



A Sociological Study: Human Interactions With Sea Turtles at Laniakea, on the Island of Oahu, Hawaii, 2002-2003

By Cody Hooven¹ with Forward by George H. Balazs²

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Forward²

I am honored to recommend the following previously unpublished paper by Cody Hooven reporting the results of a 2002-03 study she conducted as a Marine Option Program student at the University of Hawaii at Manoa. Laniakea, also called Turtle Beach, has over the years become the most well-known place to view sea turtles in all the Hawaiian Islands. Easily accessible to the public adjacent to Kamehameha Highway on Oahu's North Shore, large turtles routinely sleep soundly basking in the sun on Laniakea's small sandy cove, and they browse peacefully on seaweed in the shallows. As many as 100 turtles of all sizes can now be counted foraging along this stretch of coastline, and up to a dozen are present at any one time basking ashore. Cody Hooven's study was carried out at the beginning of Laniakea's popularity and population boom, both for turtles and people. The first turtle known to bask at Laniakea was reported in 1999 by long-time resident and sea turtle naturalist, Joanne Pettigrew. Cody's 12-year old report therefore provides historically significant sociological and ecological documentation useful for present and future generations interested in Laniakea.

Today the "culture" of Laniakea involves a complexity of viewpoints, emotions, and activities - perhaps a reflection of modern-day life itself in Hawaii. Included among these diversities, both positive and negative, are: turtle conservation successes; conflicts between tourists, tours, and local residents; traffic frustrations; community volunteerism and fine fellowship; debates on sustainable use versus preservation; educational benign interactions with wildlife; and beach and ocean access for surfers, fishers, and others. Happily, through all of this and more, the turtles seem not to care.

I warmly extend congratulations to Cody Hooven for her excellent work, and I give my thanks and aloha to the Hawaii Audubon Society's Elepaio for publishing this important cornerstone to the continually unfolding story of Laniakea and sea turtles.

Cody Hooven 2014 Acknowledgments

This paper was written when I was more than the average number of years in to achieving my undergraduate degree from the University of Hawaii at Manoa. Dr. Sherwood Maynard was my university advisor on this project, as he was the Director of the Marine Option Program amongst many other roles. Sherwood, as most students knew him, was one of the key influences in my life that encouraged me to pursue my interests, even when they were difficult, and was a rare person who lead by example. He is missed.

Abstract

This study examined the interaction between humans and sea turtles, mainly at Laniakea on the north shore of the island of Oahu, Hawaii. The fascination that many people seem to have with sea turtles, the difference in attitude and behavior towards and regarding the turtles, if any, between visitors and residents, and the relatively new relationship between humans and sea turtles was examined through observations from August 2002 to June 2003. Interactions between humans and the turtles present at Laniakea were observed on most observation days. Most interactions were positive (i.e., not malicious), and often interactions were active such as feeding or

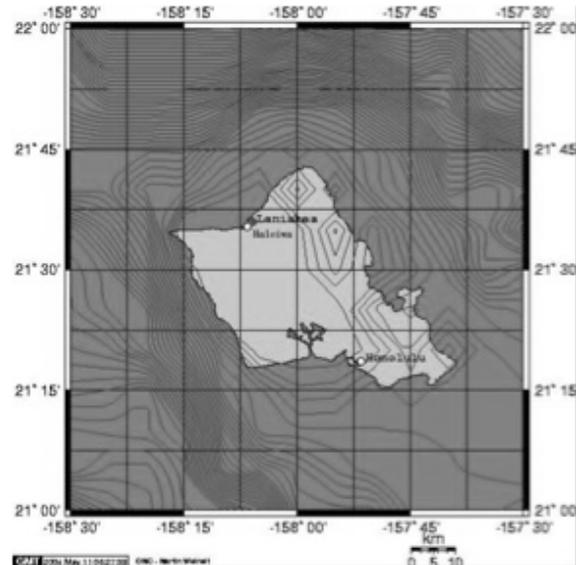


Figure 1. Area map of the island of Oahu, Hawaii. Laniakea can be found on the north- northwest facing shore (Weinelt 1999).

touching turtles, as opposed to passive, on the part of the humans. A number of other observations about the basking turtles such as their size, the surf, and the types of human interactions are described. An ongoing conundrum of human interactions with wild animals in general is concern for disturbing the natural behavior of the animals versus encouraging interest in the animals, presumably leading to further support for their conservation.

