U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Fisheries Science Center
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PROJECT REPORT

VESSEL: *Oscar Elton Sette*, Project SE-19-04

PROJECT PERIOD: June 17, 2019 to June 29, 2019

AREA OF OPERATION: Main Hawaiian Islands – Maui Nui, West Lanai, and Penguin Banks

TYPE OF OPERATION: Main Hawaiian Islands Life History Research. Operations included: 1) fishing for juvenile *Pristipomoides filamentosus* (opakapaka), *Etelis coruscans* (onaga), *Aphareus rutilans* (lehi), and *Lutjanus kasmira* (taape) for life history research, 2) collection of water samples for bottomfish eDNA dimensional profiling, 3) Drop Camera Instrument Package (DCIP) with Moana 360° camera deployment/recovery, 4) collection of water samples for bottomfish eDNA with DCIP deployment/recovery.

ITINERARY:

17 June — Embarked scientific party (Demarke, Lee, Miller, Ossolinski, O'Malley) aboard in the morning (0730). Departed for fuel pier (0835), arrive at fuel pier (0915) and began fueling. Conducted Welcome Aboard brief, safety drills, operational planning and equipment preparations throughout the day.

1745 HST Departed Pearl Harbor fuel pier en route to Penguin Banks

Conducted successful CTD test cast (2000).

18 June — Arrived at Penguin Banks. Deployed fish trap (0820). Deployed and retrieved DCIP/ Moana 360° with eDNA sampler (6 drops). Recovered fish trap (1615).

19 June — Continued operations at Penguin Banks. Deployed fish trap (0800). Deployed and retrieved DCIP/ Moana 360° with eDNA sampler (6 drops). Recovered fish trap (1615).

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20 June	Continued operations at Penguin Banks. Deployed fish trap (0800). Deployed and retrieved DCIP/ Moana 360° with eDNA sampler (5 drops). Recovered fish trap (1615). Test CTD cast failed due to equipment issues.
21 June	Continued operations at Penguin Banks. Deployed fish trap (0800). Deployed and retrieved DCIP/ Moana 360° with eDNA sampler (4 drops). Recovered fish trap (1300). The NOAA Ship *Oscar Elton Sette* secures from day operations and begins transit to Pearl Harbor (1415). Arrive at F9 (1900).
22 June	Embarked scientists Nichols and Reed. Loaded fuel hip tanks. Departed F9 (0800), demonstrated new SE4 launch/recovery operations in basin for PIFSC and MOCPI. Departed for west Lanai (1000). Arrived west Lanai (1500), began bottomfish gurdy operations from the NOAA Ship *Oscar Elton Sette* until 1830. Deployed fish trap (1900). Test CTD cast from port J-frame failed due to communication issues with water sampling bottles (1930).
23 June	West Lanai. Small boat safety meeting (0730). Launched SE4 for bottomfish sampling operations (0800). Retrieved fish trap (0840). Deployed and retrieved DCIP/ Moana 360° with eDNA sampler (8 drops). Recovered SE4 (1630). Deployed fish trap (1945). Conducted successful test CTD cast from port J-frame (2030).
24 June	Continued operations at west Lanai. Small boat safety meeting (0730). Launched SE4 for bottomfish sampling operations (0800). Retrieved fish trap (0830). Deployed and retrieved DCIP/ Moana 360° with eDNA sampler (10 drops). Recovered SE4 (1630).
25 June	Continued operations at west Lanai. Small boat safety meeting (0730). Launched SE4 for bottomfish sampling operations (0800). Conducted six CTD casts (0830-1830). Recovered SE4 (1630). Transited to Maui Nui/north Kahoolawe.
26 June	Maui Nui. Small boat safety meeting (0730). Launched SE4 for bottomfish sampling operations (0800). No DCIP/ Moana 360° deployments due to cloudy weather. Recovered SE4 (1430). Launched SE4 to pick up scientist Weng at Manele Small Boat Harbor (1700). Recovered SE4 (1745).
27 June	Maui Nui. Small boat safety meeting (0730). Launched SE4 for bottomfish sampling operations (0800). Deployed and retrieved DCIP/ Moana 360° with eDNA sampler (7 drops). Recovered SE4 (1630).

