

INFORMATION SHEET



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Nudibranchs

What are nudibranchs?

Nudibranchs and their relatives are also known as “sea slugs”, a name that does no justice to the beauty and wide appeal of these brightly coloured marine invertebrates. Nudibranchs belong to a larger group of gastropod molluscs (snails) called the Opisthobranchia. The Nudibranchia (nudibranchs) is only one of six orders within the Opisthobranchia. Bubble shells, bat-winged slugs and other slug-like marine gastropods are examples of other kinds of opisthobranchs.

Most opisthobranchs, including nudibranchs, have two pairs of sensory tentacles at the head end (although in some species these may be missing). Some species are conspicuous and brightly coloured – these species are probably advertising that they are unpalatable to potential predators. Others are very cryptic and blend remarkably well into their preferred habitat.



Nudibranch *Hoplodoris nodulosa*
Photographer / Source: Sylvia Buchanan

Habits and habitats

Feeding habits of opisthobranchs are diverse. The large sea-hares are herbivorous, but many others are specialised carnivores. Other kinds of opisthobranch are a popular food item. Some nudibranchs feed on corals and their relatives, and retain the stinging cells of the coral in their

own tissue for protection. We know of a few species which have very specific food preferences, but for most others, especially in southern Australia, little is known.

Nudibranchs are almost entirely marine and can be found in all habitats from reefs and seagrass meadows, to sand and mud plains, open ocean and the sea surface.

Why are they important?

Because many nudibranch species appear to have close associations with the marine invertebrates, the presence of a nudibranch tells us that other species are also living nearby. This means that nudibranch diversity in a given area may act as a useful indicator of the diversity and health of a wide variety of other marine organisms – for example, sponges, bryozoans, hydroids and the like.

Within southeastern Australia, the high diversity of nudibranchs has contributed to the protection and management of marine environments. In Victoria, a reef at San Remo has gained protection under the Flora and Fauna Guarantee Act. This is in large part due to the high diversity of nudibranchs (125 species) recorded there during studies by the Marine Research Group of the Field Naturalists Club of Victoria (see the paper by Tim O’Hara, listed under *Further reading* below, for more details about the San Remo reef.).

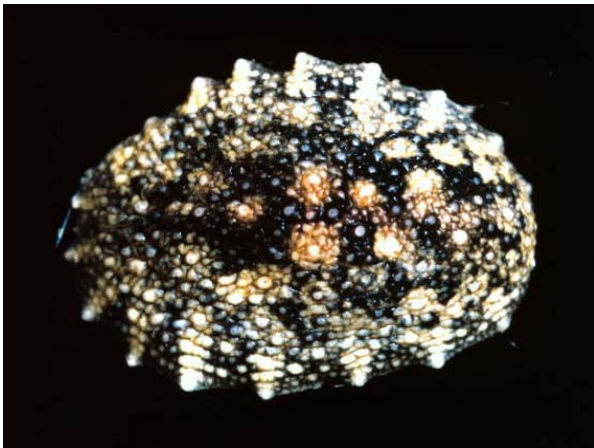
But to make the most of nudibranchs as environmental indicators we really need to know more about the habits of the 350 or more species which inhabit Victorian waters. Museum Victoria and ReefWatch Victoria have initiated a photographic atlas project which we hope will make a significant contribution to our knowledge of the diversity and habits of the opisthobranch fauna of the Bass Strait region (see *Internet resources*).



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Not all slugs are nudibranchs

Not all slug-like organisms are opisthobranchs. Garden slugs, for example, are air-breathing gastropods (classified as subclass Pulmonata) as is *Onchidella nigricans*, a small slug which is common in rocky intertidal habitats in southeastern Australia. These slugs are terrestrial (or at least amphibious – able to live both on land and in water) organisms – they are air-breathers, and have lungs. Opisthobranchs, in contrast, have gills and must remain underwater.



This common intertidal slug is not a nudibranch; it is an air-breathing slug, *Onchidella nigricans*.
Photographer: Michael Marmach / Source: Museum Victoria

Further reading

- Burn, R. 1989. Opisthobranchs (Subclass Opisthobranchia). In Shepherd, S. A. and Thomas, I. M. (eds), *Marine Invertebrates of Southern Australia. Part II*. South Australian Government Printing Division, Adelaide, pp. 725-788.
- Coleman, N. 1989. *Nudibranchs of the South Pacific* Vol.1. Neville Coleman's Sea Australia Resource Centre, 64 pp.
- Coleman, N. 2001. *1001 Nudibranchs - Catalogue of Indo-Pacific Sea Slugs* Neville Coleman's Underwater Geographic Pty Ltd, 144 pp.

- Edgar, G. J. 2000. *Australian Marine Life*. revised edition. Reed, Kew, Victoria. 544 pp.
- O'Hara, T. 1995. Marine Invertebrate Conservation at San Remo. *Victorian Naturalist* 112(1): 50-53.

Internet resources

Nudibranch and flatworm monitoring project:
<http://researchdata.museum.vic.gov.au/marine>
[A project which will generate a marine atlas of nudibranchs and flatworms]

ReefWatch Victoria:

<http://reefwatchvic.asn.au/>

Sea Slug Forum:

<http://www.seaslugforum.net/>

[Questions, answers and other nudibranch resources, hosted by Dr Bill Rudman at the Australian Museum, Sydney]

InfoZone at Museum Victoria:

<http://infozone.museum.vic.gov.au/>

Online Zoological Collections of Australian Museums (OZCAM):

<http://www.ozcam.gov.au/>

[Searching and mapping selected animals from collections of Australian museums]

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