Title: Human use patterns in coastal waters of the western Kimberley

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Abstract

In Australia, coastal and marine environments are highly valued for the range of cultural, traditional, commercial and recreational opportunities they provide. Even though isolated from large population centres, the unique environmental attributes of the Kimberley coast attract many people who undertake a wide variety of activities. Knowledge of the spatial and temporal extent of this human use is necessary for adequate management of the coastal waters of the Kimberley.

As information already exists in state government departments on most regulated activities, the main focus of this project is on investigating activities associated with recreation and tourism. Furthermore, as the environmental and cultural impacts of expedition cruising by tourist and charter vessels in the central Kimberley have been examined (Scherrer *et al.* 2010, 2011), the specific objective of this project is to obtain bench mark data along the western Kimberley coast where vehicular access is more prevalent.

Reconnaissance work indicated aerial survey to be the most efficient and cost-effective way to cover the convoluted and remote Kimberley coast and techniques developed at Ningaloo Reef (Smallwood *et al.* 2011) are being used to obtain estimates of human use during both the wet and dry seasons. Three low-altitude, aerial survey routes following the coastline are being used to assess the spatial and temporal distribution of human use in the 80-Mile Beach, Dampier Peninsula and Buccaneer Archipelago / Camden Sound regions. Along these routes, all shore-based and boat-based activities (as well as indicators such as camps and boat-trailers) are recorded, geo-referenced, photographed, classified and the data stored for spatial analysis.

High-resolution satellite imagery for the region is being analysed to establish the extent of coastal tracks which provide vehicular access to the coast. From this, and the aerial surveys, locations where there may be potential impacts on the environment and where biodiversity might be at risk from coastal use can be identified.