

# MT ES Stream & River Habitats HACCP Plan

HACCP Step 1 - Activity Description	
<b>Facility:</b> MT ES office	<b>Site:</b> Stream and river habitats
<b>Project Coordinator:</b> Doug Peterson or Wade Fredenberg	<b>Project Description:</b> Fish, invertebrate, and/or physical habitat sampling
<b>Site Manager:</b> Doug Peterson or Wade Fredenberg	
<b>Address:</b> 585 Shepard Way Helena, MT 59601	
<b>Phone:</b> 406-449-5225 ex 221 or 406-758-6872	

<b>Project Description</b> (Who, What, Where, When, How & Why)
<p><b>Who:</b> Fish biologists and field staff</p> <p><b>What:</b> Sampling fish, invertebrates, or physical habitat or conducting redd counts in the stream environment</p> <p><b>Where:</b> Throughout Montana</p> <p><b>When:</b> as needed, could be year round</p> <p><b>How:</b> Fish are captured by electrofishing and held in metal tubs or plastic buckets, tubs or live wells. Fish are then identified to species, sexed if possible, measured, weighed on a portable scale, given a fin clip and/or individually identifiable tag or mark; before being released back into the water. On occasion, fish may be kept for scientific purposes, and are placed in plastic bags or a bucket in the field and transported to a freezer or immediately preserved in formalin or ethanol. Habitat sampling may include redd counts, and measurement of physical habitat characteristics and abiotic conditions. After sampling is completed, equipment is loaded back into the field vehicle. The vehicle with equipment is driven to another body of water or back to the office/storage area. Equipment is either unloaded, or if crew is in the field for several days, then equipment remains in the vehicle overnight until the next work day.</p> <p><b>Why:</b> To support FWS mission.</p>

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## HACCP Step 2 - Potential Hazard Identification

**Vertebrates:**

any fish species or other vertebrates (native or non-native) found in drainage basin

**Invertebrates:**

New Zealand Mud Snails, Zebra and Quagga mussels

**Plants:**

Native or non-native plants found in drainage basin.

**Other Biologics:**

whirling disease or other fish pathogens

**Others:**

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## HACCP Step 3 - Flow Diagram

<b>Task # 1</b>	Drive and then hike to stream.
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<b>Task # 2</b>	Sample using backpack mounted electroshocking equipment. Occasionally block nets will be used to prevent fish migration out of sampling area. Sample aquatic invertebrates (especially larval aquatic insects) using appropriate methods (e.g., drift nets, Surber samplers, etc.)
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<b>Task # 3</b>	Capture fish using dip nets while walking in the stream wearing waders.
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<b>Task # 4</b>	Put fish in holding containers (live wells, buckets, tubs), measure/weigh and/or tag fish, release fish back into water. Occasionally fish will be kept for egg/milt collection, genetic analysis, disease analysis, or other purposes. If aquatic invertebrates are the survey target, preserve samples using appropriate means (container and chemical preservative).
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<b>Task # 5</b>	Either sample another location on this stream or hike back to vehicle.
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<b>Task # 6</b>	Return to overnight facilities or drive back to office and store equipment.
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<b>Task # 7</b>	Any fish or aquatic invertebrate kept will be handled according to intended purposes.
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### HACCP Step 4 - Hazard Analysis

Task	Hazard	Probable?	Justification	Control Measures	CCP?
1. Drive and then hike to stream.	Vertebrate: any fish species or other vertebrates (native or non-native) found in drainage basin	No	Equipment clean and free of hazards		No
	Invertebrate: New Zealand Mud Snails, Zebra and Quagga mussels	No	Equipment clean and free of hazards		No
	Plant: Native or non-native plants found in drainage basin.	No	Equipment clean and free of hazards		No
	Other Biologic: whirling disease or other fish pathogens	No	Equipment clean and free of hazards		No
2. Sample using backpack mounted electroshocking equipment. Occasionally block nets will be used to prevent fish migration out of sampling area. Sample aquatic invertebrates (especially larval	Vertebrate: any fish species or other vertebrates (native or non-native) found in drainage basin	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No
	Invertebrate: New Zealand Mud Snails, Zebra and Quagga mussels	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No
	Plant: Native or non-native plants found in drainage	Yes	Could be present during sampling.	No transport is being conducted in	No

