

September 12, 1997 F/SWC2:FAP:FLF
CR9708-2.FAP

CRUISE REPORT

VESSEL: *Townsend Cromwell*, Cruise 97-08 (TC-223)

CRUISE PERIOD: August 4-25, 1997

AREA OF OPERATION: Northwestern Hawaiian Islands (Fig. 1)

TYPE OF OPERATION: Personnel from the Southwest Fisheries Science Center (SWFSC) Honolulu Laboratory (HL), National Marine Fisheries Service (NMFS), NOAA surveyed habitat, and fish abundance to support the continuing study of monk seal forage base. Fish censuses were done in waters around French Frigate Shoals (FFS) and Midway Island (MID).

ITINERARY:

- 4 August - Ray Boland, Edward DeMartini, Kevin Weng, Richard Grigg, Dennis Pesch, John Francis, Jeff Wayman, John Eddy, Greg Marshall embarked ship and departed Snug Harbor at 1200.
- 6 August - Arrived FFS 1700. Embarked Frank Parrish, and disembarked Greg Marshall, John Francis, John Eddy, and Jeff Wayman. Off-loaded supplies for island.
- 7-10 August - Conducted diving operations and assisted, as needed, with shore-based activities. Departed FFS 1500 on 10 August.
- 11-13 August - Transited to MID. Arrived 1600 on 13 August.
- 14-17 August - Conducted diving operations at MID. Richard Grigg and Dennis Pesch disembarked before the ship departed MID at 1000 on 17 August.
- 18-20 August - Transited. Arrived SE Brooks Bank at 1700 and conducted camera survey of summit until dark.

- 21 August - Continued camera survey of Brooks Banks until 1100 and then travelled to FFS and completed some survey dives.
- 22 August - Loaded gear from FFS and departed for Honolulu at 1300.
- 23-25 August - Transited to Honolulu. Arrived Honolulu 0800, All personnel disembarked.

MISSIONS AND RESULTS:

- A. Visual census of reef fish assemblages at fixed historical transect stations.

Nine stations were surveyed at both FFS and MID by divers who counted and estimated size of all non-cryptic fish species. Fixed transects represented both patch reef and barrier reef habitats. Patch reefs (~50 m diameter) are surveyed in their entirety and barrier reef habitats are surveyed with 50-m belt transects. Fish on each transect are counted by two divers and their size estimated by a third diver. Counts from these surveys will be compared with counts made at the same locations in previous years.

- B. Habitat surveys by remote video cameras and divers.

Habitat data was collected to better evaluate the relevance of habitat observed with seal-mounted video instruments. A remote video camera was used to examine the summit of Brooks Banks. An umbilical was added to the video system to allow real time monitoring and lights for night work. Fifteen camera drops were done and each drop involved a three-tenths of a mile drift. Divers were used to examine habitats too shallow for the ship to operate. The dive team equipped with a video camera covered a comparable area to the ship supported surveys.

- C. Fish collections for DNA analysis.

Specimens of reef fish commonly observed in the spews and scat of seals were collected by divers for DNA/lipid analysis. Fish were collected at both FFS and MID. Determining the DNA/lipid signatures of seal prey items are being evaluated as a tool to evaluate the seals foraging.

- D. General observations and miscellaneous activities.

Bird flock, fish school, and marine mammal sightings were recorded by the ship's officers and crew during daylight hours, whenever possible. Standard weather observations were made at 0000, 0600, 1200 and 1800 (G.m.t.) by the ship's officers and crew.

**SCIENTIFIC
PERSONNEL:**

Frank Parrish, Chief Scientist, National Marine Fisheries Service
(NMFS), Southwest Fisheries Science Center (SWFSC), Honolulu
Laboratory (HL)

Edward DeMartini, Fishery Biologist, NMFS, SWFSC, HL

Raymond Boland, Cooperating scientist, Joint Institute for Marine
and Atmospheric Research (JIMAR), HL

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Submitted by:

Frank Parrish
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Approved by:

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Attachment