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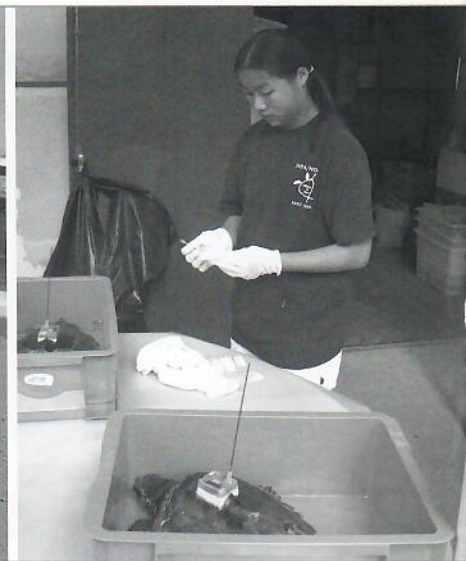
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MAKE KULA

[REAL-WORLD SCIENCE]

HPA Sea Turtle Research Program Turns 30





REAL-WORLD SCIENCE

HPA Sea Turtle Research Program Turns 30

By Shawn Saito

ON A CLEAR DAY in September, nine Upper School students and two Middle School students quietly waded into the shallow waters off a white sandy beach at Kaloko-Honokōhau National Park. Teamed up with members of the park staff and under the watchful eye of George Balazs, senior sea turtle scientist of the Marine Turtle Biology and Assessment Program within the Protected Species Division of the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service, Pacific Islands Fisheries Science Center, the students use large scoop nets to carefully capture green turtles (*honu*) feeding in the shallow waters of the basalt reef flat.

They quickly transport each turtle from the beach to a scale to be weighed. Each *honu* undergoes a physical examination with students participating every step of the way—handling the *honu*; recording morphometric data such as several measurement of the shells, any unusual conditions, the type of algae if present in the turtle’s mouth; scanning it for a microchip containing a unique identification; and gently returning it to the sea.

“Belly, back, up, ocean.” Balazs instructs the group on how to position the turtle on the examination table, and calls out a series of measurements and observations. “Forty-eight centimeters, red algae in its mouth, it’s shiny with no bumps or abrasions, tail-15.5 centimeters.” A student recorder carefully and accurately records and repeats everything to ensure accuracy.

When the research station is fully manned, a few students break off to explain the activity to park visitors observing. One bystander comments, “Our high schools don’t get to do this in Denver.”

A turtle tagging trip is the ultimate field trip for the students—a day at the beach under the blue sky, but beyond that, it is also a day of collaborating with other organizations to further research being done to save a threatened species, and experiencing firsthand how research is conducted. For some it helps them realize a future career choice, and for others it is an act of service.

“This is my first year at HPA, and I love the Sea Turtle Research Program,” said senior Hailey Briseno. “It is the first step to my becoming a marine biologist and marine veterinarian.”

“I love seeing how people internationally help endangered animals and it is incredible being able to be a part of it,” stated senior Alicia Chow. “Turtles are adorable!”

In October 1987, the collaborative partnership with NOAA and Hawai‘i Preparatory Academy created the Sea Turtle Research Program with the mission of aiding research about *honu* by gathering scientific data to learn more about the life and ecology of this threatened species.

On the program’s first tagging trip, 15 Upper School students dared to spend two nights and three days at a lagoon at Kiholo on the Kona Coast with Balazs, and HPA’s David Gulko and Marc Rice. Dive teams stretched a special net across the lagoon to capture turtles moving in and out of the area as the tide changed.

Based on the six turtles captured on that first expedition, many would not have predicted these accomplishments over the last three decades:

- Expansion from one study site to nine across Hawai‘i Island—Kawaihae, Puako, Kiholo, Honaunau, Hualālai, Kaloko, Kahalu‘u, Kapoho, and Punalau‘u
- 255 trips and 2,200 student participants
- Tagging several thousands of turtles
- Working on many of the Hawaiian Islands – Kaua‘i, O‘ahu, Lana‘i, Moloka‘i, and Hawai‘i
- Working in the Northwestern Hawaiian Islands including Midway Atoll and French Frigate Shoals
- Strengthening conservation efforts statewide
- Traveling throughout the North and South Pacific to assist with research in American Samoa, Australia, Japan, New Caledonia, and Singapore
- 15 student presenters at the Annual Symposium on Sea Turtle Biology and Conservation—Orlando (2000) and Miami (2002), Florida; Greece (2006), Mazatlan (1998) and Loreto (2008), Mexico; New Orleans (2014), Peru (2016), Philadelphia (2001), and Texas (1999)
- Creation of the Sea Turtle Hotline with 147 calls between 2001 and 2016
- Assisting with research that has led to more than 30 scientific papers on the green turtle, and more than 12 scientific papers on the loggerhead turtle



TOP LEFT (l-r): Laura Jim '91, JuliaAnn Salvador '20, and Anna Sorensen '20 at the 36th Annual Sea Turtle Symposium in Lima, Peru, where Salvador and Sorensen presented their posters in April 2016.



