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CRUISE REPORT

VESSEL: Townsend Cromwell, Cruise 00-10 Leg I (TC-260)

CRUISE PERIOD: August 9–August 25, 2000

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

TYPE OF OPERATION: Trapping and conventional diving operations were conducted at French Frigate Shoals (FFS). Traps were set along the northwest contours of the atoll at depths between 25 and 45 fm in an attempt to collect deep fish and crustaceans for fatty acid analysis. Divers conducted surveys of reef fish communities as part of the annual assessment of monk seal forage base by revisiting sites monitored since the early 1990s. Towed surveys using snorkelers were used to check sites previously cleared of marine debris in an attempt to estimate natural accumulation rates of derelict nets. Specimens of shallow reef fish were also collected for analysis of fatty acid signatures to provide reference data with which to evaluate the fatty acid signatures collected from monk seals.

ITINERARY:

9 August	Start of cruise. On board Ray Boland, Frank Parrish, Mike Sawyer and Jerard Jardin. Depart Snug Harbor at 1000 and proceeded to FFS.
11 August	Arrived FFS, set a string of lobster traps and off loaded supplies for Tern Island. Disembark Jardin. Embark Mary Donohue and Stephanie Holzworth. Begin diving operations.
12 - 20 August	Conduct trapping and diving operations at FFS Atoll. On the 20th Donohue disembarks and Jardin boards the ship.
21 August	Divers collected specimens with spears and deeper species collected by handline fishing.

22 August	Embark Brenda Becker and Irene Kinan. Depart FFS at noon and travel to Necker to deploy two archival temperature recorders.
23 August	In transit to Lehua Rock.
24 August	Arrive Lehua Rock 0900 and conduct diving surveys of black coral on the south side of the rock and monk seal surveys of west Niihau.
25 August	Arrive Honolulu, all disembark, preparations made for the second leg of the cruise.

MISSIONS AND RESULTS:

A. Revisit and collect data on reef fish abundance at fixed standardized stations at FFS.

All nine of the fixed stations were resurveyed by Boland and Parrish. Fixed transects represented both patch reef and barrier reef habitats. Patch reefs (~50 m diameter) were surveyed in their entirety, and barrier reef habitats were surveyed with 50-m belt transects. Fish on each transect were counted by both divers, who also estimated sizes of the fish. At each of the expansive habitat stations (numbers 4, 6,7, and 8) a calibration survey was conducted to allow the surveys to be shifted to video format which would permit any trained diver to collect the data and not be reliant on the same three observers year after year.

B. Collection of specimens for fatty acid analysis for monk seal forage studies.

Specimens of reef fish and invertebrates were collected using traps and divers. Priority collections were to obtain specimens at depths between 25 and 45 m. Six nights of trapping were done with marginal catches of fish and invertebrates. Collections by divers using spears focused on rounding out the sample size for each of the species collected on previous trips.

C. Marine debris surveys

Sites around Tern Island and the Whale Skate vicinity which were cleaned of marine debris in previous years were surveyed to estimate the rate at which derelict nets accumulate.

D. Night fish counts

Divers conducted a single night survey at station 7. Time limitations prevented additional evening surveys.

E. Deploy archival temperature recorders.

Deployed two archival temperature recorders and sonic pingers on Necker Bank for recovery next year.

F. Survey Lehua Rock

Visit the south wall of Lehua Rock to develop black coral measuring methodology to be used on second leg of the cruise.

G. Oceanographic observations

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Collection of oceanographic data. A single CTD deployment was done at standardized stations located south of Nihoa, Necker and FFS.

SCIENTIFIC PERSONNEL:

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Attachment