



U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE/NOAA FISHERIES  
Pacific Islands Fisheries Science Center  
1845 Wasp Blvd. Bldg. 176 • Honolulu, Hawaii  
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## PROJECT REPORT<sup>1</sup>

**VESSEL:** NOAA Ship *Oscar Elton Sette*, Project SE-15-02

**PROJECT PERIOD:** May 8 – June 6, 2015

**AREA OF OPERATION:** Leg I: transit from Honolulu, HI to Apra Harbor, Guam, with operations at Wake Island en route.  
Leg II: Mariana Archipelago, including Uracas (Farallon de Pajaros), Maug, and Asuncion within the MTMNM, and Farallon de Medinilla, Anatahan, Sarigan, Guguan, Alamagan, Pagan, and Agrihan within the Northern Mariana Islands, as well as the waters surrounding Guam and the CNMI out to 50 nmi from shore.

**TYPE OF OPERATION:** Ship-board, line-transect visual and acoustic surveys for cetaceans.

### ITINERARY:

20 Apr Depart Pearl Harbor for transit to Guam

4 May Arrive Apra Harbor, Guam

#### Leg II:

8 May Depart Guam 1100, transect survey to WP2

9 May transect survey WP2-WP3, toward WP4

10 May transect survey S Rota toward WP5, then toward WP5

11 May Tinian & Saipan HARPs, transect survey toward WP6

12 May transect survey WP8-WP9

13 May transect survey NE Pagan toward WP10

14 May nearshore surveys at Maug & Uracas

15-17 May no survey work due to weather

18 May transect survey NE Guguan toward WP16, then toward WP6

19 May nearshore survey Anatahan

20 May nearshore survey Sarigan & Zealandia Bank

21 May nearshore survey Guguan

22 May nearshore survey Alamagan

23 May deploy HARP, nearshore survey Pagan

24 May transect survey between WP9 & WP10 toward WP10, then toward WP8

25 May transect survey between WP15 & WP16 toward WP16, then toward WP14

<sup>1</sup>PIFSC Project Report CR-17-003  
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26 May	nearshore survey Agrihan
27 May	offshore survey Agrihan, seamounts north to Asuncion
28 May	nearshore survey Asuncion
29 May	transect survey WP11-WP10
30 May	nearshore survey Maug, equipment tests
31 May	transect survey WP13-WP12-WP11
1 June	nearshore survey Uracas & nearby seamounts and shallow banks
2 June	transect survey WP13-WP14
3 June	nearshore survey Pagan
4 June	offshore survey banks east of Guguan and Sarigan
5 June	nearshore survey Anatahan toward Farallon de Medinilla
6 June	arrive Saipan, 0800

### **MISSIONS AND RESULTS:**

- A. Conduct transect and near-shore visual and towed-array acoustic surveys for cetaceans within 50 nmi of the Mariana Archipelago from the ship and small boat. Collect individual identification photographs, tissue sample, and deploy satellite telemetry tags on cetaceans as opportunities allow.
1. Transect surveys were conducted on 12 days and near-shore or offshore surveys on 14 days. Three days were lost to diversion out of the study area due to Typhoon Dolphin. All regions of the study area were at least partially surveyed as planned, with some gaps in transect survey coverage due to the weather diversion. There were 42 cetacean visual sightings of 9 species, including spinner, rough-toothed, bottlenose, and Risso's dolphins, melon-headed, false killer, and sperm whales, Blainville's beaked whales, and Bryde's whales, as well as groups of dolphins, whales, and beaked whales that could not be identified to species (Figure 1). Photographic and tissue-sampling operations commenced most sightings, resulting in more than 6600 individual identification photos and 51 biopsy samples collected from spinner, rough-toothed, and bottlenose dolphins, melon-headed, false killer and sperm whales. A single satellite telemetry tag was deployed on a false killer whale near Asuncion.
  2. Towed array surveys were conducted at all daylight hours during each day of the survey. A total of 45 acoustic detections occurred, including acoustic detection of nearly all visual sightings, as well as detection of 2 groups of beaked whales and 2 groups of unidentified dolphins not observed by the visual survey team.
- B. Conduct oceanographic sampling observations using Conductivity Temperature Depth (CTD) casts, Expendable Bathythermograph (XBT) casts, and collection active acoustic backscatter data
1. CTD casts were conducted each night following the end of visual survey operations at sunset. XBT casts were conducted each day at 0600, 0900, 1200, and 1500, with few exceptions due to animal chase or other operations


incompatible with XBT cast requirements. The collection of CTD and XBT profiles revealed a standard subtropical temperature profile with sharp thermocline around 100 m in the southern portion of the study area. Profiles in the northern portion of the study area suggested there was little thermocline, and temperature dropped off more steadily with depth.

- C. Deploy sonobuoys on baleen whale sightings and each evening during the CTD cast for point-transect observations of baleen whales within the study area.
  - 1. Directional fixing and ranging (DIFAR) sonobuoys were deployed each night during the CTD cast. A sonobuoy was also deployed on a single sighting of a Bryde's whale, though no sounds were detected. Evening sonobuoy deployments were not monitored in real-time, such that detection data are not yet available for these deployments.
- D. Recovery and redeploy two High-Frequency Acoustic Recording Packages (HARPs) near Saipan and Tinian, and deploy a new HARP in the northern portion of the archipelago.
  - 1. Both the Saipan and Tinian HARPs were successfully recovered and redeployed on 11 May. The new HARP was deployed on a seamount SE of Pagan, a location chosen for its depth, as well as its lack of current volcanic or hydrothermal activity.

#### **SCIENTIFIC PERSONNEL:**

Erin Oleson, Chief Scientist, Pacific Islands Fisheries Science Center (PIFSC), National Marine Fisheries Service (NMFS)  
Marie Hill, Visual Survey Data Leader, Joint Institute for Marine & Atmospheric Research (JIMAR), University of Hawaii (UH)  
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Yvonne Barkley, Lead Acoustician, Hawaii Institute of Marine Biology (HIMB), UH  
Lora Van Uffelen, Acoustician, JIMAR, UH  
Katrina Ternus, Acoustician, NMFS, Southeast Fisheries Science Center (SEFSC)  
Eric Mooney, Oceanography & Logistics Support, PIFSC, NMFS  
Erik Norris, Coxswain & HARP Support, JIMAR, UH  
Frincess (Max) Garcia, Student Volunteer, College of the Northern Mariana Islands

Submitted by:   
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Michael Seki  
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#### Attachments

Fig 1. Map of study area with A. transect survey effort and sightings, and B. nearshore survey effort and sightings.

#### Tables

Table 1. Cetacean sightings and tissue samples collected during SE-15-02.

<u>Species</u>	<u># Sightings</u>	<u># Samples</u>
Spinner dolphin	8	12
Rough-toothed dolphin	3*	6
Bottlenose dolphin	3*	2
Risso's dolphin	2*	-
Melon-headed whale	4	27
False killer whale	2	3
Sperm whale	3*	1
Blainville's beaked whale	2	-
Bryde's whale	3	-
Unidentified dolphin	2	-
Unidentified whale	3	-
Mesoplodon sp.	5	-
TOTAL	42*	51

\* Bottlenose dolphin and rough-toothed dolphin were seen in the same group twice and Risso's dolphin and sperm whales were seen in the same group once during the survey. Sightings are counted once for each species, although the total tallies only the number of unique sightings.

