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National University of Singapore
29 June - 2 July 2016



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Improving survival and hatching success of leatherback nests at Jamursba Medi Beach, Papua Barat, Indonesia

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Jamursba Medi (JM) beach located on the northwest coast of the Bird's Head Peninsula, Papua Barat, Indonesia hosts the largest nesting aggregation of leatherback turtles (*Dermochelys coriacea*) in the western Pacific. The Bird's Head nesting population is rapidly declining, and low hatchling output impedes population recovery. Increasing hatchling production by improving survival and hatching success of leatherback nests is the primary focus of our conservation program. Here we report results from our efforts after we implemented a strategic management plan, which identified high-risk areas. Primary threats to leatherback nests include predation by feral pigs and dogs, elevated sand temperatures, tidal inundation and erosion. We protected nests by enclosing nests facing predation risk, shading nests at-risk from extreme sand temperatures, relocating nests to safer areas, and a combination of these methods. In addition, members of local communities helped lower predation rate by snaring pigs in Warmamed, one of JM beaches where nesting activity and nest predation by pigs are greatest. In 2014 and 2015, approximately 25% and 21% of the nests were protected, respectively, resulting in a higher average hatching success (64% in 2014 and 59% in 2015) than if nests were left unprotected. In both years, pig trapping by community members lowered the predation rate to nearly 0%. Effective pig trapping combined with individual nest protection has greatly improved survival and hatching success of leatherback nests in the last two years. If we, along with community members, continue this effort long term, we will help ensure that hatchling output of the population will be maximized.

Climate change and sea turtle hatchery management practices in South Asia.

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In-situ incubation of sea turtle nests is preferred, but threats including poaching, predation, and habitat loss can require eggs to be incubated in a hatchery. However, management practices that do not result in high hatchling productivity will negate the perceived benefits of incubating eggs in a secure environment. Using a mixed-methods approach to describe hatchery productivity in terms of eggs/nests protected and hatch success, I present detailed descriptions of hatchery infrastructure and practices for handling, transporting and incubating eggs, and holding, rearing and releasing hatchlings from hatcheries in Bangladesh, India, Maldives, Pakistan and Sri Lanka. Factors that are most likely to contribute to conservation of sea turtles in each country, and those with a potentially negative impact upon hatch success and hatchling survival, were identified. Of great concern is the low hatch success (as low as <10%), and holding and/or rearing of hatchlings. Rising nest temperatures due to climate change are also believed to contribute to low hatch success at some hatcheries; however, proposed mitigation measures do not consider the pivotal temperature or thermo-sensitive period relevant to temperature-dependent sex determination or temperatures experienced within in-situ and ex-situ nests. Strategies to improve hatchery management practices (e.g. annual renewal of sand; reduced holding time of hatchlings) and mitigate the potential impacts of climate change (e.g. shading) are reviewed for each country, depending on the most prominent threats, so as to ensure high productivity of hatcheries in South Asia and hatchling sex ratios that will contribute to the effective conservation of sea turtles in the region.

The challenge of sea turtle conservation in Cambodia: filling data gaps using community mapping and stakeholder interviews

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Five species of sea turtle have historically been found in Cambodia, however due to overexploitation and destructive fishing practices, numbers have declined with only the critically endangered hawksbill (*Eretmochelys imbricata*) and endangered green turtle (*Chelonia mydas*) reported in recent years. To date,