



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
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November 16, 2000 F/SWC2:MJD:FLF
CR0012-1.MJD

CRUISE REPORT

VESSEL: *Townsend Cromwell*, Cruise TC-00-12 (TC-262)

CRUISE PERIOD: 9 October-5 November 2000

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

TYPE OF OPERATION: Personnel from the Southwest Fisheries Science Center (SWFSC) Honolulu Laboratory (HL), National Marine Fisheries Service (NMFS), NOAA along with cooperators from federal, state and nongovernment organizations surveyed and removed marine debris from the critical habitat of the Hawaiian monk seal. Survey and removal efforts were conducted in waters and on beaches at Lisianski Island, Pearl and Hermes Reef, Kure Atoll, and Midway Island.

ITINERARY:

9 October Mary Donohue, Athline Clark, Amy George, Scott Godwin, Nancy Hoffman, Stephani Holzwarth, and Jen Schorr embarked the ship and departed Midway Island at 1600.

10 October Arrived Pearl and Hermes Atoll. Began surveys of near shore waters for derelict nets and line.

10-15 October Snorkel divers conducted marine debris surveys and removal of debris from near shore waters and beaches of Pearl and Hermes Atoll.

12 October Embarked Karen Geisler. Snorkel divers conducted marine debris surveys and removal of debris from near shore waters and beaches of Pearl and Hermes Atoll.

15 October Embarked Nina Young, Raymond Boland, and Greg George from U.S. Coast Guard Cutter *Kukui*.



- 15-19 October Snorkel divers conducted marine debris surveys and removal of debris from near shore waters and beaches of Pearl and Hermes Atoll. Departed Pearl and Hermes Atoll on 19 October for Kure Atoll.
- 20-21 October Snorkel divers conducted marine debris surveys and removal of debris from near shore waters and beaches of Kure Atoll. Departed Kure Atoll on 21 October for Midway Atoll Harbor due to inclement weather.
- 22 October Marine debris previously collected from waters of Midway Island were loaded on *Kukui*. In the afternoon, departed from Midway Atoll for Kure Atoll.
- 23 October Arrived Kure Atoll. Divers conducted marine debris surveys and removal of debris from near shore waters and beaches of Kure Atoll.
- 24-27 October Snorkel divers conducted marine debris surveys and removal of debris from near shore waters and beaches of Kure Atoll. Departed Kure Atoll on 27 October for Lisianski Island.
- 29 October Arrived Lisianski Island. Snorkel divers conducted marine debris surveys and removal of debris from near shore waters and beaches of Lisianski Island.
- 30-31 October Snorkel divers conducted marine debris surveys and removal of debris from near shore waters and beaches of Lisianski Island. Departed Lisianski Island on 31 October for Honolulu.
- 5 November Arrived Honolulu 0800. All personnel disembarked.

MISSIONS AND RESULTS:

- A. Conduct diver surveys and debris removal from high entanglement risk zones (HERZ) in near shore waters of (1) Pearl and Hermes Reef, (2) Kure Atoll, and (3) Lisianski Island.
1. A HERZ, represented by 1.00 km² of sea surface area established in 1999 at the northern end of North Islet at Pearl and Hermes Reef, was resurveyed and cleaned. The water column represented by an additional 0.28 km² of sea surface area was opportunistically surveyed outside the HERZ by personnel in small boats in the vicinity of Seal-Kittery and Southeast Islets. Surveys at North Islet were conducted by two snorkel divers towed behind a small boat, concurrently. All transects

and debris items were documented using Global Positioning Systems. A total of 7,875 kg of derelict nets and line were located and removed from the waters of Pearl and Hermes Reef.

2. A HERZ, represented by 1.42 km² of sea surface area, was established at the northern end of Green Islet at Kure Atoll and surveyed and cleaned of marine debris. The water column represented by an additional 0.13 km² of sea surface area was opportunistically surveyed outside the HERZ by personnel in small boats. All transects and debris items were documented using Global Positioning Systems. Surveys at Kure Atoll were conducted by two snorkel divers towed behind a small boat, concurrently. A total of 1664 kg of derelict nets and line were located and removed from the waters of Kure Atoll.
 3. A HERZ, represented by 1.17 km² of sea surface area, was established in 1999 at the northern end of Lisianski Island. A portion of this zone, approximately 0.56 km², was resurveyed and cleaned during *Townsend Cromwell* cruise TC-00-12. Surveys were conducted by two snorkel divers towed behind a small boat, concurrently. All transects and debris items were documented using Global Positioning Systems. A total of 80 kg of derelict nets and line were located and removed from the waters of Lisianski Island.
- B. Remove debris located on the beaches of Pearl and Hermes Atoll, Kure Atoll, Midway Atoll and Lisianski Island.
1. A total of 1,991 kg of derelict nets and line were recovered from the beaches of Pearl and Hermes Atoll by personnel supported by small boats.
 2. A total of 1,405 kg of derelict nets and line were recovered from the beaches of Kure Atoll by personnel supported by small boats.
 3. A total of 7,457 kg of derelict nets and line previously recovered from the coral reefs and beaches of Midway Atoll by the U.S. Fish and Wildlife Service (USFWS) were removed from the dock at Midway Atoll by personnel supported by small boats.
 4. A total of 1,955 kg of derelict nets and line were recovered from the beaches of Lisianski Island by personnel supported by small boats.

- C. Deploy and recover conductivity-temperature-depth (CTD) instrument at fixed stations within the Northwestern Hawaiian Islands.

CTD casts were successfully completed at the following eight predetermined stations in the Northwestern Hawaiian Islands:

| Station # | Latitude | Longitude | Location Description |
|-----------|-------------|--------------|---------------------------|
| CTD #1 | 22 32.000 N | 162 00.000 W | South of Nihoa Island |
| CTD #4 | 24 08.000 N | 167 40.000 W | SE of Gardner Pinnacles |
| CTD #5 | 25 00.000 N | 170 00.000 W | SE of Maro Reef |
| CTD #6 | 25 34.000 N | 171 32.000 W | South of Laysan Island |
| CTD #7 | 25 50.000 N | 173 40.000 W | South of Lisianski Island |
| CTD #8 | 27 40.000 N | 175 49.700 W | S. of Pearl & Hermes Reef |
| CTD #9 | 28 06.001 N | 177 21.300 W | South of Midway Atoll |
| CTD #10 | 28 12.500 N | 178 19.897 W | South of Kure Atoll |

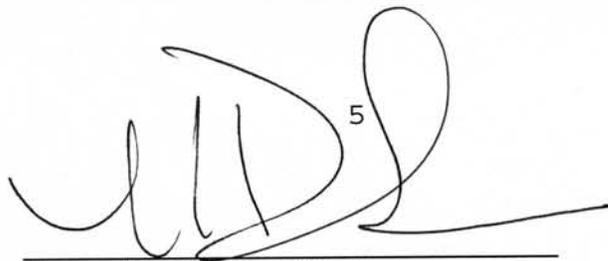
These data will be incorporated into a time series analysis of data to elucidate long-term trends in the oceanographic parameters in the habitat of Hawaiian monk seals.

- D. General Observations and miscellaneous activities.

SWFSC, HL equipment was transported between Lisianski Island and Honolulu.

**SCIENTIFIC
PERSONNEL:**

Mary Donohue, Chief Scientist, Joint Institute of Marine and Atmospheric Research (JIMAR), University of Hawaii (UH)
 Ray Boland, Cooperating Scientist, JIMAR, UH
 Athline Clark, Cooperating Scientist, State of Hawaii Department of Land and Natural Resources, Aquatic Resources Division
 Karen Geisler, Volunteer, NMFS
 Amy George, Cooperating Scientist, U.S. Fish and Wildlife Service (USFWS)
 Greg George, Cooperating Scientist, USFWS
 Scott Godwin, Cooperating Scientist, Bishop Museum
 Nancy Hoffman, Cooperating Scientist, USFWS
 Stephani Holzwarth, Cooperating Scientist, JIMAR, UH
 Jen Schorr, Cooperating Scientist, Ocean Futures Society
 Nina Young, Cooperating Scientist, Center for Marine Conservation (CMC)



Submitted by:

Mary Donohue, Ph.D.
Chief Scientist

Approved by:


