Abstract Preview

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A NOVEL USE OF AN ANCIENT HAWAIIAN FISHPOND BY GREEN TURTLES (*CHELONIA MYDAS*)

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An ancient brackish-water Hawaiian fishpond connected to Kiholo Bay on the west coast of the island of Hawaii has been found to be prominent foraging and resting habitats for immature green turtles, *Chelonia mydas*. Our study looked at the importance of the fishpond by determining the number of turtles using the fishpond, their behaviors, food sources, diel movements, and persistence of use. The results of our study have strong conservation relevance to land managers currently developing plans to alter certain features of the fishpond to enhance finfish populations. Movement by the turtles between the fishpond and Kiholo Bay via a narrow channel was monitored by video camera and a Radio Frequency Identification (RFID) monitoring station to detect the presence of a sampling of 32 RFID tagged turtles. This monitoring showed that 25% of the tagged turtles (n=8) remained in the fishpond more that 85% of their time and video monitoring showed that a maximum of 74 turtles entered the fishpond in a single 24 hour period. A population of 75-100 turtles was estimated to use the fishpond for foraging, underwater resting and occasional terrestrial basking. Most turtles entered the fishpond from 1300-2400h and moved out of the fishpond from 0500-1000h daily. Movements into and out of the fishpond were influenced by tidal currents. Algal forage utilized in the fishpond included Cladophora laetevirens, Pterocladiella caloglossoides, Schizothrix calcicola and Chroococcus sp. Based on our findings, turtles in the fishpond experience shelter from harsh ocean conditions and are protected from predation by tiger sharks frequenting Kiholo Bay. In addition, algae utilized within the fishpond may be vital to the turtles' nutrition and somatic growth given that published findings indicate that at least one coastal aggregation of green turtles on the same coastline has reached carrying capacity.