BOTTOM LEFT (l-r): Kulia Wooddell '07 and Alima Catellacci '07 were the youngest presenters at the 26th Annual Sea Turtle Symposium in Crete, Greece in March 2006.

BOTTOM MIDDLE (l-r): Ava Jean Johnston '17, Tyler Alt '17, Sidney Vermeulen '17, and Jackson Cootey '17 made the news in Noumea, New Caledonia while assisting in the attachment of satellite tags to 42 juvenile loggerhead turtles in September 2012.

BOTTOM RIGHT (l-r): Morgan Davis '21 and Marc Rice during a November 2016 trip to Haleiwa, where Davis assisted by recording the unique identification of a sonic tag that was placed on green sea turtle captured in the Anahulu River.

OPPOSITE FAR LEFT (l-r): Kathryn Treacy '08 and Jill Quaintance '03 observe a loggerhead turtle in the Port of Nagoya public aquarium in Japan during a tagging trip in September 2007.

OPPOSITE RIGHT (l-r): Meimei Nakahara '12 helps tag a loggerhead turtle with a satellite tracking device on a trip to New Caledonia in September 2008.

"Being a part of the inaugural turtle tagging team back in 1987 was one of my fondest and rewarding memories of my time at HPA. Having the opportunity to work alongside George Balazs, David Gulko, and Marc Rice was truly an honor and privilege. The experience of giving back some-thing to nature and the future generations of our society was, and is, one of the greatest moments in my life. Today, as I enjoy my days on the water or sitting on the beach, I can't help but feel a sense of fulfillment as a random turtle swims by or a tourist talks about their experience with turtles on their vacation."

— Neil Ozaki '88

"I cannot tell you how much the turtle tagging experience meant to me in high school. It was simply amazing! That opportunity opened up my world and I love telling Marc Rice and George Balazs that part of why I work for the NOAA Office of National Marine Sanctuaries is due to my high school turtle tagging experience."

— Claire Johnson Fackler '90

"My favorite Sea Turtle Research Program memory was traveling to New Caledonia to tag and release loggerhead turtles."

— Meimei Nakahara '12

Despite an overall declining trend globally, green turtle population growth rates are variable among nesting populations and regions. The Hawaiian green turtle population actually is increasing in abundance and is calculated to be increasing by about five percent per year.

Balazs quickly points out that the progress has been facilitated by HPA's Sea Turtle Research Program, which has thrived under the leadership of Marc Rice.

"Any partnership such as ours relies heavily on personalities involved," said Rice. "George Balazs has been a stalwart in supporting and including HPA in many of his multitude of research activities and projects over the years. What kept us both going in addition to the research were the interactions with the wonderful HPA students."

The mutual respect between the two is obvious when observing them in action, and the belief that the best way to learn is to do, which they share, also shines through.

"By engaging students in the hands-on aspects of this program, we can enlarge their understanding of the possible career choices they have, increase their ability to work as a team and enhance their understanding and use of technology in scientific research," explained Rice. "And it provides them with the opportunity to do original research and get involved in the publication of their research."

On a recent trip to O'ahu, eighth grader Morgan Davis and Upper School students Tyler Alt, Cecilia Calvi, Sebastian Restrepo, and Sidney Vermeulen deployed 15 sonic tags on 15 *honu*. The tags are emitting hypersonic signals being picked up by four receivers along the Anahulu River in Haleiwa. As her capstone project, Davis will be deciphering the data from these receivers—which turtles are in the river, how much time they spend there, and where in the river they spend their time.

"The use of technology in our research has enabled us to gain a far better understanding of the daily lives of sea turtles through the deployment of remote sensing devices like time-depth recorders, satellite tags/GPS tracking devices, remote controlled video cameras, UAVs and the use of satellite imagery and oceanographic sensors," remarked Rice.

The HPA Sea Turtle Research Program will continue to work with the NOAA on sea turtle biology and ecology studies, and maintain a low-level capture/recapture monitoring program on the west coast of Hawai'i Island providing students with this unique learning opportunity.

"Using travel and experience, the love of the sea turtle is the thread that takes you through the fabric of life," said Balazs. ■

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Photo courtesy Nancy Eger



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ON THE COVER: *Honu* heroes George Balazs (left), senior sea turtle scientist, Marine Turtle Biology and Assessment Program, NOAA, National Marine Fisheries Service, Pacific Islands Fisheries Center, and Marc Rice, director HPA Sea Turtle Research Program, have engaged students in real-world science through their collaborative program, which is celebrating its 30th anniversary this school year. *Honu* photo by Patrick O'Leary.



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