



Conclusions

Over millions of years, Scott Reef has demonstrated a remarkable ability to survive in a dynamic environment, including the capacity to withstand large changes in sea level over geological time. Like other coral reefs around the world, it has been affected by intense cyclones and severe coral bleaching in recent decades. But Scott Reef is distinguished by its recovery from these disturbances, and the reasons for its resilience are among the most important lessons learnt from the years spent studying the reef.

The recovery of Scott Reef illustrates that minimising local pressures can be vital to coral reefs, assisting their recovery from global threats that are so difficult to control. Favourable local conditions have enabled Scott Reef to recover from a mass bleaching in 1998 and other disturbances over the following decade, even with a limited supply of new organisms from other distant reefs.

Scientific research at Scott Reef has also produced many other important discoveries, leading to a better understanding of how different organisms are linked to each other and to their environment. Scientists have revealed ways in which corals and fishes depend on each other for survival; how corals and their symbiotic algae can adapt to extreme changes in depth; the effect of water movements on the flow of nutrients and larvae; and the importance of the reef to migratory turtles and whales. These and other discoveries have made important contributions to our understanding of Scott Reef, as well as other coral reefs around the world.

Despite the numerous discoveries made at Scott Reef over the past 20 years, many questions still remain. In particular, what does the future hold for the reef and the countless organisms that depend on it for their survival? Will the reef persist in its current state, or will more disturbances compromise its condition? Scientists continue to search for the knowledge to answer these questions, to monitor changes in ecosystem health, and to provide managers with the tools to better preserve the irreplaceable richness of Scott Reef.

As with all coral reef ecosystems, maintaining the health of Scott Reef into the future will depend on our ability to manage both the local and global pressures arising from human activities – an ever-increasing challenge for us all.

References

Brinkman R, McKinnon AD, Furnas M, Patten N, 2010, *Final Report – Project 3.1. Understanding water column and pelagic ecosystem processes affecting the lagoon of South Reef, Scott Reef*. Report produced for Woodside Energy Limited. Australian Institute of Marine Science, Perth, Australia.

Collins LB, Testa V, Zhao J, Qu D, 2009, *Quaternary growth history and evolution of the Scott Reef carbonate platform and coral reef: core study*. Report produced for Woodside Energy Limited. Curtin University of Technology, Perth, Australia.

Cooper TF, Dandan SS, Heyward A, Kuhl M, McKinney DW, Moore C, O’Leary R, Ulstrup KE, Underwood JN, van Oppen MJH, Ziersen B, 2010, *Characterising the genetic connectivity and photobiology of deep water reef building corals at South Scott Reef, Western Australia*. Report produced for Woodside Energy Limited. Australian Institute of Marine Science, Perth, Australia.

Environmental Resources Management (ERM), 2009, *Browse LNG Development: Social study on Indonesian fishers (phase 2) 2008*. Report produced for Woodside Energy Limited.

Gilmour JP, Travers MJ, Underwood JN, Markey KL, Nino R, Ceccarelli D, Hoey AS, Case M, O’Leary R, 2011. *Long-term monitoring of shallow water coral and fish communities at Scott Reef*. AIMS Document Number SRRP-RP-RT-048. SRRP Project 1: Final Report. Report produced for Woodside Energy Limited. Australian Institute of Marine Science, Perth, Australia.

Guinea ML, 2006, *Sea turtles, sea snakes and dugongs of Scott Reef, Seringapatam Reef and Browse Island with notes on West Lacepede Island*. Report to URS. Charles Darwin University, Darwin, Australia.

Guinea ML, 2009, *Long term marine turtle monitoring at Scott Reef*. Report produced for Woodside Energy Limited.

Guinea ML, 2010, *Long term monitoring of the marine turtles at Scott Reef – February 2010 Field Survey Report*. Report produced for Woodside Energy Limited.

Guinea ML, 2011, *Long term monitoring of the marine turtles of Scott Reef – Satellite tracking of green turtles from Scott Reef #1*. Report produced for Woodside Energy Limited.

Jenner KCS, Jenner MN, Pirzl R, 2009, *A study of cetacean distribution and oceanography in the Scott Reef/Browse Basin development areas during the austral winter of 2008*. Report produced for Woodside Energy Limited.

Jenner KCS, Jenner MN, 2010, *A description of megafauna distribution and relative abundance in the Scott Reef and south-west Kimberley region during the humpback whale southern migration, 2008*. Report produced for Woodside Energy Limited.

McCauley RD, 2011, *Sea noise logger deployment Scott Reef 2006-2008 – whales, fish and seismic surveys*. Report produced for Woodside Energy Limited. Centre for Marine Science and Technology (CMST), Project CMST 639-2 and 688, Report Number R2008-36. Curtin University of Technology, Perth, Australia.

RPS, 2010, *Marine megafauna report*. Report produced for Woodside Energy Limited.

RPS, 2011, *Marine megafauna study 2010*. Report produced for Woodside Energy Limited.

RPS, 2011, *Humpback whale survey report 2010*. Report produced for Woodside Energy Limited.

Smith L, McAllister F, Rees M, Colquhoun J, Gilmour J, 2006, *Benthic habitat survey of Scott Reef (0–60m)*. Report produced for Woodside Energy Limited. Australian Institute of Marine Science, Perth, Australia.

Stacey N, 2007, *Boats to burn: Bajo fishing in the Australian fishing zone*. ANU E-press <http://epress.anu.edu.au?p=55751>

URS, 2007, *Scott Reef environmental survey 5: ROV inspection of deep water outer reef habitats June 2007*. Report produced for Woodside Energy Limited.

Western Australian Museum (WAM), 1986, *Faunal surveys of the Rowley Shoals, Scott Reef and Seringapatam Reef, north-western Australia*. Edited by PF Berry. Records of the Western Australian Museum Supplement 25.

Western Australian Museum (WAM), 2009, *Marine biodiversity survey of Mermaid Reef (Rowley Shoals), Scott and Seringapatam Reefs, Western Australia 2006*. Edited by C Bryce. Records of the Western Australian Museum Supplement 77.

Woodside, 2008, *Scott Reef status report 2008*.

Woodside, 2010, *Scott Reef status report 2010*.

Woodside, 2011, *Browse LNG Development Draft Environmental Impact Statement EPBC Referral 2008/4111*. November 2011.

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