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students help lab study green turtles

High school students are helping scientists of the Southwest Fisheries Center Honolulu Laboratory of the National Marine Fisheries Service study Hawaiian green sea turtles at Kiholo Bay on the Big Island. Such an opportunity is rare even for college students much less high school students, according to George Balazs, a zoologist with the NMFS Marine Mammals and Endangered Species Program.

Students of the Hawaii Preparatory Academy at Kamuela have assisted Balazs in three field studies on green turtles at Kiholo Bay since October 1987. The field study in April included 17 HPA students as well as four from the Hawaii School for Girls in Honolulu.

"Students helping scientists" is the brainchild of Dave Gulko, an HPA science teacher. Gulko got the idea while assisting Balazs during a joint research project between NMFS and college students in the University of Hawaii's Marine Option Program.

Balazs was very interested in Gulko's idea: Kiholo Bay, an important feeding and sleeping area for green turtles, was monitored only sporadically because of budget constraints. Gulko's students would provide the needed manpower for such research; a generous donation from the late Robert L. Hind, Jr., of Kailua-Kona, provided the necessary funds for one year of research.

During the field studies, the student-scientists are grouped into teams that work in 2-to 3-hour shifts through the night, when turtles are sleeping and much easier to catch. The duties of each team are rotated so that students learn as much as possible about turtle research. Duties include watching for turtles, tending captured turtles, helping collect data, photographing turtles, camp duties and cooking.

To study and tag a turtle, it must first be caught either by hand or by net. Using a net is the more successful method. Dive teams stretch a large mesh tangle net across the lagoon. When a turtle is snagged in the net, the team watching from shore notifies a dive team, which quickly moves into action to carefully remove the turtle. The turtle is carried to shore and, in the morning, is tagged on a fore flipper and measured. Also, stomach and fecal samples are taken and external parasites are noted and sometimes removed. Then the turtle is set free.

The research results of the three field studies have been very promising. In the April study, 10 turtles were captured. Three had been captured previously in 1980, 1984 and February 1988. In the February study, 13 turtles were captured; 2 of them were long-term recaptures.

Long-term recaptures indicate that the growth rates of turtles averaged about half an inch per year. Long-



Hawaii Preparatory Academy student scientists at Kiholo Bay, Big Island.

term recaptures also indicate that Kiholo Bay is "home" to at least those turtles.

"It's interesting that we don't have more recaptures," said Balazs. "That we catch 10-13 turtles indicates there's a good number of turtles depending on that site for eating, sleeping and living."

Students selected for the program must have good grades and display a high degree of motivation and a willingness to work. Part of their evaluations are also based on how well they perform during the planning stages of the research. This experience gives students a taste of the logistics involved in planning a scientific field study.

The other teachers and the HPA administration are behind the program 100 percent, according to Gulko, who knows of no other project like this in Hawaii and perhaps the United States. Gulko is presenting a paper on the program in July at the National Marine Educator's Association in Santa Cruz, California.

Neither Gulko nor Balazs could say for certain whether the program would continue next year. "But we've been so judicious in spending the money, we have enough for one or two nights of research this summer, with seven or so students," said Balazs.

Both Gulko and Balazs agree that the program is a success so far. "The future of the joint program looks very bright," said Balazs.

The NMFS is an agency within the U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

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SCHOOLS



HPA STUDENTS HELP OUT — Students from Hawaii Preparatory Academy (above) are helping scientists of the National Marine Fisheries Service's Southwest Fisheries Center's Honolulu lab in studying Hawaiian green sea turtles at Kiholo Bay. The field study from April 27-29 included 17 HPA students and four from the Hawaii School for Girls in Honolulu.

Studying turtles is his thing

Knowledge about threatened Hawaiian green sea turtles is growing because of an idea Big Island high school teacher Dave Gulko had last year.

In March, Gulko joined college students studying the turtles at Punaluu in Ka'u.

Study leader George Balazs of the National Marine Fisheries Service had known since 1973 about another turtle site at Kiholo in North Kona, but rarely had time to go there.

Gulko proposed leading teams of his Hawaii Preparatory Academy students to Kiholo, as Balazs leads college students to Punaluu.

The proposal was accepted both by Balazs and by Kiholo landowner Robert L. Hind Jr., who donated enough money for food and camping gear for groups of 15 to 20 students at a time.

Gulko led three three-day field trips in October, February and April.

The turtles were captured, usually with nets, by students working in two- to three-hour shifts during the night. During the day the turtles were tagged, studied and released.

Some of the Kiholo turtles captured by Balazs in prior years were found to be growing two to three times faster than their cousins at Punaluu.

Much remains to be learned, says Gulko. The turtles breed at French Frigate Shoals, 500 miles northwest of Honolulu, and have been much studied there.

But little is known of the major part of the turtles' lives after hatchlings leave the shoals and swim to the main Hawaiian Islands.

"How long does it take for the turtles to reach sexual maturity? What do they feed on? People have found a bunch killed by parasites. We took parasite samples to find out more," Gulko says.

Gulko's interest in marine biology started while he was a student at Castle High School when he joined a program called the Blue Water Marine Laboratory. He continued on for a degree in zoology at UH Manoa.

Gulko prepares much of his own teaching material because no one has written a text on Hawaiian marine biology since there are so few people teaching it.

"There's a whole other world in the ocean," he says. "It's something people should be learning about. It's part of their heritage."



Name: Dave Gulko
Age: 27
Position: Biology teacher, Hawaii Preparatory Academy
Education: UH-Manoa
Next project: Manla rays