

# Tug 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) tug electrofishing boat that is used to temporarily immobilize and capture fish while wading in 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

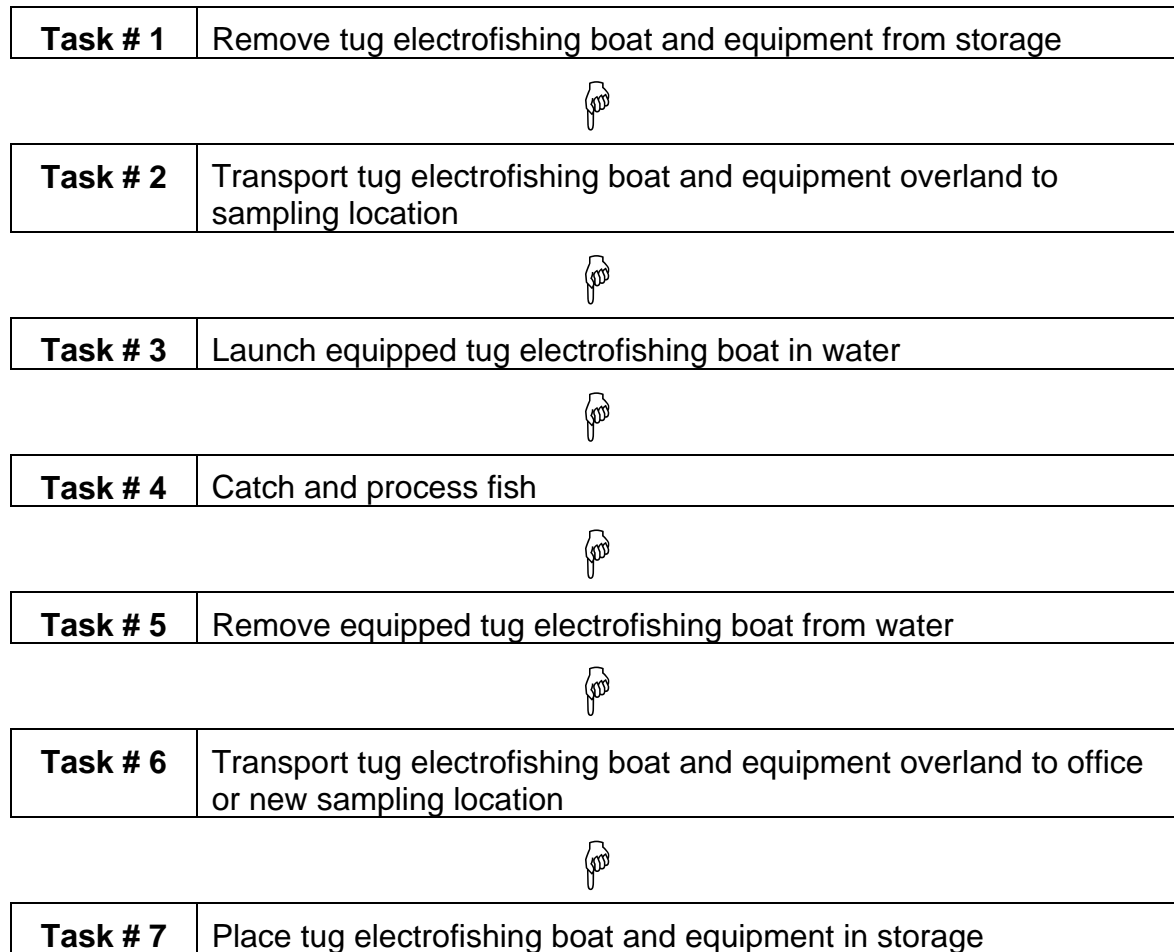
**Other Biologics:**

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



## Tug Electrofishing HACCP Plan

### HACCP Step 4 - Hazard Analysis

Task	Hazard	Probable?	Justification	Control Measures	CCP?
Remove tug electrofishing boat and equipment from storage	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	Yes	Invasive fish may remain on boat or in live well from previous sampling.	Inspect and remove all fish and standing water from boat and live well.	No
	Invertebrate: Zebra mussels, quagga mussels, faucet snails, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	Yes	Invasive invertebrates may remain on boat, in live well, or on other previously used sampling gear.	Remove all visible invertebrates and standing water from boat and live well. Check maintenance log to ensure boat was pressure washed and/or thoroughly dried since last use.	No
	Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants	Yes	Viable plant propagules may remain on boat, in live well, or attached to dipnets and electrodes from previous sampling.	Inspect and remove visible plant propagules from boat, live well, dipnets, and electrodes; drain standing water.	No
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, whirling disease, and other infectious fish pathogens	Yes	Boat and other gear may not have been disinfected following prior use.	Check maintenance log to ensure boat was disinfected since last used; reuse gear that was disinfected before storage.	No
Transport tug	Vertebrate: Round goby,	No	Precautions to		No

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electrofishing boat and equipment to sampling location	Asian carps, white perch, and other invasive fish		prevent anthropogenic movement of invasive fish were taken in previous step.		
	Invertebrate: Zebra mussels, quagga mussels, faucet snails, 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
Launch equipped tug electrofishing boat in water	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	No	Precautions to prevent anthropogenic		No

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			movement of invasive fish were taken in a previous step.		
	Invertebrate: Zebra mussels, quagga mussels, faucet snails, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	No	Precautions to prevent anthropogenic movement of invasive inverts were taken in a 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
Catch and process fish	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	Yes	Invasive fish may be collected and brought aboard.	Identify catch and preserve invasive fish or kill them and place in garbage.	No
	Invertebrate: Zebra	Yes	Invasive inverts may	Remove	No

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	mussels, quagga mussels, faucet snails, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts		be collected and brought aboard with water in live well, in/on dip nets, etc.	macroinvertebrates from boat, dip nets, live well and return to waterbody.	
	Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants	Yes	Viable plant propagules may accumulate on board boat and other used equipment.	Remove all visible plant propagules and return to waterbody or bag and discard in garbage.	No
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, whirling disease, and other infectious fish pathogens	Yes	Pathogens may contaminate equipment when fish and water are brought on board.	None.	No
Remove equipped tug electrofishing boat from water	Vertebrate: Round goby, Asian carps, white perch, and other invasive fish	Yes	Small fish may remain undetected in recesses.	Drain water from boat and live well; remove fish from hidden recesses, live well, and dip nets; kill, bag, and discard invasive fish and in garbage.	Yes
	Invertebrate: Zebra mussels, quagga mussels, faucet snails, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	Yes	Invasive inverts may remain undetected in recesses	Drain all water from boat; search for invasive macroinvertebrates; bag and discard these in garbage.	No
	Plant: Eurasian watermilfoil,	Yes	Viable plant	Drain all water from	Yes

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	purple loosestrife, and other invasive aquatic plants		propagules may remain in live well, on dip nets, wiring, or boat recesses	boat; inspect and remove plant material from boat, nets, wiring, live well, gloves, waders; thoroughly dry all gear.	
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, whirling disease, and other infectious fish pathogens	Yes	Fish disease pathogens may contaminate boat and other equipment that got wet or was used to handle fish.	Drain all water from boat, live well and other used equipment.	No
Transport tug electrofishing boat and 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, faucet snails, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	Yes	Viable microscopic life stages of some invasive inverts may remain.	Pressure wash and/or drain water from all used equipment and thoroughly dry.	Yes
	Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants	Yes	These were removed in the previous step.		No
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, and other infectious fish pathogens	Yes	Pathogens may remain on boat and other used equipment.	Disinfect and thoroughly dry boat, live well, dip nets, gloves, waders, measuring boards,	Yes

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				electrodes, and other used gear	
Place tug electrofishing boat and equipment 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, faucet snails, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts	No	Cared for in previous step.		No
	Plant: Eurasian watermilfoil, purple loosestrife, and other invasive aquatic plants	No	Cared for in previous step.		No
	Other Biologic: LMBV, SVCV, VHS, BKD, furunculosis, ich, whirling disease, and other infectious fish pathogens	No	Cared for in previous step.		No

# Tug Electrofishing HACCP Plan

## HACCP Step 5 - HACCP Plan

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

**Task # 5: Remove tug electrofishing boat and equipment from water**

#### **Significant Hazards:**

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

#### **Control Measures:**

Drain water from boat and live well; remove fish from hidden recesses of boat, live well, and dip nets; kill, bag, and place any invasive fish in garbage.

