

CONSTANCY AND CHANGE ON SHALLOW REEFS AROUND LAEM PAN WA, PHUKET, THAILAND OVER A TWENTY YEAR PERIOD

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ABSTRACT: Shallow reef flat corals around the Laem Pan Wa peninsula of South East Phuket have been subjected to a variety of disturbances over the last 20 years. These include sediment plumes from dredging in 1987; elevated sea water temperatures in 1991, 1995, 1997 and 1998; and lowered sea level in 1994 and 1997–98. The increase in sea temperatures have caused no marked coral mortality and therefore have had little impact on coral communities of the reef flats. In the cases of dredging and lowered sea level in 1997–98 there was extensive coral mortality and both coral cover and species diversity declined. However recovery, over a 1–3 year period, was marked on all those reef flats dominated by massive corals. The reasons for this rapid recovery were that partial mortality, rather than total mortality, allowed subsequent repair of massive species while successful recruitment and survival of juvenile corals in the period 1996–2000 contributed to increased cover and diversity in recent years. Sectors of reef flat which have not recovered from the lowered sea level in 1997–98 are those which were previously dominated by branching acroporid corals. Their total mortality, in a sheltered reef setting, has led to a substrate covered in mobile rubble which has not fostered successful recruitment and survival of juvenile corals. While there have been no changes in community structure of reef flats dominated by massive corals, areas dominated by branching species have been transformed into rubble banks and it is likely that full recovery here will take many years.
