

Nissa Rudh

Fisheries and Wildlife, CFANS, 2008

Mentor: Mark C. Hove, Fisheries,
Wildlife and Conservation Biology

Fish Host and Brooding Behavior of Minnesota Threatened Butterfly Ellipsaria lineolata (Mollusca: Bivalvia)

The butterfly (*Ellipsaria lineolata*) is a threatened species of freshwater mussel in Minnesota, occurring on a small stretch of the Mississippi River south of the Twin Cities and in the St Croix River. Like many other freshwater mussels, the butterfly uses a fish host to facilitate the transformation of its larvae (glochidia) into juvenile mussels. We conducted host suitability trials, confirming the freshwater drum (*Aplodinotus grunniens*) as a host while finding many other fish species as unsuitable hosts. We also caught freshwater drum from the St. Croix River that were naturally infested with glochidia and recovered juvenile mussels from these fish. We used a scanning electron microscope to photograph juvenile and glochidial butterfly and compare their dimensions to confirm that the metamorphosed juveniles were indeed butterfly. Coupled with this study, we observed and described female butterfly brooding behavior in the field and in captivity, and have speculated as to its' mechanism for attracting the host fish. The butterfly lies on its' hinge in the substrate and pulsates its' mantle. When a shadow is passed overhead, it pulls back the mantle to expose marsupia swollen with mature glochidia. The freshwater drum has an unusually long lateral line system extending onto the fish's tail, powerfully sensing low frequency vibrations. Perhaps the discrete pulsations of brooding butterfly attract its' host.



Poster Number: Session: