

August 25, 2000

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CRUISE REPORT

VESSEL: *Townsend Cromwell*, Cruise 92-02 (TC-170)

CRUISE PERIOD: 16 March-8 April 1992

AREA OF OPERATION: Waters north of the Main Hawaiian Islands and the Northwestern Hawaiian Islands (Fig. 1)

TYPE OF OPERATION: Personnel from the Southwest Fisheries Science Center (SWFSC) Honolulu Laboratory (HL) conducted fishing operations to collect biological samples for ongoing life history studies on major species associated with the North Pacific pelagic driftnet fisheries, particularly the flying squid, *Ommastrephes bartramii*, and the Pacific pomfret, *Brama japonica*. Sampling included plankton tows with 2m² and 4m² ring nets and Cobb trawls for micronekton. Concurrent environmental data were collected with expendable bathythermograph (XBT) and conductivity-temperature-depth (CTD) casts. In addition, personnel and supplies were transported to Laysan and Lisianski Islands to establish Protected Species Investigation (PSI) monk seal research field camps. Supplies were also transported to the U.S. Fish and Wildlife Service field station at Tern Island.

ITINERARY:

16 March - Departed Snug Harbor, Honolulu, at 1100. On board; Brenda L. Becker, Keith A. Bigelow, Roian S. E. Egnor, Lisa M. Hiruki, Heather L. Johnston, John R. Klavitter, Leona P. Laniawe, Walter A. E. Machado, Timothy J. Ragan, Nathan W. Raring, and Michael P. Seki. Conducted vessel speed trials off leeward Oahu. Completed trials at 1420 and proceeded for Tern Island, French Frigate Shoals.

- 18 March - Arrived Tern Island. Offloaded supplies and departed for Laysan Island.
- 19 March - Arrived Laysan Island.
- 20 March - Disembarked Becker, Klavitter, Laniawe, Machado, and Ragan. Offloaded PSI field camp gear and supplies, departing later that day for Lisianski Island.
- 21 March - Arrived Lisianski Island. Disembarked Egnor, Hiruki, and Johnston. Offloaded PSI field camp gear and supplies. Departed for first scheduled fishing station approximately 120 nmi southwest of Maro Reef.
- 22 March - Arrived at station 1. Commenced fishing and oceanographic operations. Sampling involved plankton tows with a 4m² ring net, Cobb trawls for micronekton, and XBT and CTD casts.
- 23 March - Sampling abandoned prior to arrival to scheduled station 2 at Maro Reef. Vessel proceeded to Kauai to disembark Bigelow for his return to Honolulu.
- 26 March - Arrived at Nawiliwili Harbor, Kauai, disembarked Bigelow and proceeded to new station 2 of modified sampling grid located at the 1000 fm contour north of Kauai. Upon arriving on station, fishing and oceanographic operations resumed. A 2m² ring net (in lieu of the 4m² ring) was employed to sample plankton.
- 27 March - Conducted fishing and oceanographic operations at
7 April each sampling site (Fig. 1).
- 8 April - Arrived Snug Harbor, Honolulu. Disembarked Raring and Seki. End of cruise.

**MISSIONS
AND
RESULTS:**

- A. Collect paralarval squid and juvenile pomfret with plankton nets and midwater trawls for ongoing life history studies.

A total of 104 ring net tows (99 with 2m² ring; 5 with 4m² ring) and 29 Cobb trawls were conducted to capture the early life stages of the target species. With the exception of 4 surface tows conducted at station 8 with the 2m² ring net, all of the ring net tows were conducted in a stepped oblique fashion targeting a maximum depth of 100 m. Each deployment of the net was equipped with a Wildlife Computers time-depth recorder (TDR) to obtain data on the actual depths fished.

All tows were 40-45 min in duration. Cobb trawls targeted waters 0-200 m and were also conducted in a stepped oblique fashion. Where possible, early life stages of Pacific pomfret and ommastrephids were sorted out, and saved in 95% ethanol for ongoing age and growth studies. Otherwise, plankton ring net samples were fixed in a 6% formalin solution, transferred into and preserved in 50% isopropanol, and returned to the HL for sorting and analysis. Cobb trawl micronekton samples were sorted at sea, fixed in a 10% formalin solution, preserved in 50% isopropanol, and returned to the HL for analysis.

- B. Collect environmental data corresponding to the area of squid and pomfret fishing operations.

Fourteen CTD and 14 XBT casts (Sippican T-4 probes) were conducted during the cruise. CTD casts were made to 1,000 m; water samples were collected at 1,000 m and at the salinity minimum.

- C. Transport PSI personnel and supplies to field camps at Tern, Laysan, and Lisianski Islands.

Supplies were offloaded at Tern Island, French Frigate Shoals on 18 March. Laysan Island PSI field camp was established on 20 March, when PSI personnel disembarked, along with their gear and supplies. Subsequently, field camp for monk seal studies at Lisianski Island was established on 21 March.

**SCIENTIFIC
PERSONNEL:**

Michael P. Seki, Chief Scientist, National Marine Fisheries Service (NMFS), Southwest Fisheries Science Center (SWFSC), Honolulu Laboratory (HL).

Nathan W. Raring, Research Assistant, NMFS, SWFSC, HL.

(16-20 March)

Brenda L. Becker, Wildlife Biologist, NMFS, SWFSC, HL.

John R. Klavitter, Research Assistant, NMFS, SWFSC, HL.

Leona P. Laniawe, Research Assistant, NMFS, SWFSC, HL.

Walter A. E. Machado, Research Assistant, NMFS, SWFSC, HL.

Timothy J. Ragan, Fishery Biologist, NMFS, SWFSC, HL.

(16-21 March)

Roian S. E. Egnor, Research Assistant, NMFS, SWFSC, HL.

Heather L. Johnston, Research Assistant, NMFS, SWFSC, HL.

Lisa M. Hiruki, Wildlife Biologist, NMFS, SWFSC, HL.

(16-26 March)

Keith A. Bigelow, Fishery Biologist, NMFS, SWFSC, HL.

Submitted by:

Michael P. Seki
Chief Scientist

Approved by:

George W. Boehlert
Director, Honolulu Laboratory

Attachment