

# (DRAFT ONLY) Surf Coast Shire Bio-mapping

Flora and Fauna of Nine Priority Reserves, 2006-07

A Report for Surf Coast Shire

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April 2007





## **BELLS BEACH SURFING RECREATION RESERVE**

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<b>Location</b>	Bells Beach Road, Bellbrae
<b>Centre Point MGA</b>	262800 easting, 5749950 northing
<b>Surf Coast Shire Priority</b>	Low
<b>Area</b>	50.4ha

### **Reserve Description**

Bells Beach Surfing Recreation Reserve stretches for much of the length of Bells Beach Road, occurring on each side. Vegetation types present are coastal heath and scrub with a large area of dry forest on the west of the road. The shore side of the Reserve includes steep cliff-face down to the beach. There are a couple of car-parks within the Reserve which appear to experience a high level of public visitation.



## Vegetation

Previous EVC mapping for this Reserve was undertaken at a broad scale (1:100 000), which was inadequate for habitat hectare assessment. A comprehensive survey was therefore undertaken, which recognised four main vegetation types (Figure 8).

Coastal Alkaline Scrub covers most of the Reserve between the road and the beach. The canopy is dominated by *Melaleuca lanceolata* (Moonah), to around 5m in height. In sheltered situations this is the principal canopy dominant, sometimes in association with *Eucalyptus tricarpa* (Red Ironbark). In more exposed situations, the canopy is much lower (to 2m tall or less) and other shrubs co-dominate, notably *Pomaderris paniculosa* (Coast Pomaderris) and *Leucopogon parviflorus* (Coast Beard-heath). *Pimelea serpyllifolia* (Thyme Rice-flower), *Rhagodia candolleana* (Seaberry Saltbush) and *Tetragonia implexicoma* (Bower Spinach) are common components of the shrub layer. The herbaceous ground layer is diverse, but only provides scant cover.



Some tree and shrub species that are not indigenous to the area have been planted in the past, including *Melaleuca diosmifolia* (Green Honey-myrtle from Western Australia), *Melaleuca huegelii* (from Western Australia), *Melaleuca hypericifolia* (Hillock Bush from NSW), *Melaleuca armillaris* (Giant Honey-myrtle from Tasmania to Queensland, but this subspecies does not naturally extend farther west than central Gippsland) and *Eucalyptus conferruminata* (Bald Island Marlock from Western Australia). *Hakea drupacea* (Sweet Hakea) was also noted in this vegetation type.

Is the revegetation appropriate?

The fenced revegetation area adjacent to the central car park was examined, and found to contain a range of indigenous shrub species. The structure and composition of this vegetation was similar to that found in comparable positions elsewhere in the park, suggesting that most of the species planted within the revegetation area are ecologically appropriate and correctly sited in regard to their position in the landscape. However, given the conservation significance of Coastal Alkaline Scrub and the role of the Reserve, removal of the non-indigenous species mentioned above is recommended.

What age is the Moonah?

The age of Moonah is not easy to estimate, as growth rings are not always clear, growth rates vary dramatically depending on where individuals are situated, and rates also vary over their lifetime (dependent on seasonal conditions). Moonah tends to grow relatively slowly after the first twenty years or so, such that single-stemmed specimens of around 20cm trunk diameter (such as in the stand in the gully immediately south of the central car park) are likely to be well in excess of 100 years old. The age of multi-stemmed specimens that have coppiced after fire or grazing are even more difficult to estimate, because the bottom of the original trunk (from which the new trunks arose) may be obscured by sand, and age is likely to be grossly underestimated. The multi-stemmed specimen observed



near the cliff face south of the central car park (with stem diameters of around 30cm) is likely to be many hundreds of years old, clearly pre-dating European settlement.

Weeds are a minor component of this EVC, and infestations are mostly restricted to disturbed areas around the car-parks and along tracks. Common weed species include *Bromus* spp. (Bromes), *Sonchus oleraceus* (Common Sow-thistle), *Ammophila arenaria* (Marram Grass), *Dactylis glomerata* (Cocksfoot), *Lolium perenne* (Perennial Rye-grass), *Anagallis arvensis* (Pimpernel) and *Plantago lanceolata* (Ribwort).

Within the Coastal Alkaline Scrub there are patches of Coastal Headland Scrub generally less than 1m in height. This EVC is dominated by species such as *Gahnia radula* (Thatch Saw-sedge), *Leptospermum continentale* (Prickly Tea-tree), *Lasiopetalum baueri* (Slender Velvet-bush), *Banksia marginata* (Silver Banksia) and *Epacris impressa* (Common Heath). Few weeds were noted in this EVC.

Coastal heathlands, like other heathlands, are adapted to occasional fire for promoting species recruitment and a mosaic of fauna habitat (Specht, 1981). A fire management plan should therefore be developed for the Reserve to ensure the maintenance of biodiversity values. This plan should take into consideration individual species responses, season of burn, frequency of burn, burn pattern (should lead to a 'mosaic'), potential fauna responses and rare and threatened species (Good, 1981).

Shrubby Dry Forest dominates the vegetation west of the road. This is characterised by a canopy of *Eucalyptus tricarpa* (Red Ironbark) to around 8m in height with occasional *Eucalyptus obliqua* (Messmate Stringybark), and lower strata dominated by *Tetragonia implexicoma* (Bower Spinach), *Melaleuca lanceolata*, *Pomaderris paniculosa*, *Ozothamnus ferrugineus* (Tree Everlasting), *Leptospermum continentale* (Prickly Tea-tree) and *Leucopogon parviflorus*. The rare *Pomaderris halmaturina* subsp. *continentis* (Glenelg Pomaderris) was noted here. Thus, whilst this particular EVC is considered to be of Least Concern in regard to Bioregional Conservation Status, the vegetation in the Reserve nonetheless harbours at least one species of high conservation concern. The herbaceous ground layer is diverse, but overall foliage cover is low. Weeds of concern include *Chrysanthemoides monilifera* (Boneseed) and *Phalaris aquatica* (Toowoomba Canary-grass) in the gully – these should be controlled.

Cleared and disturbed vegetation exists adjacent to the car-park at the southern end of the Reserve, and in the narrow strip along the west side of the road towards the north of the Reserve. This is dominated by exotic species such as *Anthoxanthum odoratum* (Sweet Vernal-grass), *Phalaris minor* (Lesser Canary-grass), *Plantago lanceolata*, *Hypochoeris radicata* (Cat's Ear) and *Briza maxima* (Large Quaking-grass). Various shrubs have been planted that are not indigenous to the area, including *Hakea drupacea* (Sweet Hakea from Western Australia), *Melaleuca armillaris*, *Melaleuca nesophila* (Showy Honey-myrtle from Western Australia) and *Melaleuca diosmifolia*.

*Melaleuca diosmifolia*, *Melaleuca armillaris* and *Hakea drupacea* are all already successfully self-seeding. *Leptospermum laevigatum* is restricted to roadsides, but appears vigorous there, suggesting it is likely to be an introduction to the Reserve. Control measures are warranted for all these invasive shrubs. Vegetation quality assessments were not undertaken in these sections, due to dominance by exotic species and an inability to confidently estimate the original EVC type.

With the exception of the cleared and disturbed areas, the vegetation was in relatively good condition, and site scores ranged from 60 to 68 habitat hectare points (Table 16). Landscape scores were enhanced by the size of the Reserve, but diminished somewhat by the low amount of native vegetation in the farming landscape surrounding the Reserve.



**Table 16. Habitat hectare scores for individual Ecological Vegetation Classes in Bells Beach Surfing Recreation Reserve, November 2006.**

EVC	Area (ha)	Site score (max 75)	Landscape score (max 25)	Total score	Bioregional Conservation Status and Conservation Significance
Coastal Headland Scrub	1.5	68	14	82	Status – Vulnerable Significance – Very High
Coastal Alkaline Scrub	17.3	67	15	82	Status – Endangered Significance – Very High
Shrubby Dry Forest	12.3	60	15	75	Status - Least Concern Significance - Medium
Disturbed / cleared	4.4	n/a	n/a	n/a	n/a

## Fauna

A total of 43 vertebrate species was recorded from Bells Beach Surfing Recreation Reserve, comprising 11 mammals, 29 birds and three reptiles (Table 17).

### Mammals

Nine native and two introduced mammal species were recorded from this Reserve during the survey. These include an unidentified antechinus species picked up from hair samples, most likely an Agile Antechinus *Antechinus agilis*, given that the dry shrubby forest it was recorded from is unsuitable habitat for other antechinus species found in the Shire area. However, it cannot be confirmed as this species. The sugar glider record is notable in that there are very few records of this species from the surrounding area, the closest being from forest north of Aireys Inlet. One individual was seen at the Reserve foraging near the roadside in a large bush.

### Birds

Most of the twenty-nine bird species recorded for this Reserve were found in the more structurally heterogeneous areas of Shrubby Dry Forest to the west of the main road. Many of the larger bush birds, such as Australian Magpie and Little Raven, were commonly sighted in the open woodland areas. The bird fauna of the beachfront Coastal Alkaline Scrub was dominated by smaller passerines, including Silvereye and Brown Thornbill, with a few honeyeaters scattered throughout the closed vegetation.

