low potential for management. Populations found in smaller, isolated inland waters could possibly be eradicated with fish toxicants.

REFERENCES:

Courtenay, W. R. Jr. 1993. Biological pollution through fish introductions. *In*,:McKnight, B. N. (Ed), Biological pollution: the control and impact of invasive exotic species. Proceedings of a Symposium at the Indiana University - Purdue University of Indianapolis on 25-26 October 1991: 35-61.

Courtenay, W. R. Jr, D. P. Jennings, and J. D. Williams. 1991. Exotic fishes. *In*, Robins, C. R., R. M. Bailey, C. E. Bond, J. R. Brooker, E. A. Lachmer R. N. Lea and W. B. Scott (Eds), Common and Scientific Names of Fishes from the United States and Canada, 5th edn. American Fisheries Society Special Publication 20:97-107.

Lever, C. 1996. Naturalized fishes of the world. Academic Press Limited, San Diego, California.

6216.0250 Prohibited Exotic Species, Subp. 3. (Fish). Item (B):

COMMON NAME: **Black carp**
SCIENTIFIC NAME: ***Mylopharyngodon piceus*** (Richardson 1846) FAMILY: **Cyprinidae**

SPECIES DESCRIPTION AND NATIVE RANGE: The black carp is native to eastern Asia. Although it is one of several commercially important carp species in China, many aspects of its natural history are unknown (Nico and Williams 1996). Black carp are generally regarded as a large river species feeding primarily on microcrusteceans and rotifers (Bardach et al. 1972).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

BASIS FOR PROPOSED CLASSIFICATION:	Ranking
A. Likelihood of release or escape if allowed in the state:	**moderate**
B. Likelihood of naturalization if released or escaped:	**moderate**
C. Magnitude of potential adverse impacts if naturalized:	**high**
D. Ability to: a) eradicate	**low**
b) manage naturalized population	**low**
c) control its spread to new locations	**low**

A. Likelihood of introduction
The likelihood that black carp might be released or escape into Minnesota waters is moderate. Because of their high commercial aquaculture value, there is the risk that this species will be illegally introduced. They were brought into the United States by an Arkansas fish farmer and a Mississippi fish farmer in the early 1980's (Nico and Williams 1996). The first and only known introduction of black carp into open waters occurred in 1994 when thirty or more escaped with several thousand bighead carp into the Osage River when high water flooded hatchery ponds at an aquaculture facility near Lake of the Ozarks (Nico and Williams 1996).

B. Likelihood of naturalization
The likelihood that black carp might establish a self sustaining population in Minnesota waters is moderate. The published literature indicates that introduced black carp have established naturally reproducing populations in several areas outside of its natural range (USSR, Japan, Vietnam: Nico and Williams 1996). Appropriate habitats and climate are found throughout most of the United States (Nico and Williams 1996).

C. Magnitude of adverse impacts on native species, natural resources, and their use
The magnitude of potential adverse impacts is considered high because: 1) they feed on microcrustaceans which could reduce the number of important native mussels, 2) there is potential for competition with native species; and 3) they may compete with waterfowl and other vertebrates that utilize mollusks for food (Nico and Williams 1996).

D. Ability to control
The ability to reduce or eliminate populations of black carp will vary based on where they are found. Populations established in major river systems have low potential for management. Populations found in smaller, isolated inland waters could possibly be eradicated with fish toxicants.

E. Other considerations In addition to their perceived value as a commercial species, black carp have also been considered as a potential control agent for the exotic zebra mussel. Based on their mouth structure and what is known about their feeding behavior, it is unlikely that black carp would be capable of breaking apart zebra mussel rafts (Nico and Williams 1996).

REFERENCES:

Bardach, J. E., J. H. Ryther, and W. O. McLarney. 1972. Aquaculture: The farming and husbandry of freshwater and marine organisms. Wiley-Interscience, New York. 868pp.

Nico, L. G. And J. D. Williams. 1996. Risk assessment on black carp (Pisces: Cyrinidae). Report to the Risk Assessment and Management Committee of the Aquatic Nuisance Species Task Force. U. S. Geological Survey, Gainesville, Florida.

6216.0250 Prohibited Exotic Species, Subp. 3. (Fish). Item (H):

COMMON NAME: **Silver carp**
SCIENTIFIC NAME: ***Hypophthalmichthys molitrix*** Valenciennes FAMILY: **Cyprinidae**

SPECIES DESCRIPTION AND NATIVE RANGE: The silver carp is a native of China and Siberia. It is one of a group of Chinese carp which has been widely distributed for aquacultural purposes (Lever 1996). The silver carp possess a specialized structure of gill rakers well adapted to grazing on plankton.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

BASIS FOR PROPOSED CLASSIFICATION:		Ranking
A. Likelihood of release or escape if allowed in the state:		**high**
B. Likelihood of naturalization if released or escaped:		**moderate**
C. Magnitude of potential adverse impacts if naturalized:		**moderate**
D. Ability to:	a) eradicate	**low**
	b) manage naturalized population	**low**
	c) control its spread to new locations	**low**

A. Likelihood of introduction
The likelihood that silver carp might enter Minnesota waters is high because it is already present in downstream waters of the Mississippi River drainage. Because silver carp are planktivorous, there is some attraction with this species as an aquarium or ornamental pond fish. Because of their high commercial aquaculture value there is the risk that this species will be illegally introduced.

B. Likelihood of naturalization
The likelihood that silver carp might establish a self sustaining population in Minnesota waters is moderate. The silver carp is so widespread in the United States that its establishment seems assured (Courtenay et al. 1991). Temperature may limit the establishment of breeding populations in Minnesota waters.

C. Magnitude of adverse impacts on native species, natural resources, and their use
The silver carp has escaped into open waters in Arkansas where it may compete with smallmouth buffalo if it reproduces (Welcomme 1981, 1988). The silver carp has become one of the major controversial species in India where it competes directly with valuable native species that feed at similar trophic levels (Shetty et al. 1989).

D. Ability to control
The ability to reduce or eliminate populations of silver carp will vary based on where they are found. Populations established in major river systems have low potential for management. Populations found in smaller, isolated inland waters could possibly be eradicated with fish toxicant.

REFERENCES:

Courtenay, W.R. Jr, D. P. Jennings, and J. D. Williams. 1991. Exotic fishes. In: Robins, C. R., R.M. Bailey, C. E. Bond, J. R. Brooker, E. A. Lachmer R. N. Lea and W. B. Scott (Eds), Common and Scientific Names of Fishes from the United States and Canada, 5th edn. American Fisheries Society Special Publication 20:97-107.

Lever C. 1996. Naturalized fishes of the world. Academic Press Limited, San Diego, California.

Shetty, H. P. C., M. C. Nandeesha, and A. G. Jhingran. 1989. Impact of exotic aquatic species in Indian waters. *In*, DeSilva, S. S. (Ed.), Exotic aquatic organisms in Asia. Asian Fisheries Society Special Publication 3: 45-55.

Welcomme, R. L. 1981. Register of international transfers of inland fish species. FAO Fisheries Technical Paper 213:120pp.

Welcomme, R. L. 1988. International introductions of inland aquatic species. FAO Fisheries Technical Paper 294:318pp.

6216.0250 Prohibited Exotic Species, Subp. 3. (Fish). Item (J):

COMMON NAME: **Zander**
SCIENTIFIC NAME: ***Stizostedion lucioperca*** Linnaeus FAMILY: **Percidae**

SPECIES DESCRIPTION AND NATIVE RANGE: Zander are native to eastern Europe and western Asia. They have been translocated across much of Europe due to its high commercial and sport fish value (Lever 1996). The zander is similar to the North American walleye in appearance and general characteristics. It is a voracious predator that favors turbid water in lakes and low gradient rivers.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of release or escape if allowed in the state:	**high**
B. Likelihood of naturalization if released or escaped:	**high**
C. Magnitude of potential adverse impacts if naturalized:	**high**
D. Ability to: a) eradicate	**low**
b) manage naturalized population	**low**
c) control its spread to new locations	**low**

A. Likelihood of introduction
The likelihood that zander might be released or escape into Minnesota waters if allowed in the state is high. Public perception is that this species will offer greater trophy angling potential than the native walleye, which increases the likelihood of illegal release. The state of North Dakota released zander into Spiritwood Lake in 1989 as an experiment to provide additional angling opportunities. At that time, Spiritwood was described as an isolated basin with no potential for outlet to other waters. In the spring of 1997 after several years of above normal precipitation, Spiritwood has risen to a level where it now has an outlet to Alkali Lake (VanEeckhout, personal communication). Emergency screening measures are being taken should water levels continue to rise whereby Alkali Lake would begin releasing water into the James River watershed.

B. Likelihood of naturalization
The likelihood that zander might establish a self sustaining population in the wild if they are released or escape into a free-living state is high. The zander utilizes habitats in Europe and Asia that are very similar to that which is readily available in Minnesota waters. It is capable of spawning on a wide range of substrates (Kukuradze 1971; Shikashabekov 1978; Akhmedov 1975) and can tolerate a wider range of temperatures than walleye.

C. Magnitude of adverse impacts on native species, natural resources, and their use
The magnitude of potential adverse impacts of zander is high. There is the potential for zander to compete directly for available habitat and forage with native walleye and sauger stocks. Given the immense economic value of walleye and sauger to the state's economy this is cause for great concern. In Denmark (Dahl 1962) and the Netherlands (Vooren 1972), declines in northern pike populations have been correlated with the introduction of zander.

D. Ability to control
The ability to reduce or eliminate populations of zander will vary based on where they are found. Populations established in major river systems have low potential for management. Populations found in smaller, isolated inland waters could possibly be eradicated with fish toxicants.

E. Other considerations

Only one zander has been collected from their original introduction into Spiritwood Lake in North Dakota. The state has since discontinued its effort to establish zander populations at the urging of the American Fisheries Society and neighboring states (Wingate, personal communication).

REFERENCES:

Akhmedov, M. O. 1975. Fish and the biological principles of fish farming under the changed conditions of the lakes of the Kura-Araks Lowland. As cited in Shikhshabekov, M.M. 1978. The sexual cycles of the catfish (Silurus glanis), the pike (Esox lucius), the perch (Perca fluviatilis), and the pike-perch (Lucioperca lucioperca). Journal of Ichthyology 18: 457-468.

Dahl, J. 1962. The importance and profits from zander fishing in the cultivation of Danish lakes. Zhurnal Fischereiwelt 8/10: 689-695.

Kukuradze, A. M. 1971. A description of the spawning stock and reproduction of the pike-perch (Lucioperca lucioperca) of the Danube Delta and waters in the Danubian Region. Journal of Ichthyology 14: 385-392.

Lever C. 1996. Naturalized fishes of the world. Academic Press Limited, San Diego, California.

Shikhshabekov, M. M. 1978. The sexual cycles of the catfish (Silurus glanis), the pike (Esox lucius), the perch (Perca fluviatilis), and the pike-perch (Lucioperca lucioperca). Journal of Ichthyology 18: 457-468.

Vooren, C. M. 1972. Ecological aspects of the introduction of fish species into natural habitats in Europe, with special reference to the Netherlands and literature survey. Journal of Fish Biology 4: 565-583.

6216.0250 Prohibited Exotic Species, Subp. 5. (Mammals). Item (B):

COMMON NAME: **Eurasian swine, European wild boar**
SCIENTIFIC NAME: ***Sus scrofa scrofa*** Linnaeus FAMILY:

SPECIES DESCRIPTION AND NATIVE RANGE: Eurasian swine is a mammal that is native to Eurasia. Eurasian swine have been stocked or escaped in to at least five locations in the United States and hybrids were stocked into eight other states (Mayer 1991:225).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

LEGAL STATUS HISTORY:
The regulatory status of Eurasian swine was debated for several years at the Minnesota Legislature. A task force was established by the Legislature in 1993 to study and determine whether or not raising of Eurasian swine should be banned in Minnesota (Wild Hog Task Force 1994). Eurasian swine is currently designated as a restricted species (Minnesota Statutes, section 17.457). Under this classification, several herds of Eurasian swine were grandfathered and are allowed in confinement under permit from the Minnesota department of Agriculture. The proposed prohibited exotic species status would complement the restricted species status. The exotic species statutes provide for prohibited exotic species to be possessed under a restricted species permit as authorized by Minnesota Statutes, section 17.457.

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of release or escape if allowed in the state:	**high**
B. Likelihood of naturalization if released or escaped:	**moderate to high**
C. Magnitude of potential adverse impacts if it naturalized:	**high**
D. Ability to: a) eradicate	**moderate**
b) manage naturalized populations:	**moderate to low**
c) control its spread to new locations:	**low**

A. Likelihood of introduction
The likelihood that Eurasian swine might be released or escape into a free-living state if allowed in the state is moderate to high. Officials from 33 states of 39 officials responding to a survey did not believe wild hogs could be confined with no chance of escape (Minnesota Department of Agriculture 1993). Several have escaped from captivity in Cottonwood County, Minnesota and traveled many miles from the farm where they were kept.

B. Likelihood of naturalization
The likelihood that Eurasian swine might establish a self sustaining population in the wild if they are released or escape into a free-living state is moderate to high because their native range includes northern latitudes.

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of Eurasian swine is high because feral hogs and hybrids of Eurasian swine have caused damage to the natural resources in several states. At least 32 states consider them a liability (Minnesota Department of Agriculture 1993).

D. Ability to control

The ability to eradicate small numbers of individual Eurasian swine would be high to moderate. The ability to reduce populations of Eurasian swine once naturalized would be moderate to low because they may be difficult to locate. The ability to limit spread of Eurasian swine is low because they could easily travel to new locations independent of human assistance.

REFERENCES:

Mayer, J. and I.l. Brisbin, Jr. 1991. Wild Pigs in the United States. The University of Georgia Press, Athens and London.

Minnesota Department of Agriculture. 1993. Summary of a 1993 Survey of Wild Hogs in Other States. Unpublished report available from the Minnesota Department of Agriculture.

Wild Hog Task Force. 1994. Wild Hog Report. An unpublished report prepared for the Minnesota Legislature. Available from the Minnesota Department of Agriculture.

Part 6216.0260 **Regulated Exotic Species.**

This part lists several new designations of regulated exotic species that will be regulated by parts 6216.0265, 6216.0280, and 6216.0600 of these rules and Minnesota Statutes, Chapter 84D.

It is necessary and reasonable to designate the species in part 6216.0260 as regulated exotic species based on: 1) their likelihood of release or escape if allowed in the state; 2) their likelihood of naturalization if released or escaped; 3) their magnitude of adverse impacts on native species, natural resources, or their use; and 4) the ability to control the species populations its spread as described in the summary pages for each species. The list of regulated exotic species is organized by taxonomic group and alphabetically by common name within the taxonomic groups. The summary pages for each regulated exotic species are arranged in the same order the species are listed in the rule. References, where available, are provided to substantiate the characterization of each listed species.

