

## **Sentinels of climate change: coastal indicators of wildlife and ecosystem change in Long Island Sound.**

**Abstract:** We propose to implement a comprehensive plan to monitor climate change impacts on key wildlife and ecosystem resources in Long Island Sound. We will combine new data collection that builds on existing monitoring, the compilation of existing data into a common and accessible format, and time series analyses for multiple parameters to test for links to core climate parameters. Our focus is on coastal indicators with high biological potential to show climate responses, available historical data, ease of cost-effective future data collection, and the ability to inform real-world management decisions. Monitoring will focus on the estimation of multiple parameters for three priority sentinels. Sentinel (i): we will examine several metrics of abundance, distribution, productivity, and phenology for focal bird species that depend on tidal marshes, beaches, and mudflats. Sentinel (v): in zones where marine transgression is likely, we will survey focal habitats (coastal forests, shrublands, grasslands) to document avian community composition, presence of tidal marsh plant indicators, and tree mortality. Sentinel (vi): we will sample areal cover, diversity, species composition, and phenology of dominant saltmarsh plants in conjunction with the bird monitoring, and at sites with past data. Work will be led by researchers at the University of Connecticut in cooperation with the CT DEEP Wildlife Division and a multi-investigator team that has developed a northeastern US coastal marsh bird monitoring program. Compilation of existing data will begin immediately; field work will occur from spring-fall 2013; analysis, parameter assessment, and public release of results will be completed in spring 2014.