Faculty Sabbatical Report

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This report documents the achievement of my proposed objectives listed in my original application for sabbatical.

Objectives:
1. Participate as co-PI on a Center for Tropical and Subtropical Aquaculture (CTSA) project on cultivation methods for two native, edible seaweeds.
2. Work to complete in-progress papers.
3. Clean my office.

Results:
1. I continued to work with Dr. Maria Haws and several graduate and undergraduate students to complete this project. The final report is due to CTSA September 30, 2014.
2. I completed and submitted a manuscript that was accepted for publication:

   Abstract: The Hawaiian green sea turtle, *Chelonia mydas* Linnaeus, is a marine herbivore known to feed on seagrasses and seaweeds. On the east side of the island of Hawai‘i, at high tide, green turtles have been observed feeding on a terrestrial, salt-tolerant turfgrass: seashore paspalum, *Paspalum vaginatum* Swartz, first introduced to the Hawaiian Islands in the 1930s. The role of this grass in green turtle nutrition is unknown. *Paspalum vaginatum* samples were collected at Keaukaha Beach Park, Hilo, and analyzed for nutritional composition (% water, % ash, caloric value, C:N ratio, % protein, and % lignin). In addition, two red seaweeds, *Pterocladiella capillacea* (Gmelin) Santelices & Hommersand, a common food source for green turtles, and *Ahnfeltiopsis concinna* (J. Agardh) Silva & DeCew, an abundant high intertidal species sometimes consumed by turtles, were analyzed for comparison. *Paspalum vaginatum* contained approximately half the ash of either of the seaweed species. Samples of *P. vaginatum* contained at least 300 calories/g ash-free dry wt. more than either of the seaweeds. Total protein content of *P. vaginatum* was 3-4 times higher than that of the seaweed species. Samples of *P. vaginatum* contained at least 300 calories/g ash-free dry wt. more than either of the seaweeds. Green turtles in Hawai‘i may opportunistically consume *P. vaginatum* because of its local abundance, and/or its high protein and caloric content. In foraging areas where native macroalgal species have declined and/or turtle carrying capacity has been reached, green turtles may exploit new foods, such as seashore paspalum, and perhaps mitigate decline in somatic growth rates and body condition.
3. I organized my office somewhat.

4. Although not proposed in my original sabbatical application, I re-thought my pedagogy and curricula. I implemented my ideas on making lecture courses more inquiry- and student-synthesis-based in my classes beginning in Fall 2013. For example, in Marine Biology lecture, my students now take hammer and chisel and split shale to find trilobite fossils; I no longer lecture about extinct arthropods. In Marine Plants lecture, students extract carrageenan from Hawaiian seaweeds, and then search the literature to make their own discoveries and conclusions. I am continuing to add to and improve these class activities in all my courses.

Financial Remuneration:

Originally I had thought that the CTSA would support me for 0.74 months during my sabbatical, but these funds were not used until after my sabbatical.

Summary:

I thank the University and my department for allowing me to take the year of sabbatical to pursue my scholarly activities. I came back ready to teach, better able to cope with disappointment, and with a clearer perspective on my personal and professional goals.