HIDDEN RIGHT UNDER OUR NOSE: AN INWATER PROJECT ON FLATBACK TURTLES IN THE KIMBERLEY REGION OF WESTERN AUSTRALIA

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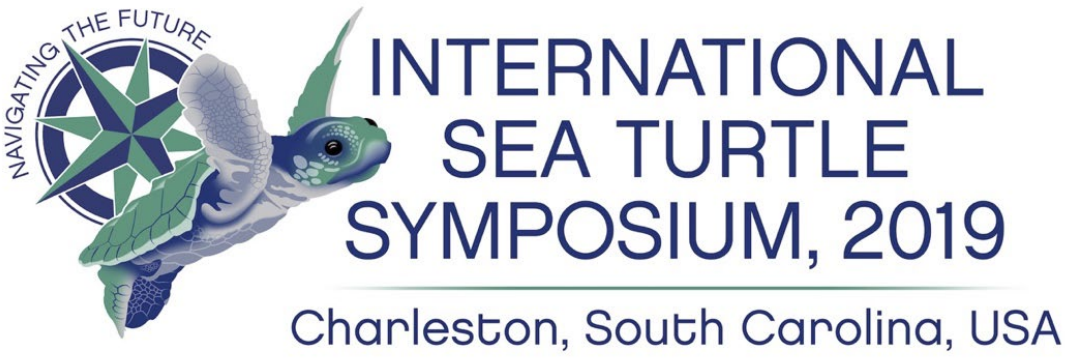
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Multiple tracking studies initiated at flatback turtle rookeries in the last decade have revealed that they forage in water depths < 120 m, often in remote locations, but with little information about relative density or demography. Herein we report results of the first foraging ground study of flatback turtles in the Yawuru Nagulagun/Roebuck Bay Marine Park, Kimberley, Western Australia. The close proximity to the city of Broome enabled initial boat surveys to detect 105 observations of surface feeding or basking flatbacks. We sampled 43 turtles (including one within season recapture) by dip netting or rodeo jumping, including juveniles, sub-adults and adult males and females in ten days of field work (June 25-29; August 27-31). We affixed GPS or Argos satellite telemetry tags to 1 juvenile, 3 sub-adults, 7 females and 9 males. One female had been originally flipper-tagged in 2006 nesting on Barrow Island (770 km away and last recorded nesting there in 2017 SW) Diving and foraging behaviour were investigated using deployments of an underwater video camera (n=1 male), and daily diary accelerometers (n=2 males, 2 females). Blood collection and

health examinations were undertaken to develop baseline data for sea turtles in WA. These are the first blood samples collected from foraging flatback turtles and together with nesting flatback samples will form haematological and biochemical blood reference values for this species. New food sources were described with half of collected animals feeding on jellyfish. Some animals remained in Roebuck Bay during tracking, but adult males and females migrated by mid-October to vicinities of known nesting beaches to the north (James Price Point) and south (Ecobeach, Anna Plains, Wallal Downs, beyond). These are the first studies on the movements of sub-adult and adult male flatback turtles. Additional sampling will bolster regional studies of stable isotope baselines and enable the analysis of mixed genetic stocks in a Western Australia foraging ground. The identification of YNRB Marine Park as a flatback foraging area is nationally and globally significant. The Park provides the first opportunity to study flatback turtles at a life stage other than the nesting beach. It provides an opportunity to investigate diet, habitat use, diving behaviour, health status, movements and demographic data. Other species found within the Park include green, hawksbill, loggerhead and olive ridley turtles. This study will furnish novel information that can be fed directly into the management of the Western Australian Marine Parks that are jointly managed by state government and the local indigenous people. We thank the Nyamba Buru Yawuru Country Managers for assisting the field work.

NOAA Technical Memorandum NMFS-SEFSC-784
doi:10.25923/vhgd-d180

PROCEEDINGS OF THE THIRTY-NINTH ANNUAL SYMPOSIUM ON SEA TURTLE BIOLOGY AND CONSERVATION



1 to 8 February, 2019

Charleston, South Carolina, USA

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U.S. DEPARTMENT OF COMMERCE
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November 2024