

7.2.2 ENVIRONMENTAL MANAGEMENT PLAN ELEMENT 2: SALTMARSH COMPLEX MANAGEMENT

Introduction

The saltmarsh is of State or National significance for its vegetation communities and sub-communities. The saltmarsh provides habitat for the Orange-bellied Parrot and therefore is considered to have potential National significance. It also provides habitat for numerous waders or shorebirds, some of which are listed on the Japanese Australian Migratory Bird Agreement (JAMBA) and Chinese Australian Migratory Bird Agreement (CAMBA) international treaties. The environmental value of the saltmarsh has been recognised by local residents and environment groups for many years, culminating in a conservation covenant being applied to the area in 1995 (Trust For Nature 1995). Several previous studies and reports have raised the issue of altered tidal inundation and its effects on the ecology of the saltmarsh (Walters 1999, Thompson Creek Catchment Committee 1998, Bird 1998). There are current plans to finance works to improve tidal flows to the area (A. Boyle, Thompson Creek Catchment Project, pers. comm.; J. Spittle, Surf Coast Shire, pers. comm.)

The 173 Agreement specifically addresses a range of issues relating to the Golden Beach (Torquay Sands) Development and its implementation and operation which are intended to protect the saltmarsh from direct and indirect impacts. Protection of the saltmarsh and its significant flora and fauna relies upon the involvement and co-operative management between the Developer, the Trust for Nature and the Surf Coast Shire, together constituting the Karaff Wetland Environmental Management Trust.

Several major issues are relevant to the management of the saltmarsh and more detailed investigation is required to address these issues. These issues include:

- restoration of the saltmarsh hydrological regime (see below);
- an appropriate management structure;
- preparation of a detailed Saltmarsh Management Plan; and
- providing buffers between the development and saltmarsh.

Restoration of saltmarsh hydrology

There have been massive alterations to the pre-European hydrological regime of the Saltmarsh Complex which have set in train serious degradation processes. If these are not reversed or appropriately addressed they will cause the long-term destruction of the flora and fauna values of national significance with or without development (residential or otherwise) of the hinterland. These changes are:

- construction of Point Impossible Road on the west side of Thompson Creek which has, except for a small culvert with a pipe (Plate 16), closed off the tidal Mullet Creek which allows the flooding of the Saltmarsh Complex (Bird 1998); and
- clearing of most native vegetation in the catchment to the west of the saltmarsh, resulting in greatly increased runoff into the saltmarsh. Craigie and Condina (1999) estimated that under existing conditions there is an average annual 60 ML input of freshwater into the saltmarsh from the catchment draining through the development site.

These changes have resulted in increased freshwater input into the saltmarsh (via catchment runoff) and greatly reduced tidal penetration (frequency, duration and amplitude) resulting in a lowering of the salinity. Serious degradation of the saltmarsh is predictable on theoretical grounds (i.e. maintenance of the dominant, obligate, salt-loving plants – halophytes) and this degradation is probably now evident in the vegetation, with widespread decline and death of the most important saltmarsh dominant, Shrubby Glasswort (*Sclerostegia arbuscula*) (Plate 6). This may be related to reduced salinity, as well as invasion of the saltmarsh by weeds, especially annual grasses (see Section 5.1.2). Invasion of the Blue Tussock-grass – Sea Rush Grassland/Sedgeland in the upper saltmarsh by Coast Beard-heath (*Leucopogon parviflorus*) is also evident. Invasion by the bird-dispersed Beard-heath from the adjoining dune system would not occur if normal waterlogging and salinity levels prevailed in the upper saltmarsh.

It is essential to reinstate normal tidal flooding of the saltmarsh if it is to survive in the long-term in its current form and retain its present biological values. Reinstating the tidal regime will also assist in mitigating the impacts of freshwater input to the saltmarsh from the cleared catchment. It will also be important to ensure that surface runoff regimes associated with proposed urban developments in the catchment (including Golden Beach (Torquay Sands)) are maintained as close as possible to existing rural runoff levels and, wherever practical, that opportunities to reduce runoff volumes are grasped. In regard to the Golden Beach (Torquay Sands) development, Craigie and Condina (1999) estimated that a variation of +/-15-20% from “natural” conditions would be a practical expectation in respect of post-development runoff volumes.

Urgent investigation of these crucial hydrological issues must be carried out by Surf Coast Shire, as agreed at the Council Meeting of 11 April 2000 to restore tidal flow. The investigations should determine:

- hydrological modelling and assessment of potential impacts of reinstatement of the former hydrological regime by reopening the saltmarsh to tidal inundation (e.g. flooding of neighbouring properties);
- acceptable risks or disbenefits (if applicable) resulting from a fully or partially reinstated tidal regime;
- type of works and costs required to reinstate tidal flooding regime; and
- appropriate monitoring of results or impacts on the environment (particularly vegetation) from reinstatement of tidal flooding.