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# The Urban Sanctuary

Algae and Marine Invertebrates of  
Ricketts Point Marine Sanctuary

Jessica Reeves & John Buckeridge

Published by:  
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*Healthy Parks  
Healthy People®*



Marine Care Ricketts Point  
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Cover photo: Rocky reef habitat at Ricketts Point Marine Sanctuary, David Reinhard

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Figure 1: Ricketts Point Marine Sanctuary. The intertidal zone rocky shore platform dominated by the brown alga *Hormosira banksii*. Photograph: John Buckeridge.

# Introduction

Most Australians live near the sea – it is part of our national psyche. We exercise in it, explore it, relax by it, fish in it – some even paint it – but most of us simply enjoy its changing modes and its fascinating beauty. Ricketts Point Marine Sanctuary comprises 115 hectares of protected marine environment, located off Beaumaris in Melbourne’s southeast (figs 1–2). The sanctuary includes the coastal waters from Table Rock Point to Quiet Corner, from the high tide mark to approximately 400 metres offshore.

With their extensive rocky outcrops, the shallow waters around Ricketts Point offer one of Port Phillip Bay’s most outstanding examples of a sandstone-reef-based marine ecosystem. The diversity of species has come under threat in recent decades due to the intensive harvesting of shellfish and a corresponding decline in the higher animals that depend on them as a food source. Along with ten other Marine Sanctuaries along the coastline from Port Campbell to East Gippsland, and the thirteen larger Marine National Parks across the state, Ricketts Point Marine Sanctuary was established by the Victorian Government to safeguard marine ecosystems. The sanctuary protects species and their habitats, significant natural landscapes, and features of important cultural and aesthetic value. The sanctuary was established in November 2002, some fifteen years after the concept of a marine reserve for the area was first proposed.

Ricketts Point Marine Sanctuary comprises a variety of habitats, from intertidal rock pools to ornate sponge gardens, which all contribute to the rich biodiversity of the area. Walking along the intertidal platforms or snorkelling in the shallow waters can reveal many of the organisms found in this book. The sanctuary is dominated by sandstone reef rock platforms, and the water depth is mostly less than five metres at low tide. The rocks provide a surface for attachment; shelter from wind and waves; and cracks and fissures in which organisms can hide, either to escape predation or to ambush their own prey. Sand and silt provide opportunities for burrowing organisms.

Rocks, however, are more than simply a substrate, and in places like Ricketts Point they can tell us much about what happened in the area millions of years ago. One of the dominant rock types around Ricketts Point is a reddish brown sedimentary rock that contains a diverse fossil assemblage, ranging from terrestrial marsupials and marine vertebrates, to a rich diversity of invertebrates, including echinoderms (fig. 4), barnacles and shrimps. Of particular interest near Ricketts Point are the burrows and tracks that have been left by shrimps that lived in the area some 4 million years ago (fig. 3).



Figure 2: Locality map of Ricketts Point Marine Sanctuary. a) The sanctuary is one of three located in the north of Port Phillip Bay. b) This image shows the habitat distribution within the sanctuary. Images provided by Parks Victoria.

# Visiting the Sanctuary

The proximity of Ricketts Point Marine Sanctuary to Melbourne ensures that it is popular as a marine studies learning site, as well as place for recreation. To maintain the health and diversity of the environment for future enjoyment we ask that you please observe these guidelines:

- Look at where you place your feet to avoid trampling delicate plants and animals.
- Make sure you can see where you place your hands, and learn how to identify potentially dangerous animals, such as the Blue-Ringed Octopus and cone shells (identified by a prominent red square in this guide).
- When diving or snorkelling, be wary of causing damage with your fins and do not chase or capture animals.
- Leave all shells on the beach – you never know what may be inside.
- Take all rubbish home with you and clean up other litter you may find.
- Be mindful of the chemicals that enter our waterways, such as detergents, oil and fertilisers, and consider what you use in your home.
- Take the time to learn more about the animals and plants of the sanctuary and the habitats they depend on.
- Take care of any animals or plants that you are observing by keeping them moist and always ensure they are returned to the same location where they were found.
- Carefully replace any rocks that may have been moved.

To look after yourself and to ensure the safety of those you care for:

- Make sure you can see where you place your hands, and learn how to identify potentially dangerous animals, such as the Blue-Ringed Octopus and cone shells.
- Wear appropriate footwear on the rocks and take care on slippery surfaces.
- Remember sun protection (sunscreen, hats and appropriate clothing), even in the water.

Please remember that Marine Sanctuaries are no-take environments. State laws prohibit fishing, netting, spearing, and collecting shells and artefacts in these areas.

Humanity's influence is not always benign, with the remains of our activities, such as flotsam and jetsam, often being harmful to the natural world. We encourage you to remove rubbish, especially plastic bags and fibres.



Figure 3: Thalassinid burrows. Presumed to have been made by shrimps during the late Miocene. Ricketts Point. Photograph: John Buckeridge. Scale: coin diameter 25 mm.





Figure 4: Fossils of Ricketts Point. Two specimens of the Heart Urchin, *Lovenia woodsii*, c. 4 million years old. Photograph: John Buckeridge.

## How to use this book

This book has been designed to help keen naturalists, high-school students and university undergraduates identify the aquatic plants and invertebrates within Ricketts Point Marine Sanctuary. Many of the species found here are common to the other sanctuaries in the north of Port Phillip Bay – Jawbone and Point Cook.

We have included entries for over 200 species that we know either live in the sanctuary or are commonly found washed up on the shore. The organisms are listed in systematic fashion, with the least specialised organisms placed first; thus, the book begins with the cyanobacteria and finishes with the higher invertebrates. Some of the very rare or more cryptic organisms are not included. It is also certain that invasive species will arrive as hitchhikers on ships or as a response to climate change.

This book thus represents a snapshot of the algal and marine invertebrate life at Ricketts Point in 2012. If you find other species that are not listed here, please contact Marine Care Ricketts Point so they can make a record for future editions of this book.

A key is provided on page 116 to help users identify the major group to which an organism belongs, e.g. sponges, seastars, bivalves, snails. The groups are colour-coded on the margin of the book for easy reference. There is a separate entry for each organism, which includes the scientific name and author; common name; a description of key identifying characters; its maximum size, preferred habitat, optimal depth range, distribution (locally and, if relevant, globally) and abundance; references; common scientific synonyms (any names by which the organism was previously known) and a colour photograph. The photographer of each image is acknowledged, along with the location at which the photograph was taken, if not at Ricketts Point. A glossary of technical terms, which are indicated in bold type in the species descriptions, is included at the end of the book.

## Warning ■

Some species found within the sanctuary are poisonous and must not be handled. These are identified in the book by a prominent red square.

# Habitat

The habitats found within the sanctuary have been classified by Parks Victoria as sand, seagrass, urchin barrens, intertidal rock platforms, shallow subtidal platforms, rocky reefs and open water. The distribution of each habitat within the sanctuary is shown on the map in figure 2b. The following codes, based upon those used by Parks Victoria, are included in each entry for quick reference to the habitat and substrate:



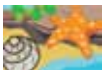
Sand habitats are home to numerous organisms that live both at the sand–water interface and in the spaces between sand particles. The micro-organisms that feed on detritus in the sand provide important nutrient cycling in the marine ecosystem. Common macro-organisms in sandy habitats include bivalves and crabs.



Seagrass forms extensive meadows in sheltered bays and estuaries and protects the coastline by trapping fine sediment, thus stabilising the sea bed. Seagrass habitats provide nursery grounds for many marine species. They are dominated by *Zostera* spp.



Urchin barrens are regions stripped of algae by the aggressive grazing of the echinoderm (or ‘urchin’) *Heliocidaris erythrogramma*. Fortunately, the regions of urchin barren in the sanctuary are currently small, but they still require careful monitoring.



Intertidal rock platforms are exposed at low tide and form one of the most diverse and interesting habitats to explore. Rock pools and crevices provide shelter from predators and waves, creating a diverse and protected habitat for a wide range of organisms. Neptune’s Necklace, gastropods, mussels, seastars, crabs, shrimps, tube worms, anemones and barnacles can all be found here.



Shallow subtidal platforms are rocky surfaces located just below low tide, hence organisms living here are always submerged. Colourful algae, sea urchins, coral, seastars, molluscs, anemones, nudibranchs and sea squirts are common here.



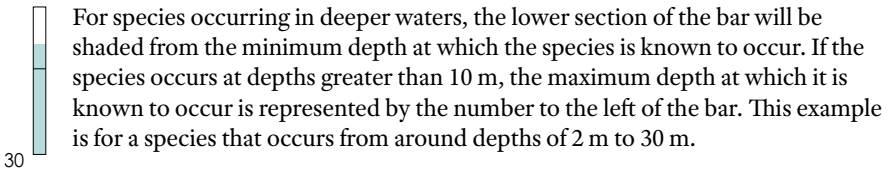
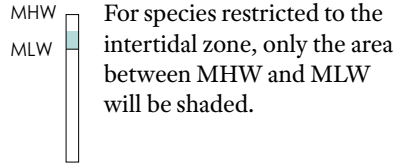
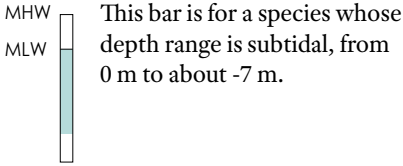
Rocky reefs provide a solid substrate for marine organisms to attach to. Here you will find mixed algae in areas where light can penetrate, colourful sponge gardens, sea squirts, gastropods, sea stars and anemones. Under the ledges and in crevices on reefs are good places for some animals to shelter.



Open water environments extend beyond the reefs of Port Phillip Bay to Bass Strait and the Southern Ocean. These waters are home to organisms that include plankton, jellies, large fish and marine mammals. Although organisms from these deeper waters are sometimes found washed up on the shore, most are atypical of habitats within the sanctuary.

# Depth

The optimal depth range of a species is represented by blue shading on a vertical bar. The top of the depth bar represents the average height of high tide, or mean high water (MHW); the line around one quarter of the way down the bar represents the average height of low tide, or mean low water (MLW); the bottom of the bar represents 10 m water depth.



# Distribution

The distribution of a species is shown using the following maps:



Victoria, Tasmania



Victoria, Tasmania, South Australia, Southern New South Wales, Southern Western Australia



South of the Tropic of Capricorn



East coast of Australia



Australia



Introduced (exotic species which may have a wide global distribution)

# Abundance

The abundance of each species is provided in graphic form. Abundance refers specifically to that within Ricketts Point Marine Sanctuary. When a species is listed as rare, it means that you will be very lucky to see a specimen, although they have been recorded in the sanctuary; uncommon implies that careful observation in the appropriate habitat should reveal one or two specimens; common organisms are easy to find in the habitat given; and abundant organisms comprise a significant portion of the biota in its given habitat.

- Rare            □
- Uncommon    ■
- Common       ■ ■
- Abundant     ■ ■ ■

# Reference

Other well-known or easily accessible sources of information about a species are listed with its description. The letter code refers to one of the resources listed below, and is followed by the page number, where applicable. For example, 'F 15' refers to page 15 of *Seaweeds of Australia*.

- B** Friends of the Bluff, Barwon Heads, 2009. *Life on the Edge*.
- D** Davey, K. 2000. *Life on Australian Seashores*.
- E** Edgar, G.J. 2000. *Australian Marine Life*, revised edition.
- E2** Edgar, G.J. 2008. *Australian Marine Life*, revised 2nd edition.
- F** Fuhrer, B.A. et al. 1981. *Seaweeds of Australia*.
- FN** Phillips, D.A.B. et al. 2006. *Coastal Invertebrates of Victoria*, revised edition.
- R** Wescott, G.C. et al. 1980. *Life on the Rocky Shores of South-Eastern Australia*.
- W** Whiteway, B. 1985. *Marine Life of the Coastal Fringe*.
- AlgaeBase** [www.algaebase.org](http://www.algaebase.org)
- WoRMS** *World Register of Marine Species*, [marinespecies.org](http://marinespecies.org)
- SS** *The Sea Slug Forum* [seaslugforum.net](http://seaslugforum.net)
- MV** *Marine Crustaceans of Southern Australia* [museumvictoria.com.au/crust/](http://museumvictoria.com.au/crust/)  
(now incorporated in the Taxonomic Toolkit for Marine Life of Port Phillip Bay, [portphillipmarinelife.net.au](http://portphillipmarinelife.net.au))

These references, along with additional texts for further reading, are listed in full under Further reading on page 120.

## A note on nomenclature

Plants and animals are described using a two-part scientific name consisting of the genus name and the species epithet. The use of scientific names allows plants and animals to be referred to unambiguously. For animals, the author (the person who first described the species) and the year that the name was first published are listed after the species name. If the genus name has changed through taxonomic revision, the author's name and date of description are placed in parentheses. For example, *Lovenia woodsii* (Etheridge, 1875) was first described by Etheridge in 1875, but he did not, at that time, call it *Lovenia* (he actually called it *Hemipatagus woodsii*). In botanical nomenclature, an entry such as '*Hormosira banksii* (Turner) Decaisne, 1842' tells us that although the organism was first described by Turner, it was Decaisne, in 1842, who provided the current name. Both systems allow species names and descriptions to be accurately cross-checked in other publications.

## Acknowledgements

The genesis of this field guide followed a request from Marine Care Ricketts Point ([www.marinecare.org.au](http://www.marinecare.org.au)), a volunteer group formed in 2003 to ensure the wellbeing of the Ricketts Point Marine Sanctuary. They wanted a guide to help them in their regular surveys of the sanctuary and to use as a teaching tool for the many school and other groups who visit the site. Funding to undertake this project was provided through the Norman Wettenhall Foundation, an environmental organisation and philanthropic trust that supports projects that enhance or maintain the vitality and diversity of the Australian natural living environment. RMIT provided in kind support, making this project possible.

This book represents the knowledge of a great number of naturalists and professional scientists. It is a culmination of their effort and enthusiasm, which has provided distribution data, photographs and confirmed identifications. We specifically acknowledge Ray Lewis, Bob Whiteway, Joe Mumford, Mel Mitchell and David Reinhard (Marine Care Ricketts Point); Rod Watson (Victorian Marine Science Consortium, Queenscliff); Mark Rodrigue and Steffan Howe (Parks Victoria); John Eichler, Leon Altoff (Field Naturalists Club Victoria); Isla Fletcher, Jan Carey (University of Melbourne), John Huisman (Murdoch University) and Sarah Speight. Michelle Kelly (National Institute of Water & Atmospheric Research, Auckland, New Zealand) provided valuable insight into sponge taxonomy. We also thank the many photographers who generously contributed their work to this project. The research and production team included Jackie Scally, Anthony Bright (graphics) and Alison Vaughan (editing), without whom this book would have simply languished as an idea.

This book is published with the generous support of Parks Victoria and the International Union of Biological Sciences.

John St James Stewart Buckeridge

Melbourne, Australia

# Species descriptions

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Kingdom **Monera**Phylum **Cyanophyta***Rivularia firma*

Womersley, 1946

**BLUE-GREEN ALGAE**

**Description:** *Rivularia firma* is a gelatinous, globular, green-black **cyanobacteria** that forms densely scattered, brain-like colonies.

**Size:** Diameter to 20 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 15; E 19; B 7

**Photograph:** Rod Watson, Barwon Bluff

Kingdom **Protista**Phylum **Phaeophyta***Leathesia difformis*

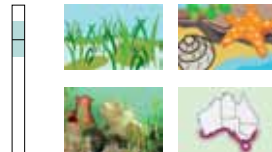
Areschoug, 1847

**SEA POTATO**

**Description:** *Leathesia difformis* is yellow-brown in colour, with a slimy texture when squashed. It is a seasonal species and is most evident in late spring and summer.

**Size:** **Thallus** width to 80 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 64; E 44; AlgaeBase

**Photograph:** Joe Mumford





Kingdom **Protista**Phylum **Phaeophyta***Splachnidium rugosum*

(Linnaeus) Greville, 1830

**SAUSAGE WEED**

**Description:** *Splachnidium rugosum* has a gel-filled, erect primary axis, with minor lateral axes. It is most conspicuous in summer.

**Size:** **Thallus** length to 50 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** F 63; E 45; B 12; D 23

**Photograph:** Rod Watson

Kingdom **Protista**Phylum **Phaeophyta***Dictyota dichotoma*

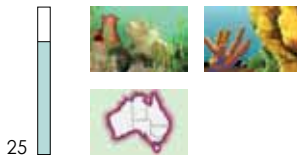
(Hudson) J.V. Lamouroux, 1809

**BLUE GLOW WEED**

**Description:** *Dictyota dichotoma* is a brown alga with flattened fronds. A distinguishing characteristic is the smooth, forked blades, with an iridescent blue sheen.

**Size:** **Thallus** length to 200 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** E 46; AlgaeBase

**Photograph:** Tim Foster



Kingdom **Protista**Phylum **Phaeophyta***Zonaria angustata*

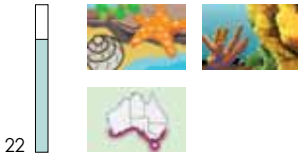
(Kützing) Papenfuss, 1952

**THIN-LEAFED FANWEED**

**Description:** *Zonaria angustata* has branched, narrow, ruffled fronds, with distinctive lighter margins.

**Size:** Thallus length to 180 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 72; E 48; AlgaeBase

**Photograph:** David Reinhard

Kingdom **Protista**Phylum **Phaeophyta***Distromium flabellatum*

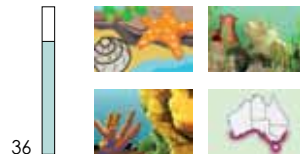
Womersley, 1967

**SOUTHERN PEACOCK WEED**

**Description:** *Distromium flabellatum* is characterised by a thin, delicate, fan-shaped thallus. The thallus is commonly iridescent blue.

**Size:** Thallus length to 140 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 49; AlgaeBase

**Photograph:** David Reinhard

Kingdom **Protista**Phylum **Phaeophyta***Scytosiphon lomentaria*

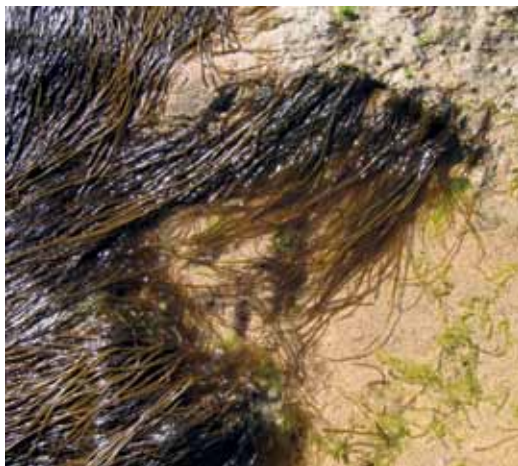
(Lyngbye) Link, 1833

**TUBULAR STRINGWEED**

**Description:** *Scytosiphon lomentaria* has long, brown, unbranched tubular **thalli** during winter. In summer, it is less distinct, occurring as an encrusting plant.

**Size:** Thallus length to 760 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** F 65; E 52; AlgaeBase

**Photograph:** Rod Watson, Barwon Heads

Kingdom **Protista**Phylum **Phaeophyta***Colpomenia sinuosa*

(Mertens ex Roth) Derbès &amp; Solier, 1851

**BUBBLE WEED**

**Description:** *Colpomenia sinuosa* is light brown and globular in appearance, and is commonly found attached to other plants. It is distinguished from *Leathesia difformis* by its more solid, creased appearance.

**Size:** Thallus width to 150 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 52; F 64; B 12; AlgaeBase

**Photograph:** David Reinhard

Kingdom **Protista**Phylum **Phaeophyta***Macrocystis pyrifera*

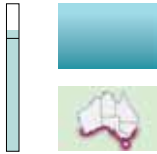
(Linnaeus) C. Agardh, 1820

**STRING KELP**

**Description:** *Macrocystis pyrifera* is the dwarf version of Giant Kelp. It has a massive branched and intertwined holdfast, with multiple **stipes**. The fronds are long, thin and narrow. This species is not found alive at Ricketts Point, but may be found washed up on shore.

**Size:** **Thallus** length to 10 m

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 75; E 54; AlgaeBase

**Synonym:** *Macrocystis angustifolia*

**Photograph:** Ray Lewis

Kingdom **Protista**Phylum **Phaeophyta***Ecklonia radiata*

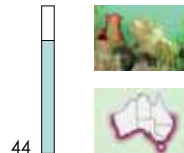
(C. Agardh) J. Agardh, 1848

**LEATHER KELP**

**Description:** *Ecklonia radiata* has **stipes** of golden-brown to dark brown and occurs in a variety of forms, depending on water depth. Those in shallow water have a short stipe, and blades covered in spines.

**Size:** **Thallus** length to 2 m

**Habitat and distribution:**



44

**Abundance:** ■ ■ ■

**Reference:** F 74; E 55; R 16; B 10; D 26;  
AlgaeBase

**Photograph:** Phil Watson



Kingdom **Protista**Phylum **Phaeophyta***Undaria pinnatifida*

(Harvey) Suringar, 1873

**JAPANESE KELP**

**Description:** *Undaria pinnatifida* has large strong fronds with ruffled **stipes**.

**Size:** **Thallus** length to 1 m

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 56; AlgaeBase

**Photograph:** Ray Lewis

Kingdom **Protista**Phylum **Phaeophyta***Ectocarpus fasciculatus*

Harvey, 1841

**Description:** *Ectocarpus fasciculatus* has pale brown, **filamentous**, jointed **stipes** and is commonly found growing on other seaweeds (here growing on *Hormosira banksii*).

**Size:** **Thallus** length to 100 mm

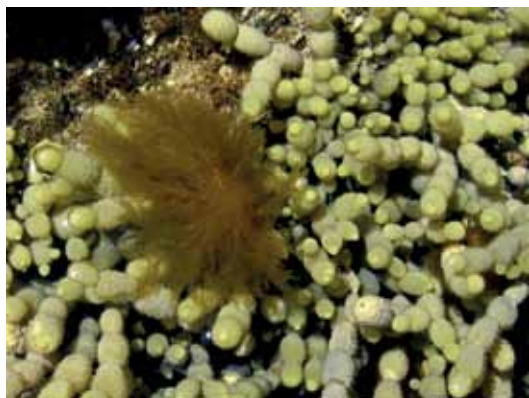
**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 60–61; AlgaeBase

**Photograph:** Rod Watson



Kingdom **Protista**Phylum **Phaeophyta***Hormosira banksii*

(Turner) Decaisne, 1842

**NEPTUNE'S NECKLACE**

**Description:** *Hormosira banksii* is a mid golden-brown alga, with bubble-like segments, and is generally attached to rocks. The degree of branching, size of segments and overall length are highly variable.

**Size:** **Thallus** length to 400 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** F 62; E 57; W 8; R 16; B 9; D 26; AlgaeBase

**Photograph:** John Buckeridge

Kingdom **Protista**Phylum **Phaeophyta***Cystophora moniliformis*

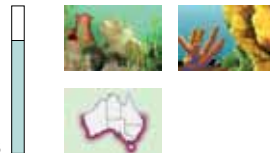
(Esper) Womersley &amp; Nizamuddin, 1964

**ZIGZAG CYSTOPHORA**

**Description:** *Cystophora moniliformis* has zigzag-shaped branches with bushy ends, originating from the edges of a flat central axis. The terminal branches are long, thin and **nodose**, and lack floats.

**Size:** **Thallus** length to 4 m

**Habitat and distribution:**



28

**Abundance:** ■ ■

**Reference:** F 79; E 63; B 11; AlgaeBase

**Photograph:** Ray Lewis



Kingdom **Protista**Phylum **Phaeophyta***Cystophora retorta*

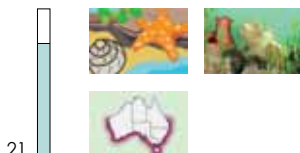
(Mertens) J. Agardh, 1848

**OPEN-BRANCHED CYSTOPHORA**

**Description:** *Cystophora retorta* has long, thin, pale greenish brown branches. The lateral fronds are spaced regularly and form small tufts. The main axis is slightly flattened.

**Size:** **Thallus** length to 1.2 m

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 80; E 66; AlgaeBase

**Photograph:** Joe Mumford

Kingdom **Protista**Phylum **Phaeophyta***Cystophora subfarcinata*

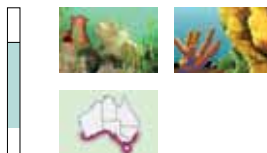
(Mertens) J. Agardh, 1848

**BUSHY CYSTOPHORA**

**Description:** *Cystophora subfarcinata* is light brown and characterised by the zigzag structure of the main axis, which is wide and thin. The lateral fronds are very dense and bushy.

**Size:** **Thallus** length to 2 m

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** F 78; E 67; AlgaeBase

**Photograph:** Joe Mumford



Kingdom **Protista**Phylum **Phaeophyta***Caulocystis uvifera*

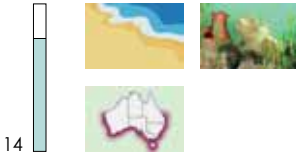
(C. Agardh) Areschoug, 1854

**GRAPEWEED**

**Description:** *Caulocystis uvifera* has round floats and a cylindrical axis, branching on all sides.

**Size:** **Thallus** length to 600 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 81; E 68; AlgaeBase

**Synonym:** *Sargassum uviferum*

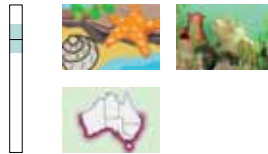
**Photograph:** Mel Mitchell, Black Rock

Kingdom **Protista**Phylum **Phaeophyta***Sargassum* spp.

**Description:** *Sargassum* is a genus of large brown algae that resembles a flowering plant with complex branching and distinctive mid-ribbed leaves. Many species are difficult to differentiate during much of the year when the reproductive fronds are absent.

**Size:** **Thallus** length to 1 m

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 83; E 69–71; AlgaeBase

**Photograph:** Ray Lewis





Kingdom **Protista**Phylum **Rhodophyta***Liagora harveyana*

Zeh, 1912

**Description:** *Liagora harveyana* is a calcified red alga, although distinct from the coralline algae. The forked branches are cylindrical, not jointed.

**Size:** **Thallus** length to 50 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 19; AlgaeBase

**Photograph:** David Reinhard, Black Rock

Kingdom **Protista**Phylum **Rhodophyta***Plocamium angustum*

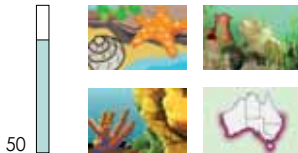
(J. Agardh) J.D. Hooker &amp; Harvey, 1847

**COMMON PLOCAMIUM**

**Description:** *Plocamium angustum* is a finely branching red alga. It has narrow, flat axes with alternating short **ramuli** with small, branched fronds.

**Size:** **Thallus** length to 250 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 36; E 80; AlgaeBase

**Photograph:** Rod Watson



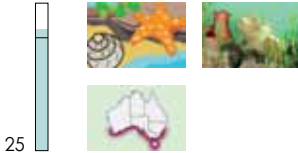
Kingdom **Protista**Phylum **Rhodophyta***Plocamium leptophyllum*

Kützing, 1849

**Description:** *Plocamium leptophyllum* is a red alga that grows as an **epiphyte** on other algae. The **thallus** is very delicate and densely branched.

**Size:** Thallus length to 150 mm

**Habitat and distribution:**

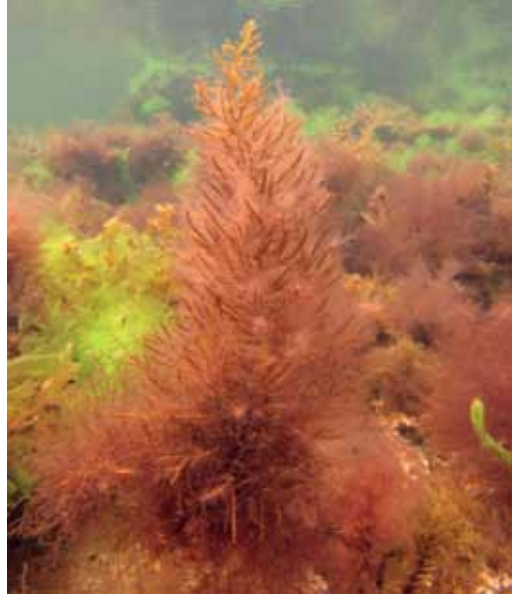


25

**Abundance:** ■ ■

**Reference:** AlgaeBase

**Photograph:** David Reinhard

Kingdom **Protista**Phylum **Rhodophyta***Capreolia implexa*

Giry &amp; Womersley, 1993

**TUFTING RED ALGAE**

**Description:** *Capreolia implexa* grows as a tufted mat. Classified as a red alga, it has a turf-like yellow-brown appearance.

**Size:** Tufts to 30 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** R 33; AlgaeBase

**Photograph:** Ray Lewis



Kingdom **Protista**Phylum **Rhodophyta***Corallina officinalis*

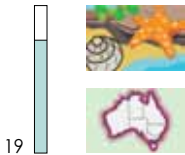
Linnaeus, 1758

**TUFTED CORALLINE**

**Description:** *Corallina officinalis* has pink-purple feather-like, articulated, branching fronds. The cells of coralline algae are hardened by deposits of calcium carbonate, giving them a coral-like texture.

**Size:** **Thallus** length to 150 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** F 18; W 9; B 8; D 29; AlgaeBase

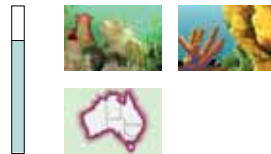
**Photograph:** David Reinhard

Kingdom **Protista**Phylum **Rhodophyta***Lithothamnion* spp.**ICING SEAWEED, ENCRUSTING CORALLINES**

**Description:** *Lithothamnion* is a genus of pink, encrusting, coralline algae. It occurs as a hard pink coating on virtually all shaded rock surfaces. It is not possible to identify to species level without a microscope.

**Size:** Variable size

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** F 20–21; E 86; W 9; B 8; D 29

**Photograph:** David Reinhard

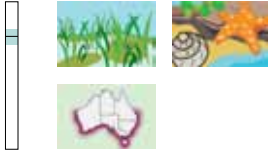
Kingdom **Protista**Phylum **Rhodophyta***Laurencia filiformis*

(C. Agardh) Montagne, 1845

**Description:** *Laurencia filiformis* has cylindrical fronds with branching in all directions. Like other *Laurencia* species, it has an indentation at the terminus of the branches. It sometimes grows as an **epiphyte** on seagrasses.

**Size:** Thallus length to 150 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 57; AlgaeBase

**Photograph:** Ray Lewis

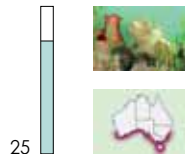
Kingdom **Protista**Phylum **Rhodophyta***Lenormandia muelleri*

Sonder, 1853

**Description:** *Lenormandia muelleri* has broad, flat, firm, leaf-like fronds, branching from the midrib and margins.

**Size:** Thallus length to 60 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** R 33; AlgaeBase

**Photograph:** Ray Lewis



Kingdom **Protista**Phylum **Rhodophyta***Botryocladia sonderi*

P.C. Silva, 1996

**Description:** *Botryocladia sonderi* has clusters of hollow, grape-like branches originating from the main stem. It ranges in colour from red through to brown.

**Size:** Thallus length to 200 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 46; E 89; AlgaeBase

**Photograph:** Ray Lewis

Kingdom **Plantae**Phylum **Chlorophyta***Ulva compressa*

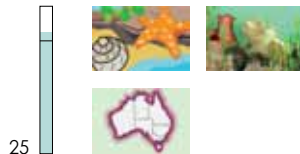
Linnaeus, 1753

**BAIT WEED**

**Description:** *Ulva compressa* is a vibrant green alga with hollow tubular fronds, branched at the base. It is held to the rocks by a holdfast.

**Size:** Thallus length to 150 mm

**Habitat and distribution:**



25

**Abundance:** ■ ■

**Reference:** B 13; AlgaeBase

**Synonym:** *Enteromorpha compressa*

**Photograph:** Friends of the Barwon Heads Bluff, Barwon Bluff



Kingdom **Plantae**Phylum **Chlorophyta***Ulva intestinalis*

Linnaeus, 1753

**GREEN BAIT WEED**

**Description:** *Ulva intestinalis* has green, hollow, constricted tubular fronds, but unlike other species, is unbranched. It commonly forms dense turf-like mats.

**Size:** **Thallus** length to 250 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** F 89–90; E 29

**Synonym:** *Enteromorpha intestinalis*

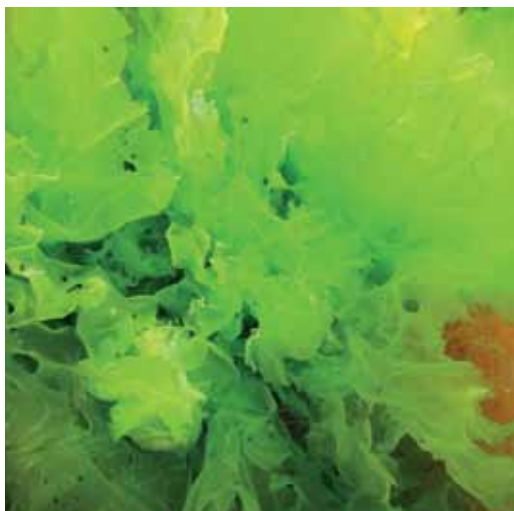
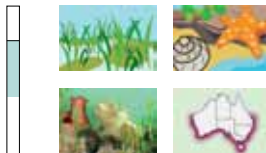
**Photograph:** Ray Lewis

Kingdom **Plantae**Phylum **Chlorophyta***Ulva* spp.**SEA LETTUCE**

**Description:** *Ulva* are vibrant green algae with broad, thin fronds. Six species are present in southern Australia, the most common being *Ulva australis*.

**Size:** **Thallus** length to 300 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** F 88–89; E 28; W 7; R 13; B 13; D 20; AlgaeBase

**Photograph:** David Reinhard

Kingdom **Plantae**Phylum **Chlorophyta***Codium fragile*

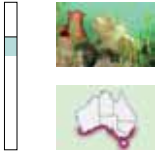
(Suringar) Hariot, 1889

**GREEN SEA VELVET**

**Description:** *Codium fragile* has dark green forked branches and a covering of hairs, creating a furry appearance. The **thalli** have pointed rather than rounded ends.

**Size:** Thallus length to 300 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** F 102–103; E 34; W 7; B 14; D 21; AlgaeBase

**Photograph:** David Reinhard

Kingdom **Plantae**Phylum **Chlorophyta***Caulerpa brownii*

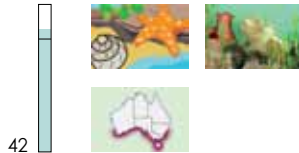
(C. Agardh) Endlicher, 1843

**SPINY CAULERPA**

**Description:** *Caulerpa brownii* is emerald green in colour. The erect axes are densely covered by short **ramuli**, which are mostly forked at their bases.

**Size:** Thallus length to 400 mm

**Habitat and distribution:**



42

**Abundance:** ■ ■ ■ ■

**Reference:** F 97; E 38; B 14; AlgaeBase

**Photograph:** Rod Watson, Barwon Bluff



Kingdom **Plantae**Phylum **Chlorophyta***Caulerpa flexilis*

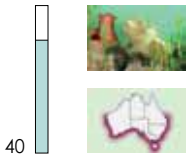
J.V.Lamouroux ex. C. Agardh, 1823

**FEATHERY CAULERPA**

**Description:** *Caulerpa flexilis* is a green seaweed with branches alternating along the erect primary axis. The conifer-like fronds are often heavily grazed, leaving only the **stolon**.

**Size:** **Thallus** length to 300 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 95; E 39; B 14; AlgaeBase

**Photograph:** Rod Watson

Kingdom **Plantae**Phylum **Chlorophyta***Caulerpa longifolia*

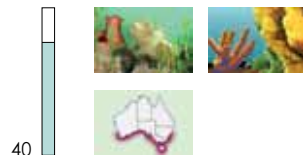
C. Agardh, 1823

**LONG-FILAMENT CAULERPA**

**Description:** *Caulerpa longifolia* has long thread-like **ramuli**, usually in five rows along the sides of the erect axes. The species has a shaggy appearance.

**Size:** **Thallus** length to 650 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 98; E 37; AlgaeBase

**Photograph:** Ray Lewis



Kingdom **Plantae**Phylum **Chlorophyta***Caulerpa remotifolia*

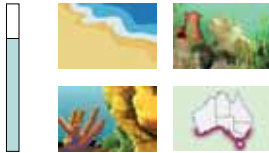
Sonder, 1853

**HERRING-BONE CAULERPA**

**Description:** *Caulerpa remotifolia* is a vivid green alga, distinguished by the regularly spaced, flattened ramuli that extend along the main axis. The gaps between the **ramuli** exceed the width of the ramuli.

**Size:** **Thallus** length to 300 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 99; E 36; AlgaeBase

**Photograph:** David Reinhard

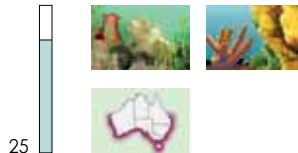
Kingdom **Plantae**Phylum **Chlorophyta***Caulerpa sedoides* f. *geminata*

(Harvey) Weber Bosse, 1898

**Description:** *Caulerpa sedoides* f. *geminata* is a small green weed with bubble-like **ramuli**, either in pairs or attached irregularly to the axes.

**Size:** **Thallus** length to 150 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** F 97; E 40; AlgaeBase

**Synonym:** *Caulerpa geminata*

**Photograph:** David Reinhard



Kingdom **Plantae**Phylum **Chlorophyta***Caulerpa vesiculifera*

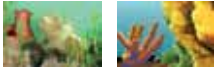
(Harvey) Harvey, 1863

**BEADED CAULERPA**

**Description:** *Caulerpa vesiculifera* has a pale green **thallus**, with thin **ramuli** densely arranged along the axes. Two similar species, *C. simpliciuscula* and *C. papillosa*, can be distinguished by their darker green colour and smaller size.

**Size:** Thallus length to 350 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** F 100; E 42; AlgaeBase

**Synonym:** *Caulerpa simpliciuscula* var. *vesiculifera*

**Photograph:** Ray Lewis

Kingdom **Plantae**Phylum **Angiospermae***Zostera muelleri*

Irmisch ex P.F.A. Ascherson, 1867

**EEL GRASS**

**Description:** *Zostera muelleri* is a seagrass with strap-shaped green leaves, notched at the tip. It flowers throughout the warmer months.

**Size:** Leaf length to 300 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** F 109; E 109

**Photograph:** Mark Rodrigue



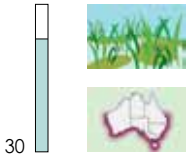
*Zostera nigricaulis*

(J.Kuo) S.W.L.Jacobs &amp; D.H.Les, 2009

**Description:** *Zostera nigricaulis* is a seagrass with flattened, blade-like leaves and dark, wiry bases arising vertically from the rhizomes. It is difficult to distinguish from other *Zostera* species in the field.

**Size:** Leaf length to 1.5 m

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 108; AlgaeBase

**Synonym:** *Heterozostera nigricaulis*

**Photograph:** David Reinhard

*Sarcocornia quinqueflora*

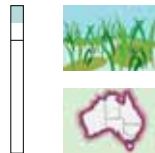
(Bunge ex Ungern-Sternberg) A.J. Scott, 1977

**BEADED GLASSWORT, BEADED SAMPHIRE**

**Description:** *Sarcocornia quinqueflora* is a succulent saltmarsh plant with segmented green stems, becoming red at the tips.

**Size:** Stem length to 300 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 111

**Synonym:** *Salicornia quinqueflora*

**Photograph:** Rod Watson, Barwon Estuary



*Sycon whiteleggei*

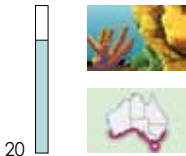
Dendy, 1893

**CREAM TUBE SPONGE**

**Description:** *Sycon whiteleggei* is a calcareous sponge, typically a branching mass of hollow tubes, with openings at the ends of each branch.

**Size:** Length to 30 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 113; WoRMS

**Synonym:** *Sycon gelatinosum*

**Photographer:** David Reinhard

*Tethya burtoni*

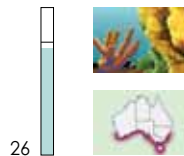
Sarà &amp; Sarà, 2004

**GOLF BALL SPONGE**

**Description:** *Tethya burtoni* is commonly bright peach-orange in colour. Its spherical shape and dimpled surface are characteristic of the genus. The sponge is anchored to the rock surface by up to ten small pedicels.

**Size:** Diameter to 25 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 114; WoRMS

**Photographer:** David Reinhard



***Ecionemia robusta***

(Carter, 1883)

**Description:** *Ecionemia robusta* is a subspherical yellow sponge with prominent openings.

**Size:** Diameter to 150 mm

**Habitat and distribution:**



30

**Abundance:** ■ ■

**Reference:** WoRMS

**Photographer:** David Reinhard

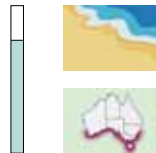
***Ciocalypta polymastia***

(Ledenfeld, 1888)

**Description:** *Ciocalypta polymastia* is a sponge with a large base buried in the sand and erect, conical, translucent **papillae** protruding above the surface. The colour is generally white or cream.

**Size:** Length to 90 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** WoRMS

**Photographer:** David Reinhard



*Clathria australiensis*

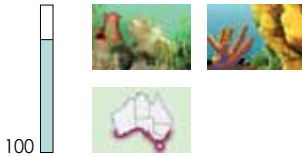
Carter, 1885

**FINGER SPONGE**

**Description:** *Clathria australiensis* is an erect, red, branching sponge with numerous flattened branches.

**Size:** Length to 400 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** WoRMS

**Synonym:** *Wilsonella australiensis*

**Photographer:** David Reinhard, Rye

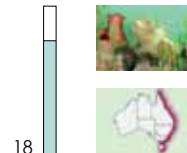
*Darwinella australiensis*

Carter, 1885

**Description:** *Darwinella australiensis* is a yellow sponge that quickly bleaches on exposure. The skeleton is made of **spongin** fibres, folded into irregular lace-like lobes.

**Size:** Length to 100 mm

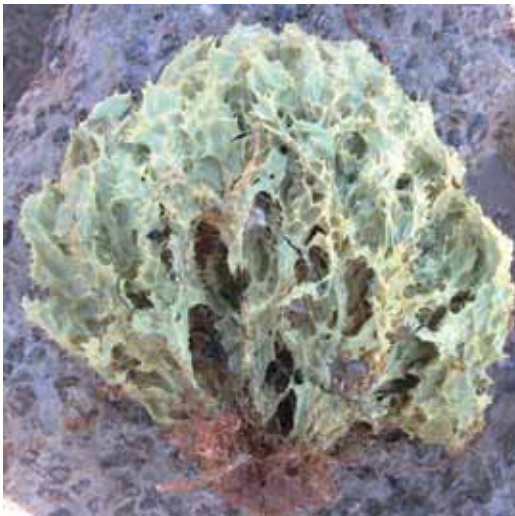
**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 117; WoRMS

**Photographer:** Ray Lewis



*Aplysilla rosea*

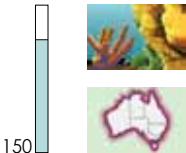
(Barrios, 1876)

**ENCrustING ROSE SPONGE**

**Description:** *Aplysilla rosea* is a pink encrusting sponge with an irregular surface. It occurs widely in sheltered habitats and is extremely common on jetty pylons.

**Size:** Width to 500 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E2 140

**Photographer:** David Reinhard

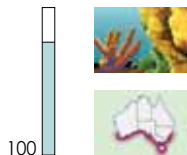
*Pseudoceratina durissima*

Carter, 1885

**Description:** *Pseudoceratina durissima* is bright yellow and rubbery when alive, but turns dark purple or royal blue when exposed to air.

**Size:** Variable size

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** WoRMS

**Synonym:** *Aplysina laevis*

**Photographer:** David Reinhard



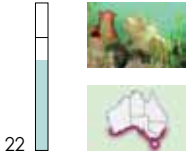
*Dendrilla cactos*

(Selenka, 1867)

**Description:** *Dendrilla cactos* is a bright pink sponge with a ruffled surface. It occurs in erect, branching and encrusting forms.

**Size:** Length to 400 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 117; WoRMS

**Photographer:** Ray Lewis

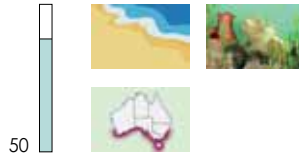
*Chondropsis kirki*

(Bowerbank, 1841)

**Description:** *Chondropsis kirki* is a sand sponge with a weakly developed skeleton of simple, straight, siliceous spicules.

**Size:** Length to 100 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** WoRMS

**Photographer:** David Reinhard





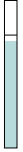
*Crella incrustans*

(Carter, 1885)

**Description:** *Crella incrustans* forms as an encrustation from which long digits arise. The sponge is highly variable in shape, very fibrous and reddish-orange in colour.

**Size:** Length to 400 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** WoRMS

**Synonym:** *Clathrissa incrustans*

**Photographer:** David Reinhard

*Ircinia* sp.

**Description:** *Ircinia* is compressible and elastic, but very tough and difficult to tear. This genus is typically darkish to light grey externally and tan internally.

**Size:** Length to 500 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** WoRMS

**Photographer:** David Reinhard



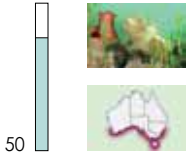
*Spheciospongia papillosa*

(Ridley &amp; Dendy, 1886)

**Description:** *Spheciospongia papillosa* is a cream-yellow sponge, covered in irregular **papillae**.

**Size:** Height to 300 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** WoRMS

**Synonym:** *Spirastrella papillosa*

**Photographer:** David Reinhard

*Notoplana australis*

(Schmarda, 1859)

**COMMON FLATWORM**

**Description:** *Notoplana australis* is a large, brown, gelatinous flatworm. It is most commonly found under boulders.

**Size:** Length to 40 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 152; R 26; B 40; WoRMS

**Synonym:** *Leptoplana australis*

**Photographer:** Mel Mitchell



***Thysanozoon* spp.**

**Description:** Thysanozoans are flatworms with warty **papillae** over their upper surface. They are a poorly described group, but are common in Australian temperate waters.

**Size:** Length to 30 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 152

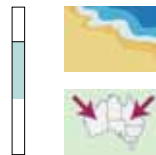
**Photographer:** John Eichler

***Baseodiscus* sp.**

**Description:** *Baseodiscus* sp. is a cream and reddish brown striped worm often in what appear to be tangled masses. This specimen closely resembles *B. delineatus*, which has not been recorded in Australia.

**Size:** Length to 200 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** WoRMS

**Photographer:** John Eichler



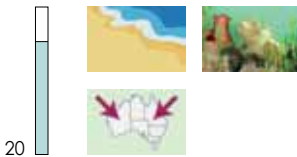
*Sabella spallanzanii*

(Gmelin, 1791)

**Description:** *Sabella spallanzanii* is a large polychaete with a tapered body and a distinctive spiral crown of banded tentacles. It is an aggressive introduced species and is particularly abundant in Port Phillip Bay.

**Size:** Body length to 10 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 160; WoRMS; MV

**Photographer:** Sarah Speight, Altona Pier

*Sabellastarte spectabilis*

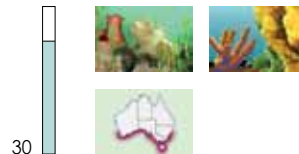
(Grube, 1878)

**FEATHER-DUSTER WORM**

**Description:** *Sabellastarte spectabilis* is a large feather-duster worm with distinctive banding of the tentacles. The body is buff coloured, with purple flecks.

**Size:** Body length to 80 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** W 26

**Synonym:** *Sabellastarte indica*

**Photographer:** David Reinhard

*Galeolaria caespitosa*

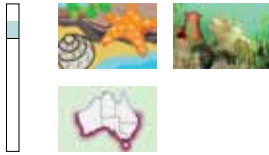
Lamarck, 1818

**TUBE WORM**

**Description:** *Galeolaria caespitosa* has a white, elongate, convoluted shell. The living animal has black tentacles and an **operculum** with nine to eleven movable gills projecting from the centre. It occurs in great density in southern Australia, commonly on wharves.

**Size:** Length to 20 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 162; W 26; R 33;  
B 40; D 38; WoRMS

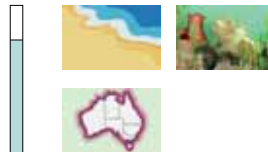
**Photographer:** Mark Rodrigue

**Sipunculids****PEANUT WORMS**

**Description:** Sipunculids are unsegmented, cylindrical worms. Their bodies typically have a fat trunk and a longer slender **proboscis**.

**Size:** Length to 100 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 163

**Photographer:** Sarah Speight, Rye Pier



*Aglaophenia plumosa*

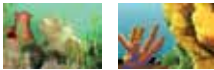
Bale, 1882

**PURPLE HYDROID**

**Description:** *Aglaophenia plumosa* is a hydroid with fine, white, feather-like branches extending from a darker stem.

**Size:** Stem length to 150 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 119; WoRMS

**Photographer:** Ray Lewis

*Actinia tenebrosa*

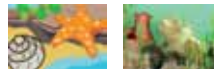
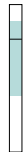
Farquhar, 1898

**WARATAH ANEMONE**

**Description:** *Actinia tenebrosa* is the dominant anemone of southern coastal waters. At low tide it is found as a dark red blob with a lighter red spot at the mouth. The conspicuous red tentacles become apparent as the tide comes in.

**Size:** Diameter to 40 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 126; FN 10; W 13; R 26; B 18; D 31; WoRMS

**Photographer:** John Eichler, Black Rock



*Oulactis muscosa*

(Drayton, 1846)

**EASTERN SAND ANEMONE**

**Description:** *Oulactis muscosa* is usually found buried in the sand. It has dark grey-white blotched tentacles and a cream column with darker spots, which is rarely visible.

**Size:** Diameter to 80 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 126–127; FN 11; D 32; WoRMS

**Photographer:** John Eichler

*Aulactinia veratra*

(Drayton, 1846)

**GREEN ANEMONE**

**Description:** *Aulactinia veratra* has a dark green column with long, narrow tentacles of lighter green. It is commonly found on rock surfaces and in crevices.

**Size:** Diameter to 70 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 127; FN 12; B 18; WoRMS

**Photographer:** Sarah Speight, Mordialloc Pier



*Anthopleura aureoradiata*

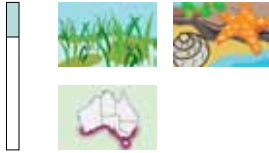
(Stuckey, 1909)

**MUDFLAT ANEMONE**

**Description:** *Anthopleura aureoradiata* has a brownish-grey column, with rows of white nodes increasing in size towards the top. The oral disc is pale, with dark lines radiating from the mouth. Tentacles are a dull greenish colour with white specks.

**Size:** Diameter to 15 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** FN 11; WoRMS

**Photographer:** John Eichler

*Anthothoe albocincta*

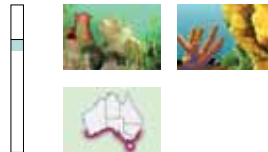
(Hutton, 1879)

**WHITE STRIPED ANEMONE**

**Description:** *Anthothoe albocincta* has a distinctive striped orange and white column with a crown of up to 200 short white tentacles. When disturbed, the animal releases stinging cells through the body wall, which are generally harmless to humans.

**Size:** Diameter to 20 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 127; FN 12; W 13; B 18; WoRMS; MV

**Synonym:** *Actinothoe albocincta*

**Photographer:** Sarah Speight





*Phlyctenactis tuberculosa*

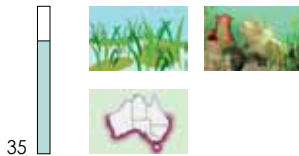
(Quoy &amp; Gaimard, 1833)

**SWIMMING ANEMONE**

**Description:** *Phlyctenactis tuberculosa* is a large, 'swimming' anemone, which may attach to seagrasses or drift in shallow water. The column is covered by large orange-red **vesicles**, resembling a plate of beans. The tentacles are long and orange.

**Size:** Diameter to 150 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** E 128; FN 9; D 31; WoRMS

**Photographer:** Sandy Webb

*Epiactis australiensis*

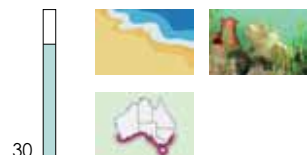
Carlgren, 1950

**PINK-TIPPED ANEMONE**

**Description:** *Epiactis australiensis* has a long, smooth column with rounded extensions at the base and pale tentacles with purplish tips. It is usually found buried in sand, but attached to shells or rock.

**Size:** Diameter to 25 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** E 129; WoRMS

**Photographer:** Sarah Speight



## *Isanemonia australis*

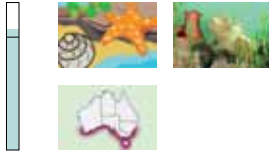
Carlgren, 1950

### AUSTRALIAN WAX ANEMONE

**Description:** *Isanemonia australis* has a dark green column with red markings and **vesicles** with stinging cells. The tentacles are long, coloured green or pink with white specks, and have conical tips.

**Size:** Diameter to 50 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 128; WoRMS; MV

**Synonym:** *Phylctenanthus australis*

**Photographer:** Sarah Speight



## Zoanthids

**Description:** Zoanthids resemble soft coral and anemones, and are generally **colonial** animals. They have a fleshy **stolon** and usually two rows of smooth tentacles.

**Size:** Length to 100 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 131

**Photographer:** Sandy Webb

*Plesiastrea versipora*

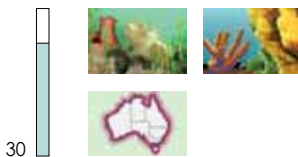
(Lamarck, 1816)

**SMALL KNOB CORAL**

**Description:** *Plesiastrea versipora* is the common reef-building coral of southern Australia. It is green-brown in colour and has distinctive large, roughly circular pits, containing the **polyps**.

**Size:** Colony width to 3 m

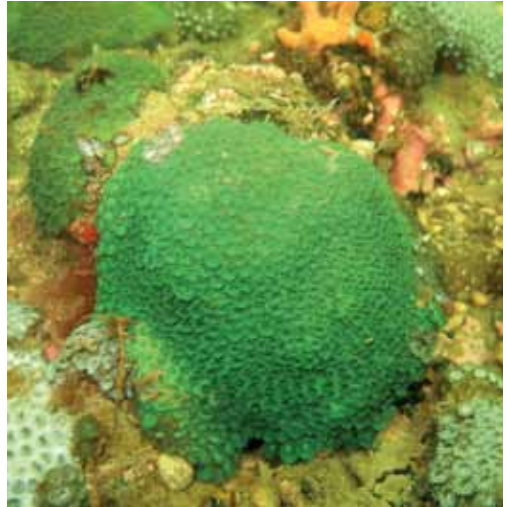
**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 134; WoRMS

**Photographer:** David Reinhard

*Pelagia noctiluca*

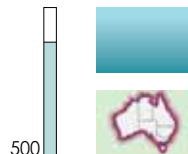
(Forsskål, 1775)

**MAUVE STINGER**

**Description:** *Pelagia noctiluca* is a jelly with purple streaks on an otherwise clear bell. It has four arms and eight fine tentacles. Stings from this species have been reported as being lethal to humans.

**Size:** Diameter to 120 mm

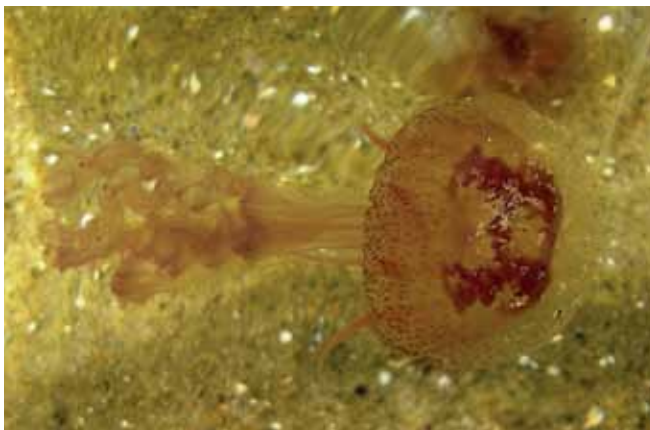
**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 146

**Photographer:** John Eichler



*Catostylus mosaicus*

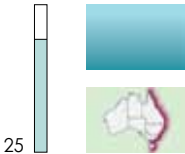
(Quoy &amp; Gaimard, 1824)

**JELLY BLUBBER, BLUE JELLY, BLUE BLUBBER**

**Description:** *Catostylus mosaicus* is pale blue and possesses eight three-winged arms and a conspicuous internal cross that is apparent through the top of the bell. It is seasonally found washed up on the beach.

**Size:** Bell width to 350 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 147; W 13; WoRMS

**Photographer:** (TOP) David Reinhard; (BOTTOM) John Buckeridge

*Pseudorhiza haeckeli*

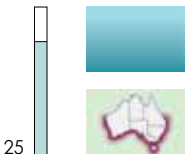
Haacke, 1884

**SOUTHERN TAILED JELLY**

**Description:** *Pseudorhiza haeckeli* is an elegant jelly with a rounded bell covered in **papillae**. The arms are small, curved and feather-like with one long colourful tail. This jelly may give a minor sting. Do not handle.

**Size:** Bell width to 400 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** MV

**Photographer:** Ray Lewis



*Ischnochiton lineolatus*

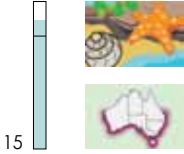
(de Blainville, 1825)

**LINED CHITON**

**Description:** *Ischnochiton lineolatus* has a cream background with dark patterning and a fawn girdle. The **pleural** and **dorsal** patterning is zigzagged and the girdle is striated.

**Size:** Length to 50 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** E 221; FN 14; WoRMS

**Synonym:** *Chiton lineolatus*

**Photographer:** John Eichler, Brighton

*Ischnochiton elongatus*

(de Blainville, 1825)

**ELONGATED CHITON**

**Description:** *Ischnochiton elongatus* has extremely variable patterning and may be cream, yellow, brown, red, purple, grey or black; plain, dotted, striped or with wavy lines. A dark background with light stripe is the most common pattern. The shell is elongated and has small girdle scales and fine ridges in the **pleural** area.

**Size:** Length to 35 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** E 221; FN 14; D 69; WoRMS

**Photographer:** (LEFT) Ray Lewis;  
(RIGHT) John Eichler, Black Rock



*Ischnochiton australis*

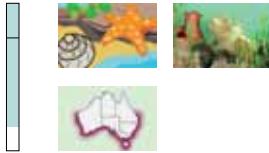
(Sowerby, 1840)

**AUSTRALIAN CHITON, SOUTHERN CHITON**

**Description:** *Ischnochiton australis* is a dark green-brown chiton with a large girdle the same colour as the shell. It has diagonal ridges laterally, and fine longitudinal **pleural** ridges. This is the largest *Ischnochiton* found in southern Australia.

**Size:** Length to 90 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 220; FN 16; B 27; D 69; WoRMS

**Synonym:** *Chiton australis*

**Photographer:** John Eichler

*Ischnochiton cariosus*

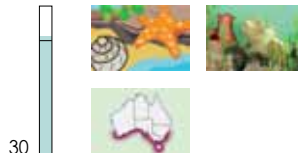
(Pilsbry, 1892)

**BEADED CHITON**

**Description:** *Ischnochiton cariosus* is generally cream, yellow or brown in colour. It is an elongate chiton and is distinctly **nodular** in the lateral area. The girdle is wide and has scales of differing sizes.

**Size:** Length to 50 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 222; FN 16; WoRMS

**Photographer:** John Eichler



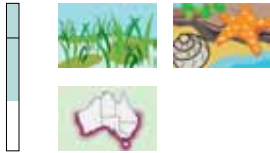
*Ischnochiton virgatus*

(Reeve, 1848)

**Description:** *Ischnochiton virgatus* is bright orange in colour, with brown patterning and bright green flecks. The girdle is cream with dark brown stripes.

**Size:** Length to 10 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** FN 17; MV

**Photographer:** John Eichler, Barwon Heads

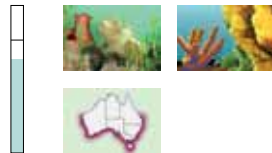
*Callistochiton antiquus*

(Reeve, 1847)

**Description:** *Callistochiton antiquus* is a chiton with a reddish brown shell and girdle. The end valves and the lateral areas have strong **nodular ribs**, with ornate diagonal nodules in the **pleural** regions.

**Size:** Length to 40 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** FN 18; E 224

**Photographer:** John Eichler



*Plaxiphora albida*

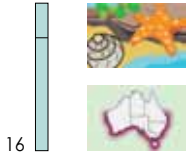
(de Blainville, 1825)

**HAIRY CHITON, GIANT CHITON**

**Description:** *Plaxiphora albida* is a large dark green chiton, with lighter wavy bars on some valves, and a dark girdle. The girdle is large and covered by bristles.

**Size:** Length to 100 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 224; FN 19; W 17; R 34; B 27; D 72; WoRMS, MV

**Photographer:** Mel Mitchell, Black Rock

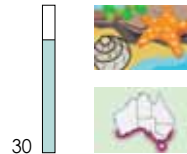
*Rhyssoplax tricostalis*

(Pilsbry, 1894)

**Description:** *Rhyssoplax tricostalis* has a dull olive-green to brown shell and girdle. The shell is elongated and elevated, with **nodulose** radial ribs in the end valves and lateral areas.

**Size:** Length to 35 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 21

**Photographer:** John Eichler, Brighton





*Cryptoplax striata*

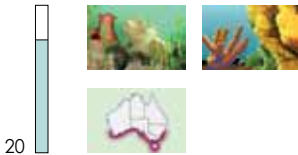
(Lamarck, 1819)

**MOTTLED WORM CHITON**

**Description:** *Cryptoplax striata* is an elongate, narrow chiton. It is commonly cream or brown, with a banded, flexible girdle.

**Size:** Length to 120 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 226; FN 21; WoRMS

**Photographer:** John Eichler

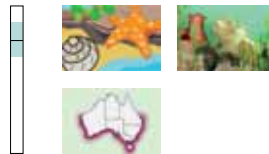
*Acanthochitona granostriata*

(Pilsbry, 1894)

**Description:** *Acanthochitona granostriata* is a chiton with a variable shell pattern, with colours including orange, cream, red and green. Conspicuous green tufts are arranged along a dark, wide, spiny girdle.

**Size:** Length to 20 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** FN 22

**Photographer:** John Eichler

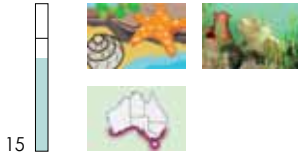
***Notoplax speciosa***

(H. Adams, 1861)

**Description:** *Notoplax speciosa* is a brownish, speckled chiton with a soft, **nodulose**, oval body. The shell plates are small and occur in a ridge along the back.

**Size:** Length to 80 mm

**Habitat and distribution:**



15

**Abundance:** ■ ■

**Reference:** WoRMS; MV

**Synonym:** *Notoplax addenda*

**Photographer:** John Eichler

***Haliotis rubra***

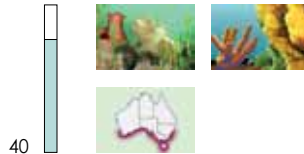
Leach, 1814

**BLACKLIP ABALONE**

**Description:** *Haliotis rubra* is the common edible abalone. The exterior of the large, oval-shaped shell is reddish with a black lip and numerous spiral ridges, crossed by radiating ribs and a row of tubercles towards the margin. The interior is opalescent mother-of-pearl.

**Size:** Length to 200 mm

**Habitat and distribution:**

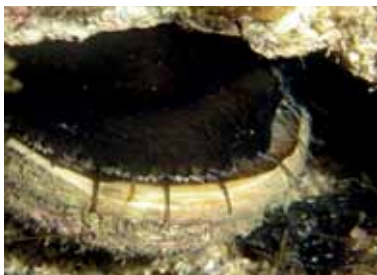


40

**Abundance:** ■

**Reference:** E 227; FN 24–25; W 20; D 74; WoRMS

**Photographer:** (TOP) Ray Lewis; (BOTTOM) Sarah Speight



*Scutus antipodes*

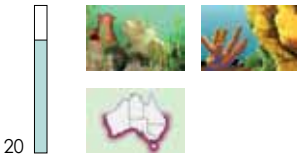
Montfort, 1810

**ELEPHANT SNAIL**

**Description:** *Scutus antipodes* is a gastropod with a brownish white shell. The shell is shield-shaped and almost flat, with a slight **apex** at the **anterior** end. The live animal is black and many times larger than the shell.

**Size:** Length to 100 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 230; FN 25; WoRMS

**Photographer:** John Eichler, Anglesea

*Diodora lineata*

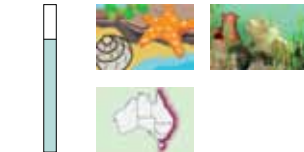
(Sowerby, 1835)

**KEYHOLE LIMPET**

**Description:** *Diodora lineata* has an oval shell with a keyhole opening at the high **apex**. The surface ornamentation forms an intricate lattice pattern.

**Size:** Length to 50 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 27; E 231

**Photographer:** John Eichler

*Cellana tramoserica*

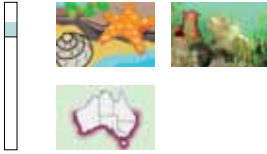
(Holten, 1802)

**COLOURFUL LIMPET**

**Description:** *Cellana tramoserica* has a large, decorative shell, with dark radiating stripes and/or crescent-shaped markings on an orange-tan background.

**Size:** Length to 50 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** E 233; FN 29; W 21; R 37; B 28; D 79; WoRMS

**Photographer:** John Eichler

*Patelloida alticostata*

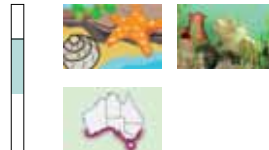
(Angas, 1865)

**TALL-RIBBED LIMPET**

**Description:** *Patelloida alticostata* is pale in colour with black markings between the ribs. The ribs are distinct and the shell is strong and often partially eroded. The edge is scalloped.

**Size:** Length to 40 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 234; FN 30; W 21; R 38; B 28; D 78; WoRMS

**Photographer:** John Eichler



*Notoacmea flammea*

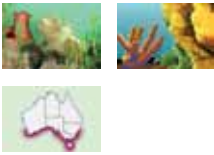
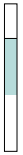
(Quoy &amp; Gaimard, 1834)

**FLAMED LIMPET**

**Description:** *Notoacmea flammea* is highly variable in colour (including yellow, orange and brown) with a striped, flamed or **reticulated** patterning of darker colours. It is oval in shape, small and relatively flat, with a thin shell.

**Size:** Length to 17 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 236; FN 32; W 21; D 85; WoRMS

**Photographer:** John Eichler, San Remo

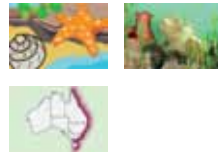
*Notoacmea petterdi*

(Tenison Woods, 1876)

**Description:** *Notoacmea petterdi* is a limpet with a dull white shell with dark radiating bands. It is common on vertical rock faces. The **apex** is brown, as is the interior of the shell.

**Size:** Length to 22 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** FN 33; E 236

**Photographer:** John Eichler

*Austrocochlea constricta*

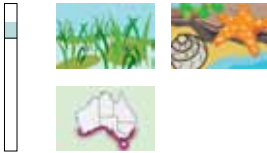
(Lamarck, 1822)

**RIBBED TOP SHELL**

**Description:** *Austrocochlea constricta* has **whorls** with prominent spiral ridges, which give it a grooved appearance. The shell height is greater than or equal to its width, and the inside of the shell is an off-white colour.

**Size:** Height to 25 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 240; F 38; W 20; R 42; B 31; D 88; WoRMS

**Photographer:** Ray Lewis

*Austrocochlea porcata*

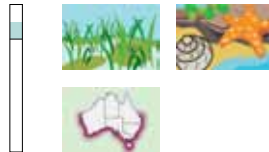
(A. Adams, 1853)

**ZEBRA TOP SHELL**

**Description:** *Austrocochlea porcata* has a shell similar in shape to *A. constricta*, but with broken ridges and parallel oblique bands of black and white extending onto the spire.

**Size:** Height to 25 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 240; D 88; WoRMS

**Photographer:** Mel Mitchell, Black Rock



*Austrocochlea concamerata*

(Wood, 1828)

**WAVY TOP SHELL**

**Description:** *Austrocochlea concamerata* has a black shell with white spots on the ribs. The shell is very wide and thick and the sculpture of the ribs is distinct.

**Size:** Height to 25 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 241; FN 38; D 89

**Synonym:** *Diloma concamerata*

**Photographer:** John Eichler

*Austrocochlea odontis*

(Wood, 1828)

**CHECKERED TOP SHELL**

**Description:** *Austrocochlea odontis* has a rounded, blue-black shell with a checkerboard pattern of small white-yellow spots. There is a bright green edge to the **aperture**.

**Size:** Height to 15 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 241; F 39; W 20; R; 43; D 89

**Synonym:** *Chlorodiloma odontis*

**Photographer:** Mel Mitchell, Black Rock



*Phasianella ventricosa*

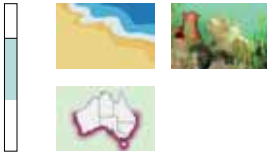
Swainson, 1822

**PHEASANT SHELL**

**Description:** *Phasianella ventricosa* has a smooth shell with variable brown, pink and cream colours and characteristic stipple-striped patterning. The shell is an elongate turbo with solid rounded **whorls** and a short **apex**. The **operculum** is large and oval, and the interior is white.

**Size:** Height to 35 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 242; FN 43

**Photographer:** Ray Lewis

*Turbo undulatus*

Lightfoot, 1786

**WARRENER, GREEN TURBAN**

**Description:** *Turbo undulatus* has a blue-green shell with lighter oblique stripes. The shell is wide, round and smooth, with a low spire.

**Size:** Height to 50 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 242; FN 42; W 18; R 44; B 30; D 92

**Photographer:** (TOP) John Buckeridge;  
(BOTTOM) John Eichler



*Astraliium squamiferum*

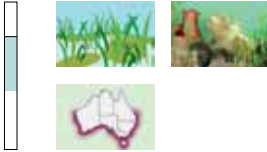
(Koch, 1844)

**SEAGRASS STAR**

**Description:** *Astraliium squamiferum* has a very low shell with outward projections from the **whorls**, giving it a star-shaped appearance when seen from above.

**Size:** Width to 30 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 243

**Photographer:** Mel Mitchell, Black Rock

*Nerita atramentosa*

(Reeve, 1855)

**BLACK CROW**

**Description:** *Nerita atramentosa* has a black shell with a white ovoid **aperture**. The shell is rounded, with a flattened spire and fine lines crossing the **striations**.

**Size:** Height to 28 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** E 244; FN 44; R 45; B 30; D 96

**Synonym:** *Nerita melanotragus*

**Photographer:** Mel Mitchell, Black Rock



*Bembicium nanum*

(Lamarck, 1822)

**STRIPED-MOUTH CONNIWINK**

**Description:** *Bembicium nanum* has a low conic shell, which is wider than it is high. The shell has dark brown wavy lines running obliquely across the lower **whorls**, with orange colouring to the **apex**.

**Size:** Height to 10 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** E 244; F 46; R 46; B 30; D 98; WoRMS

**Photographer:** Rod Watson

*Bembicium melanostoma*

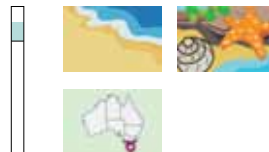
(Gmelin, 1791)

**DARK-MOUTHED CONNIWINK, GOLD-MOUTH CONNIWINK**

**Description:** *Bembicium melanostoma* has a brownish-red conical shell with five to seven spiral grooves around the edge of the last **whorl**. The interior is dark.

**Size:** Height to 20 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** E 245; F 46; W 19; D 99; WoRMS

**Synonym:** *Bembicum lividum*

**Photographer:** John Eichler



*Austrolittorina unifasciata*

(Gray, 1826)

**PERIWINKLE**

**Description:** *Austrolittorina unifasciata* has a small, smooth shell that is mostly pale blue with a brownish apex. It is usually found clustered in depressions and crevices.

**Size:** Height to 25 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** G 136; FN 44; R 47; B 30; D 100; WoRMS

**Synonym:** *Nodolittorina unifasciata*

**Photographer:** Mel Mitchell, Black Rock

*Afrolittorina praeterrmissa*

(May, 1909)

**Description:** *Afrolittorina praeterrmissa* has a grey-green shell with brown zigzag stripes and a white stripe at the base. The **whorls** are broader than in *A. unifasciata*.

**Size:** Length to 15 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** FN 45

**Photographer:** John Eichler



*Batillaria australis*

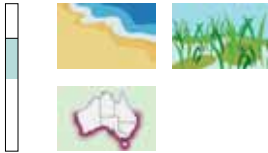
(Quoy &amp; Gaimard, 1834)

**SOUTHERN MUDWHELK**

**Description:** *Batillaria australis* is an elongated brown mudwhelk with **nodular** ridges around the **whorls** and raised folds running obliquely across them.

**Size:** Height to 45 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 249; F 48; WoRMS

**Photographer:** John Buckeridge

*Serpulorbis sipho*

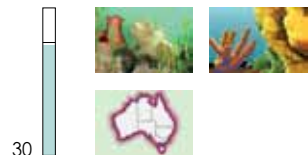
(Lamarck, 1818)

**WORM SHELL**

**Description:** *Serpulorbis sipho* is a worm-like gastropod that lives in a large, irregular, white-brown **calcareous** tube marked by longitudinal ridges.

**Size:** Diameter to 120 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 248

**Photographer:** John Eichler



*Polinices conicus*

(Lamarck, 1822)

**MOON SHELL, SAND SNAIL**

**Description:** *Polinices conicus* is lead-grey in colour, with red-brown **striations**. The shell is solid and pear-shaped. The **aperture** is large, with an orange-brown **callus**.

**Size:** Height to 42 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 249; FN 51; W 18; WoRMS

**Photographer:** John Eichler

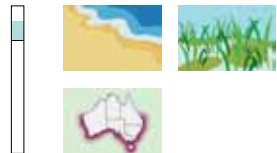
*Polinices sordidus*

(Swainson, 1821)

**Description:** *Polinices sordidus* has a grey shell with reddish-brown staining. The shell is solid and broader than *P. conicus*, with a less pronounced **apex**.

**Size:** Length to 35 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 51

**Photographer:** John Eichler



*Semicassis semigranosum*

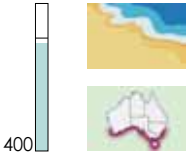
(Lamarck, 1822)

**HALF-GRAINED HELMET**

**Description:** *Semicassis semigranosum* is a helmet shell, identified by the rows of beads in the spire **whorls**. There is a small chink at the top of the **aperture** and the **siphonal canal** is deep. Commonly cream or pink in colour. The species is not found alive at Ricketts Point, but may be found washed up on the shore.

**Size:** Height to 60 mm

**Habitat and distribution:**



**Abundance:**



**Reference:** E 254–255

**Photographer:** Ray Lewis

*Cabestana spengleri*

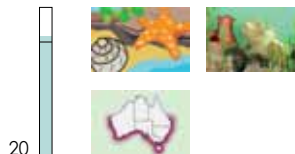
(Perry, 1811)

**SPENGLER'S TRITON**

**Description:** *Cabestana spengleri* is a cream triton shell with a brown **periostracum**. The shell is characterised by strong ridges with fine **axial striations** and **nodular shoulders**, and a spire almost half the length of the shell. The interior of the white **aperture** is also strongly ribbed.

**Size:** Height to 150 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** E 255; FN 54

**Photographer:** Ray Lewis



*Dicathais orbita*

(Gmelin, 1791)

**CART-RUT SHELL, DOG WINKLE**

**Description:** *Dicathais orbita* is generally mid to pale brown in colour. The shell is characterised by deep grooves and an **aperture** with an interior **siphonal canal**. This is a very aggressive carnivore.

**Size:** Height to 75 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 57; FN 59

**Synonym:** *Thais orbita*

**Photographer:** John Buckeridge

*Lepsiella vinosa*

(Lamarck, 1822)

**WINE-MOUTHED LEPSIELLA**

**Description:** *Lepsiella vinosa* is variable in shell shape and colour. It has a number of off-white ridges on each **whorl**, crossed by ribs and with dark grooves between.

**Size:** Height to 20 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 258; FN 58; W 19; R 48; B 33; D 13

**Photographer:** Mel Mitchell



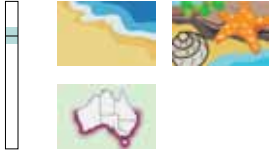
*Bedeva paivae*

(Crosse, 1864)

**Description:** *Bedeva paivae* has a solid, light brown shell, with a cream-coloured interior. The spire of the shell is less than half the full shell length. The **nodose axial ribs** are prominent with numerous **striations** in between.

**Size:** Length to 25 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 57; WoRMS

**Synonym:** *Lepsiella paivae*

**Photographer:** John Eichler

*Pleuroploca australasia*

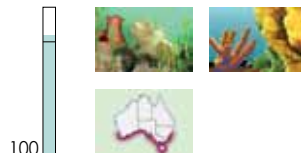
(Perry, 1811)

**TULIP SHELL**

**Description:** *Pleuroploca australasia* is a large tulip shell with prominent **nodules** on the spire and upper body, and fine spiral ridges. The shell of the live animal has brown ridges on a pale background, with a dark brown **periostracum**.

**Size:** Height to 150 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 260; FN 64

**Photographer:** John Eichler, Inverloch





*Cominella lineolata*

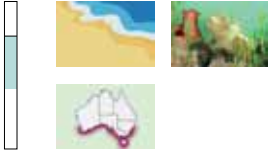
(Lamarck, 1809)

**FALSE WHELK**

**Description:** *Cominella lineolata* is a smooth, cigar-shaped gastropod with a variable checkerboard-like pattern. The shell can be smooth or with weakly **nodulose** shoulders.

**Size:** Height to 30 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 262; FN 62; R 52; B 33; D 115; WoRMS

**Photographer:** Mel Mitchell

*Nassarius pauperatus*

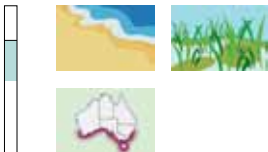
(Lamarck, 1822)

**POOR DOG WHELK**

**Description:** *Nassarius pauperatus* has a creamy coloured shell with brown banding at the centre and bottom of the **whorls**. The shell has a granular texture, caused by the crossing of the **axial** ribs and the spiral ridges. The inner edge of the **aperture** is broad and smooth

**Size:** Length to 20 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 262; FN 64



**Synonym:** *Niota pauperatus*

**Photographer:** Ray Lewis

*Nassarius pyrrhus*

(Menke, 1843)

**LITTLE DOG WHELK**

**Description:** *Nassarius pyrrhus* has a creamy shell with a prominent brown band and other minor banding. The shell is solid and rather elongate and has a granular pattern.

**Size:** Length to 20 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 63

**Synonym:** *Zeuxis pyrrhus*

**Photographer:** John Eichler

*Nassarius burchardi*

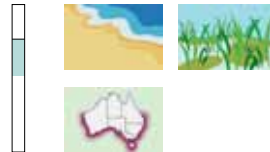
(Dunker, 1849)

**AUSTRALIAN DOG WHELK**

**Description:** *Nassarius burchardi* has a brown shell with a dark band just below the **suture**. The shell is solid and stout and the **operculum** is horny.

**Size:** Length to 15 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** FN 63

**Synonym:** *Plicarcularia burchardi*

**Photographer:** John Eichler



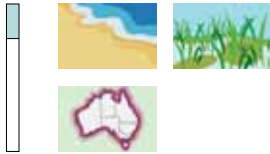
*Zeacumantus diemenensis*

(Quoy &amp; Gaimard, 1834)

**Description:** *Zeacumantus diemenensis* is a bluish-grey to brown, elongated gastropod with a granulated surface with four to five rows of concentric ridges crossed by ribs. The **operculum** is horny and red, with concentric striations.

**Size:** Height to 32 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** FN 48; WoRMS

**Photographer:** Rod Watson

*Conus anemone*

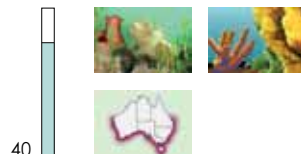
(Lamarck, 1810)

**CONE SHELL**

**Description:** *Conus anemone* has a cone-shaped shell with a variable blotched-brown, pink, orange and/or yellow pattern on a cream base. It has a venomous sting and should not be handled. It is nocturnal.

**Size:** Height to 70 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 263; FN 66; W 19; R 54; D 116; WoRMS

**Synonym:** *Conus fusiformis*

**Photographer:** Ray Lewis



*Mitra carbonaria*

Swainson, 1822

**Description:** *Mitra carbonaria* has a smooth, elongate, dark brown shell, with very fine **striations**. It is commonly found under rocks.

**Size:** Length to 55 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 65

**Synonym:** *Mitra badia*

**Photographer:** John Eichler,  
Barwon Heads

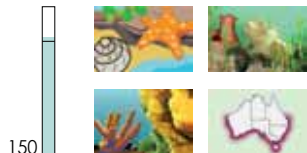
*Sigapatella calyptraeformis*

(Lamarck, 1822)

**Description:** *Sigapatella calyptraeformis* has a flattened pale, white-cream to pink shell. The basal **aperture** is large; the spire is not high, with up to three **whorls**.

**Size:** Diameter up to 26 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** WoRMS

**Photographer:** Ray Lewis



*Salinator fragilis*

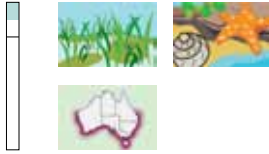
(Lamarck, 1822)

**FRAGILE AIR-BREATHER**

**Description:** *Salinator fragilis* has a very thin brown shell with dark banding. It is rounded in shape, with a wide **aperture** and small spire.

**Size:** Height to 18 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 266; FN 77; WoRMS

**Synonym:** *Ampullaria fragilis*

**Photographer:** John Eichler, Altona

*Siphonaria diemenensis*

Quoy &amp; Gaimard, 1833

**VAN DIEMEN'S SIPHON SHELL**

**Description:** *Siphonaria diemenensis* has a dark shell with raised, white radiating ribs. The shell is raised in profile and the **apex** is often eroded.

**Size:** Length to 28 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 267; FN 78; B 29

**Photographer:** John Eichler



*Siphonaria zelandica*

Quoy &amp; Gaimard, 1833

**LINED SIPHON SHELL**

**Description:** *Siphonaria zelandica* is cream-green in colour, and flat compared with *S. diemenensis*. The ribs are also less sculptured than those of *S. diemenensis* and the **apex** is commonly eroded.

**Size:** Length to 25 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 267; FN 78

**Photographer:** John Eichler

*Onchidella nigricans*

(Quoy &amp; Gaimard, 1832)

**OCEAN BEACH SLUG**

**Description:** *Onchidella nigricans* is dark green to yellowish-brown in colour, decorated with irregular spots or stripes and a scalloped border. It has an oval-shaped, leathery body with small granules covering the upper surface. It is largely nocturnal and is more common along the open coast.

**Size:** Length to 25 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 269; FN 75; R 55; B 29; D 119; WoRMS

**Synonym:** *Onchidella patelloides*

**Photographer:** Mel Mitchell



*Bulla punctulata*

A. Adams, 1850

**BOTANY BAY BUBBLE SHELL**

**Description:** *Bulla punctulata* has a marbled red-brownish shell with a diminished spire and narrow outer lip. The animal is brown with a broad head and two tentacles.

**Size:** Height to 50 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 269; FN 68; WoRMS

**Synonym:** *Bulla quoyii*

**Photographer:** John Eichler, Clifton Springs (juvenile)

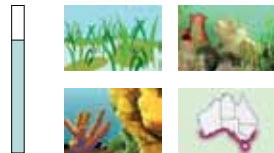
*Haminoea maugeansis*

Burn, 1966

**Description:** *Haminoea maugeansis* is a dark brown sea slug with a thin, mottled brown and transparent bubble-shaped shell.

**Size:** Length to 15 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** SS

**Photographer:** John Eichler



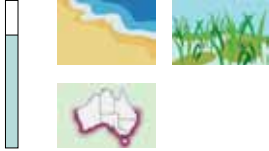
*Philine angasi*

(Crosse &amp; Fischer, 1865)

**Description:** *Philine angasi* has a translucent internal shell. The body is ovate, fleshy and creamy-white, and is twice the size of the shell.

**Size:** Length to 40 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** FN 69; E 271

**Photographer:** John Eichler,  
Altona

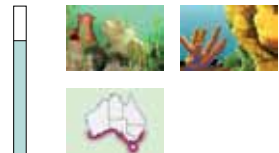
*Berthella medietas*

Burn, 1962

**Description:** *Berthella medietas* is a yellowish to pale grey cylindrical sea slug with two stout **rhinophores** extending from the head. The **mantle** extends laterally to cover the foot and the gill is often visible extending from the right side. It is commonly found on sponges.

**Size:** Length to 30 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** SS

**Photographer:** John Buckeridge





*Tambja verconis*

(Basedow &amp; Hedley, 1905)

**VERCO'S NUDIBRANCH**

**Description:** *Tambja verconis* has a distinctive blue and yellow-green body, and blue gills and **rhinophores**. It feeds solely on the bryozoan *Bugula dentata*.

**Size:** Length to 130 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** E 277; WoRMS

**Photographer:** Sarah Speight,  
Blairgowrie

*Discordia paroa*

Burn, 1969

**Description:** *Discordia paroa* is a mottled orange, flattened sea slug with darker orange **rhinophores** set back from the **anterior** edge.

**Size:** Height to 75 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** WoRMS

**Photographer:** John Eichler



*Ceratosoma brevicaudatum*

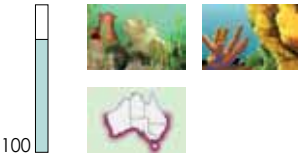
Abraham, 1876

**SHORT-TAILED SEA SLUG**

**Description:** *Ceratosoma brevicaudatum* has a variable colour pattern, but with a vivid pink-orange background with numerous red spots and white margins. It has a firm, rippled body with a distinct tail.

**Size:** Length to 150 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 279; FN 72; B 34;  
WoRMS

**Synonym:** *Cerastoma adelaidae*

**Photographer:** David Reinhard

*Hoplodoris nodulosa*

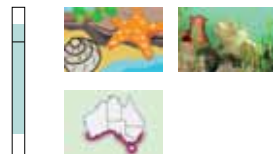
(Angas, 1864)



**Description:** *Hoplodoris nodulosa* is a brownish grey to yellowish brown mottled, flattened sea slug. It has a pustulose upper surface except for the area immediately behind the **rhinophores**, which is smooth.

**Size:** Length to 40 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** SS

**Photographer:** John Eichler, Brighton

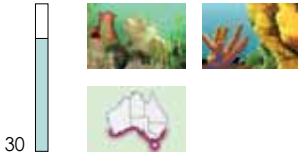
*Spurilla macleayi*

(Angas, 1864)

**Description:** *Spurilla macleayi* is a pale brown sea slug with cream and white mottling. The **cerata** are brown with translucent tips, and the **rhinophores** are translucent white with fine wrinkles.

**Size:** Length to 20 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 282; SS; MV

**Photographer:** John Eichler,  
Brighton

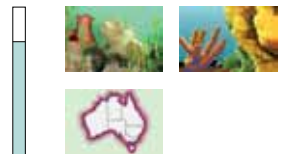
*Anteaeolidiella foulisi*

(Angas, 1864)

**Description:** *Anteaeolidiella foulisi* is a white to orange sea slug. It has numerous **cerata** with pale orange-brown and white banding.

**Size:** Length to 35 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** SS; WoRMS

**Synonym:** *Aeolidiella foulisi*

**Photographer:** John Eichler



*Noumea haliclona*

(Burn, 1957)

**Description:** *Noumea haliclona* is a small pink, red-spotted sea slug with a white edge to the mantle. It is commonly found on sponges.

**Size:** Length to 20 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** SS

**Photographer:** John Eichler, Brighton

*Dendrodoris arborescens*

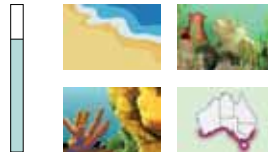
(Collingwood, 1881)

**BLACK DENDRODORID**

**Description:** *Dendrodoris arborescens* has a gelatinous texture and a variable body pattern. The adults are characteristically black, with a red, frilled margin.

**Size:** Length to 50 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E2 330; WoRMS

**Synonym:** *Doridopsis arborescens*

**Photographer:** Sarah Speight, Blairgowrie



*Placida dendritica*

(Alder &amp; Hancock, 1843)

**Description:** *Placida dendritica* is a very small green sea slug with numerous well-formed **cerata**; the green colour is due to the presence of ingested plastids, which carry out photosynthesis.

**Size:** Length to 5 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** SS

**Photographer:** John Eichler

*Anadara trapezia*

(Deshayes, 1840)

**SYDNEY COCKLE**

**Description:** *Anadara trapezia* is a bivalve with a solid shell, with broad, flat, radiating ribs. The shell is white when alive and may have a thin **periostracum**. The interior is also white, and the dentition is **heterodont**.

**Size:** Length to 75 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** E 284; FN 81; WoRMS

**Photographer:** John Buckeridge



*Barbatia pistachia*

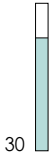
(Lamarck, 1819)

**HAIRY ARK**

**Description:** *Barbatia pistachia* is a bivalve with a cream-coloured exterior shell with numerous fine cross-hatched ridges and **striations**. When alive, the margin is covered by brown hairs. The basal margin is concave.

**Size:** Length to 70 mm

**Habitat and distribution:**



30



**Abundance:** ■ ■

**Reference:** E 285; FN 82; WoRMS

**Synonym:** *Arca pistachia*

**Photographer:** (TOP) John Eichler, Inverloch (BOTTOM) Ray Lewis

*Mytilus galloprovincialis*

Lamarck, 1819

**BLUE MUSSEL**

**Description:** *Mytilus galloprovincialis* is a large blue-black mussel. It is elongated and fan-shaped, being broad at the opening and narrow at the **umbo**. The shell is largely smooth, other than growth banding. It is an edible mussel and is commercially harvested.

**Size:** Length to 120 mm

**Habitat and distribution:**



15



**Abundance:** ■ ■

**Reference:** E 286; FN 85; WoRMS

**Synonym:** *Mytilus edulis*

**Photographer:** John Buckeridge

*Xenostrobus pulex*

(Lamarck, 1819)

**LITTLE BLACK HORSE MUSSEL**

**Description:** *Xenostrobus pulex* is a small, shiny, purple-black mussel. It is inflated and has the **umbo** at the end of a steep ridge.

**Size:** Length to 25 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 286; FN 83; B 35; D 122

**Photographer:** Rod Watson

*Electroma georgiana*

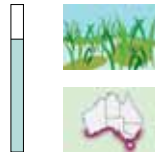
(Quoy &amp; Gaimard, 1835)

**COMMON BUTTERFLY SHELL**

**Description:** *Electroma georgiana* has a thin shell, commonly with rays of green or brown on a pale background. The shell is wing-shaped, shiny and smooth.

**Size:** Length to 40 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 290; FN 85

**Photographer:** Ray Lewis



*Pecten fumatus*

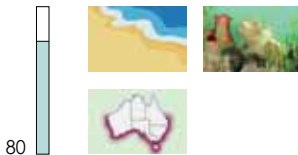
Reeve, 1852

**KING SCALLOP**

**Description:** *Pecten fumatus* has a flat left valve, whereas the right is concave, with twelve to sixteen radial ribs. The wings form mirror images of each other. This is the commercially harvested scallop.

**Size:** Length to 145 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 291; WoRMS

**Photographer:** Ray Lewis

*Anomia trigonopsis*

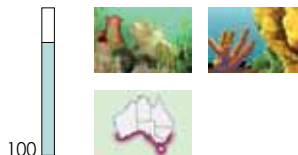
Hutton, 1877

**JINGLE SHELL**

**Description:** *Anomia trigonopsis* has a thin, opalescent shell, ranging in colour from pink to green-blue. The upper shell is convex and free, and the lower is attached to the substrate.

**Size:** Length to 90 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 293; WoRMS

**Photographer:** Ray Lewis





*Ostrea angasi*

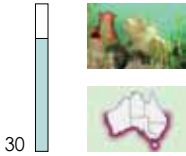
Sowerby, 1871

**BAY OYSTER, MUD OYSTER**

**Description:** *Ostrea angasi* is a large, heavy-shelled, oval-shaped oyster with a convex upper valve and flat lower valve. The shell has a dirty white exterior and white interior.

**Size:** Length to 180 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 294; FN 86; WoRMS

**Photographer:** John Eichler, Foster Beach

*Fulvia tenuicostata*

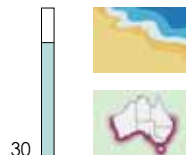
(Lamarck, 1819)

**THIN-RIBBED COCKLE**

**Description:** *Fulvia tenuicostata* is a bivalve with a fragile creamy-white shell, pink at the **umbo**, with up to sixty fine ribs and a **crenulated** margin. When viewed from the side, the two valves appear heart-shaped.

**Size:** Length to 60 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** E 298; FN 88; WoRMS

**Photographer:** Ray Lewis



*Paphies elongata*

(Reeve, 1854)

**Description:** *Paphies elongata* is a bivalve with a white, wedge-shaped shell, covered with a yellow-brown **periostracum**.

**Size:** Length to 30 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 301; FN 94; WoRMS

**Synonym:** *Amesodema elongata*

**Photographer:** John Eichler, Altona

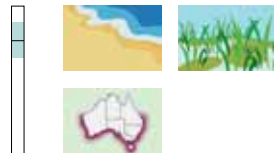
*Tellina deltoidalis*

Lamarck, 1818

**Description:** *Tellina deltoidalis* is a bivalve with a thin, finely sculptured, greyish white, subtriangular shell that is weakly folded towards the **anterior** end. A delicate, rounded ridge runs along the hinged margin.

**Size:** Length to 40 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 302; FN 97

**Synonym:** *Macomona deltoidalis*

**Photographer:** John Eichler, Newport



*Donax deltoides*

Lamarck, 1818

**PIPI**

**Description:** *Donax deltoides* may be cream, brown, pink or mauve in colour, with a green-brown **periostracum** and mauve interior. The shell is solid and flat, with fine radial lines. This species is not found alive at Ricketts Point, but may be found washed up on shore.

**Size:** Length to 60 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 95

**Photographer:** Ray Lewis

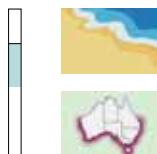
*Soletellina biradiata*

(Wood, 1815)

**Description:** *Soletellina biradiata* is a bivalve with a thin, cream-mauve shell, with a flaky brown **periostracum** at the margin. Two pale rays are commonly seen extending from the **umbo** to the margin. Fine concentric bands are also present.

**Size:** Length to 65 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 303–304; FN 96; WoRMS

**Photographer:** John Eichler, Altona



*Katelysia rhytiphora*

(Lamy, 1937)

**COCKLE, TAPESTRY VENERID**

**Description:** *Katelysia rhytiphora* has a cream shell with distinctive brown markings. Like *K. scalarina*, it has concentric ridges, although they are crossed by fine **striations** in this species. The interior is pale yellow with purple markings.

**Size:** Length to 60 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 305–306; FN 90

**Photographer:** Ray Lewis

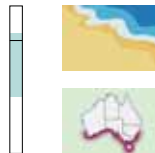
*Callista kingii*

(Gray in King, 1827)

**Description:** *Callista kingii* is a bivalve with a cream shell with mid-brown and white rays and radial bands, giving a characteristic plaid appearance. The shell has very fine concentric **striations**.

**Size:** Length to 50 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 89; WoRMS

**Synonym:** *Notocallista kingii*

**Photographer:** Ray Lewis



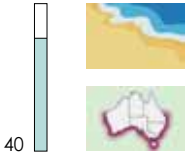
*Tawera gallinula*

(Lamarck, 1818)

**Description:** *Tawera gallinula* is a cream bivalve with brown blotches in radiating bands. The concentric ridges are more prominent than in *T. lagopus*, and the interior is purple.

**Size:** Length to 40 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 306; WoRMS

**Synonym:** *Venus gallinula*

**Photographer:** Ray Lewis

*Tawera lagopus*

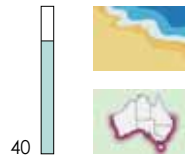
(Lamarck, 1818)

**VENUS COCKLE**

**Description:** *Tawera lagopus* has a cream shell with brown markings and a white interior. There are numerous concentric ridges outside, and fine serrations on the outer edge of the interior.

**Size:** Length to 40 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 306; WoRMS

**Synonym:** *Venus lagopus*

**Photographer:** Ray Lewis



*Eumarcia fumigata*

(Sowerby, 1853)

**Description:** *Eumarcia fumigata* is a bivalve with a smooth, cream shell with mottled brown rays and very fine grooves.

**Size:** Length to 45 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** FN 89; E 306

**Photographer:** John Eichler

*Venerupis galactites*

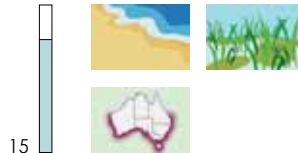
(Lamarck, 1818)

**LARGE BEAN COCKLE**

**Description:** *Venerupis galactites* is a bivalve with a creamy-white shell with fine concentric ridges and radial **striations**. The hinge is commonly brown.

**Size:** Length to 50 mm

**Habitat and distribution:**



15

**Abundance:** ■ ■

**Reference:** E 307; WoRMS

**Synonym:** *Venus galactites*

**Photographer:** Ray Lewis



*Venerupis anomala*

(Lamarck, 1818)

**Description:** *Venerupis anomala* is a bivalve with a white shell that has a pattern of dark chevrons towards the lateral margins; the intensity of the patterns diminishes with increasing age and size.

**Size:** Length to 25 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 307; FN 92

**Photographer:** John Eichler

*Circomphalus disjecta*

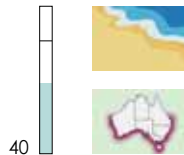
(Perry, 1811)

**FRILLED VENUS, WEDDING CAKE VENUS**

**Description:** *Circomphalus disjecta* is a bivalve with clear **striations** and widely spaced, pink-tinged, concentric frills.

**Size:** Length to 63 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 308; WoRMS

**Synonym:** *Venus disjecta*

**Photographer:** John Eichler, Port Welshpool



*Barnea australasiae*

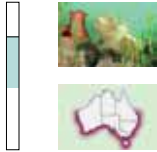
(G.B. Sowerby II, 1849)

**ANGEL WING**

**Description:** *Barnea australasiae* is a rock-boring bivalve with a thin, white, fragile shell, characterised by intricate concentric scalloped ridges and fine radiating spines. The soft bodied animal is far larger than its shell.

**Size:** Length to 60 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 309; FN 98; WoRMS

**Synonym:** *Pholas australasiae*

**Photographer:** Ray Lewis

*Hapalochlaena maculosa*

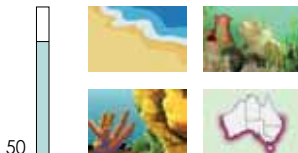
(Hoyle, 1883)

**BLUE-RINGED OCTOPUS**

**Description:** *Hapalochlaena maculosa* is a small, mottled brown octopus, with characteristic neon blue rings that glow strongly when the animal is irritated. It is often found in rock crevices. The Blue-ringed Octopus is capable of injecting a powerful nerve toxin if provoked.

**Size:** Length to 220 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 312; FN 101; W 22; R 60; B 36; WoRMS; MV

**Synonym:** *Octopus maculosus*

**Photographer:** John Eichler





*Octopus kaurna*

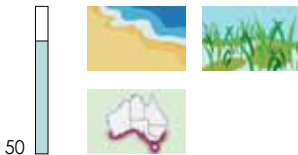
Stranks, 1990

**SAND OCTOPUS**

**Description:** *Octopus kaurna* is a nocturnal feeder. It has round tubercules on the upper surface, and long, thin arms, with webbing at the base. The overall appearance is highly variable.

**Size:** Length to 420 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** E 314; WoRMS; MV

**Photographer:** Sandy Webb

*Argonauta nodosa*

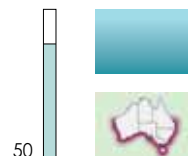
Lightfoot, 1786

**PAPER NAUTILUS**

**Description:** *Argonauta nodosa* has a delicate white shell, which is an egg case with **nodular** ridges and a wide, grooved keel. The body of the animal is slender, with arms of unequal length. This species is not found alive at Ricketts Point, but may be found washed up on shore.

**Size:** Shell length to 350 mm

**Habitat and distribution:**



**Abundance:**

**Reference:** E 315

**Photographer:** Kim Croker



*Idiosepius notoides*

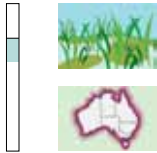
Berry, 1921

**SOUTHERN PYGMY SQUID**

**Description:** *Idiosepius notoides* is a small yellow-brown squid with tiny black and blue spots and white lines around the eyes. The fins are rounded.

**Size:** Length to 25 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 318

**Photographer:** John Eichler

*Euprymna tasmanica*

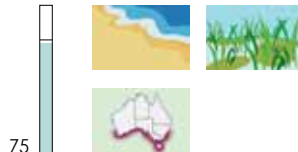
(Pfeffer, 1884)

**SOUTHERN DUMPLING SQUID**

**Description:** *Euprymna tasmanica* is a small squid with short tentacles. It is often iridescent, but has the ability to change colour to match its background. Its skin exudes mucus to which sand sticks as a camouflage device. Adults possess photoluminescent bacteria. It is nocturnal.

**Size:** Length to 25 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 318

**Photographer:** John Eichler



*Bugula dentata*

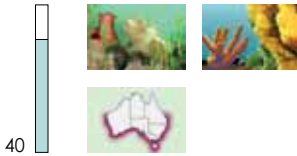
(Lamouroux, 1816)

**BLUE-GREEN BRYOZOAN**

**Description:** *Bugula dentata* forms bushy blue-green colonies made up of paired **zooids** aligned end to end to form filaments. Like other species in the genus *Bugula*, the walls of the zooids are not calcified, allowing the colony to flex with wave motion.

**Size:** Length to 50 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 323; WoRMS

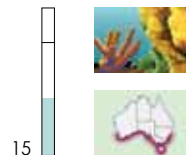
**Photographer:** David Reinhard

*Celleporaria* sp.**ORANGE PLATE BRYOZOAN**

**Description:** *Celleporaria* is an orange bryozoan with flattened, fan-like colonies attached to the reef surface.

**Size:** Colony length to 120 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 325

**Photographer:** David Reinhard



*Mucropetraliella ellerii*

(MacGillivray, 1869)

**RED BRYOZOANS**

**Description:** *Mucropetraliella ellerii* is a bright red bryozoan. It is most commonly found as encrusting colonies on seaweed and in crevices.

**Size:** Colony length to 40 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 324; R 76; WoRMS

**Synonym:** *Mucronella ellerii*

**Photographer:** David Reinhard

*Tosia magnifica*

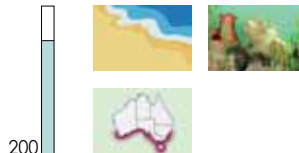
(Müller &amp; Troschel, 1842)

**MAGNIFICENT BISCUIT STAR**

**Description:** *Tosia magnifica* is similar to *T. australis*, but has more numerous and varied plates along the body margins. Colours are varied, and include brown, orange and cream.

**Size:** Arm radius to 45 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 336; FN 132; WoRMS

**Synonym:** *Pentagonaster magnificus*

**Photographer:** Ray Lewis



*Tosia australis*

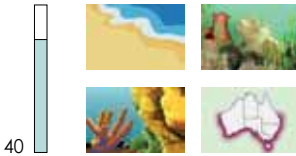
Gray, 1840

**BISCUIT STAR**

**Description:** *Tosia australis* varies in colour, including brown, orange, black, grey and purple. It most commonly has six plates along the margin between each arm tip, with the plates at the arms enlarged.

**Size:** Diameter to 100 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 337; FN 132; W 15; R 78; B 38; D 128; MV

**Synonym:** *Pentagonaster australis*

**Photographer:** John Eichler

*Nectria macrobrachia*

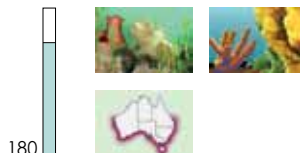
H.L. Clark, 1923

**LARGE-PLATED SEASTAR**

**Description:** *Nectria macrobrachia* is most commonly yellow, orange or red in colour, with closely packed plate-like **tabulae** across the surface and extending along the arms.

**Size:** Arm radius to 115 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 339; FN 131; WoRMS

**Photographer:** David Reinhard, Wilsons Promontory



*Petricia vernicina*

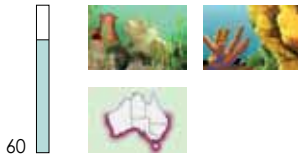
(Lamarck, 1816)

**VELVET SEASTAR**

**Description:** *Petricia vernicina* is a red-orange seastar. It is covered by a skin that gives it a soft, velvety appearance, and which is punctuated by large respiratory **papulae**.

**Size:** Arm radius to 90 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 341; FN 133; W 16; WoRMS

**Photographer:** Ray Lewis

*Meridiastra calcar*

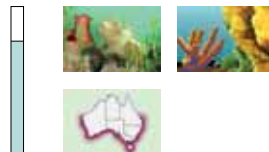
(Lamarck, 1816)

**COMMON SEASTAR**

**Description:** *Meridiastra calcar* is typically an eight-armed seastar. The colours are highly variable, but include red, purple, pink, green, brown and blue on the upper surface. The underside is uniformly pale.

**Size:** Diameter to 90 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 345; FN 135; W 15; R 60; B 38; D 129; G 245; WoRMS

**Synonym:** *Patriella calcar*

**Photographer:** David Reinhard



*Meridiastra gunnii*

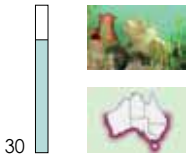
(Gray, 1840)

**SIX-ARMED SEASTAR**

**Description:** *Meridiastra gunnii* is a crimson-purple six-armed seastar with orange tube feet. The body is thick and domed and the arms are distinct.

**Size:** Arm radius to 65 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 346; FN 136; D 130; WoRMS

**Synonym:** *Patriella brevispina*

**Photographer:** John Eichler

*Parvulastra exigua*

(Lamarck, 1816)

**FIVE-ARMED CUSHION STAR, SMALL GREEN SEASTAR**

**Description:** *Parvulastra exigua* has a mottled olive-green upper surface; the underside is light blue. The five arms are short, giving the animal a pentagonal shape.

**Size:** Diameter to 40 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 135; R 79; B 38; D 129; WoRMS; MV

**Synonym:** *Patriella exigua*

**Photographer:** Rod Watson, Barwon Bluff



*Paranepanthis grandis*

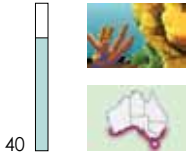
(H.L. Clark, 1928)

## GRAND SEASTAR

**Description:** *Paranepanthis grandis* is a mottled pink, orange and pale brown five-armed seastar with distinct webbing between the arms.

**Size:** Length to 140 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 344

**Photographer:** John Eichler

*Coscinasterias muricata*

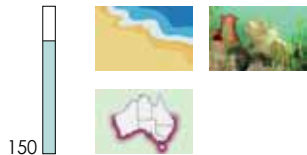
Verrill, 1870

## ELEVEN-ARMED SEASTAR

**Description:** *Coscinasterias muricata* has a mottled blue-brown appearance, with rows of large spines along its upper surface. The number of arms is usually eleven, but can vary from seven to fourteen.

**Size:** Diameter to 250 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 347–348; FN 137; W 16; R 82; B 38; D 131; WoRMS

**Synonym:** *Coscinasterias calamaria*

**Photographer:** David Reinhard





*Asterias amurensis*

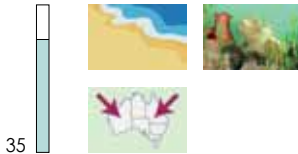
Lütken, 1871

**NORTHERN PACIFIC SEASTAR**

**Description:** *Asterias amurensis* is a purple or yellow five-armed seastar. It can be confused with *Uniophora granifera*, but differs from that species by having distinctly pointed arms and one row of spines (as opposed to two) along the **ambulacral groove** on the underside.

**Size:** Arm radius to 230 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 348; WoRMS

**Photographer:** John Eichler, Mud Islands

*Uniophora granifera*

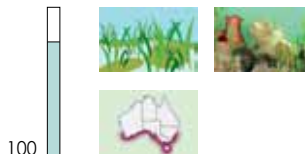
(Lamarck, 1816)

**GRANULAR SEASTAR**

**Description:** *Uniophora granifera* exhibits a range of colours, commonly orange, red, brown or yellow. The upper surface is covered with spines that have swollen rounded tips, which can create a zigzag pattern along the arms.

**Size:** Arm radius to 120 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 349; FN 138; W 1; WoRMS; MV

**Photographer:** John Eichler, Brighton



*Allostichaster polyplax*

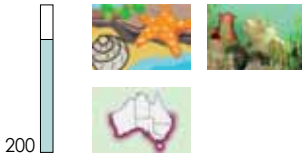
(Müller and Troschel, 1844)

**LITTLE SEASTAR**

**Description:** *Allostichaster polyplax* is a small seastar with between six and nine, but commonly eight, spine-covered arms. Several of the arms may only be in the bud stage of regrowth. It varies in colour, but is commonly grey, brown or red.

**Size:** Diameter to 100 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 350; FN 137; W 16; D 131; MV

**Photographer:** John Eichler

*Amphipholis squamata*

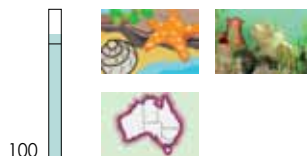
(Della Chiaje, 1828)

**SMALL BRITTLE STAR**

**Description:** *Amphipholis squamata* has a pale disc, which is usually grey, with white arms. The disc is covered in minute scales and the arms are relatively stiff. It hides in algal tufts or under rocks, and is rarely seen due to its small size and camouflage colouration.

**Size:** Disc diameter to 5 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 144; WoRMS; MV

**Photographer:** Mel Mitchell



*Amblypneustes ovum*

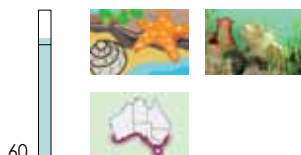
(Lamarck, 1816)

**EGG-SHAPED SEA URCHIN**

**Description:** *Amblypneustes ovum* is a globe-shaped urchin with dark primary spines only 5 mm long, and white secondary spines. The **test** is creamy-white in colour.

**Size:** Diameter to 60 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 361–362; FN 147; WoRMS

**Photographer:** Ray Lewis

*Heliocidaris erythrogramma*

(Valenciennes, 1846)

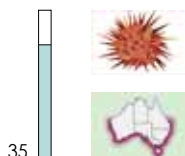
**PURPLE SEA URCHIN**

**Description:** *Heliocidaris erythrogramma* has a round, slightly flattened **test** and varies in colour from white to green to purple. The colour can differ between the spines and test.

Primary spines are long and tapered, whereas secondary spines are shortened and blunt. This species is responsible for the urchin barrens at Ricketts Point.

**Size:** Test diameter to 90 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 365; FN 148; W 15; R 77; D 133; WoRMS

**Photographer:** David Reinhard, Black Rock

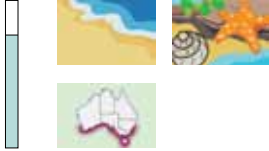
*Lipotrabeza vestiens*

(Joshua, 1914)

**Description:** *Lipotrabeza vestiens* has a red-brown or pale brown sausage-like body, covered in tube feet. Shell and rock fragments are commonly attached to its body.

**Size:** Length to 120 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** F 150; E 369

**Photographer:** John Eichler

*Neoamphicyclus mutans*

(Joshua, 1914)

**Description:** *Neoamphicyclus mutans* is a pale to dark grey-brown sea cucumber with violet hues. Its body is elongate and tapering, with five longitudinal sets of tube feet.

**Size:** Length to 50 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** MV

**Photographer:** John Eichler

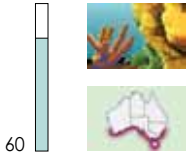
*Plesiocolochirus ignava*

(Ludwig, 1875)

**Description:** *Plesiocolochirus ignava* is a whitish to mauve sea cucumber with bright orange flecks. Its body is rectangular in section with numerous knobs and tube feet on the base.

**Size:** Length to 30 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 370; MV

**Photographer:** John Eichler, Point Franklin

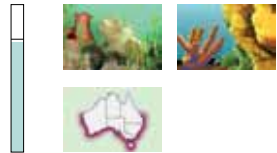
*Cucuvitrum rowei*

(O'Loughlin &amp; O'Hara, 1992)

**Description:** *Cucuvitrum rowei* is a cream-white, worm-like sea cucumber with white, branching, tentacles.

**Size:** Length to 25 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** FN 153; MV

**Photographer:** John Eichler



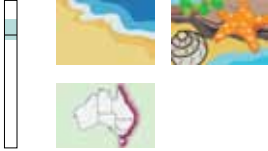
*Taeniogyrus roebucki*

(Joshua, 1914)

**Description:** *Taeniogyrus roebucki* is a uniformly bright red sea cucumber. It has a long, thin body without tube feet.

**Size:** Length to 80 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 155

**Photographer:** John Eichler

*Paridotea ungulata*

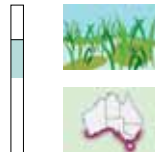
(Pallas, 1772)

**SHARP-TAILED SEA CENTIPEDE**

**Description:** *Paridotea ungulata* is a large green-brown isopod, capable of camouflage with the host plant. It has sharp points at the end of the last body segment.

**Size:** Body length to 43 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 184; WoRMS

**Photographer:** Ray Lewis

*Ceradocus serratus*

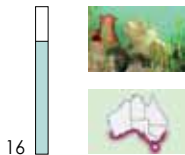
(Bate, 1862)

**SEA LICE**

**Description:** *Ceradocus serratus* is an amphipod with a pinkish-red translucent **carapace** and is often found under rocks. It has characteristic spines around the segments towards the end of the body.

**Size:** Length to 14 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 186

**Photographer:** Mel Mitchell

*Palaemon serenus*

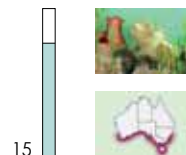
(Heller, 1862)

**ROCK POOL SHRIMP, RED-HANDED SHRIMP**

**Description:** *Palaemon serenus* is a transparent shrimp with oblique red lines on the **carapace** and flecks of red and yellow over the abdomen and legs. The second pair of legs is long and has red 'socks'.

**Size:** Length to 60 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■

**Reference:** E 191; W 24; B 23; WoRMS

**Photographer:** Ray Lewis



*Alpheus euphrosyne*

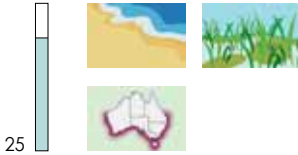
De Man, 1897

**GREEN SNAPPING SHRIMP**

**Description:** *Alpheus euphrosyne* has a pale to dark green tail with brown bands, while the **carapace** and large right claw are usually all green.

**Size:** Length to 65 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** G 215

**Photographer:** Mel Mitchell

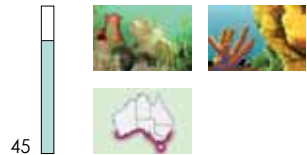
*Alpheus villosus*

(Olivier, 1811)

**Description:** *Alpheus villosus* is a bright orange shrimp covered with hairs. It is commonly found on the underside of rocks.

**Size:** Length to 60 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 194, WoRMS

**Photographer:** John Eichler





*Synalpheus tumidomanus*

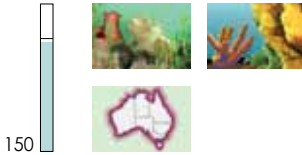
Paulson, 1875

**SNAPPING SHRIMP**

**Description:** *Synalpheus tumidomanus* is a small shrimp with a shiny green **carapace** and a large barrel-shaped front claw, with small fingers.

**Size:** Length to 25 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** MV

**Photographer:** John Eichler

*Paguristes frontalis*

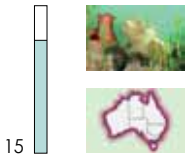
(H. Milne Edwards, 1836)

**HERMIT CRAB**

**Description:** *Paguristes frontalis* is mainly red, but the large, left front claw may be pale. It lacks hairs, but possesses tubercules and a movable finger on the right claw.

**Size:** Length to 30 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 198; FN 110; W 19, 24; WoRMS; MV

**Synonym:** *Pagurus frontalis*

**Photographer:** Sarah Speight, Blairgowrie



*Pagurixus handrecki*

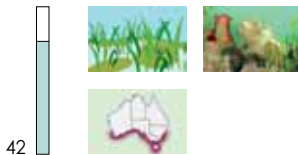
Gunn &amp; Morgan, 1992

**HENDRICK'S HERMIT CRAB**

**Description:** *Pagurixus handrecki* is a hermit crab with legs distinguished by longitudinal red stripes on a white background. It is very small and often overlooked.

**Size:** Length to 6 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 200; WoRMS

**Photographer:** Mel Mitchell

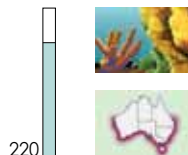
*Stimdromia lateralis*

(Gray, 1831)

**Description:** *Stimdromia lateralis* is a sponge-carrying crab with two large teeth and a smaller central tooth. It is commonly found on jetty pylons.

**Size:** Carapace width to 25 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 203

**Photographer:** John Eichler



*Austrodromidia octodentata*

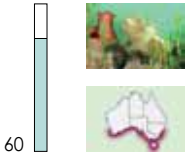
(Haswell, 1882)

**BRISTLED SPONGE CRAB**

**Description:** *Austrodromidia octodentata* has a rounded **carapace** with four or five inconspicuous teeth on the side margins towards the front. The most distinctive feature is a dense covering of tufted bristles on the carapace and legs.

**Size:** Carapace width to 75 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 203; WoRMS

**Synonym:** *Dromia octodentata*

**Photographer:** Ray Lewis  
(specimen most likely juvenile)

*Bellidilia laevis*

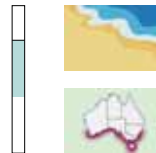
(Bell, 1855)

**SMOOTH PEBBLE CRAB**

**Description:** *Bellidilia laevis* is light to dark grey-brown in colour, although always with four white dots on the **carapace**. This crab lacks spines on the **posterior** carapace.

**Size:** Carapace to 30 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** G 225; F 124; WoRMS; MV

**Photographer:** John Eichler, Altona



*Naxia aurita*

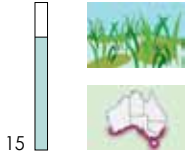
(Latreille, 1825)

**DECORATOR CRAB**

**Description:** *Naxia aurita* has a pear-shaped body and orange front claws with blue trim. It is lacking the spines and tubercles of the closely related species *N. spinosa* and *N. tumida*, but still accumulates algae on its **carapace**. Typically, this species is well camouflaged and difficult to spot.

**Size:** Carapace width to 40 mm

**Habitat and distribution:**



15

**Abundance:** ■

**Reference:** E 205; D 48; WoRMS

**Photographer:** Ray Lewis

*Halicarcinus ovatus*

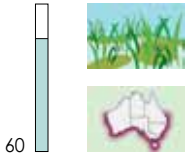
Stimpson, 1858

**THREE-PRONGED SPIDER CRAB**

**Description:** *Halicarcinus ovatus* is brown, green and/or black in colour. It has a flattened and broadly rounded **carapace**, more angular at the front, with three short spines of equal length between the eyes.

**Size:** Carapace width to 13 mm

**Habitat and distribution:**



60

**Abundance:** ■

**Reference:** E 208; FN 111; D 48

**Photographer:** John Eichler



*Carcinus maenas*

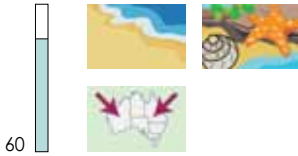
(Linnaeus, 1758)

**COMMON SHORE CRAB, EUROPEAN SHORE CRAB**

**Description:** *Carcinus maenas* has a greenish grey **carapace** with three teeth between the eyes and five teeth around the front of the side margin. The hind legs are less flattened than on most crabs.

**Size:** Carapace width to 100 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** E 208; FN 112; W 24; R 70;  
WoRMS; MV

**Synonym:** *Carcinus granulatus*

**Photographer:** John Eichler, Foster Beach

*Heteropilumnus fimbriatus*

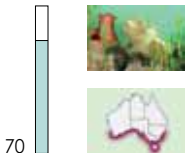
(H. Milne Edwards, 1834)

**BEARDED CRAB**

**Description:** *Heteropilumnus fimbriatus* has a flattened yellow-brown **carapace**, with dense hairs along the front margin and legs.

**Size:** Carapace width to 25 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 212; WoRMS; MV

**Synonym:** *Pilumnus fimbriatus*

**Photographer:** John Eichler



*Pilumnus tomentosus*

Latreille, 1825

**Description:** *Pilumnus tomentosus* is red-brown in colour with a sparse covering of long hairs over the **carapace**. There are three prominent protrusions along either side of the carapace and raised **papillae** along the claws, body and legs.

**Size:** Carapace width to 40 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 212; WoRMS

**Synonym:** *Pilumnus major*

**Photographer:** John Eichler

*Pilumnus fissifrons*

Stimpson, 1858

**HAIRY CRAB**

**Description:** *Pilumnus fissifrons* is a hairy crab with triangular teeth along its broadly curved front.

**Size:** Carapace width to 20 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** MV; WoRMS

**Photographer:** John Eichler, Newport





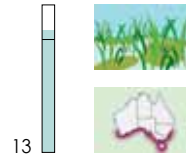
## *Pilumnopeus serratifrons*

(Kinahan, 1856)

**Description:** *Pilumnopeus serratifrons* is brownish-purple, with black-tipped claws. The front margin of the **carapace** is divided by a small notch. Short hairs are present on the sides, with stout hairs on the margins of the legs.

**Size:** Carapace width to 30 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 115; MV

**Photographer:** John Eichler

## *Cyclograpsus audouinii*

H. Milne Edwards, 1837

### SMOOTH SHORE CRAB

**Description:** *Cyclograpsus audouinii* has a smooth **carapace** with a range of colours, commonly red, brown, purple and yellow. It is very similar to *C. granulatus*, but has tufts of hair in the joints of the walking legs.

**Size:** Carapace width to 40 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 213; FN 117; R 72; B 20; D 53; WoRMS

**Photographer:** Mel Mitchell, Sandringham



*Cyclograpsus granulosus*

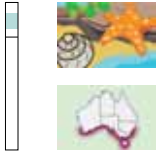
H. Milne Edwards, 1853

**MOTTLED SHORE CRAB**

**Description:** *Cyclograpsus granulosus* has a mottled red, brown and yellow **carapace**, with a smooth margin. The legs are flattened.

**Size:** Carapace width to 35 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 213; FN 117; D 53;

WoRMS

**Photographer:** John Eichler

*Paragrapsus quadridentatus*

(H. Milne Edwards, 1837)

**Description:** *Paragrapsus quadridentatus* has a rounded, flattened **carapace**. It is distinguished from *Helograpsus haswellianus* by a rounded projection on the side margin.

**Size:** Carapace width to 30 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 118; E 214; MV

**Photographer:** John Eichler,

Sorrento



*Brachynotus spinosus*

(H. Milne Edwards, 1853)

**LITTLE SHORE CRAB**

**Description:** *Brachynotus spinosus* is a small pale brown to olive-green crab with a squarish carapace and three strong teeth on each side. The eyes are black with fine white spots.

**Size:** Carapace width to 20 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 215; FN 121; W 24; R 75; WoRMS; MV

**Synonym:** *Heterograpsus spinosa*

**Photographer:** John Eichler, Mud Islands

*Guinusia chabrus*

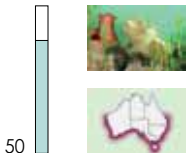
(Linnaeus, 1758)

**RED BAIT CRAB**

**Description:** *Guinusia chabrus* is a reddish crab with short hairs on the body and legs. Coarse tubercles occur along the front claws, and the carapace is deeply indented at the front.

**Size:** Carapace width to 70 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 215; FN 122; WoRMS; MV

**Synonym:** *Plagusia chabrus*

**Photographer:** David Reinhard, Rosebud



*Mictyris platycheles*

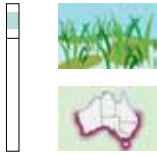
H. Milne Edwards, 1852

**SOLDIER CRAB**

**Description:** *Mictyris platycheles* has a blue-grey, globular **carapace**, with purple sides.

**Size:** Carapace width to 15 mm

**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** E 217; FN 125; WoRMS

**Photographer:** John Eichler

*Pinnotheres hickmani*

(Guiler, 1950)

**PEA CRAB**

**Description:** *Pinnotheres hickmani* is a small crab with a smooth, soft, rounded **carapace**. It is pale cream in colour, although the carapace may be darker. The eyes are not visible from above and the legs are weak. Males are much smaller than females and are rarely found. This crab inhabits bivalves.

**Size:** Carapace width to 10 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 218; FN 116; D 67; MV

**Synonym:** *Fabia hickmani*

**Photographer:** Ray Lewis



*Helograpsus haswellianus*

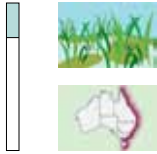
(Whitelegge, 1889)

**HIDING CRAB**

**Description:** *Helograpsus haswellianus* is commonly brown-green in colour. It has an inflated body and a single notch on the side margins of the **carapace**.

**Size:** Carapace width to 30 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 214; FN 118; W 24; D 55;  
WoRMS

**Photographer:** John Eichler, Avalon

*Ibla quadrivalvis*

(Cuvier, 1817)

**HAIRY STALKED BARNACLE**

**Description:** *Ibla quadrivalvis* is a small stalked barnacle characterised by a brown, hairy stalk and a crown of four yellow plates. Two of these plates are elongated and tooth-like.

**Size:** Length to 20 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** FN 104

**Photographer:** John Buckeridge

*Chthamalus antennatus*

Darwin, 1854

**SURF BARNACLE**

**Description:** *Chthamalus antennatus* has a pale brown shell with six solid, ribbed plates, which are often worn. The edge of the shell has strong grooves and the **orifice** is ellipsoid.

**Size:** Diameter to 12 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 172; FN 105; R 62; B 22; D 40

**Photographer:** John Buckeridge

*Chamaesipho tasmanica*

Foster &amp; Anderson, 1986

**HONEYCOMB BARNACLE**

**Description:** *Chamaesipho tasmanica* is pale brown with four solid plates fused to form a solid wall, often forming a honeycomb-like structure with neighbouring shells. The **orifice** is large and sub-circular.

**Size:** Diameter to 8 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** FN 105

**Photographer:** John Buckeridge

*Austrominius modestus*

(Darwin), 1854

**ESTUARINE BARNACLE**

**Description:** *Austrominius modestus* has a cream-white conic shell with four thin, solid, weakly ribbed wall plates. The outline is sinuous and the **orifice** diamond shaped. It is a common fouling barnacle.

**Size:** Diameter to 12 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 175; FN 107; W 25; R 69

**Synonym:** *Elminius modestus*

**Photographer:** John Buckeridge

*Tesseropora rosea*

(Krauss, 1848)

**ROSE BARNACLE**

**Description:** *Tesseropora rosea* has a pink, high conic shell, with four plates, which may develop deep erosional grooves.

The **orifice** is pentangular.

**Size:** Diameter to 30 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 174; FN 106; R 65; D 42

**Synonym:** *Conia rosea*

**Photographer:** Mel Mitchell, Black Rock



*Tetraclitella purpurascens*

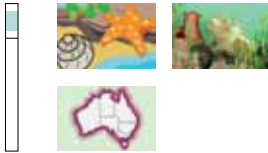
(Wood, 1815)

**ROSETTE BARNACLE**

**Description:** *Tetraclitella purpurascens* has a purple to pale grey, flat to low, conic shell with four strongly ribbed plates. The **orifice** is a wide diamond shape and the shells erode to produce a **nodular** surface.

**Size:** Diameter to 25 mm

**Habitat and distribution:**



**Abundance:** ■

**Reference:** E 172; FN 106; R 64; B 22; D 43

**Photographer:** John Buckeridge

*Balanus trigonus*

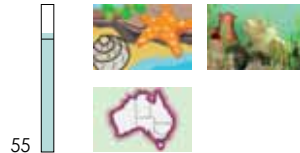
Darwin, 1854

**TRIANGLE BARNACLE**

**Description:** *Balanus trigonus* has a conic shell with alternating white and purplish stripes. It has six plates and a triangular **orifice**. It is a common fouling barnacle.

**Size:** Diameter to 10 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E2 206

**Photographer:** John Buckeridge



*Pyura stolonifera*

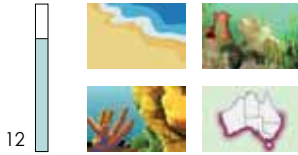
(Heller, 1878)

**CUNJEVOI**

**Description:** *Pyura stolonifera* has a brownish, cylindrical body, with a rough texture formed by the incorporation of cemented sand grains into the **test**. It is commonly covered with algae. Two siphon openings lie close to each other, projecting a little above the surface. The **orifice** is pentangular.

**Size:** Height to 300 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** E 379; FN 156; W 27; R 85; B 41; D 136; WoRMS

**Synonym:** *Cynthia praeputalis*

**Photographer:** John Buckeridge,  
Wilsons Promontory

*Sycozoa cerebriformis*

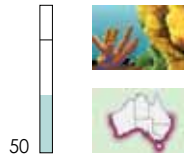
(Quoy &amp; Gaimard, 1834)

**BRAIN ASCIDIAN**

**Description:** *Sycozoa cerebriformis* is an ascidian that is variable in shape and colour (red, pink, orange, yellow or blue). As the colonies grow, the fan structure becomes convoluted to form brain-like clusters.

**Size:** Height to 100 mm

**Habitat and distribution:**



**Abundance:** ■ ■ ■ ■

**Reference:** E 384; WoRMS

**Photographer:** David Reinhard



*Aplidium* sp.

## COMPOUND ASCIDIAN

**Description:** *Aplidium* is mostly found in warmer waters, forming colonies up to 70 mm across over hard surfaces. **Zooids** are aligned in double rows along canals. It is variable in colour, but red and orange are common.

**Size:** Height to 10 mm

**Habitat and distribution:**



**Abundance:** □

**Reference:** E 387; WoRMS

**Photographer:** Ray Lewis

*Didemnum lissoclinum*

Kott, 2001

## SPONGY COMPOUND ASCIDIAN

**Description:** *Didemnum lissoclinum*, commonly mistaken for a sponge, forms twisted, yellow, banana-like colonies attached to reef overhangs.

**Size:** Colony to 1 m

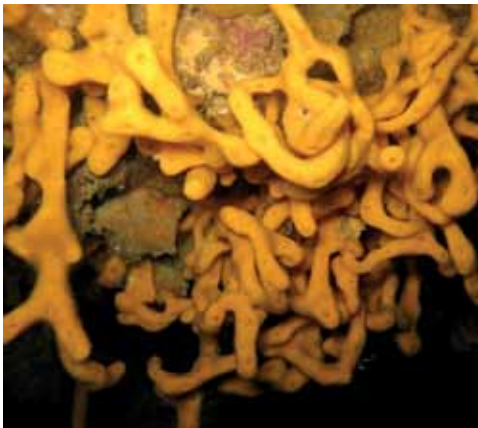
**Habitat and distribution:**



**Abundance:** ■ ■

**Reference:** WoRMS

**Photographer:** David Reinhard





# Key to the major groups of algae, cyanobacteria and marine plants at Ricketts Point

The identification of algae, cyanobacteria and marine plants is complex and often requires examination of specimens under a microscope. Because of this, a key to even generic level would be outside the scope of this book. Instead, we describe here a rough guide to the major groups used throughout the book. The key is adapted from Huisman *et al.* 2007, *Hawaiian Reef Plants*.

Glossary terms are show in italics.

- 1a Generally simply constructed, hairlike or forming pads. Colour generally blue-green to violet, occasionally brown, red, green or black. .... **Phylum Cyanophyta** (blue-greens) p. 1
- 1b Simple to elaborately constructed *macrophytes*. Colour green, brown, red or golden, rarely blue-green ..... 2
- 2a (1b) Grass-green to grey-green in colour ..... 3
- 2b (1b) Red, brown, or golden in colour ..... 4
- 3a (2a) Grass-like or leaf-like, differentiated into *vascular* tissue ..... **Phylum Angiospermae** (flowering plants) pp. 19–20
- 3b (2a) Plants with a variety of forms; *filamentous*, *membranous* or with a complex structure; lacking *vascular* tissue..... **Phylum Chlorophyta** (green algae) pp. 14–19
- 4a (2b) Commonly red or purple, mostly with moderately-sized *thalli* ..... **Phylum Rhodophyta** (red algae) pp. 10–14
- 4b (2b) Mostly various shades of brown, sometimes greenish-brown, ranging from small colonial organisms to large *thalli* ..... **Phylum Phaeophyta** (brown algae) pp. 1–9

# Key to the major groups of marine invertebrates at Ricketts Point

The key is made up of couplets (or, in some cases, triplets), which are mutually exclusive. If you work though the key, you should be able to identify the organism to phylum level or below; from there you can look at the species descriptions in the relevant section of the book to further identify the organism. The number in parentheses shows the source couplet from which each step in the key is derived.

Glossary terms are shown in italics.

- 1a *Colonial* habit ..... 2
- 1b Solitary habit ..... 4
- 2a (1a) Colony with numerous pores, *radially symmetrical* or irregular with one or more large openings; no mouth ..... **Phylum Porifera** (sponges) pp. 23–29
- 2b (1a) Colony with discrete *zooids*, each defined by a thin *calcareous* wall and one major opening ..... **Phylum Bryozoa** (bryozoans) pp. 86–87

2c (1a) Colony with numerous *polyps*, each with tentacles surrounding a mouth; walls *calcareous* or soft ..... 3

3a (2c) *Polyps* typically small (<1 cm in diameter), often branching; gastrovascular cavity not divided by vertical walls ..... **Class Hydrozoa** (hydroids) p. 33

3b (2c) *Polyps* typically large (>1 cm in diameter); gastrovascular cavity divided by vertical walls ..... **Class Anthozoa** (sea anemones, zoanthids and corals) pp. 33–38

3c (2c) Body a gelatinous *medusa* ..... **Class Scyphozoa** (jellies) pp. 38–39

4a (1b) Body with *radial symmetry* ..... 5

4b (1b) Body with *bilateral symmetry* ..... 7

5a (4a) Body with a rigid *exoskeleton* and spines; body globose or flattened .....  
..... **Class Echinoidea** (urchins) p. 94

5b (4a) Body sac-like with tube feet and leathery skin .....  
..... **Class Holothuroidea** (sea cucumbers) pp. 95–97

5c (4a) Body with arms; oral surface *ventral* ..... 6

6a (5c) Arms not distinct from central disc ..... **Class Asteroidea** (seastars) pp. 87–93

6b (5c) Arms distinct from central disc ..... **Class Ophiuroidea** (brittle stars) p. 93

7a (4b) No lateral gills in *pharynx*; no internal skeleton (either cartilage or bone) ..... 8

7b (4b) Lateral gills present in *pharynx* ..... **Class Ascidiacea** (sea squirts) pp. 114–115

8a (7a) Body worm-like ..... 9

8b (7a) Body not worm-like ..... 11

9a (8a) Body segmented; many short stiff hairs present; no jointed appendages .....  
..... **Class Polychaeta** (tube worms) pp. 31–32

9b (8a) Body not segmented ..... 10

10a (9b) Body cylindrical, *proboscis* present ..... **Phylum Sipuncula** (peanut worms) p. 32

10b (9b) Body normally flattened, no *proboscis* .....  
..... **Phylum Platyhelminthes** (flatworms) pp. 29–30

11a (8b) Body with rigid *exoskeleton*; segmented; appendages jointed ..... 12

11b (8b) Body soft and unsegmented ..... 13

12a (11a) Paired legs visible; mobile .....  
..... **Class Malacostraca** (crabs, shrimps, isopods and amphipods) pp. 97–110

12b (11a) *Sessile*; legs only visible when feeding; enclosed in a *calcareous*, multi-plated shell ..... **Subclass Cirripedia** (barnacles) pp. 110–113

13a (11b) Shell absent ..... 14

13b (11b) Shell present ..... 15

14a (13a) Head large and well-developed with two large eyes; eight to ten *prehensile* arms with suckers ..... **Class Cephalopoda** (octopus and squid) pp. 83–85

14b (13a) Head indistinct; one or two pairs of tentacles; often brightly coloured .....  
..... **Subclass Opisthobranchia** (sea slugs) pp. 66–72

15a (13b) Shell comprising a single piece (excluding *operculum*) .....  
..... **Class Gastropoda** (snails) pp. 45–65

15b (13b) Shell comprising more than one piece ..... 16

16a (15b) Shell of two, generally sub-equal plates ..... **Class Bivalvia** (bivalves) pp. 72–83

16b (15b) Shell of eight plates ..... **Class Polyplacophora** (chitons) pp. 40–45

# Glossary

**ambulacral groove:** a groove on the underside of seastars that extends from the mouth to the end of each ray or arm

**aperture:** an opening in a shell; (e.g. in gastropods, the opening through which the foot protrudes)

**apex:** the tip, or pointed end, of a shell

**axial:** a theoretical line oriented subparallel to the axis, i.e. axial ribs of gastropods are elongated, in the orientation of the axis

**bilateral symmetry:** the arrangement of parts in an organism such that it produces similar halves when split along only one given plane (e.g. a flatworm)

**calcareous:** composed of calcium carbonate; in this context, it refers to the composition of the shells of invertebrates

**callus:** a calcareous secretion that forms near the aperture in many gastropods

**carapace:** the hard exoskeleton or shell in crabs and shrimps

**cerata:** tubular extensions on the bodies of sea slugs

**chitin, chitinous:** a hard, protein-like material that forms the external skeleton of many invertebrates

**colonial:** describing a group of organisms of the same species that live close together and reproduce asexually

**crenulated:** having a scalloped or toothed margin (e.g. of a shell)

**cyanobacteria:** a group of bacteria that obtain their energy through photosynthesis

**epiphyte:** a non-parasitic plant (or alga) that grows on another plant

**exoskeleton:** the external skeleton, including the carapace and leg coverings of crustaceans; the exoskeleton is generally comprised of chitin

**filamentous:** a thin, chain-like series of cells that together form a long thread

**heterodont:** a bivalve in which the teeth (along the hinge) are of at least two distinct shapes

**macrophytes:** aquatic plants visible to the naked eye

**mantle:** in molluscs, a sheet of tissue that encloses the body mass and which may protrude in the form of flaps (e.g. in squids)

**membranous:** algae which form as thin, translucent membrane-like fronds e.g. *Ulva*

**nodose, nodular, nodulose:** possessing numerous small nodes or projections

**operculum:** a lid over an opening in a shell; in gastropod shells the operculum comprises a single plate; in barnacles the operculum is made up of four articulating plates

**orifice:** an opening, e.g. where the opercula of a barnacle are situated.

**papillae:** small, nipple-like projections on a surface

**periostracum:** a thin, yellow to brown layer of organic material that covers the shells of many invertebrates

**pharynx:** post oral cavity

**pleural:** refers to the cavity that surrounds the lungs in an animal

**polyp:** a single individual of a colonial animal (e.g. coral)

**prehensile:** describes an organ that has been adapted for grasping (e.g. claws in crabs)

**radula:** a tongue-like feeding apparatus in molluscs, covered in minute teeth

**ramuli:** small branches or extensions along algal fronds

**reticulated:** having a net-like pattern (e.g. on many gastropod shells)

**rhinophores:** chemosensory organs that form club-like extensions from the head of sea slugs

**sessile:** fixed to a surface; immobile (e.g. adult barnacles)

**siphonal canal:** a tubular extension of the mantle of gastropods, which is used to seek food

**spongin:** a modified fibrous protein found in sponges

**stipe:** a basal stalk joins the thallus to the holdfast in brown algae

**stolon:** a horizontal connecting stem e.g. a branch of an alga which produces offshoots at the nodes

**striations:** fine ridges or grooves on shells, often produced by growth bursts

**suture:** a joint between two parts of an organism's skeleton

**radial symmetry:** describes the structure of an organism that can be rotated around a central point and retain the same appearance from all angles (e.g. a coral polyp)

**test:** a shell-like structure (e.g. enclosing the body of urchins)

**thallus, thalli:** the undifferentiated shoot in algae, representing its primary body part

**umbo:** the apex of the bivalve found behind the hinge.

**vascular:** plants with conducting tissue (xylem and phloem) and associated supporting fibres

**whorl:** a single revolution in a spiral (e.g. in gastropod shells)

**zooid:** a single organism that is part of a colony (e.g. bryozoans)

# Further reading

## Web resources

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