6216.0260 Regulated Exotic Species, Subp. 2. (Aquatic plants). Item (A):

COMMON NAME: **Carolina fanwort, fanwort**
SCIENTIFIC NAME: ***Cabomba caroliniana*** A. Gray FAMILY: **Cabombaceae**

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: Carolina fanwort is a submersed, perennial, freshwater aquatic plant. As the name implies, it is native to the southeastern U.S. In the Northeastern U. S. and adjacent Canada, Carolina fanwort is found from New Jersey west through Ohio to southern Michigan and Missouri (Gleason and Cronquist 1991:46). From there, its range extends south to Florida and Texas. It has been occasionally introduced farther north, as in Massachussetts and New York. Carolina fanwort is now recorded in 30 of the United States, but has not yet been found in Minnesota or any bordering state (U.S. Dept of Agriculture - see distribution map on web site). This species is most frequently found in slow streams and in ponds (Westerdahl and Getsinger 1988).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

BASIS FOR PROPOSED CLASSIFICATION:		Ranking
A. Likelihood of release or escape if allowed in the state:		**high**
B. Likelihood of naturalization if released or escaped:		**moderate**
C. Magnitude of potential adverse impacts if it naturalized:		**low**
D. Ability to:	a) eradicate	**low**
	b) manage naturalized populations:	**moderate**
	c) control its spread to new locations:	**moderate**

A. Likelihood of introduction The likelihood that Carolina fanwort might be released or escape into a free-living state if allowed in the state is high because it is a common ornamental and aquarium plant (Mills et al 1993). Cook (1985) lists Carolina fanwort as one of several species that are planted in aquaria for their attractive foliage. This species may have been introduced to new locations through the disposal of aquaria plants. Voss (1985) noted that it may have escaped from cultivation as it is a popular aquarium plant.

B. Likelihood of naturalization The likelihood that Carolina fanwort might establish a self sustaining population in the wild if released or it escapes into a free-living state is moderate. It has naturalized in latitudes similar to those of Minnesota in the Great Lakes region (Mills et al. 1993:26-27). Voss (1985) reports that this species has become established as far north as New England and southern Michigan. It was first discovered in Michigan in 1935 in Kimble Lake, Kalamazoo County and was found to be abundant upstream in Barton and Howard lakes and down Portage Creek into St. Joseph County (Voss 1985). Hotchkiss (1972) reports this species in New Hampshire also. In the mid 1980's, Perleberg (pers. com) observed that Carolina fanwort was a common component of the aquatic plant communities in lakes in northwestern Pennsylvania and northeastern Ohio. Carolina fanwort has also spread from North America to Europe, North Africa and India and become locally established, but shows no signs of spreading or becoming "integrated" into native European flora (Cook 1985).

C. Magnitude of adverse impacts on native species, natural resources, and their use
The magnitude of potential adverse impacts of Carolina fanwort is low. Mills et al (1994:672) did not consider Carolina fanwort "... to have substantial impacts on present Great Lakes resources." The Minnesota Interagency Exotic Species Task Force (1991:21) considered the degree of threat to the environment of Minnesota posed by Carolina fanwort to be unknown. Carolina fanwort is not yet known to be present in Vermont and has been classified as a "Category II Exotic Plant" (Ms. Ann Bove, Pers. Comm., 18 September 1997). In Vermont Carolina fanwort is considered to be invasive in nearby states and is believed to pose a significant threat to Vermont's native plant community if it was introduced.

Further, it is believed that Carolina fanwort could become a "Category I Exotic Plant" in the future. "Category I Exotic Plants" are highly invasive in Vermont and displace native plants either on a localized or widespread scale. In Michigan, Carolina fanwort has been the target of control by application of fluridone herbicide (Kenaga 1993:8).

D. Ability to control The ability to eradicate populations of Carolina fanwort once naturalized would be low because it is very difficult to find populations before they are too large or scattered to eliminate. The ability to manage populations of Carolina fanwort would be *moderate* because it is susceptible to control by a number of herbicides (Westerdahl and Getsinger 1988:69). The ability to limit spread of Carolina fanwort is moderate because like other submersed aquatics, this species could be easily transported on trailered watercraft.

REFERENCES:

Butts, D, Hinton, J, Watson, C, Langeland, K, Hall, D, Kand, M. Aquascaping: planting and maintenance. Circular 912. Florida Cooperative Extension Service. Institute for Food and Agricultural Sciences, University of Florida, Gainesville.

Cook, C.D.K. 1985. Range extensions of aquatic vascular plant species. Journal of Aquatic Plant Management 23: 1-6.

Gleason, H.A., and A. Cronquist. 1991. Manual of the vascular plants of the Northeastern United States and adjacent Canada. Second Edition. The New York Botanical Garden, Bronx, NY 10458.

Hotchkiss, N. 1972. Common marsh, underwater and floating-leaved plants of the United States and Canada. Dover Publications, Inc., New York.

Kenaga, D. 1993. Preliminary report: the impact of the herbicide sonar on the aquatic plant community in twenty-one Michigan lakes 1992. Unpublished report by Michigan Department of Natural Resources, P.O. Box 30473, Lansing, Michigan 48909. 97 pages.

Mills, E.L., J.H. Leach, J.T. Carlton, and C.L. Secor. 1994. Exotic species and the integrity of the GreatLakes. BioScience. 44(10):666-676.

Mills, E.L., J.H. Leach, J.T. Carlton, and C.L. Secor. 1993. Exotic species in the Great Lakes: a history of biotic crises and anthropogenic introductions. Journal of Great Lakes Research 19(1):1-54.

Minnesota Interagency Exotic Species Task Force. 1991. Report and Recommendations of the Minnesota Interagency Exotic Species Task Force. Final edit. Submitted to the Natural Resources Committees of the Minnesota House and Senate, St. Paul, MN 55155, by the Minnesota DNR, Division of Fish and Wildlife, 500 Lafayette Rd., St. Paul, MN 55155.

U.S. Department of Agriculture Natural Resource Conservation Services website. (Http://plants.usda.gov/plants)

Voss, E.G. 1985. Michigan Flora. Part II. Dicots. Cranbrook Institute of Sciences Bulletin 59 and University of Michigan Herbarium.

Westerdahl, H.E. and K.D. Getsinger, eds. 1988. Aquatic plant identification and herbicide use guide. Vol II: aquatic plants and susceptibility to herbicides. U.S. Army Corps of Engineers. Technical report A-88-9. Aquatic Plant Control Research Program, Waterways Experiment Station, P.P Box 631, Vicksburg, Mississippi 39180-0631.

6216.0260 Regulated Exotic Species, Subp. 2. (Aquatic Plants). Item (B):

COMMON NAME: **Parrot's feather**
SCIENTIFIC NAME: ***Myriophyllum aquaticum*** (Vell. Conc.) Verdc. FAMILY: **Haloragaceae**

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: Parrot's feather is a partially emersed, rooted aquatic plant (Nelson and Couch 1985; Sutton 1985). It may be found growing in a "trailing" form on mud flats. Parrot's feather is a dioecious species. Parrot's feather is native to South America and is widely distributed in the United States, primarily in the south and along the east and west coasts (Nelson and Couch 1985; Sutton 1985; Gleason and Cronquist 1991). In the United States, only pistillate or females plants have been found.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

BASIS FOR PROPOSED CLASSIFICATION:

		Ranking
A. Likelihood of release or escape if allowed in the state:		**high**
B. Likelihood of naturalization if released or escaped:		**low**
C. Magnitude of potential adverse impacts if it naturalized:		**low**
D. Ability to:	a) eradicate	**low**
	b) manage naturalized populations:	**moderate**
	c) control its spread to new locations:	**moderate**

A. Likelihood of introduction

HIGH

The likelihood that Parrot's feather might be released or escape into a free-living state if allowed in the state is high because the species is common in the aquarium and ornamental plant trade (Nelson and Couch 1985:25; Sutton 1985:60; Gleason and Cronquist 1991:308).

B. Likelihood of naturalization

LOW

The likelihood that Parrot's feather might establish a self sustaining population in the wild in Minnesota if they are released or escape into a free-living state is low because the plant likely has already been released in the state, but there are no known populations of Parrot's feather here. Couch and Nelson (1985) documented evidence that Parrot's feather has been in the United States for at least 107 years. It has established populations from New York south along the east coast, then west across the continent to California and then north to southern British Columbia. In the mid-continent region, established populations of Parrot's feather have not been discovered north of Missouri (Nelson and Couch 1985; Gleason and Cronquist 1991:308). Nelson and Couch (1985:25) "... noticed sporadic introductions into the northern temperate zone, but such populations did not persist."

C. Magnitude of adverse impacts on native species, natural resources , and their use

LOW

The magnitude of potential adverse impacts of Parrot's feather is low. Nelson and Couch (1985) wrote that Parrot's feather "... has never been reported as a weed problem in North America." The Minnesota Interagency Exotic Species Task Force (1991) did not include Parrot's feather as a potentially harmful exotic species in its report. Sutton (1985) reported that Parrot's feather has caused problems, particularly in shallow irrigation channels, in some countries such as Japan, South Africa, and Australia. Parrot's feather is not yet known to be present in Vermont and has been classified as a "Category II Exotic Plant" (Ms. Ann Bove, Pers. Comm., 18 September 1997). In Vermont, Parrot's feather is considered to be invasive in nearby states and is believed to pose a significant threat to Vermont's native plant community if it was introduced. Further, it is believed that Parrot's feather could become a "Category I Exotic Plant" in the future. "Category I Exotic Plants" are highly invasive in Vermont and displace native plants either on a localized or widespread scale.

D. Ability to control

The ability to reduce populations of Parrot's feather once naturalized would be moderate because it is susceptible to control by a number of herbicides (Westerdahl and Getsinger 1988:69). The ability to limit spread of Parrot's feather is moderate because like many other undesirable or harmful aquatic plants, it can be spread by inadvertent transport of plant fragments. Mod.

E. Other considerations

Parrot's feather has been evaluated for phytoremediaton (Brown 1995).

REFERENCES:

Brown, K.S. 1995. The green clean: the emerging field of phytoremediaton takes root. BioScience 45:579-582.

Gleason, H.A., and A. Cronquist. 1991. Manual of the vascular plants of the Northeastern United States and adjacent Canada. Second Edition. The New York Botanical Garden, Bronx, NY 10458.

Minnesota Interagency Task Force. 1991. Report and recommendations of the Minnesota Interagency Exotic Species Task Force. Final edit. Submitted to the Natural Resources Committees of the Minnesota House and Senate, St. Paul, MN 55155, by the Minnesota Department of Natural Resources, Division of Fish and Wildlife, 500 Lafayette Rd., St. Paul, MN 55155.

Nelson, E.N., and R.W. Couch. 1985. History of the introduction and distribution of *Myriophyllum aquaticum* in North America. *In,* L.J. Anderson, Ed. Proceedings of the first international symposium on watermilfoil (*Myriophyllum spicatum*) and related Haloragaceae species, held on 23-24 July 1985 in Vancouver, British Columbia. Published by the Aquatic Plant Management Society, P.O. Box 16, Vicksburg, Mississippi, 39180.

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Westerdahl, H.E., and K.D. Getsinger, eds. 1988. Aquatic plant identification and herbicide use guide. Vol. II: Aquatic plants and susceptibility to herbicides. Technical Report A-88-9, U.S. Army Engineer Waterways Experiment Station, P.O. Box 631, Vicksburg, Mississippi, 39180-0631.

6216.0260 Regulated Exotic Species, Subp. 2. (Aquatic plants). Item (C):

COMMON NAME: **waterlilies with flowers other than white**
SCIENTIFIC NAME: ***Nymphaea* spp. with flowers other than white** FAMILY: **Nymphaceae**

SPECIES DESCRIPTION AND NATIVE AND CURRENT RANGE: Hybrid waterlily cultivars (*Nymphaea* spp.) are rooted, floating leaved aquatic plants, with showy, and often colored, flowers. Waterlilies overwinter and reproduce by rhizome and by seed. In general, *Nymphaea* rhizomes can be cut into 10cm or larger pieces for propagation (Anon. no date). Information on seed production and seed viability of individual waterlily cultivars is not well documented.

Hybrid waterlilies are the result of interspecific crosses that often included native Minnesota species, *Nymphaea odorata* and *N. tuberosa* (Bailey 1951). Numerous waterlily cultivars are currently sold in Minnesota through nurseries and mail-order catalogs. Scientific names are not commonly used to describe these species and little information is available to document their origin. These cultivars are not considered native to the state.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of release or escape if allowed in the state:	**high**
B. Likelihood of naturalization if released or escaped:	**high**
C. Magnitude of potential adverse impacts if it naturalized:	**high**
D. Ability to: a) eradicate	**variable**
b) manage naturalized populations:	**moderate**
c) control its spread to new locations:	**low**

A. Likelihood of introduction
Hybrid cultivars of *Nymphaea* have already been released into a free-living state in Minnesota. Two locations are known and there may be more that occur but have not yet been detected. The likelihood that they will continue to be released is high because they are a popular species for water gardens and readily available for sale. The most likely pathway of introduction is by intentionally planting in a waterbody. Waterlilies planted in a contained water garden (with no outlet to a natural waterbody) pose little, if any threat to the natural resources of the state.

B. Likelihood of naturalization
Hybrid waterlilies have naturalized in at least two water bodies in Minnesota. Therefore, the likelihood that additional released plants may establish self sustaining populations is high. Non-native waterlilies are also known to have naturalized in numerous water bodies in Washington State (Anon. no date).

C. Magnitude of adverse impacts on native species, natural resources, and their use
The magnitude of potential adverse impacts of hybrid waterlilies is high. At least one population has survived for ten years in Minnesota and has spread along at least 100 feet of lakeshore. In Washington State, non-native waterlilies have invaded numerous lakes and have spread throughout shallow areas, in one case covering 100 percent of a lake surface (Anon. no date). There is a possibility that non-native hybrid waterlilies may back-cross with native water lilies and distinguishing native origin would then be very difficult. As with any aquatic species that is brought to Minnesota, there is a high possibility that rhizomes of non-native waterlilies (including both hardy and tropical species) may contain other exotic species that would be transplanted along with the waterlilies.

