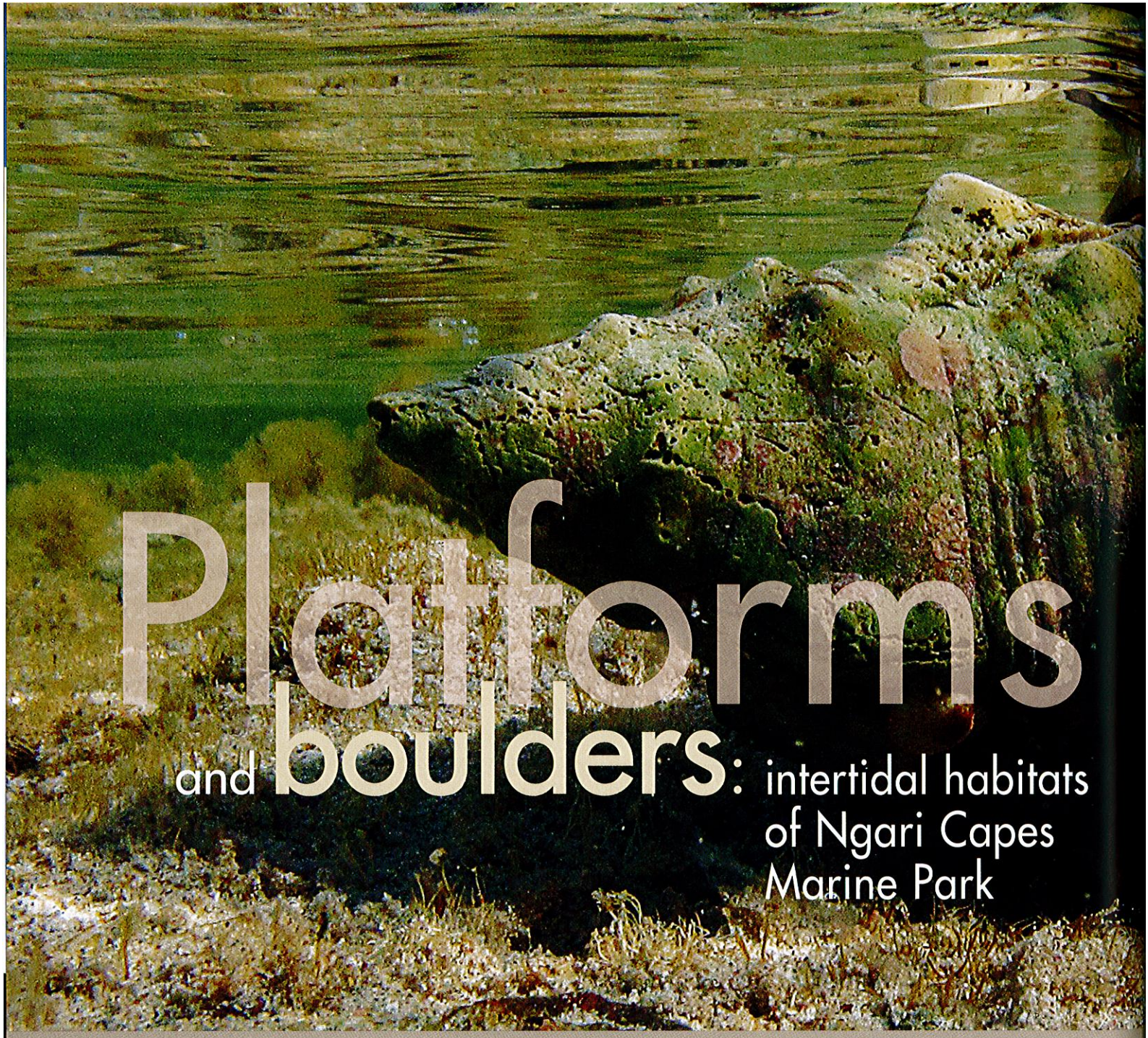


Platforms and boulders: intertidal habitats of Ngari Capes Marine Park

Early morning beachgoers along the scenic Leeuwin-Naturaliste coast in Western Australia's south-west are typically surfers out to catch a few waves before heading to work. However, during November 2012, the surfers were joined by Department of Environment and Conservation (DEC) marine scientists wielding sampling quadrats and notebooks who were taking advantage of particularly low tides at daybreak to undertake preliminary surveys of intertidal reef habitats and communities in the recently created Ngari Capes Marine Park. This work will complement a three-year research project on intertidal reef communities of the Marmion and Shoalwater Islands marine parks near metropolitan Perth (see 'Life on the edge', *LANDSCOPE*, Autumn 2012). While these communities were studied by University of Western Australia scientists in 1999 as part of an assessment of the marine conservation values of the Capes region, few such surveys have been carried out since.

A diverse shoreline

Intertidal habitats of Ngari Capes Marine Park differ from those of the Perth area because of the complex geology of the Capes region which is dominated by the Leeuwin-Naturaliste ridge, a massive granitic formation that comprises Australia's south-western corner. Many popular features of the Capes coast including Sugarloaf Rock and Canal Rocks and the promontory of Cape Leeuwin are formed from this rock. This geologically ancient granite is partially overlain by Tamala limestone which has accreted more recently from coastal sands and which has subsequently eroded into quite different shapes such as coastal cliffs and the spectacular caves of Leeuwin-Naturaliste National Park. The limestone and granite are often adjacent along the Capes coastline and form entirely different features where they meet the sea.

