

## Preface

As recently as 1990, Peter Fairweather described Australian saltmarsh as the least studied of all marine habitats, and ignorance of the ecological values of saltmarsh had been reflected in the relative lack of protection afforded to the habitat compared to other ecosystems. By way of contrast, mangroves have been recognised as an important fisheries habitat in Australia for nearly a century, and have a long history of protective legislation and regulations. Several decades of sustained research into mangroves through the 1970s and 1980s provided a comprehensive picture of their structure and composition and aspects of their ecology.

Over the same period, little attention was given to saltmarshes, in spite of their occupying as much as 16 000 square kilometres of the Australian coastline and supporting more than three times the number of vascular plant species found in mangrove forests. Throughout the 19th and 20th centuries saltmarshes were replaced by playing fields, residential and commercial land and agriculture. We now know that in the closing decades of the previous century, mangroves began replacing saltmarsh from the seaward edge, a trend likely to continue with elevated sea levels as a result of global climate change. The decline of coastal saltmarsh in the southern half of the continent has now come to the attention of policy makers, and in New South Wales coastal saltmarsh has been declared an Endangered Ecological Community under the *NSW Threatened Species Conservation Act*.

Fortunately, the growing awareness of the vulnerability of coastal saltmarsh has prompted more than a decade of research by a number of university and government scientists. While there is still much to be discovered about Australian saltmarshes, the time is ripe to dispel the myth that we know virtually nothing. This book provides the first synthesis of knowledge of Australian saltmarsh ecology. We hope it will stimulate greater interest in this fascinating habitat. The 10 chapters review geomorphology and biogeography, invertebrate ecology, the use of saltmarsh as a habitat by fish, birds and other mammals, and management issues including the control of mosquitos and the threat of invasive species. The picture which emerges is one of a vulnerable habitat which makes a unique and important contribution to the ecology of the coastal zone.

Paul Adam's opening chapter places Australian saltmarsh in a global context. Saltmarshes occur widely on estuarine and sheltered open coasts, and are immediately recognisable through a combination of habitat, vegetation physiognomy and elements of floristics. Australian saltmarshes exhibit patterns of variation at local, regional and continental scales which are similar to those elsewhere, but nevertheless have unique features. The distinctiveness of Australian saltmarshes is strongest in the south. The flora of southern saltmarshes has similarity with that across Gondwana, but with a number of Australian endemic genera and species. Whether patterns in faunal distribution reflect those in the flora is not known at geographic scales, either in Australia or elsewhere.

Chapters 2 and 3 explore the biogeography and geomorphology of Australian saltmarshes. The possible impacts of climate change are introduced in these chapters. Saltmarsh diversity increases toward the colder latitudes, and a warming climate may well pose a threat to many species. In Chapter 3, Neil Saintilan, Kerrylee Rogers and Alice Howe present evidence that sea