

Hawai'i Island Hawksbill Project Final Report for 11/01/2015 - 10/31/2019

Award Number: NA15NMF4540116
Program Officer: Penny Larin
(808) 725-5057
penny.larin@noaa.gov
Program Office: NMFS Pacific Islands Region Program Office (PIRO)
Award Period: 11/01/2015 - 10/31/2019
Project Title: Hawai'i Island Hawksbill Project
Recipient Name: THE HONU PROJECT
PIs/PDs: John Lindelow

Project Contact: Lauren Kurpita
(808) 985-6090
lkurpita@hawaii.edu



Hawai‘i Island Hawksbill Project Progress Report for 11/01/2015 – 10/31/2019

Project goals

The objectives of the Hawai‘i Island Hawksbill Project (HIHP), based at Hawai‘i Volcanoes National Park (HAVO) were to: 1) identify hawksbill nesting activity and collect baseline data; 2) manage and protect nesting habitat; 3) protect nests and ensure hatchlings safely reach the ocean; 4) control non-native predators and vegetation; 5) promote public stewardship of marine ecosystems through educational outreach.

Funding and personnel

Funding during this time frame was provided in part by the National Marine Fisheries Service (NMFS) Pacific Islands Regional Office (PIRO), Hawai‘i Pacific Parks Association (HPPA), the National Park Service (NPS), and the World Turtle Trust (WTT).

Project personnel consisted of a full-time University of Hawai‘i - Pacific Cooperative Studies Unit (UH-PCSU) project coordinator, a UH-PCSU technician ranging for various lengths of time ranging from full-time to seasonal, 51 full-time NPS Volunteers-in-Parks (VIPs), and 28 part-time resident VIPs. Full-time volunteers individually contributed three to four months of their time to the project.

Monitoring activities

Each time a nesting turtle was observed, the times and types of nesting activities were documented. Weather, tide, moon phase, and moon presence were recorded when time of emergence was known. As the turtles returned to the ocean, field personnel briefly restrained them to check for injuries, abnormalities, and tag numbers. If the turtle had not been previously tagged, or if tags were missing, Inconel tags (National Band and Tag Co., Newport, KY; size 681) were applied. These tags were supplied by NMFS Pacific Islands Fisheries Science Center. Personnel also scanned the rear flippers of each turtle for PIT (passive integrated transponder) tags with a Biomark Pocket Reader. Standard carapace measurements and curved carapace measurements were taken for each individual. Data collected were used to calculate individual remigration interval, nest-to-attempt inter-nesting interval, and nest-to-nest inter-nesting interval.

Nest sites were marked and identified by date, turtle ID#, and observers. During the hatchling emergence phase, nests were continuously monitored for signs of activity. The dates and times of all observed hatchling activity were recorded. Personnel counted hatchlings and ensured they safely reached the ocean. Nests were excavated at a minimum of 24 hours after the main hatchling emergence. Nests were excavated to inventory nest contents and rescue trapped hatchlings. Data collected were used to calculate incubation period, clutch size, and hatch/nest success. The specimens collected this season were shipped to the NMFS Pacific Islands Fisheries Science Center.

Wire enclosures, referred to as nest cages, were installed over observed nests at ‘Āwili, Halapē, Kōloa, Pōhue, and Punalu‘u to provide protection from predators, vehicular traffic, and human disturbance. Per our U.S. Fish & Wildlife T&E permit, openings were cut along the base of the nest cages after 45 days of incubation to enable hatchlings to exit unobstructed.



Figure 1: Project personnel conducted curved carapace measurements.



Figure 2: Project personnel install a nest cage at Punalu'u in 2018 with assistant from the Hawaii County lifeguards, who reported the tracks and digs.

