

CHAPTER 11. CURRENT AQUATIC INVASIVE SPECIES LAW AND RULE

INTRODUCTION

Following are Iowa's Aquatic Invasive Species Law and Rule current as of 1 January 2008. Please check with the ANS Coordinator for clarification or to see if changes have occurred. All boat ramps should be posted with Stop Aquatic Hitchhiker signs or alert signs indicating which AIS is/are present in the waterbody.

Code of Iowa Chapter 456A Regulation and Funding – Natural Resources Department

456A.37 Aquatic Invasive Species –Prevention and Control.

1. Definitions. As used in this section:

- a. "Eurasian watermilfoil" means *Myriophyllum spicatum*, a submerged aquatic weed that invades lakes, ponds, reservoirs, and other bodies of water.
- b. "Infestation of an aquatic invasive species" means an infestation of Eurasian watermilfoil that occupies more than twenty percent of the littoral area of a body of water or an infestation of any other species defined as an aquatic invasive species in this section.
- c. "Aquatic invasive species" means a species that is not native to an ecosystem and whose introduction causes or is likely to cause economic or environmental harm or harm to human health including but not limited to habitat alteration and degradation, and loss of biodiversity. For the purposes of this section, "aquatic invasive species" are limited to Eurasian watermilfoil, purple loosestrife, and zebra mussels, except as provided in subsection 4.
- d. "Purple loosestrife" means *Lythrum salicaria*, a wetland plant that invades marshes, lakeshores, and other wetlands.
- e. "Watercraft" means any vessel which through the buoyance of water floats upon the water and is capable of carrying one or more persons.
- f. "Zebra mussel" means *Dreissena polymorpha*, a small mussel that invades lakes, rivers, and other bodies of water.

2. Aquatic invasive species management plan. Before January 1, 2005, the commission shall prepare a long-term statewide aquatic invasive species management plan. The plan shall address all of the following:

- a. The detection and prevention of accidental introductions into the state of aquatic invasive species.
- b. A public awareness campaign regarding aquatic invasive species.
- c. The control and eradication of aquatic invasive species in public waters.
- d. The development of a plan of containment strategies that at a minimum shall include all of the following:

(1) The participation by lake associations, local citizens groups, and local units of government in the development and implementation of lake management plans where aquatic invasive species exist.

(2) Notice to travelers of the penalties for violation of laws relating to aquatic invasive species.

3. Grants. The director of the department of natural resources shall accept gifts, donations, and grants to aid in accomplishing the control and eradication of aquatic invasive species.

4. Rulemaking. The commission shall adopt rules pursuant to chapter 17A for the implementation and administration of this section. The rules shall do all of the following:

a. Restrict the introduction, propagation, use, possession, and spread of aquatic invasive species.

b. Identify bodies of water with infestations of aquatic invasive species. The department shall require that bodies of water be posted as infested. The department may prohibit boating, fishing, swimming, and trapping in infested bodies of water.

If the commission determines that an additional species should be defined as an “aquatic invasive species”, the species shall be defined by the commission by rule as an “aquatic invasive species”.

5. Prohibitions.

a. A person shall not do any of the following:

(1) Transport an aquatic invasive species on a public road.

(2) Place a trailer or launch a watercraft that contains or to which an aquatic invasive species is attached in public waters.

(3) Operate a watercraft in a marked aquatic invasive species infestation area.

b. A person who violates this subsection is subject to a scheduled fine pursuant to section 805.8B, subsection 5.

Section 805.8B Navigation, recreation, hunting, and fishing scheduled violations.

5. Aquatic invasive species violations. For violations of section 456A.37, subsection 5, the scheduled fine is one hundred dollars.

Chapter 90 Aquatic Invasive Species

571--90.1(456A) Definitions. As used in this chapter:

“Commission” means the natural resource commission.

“Department” means the department of natural resources.

“Director” means the director of the department of natural resources.

"Introduce" means to release a species into waters of the state. "Introduce" does not include the immediate return of a nonnative species to waters of the state from which it was removed.

"Transport" means to cause a species to be 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.

"Watercraft" means a device used or designed for navigation on water.

571--90.2(456A) Aquatic invasive species. For the purposes of this rule, the following species and any hybrids, cultivars, or varieties of the species are designated as aquatic invasive species.

90.2(1) Aquatic invasive plants.

Brittle naiad	Najas minor
Curlyleaf pondweed	Potamogeton crispus
Eurasian watermilfoil	Myriophyllum spicatum
Flowering rush	Butomus umbellatus
Purple loosestrife	Lythrum salicaria, Lythrum virgatum
Salt cedar	Tamarix spp.

90.2(2) Aquatic invasive fish.

Bighead carp	Hypophthalmichthys nobilis
Black carp	Mylopharyngodon piceus
Round goby	Neogobius melanostomus
Rudd	Scardinius erythrophthalmus
Ruffe	Gymnocephalus cernuus
Silver carp	Hypophthalmichthys molitrix
White perch	Morone americana

90.2(3) Aquatic invasive invertebrates.

Fishhook waterflea	Cercopagis pengoi
New Zealand mudsnail	Potamopyrgus antipodarum
Quagga mussel	Dreissena bugensis
Rusty crayfish	Orconectes rusticus
Spiny waterflea	Bythotrephes cederstroemi
Zebra mussel	Dreissena polymorpha

90.2(4) Federal noxious weed list. For purposes of this rule, the aquatic plants listed in Code of Federal Regulations, Title 7, Section 360.200, are also designated as aquatic invasive species.

90.2(5) Injurious wildlife species. For purposes of this rule, aquatic species listed in Code of Federal Regulations, Title 50, Section 16.11 through 16.15, are also designated as aquatic invasive species.

571--90.3(456A) Restrictions.

90.3(1) A person shall not possess, introduce, import, purchase, sell, barter, propagate, or transport aquatic invasive species in any form in this state, except:

- a. By written permission of the director;
- b. For disposal as part of a harvest or control activity;
- c. When a species is being transported to the department, or to another destination as directed by the department, in a sealed container for purposes of identifying the species or reporting the presence of the species;
- d. When the specimen has been lawfully acquired dead and, in the case of plant species, when all seeds are removed or are otherwise secured in a sealed container;
- e. In the form of herbaria or other preserved specimens; or
- f. When a species is being removed from watercraft and equipment, or when a species is caught by an angler and immediately returned to the water from which it came.

90.3(2) A conservation officer, other licensed peace officer, or employee of the department may seize or dispose of all specimens of aquatic invasive species unlawfully possessed, introduced, imported, purchased, sold, bartered, propagated, or transported in the state.

571—90.4(456A) Infested waters.

90.4(1) Designation of infested waters. The department shall designate infested waters of the state. The department shall publish the names of infested waters in the fishing regulations brochure each year and provide notice through other available means where practical. At any time, the department may designate additional waters or remove from designation those waters that are no longer infested.

90.4(2) Restricted activities on infested waters. The department may restrict boating, fishing, swimming, and trapping in infested waters of the state. When determining when to restrict activities in infested waters, the department shall consider:

- a. The extent of a species' distribution within the state;
- b. The likely means of spread for a new species; and
- c. Whether restrictions specific to infested waters containing a specific species will effectively reduce that species' spread.

These rules are intended to implement Iowa Code section 456A.37 as amended by 2004 Iowa Acts, House File 2357.

Standard Procedures for Controlling Aquatic Invasive Plants with Herbicides

Waterbodies infested with aquatic invasive plants will be treated on a case by case basis and coordinated by the ANS Coordinator. Individual situations may require deviations from or may react differently to the standards below. Changes in herbicide formulations or new herbicides developed for the aquatic environment may change these standard treatment procedures.

