

# HACCP Plan

HACCP Step 1 - Activity Description	
<b>Facility:</b> Boone Research Station	<b>Site:</b> Statewide
<b>Project Coordinator:</b> Jason Euchner	<b>Project Description:</b> Vegetation sampling
<b>Site Manager:</b> Kim Bogenschutz	
<b>Address:</b> 1436 255th St. Boone, IA 50036	
<b>Phone:</b> 515-432-2823	

<b>Project Description</b> (Who, What, Where, When, How & Why)
<p>Who: Vegetation crew            When: Summer survey season            Where: Statewide            How: Load boat and travel to water bodies within the state and conduct vegetation surveys with vegetation rake. Load boat and equipment up after survey complete and travel to next survey site or back to the station.            Why: To observe vegetation and sample for exotic vegetation.</p>

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## HACCP Step 2 - Potential Hazard Identification

**Vertebrates:**

Asian carp

**Invertebrates:**

Zebra Mussels

**Plants:**

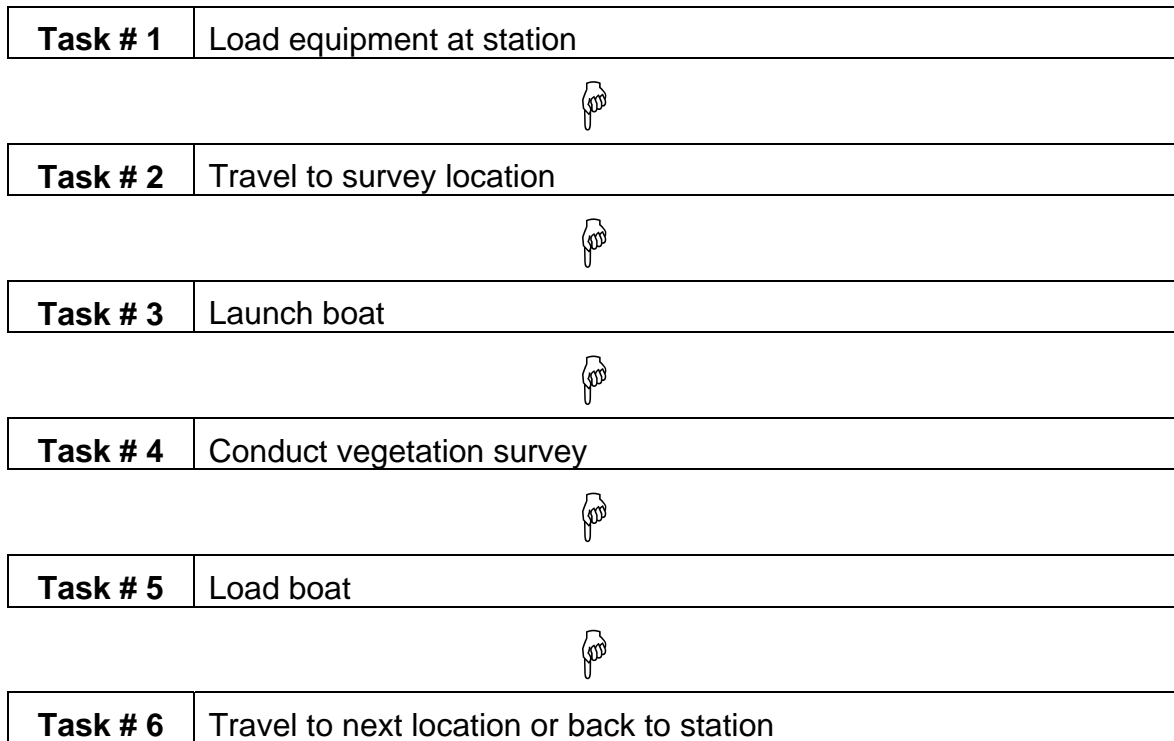
Eurasian watermilfoil  
Brittle Naiad  
Curly lead pondweed