Educational Outreach

Project personnel provided extensive on-site and off-site interpretation, in both formal and informal settings. Personnel took advantage of outreach opportunities when interacting with the public at nesting beaches. Personnel also had educational booths at community events, conducted presentations about hawksbill conservation at numerous public venues, and conducted in class lessons for elementary and high education students. Various student groups conducted marine debris cleanups and participated in night monitoring activities for classroom and four public nest excavations were conducted at Punalu'u. An estimated 100-150 were in attendance at each public nest excavations. From November 2015 through October 2019 project personnel participated in the following outreach events:

- Four public nest excavations at Punalu'u in 2018
- Kāwā community workdays in collaboration with Nā Mamo O Kāwā and Hawaii Wildlife Fund
- Kaloko-Honokōhau National Historical Park Children's Cultural Festivals
- Kahuku Cultural Festivals

- Ka‘u Coffee Festivals
- Mountain View Elementary Ohana Days
- Hawksbill conservation presentation with KUPU interns
- UH Hilo Earth Day and Conservation Career Day presentations for 200 students
- Lyman Museum presentations
- Night monitoring with students from UH-Hilo and Youth in Parks Programs
- “After Dark in the Park” and “Coffee Talk” presentations at HAVO
- In-class presentations at UH-Hilo, Na‘alehu Elementary, Mountain View Elementary, Pāhoa Elementary, Volcano School of Arts and Sciences



Figure 3: Project personnel conducting an in-class lesson about hawksbill conservation.

2016 through 2019 season results

A total of 51 adult nesting hawksbills were observed during the 2016 through 2019 season. Information about the return nesters and neophyte nesters per season is listed in Table 1-8. The project has now identified 171 adult female hawksbills on Hawai‘i Island since tagging began in 1991 (Fig. 4). The final detailed season results for 2019 will be shared in the upcoming progress report. Throughout these seasons a total of 177 nests were documented; 35 in 2016, 52 in 2017, 47 in 2018, and 43 in 2019.

Table 1. Hawksbill identification information for return-nesters on Hawai‘i Island, HI in 2016.

Turtle ID #	LFF	RFF	LRF	RRF	Last Observed	Location
14	B-759	9C55	9C57	none	2012	Kamehame
80	none	9C43	1D44	1D45	2007	‘Āpua
106	9C41	3D45	9C50	9C51	2011	‘Āpua
127	8C15	8C78	8C79	none	2014	Pōhue

Table 2. Hawksbill identification information for neophyte nesters on Hawai‘i Island, HI in 2016.

Turtle ID #	LFF	RFF	LRF	RRF	Date Tagged	Location
143	9C44	9C45	None	9C47	6/24/2016	‘Āpua
144	9C03	9C04	PIT tag: 982000167771849	PIT tag: 982000190556416	7/1/2016*	Pōhue
145	9C05	9C06	none	none	7/18/2016	Pōhue
146	9C48	9C49	none	none	7/20/2016	‘Āpua
147	9C53	9C54	none	none	7/21/2016	Kamehame
148	9C07	9C08	9C09	8C18	8/5/2016	Pōhue
149	9C16	8CF2	9C17	9C18	8/10/16	Halapē
150	8C19	8C20	9C56	9C57	8/23/16	Pōhue

*T144 satellite tag was applied on 7/20/2016

Table 3. Hawksbill identification information for return-nesters on Hawai‘i Island, HI in 2017.

Turtle ID #	LFF	RFF	LRF	RRF	Seasons returned	Location
71	8C25	8A33	442-X	9C21	2006	Pōhue
76*	1D58	1D62	1D61 PIT tag: 982000167791801	1D60 PIT tag: 982000190685398	2007	Pōhue
85	1D55	1D56	None	Unreadable	2008, 2013	Halapē
110	8C02	8C01	8C04	8C03	2011	Kōloa
118	None	3D85	3D88	3D89 PIT tag: 982000167777241	2012	Kamehame
119	3D92	Unreadable	3D05	3D95	2015	Pōhue

*Satellite tag applied 7/12/2017

Table 4. Hawksbill identification information for neophyte nesters on Hawai‘i Island, HI in 2017.

Turtle ID #	LFF	RFF	LRF	RRF	Date Tagged	Location
151	8C24	8C23	8C93	9C10	06/06/17	Pōhue
152	9C24	9C19	9C23	9C20	06/13/17	Pōhue
153	9C61	Unreadable	9C67 PIT tag: 982000167777061	9C66 PIT tag: 982000190720887	06/20/17	‘Āpua

154	None	9C63	None	None	06/22/17	‘Āpua
155	9C64	9C65	9C70 PIT tag: 982000190220469	9C71 PIT tag: 982000190638126	07/10/17	‘Āpua
156	None	None	PIT tag: 982000167826472	PIT tag: 982000167799937	07/19/17	Kamehame
157	9C77	9C76	None	None	08/02/17	‘Āwili
158	9C68	9C67	None	None	08/03/17	‘Āpua
159	PI1810	PI1808	PI1809 PIT tag: 98200016777667	PI1807 PIT tag: 982000167840924	08/24/17	Humuhumu
160	9C25	9C26	None	None	09/13/17	Pōhue

Table 5. Hawksbill identification information for return-nesters on Hawai‘i Island, HI in 2018.

