

# **Report on Hawaiian Monk Seal Survey on Ni'ihau Island, May 2016<sup>1</sup>**

Completed by

Jessica Bohlander, Tracy Mercer, and Charles Littnan

Hawaiian Monk Seal Research Program  
Pacific Islands Fisheries Science Center  
NOAA Inouye Regional Center  
1845 Wasp Boulevard, Building 176  
Honolulu, HI 96818

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## **Introduction:**

On May 12, 2016, staff from NOAA's Hawaiian Monk Seal Research Program (HMSRP) completed the program's fifth land-based survey of Hawaiian monk seals on the island of Ni'ihau. The survey took place at the end of NOAA Ship *Hi'ialakai* project HA 16-03. HMSRP staff and Ni'ihau residents participated in the survey. This report provides a summary of survey findings (Johanos, 2016a-c).

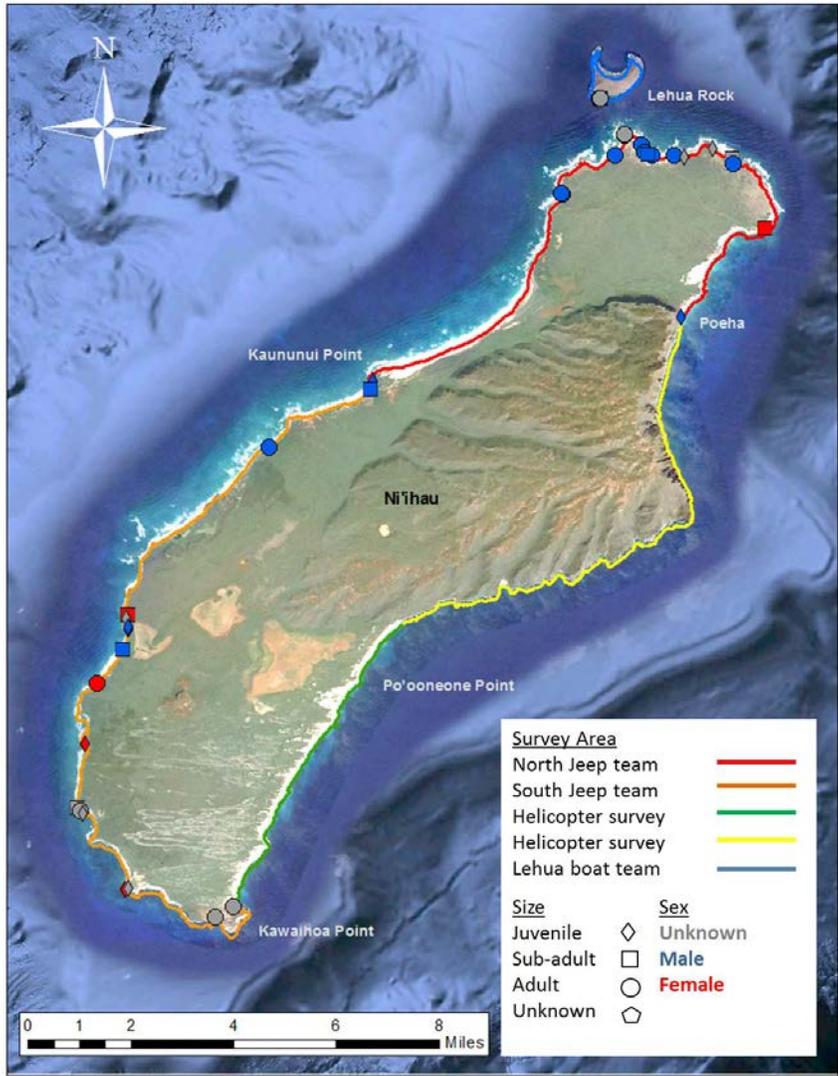
## **Methods:**

Two survey methods were implemented to cover the coastlines of Ni'ihau and Lehua Rock. Land-based surveys via jeep and on foot were conducted in areas accessible on land by two separate survey teams concurrently. Each land survey team included HMSRP personnel and Ni'ihau residents who served as guides (red, orange and green tracks; Figure 1). A small boat from the *Hi'ialakai* was used to survey Lehua Rock. The boat survey team was staffed with HMSRP personnel and a *Hi'ialakai* coxswain (blue track; Figure 1). HMSRP personnel were able to land on Lehua Rock and conduct a survey on foot along the southern shoreline of the island.