Additional standard procedures may be added as new control techniques are developed or as additional aquatic invasive plant species are found in Iowa. Permits should be applied for well in advance of herbicide application. All label directions need to be followed when applying aquatic herbicides.

Eurasian Watermilfoil Whole Lake/Pond Sonar Treatment

Sonar is a selective, systemic herbicide that results in a slow kill of Eurasian watermilfoil and eliminates the threat of an oxygen deficit due to a large mass of vegetation decaying at one time. Plants begin to show signs of chlorosis (i.e., turn pink or white) within 7-10 days of application with a complete kill taking 30-90 days. There are no restrictions on swimming, fishing, or drinking after Sonar application; however, there are irrigation restrictions.

Treatment should begin when Eurasian watermilfoil is first observed to be growing in the spring. The lake/pond should be treated at 8ppb Sonar determined by the following equations:

mean depth (ft) x ppb Sonar x 0.027 (Sonar AS) = quarts of Sonar per surface acre

mean depth (ft) x ppb Sonar x 0.054 (Sonar Q) = pounds of Sonar per surface acre

The goal while treating Eurasian watermilfoil is to maintain a Sonar concentration above 5ppb for about 45 days. In most cases, a FastEST sample to monitor the Sonar concentration should be taken two weeks after the initial treatment date. FastEST sampling instructions and bottles will be provided by the ANS Coordinator. FastEST results are sent to the ANS Coordinator 2-3 days after the sample is shipped, and additional instructions are sent to the biologist at that time. If the Sonar concentration has dropped to 5ppb or below, additional Sonar should be applied to bump the concentration back up to 8ppb. If the Sonar concentration is above 5ppb, no bump is needed at that time. A second FastEST sample should be taken 4 weeks after the treatment date and/or 2 weeks after the bump. Again, the ANS Coordinator will get the FastEST results and send any additional instructions to the biologist at that time.

Brittle Naiad Whole Lake/Pond Sonar Treatment

Sonar is a selective, systemic herbicide that results in a slow kill of brittle naiad and eliminates the threat of an oxygen deficit due to a large mass of vegetation decaying at one time. Plants begin to show signs of chlorosis (i.e., turn pink or white) within 7-10 days of application with a complete kill taking 30-90 days. There are no restrictions on swimming, fishing, or drinking after Sonar application; however, there are irrigation restrictions.

Treatment should begin when brittle naiad is first observed to be growing in the spring or summer. Brittle naiad reproduces by seeds, and the timing of seedling emergence can vary from year to year. The lake/pond should be treated at 15ppb Sonar determined by the following equations:

mean depth (ft) x ppb Sonar x 0.027 (Sonar AS) = quarts of Sonar per surface acre

mean depth (ft) x ppb Sonar x 0.054 (Sonar Q) = pounds of Sonar per surface acre

The goal while treating brittle is to maintain a Sonar concentration above 10ppb for about 45 days. In most cases, a FastEST sample to monitor the Sonar concentration should be taken two weeks after the initial treatment date. FastEST sampling instructions and bottles will be provided by the ANS Coordinator. FastEST results are sent to the ANS Coordinator 2-3 days after the sample is shipped, and additional instructions are sent to the biologist at that time. If the Sonar concentration has dropped to 5ppb or below, additional Sonar should be applied to

bump the concentration back up to 8ppb. If the Sonar concentration is above 5ppb, no bump is needed at that time. A second FastEST sample should be taken 4 weeks after the treatment date and/or 2 weeks after the bump. Again, the ANS Coordinator will get the FastEST results and send any additional instructions to the biologist at that time.

Eurasian Watermilfoil and Brittle Naiad Spot Treatment

Several different herbicides can be used for controlling small areas of Eurasian watermilfoil and brittle naiad. Herbicide selection should be based on size of area to be treated, herbicide exposure time, turbidity, herbicide water use restrictions, presence of nontarget plants, and ease of application. Chemicals that are effective on both Eurasian watermilfoil and brittle naiad are 2,4-D (e.g., Navigate, Aqua-Kleen), diquat (e.g., Reward), endothall (e.g., Aquathol K), and triclopyr (e.g., Renovate). Spot treatment with any of these herbicides usually results in short-term control and may need to be repeated in subsequent years.

HACCP Step 1 - Activity Description

Facility: Iowa Department of Natural Resources	Site: Statewide rivers and streams
Project Coordinator: Jason Euchner	Project Description: Backpack electroshocking
Site Manager: Fisheries biologist & technician	
Address: 1436 255th St. Boone, IA 50036	
Phone: 515-432-2823	

**Project Description
(Who, What, Where, When, How & Why)**

Who: Fisheries management and research biologists & technicians
What: Backpack electroshocking
When: Spring through fall
Where: Statewide rivers and streams
How: Backpack electroshocker
Why: To sample fish populations, collect fish, or tag fish

HACCP Step 2 - Potential Hazard Identification

Vertebrates:

nonnative fish species (Asian carp, white perch, round goby, ruffe)

Invertebrates:

zebra mussel, quagga mussel, rusty crayfish, spiny waterflea, New Zealand mudsnail

Plants:

Eurasian watermilfoil, curlyleaf pondweed, brittle naiad

Other Biologics:

largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)

Others:

HACCP Step 3 - Flow Diagram

Task # 1	Dip nets and backpack electroshocker obtained from storage.
Task # 2	Crew and gear travel to sample location.
Task # 3	Crew enters water and begins sampling.
Task # 4	Fish are kept or released. Kept species are preserved and brought back to station for identification or collection.
Task # 5	Crew puts gear back in truck.
Task # 6	Crew and gear travel back to station or new site.
Task # 7	Gear is stored at station.

HACCP Step 4 - Hazard Analysis

Task	Hazard	Probable?	Justification	Control Measures	CCP?
Dip nets, backpack electroshocker obtained from storage.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment is clean.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crayfish, spiny waterflea, New Zealand mudsnail	No	Equipment is clean.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment is clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment is clean.		No
Crew and gear travel to sample location.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment is clean.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crayfish, spiny waterflea, New Zealand mudsnail	No	Equipment is clean.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment is clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment is clean.		No
Crew enters water and begins sampling.	Vertebrate: nonnative fish species (Asian carp, white	No	Staying in same system until sample is		No

	perch, round goby, ruffe)		complete.		
	Invertebrate: zebra mussel, quagga mussel, rusty crayfish, spiny waterflea, New Zealand mudsnail	No	Staying in same system until sample is complete.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Staying in same system until sample is complete.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Staying in same system until sample is complete.		No
Fish are kept or released. Kept species are preserved and brought back for identification or collection.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Fish are placed in preservative.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crayfish, spiny waterflea, New Zealand mudsnail	No	Will not collect these species.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Will not collect these species.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Minimal amount of water taken from system, then preservative is added which will eliminate chance of transport.		No
Crew puts gear back in truck.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	Yes	Possible to have eggs or small fish on gear and in nets.	Clean all gear and nets before putting in storage or going to another location.	Yes

	Invertebrate: zebra mussel, quagga mussel, rusty crayfish, spiny waterflea, New Zealand mudsnail	Yes	Possible to be on gear or nets.	Clean all gear and nets before putting in storage or going to another location.	Yes
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	Yes	Possible to be on gear or nets.	Clean all gear and nets before putting in storage or going to another location.	Yes
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	Yes	Possible to be on gear or nets.	Clean all gear and nets before putting in storage or going to another location.	Yes
Crew and gear travel back to station or new site.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment is clean.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crayfish, spiny waterflea, New Zealand mudsnail	No	Equipment is clean.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment is clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment is clean.		No
Gear is stored at station.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment is clean.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crayfish, spiny waterflea, New Zealand mudsnail	No	Equipment is clean.		No

	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment is clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment is clean.		No

HACCP Step 5 - HACCP Plan

Critical Control Point #1:

Task # 5: Crew puts gear back in truck.

