

Rottnest ISLAND

marine wonderland



Perth's favourite island holiday playground is not just about sun and surf. **Rottnest Island** waters harbour an abundance of biologically important and diverse plant and animal life.

by **Britt Anderson**



Is it the migrating humpback whales that play so close to shore? Is it the turquoise blue of the reef-fringed bays? Is it snorkelling over pink coral reefs with fish by your side at every turn? Or is it the serenity of watching the sun set over the Indian Ocean? In short, yes—all of these things and many more make Rottnest Island a treasured marine wonderland.

Discovery

Rottnest Island, or Wadjemup as it is traditionally known to Nyoongar people, lies 18 kilometres from the mainland coast of Australia with Fremantle being the closest port. The island is approximately 11 kilometres long, four kilometres wide and only 250 metres at its most narrow point, which is appropriately referred to as 'Narrowneck'. It has a rich and colourful history that pre-dates the first recorded arrival of Europeans to the area. The island is part of many Dreamtime stories and records of Aboriginal occupation date back more than 6,500 years to a time when sea levels were lower than they are today and Rottnest was still attached to the mainland.

Dutchman Samuel Volkerson and his crew on the ship *Waeckende Boey* discovered the isle in 1658 while searching for another Dutch ship in the area. But it is William de Vlamingh

whose name is most synonymous with the island. De Vlamingh was the next recorded European visitor to the island in 1696 and, after witnessing an abundance of quokkas that he thought were large rats, he named the island Rottenest—or rats' nest. Rottnest was

eventually settled in the first half of the nineteenth century, with pastoralism and salt panning forming the main industries. Over time, the island was used as an Aboriginal prison, pilot station and boys' reformatory. During World War II, the island played a major role in Western Australia's coastal defence system. Many of the military buildings still exist and have been incorporated into interpretive walk trails.

Tropical influence

Fast forward to today and Rottnest has become a favoured holiday playground, attracting about 500,000 local, interstate and international

Previous page

Main Bathurst lighthouse.

Photo – David Bettini

Inset Diver at Rottnest Island.

*Photo – Eva Boogaard/Lochman
Transparencies*

Above Recreational yachting is popular at Rottnest.

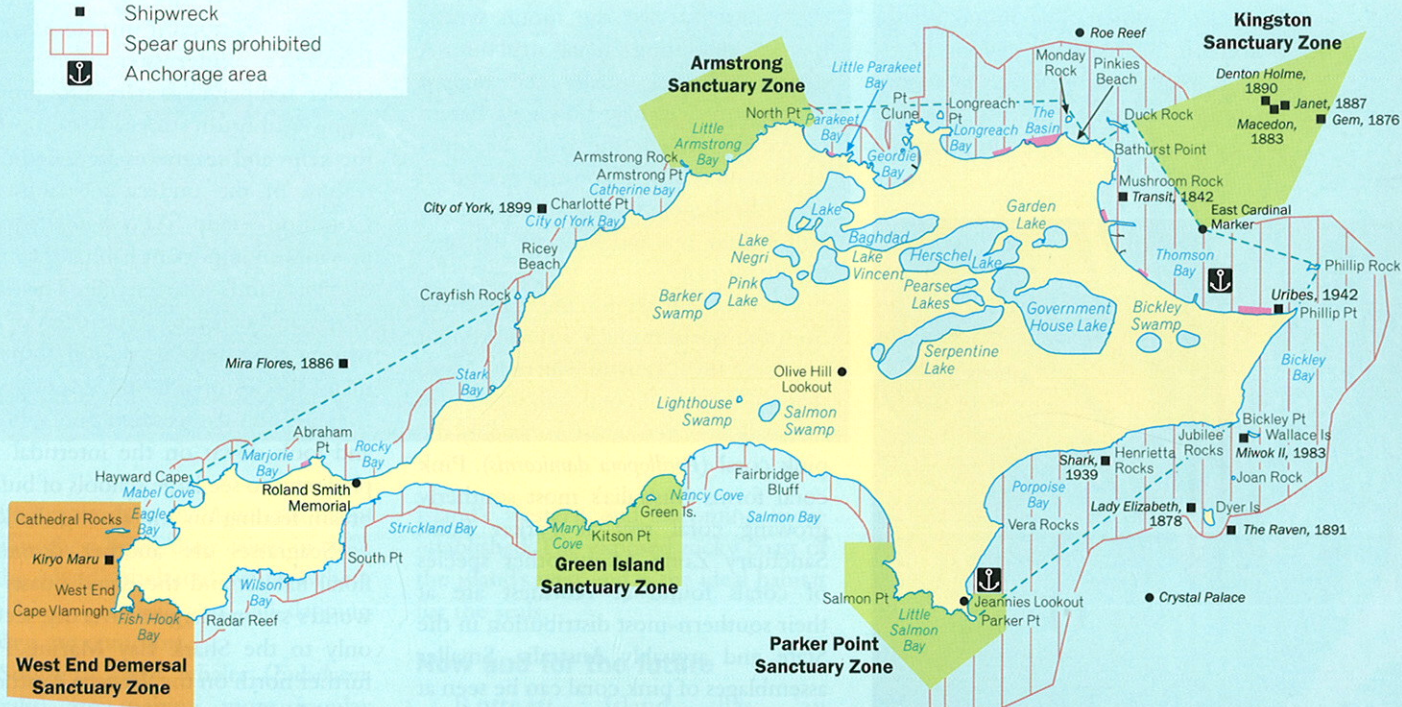
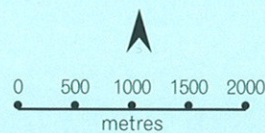
Photo – Sarah Mant

