UNDERC Selected as National Research Site

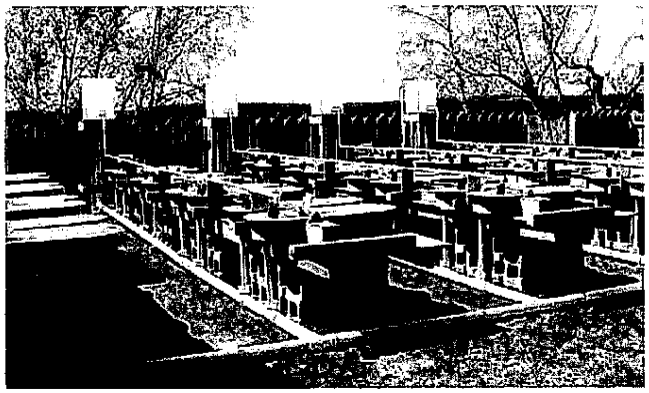
Each summer, about twenty-five undergraduate students conduct their own field research in environmental biology at UNDERC-East, located in the Upper Peninsula of Michigan. The site encompasses more than 7,500 acres with abundant wildlife including deer, wolves and black bear.

THE NATIONAL ECOLOGICAL OBSERVATORY NETWORK (NEON) has selected the University of Notre Dame Environmental Research Center's (UNDERC) land in northern Michigan and Wisconsin as a core site representing the upper Midwest. Sponsored by the National Science Foundation, NEON is a continental research platform for discovering and understanding the impacts of climate change, land-use change, and invasive species on ecology. Selection as a NEON site will double or triple education and research opportunities at UNDERC.

Notre Dame's 8,000 acres of northern hardwood forests, lakes, and wetlands straddling the Wisconsin-Michigan border will be part of a national network designed to measure environmental factors in areas that have not been disturbed by humans. In addition to regions across the continental United States, from New England to the Desert Southwest, NEON has two sites in Alaska, one in Hawaii, and one in Puerto Rico, for a total of 20 sites. Each site is chosen because it has environmental conditions most representative of the region, including typical vegetation, weather, and soil conditions.

"All the sites have to be wildland sites," says Gary Belovsky, director of UNDERC since 2001, "and must be protected from the general public. NEON is going to be coming in and building their research infrastructure." The goal is to develop a baseline of information about such environments that, among other things, will allow researchers to measure the effects of human activity in surrounding areas and patterns across the nation. The project will have federal funding for at least 30 years.

Every NEON site will have a tower with a series of sensors to gather data on climate, air quality, water quality, soil characteristics, and other environmental factors. Equipment also will collect data on soil and aquatic chemistry and track changes and patterns in small mammals, insects, birds, fish, soil microbes, plants, and algae. The national study includes the seven environmental "grand challenges" identified by the National Research Council—biodiversity, biogeochemical cycles, climate change, hydroecology, infectious disease, invasive species, and land use. The standardized measurements will be available in real time on the Internet for downloading almost as quickly as they are collected. NEON also will provide a staff of three to five people at each site, including a faculty-level scientist, a technician, and probably an environmental education specialist. Depending on facilities already present, NEON may construct additional laboratories and housing. UNDERC currently has housing for about 120



Above: **Bay Lake is one of 30 lakes, streams, and wetlands that have been protected for centuries. After completing 4–5 one-week instructional modules on field biology including bird/mammal ecology, amphibian/reptile ecology, aquatic ecology, or other topics, students can conduct their own investigations under the guidance of a faculty member or graduate student.**

people, research labs, teaching labs, and classrooms already on the site. Notre Dame has owned the property since the early 1950s and held summer classes for undergraduates on the site since the 1970s. At the Michigan site, the number of summer undergraduate researchers has grown to 24, while the number of graduate student researchers has increased to more than 15.

UNDERC opened a western site in Montana in 2006 and a southern site in Puerto Rico in 2008. UNDERC-West involves eight students (half of whom are American Indians) each summer on 1.6 million acres of the Confederated Salish and Kootenai Indian reservation. UNDERC-South has two students each summer who conduct rain forest research at the El Verde Forest Research Station.