Significant Hazards:

Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)

Control Measures:

Clean all gear and nets before putting in storage or going to another location.

Limits for Control Measures:

Clean all gear and nets before storing or traveling to another location.

Monitoring: What?

Debris on gear and nets

Monitoring: How?

Visual

Monitoring: Frequency?

Once

Monitoring: Who?

Crew

Evaluation & Corrective Actions:

Clean gear and nets until free of debris.

Supporting Documentation:

Critical Control Point #2:

Task # 5: Crew puts gear back in truck.

Significant Hazards:

Invertebrate: zebra mussel, quagga mussel, rusty crayfish, spiny waterflea, New Zealand mudsnail

Control Measures:

Clean all gear and nets before putting in storage or going to another location.

Limits for Control Measures:

Clean all gear and nets before storing or traveling to another location.

Monitoring: What?

Debris on gear and nets

Monitoring: How?

Visual

Monitoring: Frequency?

Once

Monitoring: Who?

Crew

Evaluation & Corrective Actions:

Clean gear and nets until free of debris.

Supporting Documentation:

Critical Control Point #3: Task # 5: Crew puts gear back in truck.
Significant Hazards: Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad
Control Measures: Clean all gear and nets before putting in storage or going to another location.
Limits for Control Measures: Clean all gear and nets before storing or traveling to another location.
Monitoring: What? Plant fragments on gear and nets
Monitoring: How? Visual
Monitoring: Frequency? Once
Monitoring: Who? Crew
Evaluation & Corrective Actions: Clean gear and nets until free of plant fragments.
Supporting Documentation:
Critical Control Point #4: Task # 5: Crew puts gear back in truck.
Significant Hazards: Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)
Control Measures: Clean all gear and nets before putting in storage or going to another location.
Limits for Control Measures: Clean all gear and nets before storing or traveling to another location.
Monitoring: What? Debris on gear and nets
Monitoring: How? Visual
Monitoring: Frequency? Once
Monitoring: Who? Crew
Evaluation & Corrective Actions: Clean gear and nets until free of debris.
Supporting Documentation:

Facility: Iowa Department of Natural Resources	Activity: Backpack electroshocking
Address: 1436 255th St. Boone, IA 50036	
Signature:	Date:

HACCP Plan

HACCP Checklist:

Backpack electroshocking

Facility	Iowa Department of Natural Resources
Site	Statewide rivers and streams
Coordinator	Jason Euchner
Manager	Fisheries biologist & technician
Address	1436 255th St., Boone, IA 50036

Task # 1: Dip nets, backpack electroshocker obtained from storage.

Task # 2: Crew and gear travels to sample location.

Task # 3: Crew enters water and begins sampling.

Task # 4: Fish are kept or released. Keep species are preserved and brought back for ID or collection.

Task # 5: Crew puts crew back in truck.

CRITICAL CONTROL POINT

Hazards were contained

Hazards: Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)

Control measures were implemented

Control Measures: Clean all gear and nets before putting in storage or going to another location.

Control limits were maintained

Control Limits: Clean all gear and nets before storing or traveling to another location.

Corrective actions were (performed if necessary)

Corrective Actions: Clean gear and nets until free of debris.

Hazards were contained

Hazards: Invertebrate: zebra Mussel, quagga mussel, rusty crayfish, spiny waterflea, New Zealand mudsnail

Control measures were implemented

Control Measures: Clean all gear and nets before putting in storage or going to another location.

Control limits were maintained

Control Limits: Clean all gear and nets before storing or traveling to another location.

Corrective actions were (performed if necessary)

Corrective Actions: Clean gear and nets until free of debris.

HACCP Plan

Hazards were contained

Hazards: Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad

Control measures were implemented

Control Measures: Clean all gear and nets before putting in storage or going to another location.

Control limits were maintained

Control Limits: Clean all gear and nets before storing or traveling to another location.

Corrective actions were (performed if necessary)

Corrective Actions: Clean gear and nets until free of plant fragments.

Hazards were contained

Hazards: Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)

Control measures were implemented

Control Measures: Clean all gear and nets before putting in storage or going to another location.

Control limits were maintained

Control Limits: Clean all gear and nets before storing or traveling to another location.

Corrective actions were (performed if necessary)

Corrective Actions: Clean gear and nets until free of debris.

Task # 6: Crew and gear travel back to station or new site.

Task # 7: Gear is stored at station.

HACCP Plan

HACCP Step 1 - Activity Description	
Facility: Iowa Department of Natural Resources	Site: Statewide
Project Coordinator: Jason Euchner	Project Description: Boat electroshocking
Site Manager: Fisheries biologist & technician	
Address: 1436 255th St Boone, IA 50036	
Phone: 515-432-2823	

Project Description (Who, What, Where, When, How & Why)
<p>Who: Fisheries management and research biologists & technicians What: Boat electroshocking When: Spring through fall Where: Statewide rivers and lakes How: Electroshocking boat Why: To sample fish populations, collect fish, or tag fish</p>

HACCP Plan

HACCP Step 2 - Potential Hazard Identification	
Vertebrates:	nonnative fish species (Asian carp, white perch, round goby, ruffe)
Invertebrates:	zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail
Plants:	Eurasian watermilfoil, curlyleaf pondweed, brittle naiad
Other Biologics:	largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)
Others:	

HACCP Plan

HACCP Step 3 - Flow Diagram

Task # 1	Load equipment at station.
Task # 2	Travel to sample location.
Task # 3	Launch boat.
Task # 4	Sample and collect fish for surveys or tagging.
Task # 5	Measure and tag fish.
Task # 6	Release fish back into water. (If collecting fish for fishing clinic or state fair, refer to fish hauling HACCP.)
Task # 7	Load boat onto trailer.
Task # 8	Travel back to station or another location.

HACCP Plan

HACCP Step 4 - Hazard Analysis					
Task	Hazard	Probable?	Justification	Control Measures	CCP?
Load equipment at station.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment should be clean.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Equipment should be clean.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment should be clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment should be clean.		No
Travel to sample location.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment should be clean.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Equipment should be clean.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment should be clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment should be clean.		No
Launch boat.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment should be clean.		No

HACCP Plan

	perch, round goby, ruffe)				
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Equipment should be clean.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment should be clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment should be clean.		No
Sample and collect fish for surveys or tagging.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Sampling and collecting fish, not moving to another system.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Sampling and collecting fish, not moving to another system.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Sampling and collecting fish, not moving to another system.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Sampling and collecting fish, not moving to another system.		No
Measure and tag fish.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Measuring and tagging fish, not moving to another system.		No

HACCP Plan

	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Measuring and tagging fish, not moving to another system.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Measuring and tagging fish, not moving to another system.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Measuring and tagging fish, not moving to another system.		No
Release fish back into water. (If collecting fish for fishing clinic or state fair, refer to fish hauling HACCP.)	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Will not release nonnative species back into system.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Will not release nonnative species back into system.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Will not release nonnative species back into system.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Will not release nonnative species back into system.		No
Load boat onto trailer.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	Yes	Possible to have in or on boat.	Drain fish tanks and bilge and inspect boat for presence of standing water.	Yes
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New	Yes	Possible to have in or on boat.	Drain fish tanks and bilge and inspect boat for presence of	Yes