Introduction

The purpose of this study was to examine the interaction

between humans and sea turtles, mainly at Laniakea (N 21°37.143', W 158°05.118'), on the north shore of the island of Oahu, Hawaii (Figure 1). Initially, the intent was to study the fascination that many people seem to have with sea turtles, and also the difference in attitude and behavior towards and regarding the turtles, if any, between visitors to Hawaii and longtime residents. Another goal was to gain an understanding of the relatively new relationship between humans and sea turtles as the species, once over harvested as a food resource, now thrives as a protected species. Factors significant to whether sea turtles bask or not, and why, also became a point of interest and were briefly examined.

Laniakea is locally known for the presence of green turtles (*Chelonia mydas*), some of which are relatively tame and almost always visible in the shallow water or resting on the beach. The beach frequented by both turtles and humans is a small, sandy cove at the northeast end with scattered boulders and rocks in the water and on the beach. There is another long expanse of sandy beach with a shelf-type rock fronting it that is also part of Laniakea (Figure 2). However, this portion is divided from the cove by a rocky outcropping and turtles do not bask here nor do visitors to the beach generally swim here unless the ocean is exceptionally calm. For this reason, the observations in this project refer to the small cove portion of the beach, and this will be referred to simply as Laniakea for purposes of this report. There are two phenomena regarding the turtles at this beach that make study worthwhile: the turtles at this beach have become accustomed to being hand-fed algae, or *limu*, growing on the nearby rocks, and the turtles commonly crawl out of the water and up onto the sand to bask. Both of these behaviors suggest the resident turtles at this beach feel safe enough in the presence of humans to eat from their hands and bask unharmed on the beach.

Any study of sea turtles can be deemed worthwhile because all species are listed as either endangered or threatened (green turtles are listed as threatened) under the U.S. Endangered Species Act (ESA) of 1973. Historically, native Hawaiians and other Pacific island inhabitants of areas where sea turtles can be found ate the sea turtles and their eggs. Many uses were found for the turtles in addition to a food source, including medicinal uses of the fat and functional uses for the carapace and bones. Sea turtles also possessed religious or other traditional significance in Hawaii, and were not eaten or harmed by families believing the animals were their family guardian spirit, or *'aumakua*. Advanced fishing methods and technologies (e.g. ability to hunt sea turtles at remote nesting grounds) along with habitat destruction, and pollution have contributed to the decline in sea turtle populations (National Marine Fisheries Service, NMFS, and US Fish and Wildlife Service, USFWS 1998). Even with protection under the ESA, sea turtle populations are currently still at risk in Hawaii due to a disease of epidemic levels called fibropapilloma. This disease causes tumors to grow on soft tissues of the turtles, interfering with essential functions such as eating, swimming, and seeing (NMFS and USFWS 1998; Chaloupka et al. 2009).

Green turtles (Figure 3) grow slowly and have a documented life span in Hawaii up to almost 50 years of age (Zug et al. 2001) and possibly longer (Ching 2001). From hatchlings as little as 4.7 cm in length, adults can grow to over 100 cm in carapace ("shell") length and well over 100 kg. Sexual maturity and distinguishing sexual characteristics are not visibly obvious until a green turtle is an adult or near-adult, about 65cm and above in carapace length (NMFS and USFWS 1998). Adult green turtles are vegetarians and feed mainly on algae and sea grasses in Hawaii, depending on what occurs and what is accessible in particular areas. At Laniakea, a variety of algae can be found, including *Ulva spp.*, green algae, and *Melamansia sp.*, a type of red algae. Sea grass occurs at fewer locations than algae in Hawaii and is not known to be present at Laniakea (McDermid et al. 2002).

