

HACCP Plan

HACCP Step 1 - Activity Description	
Facility: Boone Research Station	Site: All Zebra Mussel infested water bodies.
Project Coordinator: Jason Euchner	Project Description: Water sampling for zebra mussel veligers
Site Manager: Kim Bogenschutz	
Address: 1436 255th St. Boone, IA 50036	
Phone: 515-432-2823	

Project Description (Who, What, Where, When, How & Why)
<p>Who: survey crew What: water sampling for zebra mussel veligers When: spring and summer seasons Where: all Zebra Mussel infested water bodies How: with water sampling pump, screens, and buckets Why: to monitor zebra mussel reproduction in known infested water bodies</p>

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HACCP Step 2 - Potential Hazard Identification

Vertebrates:

Asian Carp

Invertebrates:

Zebra Mussel

Plants:

Eurasian watermilfoil

Brittle Naiad

Curly leaf pondweed

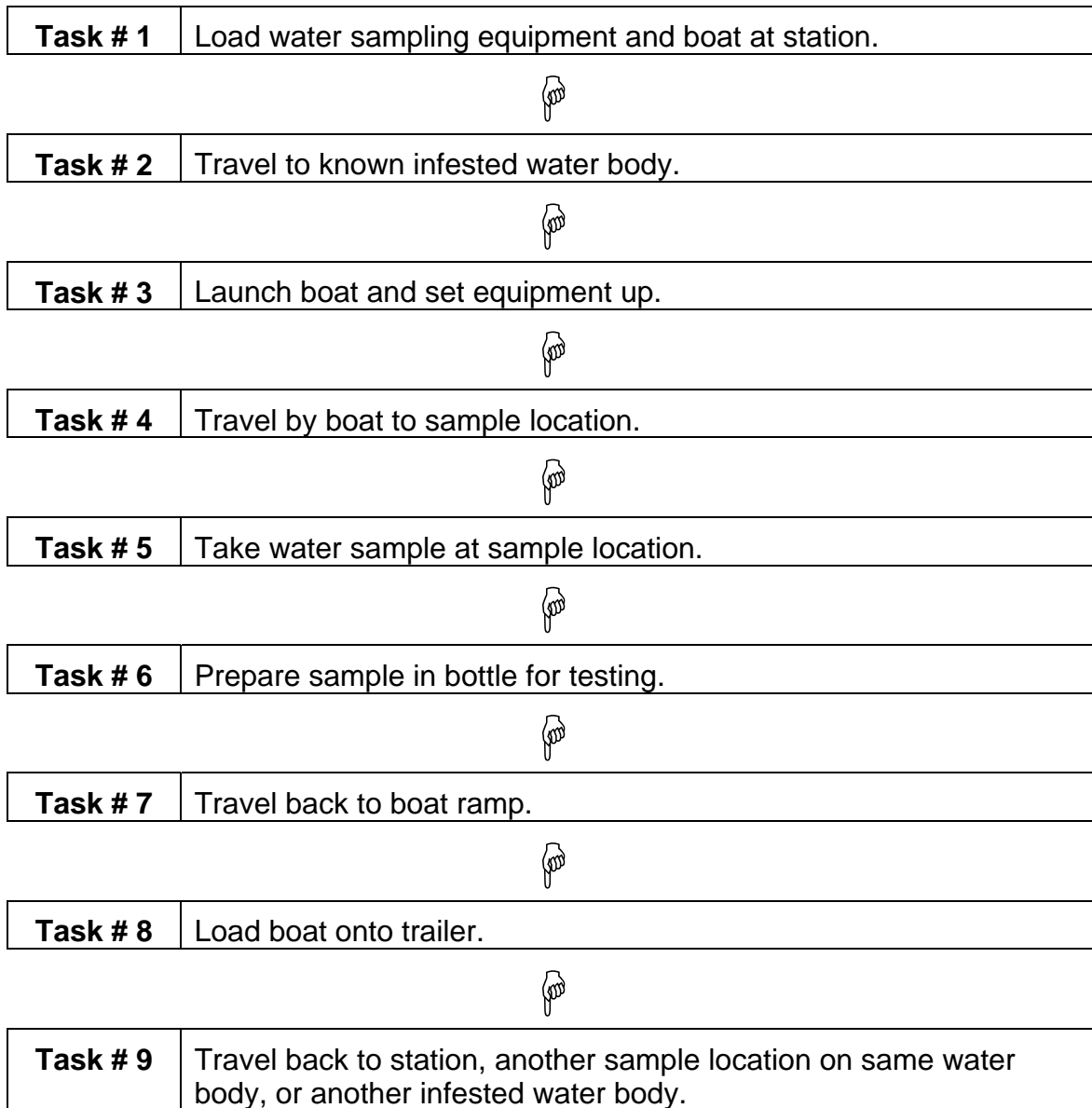
Other Biologics:

Largemouth Bass Virus (LMBV)

Others:

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HACCP Step 3 - Flow Diagram



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HACCP Step 4 - Hazard Analysis

Task	Hazard	Probable?	Justification	Control Measures	CCP?
Load water sampling equipment and boat at station.	Vertebrate: Asian Carp	No	Equipment is clean.		No
	Invertebrate: Zebra Mussel	No	Equipment is clean.		No
	Plant: Eurasian watermilfoil	No	Equipment is clean.		No
	Plant: Brittle Naiad	No	Equipment is clean.		No
	Plant: Curly leaf pondweed	No	Equipment is clean.		No
	Other Biologic: Largemouth Bass Virus (LMBV)	No	Equipment is clean.		No
Travel to known infested water body.	Vertebrate: Asian Carp	No	Equipment has not been used.		No
	Invertebrate: Zebra Mussel	No	Equipment has not been used.		No
	Plant: Eurasian watermilfoil	No	Equipment has not been used.		No
	Plant: Brittle Naiad	No	Equipment has not been used.		No
	Plant: Curly leaf pondweed	No	Equipment has not been used.		No
	Other Biologic: Largemouth Bass Virus (LMBV)	No	Equipment has not been used.		No
Launch boat and set equipment up.	Vertebrate: Asian Carp	No	Equipment has not been used.		No
	Invertebrate: Zebra Mussel	No	Equipment has not been used.		No

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	Plant: Eurasian watermilfoil	No	Equipment has not been used.		No
	Plant: Brittle Naiad	No	Equipment has not been used.		No
	Plant: Curly leaf pondweed	No	Equipment has not been used.		No
	Other Biologic: Largemouth Bass Virus (LMBV)	No	Equipment has not been used.		No
Travel by boat to sample location.	Vertebrate: Asian Carp	No	Very unlikely to come into contact with during travel.		No
	Invertebrate: Zebra Mussel	No	Very unlikely to come into contact with during travel.		No
	Plant: Eurasian watermilfoil	Yes	Possible to get some on motor or other equipment at ramp.	Check motor and equipment before leaving ramp	No
	Plant: Brittle Naiad	Yes	Possible to get some on motor or other equipment at ramp.	Check motor and equipment before leaving ramp	No
	Plant: Curly leaf pondweed	Yes	Possible to get some on motor or other equipment at ramp.	Check motor and equipment before leaving ramp	No
	Other Biologic: Largemouth	No	Very unlikely to		No

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	Bass Virus (LMBV)		come into contact with during travel.		
Take water sample at sample location.	Vertebrate: Asian Carp	No	Very unlikely to come into contact with.		No
	Invertebrate: Zebra Mussel	Yes	Taking water sample in known infested location during reproduction periods.	Try to reduce the amount of water spilled in boat and on equipment.	No
	Plant: Eurasian watermilfoil	No	Unlikely to come into contact with.		No
	Plant: Brittle Naiad	No	Unlikely to come into contact with.		No
	Plant: Curly leaf pondweed	No	Unlikely to come into contact with.		No
	Other Biologic: Largemouth Bass Virus (LMBV)	No	Unlikely to come into contact with.		No
Prepare sample in bottle for testing.	Vertebrate: Asian Carp	No	Unlikely to come into contact with.		No
	Invertebrate: Zebra Mussel	Yes	Cleaning filter off with likelihood of veligers present.	Try to minimize spilling rinse water out in boat.	No
	Plant: Eurasian watermilfoil	No	Unlikely to come into contact with.		No
	Plant: Brittle Naiad	No	Unlikely to come into contact with.		No

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	Plant: Curly leaf pondweed	No	Unlikely to come into contact with.		No
	Other Biologic: Largemouth Bass Virus (LMBV)	No	Unlikely to come into contact with.		No
Travel back to boat ramp.	Vertebrate: Asian Carp	No	Unlikely to come into contact with.		No
	Invertebrate: Zebra Mussel	No	Unlikely to come into contact with.		No
	Plant: Eurasian watermilfoil	Yes	Possible to come into contact with when entering shallow water.	Check motor and equipment before loading on trailer.	No
	Plant: Brittle Naiad	Yes	Possible to come into contact with when entering shallow water.	Check motor and equipment before loading boat.	No
	Plant: Curly leaf pondweed	Yes	Possible to come into contact with when entering shallow water.	Check motor and equipment before loading boat.	No
	Other Biologic: Largemouth Bass Virus (LMBV)	No	Unlikely to come into contact with.		No
Load boat onto trailer.	Vertebrate: Asian Carp	No	Unlikely to come into contact with.		No
	Invertebrate: Zebra Mussel	Yes	Spilled water in bilge of boat may have veligers	Pull plug and drain bilge of boat on ramp.	Yes

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			present.		
	Plant: Eurasian watermilfoil	Yes	Possible to pick up plant fragments while pulling boat and trailer out.	Remove all visible plant fragments while at ramp.	Yes
	Plant: Brittle Naiad	Yes	Possible to pick up plant fragments while pulling boat and trailer out.	Remove all visible plant fragments while at ramp.	Yes
	Plant: Curly leaf pondweed	Yes	Possible to pick up plant fragments while pulling boat and trailer out.	Remove all visible plant fragments while at ramp.	Yes
	Other Biologic: Largemouth Bass Virus (LMBV)	No	Unlikely to come into contact with.		No
Travel back to station, another sample location on same water body, or another infested water body.	Vertebrate: Asian Carp	No	Equipment clean		No
	Invertebrate: Zebra Mussel	Yes	Possibility of veligers in or on boat.	Spray boat with 10% bleach solution and pressure wash. If time allows let dry for 5 days. Sampling equipment will be rinsed with 10% bleach solution at site. Then rinsed with water from new water body. Both	Yes

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				times pumping waste water onto shoreline in area that will not run back into water body. Procedure listed in SOP.	
	Plant: Eurasian watermilfoil	No	Equipment clean		No
	Plant: Brittle Naiad	No	Equipment clean		No
	Plant: Curly leaf pondweed	No	Equipment clean		No
	Other Biologic: Largemouth Bass Virus (LMBV)	No	Equipment clean		No

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HACCP Step 5 - HACCP Plan

Critical Control Point #1:

Task # 8: Load boat onto trailer.

Significant Hazards:

Invertebrate: Zebra Mussel

Control Measures:

Pull plug and drain bilge of boat on ramp.

Limits for Control Measures:

Pull plug and drain all excess water from bilge of boat.

Monitoring: What?

presence of standing water

Monitoring: How?

visual

Monitoring: Frequency?

once

Monitoring: Who?

survey crew

Evaluation & Corrective Actions:

park boat at angle that allows bilge of boat to drain

Supporting Documentation:

Critical Control Point #2:

Task # 8: Load boat onto trailer.

Significant Hazards:

Plant: Eurasian watermilfoil

Control Measures:

Remove all visible plant fragments while at ramp.

Limits for Control Measures:

Remove all plant fragments from boat and trailer.

Monitoring: What?

presence of plant fragments

Monitoring: How?

visual

Monitoring: Frequency?

once

Monitoring: Who?

survey crew

Evaluation & Corrective Actions:

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Supporting Documentation:
Critical Control Point #3: Task # 8: Load boat onto trailer.
Significant Hazards: Plant: Brittle Naiad
Control Measures: Remove all visible plant fragments while at ramp.
Limits for Control Measures: Remove all plant fragments from boat and trailer.
Monitoring: What? presence of plant fragments
Monitoring: How? visual
Monitoring: Frequency? once
Monitoring: Who? survey crew
Evaluation & Corrective Actions:
Critical Control Point #4: Task # 8: Load boat onto trailer.
Significant Hazards: Plant: Curly leaf pondweed
Control Measures: Remove all visible plant fragments while at ramp.
Limits for Control Measures: Remove all plant fragments from boat and trailer.
Monitoring: What? presence of plant fragments
Monitoring: How? visual
Monitoring: Frequency? once
Monitoring: Who? survey crew
Evaluation & Corrective Actions:

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Supporting Documentation:	
Critical Control Point #5:	
Task # 9: Travel back to station, another sample location on same water body, or another infested water body.	
Significant Hazards: Invertebrate: Zebra Mussel	
Control Measures: Spray boat with 10% bleach solution and pressure wash. If time allows let dry for 5 days.	
Limits for Control Measures: Rinse with 10% bleach solution and pressure wash.	
Monitoring: What? cleaning of boat and trailer	
Monitoring: How? visual	
Monitoring: Frequency? once	
Monitoring: Who? survey crew	
Evaluation & Corrective Actions:	
Supporting Documentation:	
Facility: Boone Research Station	Activity: Water sampling for zebra mussel veligers
Address: 1436 255th St. Boone, IA 50036	
Signature:	Date:

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HACCP Checklist:

Water sampling for zebra mussel veligers

Facility Boone Research Station
Site All Zebra Mussel infested water bodies.
Coordinator Jason Euchner
Manager Kim Bogenschutz
Address 1436 255th St., Boone, IA 50036

- Task # 1: Load water sampling equipment and boat at station.**
- Task # 2: Travel to known infested water body.**
- Task # 3: Launch boat and set equipment.**
- Task # 4: Travel by boat to sample location.**
- Task # 5: Take water sample at sample location.**
- Task # 6: Prepare sample in bottle for testing.**
- Task # 7: Travel back to boat ramp.**
- Task # 8: Load boat onto trailer.**
CRITICAL CONTROL POINT
 - Hazards were contained
Hazards: Invertebrate: Zebra Mussel
 - Control measures were implemented
Control Measures: Pull plug and drain bilge of boat on ramp.
 - Control limits were maintained
Control Limits: Pull plug and drain all excess water from bilge of boat.
 - Corrective actions were (performed if necessary)
Corrective Actions: park boat at angle that allows bilge of boat to drain
- Hazards were contained
Hazards: Plant: Eurasian watermilfoil

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- Control measures were implemented
Control Measures: Remove all visible plant fragments while at ramp.
- Control limits were maintained
Control Limits: Remove all plant fragments from boat and trailer.
- Corrective actions were (performed if necessary)
Corrective Actions:

- Hazards were contained
Hazards: Plant: Brittle Naiad
- Control measures were implemented
Control Measures: Remove all visible plant fragments while at ramp.
- Control limits were maintained
Control Limits: Remove all plant fragments from boat and trailer.
- Corrective actions were (performed if necessary)
Corrective Actions:

- Hazards were contained
Hazards: Plant: Curly leaf pondweed
- Control measures were implemented
Control Measures: Remove all visible plant fragments while at ramp.
- Control limits were maintained
Control Limits: Remove all plant fragments from boat and trailer.
- Corrective actions were (performed if necessary)
Corrective Actions:

- Task # 9:** Travel back to station, another sample location on same water body, or another infested water body.
CRITICAL CONTROL POINT
- Hazards were contained
Hazards: Invertebrate: Zebra Mussel
- Control measures were implemented
Control Measures: Spray boat with 10% bleach solution and

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pressure wash. If time allows let dry for 5 days.

- Control limits were maintained
Control Limits: Rinse with 10% bleach solution and pressure wash.
- Corrective actions were (performed if necessary)
Corrective Actions: