



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL MARINE FISHERIES SERVICE/NOAA FISHERIES**

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## **CRUISE REPORT<sup>1</sup>**

**VESSEL:** *Oscar Elton Sette*, Cruise 05-08 (OES-30) (Fig. 1)

**CRUISE PERIOD:** June 7-July 5, 2005

**AREA OF OPERATION:** Northwestern Hawaiian Islands (NWHI)

**TYPE OF OPERATION:** Personnel from the Pacific Islands Fisheries Science Center (PIFSC), National Marine Fisheries Service (NMFS), NOAA conducted lobster trapping operations in the waters of the Northwestern Hawaiian Islands.

### **ITINERARY:**

7 June	Start of cruise. On board were Emma Anders, Greg Bary, Bryan Crouch, Kaisa Kantola, Marti McCracken, Garrett McNulty, Robert Moffitt, Joseph O'Malley, Sophie Pallson, and Kim Weersing. Departed Snug Harbor at 1600; transited to Necker Island.
9 June	Arrived at Necker Island and commenced lobster trapping.
10-21 June	Continued lobster trapping.
22 June	Hauled lobster traps and departed Necker Island; transited to Maro Reef.
24 June	Arrived Maro Reef and commenced lobster trapping.



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25-30 June	Continued lobster trapping.
1 July	Hauled lobster traps and departed Maro Reef; headed toward Pearl Harbor, Oahu.
2 July	Altered course to Pearl and Hermes Reef to assist shipwrecked vessel, <i>Casitas</i> .
3 July	Arrived at Pearl and Hermes Reef. Embarked 23 crew and scientists from the <i>Casitas</i> ; transited to Midway Atoll.
4 July	Arrived at Midway Atoll.
5 July	Lobster scientists and <i>Casitas</i> crew and scientists departed Midway aboard a Coast Guard C130.
6 July	Scientists and <i>Casitas</i> crew arrived on Oahu. <i>Sette</i> continued assisting Coast Guard.
11 July	<i>Sette</i> arrived in Honolulu. End of cruise.

#### MISSIONS AND RESULTS:

- A. Collected data on abundance and species composition of trap-captured lobster at two banks in the NWHI to compare with results of previously collected data.
1. A total of 1,466 spiny lobster, *Panulirus marginatus*; 3,212 slipper lobster, *Scyllarides squammosus*; 23 ridgeback slipper lobster, *S. haanii*; 1 regal slipper lobster, *Arctides regalis*; and 10 Chinese slipper lobster, *Parribacus antarcticus*, were caught in 281 lobster trapping stations (Table 1) conducted on adult lobster fishing grounds using black plastic (Fathom's Plus) lobster traps with a 1-in 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 fathoms of ground line. Traps were baited with 1.5-2.0 lb of cut mackerel and soaked overnight. Traps were generally set within one of two depth regimes: 10-20 fathoms or 20-35 fathoms.
  2. Our total effort at Maro Reef was 1,112 trap-nights yielding a total of 754 spiny lobster, 2,647 slipper lobster, 1 ridgeback slipper lobster, and 9 Chinese slipper lobster. Catch rates of spiny lobster were moderate at Maro Reef, approximately 0.68 spiny lobster per trap-night for all depths and locations. This is up from the 2004 value of 0.32. Catch rates of slipper lobster were high at approximately 2.38 slipper lobster per trap-night (down from 2002, 2003, and 2004 catch rates of 3.29, 3.22, and 3.27, respectively).

Current and historical catch rates for lobster (number per trap night) at Maro Reef by quad are shown in Tables 2-3 below. All data presented below is based on gross catch rates and should not be interpreted as a thoroughly analyzed assessment.

3. Our total effort at Necker Island was 2,074 trap nights yielding 712 spiny lobster, 565 slipper lobster, 22 ridgeback slipper lobster, 1 regal slipper lobster, and 1 Chinese slipper lobster. Catch rates of spiny lobster were moderately low at 0.34 lobster per trap night (lower than the 2003 and 2004 catch rates of 0.44 and 0.42, and considerably lower than the 2001 and 2000 catch rates of 0.71 and 0.83, respectively). The slipper lobster catch rate 0.27 lobster per trap night was similar to the 2004 catch rate of 0.26 and slightly lower than the 2002 and 2001 catch rates of 0.33 for each year.

Current and historical catch rates for lobster (number per trap night) at Necker Island by quad are shown in Tables 4-5 below. All data presented below is based on gross catch rates and should not be interpreted as a thoroughly analyzed assessment.

- B. Obtain length-frequency data on spiny and slipper lobsters to compare with those of previous years and to refine estimates of growth and mortality.

All lobster captured were sexed and measured. The presence or absence of eggs was recorded for all females. Data was returned to the Laboratory for computer entry and future analysis. Pleopod measurements were taken from nearly all female spiny lobster and slipper lobster. Data on the length of the female pleopod relative to carapace length will be used to estimate size at maturity for female spiny and slipper lobster. Current year's data can be compared to previously collected data to determine interannual variation in size at maturity for lobster populations.

- C. Record and release any tagged lobster at the capture location.

1. A total 54 tagged spiny and 15 tagged slipper lobster were caught at Necker and 14 tagged spiny and 111 tagged slipper lobster were caught at Maro Reef.
2. An additional 186 slipper lobster were tagged and released at Maro Reef.

- D. Conduct video taping of lobster release cage operations.

