

August 3, 1995 F/SWC2:RBM:JLK  
CR9501-2.RBM

### CRUISE REPORT

**VESSEL:** *Townsend Cromwell*, Cruise TC-95-01 (TC-197)

**CRUISE PERIOD:** June 22-July 14, 1995

**AREA OF OPERATION:** Northwestern Hawaiian Islands (NWHI) (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 NWHI. Supplies and personnel were delivered to field camps at Laysan and Lisianski Islands, and the Kure field camp was broken down.

#### ITINERARY:

22 June Start of cruise. On board were Philip Anderson, Geoff Bailey, Wayne Haight, Kevin Landgraf, Jeff Marks, Robert Moffitt, Alison Perkins, and Gregory Spencer. Departed Snug Harbor at 2130 and proceeded to Necker Island.

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

25-29 June Continued lobster trapping operations.

30 June Finished trapping operations. Departed Necker Island and proceeded to Maro Reef.

2 July Arrived at Maro Reef. Commenced lobster trapping operations.

3-10 July Continued lobster trapping operations.

- 11 July Finished lobster trapping operations. Departed Maro Reef. Proceeded to Laysan Island. Arrived Laysan Island. Off-loaded supplies. Disembarked Marks, Perkins, and Spencer. Departed Laysan. Proceeded to Lisianski Island.
- 12 July Arrived at Lisianski Island. Off-loaded supplies. Departed Lisianski Island. Proceeded to Kure Atoll.
- 13 July Arrived at Kure Atoll. Broke down Kure Atoll field camp. Embarked Lucy Keith, Lance Jeffrey, and Gordon Olayvar. Departed Kure Atoll. Proceeded to Midway Islands.
- 14 July Arrived at Midway Islands. 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 previous years. A total of 4,090 lobster were caught in 152 lobster trapping stations conducted on adult lobster fishing grounds using black plastic (Fathom's Plus) lobster traps with a 1-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 fm of ground line. Traps were baited with 1.5-2.0 lb of cut mackerel and soaked overnight. Traps were set within three depth ranges: 10-20, 20-35, and 50-100 fm. Legal sizes are defined by tail widths of 50 mm for spiny lobster (*Panulirus marginatus*) and 56 mm for slipper lobster (*Scyllarides squammosus*).

Catch rates of legal spiny lobster were low at Maro Reef, approximately 0.09 lobster per trap-night for all depths and locations. Catch rates were generally higher in the shallower depth range. Catch rates of sublegal spiny lobster were also low, approximately 0.05 all depths and areas. Catch rates of legal slipper lobster were high (>1.00/trap-night) at most of the sites at the shallower depths (only 0.20 in quad 4-7). Legal slipper catch rates varied from 0.00-0.78 in the 20-35 fm sets and 0.00-0.02 in the 50-80 fm sets. Sublegal slipper catch rates varied from 0.06 (quad 4-7) to 1.75 at the shallower depths and were much less (0.00 to 0.28) at other depths. Legal slipper lobster catch rates appeared higher than 1994 rates, and short

rates were similar. Spiny lobster catch rates from 1995 at shallower depths appear to be very similar to those obtained in 1994 for legal lobster, ranging from 0.01-0.21 in 1995 and 0.02-0.20 in 1994 but less for short lobster (0.01-0.22 in 1995 vs 0.00-0.30 in 1994). Catch rates of spiny lobster at deeper depths were poor (0.02). A few ridgeback slipper lobster, *Scyllarides haanii*, were caught at the deeper depths (0.03/trap-night). A total of 44 kona crab, *Ranina ranina*, were caught in quad 2-6.

Catch rates of legal spiny lobster the shallower depths at Necker Island were similar to those of 1994. They ranged from 0.21 per trap-night in quad 6-5 (0.14 in 1994) to 1.15 in quad 5-7 (1.26 in 1994). Total catch of spiny lobster (including sublegal) was slightly higher than 1994, ranging from 0.34 to 5.15 in 1995 and 0.21 to 5.61 in 1994. Total slipper lobster catch in 1995 was very similar to that of 1994, but the range in catch rates was much narrower in 1995 (0.16-0.60 vs 0.15-1.15). In general, catches at the shallowest depths were greater than those from the two deeper depth ranges. Ridgeback slipper lobster were particularly abundant in quad 6-5 traps set at 50-72 fm (50 lobster in 40 traps).

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 2,400 spiny and 1,550 slipper lobsters.

3. Conduct lobster trapping in shallow waters, on the barrier reef and inside Maro Reef lagoon.

A total of 6 stations were occupied in shallow water (1-13 fm) on the barrier reef and inside the Maro Reef lagoon. Ten to fifteen traps were set singly at each station. Traps were baited with mackerel and soaked for 1 night. Lobster were counted, sexed, and measured from each trap. Sixty-nine spiny, 39 green spiny (*P. penicillatus*), and 26 slipper lobsters were caught for overall catch rates of 0.85, 0.48, and 0.32 per trap-night, respectively. The CPUE of spiny lobsters was much less than that obtained in the same locations last year. Much of this decrease is from the lack of juveniles taken from a spur on the northwest portion of the barrier reef.

**SCIENTIFIC  
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Attachment