

# NATIONAL CENTERS FOR COASTAL OCEAN SCIENCE

## Center for Coastal Fisheries and Habitat Research



**NOAA**  
**Ocean Service**

*The Center for Coastal Fisheries and Habitat Research (CCFHR), jointly sponsored by the National Ocean Service and National Marine Fisheries Service, is located in Beaufort, North Carolina, and is the second oldest Federal fisheries laboratory in the United States. Current research at the Center is focusing on: estuarine processes, nearshore and ocean ecosystems biological productivity, the dynamics of coastal and reef fishery resources, and the effects of anthropogenic influences on resource productivity. The Center's primary goal is providing resource managers with information necessary to enhance recreational and commercial fishery resources and to address Essential Fish Habitat information necessary under the Magnuson-Stevens Fishery Management and Conservation Act. The CCFHR focuses its science efforts in several areas, including the following:*

### Coastal Habitats



*Estuaries are vital habitats for fish, seabirds, and other marine life.*

Ecological research is conducted on the value of coastal and estuarine habitats to fisheries organisms, impacts of natural and human-induced factors on these habitats, and the development and evaluation of methods to restore these habitats. Current studies are focusing on salt marshes, intertidal flats, and seagrasses along the Atlantic and gulf coasts and large California coastal bays. The Center is also conducting studies dealing with the interactions among bacteria, micro-algae, seagrass and salt march plants, invertebrates and fishes, and the linkages between habitats and fishery organisms.

### Fish Ecology

The Center conducts research on the environmental factors that influence the early life stages of fish. Emphasis is on describing factors that can influence the number of larvae which survive to become adults. This includes collecting larval and juvenile fish, describing processes that transport larvae from spawning to nursery grounds, and documenting conditions which are supportive of larval and juvenile fish survival and growth. The Center is also documenting the ages when larval and juvenile fish recruit to nursery grounds through the use of otolith aging techniques. The information obtained is used to understand the factors that control fish populations, thus improving our ability to forecast abundance and manage fishery resources.

### Chemical and Physical Processes

Chemical tracers, such as trace metals and stable isotopes of carbon, nitrogen, and sulfur, are employed in Center research to understand the habitat utilization, trophic pathways, and contaminant exposure and biomagnification in coastal ecosystems. Current projects include the origin of high mercury levels in Florida Bay game fish, South Atlantic coastal

***“Science Serving Coastal Communities.”***

pelagics, and marine mammals. Stable isotope research also seeks to determine the importance of phytoplankton and benthic algal and seagrass productivity in supporting higher trophic levels on the west Florida Shelf and other areas of essential fish habitat. Stock discrimination and migration of fish are also under study using trace metal characteristics of otoliths.

---

## Harmful Algal Blooms

---

CCFHR has been actively involved in the ecology and oceanography of harmful algal blooms (HABs) for more than a decade. Here the expertise and strong emphasis has been on the physical aspects of bloom dynamics and transport coupled with the development of remote sensing methods for detection of HABs and the conditions that are conducive to HAB development. Research on the transfer of algal toxins in the lower trophic marine food web is being conducted within the context of a large regional study of the west Florida continental shelf. The Center's ability to examine the molecular ecology of HAB species, including the phylogenetic relationships and development of probes for detection and quantification is an area of focus.

---

## Reef Fish

---



*Reef fish support commercial and recreational fisheries.*

Reef fish scientists utilize headboat, recreational, and commercial landings data and life history information, such as age/growth, mortality, and reproduction to assess populations of snappers, groupers, and other reef

fish species in the U.S. southeastern Atlantic and Gulf of Mexico. Scientists analyze changes in age structure and population size of various species. Researchers also use SCUBA to study reef fish habitat distribution and abundance, habitat preference, community structure, and impacts of fishing on natural reefs. Fish population status and habitat information are provided to regional fishery management councils and commissions, and include recommendations on ways to allow continued public utilization of reef fish resources.

---

## Population Dynamics

---

Population dynamics research focuses on monitoring and assessing Atlantic and Gulf fish stocks that are exploited in recreational or commercial fisheries. Stock assessments are done on several species (e.g., menhaden, spotted sea trout, weakfish, and red drum), and the Center has assisted in other stock assessments as requested (e.g., wreckfish, red porgy and south Atlantic black sea bass). These assessments are used in the management of coastal fisheries by both the Atlantic and Gulf of Mexico Fishery Management Councils and the National Marine Fisheries Service.

---

## Protected Species

---

Protected species research at the Center focuses on sea turtles and marine mammals. Current research projects are monitoring population trends to determine population characteristics (e.g., age, sex), determining genetic structure, investigating habitat requirements and navigational cues, and assessing the impacts of fisheries interactions. Activities are in response to requirements of the Endangered Species Act and Marine Mammal Protection Act which require protection of all marine mammals or endangered species.

Center for Coastal Fisheries and Habitat Research  
101 Pivers Island Road  
Beaufort, North Carolina 28516  
Phone: (252) 728-8746  
FAX: (252) 728-8784  
Website: <http://shrimp.bea.nmfs.gov/>

