Genetic Diversity of Green Turtle Population Nesting at Kosgoda Turtle Rookery, Sri Lanka

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Abstract: Genetic diversity is widely accepted as a foundation for future organismal diversity and corresponding conservation efforts are directed at preserving the existing genetic variation within endangered species. Green turtle is listed as endangered in the IUCN Red List of Threatened Animals. We assessed the genetic diversity of the green turtle population nesting at Kosgoda turtle rookery using six microsatellites. Skin tissue samples were collected from 68 nesting females from May 2005 to April 2006. All six microsatellite loci were highly polymorphic and a total of 149 alleles were observed. The mean number of alleles per locus was 24.7 and the mean observed and expected heterozygosities across all loci were 0.75 and 0.93, respectively. Micro-Checker analysis suggested that the Kosgoda green turtle population was possibly in Hardy-Weinberg equilibrium. Although the Kosgoda green turtle population is small, its high genetic diversity among and within individuals suggests that the population may not be currently undergoing a bottleneck.

Keywords: Microsatellites, Genetic Diversity, Sea Turtles