**Other Biologics:**

**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 equipment at station	Vertebrate: Asian carp	No	Boat and equipment should be clean		No
	Invertebrate: Zebra Mussels	No	Boat and equipment should be clean		No
	Plant: Eurasian watermilfoil	No	Boat and equipment should be clean		No
	Plant: Brittle Naiad	No	Boat and equipment should be clean		No
	Plant: Curly lead pondweed	No	Boat and equipment should be clean		No
Travel to survey location	Vertebrate: Asian carp	No	Traveling on land		No
	Invertebrate: Zebra Mussels	No	Traveling on land		No
	Plant: Eurasian watermilfoil	No	Traveling on land		No
	Plant: Brittle Naiad	No	Traveling on land		No
	Plant: Curly lead pondweed	No	Traveling on land		No
Launch boat	Vertebrate: Asian carp	No	Boat and equipment clean when entering water		No
	Invertebrate: Zebra Mussels	No	Boat and equipment clean when entering water		No
	Plant: Eurasian watermilfoil	No	Boat and equipment		No

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			clean when entering water		
	Plant: Brittle Naiad	No	Boat and equipment clean when entering water		No
	Plant: Curly lead pondweed	No	Boat and equipment clean when entering water		No
Conduct vegetation survey	Vertebrate: Asian carp	No	Fish are mobile and will move about system		No
	Invertebrate: Zebra Mussels	Yes	Potential to spread to non infested area of system	Clean rake off after each sample as well as possible and if in infested water body or area dispose of sampled vegetation at designated site.	No
	Plant: Eurasian watermilfoil	Yes	Potential to spread to non infested area of system	Clean rake off after each sample as well as possible. If in infested water body dispose of sampled vegetation at designated site. If sampling exotic in samples change rakes after 3 or 4 samples.	Yes

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	Plant: Brittle Naiad	Yes	Potential to spread to non infested area of system	Clean rake off after each sample as well as possible. If in infested water body dispose of sampled vegetation at designated site. If sampling exotic in samples change rakes after 3 or 4 samples.	Yes
	Plant: Curly lead pondweed	Yes	Potential to spread to non infested area of system	Clean rake off after each sample as well as possible. If in infested water body dispose of sampled vegetation at designated site. If sampling exotic in samples change rakes after 3 or 4 samples.	Yes
Load boat	Vertebrate: Asian carp	Yes	Potential to transport to another system	Drain all water from bilge of boat and pressure wash. If time allows let dry for 3 days.	Yes
	Invertebrate: Zebra	Yes	Potential to	Drain all water from	Yes

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	Mussels		transport to another system	bilge of boat and pressure wash. If time allows let dry for 3 days.	
	Plant: Eurasian watermilfoil	Yes	Potential to transport to another system	Clean boat and equipment of all vegetation. If during survey exotic plants where encountered switch to another rake. If exotic sampled pressure wash boat before going to next water body. If time allows let boat dry for 3 days.	Yes
	Plant: Brittle Naiad	Yes	Potential to transport to another system	Clean boat and equipment of all vegetation. If during survey exotic plants where encountered switch to another rake. If exotic sampled pressure wash boat before going to next water body. If time allows let boat dry for 3 days.	Yes

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	Plant: Curly lead pondweed	Yes	Potential to transport to another system	Clean boat and equipment of all vegetation. If during survey exotic plants where encountered switch to another rake. If exotic sampled pressure wash boat before going to next water body. If time allows let boat dry for 3 days.	Yes
Travel to next location or back to station	Vertebrate: Asian carp	No	Boat and equipment should be clean		No
	Invertebrate: Zebra Mussels	No	Boat and equipment should be clean		No
	Plant: Eurasian watermilfoil	No	Boat and equipment should be clean		No
	Plant: Brittle Naiad	No	Boat and equipment should be clean		No
	Plant: Curly lead pondweed	No	Boat and equipment should be clean		No

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## HACCP Step 5 - HACCP Plan

### Critical Control Point #1:

#### Task # 4: Conduct vegetation survey

**Significant Hazards:**

Plant: Eurasian watermilfoil

**Control Measures:**

Clean rake off after each sample as well as possible. If in infested water body or area, dispose of sampled vegetation at designated site. If sampling exotic in samples change rakes after 3 or 4 samples.

**Limits for Control Measures:**

No plant fragments on equipment and if sampled switch to clean rake. Also dispose of excess plant material from sample at designated area.

**Monitoring: What?**

Plant fragments on equipment

**Monitoring: How?**

Visual

**Monitoring: Frequency?**

Every sample

**Monitoring: Who?**

Survey crew

**Evaluation & Corrective Actions:**

Keep extra rakes in boat, so rake can be switched out if used in infested area.

**Supporting Documentation:**

### Critical Control Point #2:

#### Task # 4: Conduct vegetation survey

**Significant Hazards:**

Plant: Brittle Naiad

**Control Measures:**

Clean rake off after each sample as well as possible. If in infested water body or area, dispose of sampled vegetation at designated site. If sampling exotic in samples change rakes after 3 or 4 samples.

**Limits for Control Measures:**

No plant fragments on equipment and if sampled switch to clean rake. Also dispose of excess plant material from sample at designated area.

**Monitoring: What?**

Plant fragments on equipment

**Monitoring: How?**

Visual

**Monitoring: Frequency?**

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Every sample
<b>Monitoring: Who?</b> Survey crew
<b>Evaluation &amp; Corrective Actions:</b> Keep extra rakes in boat, so rake can be switched out if used in infested area.
<b>Supporting Documentation:</b>
<b>Critical Control Point #3:</b> <b>Task # 4: Conduct vegetation survey</b>
<b>Significant Hazards:</b> Plant: Curly lead pondweed
<b>Control Measures:</b> Clean rake off after each sample as well as possible. If in infested water body or area, dispose of sampled vegetation at designated site. If sampling exotic in samples change rakes after 3 or 4 samples.
<b>Limits for Control Measures:</b> No plant fragments on equipment and if sampled switch to clean rake. Also dispose of excess plant material from sample at designated area.
<b>Monitoring: What?</b> Plant fragments on equipment
<b>Monitoring: How?</b> Visual
<b>Monitoring: Frequency?</b> Every sample
<b>Monitoring: Who?</b> Survey crew
<b>Evaluation &amp; Corrective Actions:</b> Keep extra rakes in boat, so rake can be switched out if used in infested area.
<b>Supporting Documentation:</b>
<b>Critical Control Point #4:</b> <b>Task # 5: Load boat</b>
<b>Significant Hazards:</b> Vertebrate: Asian carp
<b>Control Measures:</b> Drain all water from bilge of boat and pressure wash. If time allows let boat and equipment dry for 3 days.
<b>Limits for Control Measures:</b> Remove and drain all water from bilge of boat.
<b>Monitoring: What?</b>

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Presence of sitting water in boat
<b>Monitoring: How?</b> Visual
<b>Monitoring: Frequency?</b> Every time boat is loaded on trailer
<b>Monitoring: Who?</b> Survey crew
<b>Evaluation &amp; Corrective Actions:</b> Pressure wash boat out and if time allows let boat dry for 3 days.
<b>Supporting Documentation:</b>
<b>Critical Control Point #5:</b> <b>Task # 5: Load boat</b>
<b>Significant Hazards:</b> Invertebrate: Zebra Mussels
<b>Control Measures:</b> Drain all water from bilge of boat and pressure wash. If time allows let boat and equipment dry for 3 days.
<b>Limits for Control Measures:</b> Remove and drain all water from bilge of boat.
<b>Monitoring: What?</b> Presence of sitting water in boat
<b>Monitoring: How?</b> Visual
<b>Monitoring: Frequency?</b> Every time boat is loaded on trailer
<b>Monitoring: Who?</b> Survey crew
<b>Evaluation &amp; Corrective Actions:</b> Pressure wash boat out and if time allows let boat dry for 3 days.
<b>Supporting Documentation:</b>
<b>Critical Control Point #6:</b> <b>Task # 5: Load boat</b>
<b>Significant Hazards:</b> Plant: Eurasian watermilfoil
<b>Control Measures:</b> Clean boat and equipment of all vegetation. If during survey exotic plants were encountered switch to another rake. If exotic sampled pressure wash boat before going to next water body.

