FLATBACK TURTLES AND THE POWER OF COMMUNITY: TWO DECADES OF COMMUNITY-LED CONSERVATION IN PORT HEDLAND, WESTERN AUSTRALIA*

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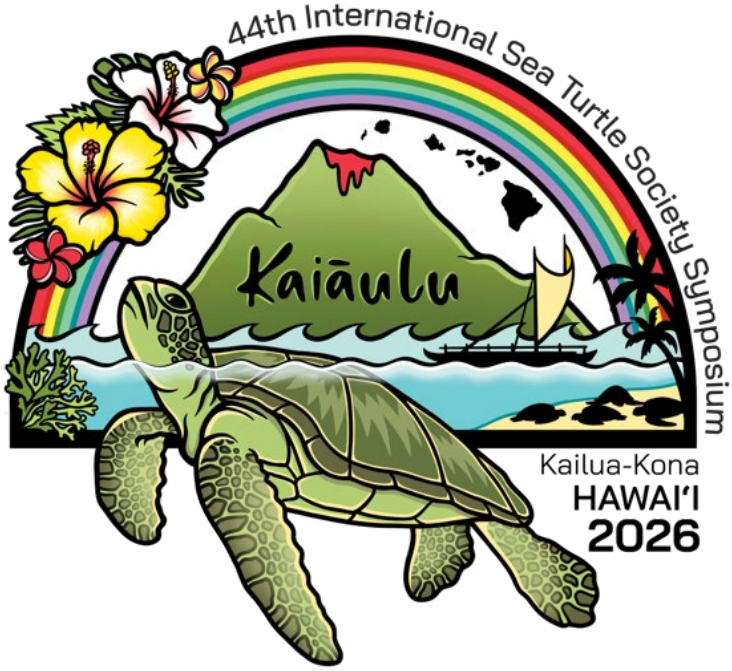
Care For Hedland Environmental Association Inc, Australia

Port Hedland, situated 1,800 km north of Perth in Western Australia's Pilbara region, is a town shaped by both ancient cultural heritage and modern industrial transformation. Aboriginal rock carvings depicting sea turtles, dated to approximately 12,000 years attest to the enduring connection between sea turtles and the Kariyarra people, traditional custodians of Cemetery Beach and surrounding Port Hedland coastal areas. Today, Port Hedland's beaches are bordered by the largest bulk tonnage export port in Australia, with a population of 15,000 and a coastline under pressure from its urban population, dredging, lighting, development, and recreational use. Prior to 2003, little was known or documented about flatback turtle (*Natator depressus*) nesting activity on local town beaches. In response, the Care For Hedland Environmental Association initiated a community-led monitoring and conservation program in 2004. Now on the cusp of its 23rd season, the program monitors three urban beaches using track identification, mark-recapture, and nest success excavation methods. These techniques have enabled the documentation of nesting seasonality, population size, population structure, inter-nesting intervals, recruitment rates, hatchling emergence, hatchling orientation, and disturbance impacts. Cemetery Beach, a 1,440m stretch within the heart of the town, has emerged as a regionally significant rookery within the WA North West Shelf flatback population. Longitudinal data indicates a relatively stable medium-sized female population (200–450 per season), with annual recruitment rates of 14% and 25% of tagged females returning to nest the following year, evidence of annual nesting migration. Genetic analysis has linked Port Hedland turtles to populations on Barrow Island and Mundabullangana, with a small percentage of tagged individuals nesting across other regional beaches. However, despite its resilience the population faces mounting challenges. Declining adult numbers, significant hatchling mis-orientation and nest success rates that fluctuate widely (20–64%), often correlating with extreme weather events and high sand temperatures. Port Hedland beaches are among the warmest in the region, and Cemetery Beach records some of the lowest hatch success rates. Threats include feral animal predation, artificial lighting, off-road vehicle use, tourism, and coastal infrastructure development. These pressures underscore the vulnerability of urban flatback turtle rookeries, the need for adaptive management and adoption of climate change resilience works. Over two decades, data collected by volunteers and analysed by experts, has informed local decision-making, shaping dredging schedules, lighting mitigation, predator control, and coastal landside and portside development planning. The program's success is rooted in community pride, scientific rigor, and the maintenance of long-term strategic partnerships, with relevant agencies and funding partners. It is widely believed locally that without Care For Hedland's intervention, sea turtles would no longer nest on Port Hedland beaches. Sharing lessons from Port Hedland's grassroots conservation journey, highlighting the intersection of science, culture, and community. Reflecting on the importance of place-based stewardship and the role of regional leadership in sustaining long-term ecological outcomes. As pressures intensify, Port Hedland's experience offers a model for inclusive, data-driven conservation, ensuring that flatback turtles continue their ancient relationship with this town, community and coastline for the next 12,000 years and beyond.

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