



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
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CRUISE REPORT

VESSEL: *Townsend Cromwell*, Cruise 01-07 (TC-270)

CRUISE PERIOD: June 11-July 10, 2001

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

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

ITINERARY:

- 10 June Start of cruise. On board were Kim Campbell, Karen D'Avino, Jason Galle, Zac Grant, Rob Marshall, Karl Meyer, Robert Moffitt, Russell Moffitt, Yannis Papastamatiou, and Emilie Weed. Departed Snug Harbor at 0900 and proceeded to Tern Island, FFS.
- 13 June Arrived at Tern Island. Off-loaded supplies and disembarked Meyer and Papastamatiou. Departed FFS at 1500 and proceeded to Maro Reef.
- 14 June Arrived at Maro Reef, but headed on to Laysan for a medical emergency at the field camp.
- 15 June Arrived at Laysan Island and delivered needed medications. Departed Laysan and transited to Maro Reef. Arrived Maro Reef at 1500 and commenced lobster trapping operations.
- 16-19 Continued lobster trapping operations.
- 20 June Finished trapping operations and proceeded to Gardner Pinnacles.



- 21 June Arrived at Gardner Pinnacles and conducted lobster and deepwater trapping operations.
- 22 June Continued trapping operations at Gardner Pinnacles.
- 23 June Completed trapping operations and proceeded to Necker Island.
- 24 June Arrived at Necker Island at 1830. Commenced lobster and deepwater trapping operations.
- 25 June-7 July Continued lobster and deepwater trapping operations.
- 8 July Hauled last lobster traps. Departed Necker Island and proceeded Snug Harbor, Oahu.
- 10 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 abundance and species composition of trap-captured lobster at two banks in the NWHI to compare with results of previously collected data.

A total of 1,747 spiny lobster, *Panulirus marginatus*; 3,678 slipper lobster, *Scyllarides squammosus*; 17 ridgeback slipper lobster, *S. haanii*; and 19 Chinese slipper lobster, *Parribacus antarcticus*, were caught in 265 lobster trapping stations conducted on adult lobster fishing grounds using black plastic (Fathom's Plus) lobster traps with a 1 in x 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 794 trap-nights yielding a total of 189 spiny lobster, 2,945 slipper lobster, 1 ridgeback slipper lobster, 0 green spiny lobster, and 10 Chinese slipper lobster. Catch rates of spiny lobster were low at Maro Reef, approximately 0.24 spiny lobster per trap-night for all depths and locations (this is considerably higher than the 1999 catch rate of 0.16 and nearly the same as the 2000 catch rate of 0.25). Catch rates of slipper lobster

were very high at approximately 3.71 slipper lobster per trap-night (considerably higher than the 1999 catch rate of 2.63 and the 2000 catch rate of 1.98).

Our total effort at Necker Island was 2,193 trap nights yielding 1,558 spiny lobster, 733 slipper lobster, 16 ridgeback slipper lobster, 9 Chinese slipper lobster, and 1 green spiny lobster. Catch rates of spiny lobster were moderate at 0.71 lobster per trap night (considerably lower than the 2000 catch rate of 0.83 and similar to the 1999 catch rate of 0.68). Slipper lobster catch rates were high for Necker Island at 0.33 lobster per trap night (similar to the 2000 catch rate of 0.35).

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 1,840 spiny and 3,825 slipper lobster.

3. Collect pleopod measurements from female lobster for ongoing maturation studies.

Pleopod and tail width measurements were taken from nearly all female spiny lobster and slipper lobster at Maro Reef and Necker Island.

4. Collect spiny lobster to return alive to the laboratory for tag retention and live weight studies.

We collected and returned approximately 130 live spiny lobster.

5. Collect fish and invertebrate specimens for monk seal diet fatty acid analysis.

We collected specimens from trapping stations ranging in depth from 15-340 fathoms. We collected specimens of several genera including *Heterocarpus*, *Plesionika*, *Paromola*, *Squalus*, *Randallia*, *Progeryon*, *Cyrtomaia*, and *Parapagurus*.