D. Ability to control

The ability to reduce populations of hybrid waterlilies once naturalized would vary, depending on the size and location of the population. Good control can be achieved with herbicides, but repeated applications may be needed (Westerdahl and Getsinger). Herbicides used to control non-native waterlilies would also kill native aquatic plants. If populations are located when they are relatively small and isolated from native aquatic plants, eradication may be possible. Lake residents in Washington State reported successful elimination of non-native waterlilies by removing all emerging leaves throughout the growing season for two or three years (Anon. no date).

(though unlikely - not a realistic goal)

E. Other considerations

The genus *Nymphaea* includes at least two, and possibly three species native to Minnesota. The common white waterlily has long been considered to represent two species, *Nymphaea tuberosa* Paine and *N. odorata*. Ait, although their distribution and the characters used to distinguish them have been variously interpreted and some authorities have at least questioned recognition of the species (Voss 1985). Monson (1960) concluded that there was only one taxon of the common white water lily in Minnesota. Morely and Ownbey (1991) recognized both species, with *N. tuberosa* being more common. *Nymphaea leibergii* Georgi (formerly identified as *N. tetragona*), small white waterlily, has been identified in a few locations in the northern third of the state (Coffin and Pfannmuller 1988) and is listed as a Threatened species in Minnesota (Minn. Rule, Ch 6134).

REFERENCES:

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6216.0260 Regulated Exotic Species, Subp. 3. (Fish). Item (A):

COMMON NAME: **alewife**
SCIENTIFIC NAME: ***Alosa pseudoharengus*** Wilson FAMILY: **Clupeidae**

SPECIES DESCRIPTION AND NATIVE RANGE: The alewife is a species of fish native to the Hudson River (Emery 1985). It invaded Lake Ontario in the late 1800's (Emery 1985) and was first recorded in Lake Erie in 1931, Lake Huron in 1933, Lake Michigan in 1949 and Lake Superior in 1953 (Becker 1983).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

BASIS FOR PROPOSED CLASSIFICATION:

		Ranking
A. Likelihood of release or escape if allowed in the state:		**moderate**
B. Likelihood of naturalization if released or escaped:		**moderate**
C. Magnitude of potential adverse impacts if it naturalized:		**moderate**
D. Ability to:	a) eradicate	**low**
	b) manage naturalized populations:	**low**
	c) control its spread to new locations:	**moderate**

A. Likelihood of introduction
The likelihood that the alewife might be released or escape into a free-living state if allowed in the state is only moderate because: alewife can not tolerate sharp changes in water temperatures (Becker 1983) and have been observed to die when subjected to temperatures below 38 F (O'Gorman et al. 1987).

B. Likelihood of naturalization
The likelihood that the alewife might establish a self sustaining population in the wild if they are released or escape into a free-living state is only moderate because of their intolerance to low water temperatures (Smith 1968).

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of alewife is low because they were first reported in Lake Superior in 1953 (McLain 1965) and are not common in western Lake Superior.

D. Ability to control
The ability to reduce populations or limit the spread of alewife once naturalized would be low because there is no known selective methods to control them. The ability to control spread to unconnected waters would be moderate because regulations would apply to anglers who would be the most likely means of spread.

REFERENCES

Becker, G.C. 1983. Fishes of Wisconsin. University of Wisconsin Press.

Emery, L. 1985. Review of fish species introduced into the Great Lakes, 1819-1974. Great Lakes Fish. Comm. Tech. Rep. No. 45.

O'Gorman, R., R.A. Bergstedt, and T.H. Eckert. 1987. Prey fish dynamics and salmonine predator growth in Lake Ontario, 1978-84. Can. J. Fish. Aquat. Sci. 44 (Suppl. 2): 390-403.

Smith, S.H. 1968. The alewife. Limnos. 1(2):12-20.

6216.0260 Regulated Exotic Species, Subp. 3. (Fish). Item (B):

COMMON NAME: **Common or European carp**
SCIENTIFIC NAME: ***Cyprinus carpio*** Linneaus FAMILY: **Cyprinidae**

SPECIES DESCRIPTION AND NATIVE RANGE:
The carp is a member of the minnow family often reaching a weight of over 20 pounds and a length of more than 2 feet. Carp can be distinguished from native North American minnows by the long dorsal fin with more than 11 soft rays and an anterior stout spine with serrations on its posterior margin. The anal fin has a similar spine.

The native range of the carp was confined to central Asia east of the Caspian Sea. The fish spread east naturally during the later glaciations to Manchuria and west to the rivers of the Danube basin and the Black and Aral Seas. The carp is now found all over the world.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

LEGAL CLASSIFICATION HISTORY:
Carp are defined as rough fish in Minnesota Statutes, section 97A.015, subdivision 43. Carp must not be used as bait according to M.S. 97C.341. Carp may be bought and sold according to M.S. 97C.391. M.S. 97C.521 prohibits the transportation of live carp fingerlings within the state. Carp may be taken by angling year round according to M.S. 97C.395, subd. 2. Carp may be taken according to Minnesota Rules, part 6252 subparts 0.100 through 6252 0.350; 6262.0100 through 6260.2400; and 6266.0100 through 6266.0700.

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of release or escape if allowed in the state:	**high** (already here)
B. Likelihood of naturalization if released or escaped:	**high** (already has occurred)
C. Magnitude of potential adverse impacts if naturalized:	**high**
D. Ability to: a) eradicate	**low**
b) manage naturalized population	**low**
c) control its spread to new locations	**low**

A. Likelihood of introduction
The carp has already been introduced into Minnesota waters and has naturalized. There are only a few watersheds in the state where they have not been introduced. The species can be easily introduced into waters where they are not present.

B. Likelihood of naturalization
Naturalization has occurred in the state.

C. Magnitude of adverse impacts on native species, natural resources, and their use
The major adverse impacts of common carp can be categorized into three issues: aquatic habitat degradation through the loss of macrophytes; deterioration of water quality, and competition with native fish species. The carp's foraging activities result in the removal of vegetation by direct consumption and uprooting of aquatic plants. This activity also results in increased lake or stream turbidity decreasing light penetration which in turn changes the trophic levels of lakes.

D. Ability to control
The carp can be eradicated by using piscicides in small bodies of water that are isolated and do not

have inlets or outlets. Control in large river systems is not feasible.

E. Other considerations

Waters with carp have been commercially harvested for the last half-century. The basis for the commercial harvest has been the use of an under-utilized species not as a control of the species.

REFERENCES:

Eddy, S. and J.C. Underhill. 1976. Northern Fishes. Third Edition. University of Minnesota Press, Minneapolis, MN.

Lever, C. 1996. Naturalized Fishes of the World. Academic Press Inc. San Diego, CA.

Stickney, R. R., 1996. Aquaculture in the United States. John Wiley and Sons, New York, NY.

6216.0260 Regulated Exotic Species, Subp. 3. (Fish). Item (C):

COMMON NAME: **Goldfish**
SCIENTIFIC NAME: ***Carassius auratus*** Linnaeus FAMILY: **Cyprinidae**

SPECIES DESCRIPTION AND NATIVE RANGE: The goldfish is arguably the most popular of all ornamental fish species, and occurs widely in captivity, in a multitude of "fancy" morphs, in warmwater aquaria and coldwater ponds (Lever 1996). The native distribution of this species is the Lena River system of eastern Europe eastward to southern Manchuria, the Amur basin, the Tym and Poronai Rivers of Sakhalin Island, and China (Lever 1996).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

LEGAL CLASSIFICATION HISTORY: Goldfish are not considered minnows in Minnesota Statutes, section 97A.015, subdivision 29 and Minnesota Rules, part 6266.0500, subpart 2, D., (1). Goldfish must not be used as bait according to M.S. 97C.341. A bill of lading or transportation permit is not required by an aquatic farm licensee to import or transport live goldfish accompanied by shipping documents according to M.S. 17.4985, subd.3.

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of release or escape if allowed in the state:	**high**
B. Likelihood of naturalization if released or escaped:	**high**
C. Magnitude of potential adverse impacts if naturalized:	**low**
D. Ability to: a) eradicate	**low**
b) manage naturalized population	**low**
c) control its spread to new locations	**low**

A. Likelihood of introduction
The likelihood that goldfish might be released or escape into a free-living state is high given their popularity as an aquarium and ornamental pond species. Original introductions of the Asian goldfish into North America began as early as the late 1600s (Mills et al. 1993). Goldfish were propagated and distributed to fish hatcheries in Great Lakes states as forage for largemouth bass (Courtenay et al. 1984). Further distribution has occurred as a result of bait bucket transfer, direct stocking, escape or release from hatcheries, release as an unwanted aquarium pet, or escape from private ornamental ponds (Mills et al. 1993).

B. Likelihood of naturalization
The likelihood that goldfish might establish a self-sustaining population in the wild if they are released or escape into a free-living state is high. Courtenay et al. (1984, 1986) reported goldfish to be naturalized in 26 states. They report that an additional 18 states including Minnesota, have reported their status as uncertain.

C. Magnitude of adverse impacts on native species, natural resources, and their use
The magnitude of potential adverse impacts of goldfish is believed to be low. There are no documented case histories where goldfish have displaced valuable native fishes in the United States. While they are expected to be naturalized in Minnesota waters, there is no information to suggest they will place native species at a competitive disadvantage.

D. Ability to control

The ability to reduce or eliminate populations of goldfish will vary based on where they are found. Populations established in major river systems have low potential for management. Populations found in smaller, isolated inland waters could possibly be eradicated with fish toxicants.

REFERENCES:

Courtenay, W. R., D. A. Hensley, J. N. Taylor, and J. A. McCann. 1984. Distribution of exotic fish in the continental United States. *In*, W. R. Courtenay and J. R. Stauffer Jr. (Eds), Distribution, biology and management of exotic fishes: 41-47. Baltimore: John Hopkins University Press.

Lever C. 1996. Naturalized fishes of the world. Academic Press Limited, San Diego, California.

Mills, E. L., J. H. Leach, J. T. Carlton, and C. L. Secor. 1993. Exotic species in the Great Lakes: A history of biotic crises and anthropogenic introductions. Journal Great Lakes Research, 19(1):1-54.

6216.0260 Regulated Exotic Species, Subp. 3. (Fish). Item (D):

COMMON NAME: **Koi**
SCIENTIFIC NAME: ***Carassius auratus*** FAMILY: **Cyprinidae**

SPECIES DESCRIPTION AND NATIVE RANGE:
Koi are ornamental fish species derived from the common carp and are cousin to the goldfish. The value of koi is determined by its color and beauty. The average koi can grow as large as 36 inches. Although some koi have attained an age of 200 years, the average life span is 25 to 30 years.
The Koi are primarily from Japan. These species are bred for color morphs.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

BASIS FOR PROPOSED CLASSIFICATION:	Ranking
A. Likelihood of release or escape if allowed in the state:	**high**
B. Likelihood of naturalization if released or escaped:	**moderate**
C. Magnitude of potential adverse impacts if naturalized:	**low**
D. Ability to: a) eradicate	**low**
b) manage naturalized population	**low**
c) control its spread to new locations	**low**

A. Likelihood of introduction
The chance of koi being introduced into the wild are fairly high since it is popular as an aquarium and a garden pond fish. In the case of a flood, garden ponds can be inundated and overflow into natural waters. It also may be released into the wild as an unwanted aquarium pet.

B. Likelihood of naturalization
The likelihood of naturalization is moderate. The koi if released into the wild may be susceptible to disease, parasites, and predation. Since they have been raised on specialized dry diets, they may not be able to readily find a food source upon introduction. There are also thermal limitations to winter and cold water survival. They do not thrive well under the ice under certain circumstances. They are able to tolerate cold water conditions and may survive in open water thermal effluents or discharges.

C. Magnitude of adverse impacts on native species, natural resources, and their use
The impacts on the natural resources and native species should be considered low. There are no documented case histories where koi may have displaced native fish in the United States. While they may have the ability to naturalize in Minnesota waters, there is no information available that suggest that they will place native species at a competitive disadvantage.

D. Ability to control
As with control of any species that are introduced into state waters, the location is key. If it is released into a large river system or lake chain, the ability to control is low. Populations found in small water bodies can be controlled by piscicides.

E. Other considerations
The koi is a prized ornamental fish that is presently found throughout Minnesota. The fish are placed in garden ponds during the summer and brought inside during the winter.

REFERENCES:
Information was found by searching websites on the Internet.

6216.0260 Regulated Exotic Species, Subp. 3. (Fish). Item (E):

COMMON NAME: **rainbow smelt**
SCIENTIFIC NAME: ***Osmerus mordax*** Mitchell FAMILY: **Osmeridae**

SPECIES DESCRIPTION AND NATIVE RANGE: The rainbow smelt is a species of fish native to the Atlantic coast and many freshwater lakes in eastern North America (Scott and Crossman 1973). The inland distribution of rainbow smelt is described by Becker 1983 and Franzin et al. 1994.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of release or escape if allowed in the state:	**high**
B. Likelihood of naturalization if released or escaped:	**high**
C. Magnitude of potential adverse impacts if it naturalized:	**high**
D. Ability to: a) eradicate	**low**
b) manage naturalized populations:	**low**
c) control its spread to new locations:	**low**

A. Likelihood of introduction
The likelihood that rainbow smelt might be released or escape into a free-living state if allowed in the state is high because: 1) significant rainbow smelt populations probably will develop through natural dispersal in Namakan Lake, Rainy Lake, and Lake of the Woods (Franzin et al, 1994); 2) human-assisted dispersal has been the most important agent in the spread of rainbow smelt whether their actions have been deliberate or accidental (Franzin et al, 1994) .

B. Likelihood of naturalization
The likelihood that rainbow smelt might establish a self sustaining population in the wild if they are released or escape into a free-living state is high because of recent range extensions (Evans and Loftus 1987, Franzin et al. 1994) and the numbers of lakes in northern Minnesota having suitable habitat for rainbow smelt.

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of rainbow smelt is high because: 1) They have the potential to prey on or compete with native percid species (Evans and Loftus 1987); 2) a diet of rainbow smelt increases the mercury levels in predator species (i.e. walleye and lake trout) in soft water lakes (Akielaszek and Haines 1981, MacCrimmon et al. 1983, and Mathers and Johansen 1985); 3) there is evidence that rainbow smelt and lake whitefish compete for habitat and food (Evans et al. 1988),

D. Ability to control
The ability to reduce populations of rainbow smelt once naturalized would be low because there is no known selective methods to control them.

REFERENCES

Akielaszek, J.J., and T.A. Haines. 1981. Mercury in the muscle tissue of fish from three northern Maine lakes. Bulletin of Environmental Contamination and Toxicology 27:201-208.

Becker, G.C. 1983. Fishes of Wisconsin. University of Wisconsin Press.

