

# The Grounding of a Coal Carrier on the Great Barrier Reef (Australia)



Fig. 2 - Shen Neng 1 coal carrier grounded on Douglas Shoal on 12 April 2010 (Photograph Australian Maritime Safety Authority)

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The Great Barrier Reef (GBR) is a complex of coral reefs, shoals, and islets in the Pacific Ocean off the north-eastern coast of Australia. The GBR extends in roughly a northwest-

southeast direction for more than 2,000 km, at an offshore distance ranging from 16 to 160 km, and it has an area of some 350,000 km<sup>2</sup> [1].

The reef actually consists of some 2,100 individual reefs and some 800 fringing reefs formed around islands or bordering coastlines.

Many are dry or barely awash at low tide; some have islands of coral sand, or cays; others fringe high islands or the mainland coast (Fig. 1). The Great Barrier Reef was selected as a World

Heritage Site in 1981. A large part of the GBR is protected by the Great Barrier Reef Marine Park, helping to limit the impact of human use.

The Great Barrier Reef is visited by approximately two million people each year. A variety of boat tours and cruises are offered, from single day trips, to longer voyages. Several continental and coral cay islands host tourist resorts. Some of the most popular tourist activities on the Great Barrier Reef include snorkelling and diving.

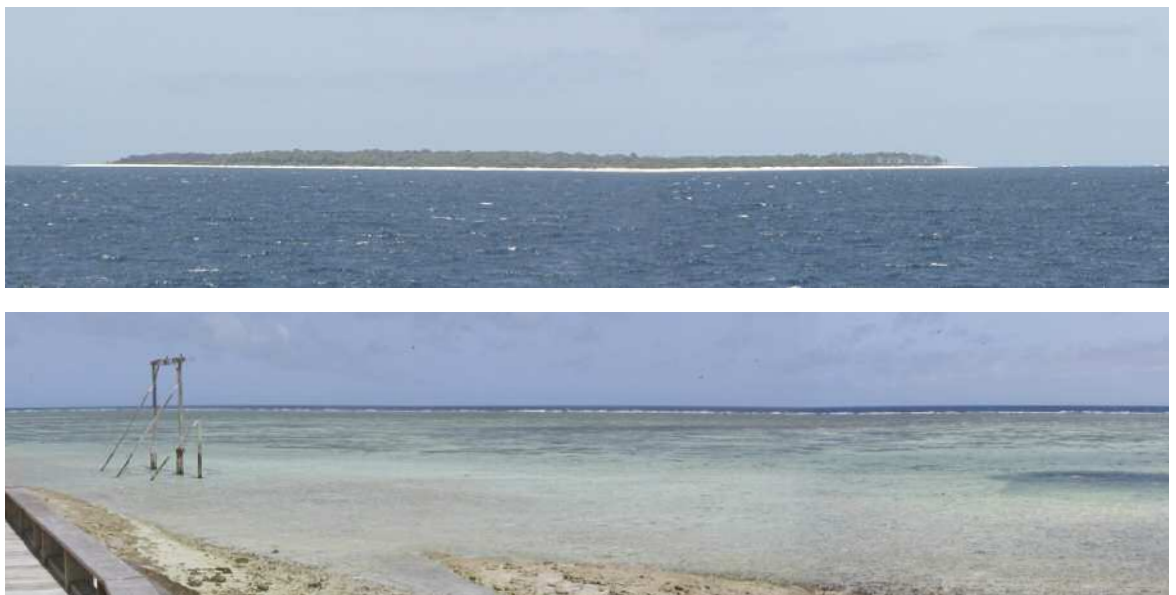


Fig. 1 - Erskine Island (top) and Heron Island reef (bottom) on the Great Barrier Reef in December 2001 (Photographs Hubert Chanson)



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In 2003-04, the Australian Maritime Safety Authority and the Great Barrier Reef Marine Park Authority developed a comprehensive zoning plan for the marine park, identifying areas where large commercial ships can and cannot transit through. A major incident took place in April 2010: the grounding of the Chinese coal carrier Shen Neng 1. The Shen Neng 1 lodged a sailing plan prior to departing from Gladstone. The planned departure route took the ship north from Gladstone until an alteration of course that would take the ship through a 12 nautical mile wide passage between North West Island and Douglas Shoal, then into the open sea to the east via the Capricorn Channel. The ship deviated from its sailing plan, entered a prohibited area and ran aground on Douglas Shoal on 3 April 2010, 70 km east of Great Keppel Island, Queensland (Fig. 2). The 230 m long coal carrier was carrying about 65,000 tons of coal and 950 tons of heavy fuel-oil bound for China.

The salvage and pollutant containment operation for the Chinese coal carrier Shen Neng 1 was managed by the Australian Maritime Safety Authority (AMSA), in conjunction with Maritime Safety Queensland (MSQ) [2]. The Pacific Responder emergency response vessel was dispatched from waters north of Cairns to provide support, the MSQ vessel Norfolk was dispatched from Heron Island to provide logistical support and AMSA's surveillance aircraft flew from Cairns to assess the situation. A dispersant-spraying aircraft was deployed from Rockhampton to manage a 100 m x 3 km ribbon of oil that had leaked from the ship. The carrier was on the shoal and salvage assistance was required to move the vessel. Two tugboats were employed to stabilise the carrier. Oil was initially transferred internally from vulnerable tanks to secure ones to reduce the risk of further spillage and to stabilise the carrier and its cargo. The Larcom bunker barge was dispatched from Gladstone and the oil was pumped from Shen Neng 1 to

the bunker. Once the oil was transferred from the carrier, the carrier was refloated, and three tugs began pulling the ship off Douglas Shoal. The vessel was towed around three nautical miles southwest of Douglas Shoal for an initial assessment, and later secured at safe anchorage off Great Keppel Island to allow divers to inspect the hull of the carrier. Salvage experts had indicated that the Shen Neng 1 required repairs and its coal cargo was later off loaded prior to being towed to a foreign port for repairs.

While the incident received world wide attention, only a minor oil spill took place and a major disaster was prevented. It was however a timely reminder of the fragility of the Great Barrier Reef's unique eco-system that supports a wide diversity of life.

### REFERENCES

- [1] "Great Barrier Reef." Encyclopædia Britannica. 2010. Encyclopædia Britannica 2006 Ultimate Reference Suite DVD, 29 May 2010.
- [2] "Containing an Oil Spill." Engineers Australia magazine, May 2010, p. 53.

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*Hubert Chanson and James Ball  
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