

UPDATE (03/2018): ENHANCING UNDERSTANDING OF THE MINNESOTA RIVER ECOSYSTEM (PHASE-I)



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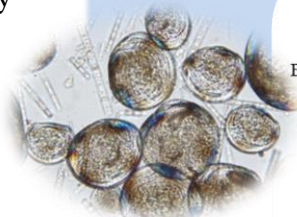
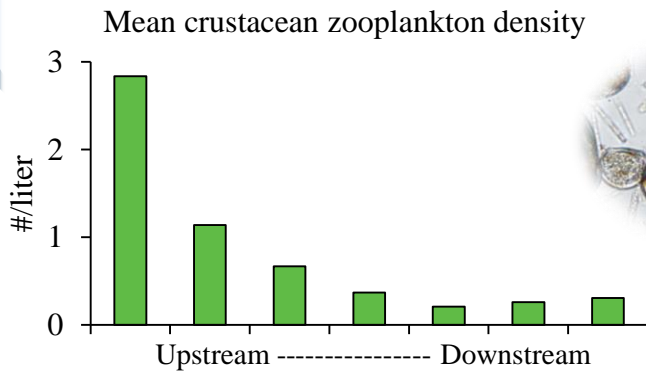
Mike Wolf
MNR Specialist
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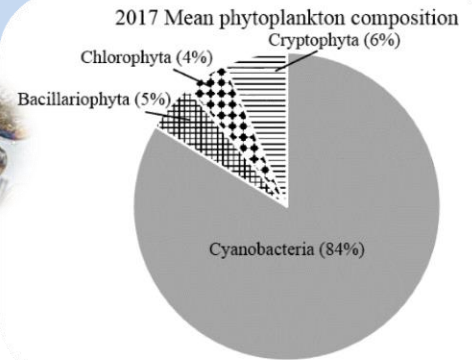
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Activity 1: Accelerate collection of baseline Minnesota River lower trophic data

- Collected 227 water quality, phytoplankton, and zooplankton samples.
- Building an understanding of temporal and spatial patterns in Minnesota River phytoplankton and zooplankton communities.
- Documented presence of Zebra Mussel veligers downstream of Granite Falls Dam.

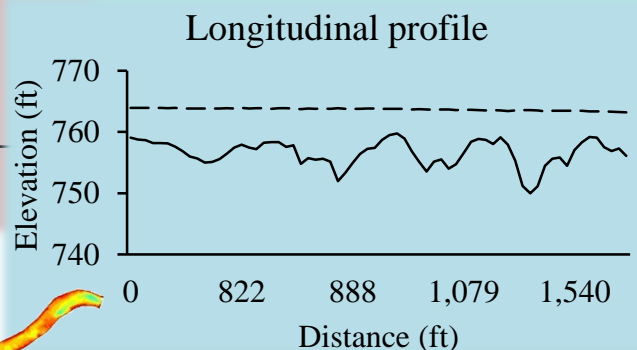
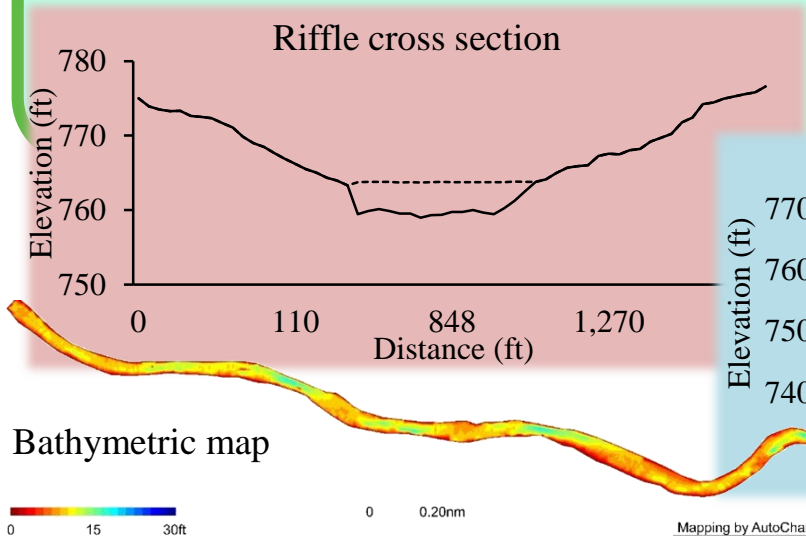


Zebra Mussel veligers



Activity 2: Quantify physical habitat characteristics of the Minnesota River

- Creating bathymetric maps and measuring cross section and longitudinal depth profiles at study sites.
- Quantifying additional physical habitat characteristics at ≥ 12 study sites.



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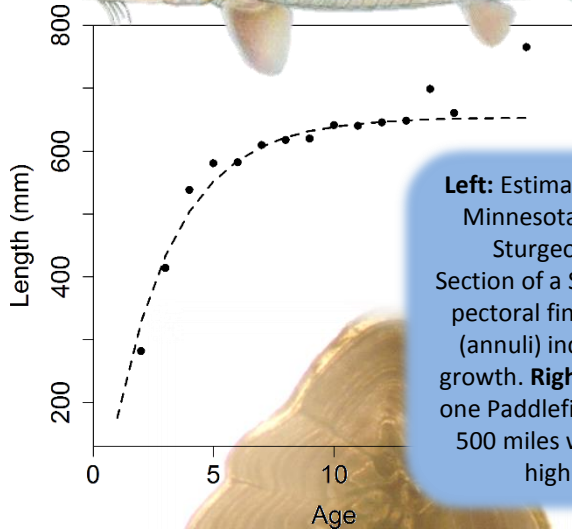
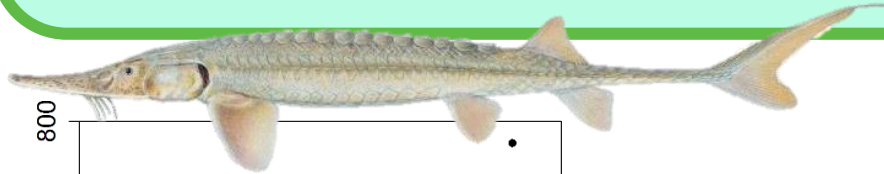
Activity 3: Inventory Minnesota River backwater fish communities

- Developed protocols for assessing fish communities in backwater habitats.
- Conducting fish community assessments and compiling historical fish survey data.
- Evaluating relationships between fish communities and habitat characteristics.



Activity 4: Evaluate population dynamics, movement, and habitat use of Paddlefish and Shovelnose Sturgeon in the Minnesota River

- Captured 66 Paddlefish, indicating a more significant population inhabits the Minnesota River than previously known.
- Tracking movements of 36 Shovelnose Sturgeon and 14 Paddlefish tagged with acoustic transmitters.
- Captured and tagged over 300 Shovelnose Sturgeon, and collected fin rays from a subsample for estimating age, growth, and mortality parameters.



Left: Estimated growth curve of Minnesota River Shovelnose Sturgeon. **Bottom left:** Section of a Shovelnose Sturgeon pectoral fin ray. Each light ring (annuli) indicates one year of growth. **Right:** During this study, one Paddlefish has traveled over 500 miles within the 120 mile highlighted area.