#### **Limits for Control Measures:**

Remove water and all fish from boat, live well, and dip nets.

#### **Monitoring: What?**

Water and fish in boat, live well, and dip nets.

#### **Monitoring: How?**

Visually

#### **Monitoring: Frequency?**

Once (as tug boat 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 tug electrofishing boat and equipment from water**

#### **Significant Hazards:**

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

#### **Control Measures:**

Drain water from boat and other used equipment; remove plant material from all used equipment (e.g., boat, dip nets, electrodes, wiring, live well, gloves, waders, measuring boards, etc.) and thoroughly dry.

#### **Limits for Control Measures:**

Remove vegetation from all parts of boat and reusable equipment.

#### **Monitoring: What?**

Presence of vegetative propogules on boat and other used equipment

#### **Monitoring: How?**

Visually

#### **Monitoring: Frequency?**

Once (as tug boat 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 style="color: red;">Critical Control Point #3:</b> <b style="color: red;">Task # 6: Transport tug electrofishing boat and 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 from boat; thoroughly dry all used equipment
<b>Limits for Control Measures:</b> Pressure wash and/or thoroughly dry boat and all other used equipment
<b>Monitoring: What?</b> Equipment was pressure washed and/or thoroughly dried
<b>Monitoring: How?</b> Visual , tactile
<b>Monitoring: Frequency?</b> Once (after tug boat returns to office or before arrival at a new sampling location)
<b>Monitoring: Who?</b> Crew leader
<b>Evaluation &amp; Corrective Actions:</b> Inspect maintenance log and gear before reuse to ensure compliance
<b>Supporting Documentation:</b> Tug electrofishing boat maintenance log
<b style="color: red;">Critical Control Point #4:</b> <b style="color: red;">Task # 6: Transport tug electrofishing boat and equipment 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 boat, live well, electrodes, waders, gloves, dip nets, measuring boards and other used equipment and thoroughly dry.
<b>Limits for Control Measures:</b>

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10 minutes of Extra germicidal detergent (1:64 dilution) contact time, rinse, and 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 boat 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> Tug electrofishing boat 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

# Tug 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 tug electrofishing boat and equipment from storage**
- Task # 2: Transport tug electrofishing boat and equipment to landing**
- Task # 3: Launch equipped tug electrofishing boat in water**
- Task # 4: Catch and process fish**
- Task # 5: Remove equipped tug electrofishing boat 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 tug boat; remove all fish from dip nets, live well, and hidden recesses of boat; kill, bag, and discard any invasive fish in garbage.
- Control limits were maintained  
Control Limits: Remove water and all fish from boat, live well, and dip nets.
- 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 all water from boat; inspect and remove plant material from boat, nets, wiring, live well, gloves, waders; thoroughly dry all used gear.

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

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

- Hazards were contained  
Hazards: Invertebrate: Zebra mussels, quagga mussels, faucet snails, Daphnia lumholtzi, rusty crayfish, and other invasive aquatic inverts
- Control measures were implemented  
Control Measures: Pressure wash and/or drain water from boat and all used equipment (e.g., waders, dip nets, buckets, measuring boards, etc.) and thoroughly dry
- Control limits were maintained  
Control Limits: Pressure wash and/or drain water from all used equipment and thoroughly dry
- Corrective actions were (performed if necessary)  
Corrective Actions: Inspect tug electrofishing boat maintenance log and 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 tug boat, livewell, dipnets, waders, gloves, and other reusable equipment and thoroughly dry.
- Control limits were maintained  
Control Limits: 10 minutes of Extra germicidal detergent (1:64 dilution) contact time, rinse, and dry

## **Tug Electrofishing HACCP Plan**

- Corrective actions were (performed if necessary)  
Corrective Actions: Inspect tug electrofishing boat maintenance log and gear before reuse to ensure compliance
  
- Task # 7: Place tug electrofishing boat and equipment in storage**