Basking on land is unique to *C. mydas*, and occurs in only a few places in the world (Swimmer and Balazs 1998; Whitton and Balazs 1982). Some of the physiological benefits of basking for marine turtles are thought to be thermoregulation and energy conservation (Swimmer and Balazs 1998). However, basking in the main Hawaiian Islands was an extremely rare behavior for green turtles until recently (Balazs 1996).

In addition to observing human-turtle interactions at Laniakea, another aspect of this study was to increase public awareness and reliable knowledge of sea turtles in Hawaii and encourage concern and appreciation for their conservation and wise use, such as in ecotourism. Further observations and research are continuing at Laniakea and will eventually provide more detailed results.

Methods

As the main part of this project is visual research, observations were made at Laniakea an average of once a week, or as near to this rate as possible. Types of interactions people participated in and attitudes they exhibited towards the turtles were noted. Were the people concerned, interested, or protective? Sometimes observations were inconspicuous, made while sitting on the beach as any other beachgoer. Other times, speaking with the people at the beach who seemed interested in the turtles provided information about those people's feelings directly. Literature packets regarding sea turtles, stranding contact information, and safe fishing turtle stickers were given out to anyone interested (as provided by the National Marine Fisheries Service Marine Turtle Research Program, MTRP). One source of information that proved to be insightful was interviews with people who have lived in Hawaii and had some type of interaction with the ocean (fishing, diving, surfing, etc.) for most of their lives. Brief oral histories were obtained from long-time residents about Laniakea documenting what changes have occurred there over the years, especially

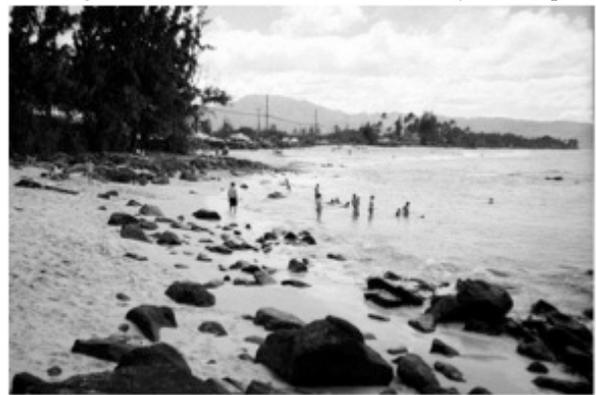


Figure 2: Laniakea; cove study area (near) divided from the rest of the beach by a rocky outcropping in front of the trees. (Photo taken in 2002, during winter when beach sand is minimized.)

regarding turtle populations, using some interview techniques described by Riney (1982) and adapted for these purposes.

Turtles seen at Laniakea were recorded at each visit, both in the water and basking on shore. Approximate size of the turtles was noted as small (<45 cm), medium (45-65 cm) or large (>65 cm) based on estimates of the straight carapace length (SCL). The sexes of estimated-adult turtles observed in this study were noted, when possible, based on the tail extending beyond the rear flippers that is characteristic of a male. Some individual resident turtles of Laniakea were identified, using sex, markings, size, and coloration. During low surf, observing the turtles was easily done while on the

beach, standing in shallow water, or snorkeling. In the winter months when the surf was high, observations were taken from shore only. The days and times of observation were intended to be varied in order to avoid sample bias, but this was not always possible due to other obligations of the author and distance to the site.

Even though fibropapilloma is a very significant area of research for sea turtles, it was not a focus for this project, and only the presence or absence of tumors was evaluated.

Photos were taken of various representative human-turtle interactions and to aid in turtle identification. Weather was also recorded for each observation day, including surf heights and wind. Surf heights were determined either based on conditions observed or using data reported by the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service station, Honolulu, Hawaii.

