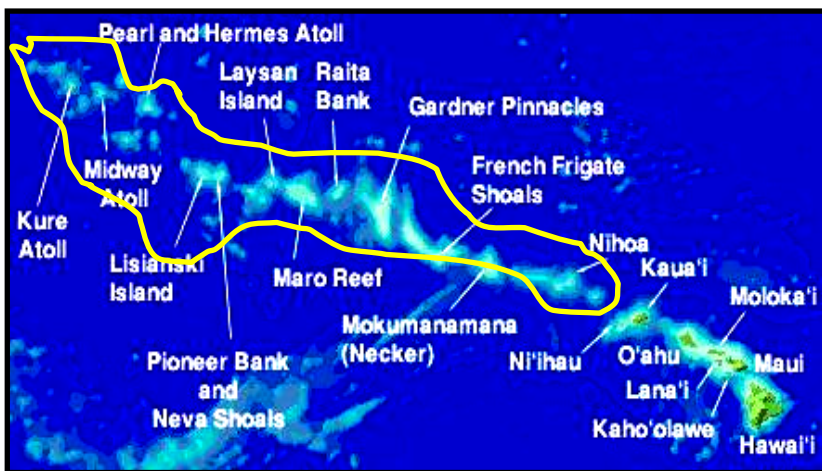




NURP Research Sheds Light on Hawaiian Monk Seal and Precious Coral Interaction

The Northwestern Hawaiian Islands (NWHI) are home to the Hawaiian monk seal (*Monachus schauinslandi*), listed as an endangered species since 1976. NOAA's Undersea Research Program (NURP) research, funded through the NOAA Undersea Research Center for Hawaii and the Western Pacific (HURL) and led by NOAA fishery biologist Frank Parrish, has contributed significantly to a greater understanding of the reclusive monk seal's foraging patterns.



Hawaiian Island archipelago. NWHI are inside yellow line. (Map: NOAA)



Studies of Hawaiian monk seals fitted with satellite tags had revealed that as many as one third were diving hundreds of meters to specific sites on the ocean floor.

NURP Research

In 1998, NURP-funded researchers surveyed these sites with HURL's *Pisces* submersibles and RCV- 150 ROV. They found the sites contained beds of precious corals, a select group of deep sea corals commercially harvested for the jewelry trade. It appeared the seals were visiting the coral beds to feed on deep-slope fish.



Top: Hawaiian Monk seal fitted with two satellite tags. Photo: NOAA Fisheries.
Center: *Pisces V* submersible. Photo: HURL.
Bottom: Hawaiian monk seal swimming in deep water cave. Photo: Frank Parrish.

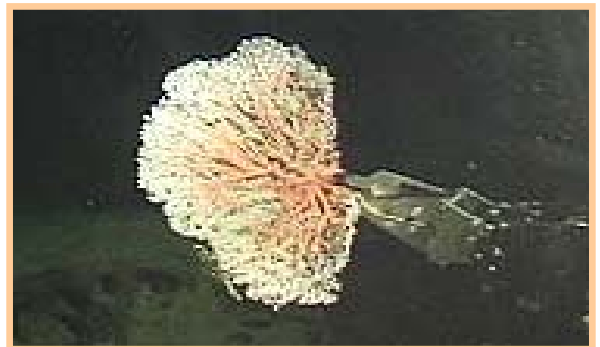
Spurred by the 1998 findings as well as by a proposed expansion of Hawaii's deep sea coral fishery, NURP funded research in 2000 and 2001 to determine whether an association existed between deep-slope fish and precious corals. Fish assemblages in habitats with and without precious corals were assessed at sites both in the NWHI and main eight islands.

The data indicated some co-occurrence of fish and larger colonies of deep sea corals. Observations suggest the corals, particularly colonies of gold coral (*Gerardia sp.*), may provide enough vertical relief and structure that they constitute an important element in deep sea fish habitat.

Research Implications

Research results contributed to a decision by the Western Pacific Regional Fisheries Management Council to ban the use of nonselective fishing gear for harvesting precious corals at seal forage sites. Precious corals have since been afforded greater protection with the establishment of the NWHI Coral Reef Ecosystem Reserve, which extends to depths that include deep sea corals.

The slow growth rate of most deep sea corals suggests that harvesting precious corals may have significant, long-term impacts on associated fisheries. Present studies are determining whether destruction of precious coral habitat could make deep-slope fish less accessible to monk seals. Additional studies are planned to determine whether protection of precious corals will require greater regulation within Hawaii's Exclusive Economic Zone.



Hawaii's four species of precious corals are the black coral (*Antipathes sp.*), gold coral (*Gerardia sp.*), pink coral (*Corrallium Sp.*) and bamboo coral (*Isididae*). **Top:** 2 m high colony of gold coral. **Center:** pink coral retrieved with RCV-150's manipulator arm. **Bottom:** Black coral. Photos: Frank Parrish

For further information contact:

John Wiltshire,
NURP/HURL, Honolulu
johnw@soest.hawaii.edu



Barbara Moore, NURP Director
1315 East West Highway
Silver Spring, MD 20910
Barbara.Moore@noaa.gov