

Background Information

Estuaries are water bodies and adjacent wetlands found in areas where rivers flow into much larger bodies of water, and include bays, sounds, marshes, inlets, lagoons, and sloughs. Most estuaries are formed where a river meets the sea, but there are also freshwater estuaries where rivers flow into much larger bodies of freshwater (such as the Great Lakes). Estuaries provide many benefits, including:

- essential spawning and nursery areas for many species, including fish and shellfish important to commercial and recreational fisheries;
- protection for upland areas from flooding and shoreline erosion; and
- habitat and food for estuarine species as well as species that live in other habitats.

Unfortunately estuaries (and the benefits they provide) are threatened by impacts from human activities such as coastal erosion, water pollution, and habitat destruction, as well as a variety of natural disturbances such as winds, waves, heavy rainfall, and severe storms.

The National Estuarine Research Reserve System (NERRS) is a network of 26 estuaries that was established to represent different biogeographical regions of the United States and support long-term research, education, and stewardship of estuarine resources. Within each reserve, field staff work with local communities and regional groups on issues such as nonpoint source pollution, habitat restoration, and how best to cope with invasive species. For more information on these topics, see:

http://nerrs.noaa.gov/Background_Bioregions.html;
http://oceanservice.noaa.gov/education/tutorial_pollution/;
http://oceanservice.noaa.gov/education/lessons/wheres_the_point.html;
http://oceanservice.noaa.gov/education/lessons/fix_it.html;
http://oceanservice.noaa.gov/education/lessons/alien_invasion.html;
http://oceanservice.noaa.gov/education/tutorial_estuaries/; and
<http://oceanservice.noaa.gov/education/stories/lionfish/>

Many researchers working in NERRS are supported through the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), a partnership between NOAA and the University of New Hampshire. The CICEET Web page (<http://www.ciceet.unh.edu/>) includes a searchable database of more than 100 projects to develop and apply innovative technologies for understanding and reversing the impacts of coastal and estuarine contamination and degradation.

This activity is intended to introduce students to some sources of information about the National Estuarine Research Reserve System and applied research projects that are part of NERRS. In addition, students will gain practice in reading and interpreting scientific reports.