**SCIENTIFIC
PERSONNEL:**

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Attachment

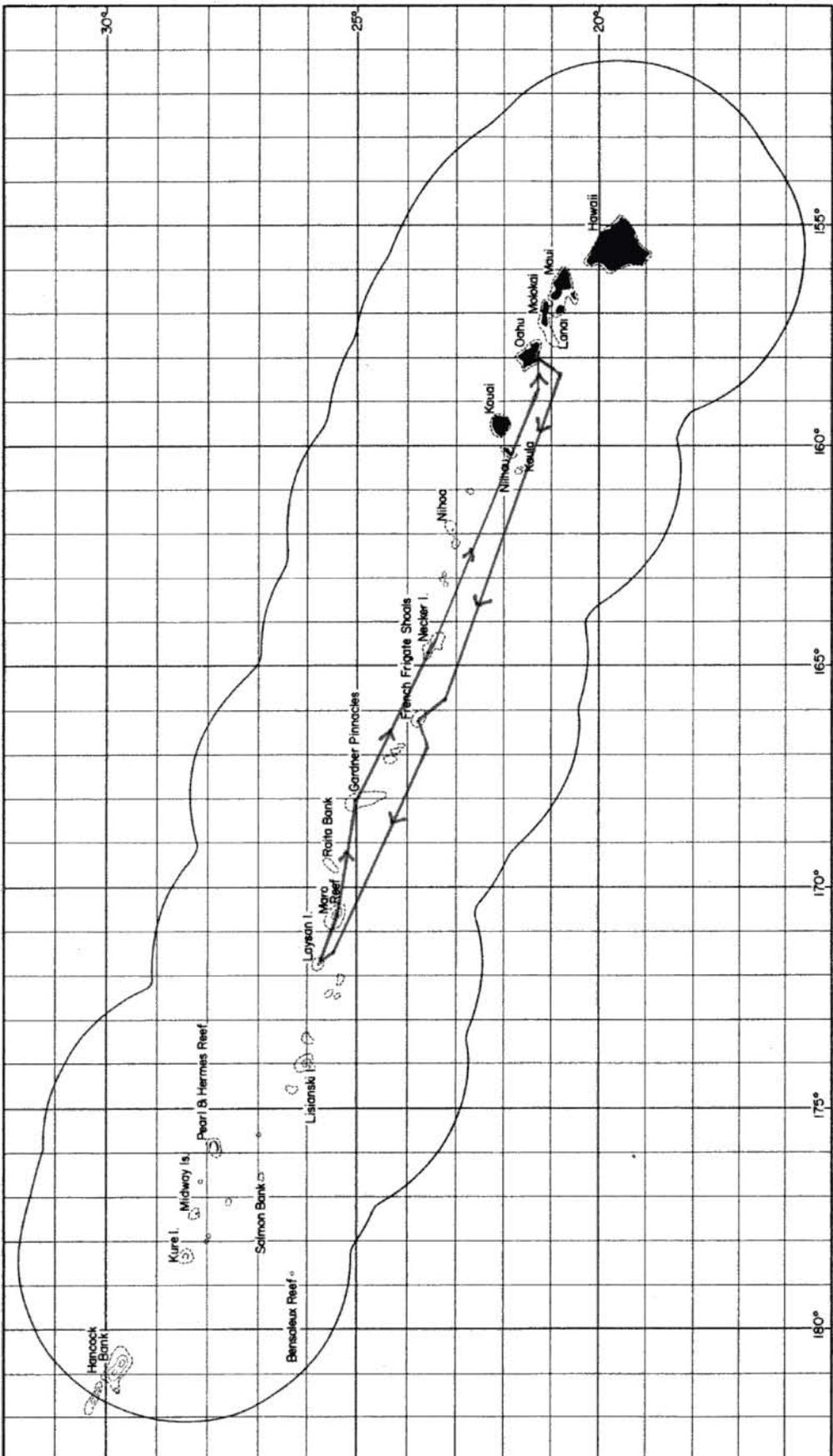


Figure 1.--Track of NOAA ship Townsend Cromwell cruise TC-01-07 (TC-270), June 11 to July 10, 2001.