Left Western Australian nudibranch.

Photo – Mark Westera



- Legend
- 5 knot line
 - Boating prohibited - no fishing during daylight hours
 - Demersal Sanctuary zone - fishing restrictions apply
 - Sanctuary zone - fishing and collecting prohibited
 - Shipwreck
 - Spear guns prohibited
 - Anchorage area



Left Humpback whale and calf.
Photo - Britt Anderson

visitors each year. The crystal clear waters, lack of traffic and laidback pace of life are easy drawcards. But for most visitors, their time on the island revolves around the marine environment. Many come to dive and snorkel, some simply to swim or beachcomb and there are those lucky enough to come on their private boat to take part in almost every marine activity imaginable. Fishing has been and continues to be a favourite pastime. Generations of Western Australians come to the island at the same time every year to wet a line and it's not unusual to see three generations of one family trying their luck off the main ferry jetty, chasing a feed of herring for dinner.

Rottnest's island environment caters to almost everyone. For scientists and marine enthusiasts, the waters surrounding the island are a treasure trove, rich in biological diversity. They harbour an array of very different sea creatures, from the small Western Australian nudibranch (*Chromodoris westraliensis*) to the giant blue whale (*Balaenopteridae musculus brevicauda*)—a sub species of the true blue whale.

The island's special environment resulted in it being declared an 'A' class reserve in 1917, for the purpose of public recreation and protection of flora, fauna and heritage values. The marine reserve covers 3,828 hectares and extends approximately

one kilometre seaward of the shoreline in a radius around the island.

Rottnest is positioned near the southward flowing Leeuwin Current—a factor which creates a blend of temperate and tropical marine life. The warm-water Leeuwin Current is the longest continuous coastal current system in the world, and flows south along the continental shelf off the Western Australian coast. In winter, the Leeuwin Current flows strongest and carries warm waters from the tropics to Rottnest Island. Many tropical fish larvae are carried with the current and some settle in the waters around the island. There are more than 400 species of fish in Rottnest waters, including more than 135 recorded species of tropical fish such as wrasses, lion fish and manta rays. On the adjacent mainland coast, comparatively fewer species have been recorded, highlighting the significant effect of the Leeuwin Current on the island's marine life.

Moon wrasse (*Coris auricularis*) is an example of the tropical fish species found at Rottneest. The moon wrasse is a colourful fish, with striking blues, greens, pinks and yellows appearing on most surfaces of the fish at some point during its life. The moon wrasse

gets its name from the distinctive new-moon shape on its tail. Like many of the wrasse species, the moon wrasse has an interesting social structure. A dominant male, usually the biggest in the area, will play host to a harem of females. When the male becomes ill, dies or is absent for any period of time, the largest female in the harem will change sex and become the new dominant male.

It is not only the fish life that benefit from the warm tropical waters brought south by the Leeuwin Current. More than 20 species of corals can be seen in the shallow waters, most noticeably the pink coral (*Pocillopora damicornis*). Pink coral forms Australia's most southerly growing coral reef at Parker Point Sanctuary Zone. Many other species of corals found at Rottneest are at their southern-most distribution in the State and arguably Australia. Smaller assemblages of pink coral can be seen at nearby Little Salmon Bay and in recent years anecdotal evidence suggests an increase in coral on the north side of the island.