HACCP Plan

	Zealand mudsnail			standing water.	
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	Yes	Possible to be on boat or trailer.	Inspect and remove any plant fragments before leaving ramp.	Yes
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	Yes	Possible to have in or on boat.	Drain fish tanks and bilge and inspect boat for presence of standing water.	Yes
Travel back to station or another location.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment should be clean.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Equipment should be clean.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment should be clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment should be clean.		No


HACCP Plan

HACCP Step 5 - HACCP Plan	
Critical Control Point #3: Task # 7: Load boat onto trailer.	
Significant Hazards:	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)
Control Measures:	Drain fish tanks and bilge and inspect boat for presence of standing water.
Limits for Control Measures:	If in known infested location, pressure wash boat and allow to dry.
Monitoring: What?	Presence of standing water
Monitoring: How?	Visual
Monitoring: Frequency?	Once
Monitoring: Who?	Crew
Evaluation & Corrective Actions:	If water still standing in boat, move to a location that allows water to drain from boat.
Supporting Documentation:	
Critical Control Point #4: Task # 7: Load boat onto trailer.	
Significant Hazards:	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail
Control Measures:	Drain fish tanks and bilge and inspect boat for presence of standing water. Decontaminate motor if in known infested area.
Limits for Control Measures:	If in known infested location, pressure wash boat and allow to dry and decontaminate engine cooling system.
Monitoring: What?	Presence of standing water
Monitoring: How?	Visual
Monitoring: Frequency?	Once
Monitoring: Who?	

HACCP Plan

Crew
Evaluation & Corrective Actions: If water still standing in boat, move to a location that allows water to drain from boat.
Supporting Documentation:
Critical Control Point #5: Task # 7: Load boat onto trailer.
Significant Hazards: Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad
Control Measures: Inspect and remove any plant fragments before leaving ramp.
Limits for Control Measures: Do not leave ramp until all plant fragments are removed from boat, trailer, and equipment.
Monitoring: What? Plant fragments
Monitoring: How? Visual
Monitoring: Frequency? Once
Monitoring: Who? Crew
Evaluation & Corrective Actions: If in known infested location, pressure wash boat and equipment before traveling to another location.
Supporting Documentation:
Critical Control Point #6: Task # 7: Load boat onto trailer.
Significant Hazards: Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)
Control Measures: Drain fish tanks and bilge and inspect boat for presence of standing water.
Limits for Control Measures: If in known infested location, pressure wash boat and allow to dry.
Monitoring: What? Presence of standing water.
Monitoring: How? Visual
Monitoring: Frequency? Once
Monitoring: Who?

HACCP Plan

Crew	
Evaluation & Corrective Actions: If water still standing in boat, move to a location that allows water to drain from boat.	
Supporting Documentation: 	
Facility: Iowa Department of Natural Resources	Activity: Boat electroshocking
Address: 1436 255th St Boone, IA 50036	
Signature:	Date:

Fish Hauling HACCP

HACCP Checklist:

Boat Electroshocking

Facility	Iowa Department of Natural Resources
Site	Statewide
Coordinator	Jason Euchner
Manager	Fisheries biologist & technician
Address	1436 255th St, Boone, IA 50036

Task # 1: Load equipment at station.

Task # 2: Travel to sample location.

Task # 3: Launch boat.

Task # 4: Sample and collect fish for surveys or tagging.

Task # 5: Measure and tag fish.

Task # 6: Release fish back into water. (If collecting fish for fishing clinic or state fair, refer to fish hauling HACCP.)

Task # 7: Load boat onto trailer.

CRITICAL CONTROL POINT

Hazards were contained

Hazards: Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)

Control measures were implemented

Control Measures: Drain fish tanks and bilge and inspect boat for presence of standing water.

Control limits were maintained

Control Limits: If in known infested location, pressure wash boat and allow to dry.

Corrective actions were (performed if necessary)

Corrective Actions: If water still standing in boat, move to a location that allows water to drain from boat.

Hazards were contained

Hazards: Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail

Control measures were implemented

Control Measures: Drain fish tanks and bilge and inspect boat for presence of

Fish Hauling HACCP

standing water. Decontaminate motor if in known infested area.

Control limits were maintained

Control Limits: If in known infested location, pressure wash boat and allow to dry and decontaminate engine cooling system.

Corrective actions were (performed if necessary)

Corrective Actions: If water still standing in boat, move to a location that allows water to drain from boat.

Hazards were contained

Hazards: Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad

Control measures were implemented

Control Measures: Inspect and remove any plant fragments before leaving ramp.

Control limits were maintained

Control Limits: Do not leave ramp until all plant fragments are removed from boat, trailer, and equipment.

Corrective actions were (performed if necessary)

Corrective Actions: If in known infested location, pressure wash boat and equipment before traveling to another location.

Hazards were contained

Hazards: Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)

Control measures were implemented

Control Measures: Drain fish tanks and bilge and inspect boat for presence of standing water.

Control limits were maintained

Control Limits: If in known infested location, pressure wash boat and allow to dry.

Corrective actions were (performed if necessary)

Corrective Actions: If water still standing in boat, move to a location that allows water to drain from boat.

Task # 8: Travel back to station or another location.

Fish Hauling HACCP

HACCP Step 1 - Activity Description	
Facility: Iowa DNR	Site: Statewide
Project Coordinator: Jason Euchner	Project Description: Fish collection and transport
Site Manager: Local Biologist or Technician	
Address: 1436 255th St, Boone, IA 50036	
Phone: 515-432-2823	

Project Description (Who, What, Where, When, How & Why)
<p>Who: Iowa DNR fisheries personnel</p> <p>What: Fish collection for use at fish clinics, the state fair, and other events</p> <p>When: During sampling season</p> <p>Where: Statewide</p> <p>How: With standard electrofishing and netting</p> <p>Why: To have live display fish at fish clinics, the state fair, and other events</p>

Fish Hauling HACCP

HACCP Step 2 - Potential Hazard Identification

Vertebrates:

Asian Carp, round goby, white perch, ruffe

Invertebrates:

zebra mussels, quagga mussels, spiny waterflea

Plants:

brittle naiad, Eurasian watermilfoil, curlyleaf pondweed

Other Biologics:

VHS (viral hemorrhagic septicemia), LMBV (largemouth bass virus)

Others:

Fish Hauling HACCP

HACCP Step 3 - Flow Diagram

Task # 1	Fill hauling unit at station and neutralize chlorine and chloramines.
Task # 2	Collect fish following HACCP plans for boat electrofishing and netting.
Task # 3	Use fish at clinic, event, or state fair.
Task # 4	Return fish back to originating waterbody and ramp, or dispose of fish.
Task # 5	Clean hauling unit and allow to dry.