Evans, D.O., J.J. Houston, and G.N. Meredith. 1988. Status of the Lake Simcoe whitefish, *Coregonus clupeaformis*, in Canada. Can. Field-Nat. 102: 103-113.

Evans, D.O., and D.H. Loftus. 1987. Colonization of inland lakes in the Great Lakes region by rainbow smelt, *Osmerus mordax*: their freshwater niche and effects on indigenous fishes. Can. J. Fish. Aquat. Sci. 44(Suppl 2): 182- 197.

Franzin, W.G., B.A. Barton, R.A. Remnant, D.B Wain, and S.J. Pagel. 1994. Range extension, present and potential distribution, and possible effects of rainbow smelt in Hudson Bay drainage waters of northwestern Ontario, Manitoba, and Minnesota. N. Am. J. Fish. Manage. 14:65-76.

MacCrimmon, H.R., C.D. Wren, and B.L. Gots. 1983. Mercury uptake by lake trout, *Salvelinus namaycush*, relative to age, growth and diet in Tadenac Lake with comparative data from other Precambrian Shield Lakes. Can. J. Fish. Aquat. Sci. 40:114-1202.

Mathers, R.A. and P.H. Johansen. 1985. The effects of feeding ecology on mercury accumulation in walleye, *Stizostedion vitreum*, and pike, *Esox lucius*, in Lake Simcoe. Can. J. Zool. 63: 2006-2012.

Scott, W.B. and E.J. Crossman. 1973. Freshwater fishes of Canada. Fish. Res. Board Canada, Ottawa. Bull. 184.

6216.0260 Regulated Exotic Species, Subp. 3. (Fish). Item (F):

COMMON NAME: **Tilapia**
SCIENTIFIC NAME: Genus ***Oreochromis, Sarotheradon, and Tilapia*** FAMILY: **Cichlidae**

SPECIES DESCRIPTION AND NATIVE RANGE:
Tilapia are a warm water fish that have the body shape of our native panfish, however, can be very colorful. The species were introduced to the North American Continent for vegetation control and ended up being used as a food fish. While tilapia tolerate very high environmental temperatures, they become diseased and die quickly during the fall as the water temperature begins to fall into the low 50's Fahrenheit. The natural range of tilapia is central Africa.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of release or escape if allowed in the state:	**high**
B. Likelihood of naturalization if released or escaped:	**low**
C. Magnitude of potential adverse impacts if naturalized:	**low**
D. Ability to: a) eradicate	**high**
b) manage naturalized population	**high**
c) control its spread to new locations	**high**

A. Likelihood of introduction
The likelihood of introduction is high at this time. The fish is cultured and sold live in ethnic food markets and also sold in the aquarium trade. Once people tire of aquarium fish, they may release them into the wild as one of their options.

B. Likelihood of naturalization
The only areas where naturalization could occur in Minnesota are places that have year round thermal discharges that maintain water temperatures 55 degrees Fahrenheit or higher.

C. Magnitude of adverse impacts on native species, natural resources, and their use
The impact on native species and natural resources would be limited because the tilapia can survive only in warm summer temperatures. The species has impacted native plant communities where it has survived for more than one or two seasons.

D. Ability to control
The species would be relatively easy to control because it can not survive in water temperatures less than 50 degrees Fahrenheit. If tilapia were found in a water body with thermal discharges, the source of warm water could be eliminated for a short time period to eradicate the species.

E. Other considerations
Tilapia are successfully being raised by aquatic farmers for ethnic markets in the Twin Cities, Toronto, and New York City. The fish are raised in indoor facilities and not in public waters of the state.

REFERNECES:
Lever, C. 1996. Naturlized Fishes of the World. Academic Press Inc. San Diego, CA.

Stickney, R. R., 1996. Aquaculture in the United States.John Wiley and Sons, New York, NY.

6216.0260 Regulated Exotic Species, Subp. 4. (Invertebrates). Item (A):

COMMON NAME: **Chinese mystery snail, Japanese trap door snail**
SCIENTIFIC NAME: ***Cipangopaludina* spp.** (including *japonicus* and *chinensis malleatus*) Hannibal
FAMILY: **Viviparidae**

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: Chinese mystery snail and Japanese trap door snail are large viviparid snails similar in appearance to native species. As their name implies, these two taxa are native to Asia. They are introduced and widely spread throughout the United States, and have been in North America for close to a century (Clench and Fuller 1965).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

BASIS FOR PROPOSED CLASSIFICATION:	Ranking
A. Likelihood of release or escape if allowed in the state:	**high**
B. Likelihood of naturalization if released or escaped:	**high**
C. Magnitude of potential adverse impacts if it naturalized:	**moderate**
D. Ability to: a) eradicate	**low**
b) manage naturalized populations:	**low**
c) control its spread to new locations:	**moderate**

A. Likelihood of introduction
The likelihood that Chinese mystery snail and Japanese trap door snail might be released or escape into a free-living state if allowed in the state is high because they are commonly used in aquarium trade for tanks or outdoor water gardens. Mills et al. (1993) reports on intentional introductions and aquarium releases of these species in the Great Lakes region.

B. Likelihood of naturalization
The likelihood that Chinese mystery snail and Japanese trap door snail might establish a self sustaining population in the wild if they are released or escape into a free-living state is high, because populations already exist within the waters of the state.

C. Magnitude of adverse impacts on native species, natural resources, and their use
The magnitude of potential adverse impacts of Chinese mystery snail is moderate because: 1) they may out compete native snails due to their slightly larger size, but information on this is lacking. 2) extremely high densities may impact macrophytes, as these snails are grazers, similar to the native closely related species in the state; and 3) they may also play a role in the cycling of swimmers itch, as do our native species; 4) there are no widespread reports of problems occurring with these snails.

D. Ability to control
The ability to reduce populations of Chinese mystery snail and Japanese trap door snail once naturalized would be low because any attempt to eradicate snails with chemicals on a system-wide basis would have major negative impacts on other aquatic life. The ability to limit spread of Chinese mystery snail and Japanese trap door snail is moderate because it is present in locations within the state, and may move naturally through connected waterways.

E. Other considerations
A paper presented in an International Research Conference on Zebra Mussels listed *Cipangopaludina chinensis malleatus* as a 'relatively benign' species which may have increased molluscan diversity in certain areas of the Great Lakes. While their release does not seem likely to cause major environmental impacts, it would be prudent to restrict the intentional release.

REFERENCES:

Clench, W.J. and S.L.H. Fuller. 1965. The genus Viviparus (Viviparidae) in North America. Occasional Papers on Mollusks 2(32): 385 - 412.

Mills, E.L., J.H. Leach, J.T. Carlton, and C.L. Secor. 1993. Exotic species in the Great Lakes: a history of biotic crises and anthropogenic introductions. Journal of Great Lakes Research 19(1):1-54.

6216.0260 Regulated Exotic Species, Subp. 4. (Invertebrates). Item (B):

COMMON NAME: **rusty crayfish**
SCIENTIFIC NAME: ***Orconectes rusticus*** Girard FAMILY: **Cambaridae**

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: Rusty crayfish are a species of crayfish native to the area of North America that includes Michigan, Ohio, Indiana and southern states. It is similar in appearance to crayfish native to Minnesota, but is larger in size.

PRESENT CLASSIFICATION: **prohibited**
PROPOSED CLASSIFICATION: **regulated**

LEGAL CLASSIFICATION HISTORY:
Minnesota Rule 6260 prohibits the transport of any crayfish from one waterbody to another. The rule prohibits the use of live crayfish for bait, except in the water body where they are collected. Minnesota Rule 6216.0250 currently designates rusty crayfish as a prohibited exotic species. The proposed amendment to the rules would change the classification to a regulated exotic species.

BASIS FOR PROPOSED CLASSIFICATION:		Ranking
A. Likelihood of release or escape if allowed in the state:		**high**
B. Likelihood of naturalization if released or escaped:		**high**
C. Magnitude of potential adverse impacts if it naturalized:		**moderate**
D. Ability to:	a) eradicate	**low**
	b) manage naturalized populations:	**low**
	c) control its spread to new locations:	**medium**

A. Likelihood of introduction
The likelihood that rusty crayfish might be released or escape into a free-living state if allowed in the state is high because: 1) they have been used and distributed for use as live bait; 2) they can be acquired from biological supply houses for educational uses and may be subsequently released by teachers or student; and 3) they could escape from ponds if raised in aquaculture.

B. Likelihood of naturalization
The likelihood that rusty crayfish might establish a self sustaining population in the wild if they are released or escape into a free-living state is high because self-sustaining populations of this species are known to be present in several bodies of water in Minnesota. A 1990 report lists sixteen waterbodies, in 12 Minnesota counties, in which rusty crayfish were collected, scattered from the northeast to the southwest of the state (Helgen 1990). It is likely in more waters, but has not been reported.

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of rusty crayfish is moderate because: 1) it has replaced or altered community composition of native crayfish species in some lakes (Page 1985); and 2) has been suggested to cause elimination of aquatic macrophytes (Olsen *et al.* 1989). However, this does not occur in all lakes where this organism is introduced and macrophyte destruction and/or elimination has also been documented from our native species of crayfish (Bad Medicine Lake). Finally, there is little or no substantiated evidence that the rusty crayfish will cause severe negative impacts to fish communities.

D. Ability to control
The ability to reduce populations of rusty crayfish once naturalized would be low because there are not management options available for natural waters that would not seriously impact other aquatic life. The ability to limit spread of rusty crayfish is moderate because its means of spread to new waters is primarily through human activity or naturally through interconnected waterways.

E. Other considerations

The DNR has established rules governing crayfish including harvest, transport, release and use for bait. There have been permits issued in the recent past allowing possession and transport of rusty crayfish as part of incidental capture. Thus, it seems contradictory to have this species listed as 'prohibited' stating that it cannot be transported or possessed, and have rules which can allow these actions by permit. Having two permit processes is unnecessary and confusing. As the existing crayfish rules precede the designation of rusty crayfish as prohibited, it seems reasonable to reclassify the rusty crayfish as 'regulated'. The existing crayfish rules can control the spread and these exotic species rules would not conflict with pre-existing rules.

REFERENCES:

Helgen, J. C. 1990. *The Distribution of Crayfishes in Minnesota.* Section of Fisheries Investigational Report No. 405. Division Of Fish and Wildlife, Minnesota Department of Natural Resources.

Page, L. M. 1985. The Crayfish and Shrimps (Decapoda) of Illinois. Volume 33, Article 4. *Illinois Natural History Survey Bulletin.*

Olsen, M. T., D.M. Lodge, G. M. Capelli, and R. Houlihan. 1989. Impact of the Introduced Crayfish, *Orconectes rusticus,* in Northern Wisconsin Lakes. Abstracts form the 1989 North American Benthological Society Annual Meeting.

6216.0260 Regulated Exotic Species, Subp. 4. (Invertebrates). Item (C):

COMMON NAME: **spiny water flea**
SCIENTIFIC NAME: ***Bythotrephes cederstroemi*** Schoedler FAMILY: **Cercopagidae**

SPECIES DESCRIPTION AND NATIVE RANGE: Spiny water flea is a tiny (less than one half inch long) crustacean with a long, sharp, barbed tail spine. It is native to Great Britain and northern Europe east to the Caspian Sea.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

BASIS FOR PROPOSED CLASSIFICATION:

		Ranking
A. Likelihood of release or escape if allowed in the state:		**high**
B. Likelihood of naturalization if released or escaped:		**high**
C. Magnitude of potential adverse impacts if it naturalized:		**moderate to low**
D. Ability to:	a) eradicate	**low**
	b) manage naturalized populations:	**low**
	c) control its spread to new locations:	**moderate**

A. Likelihood of introduction
The likelihood that spiny water flea might be released or escape into a free-living state if allowed in the state is high because: 1) adults can become stuck to boating equipment; 2) adults and eggs can be transported in water in livewells, bait containers, bilges; 3) both adults and eggs are very small and difficult to see.

B. Likelihood of naturalization
The likelihood that spiny water flea might establish a self sustaining population in the wild if they are released or escape into a free-living state is high because they are known to exist in Lake Superior, the St. Louis River, and a few other waters near Duluth.

C. Magnitude of adverse impacts on native species, natural resources, and their use
The magnitude of potential adverse impacts of spiny water flea is moderate to low because, while *Bythotrephes* has been established in Minnesota waters for several years, there have been no reports of documented negative impacts to the lakes where it has been found. Some researchers speculated early in the spread of this organism that it might cause a disruption or crash of the cladoceran zooplankton grazers, due to its predatory nature. For example, in Lake Michigan the *Daphnia* populations were found to contain only one species in the offshore areas, as opposed to three in the nearshore areas. Researchers speculated that fish predation in the nearshore on the large *Bythotrephes* reduced its grazing on the cladoceran community, while in the offshore areas, predation pressure on the exotic was lessened. However, the *Daphnia* community was not eliminated. It has also been found that while small fish have difficulties in consuming this animal (due to the spines on its tail) larger fish can and do successfully prey on this invertebrate. Researchers have reported several species of fish consuming *Bythotrephes*, and report that in European lakes, it is abundant only in fishless lakes or those with a low abundance of planktivores (Garton, et al. 1993).

D. Ability to control
The ability to eradicate or reduce populations of spiny water flea once naturalized would be low because there are no known control methods for crustacean zooplankton, and chemical control would have disasterous impacts on the entire aquatic ecosystem. Additionally, the resting egg stage of this zooplankter has evolved to withstand most environmental extremes. Thus, by the time spiny water

flea are found in a lake, there are already resistant resting eggs in the system which would produce new *Bythotrephes*. The ability to limit spread of spiny water flea is moderate because, while regulations could address transport, the cladocerans are very difficult to see, and transport would be generally accidental.

E. Other considerations

Waters with spiny water flea populations will continue to be designated infested waters because unregulated transport of water from those waters would further unintentional spread of spiny water fleas.

REFERENCES:

Garton, D.W., D.J. Berg, A.M. Stoeckmann, and W.R. Haag. 1993. Biology of recent invertebrate invading species in the Great Lakes: The spiny water flea *Bythotrephes cederstroemi* and the zebra mussel *Dreissena polymorpha*. The Ohio State University, Ohio Sea Grant Program, Reprint OHSU-RS-165.

6216.0260 Regulated Exotic Species, Subp. 5. (Birds). Item (A):

COMMON NAME: **Egyptian goose**
SCIENTIFIC NAME: ***Alopochen aegyptiacus*** Linne FAMILY: **Anatidae**

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: Egyptian goose is a bird that is native to Africa (Lever 1987:39). It has naturalized in the British Isles and the Netherlands in Europe. Lever (1987:41) does not report naturalized populations in the United States, although in 1997 the Oregon Department of Fish and Wildlife's district biologists report that about 250 Egyptian geese have naturalized at Umpqua Valley in Oregon.

