

ENVIRONMENTAL THREATS TO EAST AUSTRALIAN MANGROVE FORESTS AND TIDAL MARSHES

by

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THE RESOURCE

The east Australian coastline extends for over 7100 km from Cape York (10°45'S) to Cape Howe (37°31'S), the southern extent of the state of New South Wales (N.S.W.). Along this coastline mangrove forests and tidal marshes form an extensive resource which we will collectively refer to as "tidal wetlands"; It is estimated that 42% of Queensland's 5200 km coastline is fringed with mangroves (pers. comm., DR. I. DAVIS, Geography Department, University of Queensland), but the total area of tidal wetlands has not yet been determined. The Queensland Fisheries Service is currently engage in a major project of mapping this resource (OLSEN personal communication). In N.S.W. tidal wetlands are much less extensive. GOODRICH (1970) estimated that they originally occupied 29,016 ha., but up to date figures are not available on how much of this resource has been destroyed.

Detailed documentation of the basic biological attributes of these environments followed the work of MACNAE (1966, 1968) and has been underway for less than a decade. Since 1968, the Australian Littoral Society has been able to survey the fauna and flora of 18 sites along the coastline (see: HEGERL & DAVIE personal communication, Fig. 1). The most extensive work has occurred in Careel Bay in central N.S.W., in Moreton Bay and Hervey Bay in southern Queensland, and in Cairns in northern Queensland. The objectives and the methodology employed in most of these surveys have been discussed by HEGERL & DAVIE (personal communication) and many of the results have been documented (DAY 1975; ELLWAY & HEGERL 1972; GRAHAM *et al.* 1975; HABITAT 1974; HEGERL 1975; HEGERL & TIMMINS 1973; HEGERL & TARTE 1974; EUTCHINGS & RECHER 1974; LEWIS & ELLWAY 1971; SHANCO 1975; SHANCO & TIMMINS 1975; SHINE *et al.* 1973; WEATE 1975). In addition to these studies, a detailed investigation of some mangrove forests at Port Curtis in central Queensland have been initiated by the Southern Electric Authority of Queensland (SAENGER & ROBSON personal communication).

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THE THREATS

Despite the fact that less than 5 million Australians live on, or near, the east Australian coastline, the magnitude of industrial and agricultural activity, and the lifestyle and affluence of Australians have already had a substantial impact on the east coast mangrove forests and tidal marshes. Until recently, these areas have been regarded by most Australians as "worthless swamplands" which should be filled and used for other purposes. As a result, reclaimed tidal wetlands have been utilized as sites for urban and industrial developments, wharf facilities, airports, rubbish dumps, and agricultural activities.

Canal-estate housing developments have proved particularly destructive to tidal wetlands. In southern Queensland some 500 km of canals have been built, are under construction, or are being planned. Water pollution and flooding problems have arisen in these canals and concern is now being widely expressed about damage to recreational and commercial fisheries and bird-life. In addition the beaches of many canals have proved an extremely favourable habitat for biting midges (*Ceratopoginidae*). Recent proposals for additional canals have been strongly opposed by the public.

In most cases of tidal wetlands destruction that we have studied in eastern Australia, either alternative sites have been available for the development, or the proposal has proved of dubious economic benefit to the community.

CONCLUSIONS

Destruction of tidal wetlands in eastern Australia continues largely because the link between tidal wetlands and the life they support is not yet widely appreciated. Additional studies such as those of MARTOSUBROTO & NAAMIN (personal communication) are needed to show that tidal wetlands in an undisturbed state may produce the greatest benefits to the Australian people.

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