Hot Biology: Use of Thermal Imaging to Detect Nesting Behaviors of the Endangered Hawaiian Coot

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I inquired; Can artificial floating nests (AFNs) be used to improve Hawaiian Coot (Fulica alai) reproductive success in a mangrove forest or at wetlands where no predator control is conducted? I conducted a site comparison between nesting behaviors of the Hawaiian Coot in a mangrove forest at Pipiʻo Pond, Molokai (site #1) versus open-water wetlands at Keaukaha Fishpond, Big Island (site #2). Baseline data was collected at both sites and a determination was reached that locations were suitable to introduce AFNs. Based on data and bird observations, three AFNs were deployed at desirable locations at each site where nests were inaccessible to both land-based and aerial predators and spaced to avoid territorial disputes for foraging birds. Thermal imaging technology was used to detect reproductive patterns at site #1 enabling viewable images of coots nesting in a mangrove forest not accessible to observe with binoculars. Images were analyzed to determine compatibility of nesting on AFNs in open-water versus nesting in forested areas. AFNs were re-engineered to be more economical at site #2 by using PVC versus ABS Piping, scaled down to minimize predation of coots by black crowned night herons, and nesting material added to assist nest construction. Although coots arranged nesting material and ate algae that grew on AFNs, coots at site #1 were determined to nest in the mangrove, as coots are known to nest at the same place even if their offspring are unsuccessful. Furthermore, it was inconclusive that the artificial floating nests improved reproductive and fledging success at site#2. However, typical nesting season of the Hawaiian Coot is December-March, this may be answered through continued observations as my study progresses.

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