PRELIMINARY INSIGHTS INTO HEALTH STATUS AND PATHOLOGICAL FINDINGS OF THE INDIAN OCEAN SEA TURTLES OF WESTERN AUSTRALIA

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The status of sea turtle health in Western Australia is largely unknown, particularly for the endemic flatback turtle (*Natator depressus*). Several hundred turtle strandings are reported annually in Western Australia (WA) with numbers fluctuating due to factors such as inter-annual variation in ocean currents and winds driving turtles ashore and, variation in reporting rates along the remote and sparsely populated coast. Anecdotal reports for the causes of sick, injured and dead turtles seem comparable to those in other parts of Australia and the world (e.g. spirorchiidiasis, fibropapillomatosis and marine debris ingestion) but no scientific studies to validate these reports have been conducted in this region. We investigated the causes of stranding through diagnostic techniques including necropsy, clinical pathology, diagnostic imaging, histopathology, parasitology, microbiology, toxicology and molecular analyses. The source animals include both live and dead stranded turtles found on the WA coastline and waters. In addition, we determined baseline levels of health and disease for specific populations, predominately nesting flatback turtles. The high incidence of spirorchiid fluke infestation and associated pathology in sea turtles examined, including flatbacks, will be discussed as well as other cases of interest including histologically diagnosed visceral fibropapillomatosis. We also discovered a novel bacterium, *Streptococcus iniae*, responsible for a mass mortality event in the Kimberley region, in the northwest of WA in February 2016. This bacterium caused the death of 14 juvenile flatback turtles, 18 sea snakes (including *Aipysurus laevis* and *Hydrelaps darwinensis*), 17000 fish of numerous species, as well as other marine species. This study has greatly improved knowledge of sea turtle health and disease status for WA and the eastern Indian Ocean. It will assist sea turtle conservation in Western Australia by improving ante- and post-mortem diagnoses, identifying newly emerging diseases, and will guide long-term population health monitoring programs. This study is the first statewide health and disease investigation in the eastern Indian Ocean and will provide broader insights to sea turtle health and disease status on a regional scale.

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