Turtle ID #	LFF	RFF	LRF	RRF	Season returned	Location
90	2D56	2D57	2D58 PIT tag: 982000167774944	2D59 PIT tag: 982000167776902	2009, 2015	Pōhue
99	Unreadable	2D55	3D01 PIT tag: 982000402166709	3D02 PIT tag: 982000402166904	2009	Punalu‘u
123	9C80	9C78	9C81 PIT tag: 982000167775413	8C41 PIT tag: 982000167827256	2013	Pōhue
132	3D14	9C27	3D16	9C28	2015	Pōhue
139	8C11	8C12	9C72 PIT tag: 982000167841019	8C14 PIT tag: 982000190550203	2015	Pōhue

Table 6. Hawksbill identification information for neophyte nesters on Hawai‘i Island, HI in 2018.

Turtle ID #	LFF	RFF	LRF	RRF	Date Tagged	Location
161*	PI1861	PI1860	PI1859 PIT tag: 982000190552985	PI1858 PIT tag: 982000190726303	7/12/2018	Kamehame
162	9C83	9C30	9C29 PIT tag: 982000402162627	9C82 PIT tag: 982000402162546	7/15/2018	Pōhue
163	9C60	9C59	9C84	9C85	7/16/2018	Pōhue

164**	9C75	9C73	9C87 PIT tag: 982000402163148	9C74 PIT tag: 982000402166843	8/16/2018	Pōhue
165	9C86	PI1867	PI1869 PIT tag: 982000402163356	PI1868 PIT tag: 982000402163290	9/3/2018	Pōhue
166	PI1871	PI1870	PI1873 PIT tag: 982000402167363	PI1872 PIT tag: 982000402167098	10/11/2018	Pōhue

*Satellite tag applied 7/12/18

**Satellite tag applied 9/6/2018 SN:17A0623 (tag not present on 9/25/18)

Table 7. Hawksbill identification information for return-nesters on Hawai‘i Island, HI in 2019.

Turtle ID #	LFF	RFF	LRF	RRF	Seasons returned	Location
64	85M	88M	2D15	83M	2005, 2010, 2014	Pōhue
74	PI1888	1D47	1D48	Unreadable	2007, 2009, 2011, 2013, 2015, 2019	Kamehame
77	3D11	1D65	1D66	1D67	2007, 2010, 2015	Pōhue
102	8C67	Unreadable	Unreadable PIT tag: 982000402163052	8C70 PIT tag: 982000402162656	2010, 2013, 2015	Kamehame
112*	3D40	3D41	8C29 PIT tag: 982000402163090	8C30 PIT tag: 982000402167131	2012, 2015	Pōhue
119	3D92	3D93	3D05	3D95	2013, 2015, 2017	Pōhue
135	8C57	PI27	Unreadable PIT tag: 982000190725942	9C33 PIT tag: 982000190215226	2015	Kamehame

*Satellite tag applied 6/27/2019, PTT:176795

Table 8. Hawksbill identification information for neophyte nesters on Hawai‘i Island, HI in 2019.

Turtle ID #	LFF	RFF	LRF	RRF	Date Tagged	Location
167*	PI1833	PI1829	PI1926 PIT tag: none	PI1858 PIT tag: 982000402162672	7/07/2019	Pōhue
168	PI1839	PI1840	PI1843 PIT tag: 982000402162849	9C82 PIT tag: 98200402166919	7/16/2019	Kamehame

169	PI1832	PI1853	PI1852 PIT tag: 982000402166486	PI1851 PIT tag: 982000402163139	7/29/2019	Pōhue
170**	PI1844	PI1845	PI1846	none	8/27/2019	Kamehame
171	PI1837	PI1836	none	none	9/6/2019	Pōhue

