

# Southeast Fisheries Science Center Beaufort Laboratory

National Marine Fisheries Service  
Southeast Fisheries Science Center  
Beaufort Laboratory  
Pivers Island  
Beaufort, NC 28516-9722

## Laboratory Objectives

The objectives of the Beaufort Laboratory are to (1) obtain the scientific information necessary to manage and conserve selected coastal and reef resources along the southeastern and Gulf Coast of the U.S., (2) determine the natural processes that control the growth and survival of the coastal fishes, (3) determine the effects of habitat modifications and chemical contaminants on estuarine-dependent fisheries resources, and (4) obtain information on the movements and

stranding of marine mammals and sea turtles along the North Carolina coast.

## Personnel

Ford A. Cross, Director  
Donald E. Hoss, Chief, Division of Estuarine & Coastal Ecology  
John V. Merriner, Chief, Division of Fisheries  
William L. Bernhardt, Administrative Officer  
David W. Engel, Leader, Chemical & Physiological Team  
David S. Peters, Leader, Fishery Ecology Team  
Gordon W. Thayer, Leader, Habitat Utilization Team  
Randolph L. Ferguson, Leader, Habitat Characterization & Microbial Processes Team

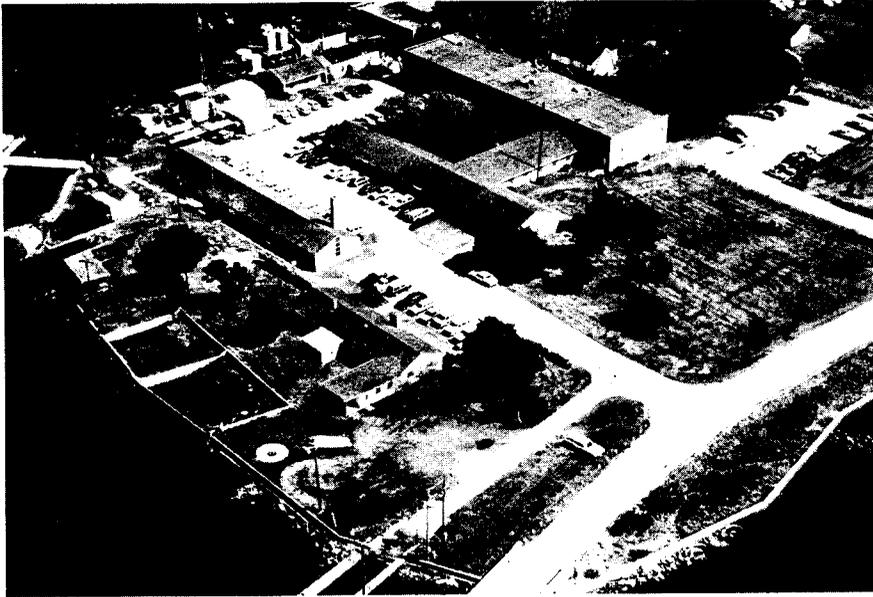
Peter J. Hanson, Leader, Contaminant Ecology Team  
David R. Colby, Leader, Early Life History Team  
Douglas S. Vaughan, Leader, Menhaden and Latent Resources Team  
Gene R. Huntsman, Leader, Reef Resources & Coastal Pelagics Team  
Alexander J. Chester, Automatic Data Processing & Biometrics  
Kenneth C. Harris, Statistics & Data Management, South Atlantic Statistics  
Larry H. Hardy, Habitat Conservation Division

## Areas of Expertise

The Division of Ecology conducts research to (1) determine the environmental and habitat interactions that control the production of estuarine dependent and coastal fishes, (2) determine the effects of habitat modification and changes in water quality on fishery resources, (3) assess the adequacy of, and improve habitat mitigation and restoration techniques relative to the production of fishery resources, (4) determine the effects of trace metal contaminants on selected fishery organisms and their prey, (5) monitor the level of chemical contamination and incidence of disease in fish from selected estuaries from Maine to Texas, and (6) coordinate the marine mammal and sea turtle stranding networks along the North Carolina coast. In addition, staff of the Division provide scientific support to the Southeast Regional Office, the Washington Office, Fishery Management Councils, state agencies and the private sector on fishery/habitat management issues.

