Marine life of the Kimberley bioregion: past, present and future

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The marine biodiversity of the Kimberley is poorly known. The Western Australian Museum (WAM) commenced its multidisciplinary marine biodiversity survey program for this region in 1976, with further surveys occurring in the 1980s and 1990s. The vouchered specimens, published and unpublished reports of the WAM, and relevant collections housed in other museums and herbaria with a tropical interest, constitute the main biodiversity knowledge-base for this marine bioregion. In 2006, the WAM undertook a quantitative, multidisciplinary, marine survey of the north western atolls situated off the Kimberley continental shelf edge. This was later followed in 2008 by a biodiversity program, titled the *Woodside Collection Project–Kimberley (Woodside 4)*, which will be finalised in 2011. The intent of this project was to examine the marine biodiversity of the Kimberley inshore region using both historic survey data (reports and collections) from the WAM and partner institutions, as well as new survey data from two field expeditions undertaken in 2009 to Adele Island and Montgomery Reef and in 2010 to Cassini Island and Long Reef. A new biodiversity program, the *Woodside Collection Project–Kimberley (Woodside 5)*, is now underway with the intent of increasing the scope and resolution of the field data collected during the Woodside 4 field program. Woodside 5 (2011 – 2015) will include four separate surveys to targeted Kimberley coastal reefs and islands, and Browse Island on the mid-continental shelf, to provide latitudinal and longitudinal gradients of marine biodiversity data for the Kimberley Bioregion. Here we present an overview of this research to date.

Invasive species performance in marine reserves

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Conservation of biodiversity is a major aim of marine reserves but invasive species, a major threat to biodiversity globally, are likely to negatively impact diversity in marine reserves. We systematically searched the literature to determine if marine reserves influence the performance (e.g. enhance, repel) of invasive species. We examined more than 13 000 papers and found 14 cases that contained quantitative data on invasive species inside and outside marine reserves. In no cases did reserves repel invasive species. Of the seven cases where reserves were established prior to the arrival of the invasive species, five had no effect on the invasive species and two enhanced invasive species. Of the seven cases where reserves were established in areas that had pre-existing invasive species, three had no effect on the invasive species and four enhanced the invasive species. These results suggest invasive species are pervasive within marine reserves; greater effort needs to be placed on understanding and managing for the impacts of invasive species within reserves.

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