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **prohibited**

BASIS FOR PROPOSED CLASSIFICATION:

	Ranking
A. Likelihood of release or escape if allowed in the state:	**high**
B. Likelihood of naturalization if released or escaped:	**moderate to high**
C. Magnitude of potential adverse impacts if it naturalized:	**moderate to high**
D. Ability to: a) eradicate	**high**
b) manage naturalized populations:	**low**
c) control its spread to new locations:	**moderate**

A. Likelihood of introduction
The likelihood that the Egyptian goose might be released or escape into a free-living state if allowed in the state is high because they have escaped captivity in other countries such as the Netherlands (Lever 1987:40).

B. Likelihood of naturalization
The likelihood that the Egyptian goose might establish a self sustaining population in the wild if they are released or escape into a free-living state is moderate to high based on the fact that it has naturalized in Europe (Lever 1987) and Oregon. Delacour (1954) reports that they breed freely and any food, even a plain diet of corn, suits them.

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of the Egyptian goose is moderate to high because it can be extremely aggressive to other species (Lever 1987:40) and has exhibited that behavior in Oregon. However, Lever (1987:41) states that their competition for nesting sites and food with native species in the Netherlands has not been recorded so far. Delacour (1954:237) reports that Eqyptian geese are "of a jelous and violent disposition" and "because of its savage temper and extreme pugnacity, it is dangerous to other birds, unless unlimited space is given." They also hybridize easily with other species of waterfowl (Delacour 1954:238).

D. Ability to control
The ability to eradicate small populations of Egyptian geese once naturalized would be high because they would be possible to find and destroy. The ability to manage numerous large populations of Egyptian geese if naturalized would be low. The ability to limit spread of Egyptian geese would be moderate because their importation and release could be regulated, however if allowed to naturalize in the state they could spread by flying to new locations.

REFERENCES:

Delacour, J. 1954. Waterfowl of the World - Volume One. Country Life Limited, London.

Lever, C. 1987. Naturalized Birds of the World. Longman Scientific & Technical, copublished in the United States with John Wiley and Sons, Inc., New York, NY.

Oregon Department of Fish and Wildlife. 1997. Wildlife Integrity Handbook. Chapter 7 – Prohibited Species Justification.

6216.0260 Regulated Exotic Species, Subp.5. (Birds), Item (B):

COMMON NAME: **mute swan**
SCIENTIFIC NAME: ***Cygnus olor*** Gmelin FAMILY: **Anatidae**

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: Mute swans are native to Europe and Asia and were first introduced into the United States in the mid 1800s through the early 1900s (Lever 1987, Ciaranca et al 1997).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

LEGAL CLASSIFICATION HISTORY:
Minnesota Emergency Rule 6216.0100 listed mute swan as an undesirable exotic species which made it illegal to transport, possess, sell, purchase, import, take, or propagate the species without a permit issued by the Department. This emergency rule expired August 11, 1994. Mute swans are currently regulated in part by the state game farm statues. It is illegal to release mute swans into the wild under those statutes.

BASIS FOR PROPOSED CLASSIFICATION:

		Ranking
A. Likelihood of release or escape if allowed in the state:		**high**
B. Likelihood of naturalization if released or escaped:		**high**
C. Magnitude of potential adverse impacts if it naturalized:		**high**
D. Ability to:	a) eradicate	**high**
	b) manage naturalized populations:	**moderate**
	c) control its spread to new locations:	**moderate**

A. Likelihood of introduction
The likelihood that mute swans might be released or escape into a free-living state if allowed in the state is high because mute swans have escaped or been released from golf courses, avicultural and park settings occasionally in Minnesota. All North American populations of mute swans originated from release or escape of individuals from captive flocks (Ciaranca et al 1997:1). There have been attempts to use mute swans to keep geese populations in localized areas in check. However, this does not work because the aggression is centered around the breeding season and subsides prior to the molt migration of geese, thus allowing goose numbers to increase. With increasing goose populations, more people may be interested in possessing and releasing mute swans to compete with Canada geese (Mr. Kent Solberg, pers. comm., June 1997).

B. Likelihood of naturalization
The likelihood that mute swans might establish a self sustaining population in the wild if they are released or escape into a free-living state is high because there have been documented wild nesting pairs in some locations of the state, such as the Cannon River in Rice County, and in Cass County.
In Michigan, Ontario, Wisconsin and eastern states from Maine to South Carolina, populations have naturalized expanded rapidly causing concern for native species and their habitat (Allin, Chasko, and Husband 1987, Ciaranca et al 1997:1).

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of mute swans is high because: 1) mute swans can be extremely aggressive during the spring and summer breeding season, excluding other wildlife from their breeding territories (Allin, Chasko, and Husband 1987). 2) there is evidence that mute swans have displaced loons on traditional loon nesting sites in Michigan (Johnson, pers. comm. 1991); 3) while

Conover and McIvor (1993) did not find significant impacts from mute swans at low population densities, it is difficult to maintain low population levels once mute swans are established. Ciaranca, et. al. (1997) gave overgrazing of aquatic vegetation and displacement of native waterfowl as potential effects on native ecosystems. Delacour (1954) describes mute swans as "jealous and bad-tempered, sometimes persecuting and killing even ducks." Lever (1987:26) reports that at Chesapeake Bay where one or two pairs escaped or were released in 1962, they have multiplied to 500 individuals which may be competing with other water birds. Recent articles from The Maryland Sun quote a state biologist reporting "there are 2700 of the birds in Maryland ... they've been increasing at 15% a year." The same individual reports harmful impacts to reproduction of native waterbirds.

D. Ability to control

The ability to eradicate small populations would be high. However, the ability to reduce large populations of mute swans once naturalized would be moderate because mute swans are capable of high reproductive rates (Knapton 1993, Wisconsin DNR pers. comm., Johnson 1993) and the public can become protective of the species at localized sites. The ability to limit spread of mute swans is moderate because the potential spread could come from intentional introductions or from naturalized birds arriving from other states or provinces. Regulation of intentional introductions would provide moderate ability to control the spread.

E. Other considerations

It is desirable to prevent the establishment of a naturalized population of mute swans (Temple 1992). It is reasonable and necessary to designate the mute swan as a "regulated exotic species" to prohibit releases and require reports of escaped mute swans to help prevent the establishment of naturalized populations in the state. This proposed designation mirrors the Minnesota Statute, section 97A.105 which prohibits the introduction of mute swans into the wild without a permit. The proposed designation will classify the mute swan into a class consistent with statutory restrictions on the species.

REFERENCES:

Allin, C. C., Chasko, G. G., and T. P. Husband. 1987. Mute swans in the Atlantic flyway: a review of the history, population growth, and management needs. *Trans. NE Sect. Wildl. Soc.* 44: 32-47.

Ciaranca, M.A.,C.C. Allin, and G.S. Jones. 1997. Mute Swan (*Cygnus olor*). *In* The Birds of North America, No. 273 (A. Poole and F. Gill, eds.) The Academy of Natural Sciences, Philadelphia, PA and The American Ornathologists' Union, Washington, D.C.

Delacour, J. 1954. Waterfowl of the World - Volume One. Country Life Limited, London.

Johnson, J. 1993. Kellogg Bird Sanctuary. Michigan State University.

Knapton, R. W. 1993. Population Status and reproductive biology of the mute swan, *Cygnus olor*, at Long Point, Lake Erie, Ontario. Can. Field Nat. 77:354-356.

Lever, C. 1987. Naturalized Birds of the World. Longman Scientific & Technical, copublished in the the United States with John Wiley and Sons, Inc., New York, NY.

Minnesota Department of Natural Resources. 1995. Survey records and notes.

Smith, T. 1993. Deceptive elegance. Wisconsin Natural Resources 17(3):4-9.

Temple, S. 1992. Exotic birds: a growing problem with no easy solution. The Auk 109(2):395-397.

Wisconsin Department of Natural Resources. 1994. Surveys records and notes.

6216.0260 Regulated Exotic Species, Subp. 5. (Birds), Item (C):

COMMON NAME: **Sichuan pheasant**
SCIENTIFIC NAME: ***Phasianus colchicus strachi*** FAMILY:

SPECIES DESCRIPTION, NATIVE AND CURRENT RANGE: Sichuan pheasants are a subspecies of the common pheasant and is native to Sichuan Province in China. It closely resembles the ring-necked pheasant although it may use different habitats. Sichuan pheasants were observed using a variety of habitats in China (R. Kimmel, pers. comm., August 16, 1988).

PRESENT CLASSIFICATION: **none**
PROPOSED CLASSIFICATION: **regulated**

BASIS FOR PROPOSED CLASSIFICATION:		Ranking
A. Likelihood of release or escape if allowed in the state:		**moderate**
B. Likelihood of naturalization if released or escaped:		**moderate**
C. Magnitude of potential adverse impacts if it naturalized:		**high to moderate**
D. Ability to:	a) eradicate	**moderate**
	b) manage naturalized populations:	**moderate**
	c) control its spread to new locations:	**moderate**

A. Likelihood of introduction
The likelihood that Sichuan pheasants might be released or escape into a free-living state if allowed in the state is moderate. Intentional introductions have been attempted in Michigan, Pennsylvania, and NorthDakota and discussed in other states including Minnesota (R. Kimmel, pers. comm., October 8, 1997).

B. Likelihood of naturalization
The likelihood that Sichuan pheasants might establish a self sustaining population in the wild if they are released or escape into a free-living state is moderate. They have naturalized in Michigan after introduction by the Michigan Department of Natural Resources. It is likely they could naturalize in areas of Minnesota where ring-necked pheasants and sharptailed grouse are currently present.

C. Magnitude of adverse impacts on native species, natural resources , and their use
The magnitude of potential adverse impacts of Sichuan pheasants is high to moderate because Sichuan pheasants could parisitize nests of native birds; hybridize with ring-necked pheasants; and compete with upland birds such as ruffed grouse, sharp-tailed grouse, and wild turkey (Kimmel 1988:262).

D. Ability to control
The ability to eradicate small number of birds in a known location would be high. However, the ability to reduce large populations of naturalized bird would be moderate to low.

E. Other considerations
Past correspondednce from Pheasants Forever, The Wild Turkey Federation, and the Minnesota Sharp-tailed Grouse Society has expressed concern about, and opposition to, the introduction of Sichuan pheasants in Minnesota.

REFERENCES:
Kimmel, R. O. 1988. Potential impacts of ringnecked pheasants on other game birds. Pages 253-265 *in*, D.L. Hallett et al., W.R. Edwards, and G. V. Burger (eds), Pheasants: Symptoms of Wildlife Problems on Agricultural Lands. North Central Section of the Wildl. Soc., Bloomington IN 345pp.

Part 6216.0265 **Permits for Prohibited and Regulated Exotic Species.**

This part describes the circumstances when a permit is required and allowed for prohibited and regulated exotic species and alternate permits that may authorize an introduction of a regulated exotic species. It describes the qualifications which a person must satisfy in order to be issued a permit for prohibited or regulated exotic species. This part also addresses inspections of facilities or equipment used to confine prohibited exotic species and the transferability, renewal, and revocation of permits.

Subpart 1. **Requirement.**

This subpart explains that a person must obtain a permit to possess, import purchase, propagate, or transport prohibited exotic species, except as authorized in statute. It also explains that a person may not introduce a regulated exotic species without a permit from the commissioner. It is necessary and reasonable to establish these statutory limitations in the rule as the foundation for the subsequent requirements and to clarify the scope of the Department's permit authority.

Subpart 2. **Exemptions and alternate permits for regulated exotic species.**

It is reasonable to allow alternative permits or licenses to authorize the introduction of a regulated exotic species. Under subpart 2, permits and licenses issued under Minn. Stat., secs. 97C and 17.4981 to 17.4994 for private fish hatcheries, aquatic farms, commercial fishing operators, and bait dealers may authorize the introduction of regulated exotic species under the conditions specified in the permit. This is necessary and reasonable to avoid duplication of permit requirements.

Subpart 3. **Prohibited exotic species permit limitation.**

This subpart describes the limited purposes for which a prohibited exotic species permit may be issued according to Minn. Stat., sec. 84D.11, subd. 1. It is necessary and reasonable to establish these statutory limitations in the rule as the to

clarify the scope of the Department's permit authority for prohibited exotic species.

Subpart 4. **Eligibility; prohibited exotic species permit.**

This subpart establishes eligibility requirements for persons applying for a prohibited exotic species permit. It is necessary to establish such requirements to ensure that the applicants are capable of handling and possessing prohibited species without allowing them to escape or be disposed of improperly. It is reasonable and necessary to require applicants to be at least 18 years of age so that they are legally responsible age in the event that there is an unauthorized introduction of prohibited exotic species and the permittee is liable for the actual costs incurred by the department in capturing or controlling, or attempting to capture or control, the animal and its progeny and established in Minnesota Statutes, sec. 84D.08. It is necessary and reasonable to require the applicant to maintain a facility or transportation equipment sufficient to prevent the escape of prohibited species if they are allowed to possess or transport a prohibited exotic species.

Subpart 5. **Permit application.**

Under this subpart are listed the various types of information that will be requested of persons who apply for a prohibited or regulated exotic species permit. The agency will provide a form for the applicants to complete, the information requested will include items such as: the applicant's name, address, and daytime and evening phone numbers; the names of the prohibited or regulated exotic species for which the applicant desires permits; a description of the activity the applicant will be undertaking; a description of the facilities or transportation equipment the applicant will use to contain prohibited exotic species; and a written contingency plan to recapture or eradicate the species should the species escape.

It is necessary and reasonable that the applicants be required to provide this information because it is needed to evaluate and process the application in a timely manner and to provide basic information for record files kept on all permit holders.

More specifically, it is necessary for the applicant to describe the activity that the applicant will be undertaking with prohibited exotic species in order to determine if the activity and its purpose are allowable under Minnesota Statutes, chapter 84D. It is also necessary to fully understand activity in order to determine the risk of introduction of the prohibited exotic species and precautions that are necessary to contain the species. It is necessary to require the applicant to provide a detailed description of the facilities or transportation equipment to be used so the Department can evaluate whether the facilities and equipment are adequate to contain the species. It is also necessary to require the applicant to describe their previous experience handling the same or similar species to help the Department evaluate whether that the applicant is capable of handling prohibited species without significant risk of escapes or other unauthorized introductions. It is necessary and reasonable to require a contingency plan for the eradication or recapture of an unauthorized introduction because there is always a possibility that an introduction may occur, and it is in the permittee's and the state's best interest to be prepared for accidental introductions should they occur.