28 June — Maui Nui. Small boat safety meeting (0730). Launched SE4 for bottomfish sampling operations (0800). Deployed and retrieved DCIP/ Moana 360° with eDNA sampler (9 drops). Recovered SE4(1630). Transit to Ford Island.

29 June — The NOAA Ship *Oscar Elton Sette* arrived at Ford Island (0800). End of scientific operations. Scientists disembarked and offloaded gear.

MISSIONS AND RESULTS:

A. Conduct daylight bottomfish fishing in the 25–400 m depth zone around the islands to collect adult specimens of *E. coruscans*, juvenile *P. filamentosus*, and any size *A. rutilans*. Fishing will occur from the NOAA Ship *Oscar Elton Sette*- and PIFSC-based small boats. Conduct fish trapping operations for *L. kasmira* with day-long and overnight soaks. Bottomfish specimens will be processed (extract and preserve otoliths, gonads, and tissue samples) aboard the NOAA Ship *Oscar Elton Sette* in the longline pit area and the wet laboratory.

1. Small boat operations were severely impacted by the NOAA Ship *Oscar Elton Sette* crane issues, specifically, the aft-crane winch drum out for repair and the O2 deck crane not being man-rated. Because PIFSC small boats could not be launched at all and SE4 was only launched for 6 days there was a loss of 10 days of fishing for juvenile *P. filamentosus* and the loss of 6 days of fishing for *E. coruscans* and *A. rutilans*. A new procedure for launching SE4 from the O2 crane enabled fishing for *P. filamentosus, E. coruscans* and *A. rutilans* although with greatly reduced efficiency because SE4 does not have a fathometer capable of measuring the required depths for these species.

2. Juvenile *P. filamentosus*. One day of fishing operations was conducted off west Lanai to document presence/absence as part of the eDNA dimensional profiling research. One fish was captured outside the sampling grid.

3. *E. coruscans*. Fishing operations resulted in 12 samples collected for life history studies. Bycatch included 15 *E. carbunculus*, 9 *P. microcephalus*, and 4 *P. filamentosus* which were also saved for life history studies.

4. *A. rutilans*. No fish were captured during fishing operations.

5. *L. kasmira*. Fishing operations resulted in 51 samples collected for life history studies. *L. kasmira* were only captured in the overnight soaks off west Lanai. Bycatch included 13 *P. filamentosus* which were also saved for life history studies.

B. Collect water samples for eDNA analysis from the NOAA Ship *Oscar Elton Sette*. Water will be filtered aboard the NOAA Ship *Oscar Elton Sette* in the Hydrochemical Laboratory.

1. Water samples were collected in concert with the DCIP deployments. Forty-nine water samples were filtered for bottomfish eDNA.

2. Six CTD casts collected 36 water samples that were filtered for bottomfish eDNA.

C. Conduct daylight *Sette*-based deployments of the (DCIP) to facilitate quantitative comparison of the MOUSS and Moana360 camera systems to facilitate research on effective sampling area of the MOUSS.

1. A total of 55 DCIP/360 camera deployments and recoveries were conducted.

SCIENTIFIC PERSONNEL:

Name (Last, First)	Title	Date Aboard	Date Disembark	Gender	Affiliation	Nationality
Demarke, Chris	Insular Fisheries Research Associate	6/17/19	6/29/19	M	JIMAR/SOD	USA
Lee, Maximiliano	Intern	6/17/19	6/29/19	M	NOAA/FRMD	USA
Miller, Diana	Insular Fisheries Research Specialist	6/17/19	6/29/19	F	JIMAR/SOD	USA
Nichols, Ryan	Fisheries Biologist/ Coxswain	6/22/19	6/29/19	M	NOAA/FRMD	USA
Ossolinski, Justin	Operations Lead / Coxswain	6/17/19	6/29/19	M	JIMAR/SOD	USA
O'Malley, Joseph	Chief Scientist	6/17/19	6/29/19	M	NOAA/FRMD	USA
Reed, Erin	Data Manager	6/22/19	6/29/19	F	JIMAR/FRMD	USA
Weng, Kevin	Associate Professor	6/26/19	6/29/19	M	VIMS, College of William & Mary	USA

Submitted by: O'MALLEY.JOSEPH.MICHAEL. Digitally signed by O'MALLEY.JOSEPH.MICHAEL. Date: 2019.11.04 13:47:06 -10'00'

Joseph M. O'Malley, Ph.D.
Chief Scientist

Approved by: SEKI.MICHAEL.P. Digitally signed by SEKI.MICHAEL.P. Date: 2019.11.04 16:26:27 -10'00'

Michael P. Seki, Ph.D.
Science Director
Pacific Islands Fisheries Science Center

Attachments:
Tables:
None

Figure:
See below

Figures

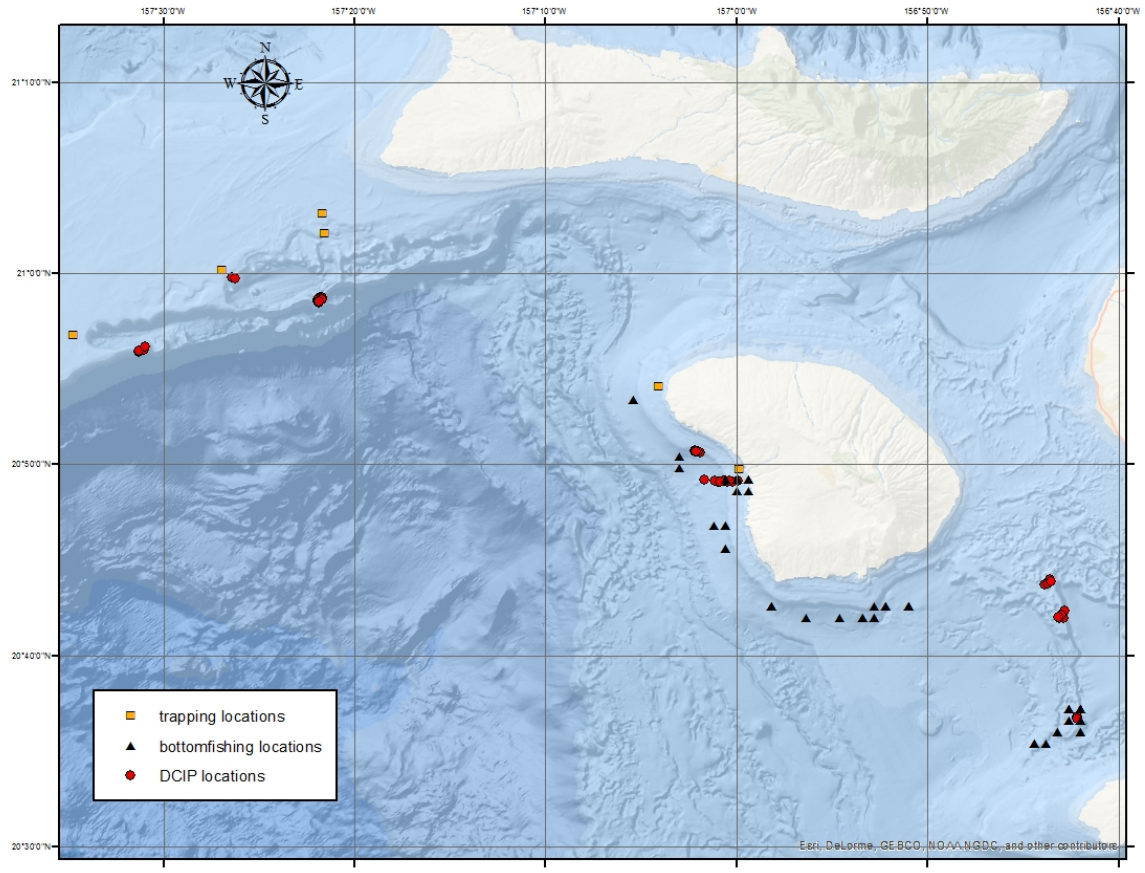

Figure 1. SE-19-04 operations map.