R. Michael Laurs, Ph.D.
Director, Honolulu Laboratory

Attachment

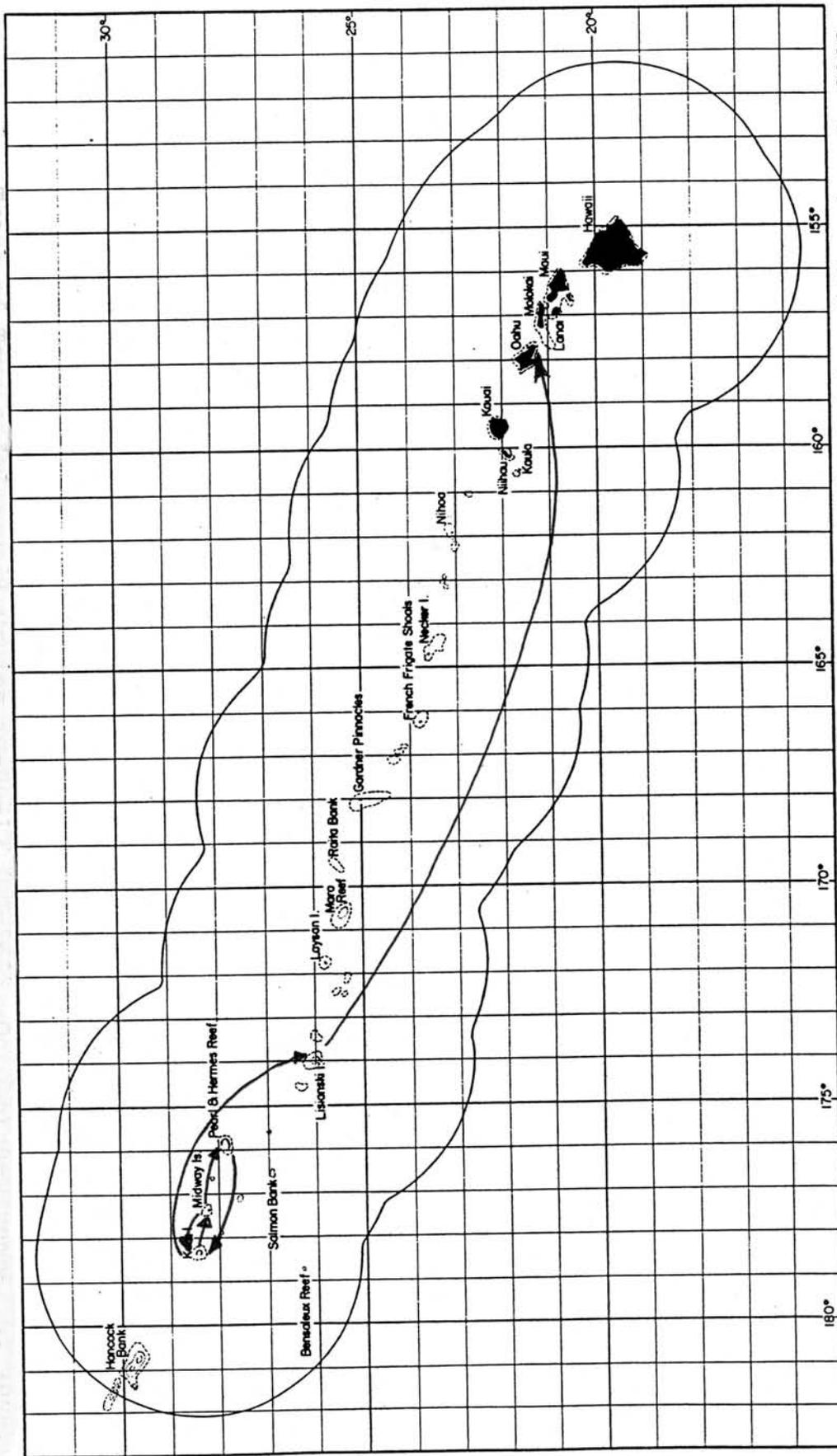


Figure 1. Track of Townsend Cromwell Cruise TC-00-12 (TC-262), October 9-November 5, 2000.