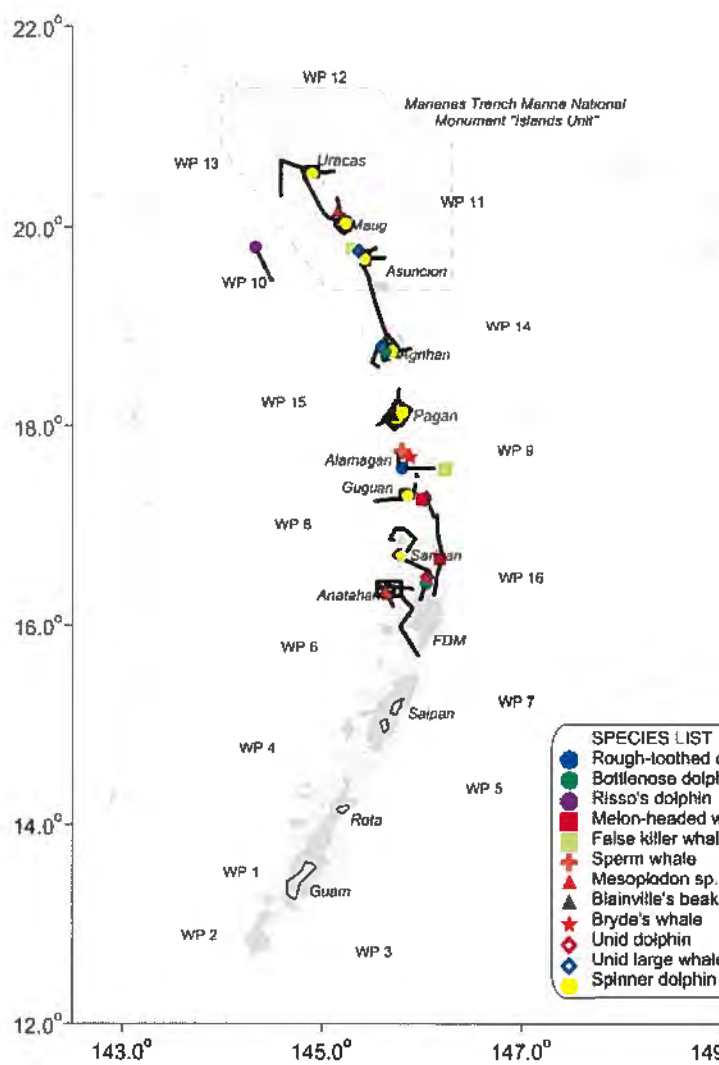
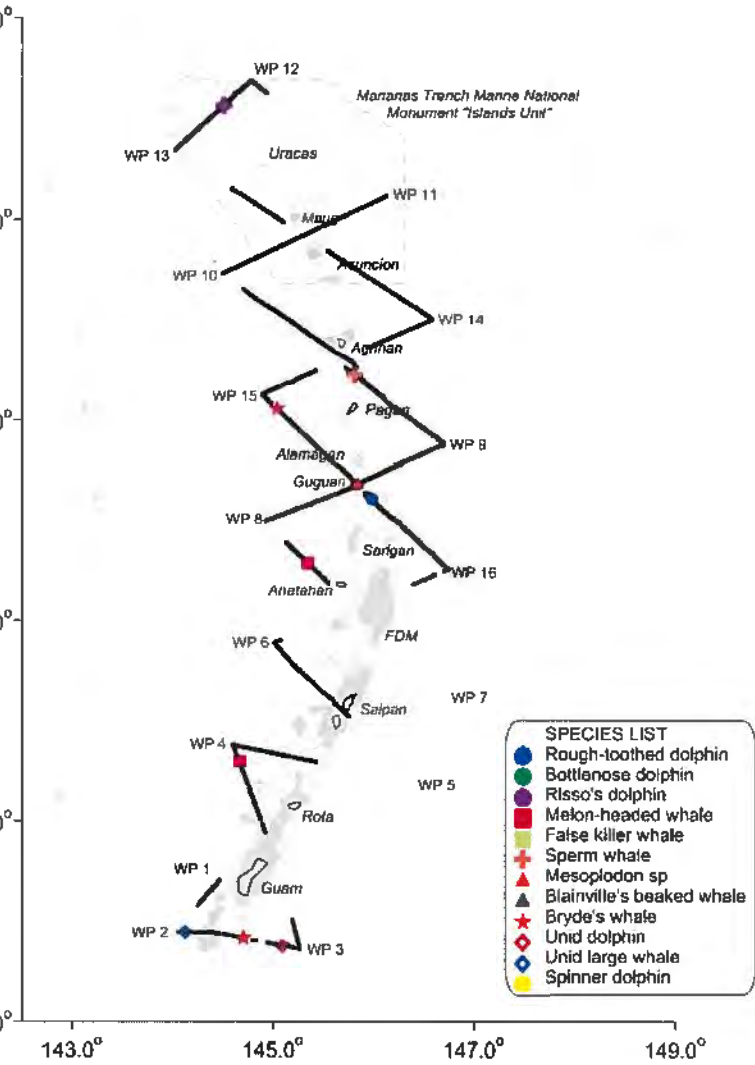


Figure 1.--Left panel—transect survey effort and sightings. Right panel—near-shore and other “non-standard” effort and sightings.