

EXECUTIVE SUMMARY

Flood waters from the Fitzroy River inundated the Keppel Islands in January 1991 resulting in considerable decreases in salinity, for a period of 19 days, at the surface (8 to 10 ppt) and at shallow depths (15 to 28 ppt at 3 m). Data from coral surveys undertaken in 1989 were used to assess the degree of damage. The shallow coral reefs on the leeward edge of the islands were substantially damaged by the flood waters. Approximately 85% of the coral was dead and overgrown by turf algae. Absolute mortality continued to -1.3 m Low Water Datum (LWD), below this demarcation a narrow band of bleached coral was evident (expelled zooxanthellae). Beyond this distinct band, corals remained alive - although the reef only extended a further 1.0 to 1.5 m onto sand. The exposed slopes of Great Keppel Island, Bald Rock and Barron Island were only marginally affected. In contrast to the leeward side, these reefs have only narrow reef flats. Approximately 5% of the established colonies appeared recently dead and overgrown with turf algae, approximately 10% of the corals were bleached.

Mortality was most extensive for acroporids and pocilloporids. Survival in shallow habitats was apparent for faviids (*Leptastrea*, *Cyphastrea*, *Goniastrea*, *Favites*, and *Favia species*) *Turbinaria spp.*, *Porites spp.*, *Psammocora sp.* and *Coscinaraea sp.* Ironically, the species most vulnerable to low salinities (*Acropora* species) dominate the reef assemblages - a consequence of regional circumstance.