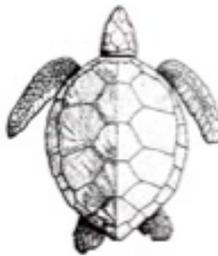


Figure 3 (left) Drawing of a green turtle, *Chelonia mydas*, dorsal view (Graphic Credit - NOAA, Jack Javech)

Basic sea turtle information was provided to tour (bus and limousine) operators who chose to stop at Laniakea as part of their tours. As these buses can bring large numbers of visitors to the beach for a short amount of time (<20 minutes), the drivers were provided with signs (also provided by the MTRP) informing mainly that sea turtles are protected, and that basking is a normal behavior, in both Japanese and English. Japanese text was provided due to the high number of Japanese visitors to Hawaii. Literature for the drivers/tour guides was included so they could learn and share accurate information with their guests. In general, information was given to anyone interested to increase knowledge and awareness of sea turtles, from lifeguards and police officers passing by, to visitors and local residents, to the hot dog vendor located at Laniakea. There were a few other instances of sea turtle stranding contact information given via email or telephone, or in person.

During the course of this project, signs were placed at Laniakea by the MTRP and the author in various locations in an attempt to be visible, educational, and instructional. The general text of some of the signs gave information on sea turtles and basking behavior, and others were brief phrases that said "Do not touch the turtles".

Results

There were a total of 28 observation days between August 22, 2002 and June 21, 2003 included in this report (Figure 4). This time frame encompassed both a winter and a summer surf season (high and low surf, respectively). Observations began in the afternoon (after 12pm) on 22 of the 28 days observed, and lasted an average of two hours. On the other 6 days, observations began before 12pm, but not earlier than 10am. For each observation at Laniakea, there was at least one person seen, and most often six or more, up to an estimated maximum of 90 people. The average number of people present was 31. The people were located both on shore and in the water when ocean conditions were calm. Often people were observed in shallow water watching or looking for turtles, even when there was small to medium surf (0-8 ft.). When the surf conditions were any larger, or when the weather was cool, the majority of people remained onshore with the exception of surfers who accessed surf breaks several hundred yards out through

the sandy cove area at Laniakea.

There was at least one turtle visible at Laniakea for 100% of the observation days and of this, 89.3% of observations found turtles in the water and 64.3% of observations found one or more basking turtles. As many as 12 turtles were observed in the near shore waters of the beach and the average number was six (Figure 4). There were usually more turtles observed in the water than basking on shore with the exception of January 7, 2003 when only one turtle was noted and it was basking, and also April 7, 2003 when all five turtles observed were basking.

While this research focused on conducting human-turtle interactions, individual turtles were identified when possible, to contribute to sighting data and are described below. On more than one occasion, people commented when they were able to recognize turtles as individuals, indicating an appreciation for "knowing" turtles that regularly frequented Laniakea. Several turtles regularly observed could be distinguished from others. One turtle, once identified, was noted regularly basking on the beach. This turtle is a large male, with a distinctive flattened, slightly scalloped-edge shell that appears to be shaped this way from age and use. This turtle was later identified as "L1" by an etched mototool inscription it was given by the MTRP in November of 2001 when it was treated for a hook removal from its flipper (the etching had since faded). Another turtle was distinctive due to the large crack just right of center in its carapace. This large female was later identified as "L2" also by a mototool inscription given by the MTRP in December of 2001 when this turtle was given a dental epoxy patch to repair the injury. A third turtle was identified by a metal tag applied to the front flipper that could be read once in calm, shallow water. Prior to identification of this turtle by tag number A-539, this turtle also appeared distinctive by the deep purple coloring just above the eyes, corresponding to a brow-line in humans. Prior to this tag re-sight on October 11, 2002, this turtle had not been seen since 1996 when it was nesting at French Frigate Shoals, about 500 miles northwest of the Main Hawaiian Islands. Aside from various notches or scars, many other turtles observed were non-descript, except for size class and sex if they were adults—even some of those seen on shore were large, robust turtles with no permanent markings or shapes with which to positively identify them unless they were able to be observed up close, usually while on shore. However, all turtles observed on the beach were a medium or large size, and most were large turtles. The only small turtles observed were in the water.

Other significant findings of this project were the varied reactions and behaviors of people as they interacted with the turtles. There was a general expression of delight at seeing the turtles, whether their presence was a surprise or expected from prior knowledge. General trends noted were that visitors to Oahu stopped at the beach, and interacted very much with the turtles such as by taking photos of the animals, and often with them if they were basking.

Residents of Hawaii also seemed to enjoy the turtles, but were naturally less fascinated, most likely due to familiarity. Specifically, of the 28 observation days, on nearly 93% of these days people were observed passively interacting with the turtles in some fashion, looking for them, taking photos, etc. On 71% of these observation days people were being more assertive in their interactions, either feeding the turtles, or touching them (Figure 5).

Only on two occasions during this study were particularly aggressive behaviors noted – once a visiting teenaged boy held on to a swimming turtle to "ride" it, and in another instance a woman who was a resident of Hawaii was using two hands to hold the head of a turtle in shallow water and shake it. Neither of these behaviors seemed ill-intentioned, although they were most likely bothersome to the turtles.

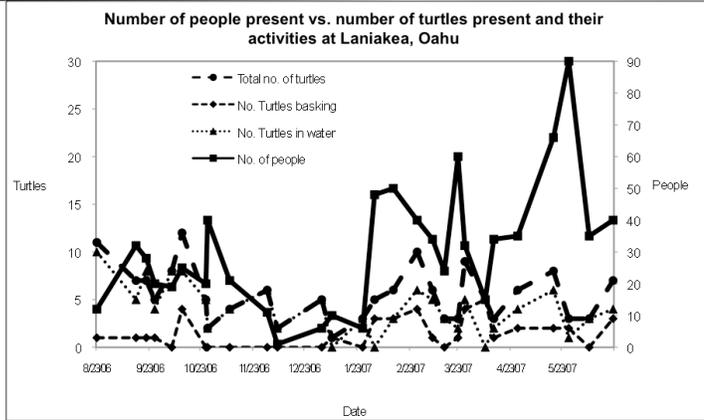


Figure 4: Number of people estimated to be present at Laniakea at the time of observation vs. total number and activities of the turtles.

On many other occasions, people would touch the carapace of a basking turtle, or a flipper as the turtles were swimming. Interestingly, on several occasions, assertive behavior by people was noted in a protective manner towards the turtles. For example, a resident man of Oahu forcefully yelled at two young tourist boys who repeatedly touched the flipper or carapace of a turtle swimming nearby. In several other instances, people informed others not to touch the turtles, often referencing educational signs on the beach, in varying degrees of politeness, or lack thereof. The number of observations of touching the turtles did not significantly differ before and after the educational “Do Not Touch” signs were placed at Laniakea. Despite a wary attitude by some beachgoers and residents towards the large tour groups, these groups generally remained on the beach less than 20 minutes, and often did nothing more than take photos of the turtles.

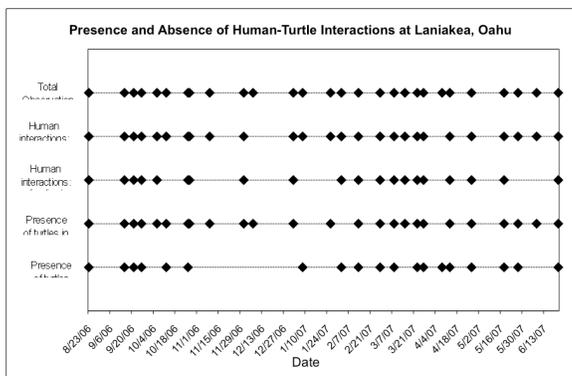


Figure 5: Presence and absence plot of different human and turtle interactions noted at Laniakea, Oahu.

On several occasions, officers from the State of Hawaii Department of Land and Natural Resources Division of Conservation and Resource Enforcement were seen at Laniakea either walking on the beach or observing beach activities from their patrol vehicle. No behavior change by people present at the beach could be attributed to the presence of the enforcement officers in the amount of time they were observed.

Surf heights were recorded for each observation. During winter storms, surf heights reached over 20 feet on several occasions. At these extreme heights, the water at Laniakea intermittently covered the entire cove with high-energy waves, making it impossible or unsafe to stand near the waterline. At other times, when the surf was large but not at extreme heights, the water still remained turbulent and difficult

to swim in. The sand also became more sparse and the rocks more exposed during this time, as compared to calm summer months. The presence of turtles basking was compared to the surf heights and there seems to be a trend showing turtles basking more often when the surf heights are low to moderate, however more observations would be needed to draw complete conclusions about the relationship (Figure 6).

Many other interesting anecdotes were collected through informal interviews, observations of, and discussions with various people at Laniakea. Examples are listed below:

- The owner of a property near Laniakea commented on the fact that many tour buses stop at Laniakea regularly and he seemed to be displeased with this. He also mentioned that his children have grown up enjoying the turtles and even would “ride” them when younger.
- A fisherman who has lived on the North Shore of Oahu for 30 years and regularly fishes with a throw net at Laniakea had noticed an increase in the number of turtles there from when he was younger. He mentioned that he wouldn’t want to touch the turtles that have tumors. He also said that since it became illegal to eat them, he has noticed larger turtles than before.
- Many surfers frequent Laniakea, which is fronting a popular surf break. Of all people observed, the surfers behavior was by far the most passive towards the turtles, often giving them nothing more than brief acknowledgement, or steering their surfboards to avoid the animals.
- A Japanese national living on Oahu brought his Japanese visitors to this beach to see turtles. He said there is a children’s legend in Japan with a turtle that signifies good luck.
- A man who called himself “Surfer Brian”, a resident of the North Shore and a Brazilian national, asked many questions about sea turtles. He then would tell attractive, young women interested in the turtles what he just learned to initiate conversations.
- A family stopped by to take an annual holiday photo with the turtles.

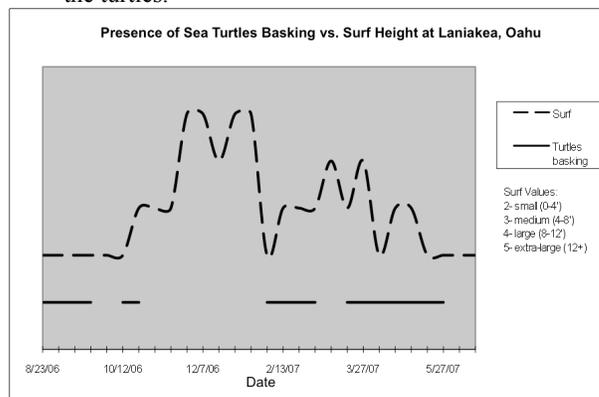


Figure 6: Plot of turtles observed basking (presence/absence) vs. surf heights at Laniakea, Oahu.

Conclusion

Although law prohibits harassing sea turtles, the types of contact observed did not appear to be particularly irritating to the animals. Even bothersome behaviors did not cause the turtles to become skittish and swim away as if extremely agitated. This shows

that they have developed a high tolerance to human interactions at this study site.

The basking and feeding behaviors of the turtles at Laniakea seem to be gained through learning and positive reinforcement. A turtle will presumably bask once unharmed, and return again because it was somehow rewarding for the animal. Similarly, a turtle that swims near a human and receives food unharmed will most likely repeat this behavior, essentially becoming accustomed to the presence of humans.

It is interesting to note that no turtles observed basking at Laniakea had tumors. However, at locations very near to Laniakea, turtles with tumors have been observed in the water and basking. This does not seem attributable to home-ranging behavior of turtles because the areas are in such close proximity that it is unlikely that the turtles are remaining in such specifically delineated areas. It would be worth studying whether basking turtles at Laniakea are promoting their health and tumor-free status by frequenting this specific cove. It may be that the turtles that have developed the behavior of entering this small cove are healthier because they are well-fed and able to bask frequently and possibly thus have a stronger immune system.

Another interesting observation was a trend for smaller turtles to be in the shallow water when surf was larger, whereas larger turtles generally dominated this area when conditions were calm. Basking could be affected in winter due to high surf eroding away much of the sand on the beach. With a rockier beach, turtles have less of a sandy path available to climb out and rest on and they are too cumbersome to maneuver on dry land over large rocks or around other obstacles. Also, the shallow water becomes much more turbulent and most likely it is treacherous to maneuver into the area from deeper waters over shallow reefs and rocks. Possibly the younger, smaller turtles stay inside of the outer reefs, while larger turtles forage and rest in deeper, calmer water.

The general conclusion about human interactions is that people tend to have good intentions and find encounters with the turtles to be enjoyable. Visitors to Hawaii seemed to be more fascinated and actively involved in interacting with the animals, while residents tended to be more passively enjoying the turtles. A third group, the surfers, tended to be the most reserved around the animals and regarded them respectfully.

While harassment is a judgment to be made by conservation enforcement agencies, it should be within reason. Petting and touching the animals is generally not harmful or malicious, but it can lead to people taking further liberties and disturbing the behavior of the turtle. However, if a person is able to interact closely with a protected marine animal (or any protected species) it makes the experience more memorable, and hopefully this will perpetuate concern for their conservation.

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HAS RESEARCH GRANTS

OCTOBER 1ST APPLICATION DEADLINE

The Hawai'i Audubon Society offers grants for research in Hawaiian or Pacific natural history. Awards are oriented toward small-scale projects and generally do not exceed \$500.00. Proposals are reviewed semi-annually, with the next deadline falling on **OCTOBER 1ST**. Email hiaudsoc@pixi.com for an application or visit the "Programs & Projects" section of our website at www.hawaiiadubon.org.



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Comments on the draft Kawainui-Hamakua Complex Master Plan

By Linda Paul, President, Hawaii Audubon Society

The Kawainui-Hamakua Marsh Complex on the windward side of Oahu is the last large wetland in Hawai'i covering more than 1000 acres. It is a Wetland of International Importance under the Ramsar Convention and a biosphere reserve site under UNESCO. The Department of Land & Natural Resources (DLNR) released its draft Kawainui-Hamakua Complex Master Plan (Plan) for public comment in May. The Society is one of several community groups that submitted comments in opposition to the Plan as it is currently envisioned.

The protection of Kawainui Marsh and its native waterbirds has been part of the Society's strategic plan for decades. Society members participated in the formation of the 1994 Kawainui Marsh Master Plan and subsequently lobbied the Legislature for state matching funds to construct the recently-completed waterbird ponds. This Spring the Society adopted Pond #10 and volunteers are restoring a valuable nesting area for native and migratory waterbirds. The Society is a longtime member of Ho'olaulima ia Kawainui, a network of conservation, native Hawaiian, educational, and community organizations founded in 2003 that developed a strategic vision for the Marsh in 2009. On June 30, 2014, the Society and Hawaii's Thousand Friends submitted joint comments on the draft Plan.

Unfortunately the draft Plan contains very little about the ecological significance of Kawainui and Hamakua Marshes or how the DLNR will restore and manage its watershed and wetlands to ensure the conservation of native habitat beyond its current projects. There is no plan to return sufficient instream flow into the Marsh to achieve maximum nesting success and prevent stagnant anoxic habitats prone to outbreaks of botulism fatal to endangered water birds, and no plan to maintain the migratory paths traveled by native gobies between the ocean and mountain streams. The draft Plan does not include a research program that will provide data important for understanding and managing the biota and other natural resources of the site, or a plan for whole-scale removal of invasive vegetation to increase

the amount of water bird habitat and food availability.

Instead the draft Plan includes detailed plans and locations for the construction of 37 buildings, 11 parking lots, 8 pavilions, 10 viewing decks, 4,155 feet of boardwalk, approximately 5.7 miles of trails, 9 maintenance access roads, 3 bridges/causeways, 4 staging areas, 4 plant nurseries, and 1 canoe launch adjacent to and in the historic wetlands. Yet the draft Plan provides little detail on how endangered and migratory birds and their habitat will be protected at each development site or how nesting birds will be kept safe from people, dogs, cats and rats that will become a problem once the Marsh is made more accessible via trails and boardwalks across streams and wetlands that now serve as a deterrent.

The Marsh is a rare and sensitive wetland and the Society's Board of Directors finds the construction proposed for the Marsh environs to be inconsistent with the public trust principles incorporated in the Hawaii Constitution. The State must require that all buildings, *luas*, parking lots, and maintenance yards be located **outside** of the Marsh environs and **downstream** of the historic wetlands and return the Maunawili Stream water now diverted to Waimanalo to the Kawainui watershed.

The final Kawainui-Hamakua Marsh Complex Master Plan needs to be a much more aspirational 25-year plan to fully restore and protect the Kawainui watershed streams and wetlands as they were 250 years ago. The Board believes only a fully restored and functioning Marsh, which provides an abundance of habitat and protection for Hawaii's endangered waterbirds and migratory birds and has adequate class 1 water flow to provide sufficient waterbird habitat and facilitate native goby migration can host a limited number of people to experience its wonders.

Text of the draft Plan is at <http://www.hhf.com/kawainui/>
Society's Comments on the Plan at www.hawaii-audubon.org

HAS Seeking Nominations for 2015 Board of Directors

The 2015 HAS Board elections Nominating Committee is seeking Society members who are willing to serve on the Board of Directors for an initial one year term. A handful of seats will become vacant and open for nomination. The nominating committee is comprised of Linda Paul, Liz Kumabe, Talia Ogliore, Mary Roney and Lance Tanino.

All members of the Board are expected to attend five two-hour meetings per year and a weekend Leaders' Retreat in January. If you are a Society member and interested in becoming a candidate, please submit a letter of interest and brief resume of your background and activities to the attention of the Nominating Committee at the Hawai'i Audubon Society's address by Friday, October 3rd, 2014.

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Make a donation to HAS at the cash register using your Maika'i Card and our code #77189. See page 6 for full details.

Kawainui Marsh Restoration

Saturday, September 6th from 9 am – noon

Saturday, October 4th from 9am – noon

Volunteer at the monthly Kawainui Volunteer Day led by DLNR/DOFAW. Support some of Hawaii's most endangered waterbirds and contribute to the success of the new restoration ponds behind Castle Medical Center in Kailua (at the end of Ulukahiki St.) *Please note: this workday is not led by Hawai'i Audubon Society, but by DLNR/DOFAW.

Paiko Lagoon "Welcome Home Shorebirds" Tour

Saturday, September 6th at 7:30am

Meet at 7:30 am on Kuli'ou'ou Road at the water's edge for a guided tour of the birds and their habitat. RSVP to Alice by leaving a message with your name, number of people attending, and phone number at 808-864-8122.

Bishop Museum Vertebrate Collections Tour

Monday, September 8th at 2 pm

Take a tour of the Bishop Museum's Vertebrate Zoology Collection, including the Hawai'i bird collection of approximately 7,200 specimens of extinct native species, native breeding species, non-breeding visitors, and introduced species. Please RSVP to Alice by leaving a message with your name, number attending, and phone number at (808) 864-8122. Space is limited.

HAS Research Grant Application Deadline

Tuesday, October 1st

Email hiaudsoc@pixi.com for an application or visit the "Programs & Projects" section of our website at www.hawaii Audubon.org.

HAS Board of Directors Nominations Deadline

Friday, October 3rd

See full description on page 5.

Hawai'i Audubon Society Membership Renewal/Donation Form

- \$25 Regular Member
- \$15 Student Member
- \$40 Family Membership
- \$100 Supporting Member

International Membership:

- \$28 Canada & Mexico
- \$33 Other

\$ ____ Donation

Donations are tax-deductable and greatly appreciated.

Name: _____

Address: _____

Phone: _____ Email: _____

- E-mail me the 'Elepaio Mail me the 'Elepaio E-mail me volunteer opportunities, updates, & field trips.

Thank you for your concern and commitment to protecting Hawai'i's native wildlife and ecosystems.

Pay by credit/debit card at www.hawaii Audubon.org.

Please make checks payable to **Hawai'i Audubon Society**

Mail form and payment to 850 Richards St., Suite 505, Honolulu, HI 96813



HAWAII AUDUBON SOCIETY
850 RICHARDS ST, SUITE 505
HONOLULU, HI 96813-4709

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Calendar of Events

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Foodland's Give Aloha Campaign, Code #77189
September 1st – 30th

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Tuesday, October 1st

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Friday, October 3rd

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