The Division of Fisheries conducts research to (1) assess the effects of fishing on Atlantic and Gulf of Mexico menhaden populations and on reef fish communities from Cape Hatteras to Key West; (2) obtain information on the species composition and size of the catch by headboats in the South Atlantic and Gulf of Mexico; (3) develop





**Aerial view of Beaufort Laboratory on the northern end of Pivers Island, near Beaufort, North Carolina.**

fishery assessments of menhaden, reef fishes, and selected sciaenids including red drum and weakfish populations along the Atlantic coast; (4) determine the migration patterns of king and Spanish mackerel cooperatively with the state of North Carolina; (5) obtain information on the life history of dominant reef fishes, cobia and greater amberjack; (6) understand the dynamics of reef fish communities along the Atlantic coast; and (7) determine the species composition, distribution and movements of sea turtles in North Carolina estuarine waters. Staff of the Division work closely with the South Atlantic, and Gulf Fishery management Councils in resource assessments and management under the Fisheries Conservation and Management Act. The Atlantic and Gulf States Marine Fisheries Commissions, and individual states, are also assisted in the development of management plans and regulations. This fishery management assistance has included reef fish, red drum, menhaden, weakfish, Spanish mackerel, Atlantic sturgeon, and striped bass and other important resources of the Atlantic and Gulf coasts.

### Laboratory Features

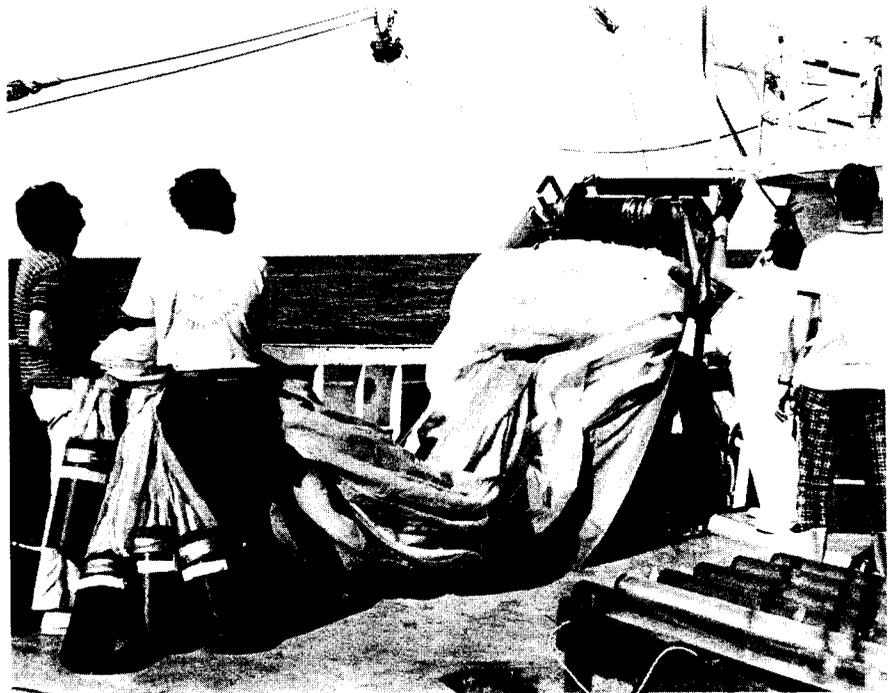
The Beaufort Laboratory consists of a complex of buildings containing of-

fices, laboratories, conference, storage, and work rooms, maintenance shops, and a library. Significant features include: (1) a continuously flowing seawater system and fiberglass tanks of various capacities; (2) spawning and rearing facilities for marine orga-

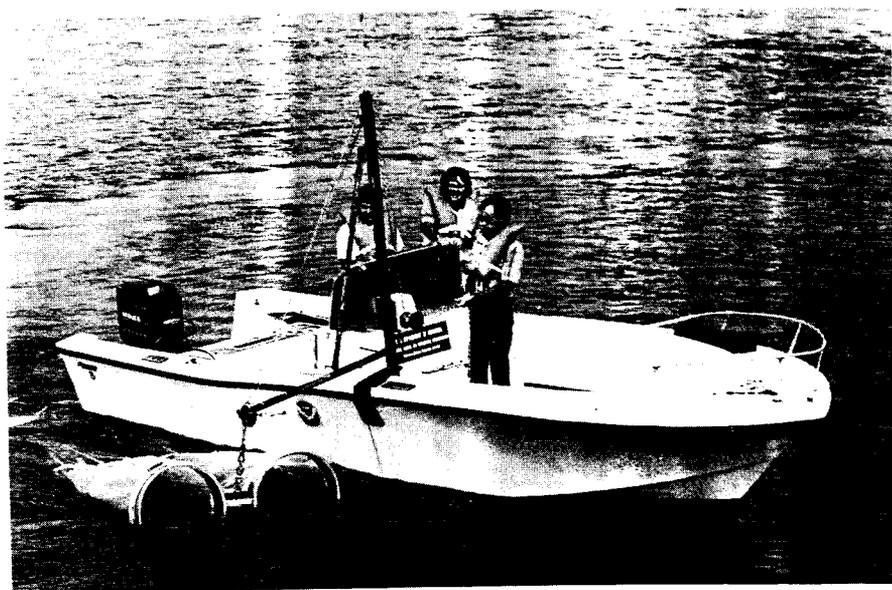
nisms; (3) analytical instruments such as respirometers, carbon/hydrogen/nitrogen analyzer and atomic absorption spectrophotometers; (4) clean room for low level analysis of trace metals; (5) equipment for handling, using, and storing radioactive isotopes with research instruments and counters; (6) wet and dry laboratories for life history studies and scuba and underwater photographic equipment to support field ecological studies of submerged aquatic vegetation and reefs; (7) a library containing 30,000 volumes, 300 current journals, automated literature-search capability, and other resources; (8) mainframe computer facilities connected to the National Marine Fisheries Service Computer Center, Seattle, Washington, and interactive graphic and non-graphic terminals and PCs; and (9) the *Onslow Bay*, a 50-foot research vessel and other smaller boats.

