ESSENTIAL FISH HABITAT

NOAA Fisheries Research on EFH

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Background

NOAA Fisheries has significant research efforts underway to improve understanding of the link between fishery production and habitat. These efforts will provide information needed to make sound management decisions related to the conservation of essential fish habitat (EFH). Two areas of emphasis for NOAA Fisheries' EFH research are increased understanding of the habitat requirements of managed species to refine EFH designations, and increased understanding of the effects of fishing activities on EFH. Examples of NOAA Fisheries' research projects are provided below.

Alaska

NOAA Fisheries' EFH research activities in Alaska include mapping habitat and examining the associations between habitat features, geologic processes, and habitat utilization by fish stocks. Specifically, projects will assess the role of important nearshore nursery and foraging habitats (i.e., eelgrass, kelp, estuarine wetlands) for juvenile salmon and groundfish, and identify habitat areas that may need protection from development. NOAA Fisheries is working on identifying gorgonian red tree coral (*Primnoa* sp.) habitats, which are being considered for designation as habitat areas of particular concern (HAPC). NOAA Fisheries researchers are also assessing the effects of various gear types (trawls, longlines, pots, and dredges) on a range of habitat types.

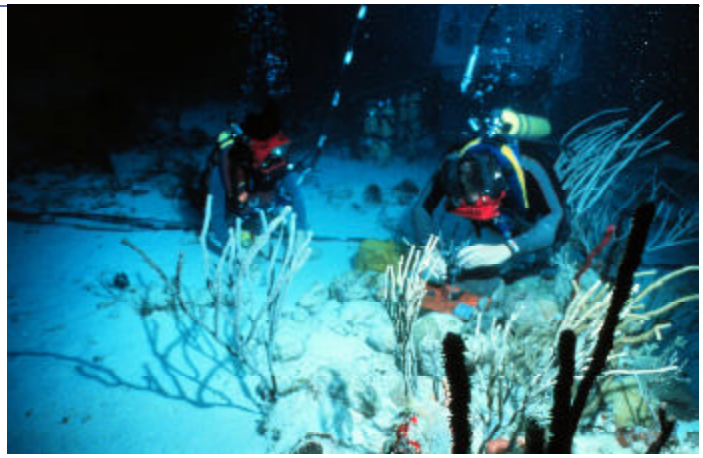
Northwest

In the Northwest, NOAA Fisheries researchers are combining historical data, high resolution seafloor imagery and new survey and analysis techniques to study relationships between fish and their habitats off the coast of Oregon. Remotely operated vehicles will be used to produce a detailed map of Astoria Canyon, identify major geologic provinces and unusual features, and sample representative elements of the canyon's biological features. NOAA Fisheries staff are involved in a rigorous field-test of underwater electro-optic imaging technology (e.g. Laser Line Scanner) for application in the characterization and exploration of deep-water habitats and the assessment of potential disturbance to these habitats off the U.S. West Coast. NOAA researchers are also involved in a cooperative effort with Oregon State University to develop an integrated database for west coast groundfish and their habitats, which can be used to address management and conservation questions that require a better understanding of marine habitats, fisheries, and fisheries resources.

Southwest

In the Southwest, NOAA Fisheries researchers are using high-resolution swath bathymetry, *in situ* submersible surveys, and fishing information to describe benthic habitats and associated groundfish assemblages on significant fishing grounds. NOAA Fisheries is also surveying and characterizing spawning habitat of market squid off California to help identify the overlap between spawning grounds and the purse seine fishery, which may impact the egg beds. In Hawaii, NOAA Fisheries staff are

characterizing and mapping benthic habitat of spiny and slipper lobsters and assessing the potential for damage to coral reefs from commercial lobster fishing.



Southeast

In the Southeast, NOAA Fisheries has a number of diverse research efforts focused on EFH. In the Gulf of Mexico, there are projects examining the ecological relationships between commercially-important species of fish, crab, and shrimp and estuarine habitats, such as salt marsh, tidal freshwater marsh, seagrass, mangrove, oyster reef, and shallow bottom open water. On the west Florida shelf, efforts are underway to more precisely identify EFH for shrimp, lobster and crab. Furthermore, NOAA Fisheries researchers are experimentally evaluating trawl and trap damage to offshore seagrass beds. Larger-scale studies are estimating the extent of mobile fishing gear usage, and identifying sites for evaluating the habitat protection potential of marine reserves. These studies include determining the effects of gradients in fishing effort and modifications in fishing gear on habitat.

Northeast

NOAA Fisheries in the northeast has a number of research projects revolving around an area closed to some types of fishing (known as Closed Area II) on Georges Bank. Benthic samples, fish diets, and videotapes/ photographs from both inside this closed area and its perimeter are being analyzed to determine the effects of scallop dredges on cod, haddock, flounder, and scallop habitats. In Delaware Bay, NOAA Fisheries is examining the distribution and abundance of managed species in relation to their habitat. Additional projects are examining environmental influences on early life stages of managed species, such as juvenile winter flounder.

National Partnerships

NOAA Fisheries is pursuing joint EFH research initiatives with other agencies and organizations. Partnering with the U.S. Geological Survey and several academic institutions, NOAA Fisheries is working on a national initiative to identify and map bottom habitats and to determine the effects of fishing gear on EFH. NOAA Fisheries is working in cooperation with the National Sea Grant Program to select priority EFH research projects, which Sea Grant will fund over the next two years. The National Ocean Service is helping NOAA Fisheries to generate maps and other syntheses, which will help the fishery management councils identify EFH and enable the development of internet-based compilations of EFH information.

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