

MARINE TREASURE TROVES

The results of a marine biological survey off our southern coast (see *Wonders of our Southern Seas*) provides some idea of the beauty and uniqueness of our marine environment. But the area surveyed represents only a small sample of the 12 500 kilometres of coastline that stretches from the warm tropical waters of the Timor Sea to the cool temperate waters of the Southern Ocean.

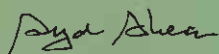
Our coastal resource also includes treasure troves, such as the crystal clear waters surrounding the shelf-edge reefs of the Rowley Shoals Marine Park, the extensive coral reefs and mangroves of the Kimberley and Pilbara coasts, Australia's largest fringing coral reef within the Ningaloo Marine Park, and the world's most extensive seagrass meadows and oldest living lifeforms (ie stromatolites) in the Shark Bay World Heritage Area.

The presence of the southward flowing Leeuwin Current adds to this richness by allowing tropical marine life to thrive much farther south than normally occurs in the world's oceans. The resulting mixture of warm-water and cold-water species is most pronounced along the central west coast, where a continuous limestone reef stretching between Dongara and Perth provides a marine environment that is unique in Australia.

As well as providing many recreational opportunities for the local community, our marine environment is also very important to Western Australia's economy. Prawning and pearl culture in the north and the rock lobster fishery in the south are among our important fishing industries. Similarly, the petroleum industry on the North West Shelf makes a multi-billion-dollar contribution to the local and national economy. The emerging marine, "job rich", nature-based tourism industry, currently centred around whale-watching off Perth and Albany, the Monkey Mia dolphins in Shark Bay and the whale sharks off Exmouth, has great potential to become another significant marine-based industry in Western Australia. The rich diversity of marine life in our waters potentially contains numerous medicinal substances that may be of great benefit to mankind.

Striking a balance between the conservation of our marine environment and the management of the above recreational and commercial uses is not an easy task. Recent changes to the CALM Act, which came into effect in August this year, have provided an improved capacity to achieve these dual objectives. These changes include the creation of a Marine Parks and Reserves Authority (MPRA) as a vesting authority and as an advisory body to the Minister for the Environment. A Scientific Advisory Committee has also been established to provide advice to the Minister and the MPRA. Other important changes ensure commercial and recreational stakeholders and local communities play an integral part in the marine reservation process from the very beginning.

CALM is committed to achieving a balance between the conservation and the many uses of our marine environment. The new legislation provides Western Australia with a unique opportunity to ensure that the qualities of the marine environment valued so highly by Australians are there for the benefit of future generations.



The Publisher

ENDANGERED COCKATOOS
RAISED IN CAPTIVITY

One of Western Australia's most threatened native cockatoo species has been successfully raised in captivity, heralding a new approach to the conservation of birds listed as threatened with extinction.

Cockatoos have been raised from eggs and nestlings collected in the wild under a joint partnership between the avicultural industry and the Department of Conservation and Land Management (CALM).

The initiative followed a call for expressions of interest in 1995 for captive breeding or similar programs based on wild-captured birds.

Carnaby's cockatoo (*Calyptorhynchus latirostris*) was chosen, as it had suffered in the wild because of loss of nesting trees through land clearing for farming, and it had been the target of poachers.

The partnership between CALM and an avicultural syndicate, including Rainbow Jungle (a native parrot wildlife park at Kalbarri), also looked at the extent to which a controlled harvest of birds could be undertaken that would most benefit the conservation of the species.

CALM's Wildlife Branch staff collected 34 eggs and 34 newly hatched chicks from 68 nests. These were given to five aviculturists for rearing and resulted in 26 chicks from the eggs and 31 from the nestlings.

Carnaby's cockatoos generally lay two eggs but research has shown that as a rule only one egg hatches. If both hatch, one of the nestlings dies.

Further monitoring of the nests from which the eggs and chicks were taken revealed

that 42 cockatoo chicks were successfully raised in the wild from the remaining eggs and nestlings. This level was in line with past research observations. This meant that when combined with the captive breeding program, the number of chicks that survived was more than double the rate that would occur naturally.

CALM will sell 10 of the raised birds by tender to licensed aviculturalists to provide more resources for continuing conservation efforts, including restoring nest sites in the wild.

All of the captive-raised birds are being DNA-tested and having micro chips inserted for identification. The DNA tests will also help determine the sex of each bird so they can be paired up before they begin breeding in about three years' time.

CALM's field survey work has also identified significant new breeding populations and provided valuable information on nesting behaviour for the species.

The program has shown how private landholders and Government agencies can play an important role in helping conserve nesting and feeding areas for the cockatoo.

This will help increase the availability of the species in aviculture and reduce the incidence of nest-robbing in the wild.

The program will continue for a further two years. Efforts in the second year will include repairs to additional potential nest sites with the aim of directly increasing the number of cockatoo pairs breeding successfully in the wild.



Short-billed black-cockatoo (commonly known as Carnaby's cockatoo).

Photo – Babs & Bert Wells/CALM

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The waters off Western Australia's south coast are home to a rich diversity of marine plants and animals. Read about them on page 28.



Burnerbinmah Station, in WA's Murchison Region, fills an important gap in the State's flora and fauna reserve system. See page 42.



Was it created by a meteorite crashing to Earth, or more slowly over time? Find about Curiosity Swamp on page 50.



Imagine a commercially-owned and managed sanctuary in the hills east of Perth and you have 'Karakamia Sanctuary'. Find out how it was created on page 17.



The Western Blue Gum, a commercial variety of the Tasmanian bluegum, was developed for WA conditions, but tree breeders continue to improve the strain. See page 36.

COVER

Is the forest red-tailed black-cockatoo rare or just rarely seen? Find out the answer to these questions on page 10.



Illustration by Philippa Nikulinsky

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