*Satellite tag applied 8/29/2019, PTT: 22980, older model telonics tag

**Satellite tag applied 8/27/2019, PTT: 176797

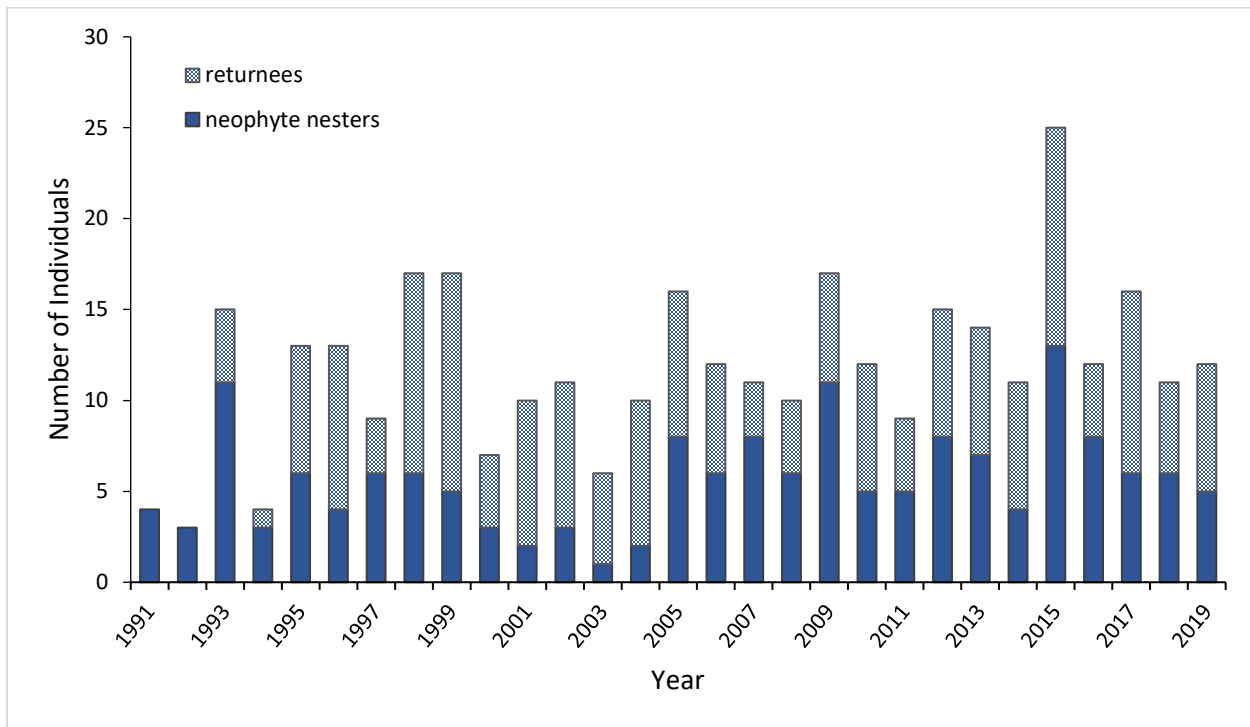


Fig. 4. Number of newly tagged, neophyte nesters and returnee hawksbill sea turtles by year (1991-2019), Hawai‘i Island, HI.

Challenges and future activities

Throughout the 2016 to 2019 nesting seasons, the project dealt with logistical challenges that resulted in lapses of night coverage and sporadic monitoring. Some of these challenges resulted from limited working vehicles to access our remote nesting sites. Safety issues limited monitoring at Kamehame especially during the 2016-2018 season. During the 2019 season, monitoring groups of three or more project personnel were able to increase monitoring efforts thus documented more nesting individuals than in previous season. The project will continue to improve monitoring efforts at Kamehame in order to gain a better understanding of the nesting population there.

During these nesting seasons, monitoring was disrupted by numerous storms and severe weather events. Project personnel were unable to monitor during these storms. In 2018 and in 2019, two nests each season were emergency translocated in-land at Pōhue. These nests were at

risk of being washed away by the high surf (fig. 5& 6). The project will need to continue to brainstorm measures to mitigate the impacts of these increasing storms on the nesting beaches.



Figure 5 & 6: Project volunteers conducting a nest translocation.