Videotaping of lobster release cage operations was not conducted due to time constraints.

- E. Conduct shallow (<10 fathoms) lobster trapping and related habitat video from a small boat.

Shallow water lobster trapping and videorecording operations were conducted at both Necker Island and Maro Reef. Table 6 shows trap dates and catch. All animals were released at the capture site. Genetic samples (toe clips) were collected from spiny lobsters prior to release.

F. Conduct bottomfishing and collect biological data.

A total of six bottomfishing operations (Table 7) were conducted. Length measurements and otoliths were collected from 15 ehu, *Etelis carbunculus*; 6 hapuupuu, *Epinephelus quernus*; and 1 gindai, *Pristipomoides zonatus*. Genetic samples (fin clips) were taken from the ehu specimens.

## G. Collect genetic material from select lobster and fish species.

Tissue samples from several species were collected and turned over to various investigators at the University of Hawaii for their ongoing projects. These samples included:

Species	# Necker	# Maro Reef
<i>Panulirus marginatus</i>	50	0
<i>P. marginatus</i> juveniles	11	42
<i>Scyllarides squamosus</i>	35	27
<i>Scyllarides haanii</i>	5	0
<i>Dardanus gemmatus</i>	50	50
<i>Dardanus brachyops</i>	17	50
<i>Calappa calappa</i>	50	50
<i>Charybdis hawaiiensis</i>	41	50
<i>Gymnothorax undulates</i>	3	34
<i>Gymnothorax steindachneri</i>	0	16
<i>Gymnothorax flavimarginatus</i>	0	3
<i>Gymnothorax meleagris</i>	3	0
<i>Gymnothorax eurostus</i>	2	0
<i>Lutjanus kasmira</i>	12	4
<i>Pristipomoides carbunculus</i>	6	0

**SCIENTIFIC  
PERSONNEL:**

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Attachments

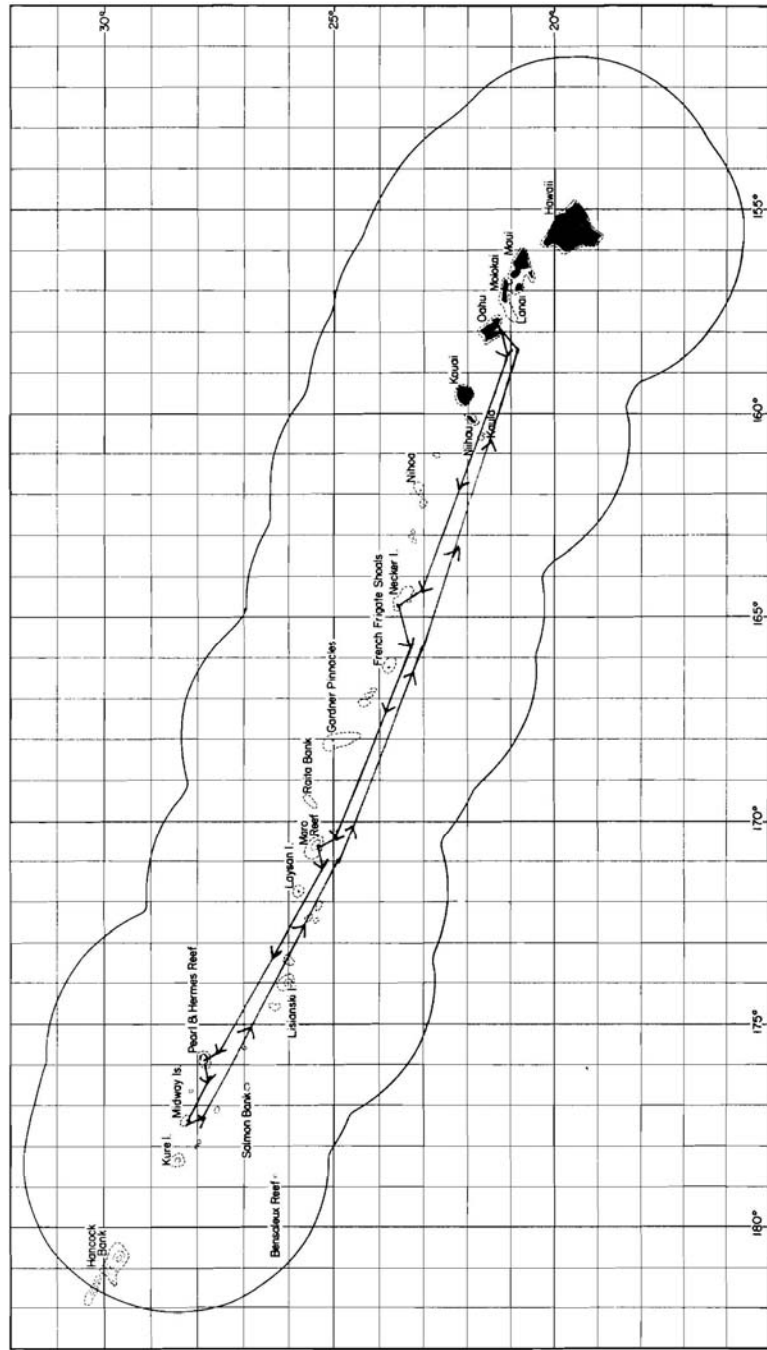


Figure 1.--Track of the Oscar Elton Sette cruise OES-05-08 (OES-30), June 7 to July 5, 2005.