

December 6, 1999

F/SWC2:MJD:FLF
CR9910-1.MJD

CRUISE REPORT

VESSEL: *Townsend Cromwell*, Cruise TC-99-10 (TC-248)

CRUISE PERIOD: 6 October-4 November 1999

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 around Lisianski Island and Pearl and Hermes Reef. Derelict nets and line were removed from the beaches of Laysan Island, Lisianski Island, and Pearl and Hermes Reef.

ITINERARY:

6 October Mary Donohue, Ray Boland, Carolyn Sramek, Christian Eggleston, Holly Gellerman, Laurie Ness, and Ron Ohrel embarked the ship and departed Pearl Harbor at 1000.

10 October Arrived Laysan Island. Disembarked Christian Eggleston, Holly Gellerman, and Laurie Ness. Embarked Bart McDermott.

11 October Arrived Lisianski Island. Began surveys of near shore waters for derelict nets and line.

12-18 October Snorkel divers conducted marine debris surveys and removal of debris from near shore waters and beaches of Lisianski Island. Departed Lisianski Island on 18 October for Pearl and Hermes Reef.

- 19-26 October Snorkel divers conducted marine debris surveys and removal of debris from near shore waters and beaches of Pearl and Hermes Reef. Departed Pearl and Hermes Reef on 26 October for Midway Island.
- 27 October Arrived Midway Island. Marine debris previously collected from waters of Midway Island were loaded on *Townsend Cromwell*. Embarked David Johnson.
- 28 October Departed Midway Island for Laysan Island.
- 30 October Arrived Laysan Island. Embarked Matt Berry, Brendon Courtot and Laurie Ness. Departed for Kauai.
- 3 November Arrived Kauai. Disembarked Carolyn Sramek. Embarked Scott Gudes and Mike Kelly. Departed for Honolulu.
- 4 November Arrived Honolulu 0600. All personnel disembarked.

MISSIONS AND RESULTS:

- A. Diver surveys and removes debris from high entanglement risk zones (HERZ) in near shore waters of Lisianski Island and Pearl and Hermes Reef.
1. A HERZ represented by 1.17 km² of sea surface area was delineated at the northern end of Lisianski Island. Systematic parallel track searches for debris conducted within this zone totaled 0.45 km² or 38% survey coverage. The water column represented by an additional 0.58 km² of sea surface area was surveyed outside the HERZ. Surveys, conducted by two snorkel divers, towed behind a small boat concurrently. A total of 911 kg of derelict nets and line were located and removed from the waters of Lisianski Island.
 2. A HERZ represented by 1.00 km² of sea surface area was delineated at the northern end of North Islet at Pearl and Hermes Reef. Systematic parallel track searches for debris conducted within this zone totaled 0.66 km² or 66% survey coverage. The water column represented by an additional 15.8 km² of sea surface area was opportunistically surveyed outside the HERZ by personnel in small boats. Surveys at North Islet, conducted by two snorkel divers, towed behind a small boat concurrently. A total of 7,536 kg of derelict nets and line were located and removed from the waters of Pearl and Hermes Reef.

- B. Remove debris collected on the beaches of Lisianski Island and Pearl and Hermes Reef.
1. A total of 4,533 kg of derelict nets and line were recovered from the beaches of Lisianski Island by personnel supported by small boats.
 2. A total of 1,140 kg of derelict nets and line were recovered from the beaches of Pearl and Hermes Reef by personnel supported by small boats.
- C. Deployment of Expendable Bathythermographs (XBTS) at a fixed transit intervals.

XBTS were deployed every 20 nmi along the Hawaiian Ridge between the Big Island of Hawaii and French Frigate Shoals and every 50 nmi between French Frigate Shoals and Kure Atoll on both the outbound and inbound transits. These temperature profiles will assist HL scientists in understanding the ocean conditions along the Hawaiian Ridge.

- D. Conductivity-temperature-depth (CTD) instrument deployed and recovered at fixed stations within the Northwestern Hawaiian Islands.

CTD casts were successfully completed at the following nine 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 #2	23 11.099 N	164 42.562 W	South of Necker Island
CTD #3	23 34.000 N	166 18.000 W	South of Tern 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	South of Pearl & Hermes Reef
CTD #9	28 06.001 N	177 21.300 W	South of Midway Islands

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.

- E. General observations and miscellaneous activities.

U.S. Fish and Wildlife Service personnel and equipment were transported between Honolulu and Laysan Island and Laysan Island and Honolulu.

**SCIENTIFIC
PERSONNEL:**

Mary Donohue, Chief Scientist, National Marine Fisheries Service
(NMFS), Southwest Fisheries Science Center (SWFSC), Honolulu
Laboratory (HL)

Ray Boland, Cooperating Scientist, Joint Institute for Marine and
Atmospheric Research (JIMAR), University of Hawaii (UH)

Carolyn Sramek, Cooperating Scientist, Office of NOAA Corps
Operations, National Oceanic and Atmospheric Administration

Ron Ohrel, Cooperating Scientist, Center for Marine Conservation
(CMC)

Bart McDermott, Cooperating Scientist, United States Fish and
Wildlife Service (USFWS)

David Johnson, Cooperating Scientist, USFWS

Submitted by:

Mary J. Donohue
Chief Scientist

Approved by:

R. Michael Laurs
Director, Honolulu Laboratory

Attachment