

# Ichthyofauna and benthic macroinvertebrate communities

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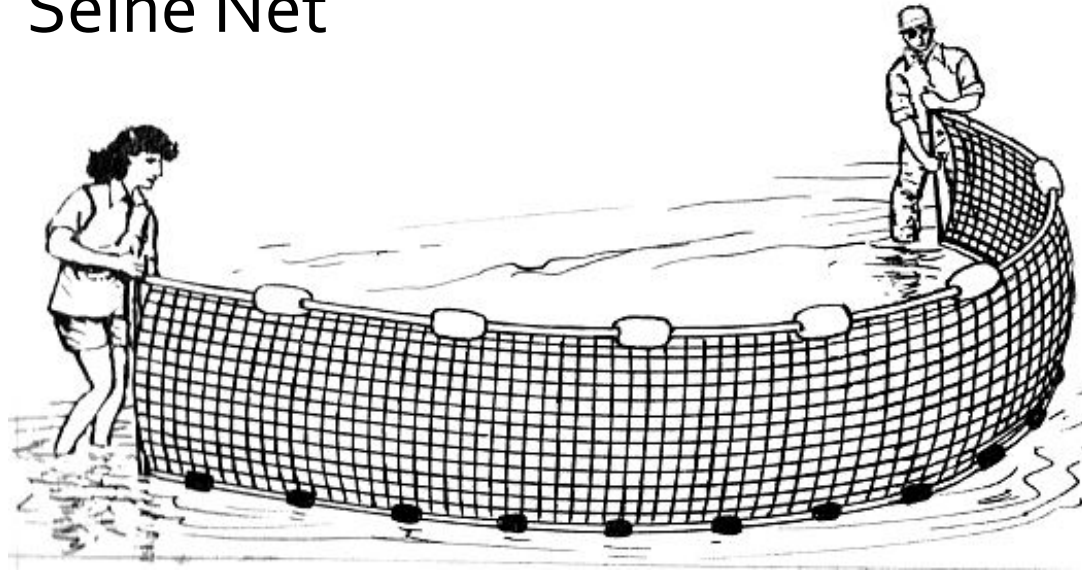
# Mission

- We are attempting to form a complete picture of the relationships that are occurring between aquatic insects, fishes, and their environments within the North Dakota/Midwestern systems

# Methods

- BMI and ichthyofauna (fish) collection
- Electrofishing equipment
- Aquatic sampling tools

## Seine Net



<https://www.netsandmore.com/products/fishing-nets/seines>

## Dip Net



<https://duluthfishnets.com/store/dip-nets/heavy-duty-dip-nets/>

# YSI ProDSS Multiparameter Digital Water Quality Meter

- Analyze physiochemical parameters: pH, dissolved oxygen, specific conductivity, and water temperature





# Backpack Electrofisher

Halltech's HT-2000 Battery Backpack Electrofisher is a 24-volt Battery powered Electrofisher enclosed in a watertight Pelican case, mounted on a non-conductive backpack frame. The HT-2000 works effectively in waters with high to low conductivity

[https://www.halltechaquatic.com/pdfs/HT\\_2000\\_manual\\_revision\\_with\\_cover\\_2013.pdf](https://www.halltechaquatic.com/pdfs/HT_2000_manual_revision_with_cover_2013.pdf)

# Results

- BMIs (Order): Coleoptera, Ephemeroptera, Trichoptera, Hemiptera, Odonata, Diptera and more

# Lab BMIs

## Order Hemiptera



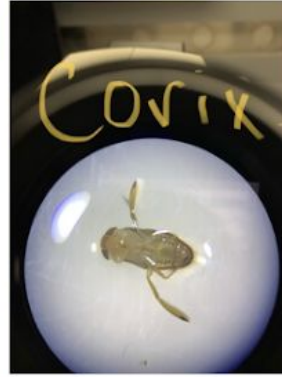
### **Notonectidae**

backswimmer, long legs, light notum, dark sternum



### **Corixidae**

waterboatman, scoop-shaped, small, dark notum, light sternum, smaller



### **Pleidae**

convex dorsal side



### **Gerridae**

Waterstrider



### **Belostomatidae**



### **Nepidae**



# Results

- Fishes: Walleye, Bluegill, Black bullhead, Brook Stickleback, Yellow Perch and more

# Lab Fishes



*Culaea inconstans*

Gasterosteidae

Brook Stickleback



*Ameiurus melas*

Ictaluridae

Black Bullhead



*Noturus gyrinus*

Ictaluridae

Tadpole Madtom

# Lab Fishes



*Catostomus commersonii*

Catostomidae  
White Sucker



*Micropterus dolomieu*

Centrarchidae  
Smallmouth Bass

NASA

- Strategic Goal 1 (NASA 2018)
- Earth science observations assist with: crop estimates, productivity assessments, and yield models

[https://www.nasa.gov/sites/default/files/atoms/files/nasa\\_2018\\_strategic\\_plan.pdf](https://www.nasa.gov/sites/default/files/atoms/files/nasa_2018_strategic_plan.pdf)

