

# Backpack Electrofishing HACCP Plan

HACCP Step 1 - Activity Description	
<b>Facility:</b> La Crosse Fishery Resources Office	<b>Site:</b> Non-navigable waters
<b>Project Coordinator:</b> Crew leader (varies)	<b>Project Description:</b> Fishery Resource Management
<b>Site Manager:</b> Pam Thiel	
<b>Address:</b> 555 Lester Avenue Onalaska, WI 54650	
<b>Phone:</b> 608-783-8434	

<b>Project Description</b> (Who, What, Where, When, How & Why)
<p>The La Crosse Fishery Resources Office (LAXFRO) maintains one (1) backpack electrofishing unit that is used to temporarily immobilize and capture fish while wading in small streams, canals, wetlands, and other limited access (i.e., non-navigable) portions of rivers, lakes, and impoundments in the Upper Mississippi River and Great Lakes drainage basins. This equipment is used in support of projects that include the restoration of native species, surveillance of invasive species, assessment of fish health, management of trust resources, and public education. This equipment is used during ice-free periods (typically March-November) by LAXFRO staff and cooperators who are trained in its safe operation.</p>

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## HACCP Step 2 - Potential Hazard Identification

**Vertebrates:**

Round goby, Asian carps, white perch, and other invasive fish

**Invertebrates:**

Zebra mussels, faucet snails, quagga mussels, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts

**Plants:**

Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants

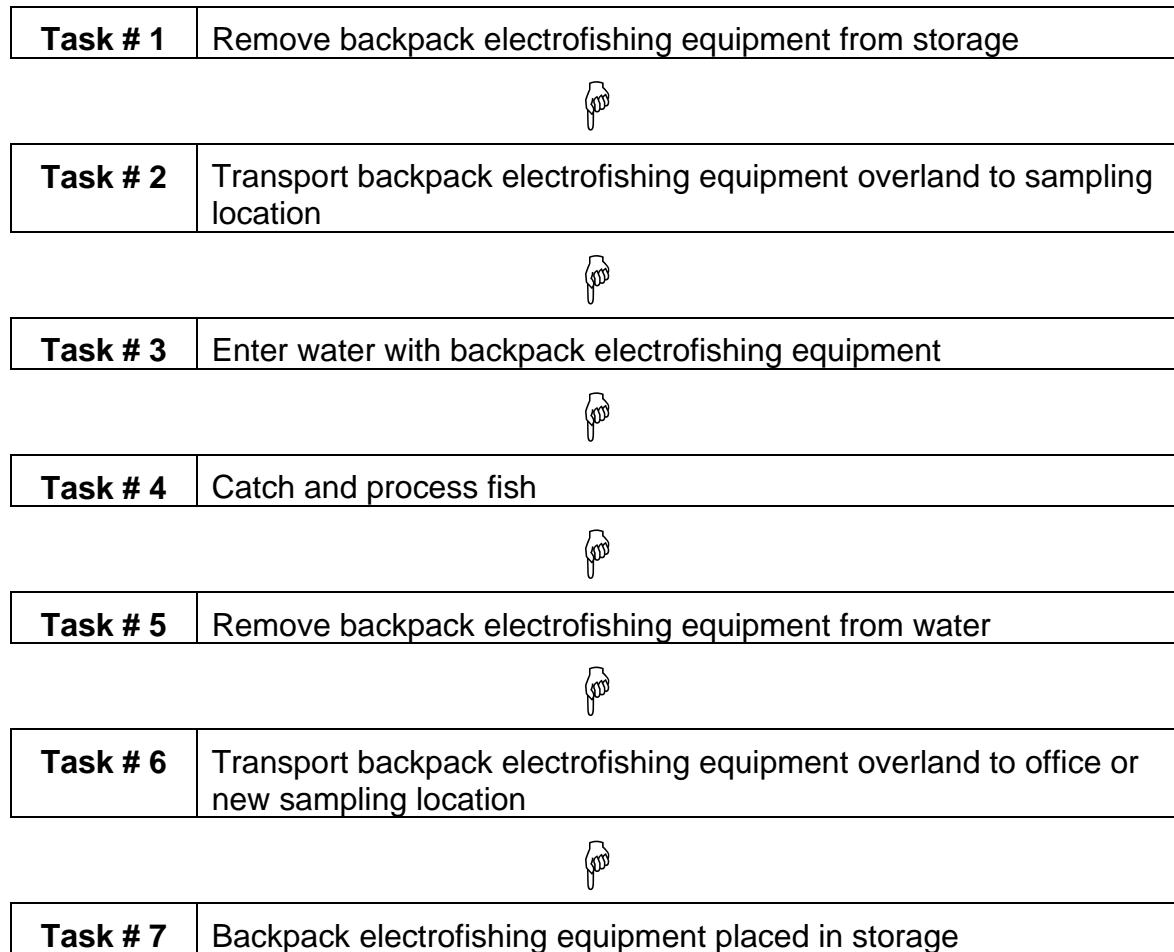
**Other Biologics:**

Largemouth bass virus (LMBV), spring viremia of carp virus (SVCV), viral hemorrhagic septicemia (VHS), bacterial kidney disease (BKD), furunculosis, ich, whirling disease, and other infectious fish pathogens

**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?
Remove backpack electrofishing equipment from storage	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	Yes	Invasive fish may remain in live well from previous sampling.	Inspect and remove all fish and water from live well.	No
	Invertebrate: Zebra mussels, quagga mussels, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	Yes	Invasive invertebrates may remain on waders, dipnets, or other reusable equipment from previous sampling.	Inspect reusable equipment (e.g., waders, buckets, dipnets, gloves, electrodes) to ensure it is thoroughly dry	No
	Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants	Yes	Viable plant propagules may remain on waders, dipnets, gloves, or other reusable equipment from previous sampling.	Inspect and remove visible plant propagules from all reusable equipment (e.g., waders, buckets, dipnets, electrodes, gloves)	No
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, whirling disease, and other infectious fish pathogens	Yes	Gear may not have been disinfected following prior use.	Use gear that was disinfected before storage.	No
Transport backpack electrofishing equipment overland to sampling location	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	No	Precautions to prevent anthropogenic movement of invasive fish were taken in previous		No

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			step.		
	Invertebrate: Zebra mussels, quagga mussels, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	No	Precautions to prevent anthropogenic movement of invasive inverts were taken in previous step.		No
	Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants	No	Precautions to prevent anthropogenic movement of invasive aquatic plants were taken in previous step.		No
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, whirling disease, and other infectious fish pathogens	No	Precautions to prevent anthropogenic movement of infectious fish pathogens were taken in previous step.		No
Enter water with backpack electrofishing equipment	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	No	Precautions to prevent anthropogenic movement of invasive fish were taken in a previous step.		No
	Invertebrate: Zebra	No	Precautions to		No

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	mussels, quagga mussels, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts		prevent anthropogenic movement of invasive inverts were taken in a previous step.		
	Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants	No	Precautions to prevent anthropogenic movement of invasive aquatic plants were taken in previous step.		No
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, whirling disease, and other infectious fish pathogens	No	Precautions to prevent anthropogenic movement of infectious fish pathogens were taken in previous step.		No
Catch and process fish	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	Yes	Invasive fish may be collected.	Identify catch and preserve invasive fish or kill them and place in garbage.	No
	Invertebrate: Zebra mussels, quagga mussels, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	Yes	Invasive inverts may be collected in live well, in/on dip nets, etc.	Remove macroinvertebrates and return to water.	No
	Plant: Eurasian watermilfoil,	Yes	Viable plant	Remove all visible	No

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	purple loosestrife, and other invasive aquatic plants		propagules may accumulate in/on used equipment.	plant propagules and return to waterbody or bag and discard in garbage.	
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, whirling disease, and other infectious fish pathogens	Yes	Pathogens may contaminate used equipment.	None.	No
Remove backpack electrofishing equipment from water	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	Yes	Small fish may remain undetected in live well or in dipnets.	Drain all water; inspect live well and dip nets to remove all fish; kill invasive fish, bag and place in garbage.	Yes
	Invertebrate: Zebra mussels, quagga mussels, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	Yes	Invasive inverts may remain undetected in live well or in dip nets.	Drain water and search for invasive macroinvertebrates on all used equipment; bag and discard these in garbage.	No
	Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants	Yes	Viable plant propagules may remain in live well, on dip nets, waders, or electrodes.	Drain water and remove plant material from all used equipment; thoroughly dry all reusable gear.	Yes
	Other Biologic: LMBV, SVCV, VHS, BKD,	Yes	Fish disease pathogens may	Drain excess water from used gear.	No

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	furunculosis, ich, whirling disease, and other infectious fish pathogens		contaminate used equipment.		
Transport backpack electrofishing equipment overland to office or new sampling location	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	No	These were removed in the previous step.		No
	Invertebrate: Zebra mussels, quagga mussels, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	Yes	Viable microscopic life stages of some invasive inverts may remain.	Drain water and thoroughly dry all reusable gear.	Yes
	Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants	No	These were removed in the previous step.		No
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, whirling disease, and other infectious fish pathogens	Yes	Pathogens may contaminate used equipment.	Disinfect and thoroughly dry all reusable gear (e.g., buckets, waders, dip nets, electrodes, gloves, measuring boards, etc)	Yes
Backpack electrofishing equipment placed in storage	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	No	Cared for in previous step.		No
	Invertebrate: Zebra mussels, quagga mussels, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	No	Cared for in previous step.		No
	Plant: Eurasian watermilfoil,	No	Cared for in		No

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	purple loosestrife, and other invasive aquatic plants		previous step.		
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, whirling disease, and other infectious fish pathogens	No	Cared for in previous step.		No

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## HACCP Step 5 - HACCP Plan

### **Critical Control Point #1:**

**Task # 5: Remove backpack electrofishing equipment from water**

**Significant Hazards:**

Vertebrate: Round goby, Asian carps, white perch, and other invasive fish

**Control Measures:**

Drain all water from live well; inspect live well and dip nets to remove fish; kill invasive fish and place in garbage.

**Limits for Control Measures:**

Remove all water and fish from live well and dip nets

**Monitoring: What?**

Water and fish in live well and dip nets.

**Monitoring: How?**

Visually

**Monitoring: Frequency?**

Once (as gear is removed from water)

**Monitoring: Who?**

Crew leader

**Evaluation & Corrective Actions:**

Inspect gear before reuse to ensure compliance

**Supporting Documentation:**

### **Critical Control Point #2:**

**Task # 5: Remove backpack electrofishing equipment from water**

**Significant Hazards:**

Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants

**Control Measures:**

Drain water and remove plant material from all used equipment; thoroughly dry all reusable gear

**Limits for Control Measures:**

Remove accumulated water and vegetation from all reusable equipment.

**Monitoring: What?**

Presence of vegetative propogules and accumulated water on/in reusable equipment (e.g., dip nets, buckets, waders).

**Monitoring: How?**

Visually

**Monitoring: Frequency?**

Once (as gear is removed from water)

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<b>Monitoring: Who?</b> Crew leader
<b>Evaluation &amp; Corrective Actions:</b> Inspect gear before reuse to ensure compliance.
<b>Supporting Documentation:</b>
<b>Critical Control Point #3:</b> <b>Task # 6: Transport backpack electrofishing equipment overland to office or new sampling location</b>
<b>Significant Hazards:</b> Invertebrate: Zebra mussels, quagga mussels, faucet snails, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts
<b>Control Measures:</b> Pressure wash and/or drain accumulated water, then thoroughly dry all reusable equipment.
<b>Limits for Control Measures:</b> Pressure wash and/or thoroughly dry all used equipment
<b>Monitoring: What?</b> Equipment was pressure washed and/or thoroughly dried
<b>Monitoring: How?</b> Visual, tactal
<b>Monitoring: Frequency?</b> Once (after backpack electrofishing equipment returns to office or before arrival at a new sampling location)
<b>Monitoring: Who?</b> Crew leader
<b>Evaluation &amp; Corrective Actions:</b> Inspect gear before reuse to ensure compliance
<b>Supporting Documentation:</b> Backpack electrofishing maintenance log
<b>Critical Control Point #4:</b> <b>Task # 6: Transport backpack electrofishing equipment overland to office or new sampling location</b>
<b>Significant Hazards:</b> Other Biologic: Largemouth bass virus, spring viremia of carp virus, viral hemorrhagic septicemia, bacterial kidney disease, furunculosis, ich, whirling disease, and other infectious fish pathogens
<b>Control Measures:</b> Disinfect all reusable equipment and thoroughly dry.
<b>Limits for Control Measures:</b> 10 minutes of Extra germicidal detergent (1:64 dilution) contact time, rinse, and

