

ALIEN PLANT THREATENS NILE CROCODILE BREEDING IN LAKE ST LUCIA, SOUTH AFRICA

Alison J. Leslie^{1,2} and James R. Spotila²

¹ Department of Zoology, University of Stellenbosch, Private Bag X1, Matieland 7602, South Africa

² Department of Environmental Sciences, Drexel University, Philadelphia, U.S.A.

In a study from 1994 – 1997, we observed that the majority of Lake St Lucia's nesting Nile crocodiles selected open, sunny, sandy areas in which to deposit their eggs. Nests were only found in shaded sites in the Mpate river breeding area and these nests were shaded primarily by the alien plant *Chromolaena odorata*. Shaded site soil temperatures at 25cm depth, were on average 5.0 – 6.0°C cooler than sunny site soil temperatures at the same depth. Shaded site temperatures were well below the pivotal temperature for St Lucia's Nile crocodiles and as a result nests probably produced a female-biased sex ratio. Shaded site temperatures may also have prevented embryonic development altogether. We observed the behaviour of a number of breeding crocodiles in the Mpate river area during the study, and noticed that while digging their egg chambers many females encountered roots from *C. odorata*. Being unable to dig through the fibrous mat of roots, these sites were abandoned. In a mitigation experiment, where additional nesting sites were created, the percent of sites utilized increased, indicating that suitable nesting sites were in short supply. This alien plant is posing a very serious threat to the continued survival of the Nile crocodile in Lake St. Lucia and unless immediate action is taken, a female-biased sex ratio will result in eventual extirpation of the species from this recently proclaimed World Heritage Site³.

³Leslie, A.J. and J.R. Spotila, 2000. Alien plant threatens Nile crocodile (*Crocodylus niloticus*) breeding in Lake St. Lucia, South Africa. *Biological Conservation* 98:347-355.