Subpart 6. **Inspection of facilities or equipment.**

This part provides that the Department may inspect the facilities or equipment of the applicant prior to issuing a permit and after issuance at reasonable times. The inspections are optional, but it is necessary allow such inspections by the commissioner to confirm the adequacy of the facilities to contain a prohibited exotic species.

Subpart 7. **Transferability.**

Prohibited or regulated exotic species permits issued to a person cannot be transferred under the language of this subpart. It is necessary and reasonable that there be a provision in the rules precluding a permit specifically issued to one person from being transferred to another, because the recipient of the transferred permit might not be qualified to have a permit or have appropriate facilities or

equipment to contain a prohibited exotic species.

Subpart 8. **Expiration date and renewal.**

This subpart provides that all prohibited and regulated exotic species permits expire on December 31 of each year or another date that is specified in the permit. It is reasonable for permits to be issued for a limited time period so they are not open ended. This is important in order for the Department to monitor the permittee's ongoing need for the permit and maintain current information about the permittee.

The rule would allow permits to be issued for variable lengths of time with the permit duration matching the need to possess the permit. For example, a research project may be planned for two or three years, in which case a permit allowing the researcher to possess prohibited exotic species for the project could be issued for the duration of the project. Other permits for purposes of transporting prohibited exotic species may only be needed to be for a short duration. Under these rules this shorter time could also be specified on a permit.

This subpart also specifies that applications for renewal shall be made before October 31 of the year the permit expires and requires the application for renewal to describe any changes in the information required to obtain the permit. It is reasonable and necessary to establish a date that renewal applications must be received in order to allow adequate time for the Department to process renewals before the end of each year when many permits may expire. It is reasonable to have the applications for renewal include information describing changes to the initial information required to obtain a permit so that the Department may review changes in quantities of a species, facilities, contingency plans, or other such information before renewing a permit.

Subpart 9. **Revocation of Permit.** This part provides for the revocation of permits by the Department for failure of a permittee to comply with any provisions of the proposed rules, when it is necessary to protect the interests of the public, to protect native plant and animal populations in the state, or to protect the state's natural resources. Failure to comply with provisions governing the prohibited or regulated exotic species permits is a reasonable basis for permit revocation, because noncompliance with regulations could pose an unreasonable risk to the state's natural resources and their use which would not be allowed under the standard established in Minn. Stat., sec. 84D.11, subd. 3. New information or situations arising after a permit is issued may cause the commissioner to determine that a higher risk to the state's natural resources or their use exists than at the time a permit was issued. In that situation it may be necessary and reasonable to revoke or amend a permit. Since this part establishes a hearing process with the Commissioner of Natural Resources, it ensures that a permit holder is given a chance to contest the revocation and seek an amended permit.

Subpart 10. **Disclaimer of Liability.** This subpart states that any permits issued under the proposed rules are permissive (voluntary) and that no liability is to be incurred by the state for any acts of permit holders. Further, this part makes the permittee solely responsible for any damages or injuries that may result from activities carried on by the permittee. Such a disclaimer is necessary and reasonable because the state cannot assume liability for actions of persons with permits issued by the Department.

Subpart 11. **Effective date.**

At the time these rules are effective there may be people that have prohibited exotic species in their possession or that they are in the process of importing, purchasing, selling, propagating, or transporting. This subpart requires those people to apply for a prohibited exotic species permit within 60 days of the effective date of the rules in order to comply with the rules. It is necessary to require those people to

apply for a permit to ensure that the prohibited exotic species they possess are for purposes allowed by statute and to issue a permit in appropriate cases. It is reasonable to allow a 60 day time period for applications to be submitted because it may not be immediately known that the rules are effective and the requirement to apply for a permit is in place. It also allows a reasonable period of time for the applicant to prepare the required application.

Part 6216.0270 **Unregulated Exotic Species**

"Unregulated exotic species" proposed for designation in this part are listed in the table below along with the primary reason for the proposed designation. Species that are known to have limits to their potential range of naturalization and therefore would not likely naturalize in the state are indicated in column (A). Species that are naturalized in the state and are so widely distributed that regulating them would be of minimal benefit are indicated in column (B). Species that are exempt from the rules because they are designated as livestock in statute or otherwise exempt according to statute (such as animals that are common domestic animals rather than wild animals) are indicated in column (C). Species considered to be of minimal threat are indicated in column (D).

which statute?

It is reasonable to list the exotic species that will not be regulated by these rules. For example, owners of cats, red deer, and llamas will know that they will not be impeded by these rules. It is necessary to list the species that are not exempt from the rules and are unlikely to naturalize in the state to avoid the commissioner having to make a formal review of those species upon request.

See 84 0.14
See Chapter 17 for livestock (llamas, etc)

Table 2. Rationale for proposed unregulated exotic species.

Common name (scientific name) authority	A. Unlikely to naturalize	B. Already abundant in the state	C. Defined as livestock (L) in statute or exempt (E)	D. Minimal adverse impacts
Part 6216.0270, Subpart 2. Fish.				
A. Atlantic salmon (*Salmo salar*) Linnaeus				x
B. brown trout (*Salmo trutta*) Linnaeus				x
C. coho salmon (*Oncorhynchus kisutch*) Walbaum				x
D. chinook salmon (*Oncorhynchus tshawytscha*) Walbaum				x
E. pink salmon (*Oncorhynchus gorbuscha*) Walbaum				x
F. rainbow trout (*Oncorhynchus mykiss*) Walbaum				x
G. tropical, subtropical, and saltwater fish, except anadromous species	x			x
Part 6216.0270, Subpart 3. Invertebrates.				
A. tropical, subtropical, and saltwater invertebrates	x			
Part 6216.0270, Subpart 4. Mammals.				
A. ass, burro, donkey (*Equus asinus*)			E (Lever 1985)	
B. camel (*Camelus bactrianus and C. Dromedarius*)			E	
C. cat, all domestic breeds (*Felis catus*)			E	
D. cattle (*Bos taurus* and *Bos indicus*)			E	
E. chinchilla (*Chinchilla laniger*)			E	
F. dog, all domestic breeds (*Canis familiaris*)			E	
G. "farmed" Cervidae as defined in Minn. Stat., sec. 17.451, subd. 2			L	
H. gerbil, all species			E	

Common name (scientific name) authority	**A. Unlikely to naturalize**	**B. Already abundant in the state**	**C. Defined as livestock (L) in statute or exempt (E)**	**D. Minimal adverse impacts**
I. Guinea pig (*Cavia porcellus*)			**E**	
J. hamster (*Mesocricetus auratus*)			**E**	
K. horse (*Equus caballus*)			**E**	
L. llamas and alpaca (*Lama* spp.)			**L**	
M. mouse, house mouse (*Mus musculus*)		x (Lever 1985)		
N. mule and hinney (*Equus asinus* x *E. Caballus)*			**E**	
O. rat (*Rattus norvegicus* and *Rattus rattus*)		x (Lever 1985)		
P. sheep (*Ovis aries*)			**E**	
Q. swine, domestic (*Sus scrofa domestica*)			**E**	
Part 6216.0270, Subpart 5. Birds.				
A. chicken (*Gallus gallus*)			**E**	
B. chuckar partridge (*Alectoris chuckar*) Gray	x			
C. domestic duck , including Muscovy (*Cairina moschata*) and Peking	x		**E**	
D. house sparrow (*Passer domesticus domesticus*)		x (Lever 1987:438)		
E. helmeted Guinea fowl (*Numida meleagris*) Linnaeus	x (Lever 1987:190)			
F. Hungarian partridge (*Perdix perdix*) Linnaeus				x
G. peafowl (*Pavo cristatus*) Linnaeus	x (Lever 1987:186)			
H. pigeon or rock dove (*Columa livia*) Gmelin		x (Lever 1987:208		
I. Rattitae, members of the family (ostrich, emu, rheas)			**L**	

Common name (scientific name) authority	A. Unlikely to naturalize	B. Already abundant in the state	C. Defined as livestock (L) in statute or exempt (E)	D. Minimal adverse impacts
J. ringneck pheasant (*Phasianus colchicus*) Linnaeus				x
K.starling (*Sturnus vulgaris vulgaris*) Linnaeus		x (Lever 1987:478)		
L. turkey, domestic (*Melagris gallopavo*), morphologically distinct from wild turkey, Linnaeus			E	

REFERENCES

Lever, C. 1985. Naturalized Mammals of the World. Longman Inc., New York.

Lever, C. 1987. Naturalized Birds of the World. Longman Scientific & Technical. Copublished in the United States with John Wiley and Sons, Inc., New York.

Part 6216.0280 **Escape of Exotic Species.**

It is necessary and reasonable to establish in this part the information that must be provided to the Department when a person reports an unauthorized introduction of prohibited, regulated, or unlisted exotic species in the state as it is required by Minn. Stat., sec. 84D.08. The type of information to be provided is not specified in statute and it is necessary to specify the requirements so permittees, other members of the public, and the Department know what information should be provided in order to consider a person in compliance with Minn. Stat., sec. 84D.08 (a) and not be subject to criminal penalties for the unauthorized introduction under Minn. Stat., sec. 84D.08 (b). It is necessary for the person reporting the unauthorized introduction to provide their name, address, and telephone number so the Department can contact the person after the initial report. It is necessary to know the quantity and species introduced, the location of the introduction, the date and time of the introduction, and the last known location of the species so the Department can establish and conduct efforts to locate and capture or destroy of the unauthorized introductions if the owner of the species has made a reasonable but unsuccessful attempt to recapture or destroy the animal as required under Minnesota Statutes, sec. 84D.08.

Part 6216.0290 **Process for Review of Introductions of Unlisted Exotic Species.**

Subpart 1. **Applications and information required.**

It is necessary to establish what information is required from a person who requests that the commissioner review an unlisted exotic species of aquatic plant or wild animal for introduction according to Minn. Stat., sec. 84D.06. It is reasonable to have all the required information provided before the commissioner can determine if the species should be allowed to be introduced in the state and which classification the species should be designated.

require to verify or predict the outcome of introductions of exotic species.[16] It is necessary and reasonable to have this information to classify an unlisted exotic species according to the criteria in Minnesota Statutes, section 84D.04.

It is reasonable that the entity that proposes an introduction and review by the commissioner should be responsible for compiling and providing the information required. The requirement to provide the information is analogous to the requirement for companies to provide information when they register new pharmaceutical drugs, pesticides, or genetically engineered organisms that must be analyzed prior to use. In 1991, a Minnesota Interagency Exotic Species Task Force, established by the Legislature, recommended that there should be a uniform review process for any proposed intentional introduction of an exotic species and the responsibility for certifying that a potential introduction will not be ecologically harmful should be borne by the importer or breeder.

Subpart 2. **Application review.**

A time for the commissioner's review is provided so that the applicant is assured of a timely consideration of their request. It is reasonable to allow up to 10 work days to review the information before making the determination if the commissioner shall reject or accept the application, because there are only a few Department staff available to technically assess the adequacy and completeness of the information.

Subpart 3. **Review period.**

The proposed rule establishes a 60 day review period that may be extended if the commissioner determines that a public comment period should be established or additional information is necessary to evaluate the proposed introduction. It is reasonable to allow 60 days for review of a proposal to introduce a new exotic species

[16] U.S. Congress, Office of Technology Assessment. 1993. Harmful Nonindigenous Species in the United States.

It is necessary and reasonable to require the name, address, and telephone number of the applicant to ensure that future communication between the applicant and the Department can occur. It is reasonable to require the scientific and common names, family, and the reference used for the scientific name of the unlisted exotic species to ensure that the applicant and the Department are referring to the same species. The applicant is required to state the number of individual plants or animals that are proposed for introduction so that the Department can assess the likelihood that the species would propagate or naturalize in the state.

The applicant is required to provide information about the reason and need of a proposed introduction to assess the need for such introduction and potential benefits to the person or the State of Minnesota that may result from an introduction. It is necessary and reasonable to require the applicant to provide information about the potential to use native species for the same purpose so the Department can determine if there may be options available to the applicant that are less threatening to the state's natural resources or their use. The applicant is required to state the location for the proposed introduction because the department needs to consider the potential impacts of the introduction to other jurisdictions and the department needs to be able to monitor any introductions if they are permitted.

The information required in subpart 1 A. (a) (7) through (10) is needed because introductions of exotic species can have a broad range of harmful impacts. Once introduced, many species may be able to exist in the state indefinitely. It is necessary and reasonable to require the information from the applicant to be scientific based to ensure that the information is accurate and in most cases has been reviewed before publication. The specification of scientific based information generally means scientific journals, published books, papers presented at conferences, and other verifiable information. It is reasonable for the Department to require the same level of information from the applicant as other states would

into a free-living state in Minnesota because the Department must review information about the species and may need to seek other information about the species and its potential impacts. If the information is not sufficient, or it is appropriate to have the public comment on the proposed introduction, it is reasonable and necessary to extend the review period to allow time for such actions.

Subpart 4. **Review process.**

It may be necessary to seek information and opinions of technical experts to verify and supplement the information provided to the commissioner. It is necessary and reasonable to solicit public comment and to hold public hearings on proposed introductions because the public may be affected positively or negatively by introductions. Introduced species can also spread to other states or Canadian provinces so it is reasonable to consult with other jurisdictions before making a determination of the appropriate classification.

It may be necessary to require a certificate of veterinary inspection or other certification that animals are pathogen free before making a determination on a proposed introduction, because it is recommended by the Minnesota Board of Animal Health (Dr. Hagerty, pers. comm.) to protect against introduction of pathogens that may affect other animals or people in the state.

Subpart 5. **Comment period and comments.**

It is reasonable to allow public comment on proposed introductions of unlisted exotic species. Several organizations and task forces have recommended opportunity for public comment regarding proposed introductions and it is part of the existing State review process for release of genetically engineered organisms. The federal Aquatic Nuisance Task Force recommended, as part of model state code for intentional introductions, that state rules establish opportunity for public involvement prior to final approval. The American Fisheries Society position paper on intentional introductions states, "Publicity and review: the subject should be

entirely open and expert advice should be sought. It is at this point that thoroughness is in order. No importation is so urgent that it should not be subject to careful evaluation."

It is reasonable to use the EQB Monitor as the means to publish the notice of public comment period because it is used as an official source for notice of proposed releases of genetically engineered organisms, actions requiring environmental review, and other activities affecting the environment in Minnesota. This publication is commonly used by agencies, organizations, and individuals interested in proposed actions with potential environment impacts.

It is reasonable to limit the comments to the accuracy and completeness of the material in the application, additional information that was omitted from the application and potential impacts of a proposed introduction so the Department can best use and evaluate the comments.

Subpart 6. **Designation and Notification.**

It is reasonable and necessary to require that the commissioner make a determination on designation of the species and to notify the applicant according to the process in statute.

Part 6216.0300 **Designation, Notice, And Marking of Infested Waters and Limited Infestations of Eurasian Water Milfoil.**

The proposed changes to this existing part change the terms "identify", "identified", and "identification" to the respective terms "designate"/ "remove from designation", "designated", and "designation". It is reasonable and necessary to make these technical changes to allow the rule to be consistent with Minnesota Statutes, sections 84D.03 and 84D.12, which refer to the commissioner's responsibility and authority to "designate" infested waters.

Subpart 3. **Delineation and markers for limited infestation of Eurasian water milfoil.**

This existing subpart directs the Commissioner to mark limited infestations of Eurasian water milfoil pursuant to the procedure found in Minnesota Rules, part 6110.1500, subp. 7. (see appendix). One change to the current rule is the addition of language that allows the buoys used to mark limited infestations of Eurasian water milfoil to remain in the water until the water use restrictions associated with control actions have expired. It is necessary and reasonable to allow buoys to remain in place until water use restrictions expire for purposes of public notification of the restrictions and the area affected.

Part 6216. 0350 **Designated infested waters.**

Subparts 1 through 6 of this part designate all waters of the state currently known to contain populations of Eurasian water milfoil (subpart 1), round goby (subpart 2), ruffe (subpart 3), spiny water flea (subpart 4), white perch (subpart 5), and zebra mussel (subpart 6) as "infested waters". The presence of these species in the listed waters has been confirmed by biologists from the Department. Other potentially infested waters have been reported to the Department, however investigation by the Department's biologists could not confirm populations of the above species in those waters. In the St. Croix River, individual zebra mussels have been discovered on boats and other objects and removed from the water. Subsequently, after significant searching there have not been any naturalized zebra mussel populations located. For that reason the waterbody was not designated as infested with that species.

It is necessary to designate these waters listed in subparts 1 through 6 of this part as infested waters to comply with Minnesota Statues, section 84D.03, subdivision 1, which requires the commissioner to designate waters of the state that contain harmful exotic species that could spread to other waters if use of the water

and related activities are not regulated to prevent the spread. It is reasonable to designate the infested waters through rulemaking to allow public review and official notice of the designated waters.

Part 6216.0400 **Restricted activities on infested waters and waters with limited infestations of Eurasian water milfoil.**

Subpart 1. **Prohibition of taking bait from infested waters.**

This existing subpart currently prohibits the taking of wild animals from infested waters for bait purposes. The proposed change in this subpart would expand the prohibition on harvest of wild animals from infested waters for aquatic farm purposes. Typically, the taking of wild animals for bait and aquatic farm purposes is done in an indiscriminate manner and can result in the capture of many species other than the target species as well as the transfer of water containing zebra mussels, spiny water fleas, or other harmful exotic species in life stages that are not visible to the naked eye. Although the captured minnows can be searched for harmful exotic species, it is an inefficient and ineffective means of detecting those species and the lay person may not be trained to identify all harmful exotic species. Additionally, in harvesting and transport of wild animals for aquatic farms, the transfer of water containing microscopic life stages of harmful exotic species is a large concern which cannot be addressed through visual inspection for harmful exotic species. Minnow traps, seines, hoop nets, or other gear used to capture, transfer, or transport bait species can transfer harmful exotic species if not totally dried and there are no acceptable methods to treat water used to transfer wild animals. As wild animals used in aquatic farms are placed in waters other than those where the bait was taken, it is reasonable and necessary to have a blanket prohibition on taking wild animals from infested waters for aquatic farm purposes.

Subpart 2. **Prohibition of sport gill netting for whitefish and ciscoe in infested waters.**

This existing subpart gives the Commissioner the authority to close infested waters for sport gill netting of whitefish and ciscoe. The proposed changes to this part change the terms "identify" and "identified" to the respective terms "designate" and "designated". It is reasonable and necessary to make these technical changes to allow the rule to be consistent with Minnesota Statutes, sections 84D.03 and 84D.12, which refer to the commissioner's responsibility and authority to "designate" infested waters.

Subpart 4. **Prohibition on entry into areas marked for limited infestation of Eurasian water milfoil.**

The proposed change to this subpart is to the title of the subpart and does not change the original requirements of the subpart. The original title is shortened, yet the proposed title retains the essence of the subpart. It is reasonable to change the title to simplify reading of the rule.

Part 6216.0500 **Transportation and appropriation of water from infested waters.**

Subpart 1. **Transporting water and live fish from infested waters.**

This existing subpart currently prohibits the year round use of water from infested waters to transport fish. Additionally, the transport of live fish taken from infested waters, but not including the infested water, to other waters or holding facilities from May 1 through October 31st requires a transportation permit issued by the Department. A permit is not required to transport fish from infested waters during other times of the year. The proposed change to this subpart would allow water from infested waters to be used to transport fish under an infested waters transport permit as provided in 6216.0500, subpart 4. In this situation, the issuance of any permit would require treatment of the water to eliminate harmful exotic species as in 6216.0500, subpart 4(C). The ability to use infested water in public and private

fish rearing facilities, where it is possible to treat the water before, during, or after its use, so as not to contaminate other waters, is reasonable because there have been capital investments made at these sites, the facilities cannot be moved, and the harmful exotic species populations may be eradicated from the facilities. Chemicals or filters can be used for removing zebra mussels and herbicides or screens could be used to eliminate undesirable aquatic plants from closed fish rearing systems, where eradication of most undesirable exotic species is not possible in natural water bodies. In situations where water has been treated to eliminate harmful exotic species and can be verified, it is necessary and reasonable to allow the transfer of infested water to transport live fish.

Subpart 3. **Persons leaving select infested waters.**

This existing subpart currently prohibits the transport of water in watercraft, their associated equipment, livewells, and bait containers from waters with specific harmful exotic species. Several waters are identified in the subpart where the rule applies. This list preceded the designation of these infested waters in permanent rule. The proposed change to this subpart would eliminate the list of waters from the subpart. It is reasonable to make this proposed change because with the addition of part 6216.0350 Designated infested waters, it is no longer necessary to list these waters separately in this subpart.

Additionally in this subpart there is a proposed change of the term "identified" to the term "designated". It is reasonable and necessary to make these technical changes to allow the rule to be consistent with Minnesota Statutes, sections 84D.03 and 84D.12, which refer to the commissioner's responsibility and authority to "designate" infested waters.

Subpart 5. **Fish hatchery or aquatic farm operations in infested waters.**

This existing subpart currently governs the use of infested waters for fish hatchery or aquatic farm operations. The proposed changes to this part change the

term "identified" to the term "designated". It is reasonable and necessary to make these technical changes to allow the rule to be consistent with Minnesota Statutes, sections 84D.03 and 84D.12, which refer to the commissioner's responsibility and authority to "designate" infested waters.

A proposed change to paragraph B allows the use of artificial water basins with populations of regulated exotic species to be licensed for aquatic farm and private hatchery use, and secondly requires that after notification by the commissioner, the commissioner may require that the net, traps, buoys, stakes and lines that have been used in those water basins must be dried or frozen for a specified time before use in noninfested waters. It is reasonable and necessary to make artificial water basins with regulated exotic species eligible for license as aquatic farms or private hatcheries if at the same time the commissioner may require precautions be taken before licensees transfer equipment that is potentially contaminated with harmful exotic species to noninfested waters.

A proposed change to paragraph C is necessary to expand the classifications of species that the commissioner may require be eliminated from infested water when infested water is used as a source for aquatic farms or private hatcheries. The addition of regulated exotic species to the existing prohibited exotic species classification in the rule is necessary because designated infested waters can contain harmful exotic species in one or both the prohibited and regulated exotic species classifications. Chemicals, filters, and herbicides could be used to eliminate prohibited an regulated exotic species from closed aquatic rearing systems, where eradication of most harmful exotic species is not possible in natural water bodies. In situations where treatment is possible and can be verified, it is reasonable to allow the transfer of infested water to transport aquatic life if the water has been treated to eliminate harmful exotic species.

Part 6216.0600 **Violations; Confiscations.**

This part currently cites past statutory authority for the penalty for violating these existing and proposed rules. A proposed change in this part is necessary to replace the previous statutory reference of Minnesota Statutes, sections 17.317 and 84.9691 with the current statutory reference of Minnesota Statues, section 84D.13.

Another change is to the type of exotic species the commissioner may confiscate. With the new categories for exotic species, it is reasonable and necessary to specify and clarify which classifications of exotic species may be confiscated when violations occur.

Superseding Permanent Rule; Repealer.

The statement that Minnesota Rules, part 6216.0350, as permanently adopted by these rules, will supersede expedited emergency rules effective August 4, 1997 is a necessary technical addition by the Revisor to clarify which rule takes precedent. This is reasonable because the permanent rule has the same content as the earlier expedited emergency rule. It is necessary and reasonable to repeal the expedited emergency rule to ensure that the infested waters list will only exist in permanent rule. It is necessary and reasonable to repeal the current definition of infested waters in rule, which was different from the current definition in statute, and use the current definition in Minn. Stat., sec. 84D.01.

VI. 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.

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VII. CONCLUSION

Based on the foregoing, the Department's proposed rules are both needed and reasonable.

RODNEY SANDO
Commissioner
Department of Natural Resources

By Gail Lewellen
Gail Lewellen,
Assistant Commissioner of Human Resources and Legal Affairs

Dated 10/10/97

APPENDIX A - MINNESOTA RULE 6110.1500, SUBPART 7.

Buoys or signs indicating an area that is infested with Eurasian water milfoil may be marked using a solid yellow sign or buoy. If a buoy is used, it shall be no less than four inches in diameter and extend at least 30 inches above the surface of the water. The words "Milfoil" or "Milfoil Area" must appear on opposing sides of the buoy in at least two-inch high black letters. If a sign is used, it shall be no more than 12 inches in width or more than 18 inches in height and extend at least 30 inches above the surface of the water at normal high water level. The words "Milfoil" or "Milfoil Area" must appear on the sign in at least two-inch high black letters.

APPENDIX B - SELECTED MINNESOTA STATUTES REGARDING HARMFUL EXOTIC SPECIES

CONTENTS

MINNESOTA STATUTES - HARMFUL EXOTIC SPECIES

(Note: Minnesota Statutes, chapter 84D became effective May 1, 1996 and replaced several statutes that pertained to Eurasian water milfoil, ecologically harmful exotic species, and purple loosestrife.)

M.S. 84D.01 DEFINITIONS.

Subdivision 1. **Terms.** For the purposes of this chapter, the following terms have the meanings given them.

Subd. 2. **Aquatic macrophyte.** "Aquatic macrophyte" means a nonwoody plant, either a submerged, floating leafed, floating, or emergent plant that naturally grows in water or hydric soils.

Subd. 3. **Commissioner.** "Commissioner" means the commissioner of the department of natural resources.

Subd. 4. **Department.** "Department" means the department of natural resources.

Subd. 5. **Exotic species.** "Exotic species" means a wild animal species or aquatic plant species that is not a native species.

Subd. 6. **Eurasian water milfoil.** "Eurasian water milfoil" means Myriophyllum spicatum.

Subd. 7. **Harmful exotic species.** "Harmful exotic species" means an exotic species that can naturalize and either:

(1) causes or may cause displacement of, or otherwise threaten, native species in their natural communities; or

(2) threatens or may threaten natural resources or their use in the state.

Subd. 8. **Infested waters.** "Infested waters" means waters of the state designated by the commissioner under sections 84D.03, subdivision 1, and 84D.12.

Subd. 9. **Introduction.** "Introduction" means the release or escape of an exotic species into a free-living state.

Subd. 10. **Limited infestation of eurasian water milfoil.** "Limited infestation of Eurasian water milfoil" means a body of water designated by the commissioner under sections 84D.03, subdivision 2, and 84D.12.

Subd. 11. **Native species.** "Native species" means an animal or plant species naturally present and reproducing within this state or that naturally expands from its historic range into this state.

Subd. 12. **Naturalize.** "Naturalize" means to establish a self-sustaining population of exotic species in the wild outside of its natural range.

Subd. 13. **Prohibited exotic species.** "Prohibited exotic species" means a harmful exotic species that has been designated as a prohibited exotic species in a rule adopted by the commissioner under section 84D.12.

Subd. 14. **Purple loosestrife.** "Purple loosestrife" means Lythrum salicaria, Lythrum virgatum, or combinations thereof.

Subd. 15. **Regulated exotic species.** "Regulated exotic species" means a harmful exotic species that has been designated as a regulated exotic species in a rule adopted by the commissioner under section 84D.12.

Subd. 16. **Transport.** "Transport" means to cause or attempt to cause a species to be carried or moved into or within the state, and includes accepting or receiving the species for transportation or shipment. Transport does not include the unintentional transport of a species within a water of the state or to a connected water of the state where the species being transported is already present.

Subd. 17. **Unlisted exotic species.** "Unlisted exotic species" means an exotic species that has not been designated as a prohibited exotic species, a regulated exotic species, or an unregulated exotic species in a rule adopted by the commissioner under section 84D.12.

Subd. 18. **Unregulated exotic species.** "Unregulated exotic species" means an exotic species that has been designated as an unregulated exotic species in a rule adopted by the commissioner under section 84D.12.

Subd. 19. **Watercraft.** "Watercraft" means a contrivance used or designed for navigation on water and includes seaplanes.

Subd. 20. **Waters of the state.** "Waters of the state" has the meaning given in section 97A.015, subdivision 54.

Subd. 21. **Wild animal.** "Wild animal" means a living creature, not human, wild by nature, endowed with sensation and power of voluntary motion.

Subd. 22. **Zebra mussel.** "Zebra mussel" means a species of the genus Dreissena.

M.S. 84D.02 HARMFUL EXOTIC SPECIES MANAGEMENT PROGRAM.

Subdivision 1. **Establishment.** The commissioner shall establish a statewide program to prevent and curb the spread of harmful exotic species. The program must provide for coordination among governmental entities and private organizations to the extent practicable. The commissioner shall seek available federal funding and grants for the program.

Subd. 2. **Purple loosestrife and Eurasian water milfoil programs.** (a) The program required in subdivision 1 must include specific programs to curb the spread and manage the growth of purple loosestrife and Eurasian water milfoil. These programs must include: (1) compiling inventories and monitoring the growth of purple loosestrife and Eurasian water milfoil in the state, for which the commissioner may use volunteers;

(2) publication and distribution of informational materials to boaters and lakeshore owners;

(3) cooperative research with the University of Minnesota and other public and private research facilities to study the use of nonchemical control methods, including biological control methods; and

(4) managing the growth of Eurasian water milfoil and purple loosestrife in coordination with appropriate local units of government, special purpose districts, and lakeshore associations, to include providing requested technical assistance.