### Laboratory History

The Beaufort Laboratory, the second oldest federal fisheries laboratory in the United States, celebrated its 90th anniversary in 1989. The Beaufort area has been the site of marine research



**Readying the MOCNESS (Multiple Opening/Closing Net and Environmental Sensing System) for deployment from the research vessel *Oregon II*.**



Beaufort Laboratory personnel deploy bongo nets for ichthyoplankton sampling.

for decades because of its extensive and varied habitats with salt marshes, sand shoals, and mud flats intercepted by deeper water, sounds, and barrier islands.

After visits by zoologists Gill and Stimpson in 1860, and Coues and Yarrow in 1871, Beaufort was frequented by many others interested in marine biology. For 10 years a group of professors and students from Johns Hopkins University maintained a biological station at Beaufort. Spencer F. Baird and others connected with the U.S. Commission of Fish and Fisheries investigated the fishes of the region during the 1880s, but it was not until 1899 that a biological laboratory was established in a rented building in Beaufort. Congress subsequently authorized the construction of a permanent biological station on Pivers Island, and the laboratory was opened for research in May 1902.

The Laboratory was accessible only by boat until 1937 when a one-lane wooden bridge was constructed, providing direct access to the island. This bridge was replaced by a modern con-

crete bridge in 1968. The original wooden buildings were also later replaced with masonry buildings during the period 1954-64. A residence, constructed in 1928, is the only frame building remaining at this time.

The Laboratory was founded with a regional responsibility to learn the life histories of marine animals and plants, their relations to each other and to the environment, their resource potential, the effects of man on their abundance, and methods for their scientific culture. Now, 90 years later, in a rapidly developing coastal environment, the Beaufort Laboratory pursues similar aims with the aid of increasingly sophisticated technology for scientific measurement of fisheries/ecological processes and phenomena, and for information management and dissemination.

### Cooperating Agencies

Within the National Oceanic and Atmospheric Administration (NOAA), cooperative research programs are being conducted with the National

Ocean Service and the National Environmental Satellite Data Information Service. Cooperative research is also being conducted with the Fish and Wildlife Service, the Environmental Protection Agency, the Army Corps of Engineers, and the states of Florida and North Carolina.

Eight staff are adjunct professors of the Department of Zoology, North Carolina State University, and master's and doctoral candidates have been in residence at the Beaufort Laboratory every year since 1964. Staff members have also served on graduate committees for the University of North Carolina at Chapel Hill, Virginia Institute of Marine Science, University of Virginia, University of South Carolina, University of Delaware, Duke University, Old Dominion University, Oregon State University, Pennsylvania State University, and Rutgers University.

Duke University Marine Laboratory, the University of North Carolina Institute of Marine Science, and the North Carolina Division of Marine Fisheries are also located in the Beaufort-Morehead City area. Exchange of equipment, library holdings, and research findings is active among the institutions.

In 1988, a memorandum of understanding among NOAA (including the Beaufort Laboratory), Duke University, and the University of North Carolina established the Cooperative Institute for Fishery Oceanography (CIFO). The purpose of the institute is to: (1) coordinate existing research among NOAA, Duke University, and the University of North Carolina in fisheries oceanography; (2) serve as a Center from which scientists and engineers may focus on fisheries oceanography problems in the South Atlantic Bight; and (3) stimulate the training of scientists and engineers in the disciplines involved in fisheries and oceanographic sciences.

*Linda C. Clements*