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<b>Limits for Control Measures:</b> Remove all vegetation from boat and equipment
<b>Monitoring: What?</b> Presence of plant fragments on boat and equipment
<b>Monitoring: How?</b> Visual
<b>Monitoring: Frequency?</b> Every time boat is loaded on trailer
<b>Monitoring: Who?</b> Survey crew
<b>Evaluation &amp; Corrective Actions:</b> Pressure wash boat and if time allows let boat dry for 3 days.
<b>Supporting Documentation:</b> <div style="background-color: #4b4b0b; height: 20px; width: 100%;"></div>
<b>Critical Control Point #7:</b> <b>Task # 5: Load boat</b>
<b>Significant Hazards:</b> Plant: Brittle Naiad
<b>Control Measures:</b> Clean boat and equipment of all vegetation. If during survey exotic plants were encountered switch to another rake. If exotic sampled pressure wash boat before going to next water body.
<b>Limits for Control Measures:</b> Remove all vegetation from boat and equipment
<b>Monitoring: What?</b> Presence of plant fragments on boat and equipment
<b>Monitoring: How?</b> Visual
<b>Monitoring: Frequency?</b> Every time boat is loaded on trailer
<b>Monitoring: Who?</b> Survey crew
<b>Evaluation &amp; Corrective Actions:</b> Pressure wash boat and if time allows let boat dry for 3 days.
<b>Supporting Documentation:</b> <div style="background-color: #4b4b0b; height: 20px; width: 100%;"></div>
<b>Critical Control Point #8:</b> <b>Task # 5: Load boat</b>
<b>Significant Hazards:</b> Plant: Curly lead pondweed

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<b>Control Measures:</b> Clean boat and equipment of all vegetation. If during survey exotic plants where encountered switch to another rake. If exotic sampled pressure wash boat before going to next water body.	
<b>Limits for Control Measures:</b> Remove all vegetation from boat and equipment	
<b>Monitoring: What?</b> Presence of plant fragments on boat and equipment	
<b>Monitoring: How?</b> Visual	
<b>Monitoring: Frequency?</b> Every time boat is loaded on trailer	
<b>Monitoring: Who?</b> Survey crew	
<b>Evaluation &amp; Corrective Actions:</b> Pressure wash boat and if time allows let boat dry for 3 days.	
<b>Supporting Documentation:</b>	
<b>Facility:</b> Boone Research Station	<b>Activity:</b> Vegetation sampling
<b>Address:</b> 1436 255th St. Boone, IA 50036	
<b>Signature:</b>	<b>Date:</b>

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## HACCP Checklist: Vegetation sampling

**Facility** Boone Research Station  
**Site** Statewide  
**Coordinator** Jason Euchner  
**Manager** Kim Bogenschutz  
**Address** 1436 255th St., Boone, IA 50036