Fish Hauling HACCP

HACCP Step 4 - Hazard Analysis					
Task	Hazard	Probable?	Justification	Control Measures	CCP?
Fill hauling unit at station and neutralize chlorine and chloramines.	Vertebrate: Asian carp, round goby, white perch, ruffe	No	Tank should be clean from previous uses.		No
	Invertebrate: zebra mussels, quagga mussels, spiny waterflea	No	Tank should be clean from previous uses.		No
	Plant: brittle naiad, Eurasian watermilfoil, curlyleaf pondweed	No	Tank should be clean from previous uses.		No
	Other Biologic: VHS (viral hemorrhagic septicemia), LMBV (largemouth bass virus)	No	Tank should be clean from previous uses.		No
Collect fish following HACCP plans for boat electrofishing and netting.	Vertebrate: Asian carp, round goby, white perch, ruffe	Yes	Could be collected during this task.	Refer to HACCP plans for boat electrofishing and netting.	No
	Invertebrate: zebra mussels, quagga mussels, spiny waterflea	Yes	Could be collected during this task.	Refer to HACCP plans for boat electrofishing and netting.	No
	Plant: brittle naiad, Eurasian watermilfoil, curlyleaf pondweed	Yes	Could be collected during this task.	Refer to HACCP plans for boat electrofishing and netting.	No
	Other Biologic: VHS (viral hemorrhagic septicemia), LMBV (largemouth bass virus)	Yes	Could be collected during this task.	Refer to HACCP plans for boat electrofishing and netting.	No
Use fish at clinic, event, or state fair.	Vertebrate: Asian carp, round goby, white perch, ruffe	No	Fish and water are not being released anywhere.		No

Fish Hauling HACCP

	Invertebrate: zebra mussels, quagga mussels, spiny waterflea	No	Fish and water are not being released anywhere.		No
	Plant: brittle naiad, Eurasian watermilfoil, curlyleaf pondweed	No	Fish and water are not being released anywhere.		No
	Other Biologic: VHS (viral hemorrhagic septicemia), LMBV (largemouth bass virus)	No	Fish and water are not being released anywhere.		No
Return fish back to originating waterbody and ramp, or dispose of fish.	Vertebrate: Asian carp, round goby, white perch, ruffe	Yes	Eggs could be in water or on fish in tank.	Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.	Yes
	Invertebrate: zebra mussels, quagga mussels, spiny waterflea	Yes	Veligers could be present in water.	Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.	Yes
	Plant: brittle naiad, Eurasian watermilfoil, curlyleaf pondweed	Yes	Plant fragments could be present in tank.	Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.	Yes
	Other Biologic: VHS (viral hemorrhagic septicemia), LMBV (largemouth bass virus)	Yes	Biological hazards could be present in water.	Water and fish can only be released back at originating boat ramp or disposed of	Yes

Fish Hauling HACCP

				properly. Cannot be released into nearest waterbody to event.	
Clean hauling unit and allow to dry.	Vertebrate: Asian carp, round goby, white perch, ruffe	No	Hauling unit should be clean.		No
	Invertebrate: zebra mussels, quagga mussels, spiny waterflea	No	Hauling unit should be clean.		No
	Plant: brittle naiad, Eurasian watermilfoil, curlyleaf pondweed	No	Hauling unit should be clean.		No
	Other Biologic: VHS (viral hemorrhagic septicemia), LMBV (largemouth bass virus)	No	Hauling unit should be clean.		No

Fish Hauling HACCP

HACCP Step 5 - HACCP Plan
Critical Control Point #1: Task # 4: Return fish back to originating waterbody and ramp, or dispose of fish.
Significant Hazards: Vertebrate: Asian carp, Round goby, white perch, ruffe
Control Measures: Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.
Limits for Control Measures: Water and fish must be released back at originating waterbody and ramp. If not releasing fish back into water, dispose of fish properly.
Monitoring: What? Water and fish
Monitoring: How? Visual
Monitoring: Frequency? Once
Monitoring: Who? Fisheries biologist or technician
Evaluation & Corrective Actions: Water and fish cannot be released anywhere other than originating waterbody.
Supporting Documentation:
Critical Control Point #2: Task # 4: Return fish back to originating waterbody and ramp, or dispose of fish.
Significant Hazards: Invertebrate: zebra mussels, quagga mussels, spiny waterflea
Control Measures: Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.
Limits for Control Measures: Water and fish must be released back at originating waterbody and ramp. If not releasing fish back into water, dispose of fish properly.
Monitoring: What? Water and fish
Monitoring: How? Visual
Monitoring: Frequency? Once
Monitoring: Who? Fisheries biologist or technician
Evaluation & Corrective Actions:

Fish Hauling HACCP

Water and fish cannot be released anywhere other than originating waterbody.
Supporting Documentation:
Critical Control Point #3: Task # 4: Return fish back to originating waterbody and ramp, or dispose of fish.
Significant Hazards: Plant: brittle naiad, Eurasian watermilfoil, curlyleaf pondweed
Control Measures: Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.
Limits for Control Measures: Water and fish must be released back at originating waterbody and ramp. If not releasing fish back into water, dispose of fish properly.
Monitoring: What? Water, fish, and plant fragments
Monitoring: How? Visual
Monitoring: Frequency? Once
Monitoring: Who? Fisheries biologist or technician
Evaluation & Corrective Actions: Water and fish cannot be released anywhere other than originating waterbody. Check for plant fragments as tank is draining.
Supporting Documentation:
Critical Control Point #4: Task # 4: Return fish back to originating waterbody and ramp, or dispose of fish.
Significant Hazards: Other Biologic: VHS (viral hemorrhagic septicemia), LMBV (largemouth bass virus)
Control Measures: Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.
Limits for Control Measures: Water and fish must be released back at originating waterbody and ramp. If not releasing fish back into water, dispose of fish properly.
Monitoring: What? Water and fish
Monitoring: How? Visual
Monitoring: Frequency? Once

Fish Hauling HACCP

Monitoring: Who? Fisheries biologist or technician	
Evaluation & Corrective Actions: Water and fish cannot be released anywhere other than originating waterbody.	
Supporting Documentation: <div style="background-color: #4b4b00; height: 20px; width: 100%;"></div>	
Facility: Iowa DNR	Activity: Fish collection and transport
Address: 1436 255th St, Boone, IA 50036	
Signature:	Date:

HACCP Checklist:

Fish collection and transport

Facility Iowa DNR
Site Statewide
Coordinator Jason Euchner
Manager Local Biologist
Address 1436 255th St., Boone, IA 50036

Task # 1: Fill hauling unit at station and declorinate.

Task # 2: Collect fish following HACCP plans for boat electrofishing and netting.

Task # 3: Use fish at clinic, event, or state fair.

Task # 4: Return fish back to originating waterbody and ramp, or dispose of fish.

CRITICAL CONTROL POINT

Hazards were contained

Hazards: Vertebrate: Asian carp, round goby, white perch, ruffe

Control measures were implemented

Control Measures: Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.

Control limits were maintained

Control Limits: Water and fish must be released back at originating waterbody and ramp. If not releasing fish back into water, dispose of fish properly.

Corrective actions were (performed if necessary)

Corrective Actions: Water and fish cannot be released anywhere other than originating waterbody.

Hazards were contained

Hazards: Invertebrate: zebra mussels, quagga mussels, spiny waterflea

Control measures were implemented

Control Measures: Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.

Control limits were maintained

Control Limits: Water and fish must be released back at originating waterbody and ramp. If not releasing fish back into water, dispose of fish properly.

Corrective actions were (performed if necessary)

Corrective Actions: Water and fish cannot be released anywhere other than originating waterbody.

Hazards were contained

Hazards: Plant: brittle naiad, Eurasian watermilfoil, curlyleaf pondweed

Control measures were implemented

Control Measures: Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.

Control limits were maintained

Control Limits: Water and fish must be released back at originating waterbody and ramp. If not releasing fish back into water, dispose of fish properly.

Corrective actions were (performed if necessary)

Corrective Actions: Water and fish cannot be released anywhere other than originating waterbody. Check for plant fragments as tank is draining.

Hazards were contained

Hazards: Other Biologic: VHS (viral hemorrhagic septicemia), LMBV (largemouth bass virus)

Control measures were implemented

Control Measures: Water and fish can only be released back at originating boat ramp or disposed of properly. Cannot be released into nearest waterbody to event.

Control limits were maintained

Control Limits: Water and fish must be released back at originating waterbody and ramp. If not releasing fish back into water, dispose of fish properly.

Corrective actions were (performed if necessary)

Corrective Actions: Water and fish cannot be released anywhere other than originating waterbody.

Task # 5: Clean hauling unit and allow to dry.

HACCP Step 1 - Activity Description	
Facility: Iowa Department of Natural Resources	Site: Statewide
Project Coordinator: Jason Euchner	Project Description: Fish netting
Site Manager: Fisheries biologist & technician	
Address: 1436 255th St. Boone, IA 50036	
Phone: 515-432-2823	

Project Description (Who, What, Where, When, How & Why)
<p>Who: Fisheries management and research biologists & technicians What: Fish netting (passive & active) When: Spring through fall Where: Statewide rivers and lakes How: Passive & active nets Why: To sample fish populations, collect fish, or tag fish</p>

HACCP Step 2 - Potential Hazard Identification

Vertebrates:

nonnative fish species (Asian carp, white perch, round goby, ruffe)

Invertebrates:

zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail

Plants:

Eurasian watermilfoil, curlyleaf pondweed, brittle naiad

Other Biologics:

largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)

Others:

HACCP Step 3 - Flow Diagram

Task # 1	Load equipment at station.
Task # 2	Travel to sample location.
Task # 3	Launch boat and travel by boat to sample location.
Task # 4	Set nets if using passive gear, use nets if using active gear.
Task # 5	Travel back to ramp.
Task # 6	Load boat onto trailer.
Task # 7	Travel back to station.

HACCP Step 4 - Hazard Analysis

Task	Hazard	Probable?	Justification	Control Measures	CCP?
Load equipment at station.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment should be clean.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Equipment should be clean.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment should be clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment should be clean.		No
Travel to sample location.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment should be clean.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Equipment should be clean.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment should be clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment should be clean.		No
Launch boat and travel by boat to	Vertebrate: nonnative fish species (Asian carp, white	No	Staying in system.		No

sample location.	perch, round goby, ruffe)				
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Staying in system.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Staying in system.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Staying in system.		No
Set nets if using passive gear, if using active gear use nets.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Staying in system.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Staying in system.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Staying in system.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Staying in system.		No
Travel back to ramp.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Staying in system.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New	No	Staying in system.		No

	Zealand mudsnail				
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Staying in system.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Staying in system.		No
Load boat onto trailer.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	Yes	Possible to be in or on nets and other equipment.	Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area. Allow nets to dry before using in another waterbody.	Yes
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	Yes	Possible to be in or on nets and other equipment.	Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area. Allow nets to dry before using in another waterbody.	Yes
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	Yes	Possible to have fragments in nets or on equipment.	Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area. Allow nets to dry before using in another	Yes

				waterbody.	
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	Yes	Possible to be in or on nets and other equipment.	Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area. Allow nets to dry before using in another waterbody.	Yes
Travel back to station.	Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)	No	Equipment should be clean.		No
	Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail	No	Equipment should be clean.		No
	Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad	No	Equipment should be clean.		No
	Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)	No	Equipment should be clean.		No

HACCP Step 5 - HACCP Plan

Critical Control Point #1:

Task # 6: Load boat onto trailer.

Significant Hazards:

Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)

Control Measures:

Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area.

Limits for Control Measures:

If in known infested system, pressure wash nets and equipment.

Monitoring: What?

Presence of standing water or mud on nets and equipment.

Monitoring: How?

Visual

Monitoring: Frequency?

Once

Monitoring: Who?

Crew

Evaluation & Corrective Actions:

Rewash all equipment and let dry before using again.

Supporting Documentation:

Critical Control Point #2:

Task # 6: Load boat onto trailer.

Significant Hazards:

Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail

Control Measures:

Clean nets and equipment off when leaving area. Drain water. Pressure wash everything and decontaminate motor if in known infested area.

Limits for Control Measures:

If in known infested system, pressure wash nets and equipment and decontaminate engine cooling system.

Monitoring: What?

Presence of standing water or mud on nets and equipment.

Monitoring: How?

Visual

Monitoring: Frequency?

Once

Monitoring: Who?

Crew

Evaluation & Corrective Actions:

Rewash all equipment and let dry before using again.
Supporting Documentation:
Critical Control Point #3: Task # 6: Load boat onto trailer.
Significant Hazards: Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad
Control Measures: Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area.
Limits for Control Measures: If in known infested system, pressure wash nets and equipment.
Monitoring: What? Presence of plant fragments or mud on nets and equipment.
Monitoring: How? Visual
Monitoring: Frequency? Once
Monitoring: Who? Crew
Evaluation & Corrective Actions: Rewash all equipment and let dry before using again.
Supporting Documentation:
Critical Control Point #4: Task # 6: Load boat onto trailer.
Significant Hazards: Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)
Control Measures: Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area.
Limits for Control Measures: If in known infested system, pressure wash nets and equipment.
Monitoring: What? Presence of standing water or mud on nets and equipment.
Monitoring: How? Visual
Monitoring: Frequency? Once
Monitoring: Who? Crew

Evaluation & Corrective Actions: Rewash all equipment and let dry before using again.	
Supporting Documentation:	
Facility: Iowa Department of Natural Resources	Activity: Fish netting
Address: 1436 255th St. Boone, IA 50036	
Signature:	Date:

**HACCP Checklist:
Fish Netting**

Facility Iowa Department of Natural Resources
Site Statewide
Coordinator Jason Euchner
Manager Fisheries biologist & technician
Address 1436 255th St., Boone, IA 50036

Task # 1: Load equipment at station.

Task # 2: Travel to sample location.

Task # 3: Launch boat and travel by boat to sample location.

Task # 4: Set nets if using passive gear, use nets if using active gear.

Task # 5: Travel back to ramp.

Task # 6: Load boat onto trailer.

CRITICAL CONTROL POINT

Hazards were contained

Hazards: Vertebrate: nonnative fish species (Asian carp, white perch, round goby, ruffe)

Control measures were implemented

Control Measures: Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area.

Control limits were maintained

Control Limits: If in known infested system, pressure wash nets and equipment.

Corrective actions were (performed if necessary)

Corrective Actions: Rewash all equipment and let dry before using again.

Hazards were contained

Hazards: Invertebrate: zebra mussel, quagga mussel, rusty crawfish, spiny waterflea, New Zealand mudsnail

Control measures were implemented

Control Measures: Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area. Decontaminate motor.

Control limits were maintained

Control Limits: If in known infested system, pressure wash nets and equipment.

Decontaminate engine cooling system.

Corrective actions were (performed if necessary)

Corrective Actions: Rewash all equipment and let dry before using again.

Hazards were contained

Hazards: Plant: Eurasian watermilfoil, curlyleaf pondweed, brittle naiad

Control measures were implemented

Control Measures: Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area.

Control limits were maintained

Control Limits: If in known infested system, pressure wash nets and equipment.

Corrective actions were (performed if necessary)

Corrective Actions: Rewash all equipment and let dry before using again.

Hazards were contained

Hazards: Other Biologic: largemouth bass virus (LMBV), viral hemorrhagic septicemia (VHS)

Control measures were implemented

Control Measures: Clean nets and equipment off when leaving area. Drain water. Pressure wash everything if in known infested area.

Control limits were maintained

Control Limits: If in known infested system, pressure wash nets and equipment.

Corrective actions were (performed if necessary)

Corrective Actions: Rewash all equipment and let dry before using again.

Task # 7: Travel back to station.

Waterbody	Species	County	Year Discovered	Status
Big Sioux River	bighead carp	Woodbury	1997	present - no control
Cedar River	bighead carp	Linn		present - no control
Chariton River	bighead carp	Appanoose	1995	present - no control
Des Moines River	bighead carp	multiple	1996	present - no control
East Nodaway River tributary	bighead carp	Adams	2004	present - no control
Iowa River	bighead carp	Johnson	2003	present - no control
Mississippi River	bighead carp	multiple	2003	present - no control
	silver carp	Lee	2003	present - no control
	zebra mussel	multiple	1992	present - no control
	Eurasian watermilfoil	multiple	unknown	present - no control
	brittle naiad	multiple	2003	present - no control
Missouri River	bighead carp	multiple	1995	present - no control
	silver carp	multiple	unknown	present - no control
Ottumwa Lagoon	bighead carp	Wapello	2002	present - no control
Pee Dee Creek/Soap Creek tributary	bighead carp	Davis	2004	present - no control
West Platte River	bighead carp	Union	2004	present - no control
Chariton River	silver carp	Appanoose	2007	present - no control
	Eurasian watermilfoil	Chickasaw	2002	treated in 2003 and 2004, continue monitoring
Airport Lake	Eurasian watermilfoil	Franklin	2000	eradicated
Beeds Lake	Eurasian watermilfoil	Franklin	2000	eradicated
Camp Sunnyside Pond	watermilfoil	Polk	2001	treated in 2002 and 2005, continue monitoring
		Cerro		
Clear Lake	zebra mussel	Gordo	2005	unknown - will monitor this fall and spring
Casey Lake	brittle naiad	Tama	2003	treated in 2004, continue monitoring
Crawford Creek Lake	brittle naiad	Ida	2003	treated in 2004, treatment scheduled for 2006
Crystal Lake	Eurasian	Hancock	1993	eradicated

Eldred Sherwood Lake	watermilfoil brittle naiad Eurasian	Hancock	2005	treatment scheduled for 2006
Grundy County Lake	watermilfoil	Grundy	2003	treated in 2004, continue monitoring
Hannen Lake	brittle naiad Eurasian	Benton	2004	treatment scheduled for 2006
Horseshoe Pond	watermilfoil Eurasian	Jackson	2000	eradicated
Keg Creek Lake	watermilfoil Eurasian	Mills Buchana	1999	eradicated
Koutny Pond	watermilfoil	n Buchana	1995	treated in 1996, 1998, 2003, continue monitoring
	brittle naiad	n Van	2003	treated in 2004, continue monitoring
Lacey-Keosauqua Lake	brittle naiad	Buren	2004	treated in 2005, continue monitoring
Lake Geode	brittle naiad	Henry Van	2004	continue monitoring
Lake Sugema	brittle naiad	Buren	2004	continue monitoring
Lake Wapello	brittle naiad	Davis Woodbur	1998	continue monitoring
Little Sioux Park Pond	brittle naiad Eurasian	y	2003	treated in 2004, continue monitoring
Mile Hill Lake	watermilfoil Eurasian	Mills Black	1999	treated in 2000, treatment scheduled for 2006
Mitchell Avenue Pit	watermilfoil	Hawk	1998	eradicated
Moorehead Park Pond	brittle naiad	Ida Van	2003	treated in 2004, continue monitoring
Morris Park Pond	brittle naiad	Buren	2004	treated in 2005, continue monitoring
Nelson Park Pond	brittle naiad Eurasian	Crawford	2003	treated in 2004 and 2005, continue monitoring
Ottumwa Pond	watermilfoil	Wapello	2002	treated in 2003, continue monitoring
Pleasant Creek Lake	brittle naiad Eurasian	Linn	2003	continue monitoring
Red Rock Pond	watermilfoil Eurasian	Marion	2003	treated in 2004, continue monitoring
Rudd Lake	watermilfoil	Floyd	2003	treated in 2004, continue monitoring

Scott "A" Lake	Eurasian watermilfoil	Fremont	1999	eradicated
Scott "B" Lake	Eurasian watermilfoil	Fremont	2003	treated in 2004, treatment scheduled for 2006
Siems Park Ponds	Eurasian watermilfoil	Kossuth	2003	treated in 2004, treatment scheduled for 2006
Snyder Bend	Eurasian watermilfoil	Woodbury	1996	eradicated
South Prairie Lake	Eurasian watermilfoil	Black Hawk	1998	eradicated
Southwood Ponds	brittle naiad	Woodbury	2005	treated in 2005, continue monitoring
Sportsman's Lake	Eurasian watermilfoil	Palo Alto	1998	treated in 1999, treatment scheduled for 2006
St. Benedicts Pond	Eurasian watermilfoil	Kossuth	1994	treated in 1995, 1998, 2003, and 2004; will continue spot treatments
Sweet Marsh	Eurasian watermilfoil	Bremer	1997	treated in 1997, 2001, and 2004; treatment scheduled for 2006
Volga Lake	brittle naiad	Fayette	2004	continue monitoring
Walnut Acres Campground Pond	Eurasian watermilfoil	Jones	2002	treated in 2003, treatment scheduled for 2006
Walnut Creek Marsh	Eurasian watermilfoil	Ringgold	1994	eradicated
Willow Lake	brittle naiad	Harrison	2004	treated in 2004 and 2005, continue monitoring
Wilson Grove Pond	Eurasian watermilfoil	Bremer	1996	treated in 1997, treatment scheduled for 2006
Yellow Smoke Lake	brittle naiad	Crawford	2003	treated in 2004, continue monitoring
Rathbun	zebra mussel	Appanose	2007	observed on boat docked at marina

Waterbody	Site	County	River Mile	Lat N	Long W	Report Date	Report Source	Comments
Mississippi River	Lock and Dam 19	Lee	364			09/03/03	Bernie Schonoff	below dam at Keokuk; have not been observed above
Des Moines River	Keosaqua	Van Buren	51	588551	4509921	06/24/03	Mark Flammang	32.1 in., 13.2 lbs.; collected during standard sampling
Des Moines River	Otummwa	Wapello	90			07/28/03	Mark Flammang	100's of them jumping around the boat while sampling near Cliffland Access
Chariton River	Below Rathbun Dam	Appanoose				8/1/2007	Mark Flammang	

