CONSERVATION OF THE PYGMY HIPPOPOTAMUS (*Choeropsis liberiensis*) IN SIERRA LEONE, WEST AFRICA

by

APRIL LEANNE CONWAY

(Under the Direction of John P. Carroll and Sonia M. Hernandez)

ABSTRACT

The pygmy hippopotamus (*Choeropsis liberiensis*, hereafter pygmy hippo) is an endangered species endemic to the Upper Guinea Rainforests of West Africa. Major threats to their continued survival include poaching for meat and deforestation. With increasing human populations and subsequent land use changes, pygmy hippo survival is far from certain. Understanding their ecology and behavior requires knowledge of the anthropogenic forces that influence them. I report on a study conducted on and around a protected area, Tiwai Island Wildlife Sanctuary, in southeastern Sierra Leone. The objective of this research was to explore local knowledge about pygmy hippos and human-wildlife interactions, test radio transmitter attachment methods, evaluate physical capture methods for radio transmitter attachment, and explore the use of camera trapping to determine occupancy and activity patterns of pygmy hippos. My results suggested that while the majority of local residents in the study area do not believe pygmy hippos have any benefits, environmental outreach may positively influence attitudes. Furthermore, the potential for using public citizens in scientific research facilitates exchange of knowledge. For radio telemetry transmitter attachment, I found that a hose-shaped collar was the best and caused minimal abrasion to the pygmy hippo. In the field, I attempted to physically capture pygmy hippos using pitfall traps, and successfully caught a male pygmy hippo in October 2010. However, more time is needed to capture multiple hippos. Camera trapping allowed for estimation of occupancy and activity patterns on Tiwai Island and the surrounding unprotected islands, and also recorded previously undocumented species in the area like the bongo *Tragelaphus eurycerus*. Detection probabilities were low ($p < 0.3$); however, occupancy appeared to be influenced by habitat type. Pygmy hippos were more likely to occupy riverine and swamp habitats, and had a higher occupancy rate on the smaller surrounding islands. Pygmy hippos were mainly nocturnal; however, they had peaks of activity during the night, and were active later in the morning during rainy season. Camera trapping surveys should expand to further evaluate pygmy hippo populations. With forests continually degraded or lost, a better understanding of the needs of pygmy hippos can better inform range-wide conservation initiatives.

INDEX WORDS: Activity patterns, *Choeropsis liberiensis*, Camera trap, Citizen science, Conservation, Endangered, Environmental attitudes, Human dimensions, Occupancy, Pygmy hippopotamus, Sierra Leone, Technique development

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DEDICATION

This dissertation is dedicated to my parents, Leslie and Joan Conway. Without their support and encouragement through all my adventures in life, none of this would have been possible. I would also like to dedicate this dissertation to those I have lost in Sweet Salone, but who are always in my heart: Kenewa Koroma I, Momoh Magona, and Leslie Kenewa Koroma

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