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aquatic insects) using appropriate methods (e.g., drift nets, Surber samplers, etc.)	basin.			this step. Hazards are controlled in a following step.	
	Other Biologic: whirling disease or other fish pathogens	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No
3. Capture fish using dip nets while walking in the stream wearing waders.	Vertebrate: any fish species or other vertebrates (native or non-native) found in drainage basin	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No
	Invertebrate: New Zealand Mud Snails, Zebra and Quagga mussels	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No
	Plant: Native or non-native plants found in drainage basin.	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No
	Other Biologic: whirling disease or other fish pathogens	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No

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4. Put fish in holding containers (live wells, buckets, tubs), measure/weigh and/or tag fish, release fish back into water. Occasionally fish will be kept for egg/milt collection, genetic analysis, disease analysis, or other purposes.	Vertebrate: any fish species or other vertebrates (native or non-native) found in drainage basin	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No
	Invertebrate: New Zealand Mud Snails, Zebra and Quagga mussels	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No
	Plant: Native or non-native plants found in drainage basin.	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No
	Other Biologic: whirling disease or other fish pathogens	Yes	Could be present during sampling.	No transport is being conducted in this step. Hazards are controlled in a following step.	No
5. Either sample another location on this stream or hike back to vehicle.	Vertebrate: any fish species or other vertebrates (native or non-native) found in drainage basin	Yes	Some fish are not located in all waters.	Empty sampling gear of water and fish prior to moving gear. Preserve any invertebrate samples.	Yes
	Invertebrate: New Zealand Mud Snails, Zebra and	Yes	Organisms may be present in stretch of	Wash gear and equipment before	Yes

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	Quagga mussels		stream sampled	next use or use new gear.	
	Plant: Native or non-native plants found in drainage basin.	Yes	Organisms may be present in stretch of stream sampled	Wash gear and equipment before next use or use new gear at next location. Preserve any invertebrate samples.	Yes
	Other Biologic: whirling disease or other fish pathogens	Yes	Organisms may be present in stretch of stream sampled	Wash gear and equipment before next use or use new gear at next location. Preserve any invertebrate samples.	Yes
6. Return to overnight facilities or drive back to office and store equipment.	Vertebrate: any fish species or other vertebrates (native or non-native) found in drainage basin	No	Equipment is void of water and not very likely a fish would get transport with gear at this step.		
	Invertebrate: New Zealand Mud Snails, Zebra and Quagga mussels	Yes	Organisms may be present on gear	Clean, disinfect and dry gear prior to next sampling	Yes
	Plant: Native or non-native plants found in drainage basin.	Yes	Organisms may be present on gear	Clean, disinfect and dry gear prior to next sampling	Yes
	Other Biologic: whirling	Yes	Organisms may be	Clean, disinfect and	Yes

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	disease or other fish pathogens		present on gear	dry gear prior to next sampling	
7. Any fish kept will be handled according to intended purposes.	Vertebrate: any fish species or other vertebrates (native or non-native) found in drainage basin	No	Samples are contained and fish are euthanized prior to transport.		No
	Invertebrate: New Zealand Mud Snails, Zebra and Quagga mussels	No	Samples are contained.		No
	Plant: Native or non-native plants found in drainage basin.	No	Samples are contained.		No
	Other Biologic: whirling disease or other fish pathogens	No	Samples are contained.		No

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## HACCP Step 5 - HACCP Plan

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

**Task # 5: Either sample another location on this stream or hike back to vehicle.**

#### **Significant Hazards:**

Vertebrate: any fish species or other vertebrates (native or non-native) found in drainage basin

#### **Control Measures:**

Empty sampling gear of water and fish prior to moving gear.

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

100% removal of fish from gear.

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

Equipment

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

Visually

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

Every use

#### **Monitoring: Who?**

Field Supervisor

#### **Evaluation & Corrective Actions:**

Re-wash gear, make sure all mud is thoroughly washed off or use new gear.

**Supporting Documentation:** Record presence/absence of animals or material on equipment. Records reviewed by supervisor

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

**Task # 5: Either sample another location on this stream or hike back to vehicle.**

#### **Significant Hazards:**

Invertebrate: New Zealand Mud Snails, Zebra and Quagga mussels, Plant: Native or non-native plants found in drainage basin, Other Biologic: whirling disease or other fish pathogens

#### **Control Measures:**

Wash gear and equipment before next use or use new gear. Preserve any invertebrate samples.

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

100% removal of foreign material from gear.

