

Australian saltmarshes in global context

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Introduction

Coastal saltmarshes are recognised globally as ecosystems of high ecological value which are increasingly under threat (Adam 2002; Valiela 2006). While there is increasing acknowledgement of their importance in Australia, and their ‘Cinderella’ status, demonstrated by Fairweather (1990), has improved over more recent times, they are still relatively unknown compared with the intensively studied marshes of Europe and North America.

Coastal saltmarshes can be defined as intertidal communities dominated by flowering plants, principally herbs and low shrubs. They are found on soft substrate shores of estuaries and embayments, and on some open low wave energy coasts. Coastal saltmarsh is also found on the shores of intermittently open saline coastal lagoons. When these lagoons are open to the sea they are tidal (although tidal amplitude may be attenuated in comparison to nearby open shores), but when closed, which is often the majority of times, water level fluctuations are climate driven and lack predictable periodicity.

Saltmarsh is distinguished from adjacent communities by both floristic composition and structure. Mangroves are dominated by trees (and amongst the world’s forests are unusual in the virtual absence of an understorey). The boundary between saltmarsh and mangrove is normally sharp, but on temperate coasts there are sites with mosaics of saltmarsh and mangrove where there are groves of *Avicennia marina* interspersed amongst saltmarsh and at the southern global limit of mangroves in Victoria mangroves are stunted and may be lower than the chenopod shrub *Tecticornia arbuscula* on adjacent saltmarsh. Seagrass beds are predominantly subtidal and are dominated by various monocots (although none are true grasses). The upper limit of saltmarsh is set by the level of the highest tide, but the nature of the transition to terrestrial vegetation will be determined by topography, and, in urban areas, human activity. Coastal lowlands have been very heavily modified in temperate and subtropical regions, so that natural transitions to terrestrial vegetation are becoming uncommon (Figure 1.1). Swamp forests on coastal flood plains often have an understorey of saltmarshes in the transition zone, which may be inundated with brackish water during storms.

Species found in intertidal saltmarsh are also characteristic of seepage zones on seacliffs and rock platforms above the tidal limit, and on some of the most exposed cliffs and headlands, extensive swards (covering hectares) of saltmarsh species are found tens of metres above the sea but subject to high inputs of aerosolic salt.

Australia has very extensive areas of saline soil inland – some of these are of natural origin, but salinisation of agricultural and urban land is one of the major environmental problems to