Connecticut Aquatics Station Objectives

- **Key Point 1. Abiotic Factors**
  - What are the phases/processes in the Water cycle? How do nutrient erosion, salinization of agricultural lands and climatic influences affect the cycle?
  - What is a Watershed? How do you identify watershed boundaries and stream orders? Identify features of a healthy and unhealthy watershed.
  - What chemical water tests are needed to monitor/manage aquatic systems? How do you interpret the tests results? What do these results indicate to the health of the aquatic organisms?
  - How is water quality affected by physical, chemical and biological conditions?
- **Key Point 2. Biotic Factors**
  - Understand how energy and matter moves through aquatic food webs
  - Carrying capacity in aquatic systems, how competing water usage may affect the sustainability of aquatic systems
  - Identification of common, rare, threatened and endangered aquatic species with a dichotomous key. Amphibian, Fish and Macroinvertebrate, Mussels, Saltwater Invertebrates and aquatic plant identification are of focus, with special attention is paid to Aquatic Nuisance Species.
  - Biological water quality monitoring tests and how they manage aquatic systems
  - What biological water quality monitoring tests are needed to assess and manage aquatic environments
- **Key Point 3. Aquatic Environments**
  - Identify aquatic and wetland environments based on their physical, chemical and biological characteristics.
  - Know characteristics of different types of aquifers, and understand threats to groundwater quantity and quality.
  - Understand societal benefits and ecological functions of wetlands.
  - Understand the functions and values of riparian zones and be able to identify riparian zone areas.
- **Key Point 4. Water Protection and Conservation**
  - Understand how public education and enforcement agencies work to protect aquatic habitats
  - Understand how to prevent the transport of Aquatic Nuisance Invasive Species across different waterways
  - Identify different sources of point and nonpoint source pollution. Discuss methods to reduce point and nonpoint source pollution.
  - What is water conservation? Why is it important?
  - What different groups compete for water supply? What are different uses of waterways? Examples: hydropower, navigation, wildlife, recreation, waste assimilation, irrigation, and industry
  - What Federal, Provincial and state agencies oversee water resources
  - What major provincial and/or federal laws protect water quality - both surface and groundwater.

    - What is GIS and how is it used in managing water resources?
- **Key Point 5. Climate Change and EEJ**
    - How are aquatic resources vulnerable to climate change?
    - What communities are most vulnerable to altering aquatic resources?
    - What is Environmental/Climate Justice? How does it relate to aquatic resources/pollution?
    - How can we protect aquatic resources and environments against climate change?