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

Equipment

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

Visually

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<b>Monitoring: Frequency?</b> Every use	
<b>Monitoring: Who?</b> Field Supervisor	
<b>Evaluation &amp; Corrective Actions:</b> Re-wash gear, make sure all mud is thoroughly washed off	
<b>Supporting Documentation:</b> Record presence/absence of animals or material on equipment. Records reviewed by supervisor	
<b>Critical Control Point #3:</b> <b>Task # 6: Return to overnight facilities or drive back to office and store equipment.</b>	
<b>Significant Hazards:</b> Invertebrate: New Zealand Mud Snails, Zebra and Quagga mussels, Plant: Native or non-native plants found in drainage basin, Other Biologic: whirling disease or other fish pathogens	
<b>Control Measures:</b> Clean, disinfect and dry gear prior to next sampling	
<b>Limits for Control Measures:</b> Time and type of disinfection	
<b>Monitoring: What?</b> Equipment	
<b>Monitoring: How?</b> Visually	
<b>Monitoring: Frequency?</b> Every use	
<b>Monitoring: Who?</b> Field supervisor	
<b>Evaluation &amp; Corrective Actions:</b> Re-wash gear, make sure all mud is thoroughly washed off	
<b>Supporting Documentation:</b> Record presence/absence of animals or material on equipment. Records reviewed by supervisor	
<b>Facility:</b> MT ES office	<b>Activity:</b> fish sampling and/or habitat sampling surveys
<b>Address:</b> 585 Shepard Way Helena, MT 59601	
<b>Signature:</b>	<b>Date:</b>

# MT ES Stream & River Habitats HACCP Plan

## HACCP Checklist:

### fish sampling and/or habitat sampling surveys

**Facility** MT ES office  
**Site** Stream habitats  
**Coordinator** Doug Peterson or Wade Fredenberg  
**Manager** Doug Peterson or Wade Fredenberg  
**Address** 585 Shepard Way, Helena, MT 59601

- Task # 1: Drive and then hike to stream.**
- Task # 2: Sample using backpack mounted electroshocking equipment. Occasionally block nets will be used to prevent fish migration out of sampling area. Sample aquatic invertebrates (especially larval aquatic insects) using appropriate methods (e.g., drift nets, Surber samplers, etc.)**
- Task # 3: Capture fish using dip nets while walking in the stream wearing waders.**
- Task # 4: Put fish in holding containers (live wells, buckets, tubs), measure/weigh and/or tag fish, release fish back into water. Occasionally fish will be kept for egg/milt collection, genetic analysis, disease analysis, or other purposes. If aquatic invertebrates are the survey target, preserve samples using appropriate means (container and chemical preservative).**
- Task # 5: Either sample another location on this stream or hike back to vehicle.**

#### **CRITICAL CONTROL POINT**

- Hazards were contained  
Hazards: Vertebrate: any fish species or other vertebrates (native or non-native) found in drainage basin
- Control measures were implemented  
Control Measures: Empty sampling gear of water and fish prior to moving gear.
- Control limits were maintained  
Control Limits: 100% removal of fish from gear.
- Corrective actions were (performed if necessary)

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Corrective Actions: Re-wash gear, make sure all mud is thoroughly washed off or use new gear

- Hazards were contained  
Hazards: Invertebrate: New Zealand Mud Snails, Zebra and Quagga mussels, Plant: Native or non-native plants found in drainage basin, Other Biologic: whirling disease or other fish pathogens
- Control measures were implemented  
Control Measures: Wash gear and equipment before next use or use new gear. Preserve any invertebrate samples.
- Control limits were maintained  
Control Limits: 100% removal of foreign material from gear.
- Corrective actions were (performed if necessary)  
Corrective Actions: Re-wash gear, make sure all mud is thoroughly washed off or use new gear.
  
- Task # 6: Return to overnight facilities or drive back to office and store equipment.**  
**CRITICAL CONTROL POINT**
- Hazards were contained  
Hazards: Invertebrate: New Zealand Mud Snails, Zebra and Quagga mussels, Plant: Native or non-native plants found in drainage basin, Other Biologic: whirling disease or other fish pathogens
- Control measures were implemented  
Control Measures: Clean, disinfect and dry gear prior to next sampling
- Control limits were maintained  
Control Limits: Time and type of disinfection
- Corrective actions were (performed if necessary)  
Corrective Actions: Re-wash gear, make sure all mud is thoroughly washed off
  
- Task # 7: Any fish or invertebrate kept will be handled according to intended purposes.**