

September 2, 1999

F/SWC2:RBM:FLF
CR9907-2.RBM

CRUISE REPORT

VESSEL: *Townsend Cromwell*, Cruise 99-07 (TC-245) (Fig. 1)

CRUISE PERIOD: 6 June-4 July 1998

AREA OF OPERATION: Northwestern Hawaiian Islands (NWHI)

TYPE OF OPERATION: Personnel from the Southwest Fisheries Center (SWFSC) Honolulu Laboratory (HL), National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA) conducted lobster trapping operations in the waters of the Northwestern Hawaiian Islands. Supplies were delivered to the field camp at French Frigate Shoals (FFS).

ITINERARY:

6 June Start of cruise. On board were Shara Dellatore, Zac Grant, Thomas Kazama, Danika Kleiber, Rob Marshal, Robert Moffitt, Ryan Okano, Judy Reeves, and Lynne Watts. Departed Snug Harbor at 1800 and proceeded to Necker Island conducting CTD casts en route.

8 June Arrived at Necker Island. Commenced lobster fishing operations.

9-21 June Continued lobster trapping operations.

22 June Finished trapping operations. Departed Necker Island and proceeded to FFS conducting CTD casts en route.

23 June Arrived at FFS and off-loaded fuel and supplies. Proceeded to Maro Reef conducting a CTD cast en route.

- 24 June Arrived at Maro Reef. Commenced lobster fishing operations.
- 25-29 June Continued lobster trapping operations.
- 30 June Hauled last lobster traps. Departed Maro Reef and proceeded to Tern Island, FFS.
- 1 July Arrived at Tern Island. Embarked Greg Marshall; transited to Snug Harbor, Oahu.
- 4 July Arrived at Snug Harbor, Oahu. End of cruise.

MISSIONS AND RESULTS:

- A. Conduct lobster trapping operations at selected sites in the NWHI using plastic lobster traps.
1. Collected data on the abundance and species composition of trap-captured lobsters at two banks in the NWHI to compare with the results of previously collected data.

A total of 1,676 spiny lobster, *Panulirus marginatus*; 3,242 slipper lobster, *Scyllarides squammosus*; 36 ridgeback slipper lobster, *S. haanii*; 23 Chinese slipper lobster, *Parribacus antarcticus*; 3 green spiny lobster, *Panulirus penicillatus*; and 57 Kona crab, *Ranina ranina*, were caught in 279 lobster trapping stations conducted on adult lobster fishing grounds using black plastic (Fathom's Plus) lobster traps with a 1 in by 2 in mesh. Each station consisted of a single string of traps. Strings were composed of either 8 or 20 traps separated by 20 fathoms of ground line. Traps were baited with 1.5-2.0 lb of cut mackerel and soaked overnight. Traps were generally set within one of two depth regimes: 10-20 or 20-35 fathoms.

Our total effort at Maro Reef was 932 trap-nights yielding a total of 149 spiny lobster, 2,449 slipper lobster, 3 ridgeback slipper lobster, 0 green spiny lobster, 11 Chinese slipper lobster, and 56 Kona crab. Catch rates of spiny lobster were low at Maro Reef, approximately 0.16 spiny lobster per trap-night for all depths and locations (this is slightly higher than the 1998 catch rate of 0.13). Catch rates of slipper lobster were high at approximately 2.63 slipper lobster per trap-night (slightly lower than the 1998 catch rate of 2.70). A total of 56 kona crab were caught at Maro Reef in quad 2-6 (compared to 62 caught here in 1998).

Our total effort at Necker Island was 2,229 trap nights yielding 1,527 spiny lobster, 793 slipper lobster, 33 ridgeback slipper lobster, 12 Chinese slipper lobster, 3 green spiny lobster, and 1 Kona crab. Catch rates of spiny lobster were low at 0.68 lobster per trap night (similar to the 1998 catch rate of 0.72). Slipper lobster catch rates were high for Necker Island at 0.36 lobster per trap night (similar to the 1998 catch rate of 0.40).

2. Obtain length-frequency data on spiny and slipper lobsters to compare with those of previous years and to refine estimates of growth and mortality.

Carapace length and tail width measurements were recorded for approximately 1,700 spiny and 3,200 slipper lobster.

3. Collect lobster tails and ovaries for maturation and weight-length studies.

We collected ovaries and tails from approximately 70 spiny lobster from Necker Island and from approximately 70 slipper lobster from Maro Reef. The ovaries were preserved in formalin and tails frozen and returned to the laboratory for maturity analysis. The ovaries will be examined histologically for developmental stage and the pleopods of the corresponding tails measured. It is hoped that the pleopods will exhibit a morphological characteristic that corresponds to the onset of maturity. Approximately 200 tails of each species were collected for fecundity and maturity studies.

4. Conduct ACDP transects at night on predetermined tracks.

A total of nine ACDP transects were conducted at Necker Island and four at Maro Reef.

5. Conduct CTD casts at preselected sites.

A total of five CTD casts were conducted at preselected sites en route from Honolulu to Maro Reef.

**SCIENTIFIC
PERSONNEL:**

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Attachment