Left Common scalyfin.
Photo – Eva Boogaard/Lochman
Transparencies

Below Common kelp.
Photo – Ann Storrie



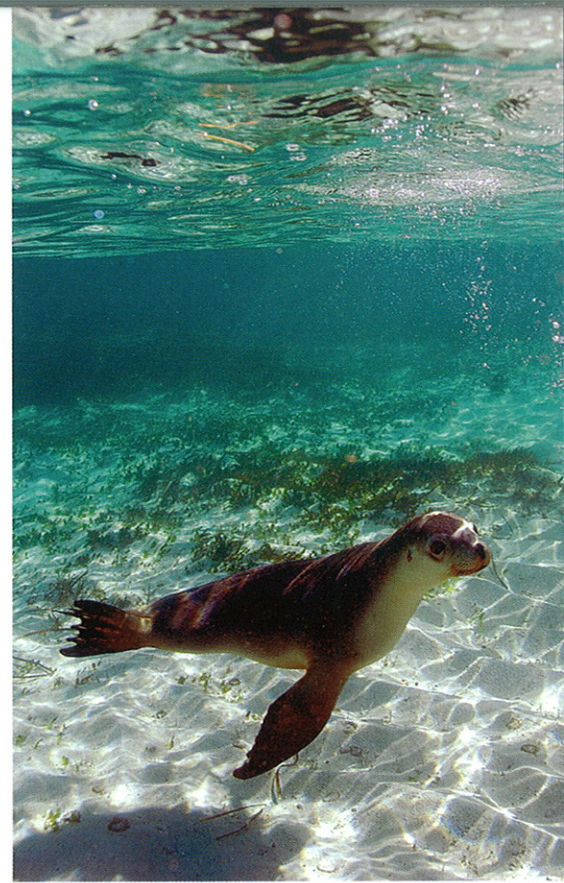
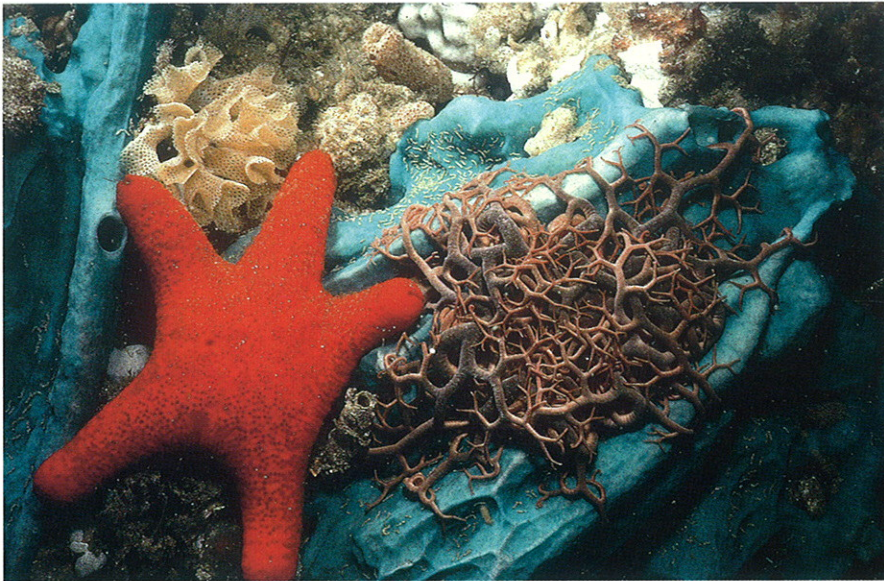
Real estate for all

As the Leeuwin Current provides a splash of tropical marine life on Rottneest's underwater canvas, the cooler temperate waters also provide a powerful brush stroke. Most notably, the kelps and seagrasses are a definitive feature of the underwater landscape. Common kelp (*Ecklonia radiata*) provides an important habitat for much of the island's marine life. The large blades and dense congregations of this marine plant make it an ideal home for many species of fish and invertebrates. It is not unusual to stand on a cliff top and look down on the intertidal reef platforms to see large schools of buffalo bream feeding on and among the kelp.

Seagrasses are another dominant floral habitat and the island boasts the world's second largest diversity, second only to the Shark Bay Marine Park, further north on the Western Australian coast. Nine species have been recorded with both the southern wireweed and strapweed (*Amphibolis antarctica*, *Posidonia australias*) providing the largest meadows. Seagrasses are essentially land plants that have adapted to life in the sea. They share several features with terrestrial grasses, including flowers and internal veins. Seagrasses play a critical role in the marine ecosystem. They typically grow in shallow, sheltered bays providing the ultimate nursery grounds for juvenile fish and invertebrates. In addition, their design helps stabilise sediments which, in turn, can reduce erosion and protect shorelines.

