EXTRACT from

"Native and Weed Mapping, Management and Restoration of the City of Stirling Coastal Zone (2011-2013)"

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The following information relates to the native and weed mapping data, conducted 2011-2013, for the southern coastal strip of Bush Forever Site 308 (Trigg Bushland and Adjacent Coastal Reserve).

This lengthy dunal system is the only location along the City of Stirling coastline where there remains a complete complex of fore dune, swale and secondary dunal systems connected to inland and significant native remnant vegetation, extending from the coastal fore dunes to the woodland for approximately two kilometres inland. Such an almost unbroken stretch of bushland is also rare along the Metropolitan coastline. Fragmentation along the remainder of the City of Stirling Coastal Zone has been caused by roadways, pedestrian and bike access routes, housing and other infrastructure. As this is the only connected coastal area it would not be recommended that any further fragmentation should occur within this coastal strip, with any further access requirements being linked to associated and existing infrastructure, such as those highly degraded areas alongside the roadway.

This area consists of Fore dune, Swale, Secondary dune and an inland highly disturbed strip to the East beside the paths and car park. The secondary dunal system is complex and composed of swales and valleys each with their own and differing vegetation communities. These changes in topography provide micro-climates, which if disturbed will rapidly bring great change and damage to each of these plant community types. The changes in dunal patterns within the secondary dunal system, with protected valleys, and differing vegetation communities across a small landscape dependent on the direction they face, eg those with a south facing direction, have very different plant communities to those facing north. This complexity of vegetation structure and function is unique for the whole of the City of Stirling coastal strip north of Scarborough. This rapidly changing landscape over very small areas also provides limited opportunities for further development and use as they are complex topographically, due to the very fragile biogeography of the region. Within these microclimates are rarely found patches of native pellitory which attract and sustain native butterflies.

From the northern underpass heading south there is an extensive secondary dunal system which is in very good condition with a Weed Cover Class of 1 (0-20%) weed cover, and 80-100% Native Cover. In some areas the western seaward neighbouring zones are heavily weed invaded Class 5 (81-100%), with the potential to provide significant impact to the Excellent condition Secondary Dune, particularly if any disturbance occurred, due to the high level of weed invasion in neighbouring areas. Any disturbance through this area would place these good condition dunal areas (area 23,894 sq metres) at great risk of degradation and weed invasion from neighbouring highly invaded sites.

31 species of weed are located in the dunal strip to the west of the secondary dunes and due to the constantly changing weather conditions are easily dispersed into any areas neighbouring the secondary dunal system where disturbance may occur. Many of these species have a very opportunistic nature and have the potential to alter the soil characteristics *(Carpobrutus edulis*), become rapidly dominant and preventing the re-establishment of native species. As a result disturbance should be avoided at all costs within and surrounding these secondary dunal areas.

Euphorbia terracina, *Pelargonium capitatum, Tetragonia decumbens, Rapahanus raphanistum* are all perennial species within this system which, due also to their large soil seed bank are very rapid expanders following disturbance, as they will reproduce from seed and the parent plants will regrow rapidly post disturbance. These are also the species which occur in the greatest number of polygons across the landscape, demonstrating their landscape dominance. The swale area to the west, and neighbouring the secondary dunal areas, have the greatest number of weed species for all dunal locations and any disturbance will quickly revert from a weed cover class 3 (41-60%) to Class 4 (61-80%) placing added pressure of invasion along the seaward edges of the of the fragile secondary dunal system. Digging and disturbance of the soil will stimulate the weed seeds within the soil to germinate and due to their highly competitive nature will grow very rapidly, providing an extremely expensive ongoing weed management programme to prevent further invasion to this and all neighbouring areas.

The mean weed cover (3.2-3.7) for this whole coastal strip demonstrates an already fragile system in need of care and management to protect and conserve the neighbouring good condition secondary Bush Forever dunal areas. In order to adequately conserve these areas particularly at a time of reduced rainfall, when native plants are becoming heavily stressed, it is recommended that this whole area become a high priority for immediate protection, management and investment, to ensure ongoing connectivity across this landscape, and reduce long term management costs.

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