Waterbody	County	Year(s) Discovered	Tier	Range	Section	Treatment (Results)*	Comments
Airport Lake	Chickasaw	2002	96N	13W	35	Sonar whole lake in 2003 (EWM observed in 2005) Navigate spot treatment in 2000 (no EWM observed)	
Beeds Lake	Franklin	2000	92N	20W	19,20		did not observe in 2005
Bob Pyle Marsh	Story	2004	85N	24W	5	none	
Camp Sunnyside Pond	Polk	2001	79N	24W	2	Sonar whole lake in 2002 (EWM observed in 2004), Sonar whole lake in 2005 (unknown), Did not observe 2007	
Crystal Lake	Hancock	1993	97N	25W	9,10,15,16	Sonar whole lake in 1994 (no EWM observed)	
Grundy County Lake	Grundy	2003	88N	15W	6	Sonar whole lake in 2004 (no EWM observed)	
Horseshoe Pond	Jackson	2000	84N	3E	30	NA	private pond
Keg Creek Lake	Mills	1999	71N; 72N	43W; 43W	4,5; 23,33	NA	
Koutny Pond	Buchanan	1995	87N	10W	36	NA (EWM observed in 1997, 2002)	Sonar whole lake for brittle naiad in 2004 (BN observed in 2005)
Maxwell Pond	Story	2002	82N	22W	22	NA	private pond
Mile Hill Lake	Mills	1999	72N	43W	10,15	NA (EWM observed in 2005)	
Mississippi River	multiple	Unknown				none	
Mitchell Avenue Pit	Black Hawk	1998	89N	12W	31	NA	
O'Brien Addition Pond	Emmet	2002	100N	34W	34	none	did not observe in 2003, 2004
Ottumwa Pond	Wapello	2002				Sonar whole lake in 2003 (no EWM observed)	private pond
Plainfield Lake	Bremer	2005	93N	14W	19		
Red Rock Pond	Marion	2003	76N	19W		Sonar whole lake in 2004 (no EWM observed)	USACE treated

							EWM observed)	
Riverton Marsh	Fremont	2006						observed by Gabe Stevenson while hunting
Rudd Lake	Floyd	2003	96N	17W	19, 20		Sonar whole lake in 2004 (no EWM observed)	
Scott "A" Lake	Fremont	1999	70N	43W	16		NA	
Scott "B" Lake	Fremont	2003	70N	43W	16		Reward spot treatment in 2004 (EWM observed in 2005)	
Siems Park Ponds	Kossuth	2003	95N	30W	9		Sonar whole lake in 2004 (EWM observed in 2005)	
Snyder Bend	Woodbury	1996	86N	47W	7,8,9,16,17		Sonar whole lake in 1998 (no EWM observed)	
South Prairie Lake	Black Hawk	1998	89N	14W	35		NA	treatment planned for 2004 was postponed due to high water, few EWM plants were observed in 2005
Sportsman's Lake	Palo Alto	1998	96N	31W	19		Sonar fall whole lake in 1998 (EWM observed in 2003,2007) Sonar whole lake all ponds in 1995 (EWM observed in 1997), Sonar whole lake all ponds in 1998? (Ewm observed in 2002), Sonar whole lake main pond in 2004 (EWM observed in 2005)	
St. Benedicts Pond	Kossuth	1994	95N	27W	30		multiple chemical and physical treatments since 1997 (EWM observed most years in reservoir and Martens Lake channel)	
Sweet Marsh	Bremer	1997	93N	12W	35			

Walnut Acres Campground Pond	Jones	2002	86N	3W	15,16	Sonar whole lake in 2003 (EWM observed in 2005)	
Walnut Creek Marsh	Ringgold	1994	68N	30W	17	NA	did not observe in 2003
Winnebago Bend Wilson Grove Pond	Woodbury	2002	86N	47W	28,29,31,32,33	none	
	Bremer	1996	93N	11W	13	NA (EWM observed in 2005)	
Yamakowski Pond	Linn	2006					private pond
Martinn Zauug	Pocahontas	2007				NA	private pond
* No data on treatment details are available if treatment happened before November 2000							

Brittle Naiad Locations		Year(s)		
Waterbody	County	Discovered	Treatment (Results)	Treatment Priority/Rea
Bergfeld Pond	Dubuque	2005		high/isolated location, s
Bitterman Pond	Buchanan	2005		This is a 1/2 acre privat
Brushy Creek Lake	Webster	2006		
Casey Lake	Tama	2003	Sonar whole lake in 2004 (brittle naiad observed in 2005)	low/low use, close prox treated in the past
Crawford Creek Lake	Ida	2003	Sonar whole lake in 2004 (brittle naiad observed in 2005)	low/low use, close prox treated in the past
Dog Creek Lake	O'Brien	2006		
Eldred Sherwood Lake	Hancock	2004		high/isolated location, s
Grundy County Lake	Grundy	2006		
Hannen Lake	Benton	2004		medium/medium use, s
Hickory Hollow Pond	Tama	2006		
Koutny Pond	Buchanan	2003	Sonar whole lake in 2004 (brittle naiad observed in 2005)	low/low use, close prox treated in the past for both brittle nai
Indian Lake	Van Buren	2005		
Lacey-Keosauqua Lake	Van Buren	2004	Sonar whole lake in 2005 (unknown)	medium/medium use, s
Lake Geode	Henry	2004		medium/high use; howe
Lake Miami	Monroe	2005		medium-low/somewhat
Lake Sugema	Van Buren	2004		low/large, close proximi
Lake Wapello	Davis	1998	Reward spot treatment	low/big, close proximity treated in the past
Little Sioux Park Pond	Woodbury	2003	Sonar whole lake in 2004 (no brittle naiad observed in 2005)	low/low use, close prox treated in the past
Meadow Lake	Adair	2006		
Mississippi River	multiple	2003		none
Moorehead Park Pond	Ida	2003	Sonar whole lake in 2004 (no brittle naiad observed in 2005)	low/low use, close prox treated in the past
Morris Park Pond	Van Buren	2004	Sonar whole lake in 2005 (unknown)	high/small, dense brittle
Nelson Park Pond	Crawford	2003	Sonar whole lake in 2004 (brittle naiad observed in 2005); Sonar whole lake 2005 (unknown)	low/low use, close prox treated in the past
Pleasant Creek Lake	Linn	2003	Reward spot treatment	low/large, close proximi

				has been spot treated in
Snyder Bend	Woodbury	2005		low/large, close proximity
Southwood Ponds	Woodbury	2005	Reward spot treatment in 2005	low/low use, close proximity
Tug Fork West	Van Buren	2005		low/connected to Lake
Volga Lake	Fayette	2004		high/isolated, medium use
Willow Lake	Harrison	2004	Reward spot treatment in 2004, 2005	low/low use, close proximity however has been spot treated in the past
Yellow Smoke Lake	Crawford	2003	Sonar whole lake in 2004 (brittle naiad observed in 2005 & 2007)	medium-low/close proximity however medium use and has been treated in
White Oak Lake	Mahaska	2006		
Wild Wood Lake	Jackson	2006		
Lake Iowa	Iowa	2007		
Private Pond	Blawh Hawk	2007		
Lake Meyer	Winneshiek	2007		

CHAPTER 12. FISHERIES BUREAU NEW EMPLOYEE ORIENTATION PROGRAM

- All new employees will enroll in and complete the 1-day department-wide orientation schedule in the central office at the earliest opportunity and within the first three months of employment.
- The first line supervisor will spend a minimum of one entire day with the new employee during the first week of work. The time will be used to define the work to be accomplished, opportunities for assistance, procedures to follow, and an orientation of the Fisheries Bureau staffing and location.
- Lead workers and/or first line supervisors will provide mentoring of new employees on a daily basis for the first month of employment. Due to logistics, remote mentoring may occur. Voice connection is preferred over email.
- New employees are expected to spend a minimum of one day on site with fisheries personnel located at each of the 18 field stations and the central office. The new employee will schedule the site visits with the approval of their supervisor. This should be accomplished any time during the first year of employment. Host employees should provide a worthwhile experience for the new employee through participation in field project activities wherever possible.
- A one hour orientation will be scheduled with a representative from each of the four other bureaus within the Conservation and Recreation Division. The supervisor of the new employee will schedule this orientation. The bureau representative should be someone located close to the new employee's place of work. This orientation should be completed within the first six months of employment.
- New employees will be scheduled to work the State Fair at the earliest opportunity. This is a good venue to meet other DNR employees and obtain a pulse of our public.