

SALTMARSH MAPPING
PORT BOTANY EXPANSION

PREPARED FOR
SYDNEY PORTS CORPORATION

By

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INTRODUCTION

Sydney Ports Corporation requires a monitoring programme for various components of the saltmarsh habitat associated with the Penrhyn Estuary Habitat Enhancement Plan. The saltmarsh monitoring plan was compiled by the Ecology Lab Pty Ltd (TEL), which details the minimum requirements and methodology to be used for monitoring of saltmarsh associated with the expansion of the port (TEL, 2006). This report covers the mapping of saltmarshes required as part of the saltmarsh monitoring programme.

The proposed expansion at Port Botany will destroy the existing saltmarsh and to compensate for this a substantial area will be created. Where possible the existing saltmarsh or its propagules will be harvested for planting on the new benches. Whilst some species can be harvested, stored and replanted at a later date most saltmarsh plants are better conserved by harvesting their seed, planting the seed in a nursery at the appropriate time and planting the seedlings in the new saltmarsh. Timing is critical if this propagation to be successful.

METHODS

A field survey of the saltmarsh within the Penrhyn Estuary was done using GPS, surveying maps and aerial photographs as detailed in Roberts et al. (2006). Each saltmarsh area was recorded onto the air photograph of the estuary and ground-truthed in the field. The dominant saltmarsh species within each of the identifiable marshes was also recorded. A colour coded map of the saltmarsh in the estuary was produced using AUTOCAD.

RESULTS AND DISCUSSION

Thirty four saltmarsh areas were delineated, including 5 sub-areas (Fig. 1). Within these areas, six saltmarsh species were identified; *Sporobolus virginicus*, *Sarcocornia quinqueflora*, *Suaeda australis*, *Isolepis nodosa*, *Juncus Kraussii* and the introduced weed *Juncus acutus* (Spiny Rush). The soil in which *J. acutus* is growing will contain seed from this weed and therefore will not be useful for any reuse in the future. The grey mangrove *Avicennia marina* and the river mangrove *Aegiceras corniculatum* were also recorded in the study area.

A number of distinct saltmarsh meadows were identified from the mapping (Fig. 1). The total saltmarsh area was calculated at 1.559 Ha (Fig. 1). This total area was comprised of saltmarsh mosaics, which included single and mixed species. The largest area of saltmarsh was covered by *Suaeda australis* (0.883 Ha). This species was generally found in the low marsh habitats adjacent to the mangroves. Approximately 0.213 Ha of *Sporobolus virginicus*, 0.591 Ha of *Sarcocornia quinqueflora*, 0.263 Ha of *Juncus Kraussii* and 0.194 Ha of the introduced Spiny Rush *Juncus acutus* was also recorded (Fig. 1). There was also 0.07 Ha of *Isolepis nodosa* which was not recorded in previous mapping events. Mangroves accounted for around 0.597 Ha of the study area (Fig 1). The next saltmarsh mapping event is scheduled to be done in late February or early March 2008.

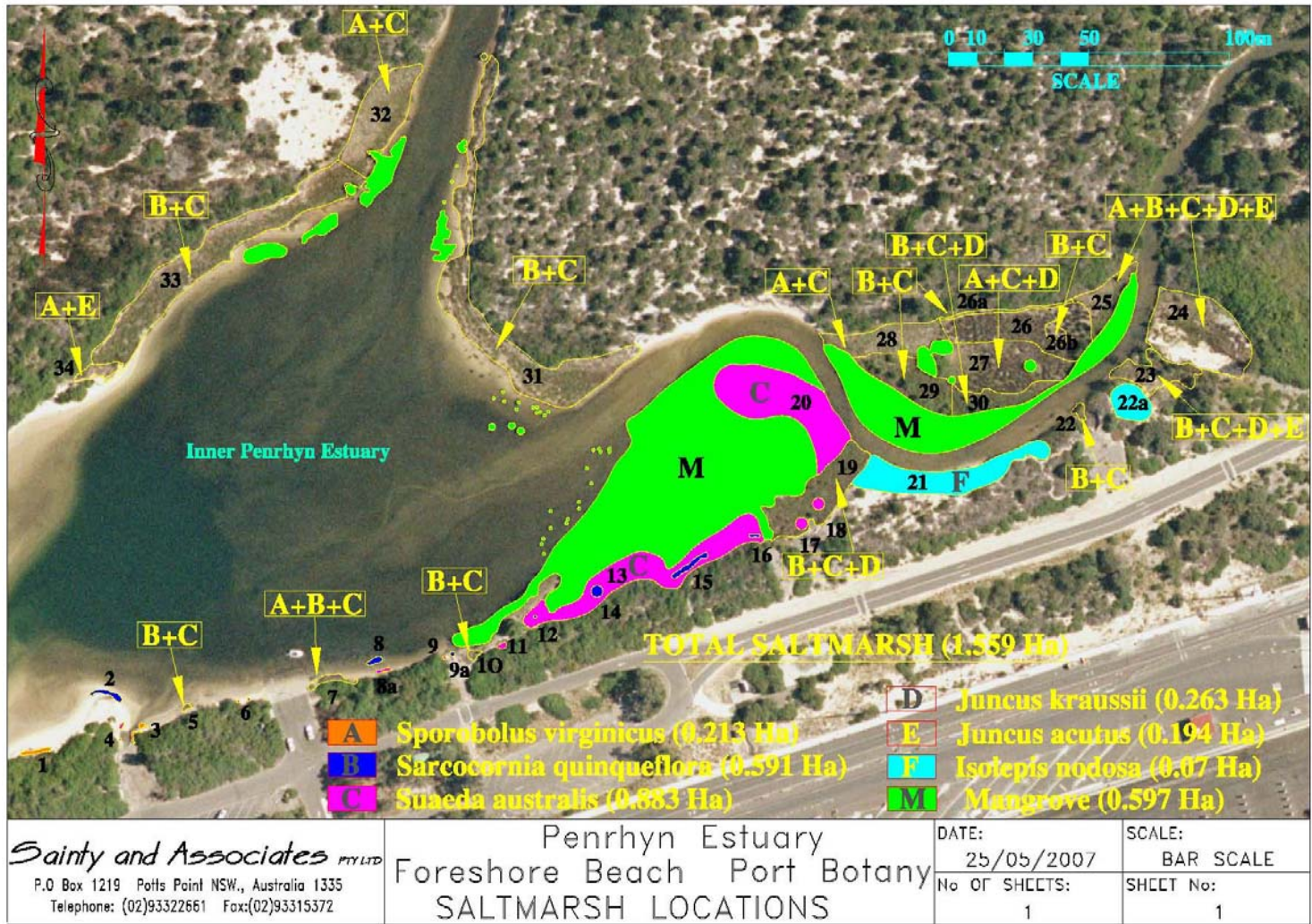


Figure 1. Saltmarsh distribution in the Penrhyn Estuary.

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