Current On-Going Research under NEAPMS Scholarship Support:

A Molecular Genetic Approach to Evaluate Herbicide Resistance and Vectors of Spread for populations of the Invasive Aquatic Plant *Hydrilla verticillata* (Hydrocharitaceae) in the Northeastern US.

Lori Benoit, a doctoral student at the University of Connecticut, received the NEAPMS graduate student scholarship for her research on Hydrilla verticillata (hydrilla), a non-native invasive aquatic plant that continues to expand its range in the United States. She will use genetic markers to determine how populations of hydrilla in the Northeast are related to each other and to populations from the Southeast and outside the U.S. This information will be used to determine how many independent introductions have occurred, and to identify patterns of spread and possible vectors (e.g. waterfowl or human-mediated dispersal).

The other part of the project consists of identifying herbicide resistant populations in the Northeast. Hydrilla populations in parts of the country where fluridone use has been extensive (e.g., southeastern USA) have shown an alarming increase in herbicide resistance. Fluridone inhibits a critical enzyme known as PDS (phytoene desaturase). Hydrilla populations that exhibit varying degrees of resistance to fluridone have one of three different mutations in their PDS gene. Ms. Benoit will determine if any hydrilla populations in the Northeast have these mutations.

Overall, the goal of the study is to produce information that will allow managers to track the spread of particular hydrilla strains, apply appropriate control measures, and limit or prevent known vectors of spread.