Parks Victoria Signs of Healthy Parks Summary

Intertidal Reef Monitoring at Point Cooke Marine Sanctuary
April 2013

Background

Intertidal reefs are present on headlands and points throughout Victoria, providing a variety of different habitats between the marine and terrestrial environments. Intertidal reefs have important social and cultural values and are subject to human pressures including collection, trampling and pollution. To effectively manage and conserve these habitats, the Victorian government has established a long-term Intertidal monitoring program.

The intertidal reef area at Point Cooke Marine Sanctuary (MS) is an extensive basalt rock platform and cobble field (Figure 1).

The sanctuary forms part of a Ramsar site for migratory birds and extends up to 400 m to the south west of Point Cooke.

A reference site was established at Altona with similar habitat features (Figure 2).

Surveys at this site started in 2003 with the tenth survey of the sanctuary done in April 2013.

Aims

The Intertidal Reef Monitoring Program provides a general description of the biological communities and species populations at each monitoring site and has the capability to measure changes over time. The program is designed to identify any:
- unusual biological phenomena;
- important community shifts;
- strong temporal trends;
- presence of introduced species; and
- any other important management information.
Results

The community structure at Point Cooke MS and Altona was primarily composed of mobile invertebrates such as gastropods and flora such as algae and seagrass.

At both sites, the gastropods were dominated by the top snail Austrocochlea porcata and the conniwink Bembicium spp.

The flora community at Point Cooke MS was dominated by the green algae Ulva spp. and the seagrass Zostera muelleri.

The Altona reference site was primarily composed of Ulva spp. and the blue-green algae Symploca. No seagrass was present along the transect at the reference site in Altona.

Sessile invertebrates did not contribute greatly to the community structure of either reef, although there were small patches of the calcareous tube-worm Galeolaria caespitosa.

Trends and community shifts

- Mobile species diversity during 2013 was at the highest level recorded during the monitoring program.
- There was a trend of increasing Ulva green algae cover since 2010.
- Seagrass Zostera muelleri decreased at Point Cooke in 2013 following a five year long trend of increasing cover (Figure 3). This trend was accompanied by corresponding changes in sediment coverage.
- The dominant gastropod Austrocochlea porcata peaked in abundance from 2009 to 2011.

Implications

The following management implications were observed at Point Cooke MS over the monitoring period:

- There was qualitative evidence of harvesting of limpets Cellana tramoserica at the Alton reference site;
- Green algae cover is sometimes indicative of nutrient loading. There was an upward trend since 2010;
- Hormosira banksii cover was naturally low at both sites. No evidence of trampling was discernable.

Reference


More information


Prepared date

7 Aug 2013