

August 30, 2000

F/SWC2:TCJ:FLF  
CR9210-3.TCJ

## CRUISE REPORT

**VESSEL:** *Townsend Cromwell*, Cruise 92-10 (TC-178)

**CRUISE PERIOD:** 7-17 December, 1992

**AREA OF OPERATION:** French Frigate Shoals and surrounding waters in the Northwestern Hawaiian Islands (NWHI) (Fig. 1).

**TYPE OF OPERATION:** Marine turtle collection gear was evaluated off Snug Harbor, Honolulu during a sea trial prior to the cruise. The outgoing leg transported Southwest Fisheries Science Center, Honolulu Laboratory, Protected Species Investigation (PSI) personnel to French Frigate Shoals (FFS). PSI and U.S. Fish and Wildlife Service (USFWS) supplies and equipment were also transported to FFS to resupply the field station. At FFS, PSI personnel conducted seal surveys to assess the condition of immature Hawaiian monk seals (*Monachus schauinslandi*) and retrieved satellite transmitter/dive recorder packages from subadult male seals. The ship remained in the vicinity of FFS, and conducted bottomfishing and trap fishing for snappers and groupers. The return leg on-loaded PSI and USFWS gear, embarked PSI personnel, and returned to Snug Harbor, Honolulu.

### ITINERARY:

- 3 December - Sea trial conducted off Snug Harbor, Honolulu. Departed Snug Harbor at 0835 with Paul Shiota on board. Turtle collection gear deployed from 1250-1325. Returned to Snug Harbor, Honolulu and disembarked Shiota.
- 7 December - Departed Snug Harbor, Honolulu at 1000 and proceeded to French Frigate Shoals. On board William Gilmartin, Thea Johanos-Kam, Thomas

- Kazama, Kevin Landgraf, Amy Sloan, and Cynthia Vanderlip.
- 8 December - Continued transiting to French Frigate Shoals.
- 9 December - Arrived Tern Island, French Frigate Shoals. Off-loaded field equipment and supplies. Disembarked William Gilmartin, Thea Johanos-Kam, Amy Sloan, and Cynthia Vanderlip. PSI personnel conducted seal surveys at FFS. The ship departed Tern Island at 1430 to area south of Tern Island and conducted gurdy bottomfishing for juvenile snappers at depths of 35-55 fm. At 1630 departed area for anchorage off Tern Island. Overnight at anchor.
- 10 December - Departed Tern Island to area north of Tern Island. Conducted four bottomfishing stations for juvenile snappers from 0848-1100 at depths of 41-59 fm. Deployed two strings of traps (five traps per string) 1340-1440. Overnight at anchor off Tern Island.
- 11 December - Departed at 0730 to area northeast of Tern Island, lat. 23 51.40'N, long. 166 07.36'W. Conducted two bottomfishing stations for juvenile snappers 0950-1230 at 45-55 fm. Deployed two strings of traps (five traps per string) 1300-1400. Departed area to southwest side of shoals. Conducted bottomfishing with gurdy for adult snappers and groupers from 1520-1800 at 80-130 fm. Overnight at anchor.
- 12 December - Departed for area southeast of shoals at 0745. Conducted gurdy fishing for adult snappers and groupers between 0845-1350 at 85-130 fm. Transited to Tern Island to drop off additional supplies for PSI personnel. Overnight at anchor.
- 13 December - Departed for area northeast of Tern Island at 0745. Retrieved all four trapstrings from 1015-1450. Transited to area southwest of shoals. Conducted bottomfishing for adults at 80-120 fm, 1630-1800. Overnight at anchor.
- 14 December - Transited to southern end of shoals at 0730. Conducted bottomfishing for adult snappers and groupers from 0900-1500 at 80-150 fm. Overnight at anchor off Tern Island.

- 15 December - On-loaded PSI and USFWS equipment and supplies 0800-0945. Embarked William Gilmartin, Thea Johanos-Kam, Amy Sloan, and Cynthia Vanderlip. Departed French Frigate Shoals at 1000 and proceeded to Snug Harbor, Honolulu.
- 16 December - Continued transiting to Snug Harbor.
- 17 December - Arrived Snug Harbor, Honolulu at 1000. Disembarked all scientific personnel. End of cruise.

#### MISSIONS AND RESULTS:

- A. Assessment of condition of immature seals at FFS.
1. Seal surveys were conducted from 9-15 December at FFS. Although several undersized seals were sighted, severely emaciated seals were not observed.
  2. A subadult female seal was successfully treated for a large dorsal abscess and subsequently released.
- B. Retrieve satellite transmitter/dive recorder packages from subadult male seals.
1. Satellite transmitter/dive recorder packages were retrieved from two of three instrumented seals. Retrieval of the third package was hindered by adverse weather.
- C. Conduct power gurdy fishing to assess the distribution and relative abundance of juvenile pink snapper or opakapaka (Pristipomoides filamentosus) at depths of 40-60 fm. Fishing was conducted with three power gurdies. Droppers attached to the mainline of the gurdies were 4 m long (80-lb test, clear monofilament) interspaced with four branch lines (10-lb test, hard/clear monofilament) interspaced with four branch lines (10-lb test, hard/clear monofilament) with either no. 8 or 12 Izuo AH hooks. A 4-lb lead weight was used. Bait was stripped squid.
1. A total of seven juvenile fishing stations were occupied varying from 24 to 68 minutes for a total of 5.7 h.
  2. A total of 25 fish were caught by the juvenile fishing gear. Seventy-two percent were two species: 17 (68%) opakapaka (FL 11.1-14.6 cm) and 1 (4%) grouper Epinephelus guernus (TL 13.2 cm). Ten of the opakapaka were caught at one station (lat. 23 51.40'N, long. 166 07.36'W to lat. 23 51.51'N 166 07.34'W). Four species

comprising the remaining 28% of catch were: lizardfish Trachinocephalus myops, rasc Pseudojuloides cerasinus, goatfish Mulloidides vanicolensis and triggerfish Xanthichthys ringens.

- D. Deploy 20 fish traps at 40-60 fm depths where juvenile opakapaka was captured by gurdy fishing. Trap gear consisted of four strings of five traps (Leo type) spaced 30 fm apart along a double-buoyed, double-anchored main line of 1/2-in polypropylene. Traps were constructed with 1-in mesh chicken wire, draped on frames of 1/2-in rebar. Trap dimensions were 6 ft long by 4 ft wide by 3 ft high with a single ramped funnel of 3 in (maximum) internal entrance width to prevent possible entrapment of monk seals. Each trap was baited with 2-3 lbs of chopped mackerel divided into three lobster pot baiters. Test was also conducted to determine the effectiveness of a quick release shackle to disengage traps from the mainline.
1. Fish traps were deployed at four stations. Soak time varied from 2 to 3 trap-nights. All traps were originally scheduled to be fished for 3 nights but impending adverse weather made it necessary to retrieve two strings earlier.
  2. A total of 55 fish were caught. Among fishes, aweoweo Priacanthus cruentatus was the most abundant representing (40; 73% of all fishes).
  3. A string of five traps was lost and seven traps were damaged. Adverse sea conditions during the trap soak period were probably responsible for the gear loss/damage and poor catch.
  4. The quick release shackle, attached to eight traps, performed well and provided a margin of safety during retrieval. Trap bridles of all other traps were cut from the mainline because of hazardous conditions imposed by rough seas.
- E. Conduct power gurdy fishing for specimens of adult-sized bottomfish along 80-130 fm contours; collect ovary specimens for characterization of body size at 50% sexual maturity.
1. Terminal gear consisted of 200-lb test monofilament dropper and four 100-lb test branch lines with no. 28 Izuo, circle hooks. Stripped squid was used for bait. Four power gurdies were used for a total of 43 line-hours on eight fishing stations.
  2. A total of 87 subadult-adult individuals of 9 species were caught for a CPUE of 2.0 fish/line-hr.

3. Matched ovary and length/weight data were collected for 66 bottomfish specimens. Gonad samples were fixed in 10% formalin from a total of 44 subadult-adult females of 6 species of eteline snappers and one grouper. These comprised of 13 opakapaka, 5 kalikali P. sieboldii, 4 yellowtail kalikali P. auricilla, 4 gindai P. zonatus, 12 ehu Etelis carbunculus, 2 onaga E. coruscans and 10 hapuupuu Epinephelus guernus.

F. Evaluate marine turtle collecting gear.

1. Marine turtle collecting gear was successfully deployed during a sea trial prior to the cruise.

**SCIENTIFIC  
PERSONNEL:**

Thea Johanos-Kam, Chief Scientist, National Marine Fisheries Service (NMFS), Southwest Fisheries Science Center (SWFSC), Honolulu Laboratory (HL).

William Gilmartin, Wildlife Biologist, NMFS, SWFC, HL.

Thomas Kazama, Fishery Biologist, NMFS, SWFC, HL.

Kevin Landgraf, Biological Tech, NMFS, SWFC, HL.

Paul Shiota, Fishery Biologist, NMFS, SWFC, HL.

Amy Sloan, Aide Wildlife, NMFS, SWFC, HL.

Cynthia Vanderlip, Volunteer, NMFS, SWFC, HL.

Submitted by:

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Thea C. Johanos-Kam  
Chief Scientist

Approved by:

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George W. Boehlert  
Director, Honolulu Laboratory

Attachment

Figure 1.--Track of the *Townsend Cromwell* cruise TC-92-10,  
December 7-17, 1992.