**BACKGROUND**

- The Habitat and Ecological Processes Research (HEPR) Program develops scientific research that supports implementation of an ecosystem approach to management.
- The HEPR Program focuses on integrated studies that combine scientific capabilities and create comprehensive research on habitat and ecological processes.
- Teams of AFSC and Pacific Marine Environmental Laboratory (PMEL) scientists collaborate in new research, proactively identify emerging management issues and draw expertise from the fishery, habitat, and protected resource managers at the Alaska Regional Office.

**Research Areas**

**LOSS OF SEA ICE**

Climate change is causing loss of sea ice in the Bering, Chukchi and Beaufort Seas. Addressing ecosystem-related shifts is critical for fisheries management, because nationally important Bering Sea commercial fisheries (>40% US catch) are located primarily within the southern Bering Sea, and for successful co-management of marine mammals, which at least thirty Alaska Native communities depend on. Groundfish and crab of the entire eastern Bering Sea shelf were surveyed in 2010, the first time in 20 years that the northern part (red oval) had been surveyed (the southeastern part is surveyed annually).

**ESSENTIAL FISH HABITAT**

Alaska has more than 50% of the U.S. coastline and leads the Nation in fish habitat area and value of fish harvested, yet large gaps exist in our knowledge of Essential Fish Habitat (EFH) in Alaska.

Current AFSC research 1) identifies habitats that contribute most to the survival, growth, and productivity of managed fish and shellfish species; and 2) determines how to best manage and protect these habitats from human disturbance and environmental change.

**OCEAN ACIDIFICATION**

Approximately 30-50% of global anthropogenic CO₂ emissions are absorbed by the world’s oceans. Increased CO₂ uptake by the oceans is expected to reduce surface ocean pH by 0.3 – 0.5 units over the next century. Ocean acidification likely will impact the ability of marine calcifiers, such as corals and mollusks, to make shells and skeletons from calcium carbonate.

Current AFSC research measures the effect of ocean pH on king crab, pollock, cod and coral and ultimately will forecast population and economic effects.

**HEPR TEAM MEMBERS**

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**MORE INFORMATION**

www.afsc.noaa.gov/HEPR/default.htm