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thoroughly dry	
<b>Monitoring: What?</b> Disinfectant contact time on equipment	
<b>Monitoring: How?</b> Chronometer	
<b>Monitoring: Frequency?</b> Once	
<b>Monitoring: Who?</b> Crew leader	
<b>Evaluation &amp; Corrective Actions:</b> Equipment must be quarantined until disinfected; inspect backpack electrofishing maintenance log to ensure compliance; equipment that has not been disinfected cannot be used beyond the sub-basin location where it was last used and must be quarantined.	
<b>Supporting Documentation:</b> Backpack electrofishing maintenance log	
<b>Facility:</b> La Crosse Fishery Resources Office	<b>Activity:</b> Fishery Resource Management
<b>Address:</b> 555 Lester Avenue Onalaska, WI 54650	
<b>Signature:</b> <i>Pam Thiel</i>	<b>Revision Date:</b> 12 April 2007

# Backpack Electrofishing HACCP Plan

## HACCP Checklist:

### Fishery Resource Management

**Facility** La Crosse Fishery Resources Office  
**Site** Navigable waters  
**Coordinator** Crew leader (varies)  
**Manager** Pam Thiel  
**Address** 555 Lester Avenue, Onalaska, WI 54650

- Task # 1: Remove backpack electrofishing equipment from storage**
- Task # 2: Transport backpack electrofishing equipment overland to sampling location**
- Task # 3: Enter water with backpack electrofishing equipment**
- Task # 4: Catch and process fish**
- Task # 5: Remove backpack electrofishing equipment from water**  
**CRITICAL CONTROL POINT**
  - Hazards were contained  
Hazards: Vertebrate: Round goby, Asian carps, white perch, and other invasive fish
  - Control measures were implemented  
Control Measures: Drain water from live well; inspect live well and dip nets to remove fish; kill, bag, and discard invasive fish in garbage.
  - Control limits were maintained  
Control Limits: Remove accumulated water and all fish from reusable equipment.
  - Corrective actions were (performed if necessary)  
Corrective Actions: Inspect gear before reuse to ensure compliance
- Hazards were contained  
Hazards: Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants
- Control measures were implemented

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Control Measures: Drain water and remove plant material from reusable equipment; thoroughly dry all reusable equipment.

- Control limits were maintained  
Control Limits: Remove all vegetation from reusable equipment.
- Corrective actions were (performed if necessary)  
Corrective Actions: Inspect gear before reuse to ensure compliance

### **Task # 6: Transport backpack electrofishing equipment overland to office or new sampling location CRITICAL CONTROL POINT**

- Hazards were contained  
Hazards: Invertebrate: Zebra mussels, quagga mussels, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts
- Control measures were implemented  
Control Measures: Pressure wash and/or drain accumulated water, then thoroughly dry all reusable equipment.
- Control limits were maintained  
Control Limits: Pressure wash and/or thoroughly dry all used equipment
- Corrective actions were (performed if necessary)  
Corrective Actions: Inspect gear before reuse to ensure compliance
  
- Hazards were contained  
Hazards: Other Biologic: Largemouth bass virus, spring viremia of carp virus, viral hemorrhagic septicemia, bacterial kidney disease, furunculosis, ich, whirling disease, and other infectious fish pathogens
- Control measures were implemented  
Control Measures: Disinfect all reusable equipment and thoroughly dry.
- Control limits were maintained  
Control Limits: 10 minutes of Extra germicidal detergent (1:64 dilution) contact time, rinse, and thoroughly dry
- Corrective actions were (performed if necessary)

## **Backpack Electrofishing HACCP Plan**

Corrective Actions: Inspect maintenance log and gear before use to ensure compliance

- **Task # 7: Backpack electrofishing equipment placed in storage**