The present SOP has been developed for to provide students with hands on demonstration of aquatic sampling methods with freshwater fish and aquatic invertebrates such as:

- *Etheostoma nigrum*
- *Semotilus atromaculatus*
- *Semotilus corporalis*
- *Catostomus commersoni*
- *Lepomis gibbosus*
- *Lepomis macrochirus*
- *Notropis cornutus*
- *Gasterosteus aculeatus*
- *Pungitius pungitius*
- *Ameiurus nebulosus*

### 1. Responsibility

The procedure will be carried out by the Principal Investigator / class instructor and/or the Biology Lab Technician.

### 2. Minimum Qualifications/ Training for PI and/or lab technician

1. Previous field sampling experience;
2. Previous experience handling/extracting fish;
3. McGill Wildlife Animal Care Course

### 3. Minimum Qualifications/ Training for students

1. Classroom lesson on the above for students

### 4. Materials

1. Seine net
2. Minnow traps
3. Adequate viewing container for caught specimens
4. D-frame aquatic net
5. Bottom Aquatic net
6. Hand sanitizer
7. Waders
8. Personal Flotation Devices (PFD)
9. First Aid Kit
10. Injured Fish Euthanization Kit
I. Nitrile gloves  
II. Protective apron  
III. Euthanization container  
IV. Appropriate dose of Eugenol. If necessary MS-222 can also be used.  
V. Scalpel  
VI. Priest (club)  
VII. Probe

5. Procedure

A. Minnow traps

1. Traps used are standard, vinyl coated, round, minnow traps;  
2. Trap location, depth and placement must be recorded as the trap is set to ensure trap recovery;  
3. Traps will be placed with enough water to cover trap entrances and will be placed in a manner that ensures that conditions will remain constant for the duration of the sampling period;  
4. Traps will be either weighted or buoyed so that they remain at a constant depth through sampling period;  
5. Surface trapping will not take place if there is a possibility of ice accumulation over the trapping period;  
6. Traps will be anchored via rope or chain to a rope, stake, buoy, or stout vegetation and clearly marked unless a significant risk of theft is present;  
7. The traps will be set for no longer than 24hrs and may be used with or without bait;  
8. All fish captured by the traps will then be collected and transferred to large, aerated, plastic holding tanks (approx. 1m x 50cm x 50cm);  
9. Total time from initial capture to final release will be between 15-30 minutes;  
10. Water in the holding tank will be changed every 15 minutes to maintain appropriate temperature and oxygen concentrations thereby eliminating the risk of any potential thermal or oxygen stress;  
11. All fish will then be immediately identified, weighed, measured, inspected for any obvious tumours, growths, and/or other abnormalities and released;  
12. Traps that have been identified by predators or have obvious signs of being ‘robbed’ by predators will immediately be removed and that location recorded as a problem location.

B. Seine Net

1. All students will receive a 2-3 hour lecture on appropriate methodology prior to the first sampling;  
2. Fish will be collected using a 15m beach-seine with ¼ inch mesh;  
3. Seine will be anchored by one person near shoreline with another person walking out into the water to stretch out the length of the net;  
4. The net will be supported to ensure that leadline stays in constant contact with substrate;  
5. The midstream sampler will then walk in a curve, keeping constant net tension downstream until terminating the haul at the shoreline;  
6. The net will then be brought in equally to guide fish into seine pocket;  
7. All fish captured by the seine will then be collected and transferred to large aerated plastic holding tanks (approx. 1m x 50cm x 50cm);  
8. Total time from initial capture to final release will be between 15-30 minutes;  
9. Water in the holding tank will be changed every 15 minutes to maintain appropriate temperature and oxygen concentrations thereby eliminating the risk of any potential thermal or oxygen stress;
10. The net will be entirely removed from the water after each haul to ensure that no fish remains trapped in the net nor will a fish become entangled in the net during sample analysis;
11. All students will be supervised at all times by the instructor.

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<tr>
<th>6. Euthanasia Procedures</th>
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<tbody>
<tr>
<td><strong>A. Fish and amphibians under 10 cm</strong></td>
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<tr>
<td>Please refer to BU SOP-1, « Fish anaesthetic and euthanasia » for updated fish euthanasia procedures.</td>
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<tr>
<td><strong>B. Fish over 15 cm</strong></td>
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<td>Please refer to BU SOP-1, « Fish anaesthetic and euthanasia » for updated fish euthanasia procedures.</td>
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<th>7. Safety</th>
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<td>Persons who are or may be pregnant or who may have a compromised immune system should contact Human Resources prior to handling animals/ cleaning habitat/aquaria and or participating in field studies where they may come into direct contact with animals. No person who is or may be pregnant or who may be immuno compromised will be required to handle animals or come into contact with untreated animal waste/habitat bedding.</td>
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<th>8. SOP Revision History</th>
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<td>These Standard Operating Procedures were revised and updated in May 2019.</td>
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References

Euthanasia:


Trapping procedure: