

An aerial photograph of a winding asphalt road that curves through a dense, green forest on a hillside. The road is light-colored and contrasts with the dark green trees. The terrain is hilly, and the road disappears into the forest in the distance. The overall scene is serene and natural.

# HPA Sea Turtle Research Program

*A history of educational and research  
opportunities provided through Sea Life  
Park's captive reared turtles*

Laura Jim and Marc Rice



# HPA

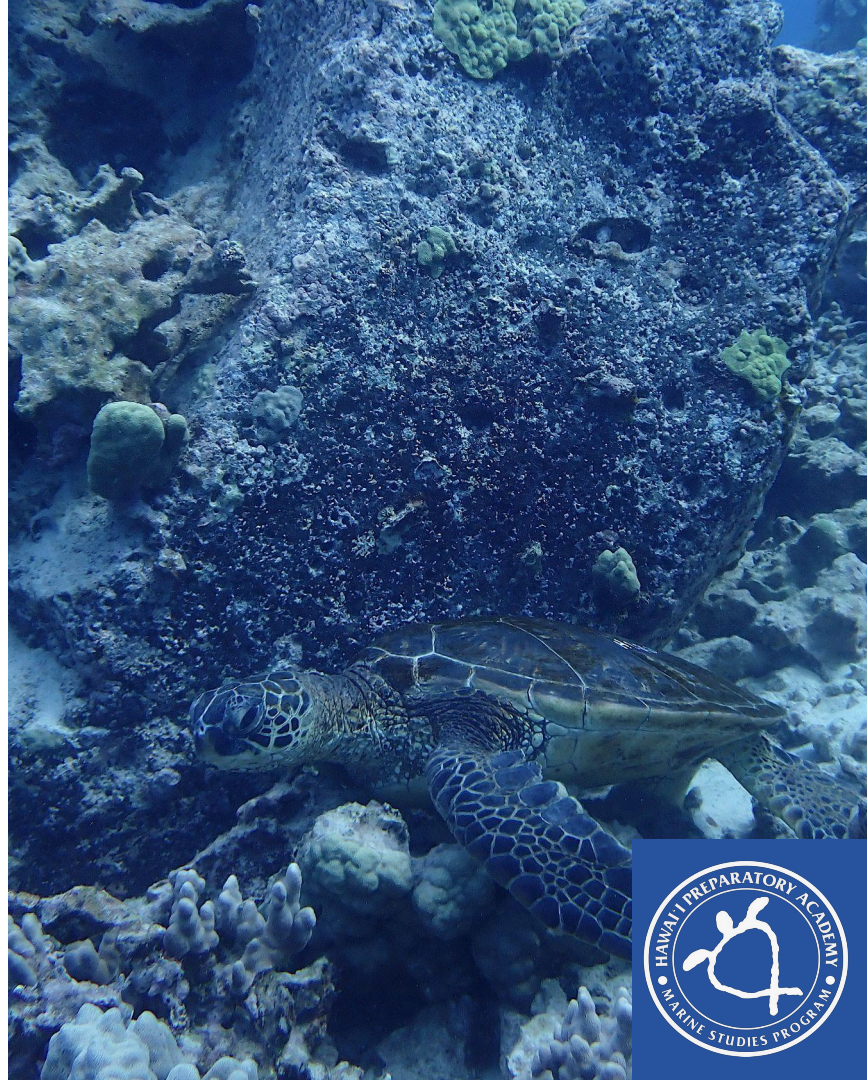
Hawai'i Preparatory Academy



# About us

# OUR MISSION

*It is the mission of Hawai'i Preparatory Academy's Marine Studies Program to contribute towards the conservation of marine life, including sea turtles, worldwide through education, research, and advocacy, working with students and community members to actualize their passion and commitment to a healthier marine environment.*



# EDUCATION, STEWARDSHIP, AND RESEARCH



## STUDENT VISITS

Throughout the past 15 years Malama na Honu staff have allowed us to bring students from our organization as well as many other schools to visit with the honu, their loko i'a, and cultural center. This on site, in person opportunity is invaluable and extremely impactful.

## SCIENTIFIC FINDINGS

While education is the main focus of Mauna Lani's program, a number of interesting findings have been learned through field research involving turtles hatched at Sea Life Park.

## TURTLE INDEPENDENCE DAY

Annually turtles are released through Mauna Lani Auberge Resort's Malama na Honu's program. This release brings community members together to celebrate our passion for honu, inviting them to be stewards of our oceans and our planet.

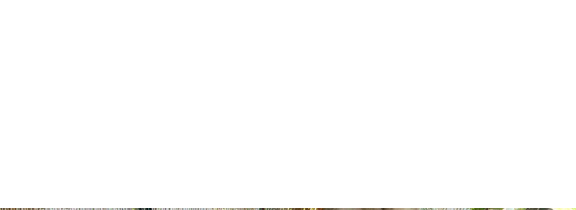
## STUDENT RESEARCH PROJECTS

Pi'i Laeha has regularly invited students to conduct independent research projects at their facility related to sea turtles, loko i'a and pond management.



# Turtle Independence Day





# School Visits





# School Visits





# School Visits





# Independent Student Projects



## An American Girl

HPA eighth grader Meimei Nakahara was featured in the September/October 2007 issue of *American Girl* for her work with threatened Hawaiian green turtles. Nakahara has been working with juvenile green turtles at the Mauna Lani Bay Hotel and Resort over the past year as part of the school's Cooperative Sea Turtle Research Program under the direction of Marc Rice, director of HPA's Sea Turtle Research Program, and George Balazs, leader of the Marine Turtle Research Program, NOAA, National Marine Fisheries Service, Pacific Islands Fisheries Science Center.



## Hawaii Prep student's volunteer efforts recognized with prestigious award

BY CAROLYN LUCAS  
WEST HAWAII TODAY  
clucas@westhawaii.com

Megan "Meimei" Nakahara hopes to see the Hawaii green sea turtle removed from the endangered species list one day. The eighth-grader at Hawaii Preparatory Academy is humble when talking about the commitment she made four years ago to study and help with the recovery effort of this

native species.

Nakahara's remarkable volunteer work made her stand out amongst the more than 40,000 middle and high school students nominated for the 2008 Prudential Spirit of Community Awards.

The 14-year-old honoree received \$1,000, silver medallion and an all expense paid trip with her parents to Washington, D.C. There Nakahara was personally congratulated by Sarah Ferguson, the Duchess of York, at the 13th annual award ceremony and gala dinner reception at the Smithsonian's National Museum of Natural History.

Ferguson addressed more than 100 top youth volunteers, of which two were from Hawaii, at the ceremony, telling them how important

▶ SEE NAKAHARA PAGE 4A



Hawaii Preparatory Academy eighth-grader Meimei Nakahara measures the body depth (thickness) of a juvenile green turtle at the Mauna Lani Bay Hotel and Bungalows.


HPA



- ▶ **NAKAHARA:** HPA student says she will donate half of her \$1,000 winnings to research and conservation program



# AN EFFECTIVE AND SAFE TECHNIQUE TO PIT TAG HATCHLING GREEN TURTLES CAPTIVE BRED AT SEA LIFE PARK HAWAII

George  Balazs, Robert Morris, DVM, and Jeffrey Pawloski



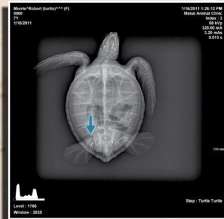
Wipe dorsal surface of left hind flipper with alcohol swab.



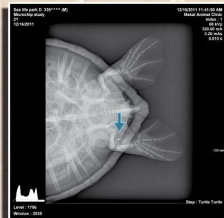
Inject 0.02 cc of 1% Lidocaine into subcutaneous soft tissue of dorsal left hind flipper. Wait 10 minutes. Use a new needle for each turtle.



Using a presterilized TX1406L applicator, insert the needle 12-15 mm under skin of the dorsal left hind flipper at an oblique angle.



Digital X-ray showing Pit tag placement in left hind flipper of an 18 cm 5-month old green turtle tagged as a day-old hatching.



Digital X-ray showing Pit tag placement in left hind flipper of 36 cm 16-month old green turtle tagged as a day-old hatching.

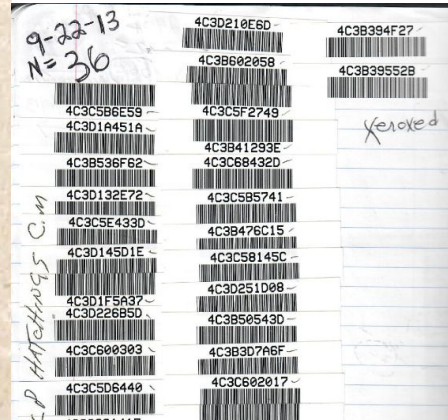
An effective, safe, and humane technique has been developed, evaluated, approved, and utilized to microchip hatchling green turtles born and released into the wild by Sea Life Park Hawaii. Since 1976, Sea Life Park has released over 13,000 hatchling Hawaiian-stock green turtles as a conservation and research effort secondary to the Park's principal objective of educational outreach focused on their captive breeding display lagoon and nesting beach. From 2010-2012, 866 hatchlings born at Sea Life Park have been Pit tagged with the Destron Sterilized TX1460L 11 x 2 mm microchip using the one-time use applicator system. Fifteen hatchlings each year have been retained for captive rearing comparative evaluation of health, growth rates, tag retention, and any movement of the microchip as shown through X-ray imaging. Turtles have been reared up to 40 cm for 2.5 years with no negative effects. Pit tags are inserted into soft proximal tissue of the dorsal left hind flipper after injecting 1% Lidocaine HCL USP pain block. The puncture at the tag injection site is sealed using a drop of Vetbond 3M Tissue Adhesive. The hind flipper Pit tagging of juvenile-to-adult wild-captured green turtles in the Hawaiian Islands has been carried out since 1995 with significant success and safety, extremely low tag loss, and no movement of the tag within the flipper. Photographic illustrations with step-by-step descriptions of the hatchling Pit tagging technique are presented in this poster. Latex gloves are worn to reduce human hazard from needle stick.



About 5mm of the needle's length will remain outside the skin when inserted the partial distance of 12-15 mm. Insert the Pit tag using the slider on the injection handle mechanism.



Apply one drop of Vetbond 3M tissue adhesive to the puncture to seal the site. Allow 10 minutes for adhesive to dry before seawater immersion.



# Scientific Knowledge



# MTBAP DATA FORM

Event ID (database): \_\_\_\_\_ Validation Date: \_\_\_\_\_ Initials: \_\_\_\_\_

Basking  In-water

TURTLE # of Day / MOTOTOOL #: H231 Turtle ID (database): \_\_\_\_\_

Species (circle one):  EI  Lo  Co  Dc Sex (circle one): F  M  O

Observer Names/Initials: Tanner Bromberg Date (MM/DD/YYYY): 11/7/23

Platform/Method: hand capture Handling Start Time (24hr format): \_\_\_\_\_

Capture Location Region: MHI Island/Atoll: HAW# Area: Puako Site: 22 PRR

Garmin ID (last 4 digits): \_\_\_\_\_ LAT: \_\_\_\_\_ Water Temp: \_\_\_\_\_ °C Air Temp: \_\_\_\_\_ °C

GPS Waypoint #: \_\_\_\_\_ LONG: \_\_\_\_\_ Water Depth: \_\_\_\_\_ m

Straight Carapace Length (SCL): 45.2 cm

Straight Carapace Width (SCW): 35.5 cm

Curved Carapace Length (CCL): 48.0 cm

Curved Carapace Width (CCW): 41.5 cm

Plastron Straight Length (PSL): 38.0 cm

Total Tail Length: 9.5 cm

Tail length (Plastron to Cloaca): 6.5 cm

Mass: 13.0 kg

SAMPLES COLLECTED? None  SKI Scute Tumor Blood Diet

Freezer/Works ID #: \_\_\_\_\_ Initials: \_\_\_\_\_

Label each vial with sample type and attach left PIT tag ID sticker. Without a sticker, label sample vials, date, flipper tag #, location, and species.

# of Skin Vials 2 Skin Location shoulder

# of Scute Vials \_\_\_\_\_ Scute Location \_\_\_\_\_

# of Tumor Vials \_\_\_\_\_ Tumor Location \_\_\_\_\_

Blood Collection Time: \_\_\_\_\_ # Tubes: \_\_\_\_\_

Volume: \_\_\_\_\_ mL Preservative: Na/Hep \_\_\_\_\_ (other)

Tube Type/Size: Glass Plastic 2 mL 6 mL 10 mL

### Flipper Tags (2 Types)

LH New		RH New	
(Add new LH PIT tag ID label here)		(Add new RH PIT tag ID label here)	
Location	Status	PIT/Metal Flipper Tag #	
LH	New	4	0
LH	Old		
LH	New	PI6005	
RH	New	PI6006	
RH	New	985113008316271	
RH	Old	98200	

Tag Location: Right Front Flipper (RF), Left Front Flipper (LF), Right Hind (RH), Left Hind (LH) Tag Status: newly applied tag (New), already present tag (Old)

KiHolo #14 SEA TURTLE TAGGING FORM (23)

CAPTURE DATE, LOCATION AND METHOD: 4-22-92 Kinohi, NIHOA hand snorkel

PERSON RECORDING DATA: Laura Dierenfield

OLD RFL TAGS: \_\_\_\_\_ NEW TAGS: RFL H-269 LFL H-268

TUMOR SCORE 0 OTHER NEW TAGS: \_\_\_\_\_

STRAIGHT CARAPACE-LENGTH: 36.4 WIDTH: 31.3  
*= 14.3 inches*

NOTCH LENGTH: 35.9

CURVED CARAPACE LENGTH: 38.5 WIDTH: 35.5

HEAD WIDTH: 5.9 SEX: MALE, FEMALE OR UNDETERMINED

TAIL LENGTH: T 6.0 C 4.0

RIGHT FRONT FLIPPER WIDTH: 6.7 SAMPLES COLLECTED: \_\_\_\_\_

PLASTRON LENGTH: 29.8

WEIGHT: 14.5 lbs.

DESCRIPTIVE REMARKS: 6622 originally tagged as HATCHLING 8/29/89 and released. HATCHED 8/28/89 AT SEA LIFE TABLE.  
PCA Left post central broken  
HAW - Mrs. Zackery's class present (4th grade class) several photographs by Mr. Rice

# Scientific Knowledge

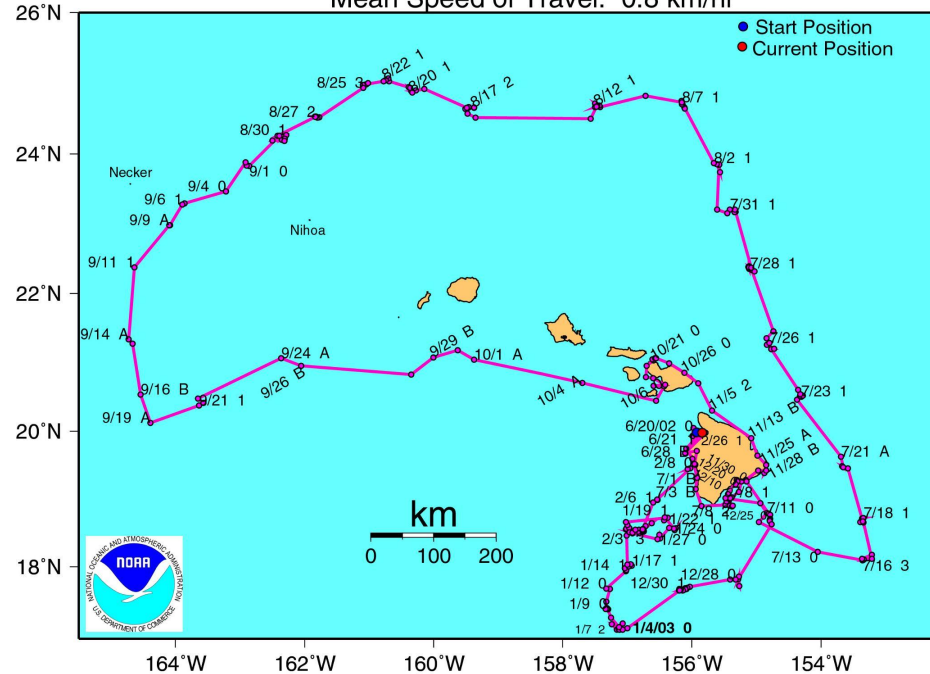
Hatchling: ~4cm in 2013 (9/22/23)  
 Juvenile: 45.2 cm in 2023  
 = ~ 40 cm/10 years or ~4 cm/yr

Hatchling: ~4cm in 1989  
 Juvenile: 36.4 in 1992  
 = 32 cm in (2.7 years) = ~11 cm / year





2002-2003 Movement of Mauna Lani Juvenile Green Turtle 22270  
 Duty Cycle: 12 hr on, 48 hr off SCL: 45.5 cm  
 Days Transmitting: 265 days Distance Traveled: 4847 km  
 Mean Speed of Travel: 0.8 km/hr



GMT Map by Denise Parker 03/13/03



# GRATITUDE

*Mauna Lani Malama na Honu Program has provided us with the ability to educate students and community members in the care for and stewardship of sea turtles and other wildlife. We are grateful to George Balazs, Pi'i Laeha, Ethan Souza, Kahoku Hurley and Danny Akaka Jr. for including us in this journey. This has only been possible through the partnership with Sea Life Park and their sea turtle program.*