Two portions of the coastline along the east side of Ni'ihau (green and yellow tracks; Figure 1) were not surveyed by HMSRP staff. The yellow area consists of sheer cliffs backed by rugged, roadless terrain, making land-based surveys infeasible. There is relatively limited haul-out space for seals along this stretch of coastline compared to the rest of the island. The green area is typically surveyed on horseback and few seals have been previously observed here. Due to personnel limitations, this area was not able to be surveyed by horseback on this current survey. The helicopter carrying Ni'ihau guides prior to the survey flew over these areas to determine if any seals were present. No seals were observed by helicopter in the yellow or green areas.

All teams conducted a census-type survey in which all individuals encountered in the survey area were recorded. Size, sex, and any identifying information were collected. Survey teams took photographs of seals whenever possible, while minimizing seal disturbance, to document any identifying marks including tags, scars, and applied or natural bleaches.

In addition to normal survey activities, three Ni'ihau personnel were trained by HMSRP staff to conduct future monk seal surveys on their own. Ni'ihau personnel were trained in seal identification and behavior, photo identification techniques, and best practices for working around monk seals. Ni'ihau personnel were supplied with digital cameras, SD cards and data sheets for conducting future monk seal surveys.



**Figure 1:** Survey areas (lines) and locations (icons) of seals sighted during 12 May 2016 survey of Hawaiian monk seals on Ni’ihau Island and Lehua Rock. Line colors indicate distinct island sections surveyed by separate teams. Red and orange tracks were surveyed by foot and Jeep; green and yellow tracks were surveyed by helicopter; blue track was surveyed by boat and on foot. Some overlap exists for seal sightings where multiple seals were seen at the same location.

## **Itinerary:**

- 0630** Helicopter overflight.  
**0730** *R/V Hi'ialakai* launched small boat with 2 land teams to meet Ni'ihau personnel near Kaununui Point.  
**0800** Small boat arrived on Ni'ihau and land teams separated and transited to survey starting points.  
**0850** Small boat returned to the *Hi'ialakai* and transited to Lehua Rock to launch Boat Team.  
**0945** Boat Team began survey of Lehua Rock.  
**1045** Boat Team completed survey of Lehua Rock and returned to the ship.  
**1530** *Hi'ialakai* arrived near Kaununui and launched small boat to recover land teams.  
**1700** Recovered small boat. Survey complete.

## **Survey Descriptions:**

### **North Jeep Team:**

Personnel: Angie Kaufman and Michelle Barbieri

Survey Area: Kaununui point to Poeha (red track) surveyed west to east.

Approximate survey time: Survey was from 0815 to 1500 for a total of 5.75 hours. Jeep then transited back to Kaununui.

Transport: 4wd Jeep and by foot in areas inaccessible by Jeep.

### **South Jeep Team:**

Personnel: James Morioka and Brenda Becker

Survey Area: Kaununui Point to Kawaihoa Point (orange track) surveyed north to south

Approximate survey time: Survey was from Kaununui at 0815 to 1500 for a total of 6.75 hours. Jeep then transited back to Kaunuiui.

Transport: 4wd Jeep and by foot.

### **Lehua Boat Team:**

Personnel: Jessica Bohlander and Thea Johanos

Survey Area: Lehua Rock (blue track)

Approximate Survey time: Boat was launched at 0930 and survey was conducted from 0945 to 1045 for a total of 1 hour.

Transport: The small boat used was a 17-ft Zodiac inflatable boat with a 50-hp outboard engine.

## **Results**

A total of 42 seals were counted on Ni’ihau and 3 seals were counted on Lehua Rock. All seals counted were on land. This included 18 adult seals, 8 sub-adults, and 19 juveniles (Table 1). Table 3 shows survey results by age-class and sex for all 5 Ni’ihau and Lehua surveys conducted by HMSRP. No nursing or weaned pups were observed on this survey. Twenty-five seals were observed along the southwest side of Ni’ihau, 17 seals were seen along the northern coastline, and 3 seals were observed on Lehua Rock (Table 2). Six seals were bleach marked during this survey.

Eleven previously identified seals were observed on Ni’ihau or Lehua (Table 4). Seven of these seals have only been sighted on Ni’ihau or Lehua and have not been documented elsewhere in the main or Northwestern Hawaiian islands. The other 4 seals have also been sighted on Kauai and Oahu. Five seals were identified by flipper tags and 6 seals were untagged and identified by natural marks and scars.

**Table 1:** Seals observed on Ni’ihau and Lehua during May 2016 survey by age-class and sex.

<u>Age-class</u>	<u>Female</u>	<u>Male</u>	<u>Unknown</u>	<u>Total</u>
Adult	2	12	4	<b>18</b>
Sub-adult	2	4	2	<b>8</b>
Juvenile	4	6	9	<b>19</b>
<b>Total</b>	<b>8</b>	<b>22</b>	<b>15</b>	<b>45</b>

**Table 2:** Seals observed on Ni’ihau and Lehua broken down by island section and year.

<u>Island Section</u>	<u>Method</u>	<u>Sept 2013</u>	<u>Sept 2014</u>	<u>May 2015</u>	<u>Sept 2015</u>	<u>May 2016</u>
North (red)	Jeep and foot	38	30	12	34	<b>17</b>
Southwest (orange)	Jeep and foot	23	28	8	14	<b>25</b>
Southeast (green)	horseback	0	2	2	3	<b>0<sup>b</sup></b>
East Cliffs (yellow)	boat/helicopter	4 <sup>a</sup>	n/a	6 <sup>b</sup>	3 <sup>b</sup>	<b>0<sup>b</sup></b>
Lehua (blue)	boat and foot	4	3	5	0	<b>3</b>
<b>Total</b>		69	63	33	54	<b>45</b>

<sup>a</sup> surveyed by boat

<sup>b</sup> surveyed by helicopter

**Table 3:** Seals observed by age-class for the 5 Ni'ihau/Lehua surveys.

Age-class	Sept 2013	Sept 2014	May 2015	Sept 2015	May 2016
Adult	27	29	13	18	<b>18</b>
Sub-adult	15	9	3	8	<b>8</b>
Juvenile	8	5	11	4	<b>19</b>
Unknown	0	0	6	3	<b>0</b>
Pup	19	20	0	21	<b>0</b>
<b>Total</b>	<b>69</b>	<b>63</b>	<b>33</b>	<b>54</b>	<b>45</b>

**Table 4:** Seals seen during May 2016 Ni'ihau/Lehua survey that have been previously identified.

Seal ID	Age-class	Sex	Islands Observed 2016	Seen Prior to 2016
<b>NG02</b>	Juvenile	Female	Ni'ihau	Ni'ihau (2015)
<b>R310</b>	Adult	Male	Lehua	Lehua, Ni'ihau (2010-2013)
<b>R332</b>	Adult	Male	Ni'ihau	Ni'ihau (2010, 2015)
<b>R334</b>	Adult	Female	Ni'ihau	Ni'ihau (2010, 2015)
<b>R341</b>	Sub-adult	Male	Ni'ihau	Ni'ihau (2015)
<b>R342</b>	Adult	Unk	Ni'ihau	Ni'ihau (2014)
<b>R343</b>	Sub-adult	Female	Ni'ihau	Lehua (2015)
<b>R6FQ</b>	Adult	Male	Ni'ihau, Kauai	Kauai (2011-2015)
<b>R8HP</b>	Juvenile	Male	Ni'ihau	Kauai, Ni'ihau (2014-2015)
<b>RG28</b>	Juvenile	Male	Ni'ihau, Kauai	Kauai (2015)
<b>RK36</b>	Adult	Male	Ni'ihau, Oahu	Kauai, Oahu (2006-2015)

## DATA CITATIONS

Johanos, T.C., 2016a: Hawaiian Monk Seal Research Program Hawaiian monk seal survey data collected in the main Hawaiian Islands, 1988-2016. US National Oceanographic Data Center, <https://inport.nmfs.noaa.gov/inport/item/5676>

Johanos, T.C., 2016b: Hawaiian Monk Seal Research Program Hawaiian monk seal master identification records (annual) collected in the Hawaiian Archipelago, 1981-2016. US National Oceanographic Data Center, <https://inport.nmfs.noaa.gov/inport/item/12939>

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