Surveys of the intertidal reef areas of Ngari Capes Marine Park have uncovered an interesting array of creatures and habitats.

by Alan Kendrick and Michael Rule

Above main Red triton shell (*Charonia lampas*). *Photo – Michael Rule/DEC*

Inset Waratah anemone (*Actinia tenebrosa*). *Photo – Ann Storrie*

Limestone platform reefs

Shoreline limestone platform reefs are most prominent between Yallingup and Prevelly in Ngari Capes Marine Park. These reefs are typically larger than those of the Marmion and Shoalwater Islands marine parks and can extend more than 50 metres across. Even relatively brief surveys reveal that many of the most prominent invertebrates inhabiting these reefs differ from those on limestone platform reefs closer to Perth. Intertidal reefs at the Capes, for example, support fewer sea stars and urchins than reefs near Perth, and some species such as the red triton shell (*Charonia lampas*) and the lighthouse shell (*Campanile symbolicum*) are more common in the Capes region. Interestingly, similar species are often common at one location or the other but not both. For example, the western turban shell (*Turbo pulcher*) is prevalent in the Capes region, while the closely related *T. torquatus* is more prevalent on reefs of the Marmion and Shoalwater Islands marine parks.

Other species inhabiting shoreline limestone intertidal reefs are common to both the Perth and Capes regions. These include the pontifical cone (*Conus doreensis*) and the western creeper (*Rhinoclavis bituberculata*), both of which burrow into sandy hollows on the reef. Numerous limpet and chiton species also occur in both regions, while the colourful opistobranch *Hydatina physis* is a common resident of some reefs in the Capes region and Rottnest Island.

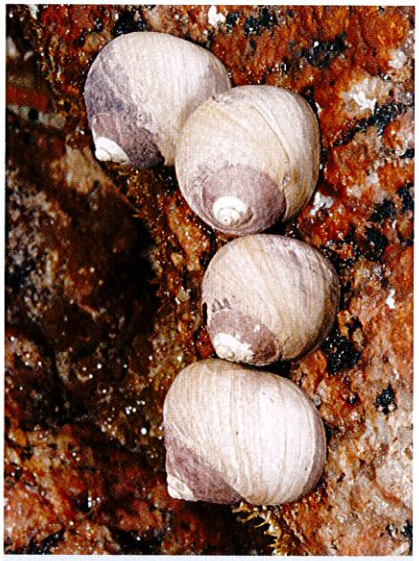
Granite boulders

The granite shores of Ngari Capes Marine Park create intertidal habitats that do not exist in marine parks of the Perth area. In exposed locations, the granite shorelines often comprise smooth and steep dome-like rocks that are continuously battered by the

Above Limestone cliffs at Cape Hamelin.
Photo – Brett Dennis/Lochman Transparencies

Left Bubble shell (*Hydatina physis*).
Photo – Michael Rule/DEC

Below Smooth top shell (*Austrochochlea rudis*).
Photo – Ann Storrie



powerful swells that characterise the Capes region. Only a few hardy species inhabit these intertidal zones, such as limpets and barnacles, which are not easily dislodged. More sheltered granite shores, however, often form intertidal fields of small, smooth boulders that are very different to limestone platform reefs and create complex and sheltered habitats that suit many invertebrate species. While littorinid snails, limpets and tangles of tube-building worms adhere to the sides of these rocks, many more species live beneath them. Here can be found a variety of polychaete worms, anemones, echinoderms and shells, such as the large elephant snail (*Scutus antipodes*). Even small fish can be found in the shallow pools among these rocks. If you wish to observe intertidal animals in such habitats take care not to leave them exposed for long and always carefully return rocks to their original position.

Building knowledge

DEC's intertidal reef surveys in Ngari Capes Marine Park and other marine parks and reserves build our knowledge of WA's marine biodiversity and contributes to the development of the department's long-term marine monitoring program. More broadly, undertaking similar surveys at different marine parks and reserves also creates an opportunity to examine how the marine environment differs across WA's large and diverse coastline.

Alan Kendrick is a senior research scientist with the Department of Environment and Conservation (DEC). Alan can be contacted on (08) 9219 9793 or by email (alan.kendrick@dec.wa.gov.au).

Michael Rule is a DEC research scientist. He can be contacted on (08) 9219 9800 or by email (michael.rule@dec.wa.gov.au).

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Executive editor Madeleine Clews.

Editors Samille Mitchell, Joanna Moore.

Scientific/technical advice Kevin Thiele, Lachie McCaw, Keith Morris, Shaun Wilson.

Design and production Lynne Whittle, Gooitzen van der Meer, Peter Nicholas.

Illustration Gooitzen van der Meer.

Cartography Promaco Geodraft.

Marketing Cathy Birch.
Phone (08) 9334 0296 or *fax* (08) 9334 0432.

Subscription enquiries
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