The cryptic Rufous Bristlebird was commonly seen in thick scrub close to the main car-park and is regarded as Near Threatened in Victoria; it is also listed under the Flora and Fauna Guarantee Act 1988 (Department of Sustainability and Environment, 2003). The Bristlebirds appear to have become accustomed to the public disturbance and the resident birds did not seem to be as wary as would be expected.

Only two introduced species, Common Blackbird and Common Starling, were recorded at the site.

### Herpetofauna

Two reptile species were recorded during the survey, the Garden Skink and White-lipped Snake. The Reserve is dominated by two EVCs, Coastal Alkaline Scrub and Shrubby Dry Forest, which most probably differ in their suitability for reptiles. In this Reserve, Coastal Alkaline Scrub is relatively structurally homogeneous, is more exposed and is primarily located on the east side of the main road where there is a network of pathways and a greater level of legitimate human activity. Shrubby Dry Forest is potentially more suitable for a greater array of reptiles, as it exhibits greater structural diversity, the herbaceous ground layer is diverse and, because it lies to the west of the main road, is less affected by human activity.

Several common reptile species are likely to utilise Shrubby Dry Forest, including the Eastern Three-lined Skink, Blotched Blue-tongued Lizard and Common Blue-tongued Lizard. Some common frog species are also probable residents, not least because they are also commonly found in farmland, which surrounds this Reserve, and these species include the Southern Bullfrog and Spotted Marsh Frog.

### **Key management recommendations**

- Rehabilitation of the disturbed area around the southern car-park, using appropriate indigenous species
- Weed control
- Removal of non-indigenous shrubs
- Development of fire management plan, including an appropriate ecological burning regime
- Development of park management plan
- Reduce unnecessary habitat disturbance, especially in Shrubby Dry Forest west of the main road, by restricting or discouraging human access and providing additional toilet facilities
- Predator control
- Appropriate signage regarding rare species (i.e. Rufous Bristlebird)





Figure 8. EVC mapping of Bells Beach Surfing Recreation Reserve, ARI 2006



**Table 15. Fauna species recorded at Bells Beach Surfing Recreation Reserve by ARI, October 2006-March 2007.**

<b>Common name</b>	<b>Species</b>
Short-beaked Echidna	<i>Tachyglossus aculeatus</i>
unidentified Antechinus	<i>Antechinus</i> sp.
Common Brushtail Possum	<i>Trichosurus vulpecula</i>
Sugar Glider	<i>Petaurus breviceps</i>
Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>
Eastern Grey Kangaroo	<i>Macropus giganteus</i>
White-striped Freetail Bat	<i>Tadarida australis</i>
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>
Lesser Long-eared Bat	<i>Nyctophilus geoffroyi</i>
Little Forest Bat	<i>Vespadelus vulturnus</i>
Black Rat	<i>Rattus rattus</i>
Dog	<i>Canis familiaris</i>
Little Pied Cormorant	<i>Phalacrocorax melanoleucos</i>
White-faced Heron	<i>Egretta novaehollandiae</i>
Straw-necked Ibis	<i>Threskiornis spinicollis</i>
Black-shouldered Kite	<i>Elanus axillaris</i>
Wedge-tailed Eagle	<i>Aquila audax</i>
Nankeen Kestrel	<i>Falco cenchroides</i>
Silver Gull	<i>Larus novaehollandiae</i>
Brush Bronzewing	<i>Phaps elegans</i>
Crimson Rosella	<i>Platycercus elegans</i>
Superb Fairy-wren	<i>Malurus cyaneus</i>
Rufous Bristlebird	<i>Dasyornis broadbenti</i>
White-browed Scrubwren	<i>Sericornis frontalis</i>
Brown Thornbill	<i>Acanthiza pusilla</i>
Red Wattlebird	<i>Anthochaera carunculata</i>
Singing Honeyeater	<i>Lichenostomus virescens</i>
White-eared Honeyeater	<i>Lichenostomus leucotis</i>
Brown-headed Honeyeater	<i>Melithreptus brevirostris</i>
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>
Rufous Whistler	<i>Pachycephala rufiventris</i>
Grey Shrike-thrush	<i>Colluricincla harmonica</i>
Grey Fantail	<i>Rhipidura fuliginosa</i>
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>
Australian Magpie	<i>Gymnorhina tibicen</i>
Little Raven	<i>Corvus mellori</i>
Richard's Pipit	<i>Anthus novaeseelandiae</i>
Welcome Swallow	<i>Hirundo neoxena</i>
Silvereye	<i>Zosterops lateralis</i>
Common Blackbird	<i>Turdus merula</i>
Common Starling	<i>Sturnus vulgaris</i>
Garden Skink	<i>Lampropholis guichenoti</i>
White-lipped Snake	<i>Drysdalia coronoides</i>

