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NOTE

THE PERSISTENCE OF THE STRIPED HYENA

HYAENA HYAENA LINNAEUS, 1758 (MAMMALIA:

CARNIVORA: HYAENIDAE) AS A PREDATOR OF OLIVE RIDLEY

SEA TURTLE *LEPIDOCHELYS OLIVACEA* ESCHSCHOLTZ, 1829

(REPTILIA: TESTUDINES: CHELONIIDAE) EGGS

Divya Karnad

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The Rushikulya River mouth, in the state of Odisha, India, is well known as an Olive Ridley Sea Turtle *Lepidochelys olivacea* mass-nesting site (Panigrahy et al. 1990; Pandav et al. 1994). In addition to sea turtles, 149 species of phytoplankton (Baliarsingh et al. 2015), 93 species of zooplankton (Sahu et al. 2010), and 27 species of fish (Patnaik & Misra 1988; John 2010) have been reported from the waters of the Rushikulya estuary. With respect to land based biodiversity, there have been reports of the bird diversity (e.g., Mohanta & Behera 2014) and land based predators of Olive Ridley nests, such as feral dogs, Golden Jackals *Canis aureus* and the Striped Hyena (Tripathy & Rajasekhar 2009).

The occurrence of Striped Hyenas along the coast, though rarely mentioned, is known along the Red Sea (Foster-Vesey-Fitzgerald 1952) and the Kenyan coast (Carlton & Hodder 2003). The presence of the Striped Hyena *Hyaena hyaena*, a Near Threatened species (AbiSaid & Dloniak 2015), along Odisha coast, is particularly significant since the Odisha coast is vulnerable to several measures of climate change, particularly sea level rise (Kumar et al. 2010) and severe weather (Kumar et al. 2014). The Striped Hyena is a solitary, nocturnal scavenger occurring in a wide variety of habitats, although thought to prefer arid to semi-arid environments (Reiger 1979), avoiding open desert and dense thickets (Prater 1971). They are known to occur across most of India, including the wet forests of southwestern India, except northeastern India (Reiger 1979). Several studies have discussed their occurrence

THE PERSISTENCE OF THE STRIPED HYENA *HYAENA HYAENA* LINNAEUS, 1758 (MAMMALIA: CARNIVORA: HYAENIDAE) AS A PREDATOR OF OLIVE RIDLEY SEA TURTLE *LEPIDOCHELYS OLIVACEA* ESCHSCHOLTZ, 1829 (REPTILIA: TESTUDINES: CHELONIIDAE) EGGS

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and abundance within and near protected areas, such as Kumbalgarh and Esrana (Singh et al. 2010), Rajaji National Park (Harihar et al. 2010), Sariska Tiger Reserve (Gupta et al. 2009) and Gir National Park (Alam et al. 2015). Yet Striped Hyenas are known to be tolerant of human habitation, occurring in human-dominated landscapes in western India (Singh et al. 2010). This feature is of significance because the coastal areas adjoining the Rushikulya estuary are dotted with fishing villages and coastal development.

As scavengers, hyenas are known to consume a huge variety of food, including leaves, fruits, insects, fishes, reptiles, birds and mammals (Leakey et al. 1999; Alam & Khan 2015). Carlton & Hodder (2003) report the occurrence of Striped Hyena as a predator of intertidal fauna, such as crabs, along the Kenyan coast. While Tripathy & Rajasekhar (2009) suggest that hyenas may have excavated sea turtle nests, they do not clearly report a direct sighting of the animal or its feeding habits. This paper provides evidence of the continued

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Image 1. Habitat in which the Striped Hyena was spotted at the edge of the Casuarina plantation on the beach at Rushikulya River mouth, Odisha, India.

occurrence of the Striped Hyena in the vicinity of the Rushikulya mass nesting beach. It adds to previous research on sea turtle predation by providing the first record of a direct sighting of the Striped Hyena feeding on Olive Ridley Sea Turtle eggs on the Rushikulya mass nesting beach in Odisha.

During the February 2008 arribada of Olive Ridley Sea Turtles at the Rushikulya mass nesting site, about 80,000 nesting turtles were recorded in just two of the five days of mass nesting (Shanker & Kale 2014). During the second night of the arribada, a Striped Hyena was sighted near the *Casuarina equisetifolia* (henceforth Casuarina) grove between the villages of Gokharkuda and Kantiagada in the Ganjam District of Odisha. An Olive Ridley Sea Turtle had ascended the beach between 50m and 70m from the high tide line at the edge of the Casuarina grove. The hyena was spotted observing the nesting turtle from close quarters (<1m distance), and once the turtle had completed nesting, the hyena searched for and dug up its nest. The Striped Hyena

then consumed the sea turtle eggs, spending about 35 minutes at that nest, consuming most of the eggs. A hyena was repeatedly sighted near the Casuarina grove on the other three days of mass nesting, but was not encountered thereafter, during the turtle incubation and hatching.

This record has two implications. First, Casuarina plantations along the sea turtle nesting beach in Rushikulya have been criticized for altering beach dynamics and ruining the nesting habitat of sea turtles (Pandav et al. 1998; Mohanty 2002). While their impact on beach characteristics may be negative (Feagin et al. 2015), the actual evidence of the Casuarina's interference with the biological parameters of sea turtle nests is difficult to find (Schmid et al. 2008). The plantations in Rushikulya have also been shown to benefit sea turtles by forming an artificial light barrier, preventing the misorientation (disorientation) of Olive Ridley hatchlings (Karnad et al. 2009). These plantations are, however, rarely used by people in this populated landscape, therefore they provide habitat for other species including the Striped Hyena. Hyenas may also be able to survive in other habitats that provide sufficient cover near the beach.

Second, Rushikulya, which has so far been thought about only as a sea turtle rookery, must now be reconceived as an area of conservation priority for both land-based and marine threatened species. This requires revisiting conservation policies for the area to include both marine and terrestrial conservation. Given that these threatened species co-exist with people in this landscape, Rushikulya can serve as a model for inclusive and community based conservation, both on land and at sea. In light of the proposed development of ports and other private commercial infrastructure on

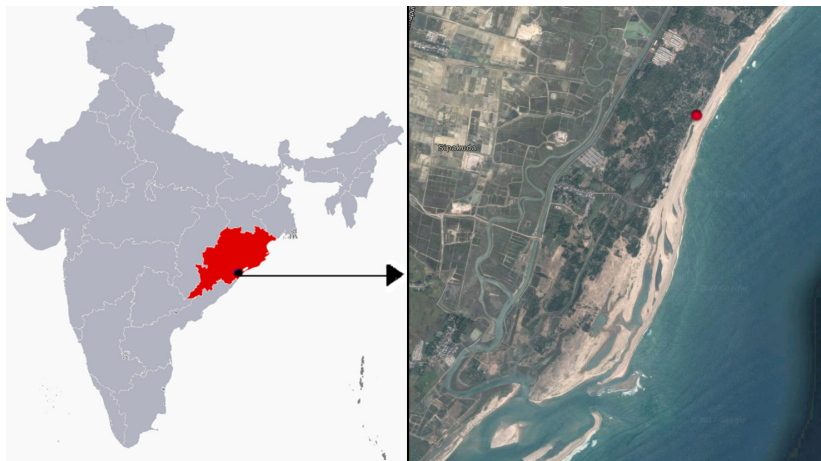


Image 2. The location of the sighting of the Striped Hyena on the beach at the Rushikulya Sea Turtle Rookery

the coast (Sridhar 2005), inclusive conservation could have significant implications for Olive Ridley Turtles in the Rushikulya area.

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