Big residents, bigger visitors

Some of Rottneest's bigger oceanic visitors include those leviathans of the sea—whales. Orcas, southern right whales, pygmy blue whales, Grey's beaked whales and humpback whales are seen in the waters surrounding Rottneest. Humpback whales are spotted on both their north and southward bound migration along the Western Australian coast. Humpback whales (*Megaptera novaengliae*) are particularly evident in the months of October and November when they are returning from breeding and calving in the warmer waters of the State's north. As the whales are returning to their



feeding grounds in the Antarctic, many new mothers bring their calves in close to the island's sheltered waters where breaching, pectoral and tail-slapping displays are common.

Southern right whales (*Eubalaena australis*) are making more regular appearances around Rottneest during the winter months. In August 2006 a mother and her new white calf spent weeks enjoying the tranquil waters of some of the island's more sheltered bays. Southern right whales are fully protected under the *Environment Protection and Biodiversity Conservation Act 1999* and are considered a threatened species, even though indicators show small increases in their population annually.

Both seals and sea lions also take advantage of the island's unique environment. Australian sea lions (*Neophoca cinerea*) are seen around Rottneest, typically lazing in the sun on Dyer Island. They head north to breed about every 18 months and the newly pregnant females return to their choice of prime coastal real estate—any one of the coastal islands off the Perth metropolitan coast.

New Zealand fur seals (*Arctocephalus forsteri*) are the most widely distributed of all the seals and sea lions but this is not a good indicator of their population status. Like many of the seal species, they were targeted by sealers and their population was almost wiped out in the late 1800s. New Zealand fur seals are now protected and their population is recovering with a permanent population at Rottneest

Island's western end becoming more established. The exposed rocky coast of the island's west end is the ideal habitat for the seals.

Now and for the future

Rottneest Island has an undeniably unique and sensitive marine environment. Protection and management of Rottneest's major asset has always been a high priority. With more than half a million visitors journeying to its shores each year, a fine balance of conservation and recreation must be met. A new marine management strategy was implemented in July 2007 to ensure the marine environment is preserved and enhanced. Extensions to two existing sanctuary zones (Parker Point and Kingston Reef) and the creation of three new sanctuary zones (Green Island, West End and Armstrong Bay) were among the management tools used. Fishing and collecting is mostly banned in sanctuary zones, so the areas

Above left Velvet sea star.

Photo – Eva Boogaard/Lochman
Transparencies

Above Australian sea lion.

Photo – DEC

Below West End sunset.

Photo – Britt Anderson

will provide examples of relatively undisturbed representative habitat for marine biodiversity conservation.

Rottneest is often referred to as the 'jewel in the crown' of WA's marine environment. Its rich biodiversity sets it aside as a place where scientists continue to marvel at the variety of life and be inspired by new discoveries. It is a place for visitors to be amazed and awed. Protection of this 'jewel' will ensure it remains a special place for all.



Britt Anderson has a degree in marine science and worked as a ranger for the Rottneest Island Authority. She wrote the Department of Environment and Conservation's new Bush Book *Common Marine Life of Rottneest Island*.

The book is available for \$6.50 from bookshops and tourist outlets, by phoning WA Naturally Publications on (08) 9334 0437 or by ordering online at www.dec.wa.gov.au.



- 50 The Ningaloo whale shark experience
Research examines the effect of tourism on whale sharks at Ningaloo.
- 57 Missing mammals: a 100-year-old mystery
A scarcity of mammals puzzled an English researcher in WA 100 years ago.

Regulars

- 3 Contributors and Editor's letter
- 9 Bookmarks
Perth Western Australia: from dawn till dusk
Albatross: their world, their ways
Shark Bay: twin bays on the edge
- 25 Endangered
Tumulus Spring Ecological Community
- 38 Feature park
Gloucester National Park
- 62 Urban Antics
Delicate as ...

Publishing credits

Executive editor Kaye Verboon.

Editors Samille Mitchell, Rhianna King, Carolyn Thomson-Dans.

Scientific/technical advice

Kevin Kenneally, Paul Jones, Keith Morris.

Design and production Natalie Jolakoski, Tiffany Taylor, Gooitzen van der Meer.

Illustration Gooitzen van der Meer.

Cartography Promaco Geodraft.

Marketing Cathy Birch

Phone (08) 9334 0296 Fax (08) 9334 0432.

Subscription enquiries

Phone (08) 9334 0481 or (08) 9334 0437.

Prepress and printing Lamb Print, Western Australia.

© ISSN 0815-4465

All material copyright. No part of the contents of the publication may be reproduced without the consent of the publishers.

Please do not send unsolicited material, but feel free to contact the editors.

Visit www.dec.wa.gov.au

Published by the Department of Environment and Conservation, 17 Dick Perry Avenue, Kensington, Western Australia.



Department of Environment and Conservation

Our environment, our future

