

Project Title: Atlantic Salmon Freshwater Assessments and Research of Mutual Interest to Maine DSRFH and NOAA

Project Location: Jonesboro office of the Maine Department of Marine Resources Bureau of Sea-run Fisheries and Habitat, 317 Whitneyville Road, Jonesboro, ME

Project Leader: Ernie Atkinson (ernie.atkinson@maine.gov)

Project Time Frame: May 16 - August 12 (flexible with student/mentor schedules)

Total Hours: up to 520

Gulf of Maine Atlantic salmon are the last wild populations in the USA and are listed as endangered under the Endangered Species Act. Continued management based research and assessments are necessary to document population responses to management action and habitat improvements and restoration.

ME-DMR Division of Sea-run Fisheries and Habitats have been in a cooperative agreement with NOAA-Fisheries for several years with the purpose of preserving Atlantic salmon within the Gulf of Maine. Under this agreement, ME-DMR staff conduct smolt trapping operations, operate adult salmon traps, perform juvenile assessments using electrofishing, and conduct spawner surveys. MDMR also works with other partners on habitat connectivity and restoration projects. This intern would be exposed to a variety of fisheries techniques and management over the course of their term. A clean driving record is a requirement as there may be a need to use a State of Maine vehicle for project needs.

The intern will spend time continuing a stream temperature-monitoring project started by a previous intern. This project monitors annual water temperature at several sites across the Narraguagus, Pleasant, Machias, East Machias and Dennys Rivers. The intern will be responsible for checking deployed temperature loggers and downloading the previous year's data. They will then compile these data into a database for further analysis. A summary report of the trends and observations for the time series will be the final outcome of this project.

Along the way the intern will learn land navigation, database management and will be introduced to Program R as the analysis portion commences. The intern will work closely with the project leader to finish this work. The intern will also experience other aspects of Atlantic salmon management as noted below.

The region that this work will take place is sparsely populated providing a "wilderness" experience. Most of the field work takes place off paved roads in remote settings. Access to sites varies and may involve canoeing and hiking as well as driving on logging roads. Comfort working in remote locations is essential to success with this position.

The intern would assist in:

- Development of a water temperature monitoring project to examine spatial variation of water temperatures within Down East Drainages and to identify areas of thermal refuge.
- Operation of rotary screw traps for the purpose of enumerating out-migrating Atlantic salmon smolts in the Narraguagus and East Machias Rivers.
- Operation of an adult trapping site on the Narraguagus River in Cherryfield, ME.
- Surveying habitat quantity and abundance in various streams in the Downeast SHRU to be used later to enumerate rearing habitat for juvenile salmon.
- Assist in habitat connectivity and habitat restoration projects such as coarse wood additions and other habitat manipulations.

Opportunities Include:

- Getting to know and work with scientists from state and federal agencies.
- Exposure to fisheries science and enumeration techniques like smolt population estimate models.
- Exposure to stream habitat rehabilitation work and the reasons for doing this.
- The ability to apply database, GIS and statistical methods to a practical application while summarizing the water temperature data.
- Practical experience in fisheries techniques like stream monitoring, trap counts and habitat surveying.
- Further data exploration and summarization in a future capstone research project.