- Task # 1: Load equipment at station**
- Task # 2: Travel to survey location**
- Task # 3: Launch boat**
- Task # 4: Conduct vegetation survey**  
**CRITICAL CONTROL POINT**
  - Hazards were contained  
Hazards: Plant: Eurasian watermilfoil
  - Control measures were implemented  
Control Measures: Clean rake off after each sample as well as possible and if in infested water body or area dispose of sampled vegetation at designated site. If sampling exotic in samples change rakes after 3 or 4 samples.
  - Control limits were maintained  
Control Limits: No plant fragments on equipment and if sampled switch to clean rake. Also dispose of excess plant material from samples at designated area.
  - Corrective actions were (performed if necessary)  
Corrective Actions: Keep extra rakes in boat, so rake can be switched out if used in infested area.
- Hazards were contained  
Hazards: Plant: Brittle Naiad
- Control measures were implemented  
Control Measures: Clean rake off after each sample as well as possible and if in infested water body or area dispose of sampled vegetation at designated site. If sampling exotic in

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samples change rakes after 3 or 4 samples.

- Control limits were maintained  
Control Limits: No plant fragments on equipment and if sampled switch to clean rake. Also dispose of excess plant material from sample at designated area.
- Corrective actions were (performed if necessary)  
Corrective Actions: Keep extra rakes in boat, so rake can be switched out if used in infested area.
  
- Hazards were contained  
Hazards: Plant: Curly lead pondweed
- Control measures were implemented  
Control Measures: Clean rake off after each sample as well as possible and if in infested water body or area dispose of sampled vegetation at designated site. If sampling exotic in samples change rakes after 3 or 4 samples.
- Control limits were maintained  
Control Limits: No plant fragments on equipment and if sampled switch to clean rake. Also dispose of excess plant material from samples at designated area.
- Corrective actions were (performed if necessary)  
Corrective Actions: Keep extra rakes in boat, so rake can be switched out if used in infested area.

- Task # 5: Load boat**  
**CRITICAL CONTROL POINT**

- Hazards were contained  
Hazards: Vertebrate: Asian carp
- Control measures were implemented  
Control Measures: Drain all water from bilge of boat and pressure wash. If time allows let boat dry for 3 days.
- Control limits were maintained  
Control Limits: Remove and drain all water from bilge of boat.
- Corrective actions were (performed if necessary)  
Corrective Actions: Pressure wash boat out and if time allows let boat dry for 3 days.

- Hazards were contained

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Hazards: Invertebrate: Zebra Mussels

- Control measures were implemented  
Control Measures: Drain all water from bilge of boat and pressure wash. If time allows let boat dry for 3 days.
- Control limits were maintained  
Control Limits: Remove and drain all water from bilge of boat.
- Corrective actions were (performed if necessary)  
Corrective Actions: Pressure wash boat out and if time allows let boat dry for 3 days.
  
- Hazards were contained  
Hazards: Plant: Eurasian watermilfoil
- Control measures were implemented  
Control Measures: Clean boat and equipment of all vegetation. If during survey exotic plants where encountered switch to another rake. If exotic sampled pressure wash boat before going to next water body.
- Control limits were maintained  
Control Limits: Remove all vegetation from boat and equipment
- Corrective actions were (performed if necessary)  
Corrective Actions: Pressure wash boat and if time allows let boat dry for 3 days.
  
- Hazards were contained  
Hazards: Plant: Brittle Naiad
- Control measures were implemented  
Control Measures: Clean boat and equipment of all vegetation. If during survey exotic plants where encountered switch to another rake. If exotic sampled pressure wash boat before going to next water body.
- Control limits were maintained  
Control Limits: Remove all vegetation from boat and equipment
- Corrective actions were (performed if necessary)  
Corrective Actions: Pressure wash boat and if time allows let boat dry for 3 days.

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- Hazards were contained  
Hazards: Plant: Curly lead pondweed
  - Control measures were implemented  
Control Measures: Clean boat and equipment of all vegetation.  
If during survey exotic plants were encountered switch to another rake. If exotic sampled pressure wash boat before going to next water body.
  - Control limits were maintained  
Control Limits: Remove all vegetation from boat and equipment
  - Corrective actions were (performed if necessary)  
Corrective Actions: Pressure wash boat and if time allows let boat dry for 3 days.
- 
- Task # 6: Travel to next location or back to station**