

**SCHEDULE 1 TO THE ENVIRONMENTAL SIGNIFICANCE OVERLAY**

Shown on the planning scheme map as ESO1.

**BEAUMARIS BAY FOSSIL SITE****1.0**19/01/2006  
VC37**Statement of environmental significance**

The Beaumaris Bay Fossil Site comprises approximately 30 hectares of area enclosed by a line commencing at the intersection of Beach Road and Cliff Grove, then south westerly via the southern side of Beach Road to Sparks Street, then south easterly to a point offset 250 metres seawards via the alignment of Sparks Street, then north easterly to the intersection of the alignment of Cliff Grove and the LWM (approximately AMG point 28759368), then north westerly to the point of commencement.

The cliffs and underlying gravel beds of Beaumaris Bay contain one of the richest and most diverse fossil assemblages in Australia for both marine mammals and sharks. Beaumaris is the only Australian fossil record for the shark genus *Megascyliorhinus* and has also yielded many excellent fossils including remains of the oldest known Australian albatross, *Diomedea thyridata* as well as a variety of sharks' teeth and bones of diprotodontid marsupials, seals, whales and penguins. (Fossil records for southern hemisphere albatrosses are too sparse to allow reconstruction of the history of the group but fossils from Beaumaris and a site in Argentina indicate that southern ocean albatrosses existed from Miocene times onward.)

The Beaumaris Cliffs form the geological type locality for the Cheltenhamian Stage, a rock unit of the late Miocene epoch. Consequently, the cliffs are a reference site for comparison with all other Australian rock sequences of this age, and with Miocene type localities in Europe. The cliffs have also been a significant geological research site since the 1890's with many rock and fossil collections taken from the place and scientific papers published about it. Indigenous values of national estate significance may exist in this place. As yet, these values have not been identified, documented nor assessed.

The place encompasses the line of cliffs between Table Rock in the south-west and Cliff Grove in the north-east. The major rock outcrop is of the Late Miocene Black Rock Sandstone, dated at between 5 and 6 million years old according to the fossil marine invertebrate fauna. Most of the other exposures of this material occur near sea level, but in Beaumaris Bay, the sandstone has been elevated and the full 15 metre sequence is visible. Common fossils in this rock layer include molluscs, brachiopods, echinoderms, corals and crustaceans.

Below the Black Rock Sandstone is a thin gravelly bed that includes nodules of phosphate and iron. The nodule bed has yielded a range of vertebrate fossils including sharks' teeth, the bones of seals and whales, the penguins *Pseudaptendodytes macraei* and *P. minor* and the albatross *Diomedea thyridata*. The lower beds of the Black Rock Sandstone extend below sea level and also contain rich and diverse fossil deposits. Some of the best known fossils are the numerous and well preserved specimens of the echinoid *Lovenia forbesi*.

Overlying the Black Rock Sandstone is the Pliocene Red Bluff Sand consisting of non-marine clayey sands and gravels. This unit contains terrestrial marsupial fossils including jaw bones of the diprotodontid genus *Kolopsis* and the species *Zygomaturus gilli*. The Red Bluff Sands vary in thickness along the cliffs and are most extensive at Table Rock and near Cliff Grove. The cliffs are aligned parallel to the axis of a major tectonic structure known as the Beaumaris Monocline which has downthrown the sedimentary strata to the south-east. The cliffs are steep to vertical and undercut in several locations, with large blocks of fallen sandstone scattered along the shore. Narrow shore platforms front the cliffs, and resistant beds of Black Rock Sandstone occur as offshore reefs running parallel with the monocline. This section of the coast provides a very clear example of a monoclinical fold.

The place is generally in a good condition but some of the fossil beds have been covered by the buildings and car park of the Beaumaris Motor Yacht Squadron. The condition of the fossil beds is dependent on the rate of erosion and the amount of pedestrian traffic and fossicking that occurs.

The construction of seal walls and other structures has reduced erosion and decreased the amount of fossil material washed up on the shore. Particularly unstable sections of the cliffs have been closed off to restrict public access. Parts of the coastline are only accessible by boat while others can only be reached at low tide.

## **2.0**

19/01/2006  
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### **Environmental objective to be achieved**

- To minimise erosion.
- To maintain public safety.
- To minimise 'fossicking'.

## **3.0**

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### **Permit requirement**

A permit is not required:

- For the buildings and in the car park of the Beaumaris Motor Yacht Squadron.
- For the Keepers Boatshed buildings.
- In the Moysey Gardens.
- In the car park opposite Keys Street.

This is in accordance with the National Estate Register citation 2/17/047/0004.

## **4.0**

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### **Decision guidelines**

Before deciding on an application, the responsible authority must consider the National significance of the site.