Broadscale Survey of Impacts of Cyclone Ivor on Coral reefs

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A Report to the
Great Barrier Reef Marine Park Authority

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Abstract

A survey of reefs in the vicinity of the path of Cyclone Ivor (19th March 1990) was conducted in July 1990. Physical damage caused by the cyclone was recognised as far as 40 km to the North of the path and 100 km to the South. Impact was most severe over a 50 km section of the outer Great Barrier Reef between Jewell Reef and Ribbon Reef No. 10. All forms of damage were seen to a depth of 20 m, which was the greatest depth examined. The major forms of damage were coral breakage, coral dislodgement, and peeling of the superficial reef matrix to a thickness of up to 1.5 m. The severity of impact declined irregularly with increasing distance from the path. Damage was patchy on scales of 100s -1000s m^2 associated partly with local shelter and topography, partly with matrix robustness, but more with coral community age and size structure than composition. Large denuded areas in the worst damaged area will be entirely dependent on larval recruitment for recolonisation by corals. Recovery of smaller and less severely damaged areas will in addition be by way of regeneration of remnant patches and growth of colonies on patch margins. Cyclones cross the central Great Barrier Reef at a frequency which suggests that, if the width of the swathe caused by Cyclone Ivor is any indication, few reefs would have escaped major modification by cyclones this century.

FIGURE 1. MAP SHOWING CYCLONE IVOR TRACK AND STUDY SITES