(b) The commissioners of agriculture and transportation shall cooperate with the commissioner to establish, implement, and enforce the purple loosestrife program.

Subd. 3. **Management plan.** By July 1, 1997, the commissioner shall prepare a long-term plan, which may include
specific plans for individual species, for the statewide management of harmful exotic species. The plan must address:

(1) coordinated detection and prevention of accidental introductions;

(2) coordinated dissemination of information about harmful exotic species among resource management agencies and organizations;

(3) a coordinated public education and awareness campaign;

(4) coordinated control of selected harmful exotic species on lands and public waters;

(5) participation by lake associations, local citizen groups, and local units of government in the development and implementation of local management efforts;

(6) a reasonable and workable inspection requirement for watercraft and equipment including

those participating in organized events on the waters of the state;

(7) the closing of points of access to infested waters, if the commissioner determines it is necessary, for a total of not more than seven days during the open water season for control or eradication purposes;

(8) maintaining public accesses on infested waters to be reasonably free of aquatic macrophytes; and (9) notice to travelers of the penalties for violation of laws relating to harmful exotic species.

Subd. 4. **Inspection of watercraft.** The commissioner shall authorize personnel to inspect, between May 1 and October 15 for a minimum of 20,000 hours, watercraft and associated equipment, including weed harvesters, that leave or are removed from infested waters.

Subd. 5. **Regional cooperation.** The commissioner shall seek cooperation with other states and Canadian provinces for the purposes of management and control of harmful exotic species.

Subd. 6. **Annual report.** By January 15 each year, the commissioner shall submit a report on harmful exotic species to the legislative committees having jurisdiction over environmental and natural resource issues. The report must include:

(1) detailed information on expenditures for administration, education, management, inspections, and research;

(2) an analysis of the effectiveness of management activities conducted in the state, including chemical control, harvesting, educational efforts, and inspections;

(3) information on the participation of other state agencies, local government units, and interest groups in control efforts;

(4) information on management efforts in other states;

(5) information on the progress made in the management of each species; and

(6) an assessment of future management needs.

M.S. 84D.03 INFESTED WATERS; LIMITED INFESTATIONS OF EURASIAN WATER MILFOIL.

Subdivision 1. **Infested waters.** The commissioner shall designate a water of the state as an infested water if the commissioner determines that the water contains a harmful exotic species that could spread to other waters if use of the water and related activities are not regulated to prevent this.

Subd. 2. **Limited infestations of eurasian water milfoil.**

(a) The commissioner shall designate a water of the state as a limited infestation of Eurasian water milfoil if:

(1) the commissioner determines that Eurasian water milfoil occupies less than 20 percent of the littoral area of the water, up to a maximum of ten acres;

(2) mechanical harvesting is not used to manage Eurasian water milfoil in the water; and

(3) Eurasian water milfoil control is planned for the water.

(b) The commissioner shall mark limited infestations of Eurasian water milfoil in accordance with rules adopted by the commissioner under section 84D.12.

(c) Except as provided in rules adopted under section 84D.12, a person may not enter a marked area of a limited infestation of Eurasian water milfoil.

M.S. 84D.04 CLASSIFICATION OF EXOTIC SPECIES.

Subdivision 1. **Classes.** The commissioner shall, as provided in this chapter, classify exotic species according to the following categories:

(1) prohibited exotic species, which may not be possessed, imported, purchased, sold, propagated, transported, or introduced except as provided in section 84D.05;

(2) regulated exotic species, which may not be introduced except as provided in section 84D.07;

(3) unlisted exotic species, which are subject to the classification procedure in section 84D.06; and

(4) unregulated exotic species, which are not subject to regulation under this chapter.

Subd. 2. **Criteria.** The commissioner shall consider the following criteria in classifying an exotic

species under this chapter:

(1) the likelihood of introduction of the species if it is allowed to enter or exist in the state;

(2) the likelihood that the species would naturalize in the state were it introduced;

(3) the magnitude of potential adverse impacts of the species on native species and on outdoor recreation, commercial fishing, and other uses of natural resources in the state;

(4) the ability to eradicate or control the spread of the species once it is introduced in the state; and

(5) other criteria the commissioner deems appropriate.

M.S. 84D.05 PROHIBITED EXOTIC SPECIES.

Subdivision 1. **Prohibited activities.** A person may not possess, import, purchase, sell, propagate, transport, or introduce a prohibited exotic species, except:

(1) under a permit issued by the commissioner under section 84D.11;

(2) in the case of purple loosestrife, as provided by sections 18.75 to 18.88;

(3) under a restricted species permit issued under section 17.457;

(4) when being transported to the department, or another destination as the commissioner may direct, in a sealed container for purposes of identifying the species or reporting the presence of the species;

(5) when being transported for disposal as part of a harvest or control activity under a permit issued by the commissioner pursuant to section 103G.615, or as specified by the commissioner;

(6) when the specimen has been lawfully acquired dead and, in the case of plant species, all seeds are removed or are otherwise secured in a sealed container;

(7) in the form of herbaria or other preserved specimens;

(8) when being removed from watercraft and equipment, or caught while angling, and immediately returned to the water from which they came; or

(9) as the commissioner may otherwise prescribe by rule.

Subd. 2. **Seizure.** Under section 97A.221, the commissioner may seize or dispose of all specimens of prohibited exotic species unlawfully possessed, imported, purchased, sold, propagated, transported, or introduced in the state.

M.S. 84D.06 UNLISTED EXOTIC SPECIES.

Subdivision 1. **Process.** After the effective date of the rules adopted under section 84D.12, subdivision 1, clause (1), a person may not introduce an unlisted exotic species unless:

(1) the person has notified the commissioner in a manner and form prescribed by the commissioner;

(2) the commissioner has made the classification determination required in subdivision 2 and designated the species as appropriate; and

(3) the introduction is allowed under the applicable provisions of this chapter.

Subd. 2. **Classification.** (a) If the commissioner determines that a species for which a notification is received under subdivision 1 should be classified as a prohibited exotic species, the commissioner shall:

(1) adopt a rule under section 84D.12, subdivision 3, designating the species as a prohibited exotic species; and

(2) notify the person from which the notification was received that the species is subject to section 84D.04.

(b) If the commissioner determines that a species for which a notification is received under subdivision 1 should be classified as an unregulated exotic species, the commissioner shall:

(1) adopt a rule under section 84D.12, subdivision 3, designating the species as an unregulated species; and

(2) notify the person from which the notification was received that the species is not subject to regulation under this chapter.

(c) If the commissioner determines that a species for which a notification is received under subdivision 1 should be classified as a regulated exotic species, the commissioner shall notify the applicant that the species is subject to the requirements in section 84D.07.

M.S. 84D.07 REGULATED EXOTIC SPECIES.

Except as provided in rules adopted under section 84D.12, subdivision 2, clause (1), a person may not introduce a regulated exotic species without a permit issued by the commissioner.

M.S. 84D.08 ESCAPE OF EXOTIC SPECIES.

(a) A person that allows or causes the introduction of an animal that is a prohibited, regulated, or unlisted exotic species shall, within 48 hours after learning of the introduction, notify the commissioner, a conservation officer, or another person designated by the commissioner. The person shall make every reasonable attempt to recapture or destroy the introduced animal. If the animal is a prohibited exotic species, the person is liable for the actual costs incurred by the department in capturing or controlling, or attempting to capture or control, the animal and its progeny. If the animal is a regulated exotic species, the person is liable for these costs if the introduction was in violation of the person's permit issued under section 84D.11.

(b) A person that complies with this section is not subject to criminal penalties under section 84D.13 for the introduction.

M.S. 84D.09 AQUATIC MACROPHYTES.

Subdivision 1. **Transportation prohibited.** A person may not transport aquatic macrophytes on any state forest road as defined by section 89.001, subdivision 14, any road or highway as defined in section 160.02, subdivision 7, or any other public road, except as provided in this section.

Subd. 2. **Exceptions.** Unless otherwise prohibited by law, a person may transport aquatic macrophytes:

(1) that are duckweeds in the family Lemnaceae;

(2) for disposal as part of a harvest or control activity conducted under an aquatic plant management permit pursuant to section 103G.615, under permit pursuant to section 84D.11, or as specified by the commissioner;

(3) for purposes of constructing shooting or observation blinds in amounts sufficient for that purpose, provided that the aquatic macrophytes are emergent and cut above the waterline;

(4) when legally purchased or traded by or from commercial or hobbyist sources for aquarium or ornamental purposes;

(5) when harvested for personal use if in a motor vehicle;

(6) to the department, or another destination as the commissioner may direct, in a sealed container for purposes of identifying a species or reporting the presence of a species;

(7) when transporting a commercial aquatic plant harvester to a suitable location for purposes of cleaning any remaining aquatic macrophytes;

(8) that are wild rice harvested under section 84.091; or

(9) in the form of fragments of emergent aquatic macrophytes incidentally transported in or on watercraft or decoys used for waterfowl hunting during the waterfowl season.

M.S. 84D.10 PROHIBITED ACT; WATERCRAFT.

A person may not place or attempt to place into waters of the state a watercraft, a trailer, or plant harvesting equipment that has aquatic macrophytes, zebra mussels, or prohibited exotic species attached. A conservation officer or other licensed peace officer may order:

(1) the removal of aquatic macrophytes or prohibited exotic species from a trailer or watercraft before it is placed into waters of the state;

(2) confinement of the watercraft at a mooring, dock, or other location until the watercraft is removed from the water; and

(3) removal of a watercraft from waters of the state to remove prohibited exotic species if the water has not been designated by the commissioner as being infested with that species.

M.S. 84D.11 PERMITS.

Subdivision 1. **Prohibited exotic species.** The commissioner may issue a permit for the propagation, possession, importation, purchase, or transport of a prohibited exotic species for the purposes of disposal, control, research, or education.

Subd. 2. **Regulated exotic species.** The commissioner may issue a permit for the introduction of a regulated exotic species.

Subd. 3. **Standard.** The commissioner may issue a permit under this section only if the commissioner determines that the permitted activity would not pose an unreasonable risk of harm to natural resources or their use in the state. The commissioner may deny, issue with conditions, modify, or revoke a permit under this section as necessary to ensure that the proposed activity will not pose an unreasonable risk of harm to natural resources or their use in the state.

Subd. 4. **Appeal of permit decision.** A permit decision may be appealed as a contested case under chapter 14.

M.S. 84D.12 RULES.

Subdivision 1. **Required rules.** The commissioner shall adopt rules:

(1) designating prohibited, regulated, and unregulated exotic species;

(2) governing the application for and issuance of permits under this chapter, which rules may include a fee schedule;

(3) governing notification under section 84D.08; and

(4) designating, and governing the marking and use of, limited infestations of Eurasian water milfoil.

Subd. 2. **Authorized rules.** The commissioner may adopt rules:

(1) regulating the possession, importation, purchase, sale, propagation, transport, and introduction of harmful exotic species; and

(2) regulating the appropriation, use, and transportation of water from infested waters.

Subd. 3. **Expedited rules.** The commissioner may adopt rules under section 84.027, subdivision 13, that designate:

(1) prohibited exotic species;

(2) regulated exotic species;

(3) unregulated exotic species;

(4) limited infestations of Eurasian water milfoil; and

(5) infested waters.

M.S. 84D.13 ENFORCEMENT; PENALTIES.

Subdivision 1. **Enforcement.** Unless otherwise provided, this chapter and rules adopted under section 84D.12 may be enforced by conservation officers under sections 97A.205, 97A.211, and 97A.221 and by other licensed peace officers.

Subd. 2. **Cumulative remedy.** The authority of conservation officers to issue civil citations is in addition to other remedies available under law, except that the state may not seek penalties under any other provision of law for the incident subject to the citation.

Subd. 3. **Criminal penalties.** (a) A person who violates a provision of section 84D.05, 84D.06, 84D.07, 84D.08, or 84D.10, or a rule adopted under section 84D.12, is guilty of a misdemeanor.

(b) A person who refuses to obey an order of a peace officer or conservation officer to remove prohibited exotic species or aquatic macrophytes from any watercraft, trailer, or plant harvesting equipment is guilty of a misdemeanor.

Subd. 4. **Warnings; civil citations.** After appropriate training, conservation officers, other licensed peace officers, and other department personnel designated by the commissioner may issue warnings or citations to a person who:

(1) unlawfully transports prohibited exotic species or aquatic macrophytes;

(2) unlawfully places or attempts to place into waters of the state a trailer, a watercraft, or plant harvesting equipment that has prohibited exotic species attached;

(3) unlawfully angles, anchors, or operates a watercraft in a marked area of a Eurasian water milfoil limited infestation; or

(4) intentionally damages, moves, removes, or sinks a buoy marking, as prescribed by rule, Eurasian water milfoil.

Subd. 5. **Civil penalties.** A civil citation issued under this section may impose civil penalties up to the following penalty amounts:

(1) for transporting aquatic macrophytes on a forest road as defined by section 89.001, subdivision 14, road or highway as defined by section 160.02, subdivision 7, or any other public road, $50;

(2) for placing or attempting to place into waters of the state a watercraft, a trailer, or plant harvesting equipment that has aquatic macrophytes attached, $100;

(3) for transporting a prohibited exotic species other than an aquatic macrophyte, $100;

(4) for placing or attempting to place into waters of the state a watercraft, a trailer, or plant harvesting equipment that has prohibited exotic species attached when the waters are not designated by the commissioner as being infested with that species, $500 for the first offense and $1,000 for each subsequent offense;

(5) for angling, anchoring, or operating a watercraft in a marked area of a Eurasian water milfoil limited infestation, other than as provided by law, $100; and

(6) for intentionally damaging, moving, removing, or sinking a buoy marking, as prescribed by rule, Eurasian water milfoil, $100.

Subd. 6. **Watercraft license suspension.** A civil citation may be issued to suspend, for up to a year, the watercraft license of an owner or person in control of a watercraft or trailer who refuses to submit to an inspection under section 84D.02, subdivision 4, or who refuses to comply with a removal order given under section 84D.13.

Subd. 7. **Satisfaction of civil penalties.** A civil penalty is due and a watercraft license suspension is effective 30 days after issuance of the civil citation. A civil penalty collected under this section is payable to the commissioner and must be credited to the water recreation account.

Subd. 8. **Appeal of civil citations and penalties.** A civil citation and penalty may be appealed under the procedures in section 116.072, subdivision 6, if the person to whom the citation was issued requests a hearing by notifying the