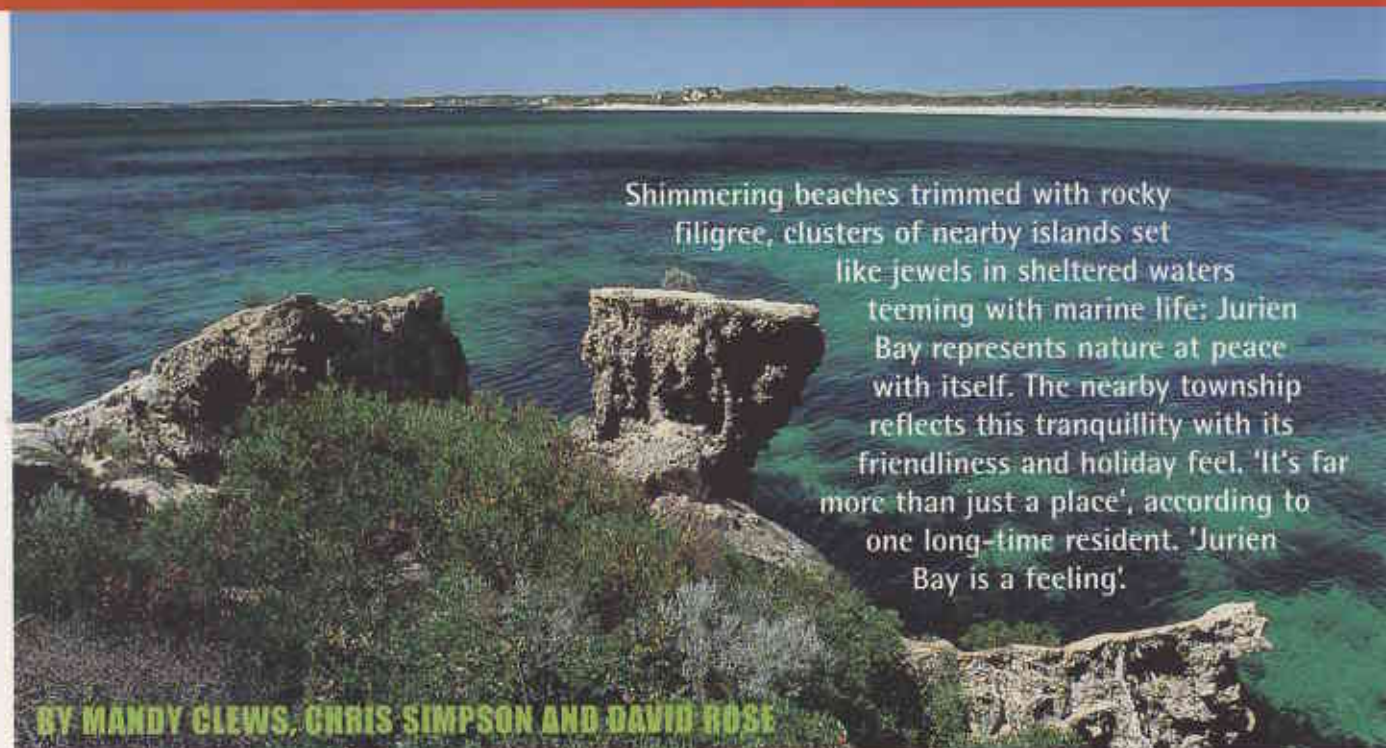


A view of the bay



Shimmering beaches trimmed with rocky filigree, clusters of nearby islands set like jewels in sheltered waters teeming with marine life: Jurien Bay represents nature at peace with itself. The nearby township reflects this tranquillity with its friendliness and holiday feel. 'It's far more than just a place', according to one long-time resident. 'Jurien Bay is a feeling!'

BY MANDY CLEWS, CHRIS SIMPSON AND DAVID ROSE

The central west coast region of Western Australia, or the 'Turquoise Coast' as it is becoming known, is renowned as the home of the western rock lobster and beautiful wildflowers. These better-known features of the region mask a biological diversity of immense richness both on the land and in the sea. Much of this diversity is found in the many terrestrial conservation reserves, such as the Lesueur and Nambung national parks, that are spread throughout the region. The rich marine life of the central west coast limestone reef system, which stretches from Dongara south to Trigg, is also being recognised, with the coastal waters centred around the Jurien Bay area now being considered for reservation as a CALM Act marine conservation reserve. When completed, the marine reserve



will provide another important link in a chain of a terrestrial and marine conservation reserves that stretches from the northern Wheatbelt town of Three Springs to the coast. This system of land and sea reserves will be unique to Western Australia and will be the culmination of years of planning and hard work by the Central Coast Planning Coordinating Committee and CALM.

FOCUSING ON THE BAY

Although Jurien Bay is peaceful, it bristles with life. The abundance of marine life is a lure for recreational fishers and divers alike. Conditions are ideal for water-skiing, sailing and windsurfing. And it is close to Perth. It's no wonder that this place is special, not just for local residents, but also for the generations of holidaymakers and tourists who have flocked to the region for the best part of this century.

As well as tourism and recreation, Jurien Bay supports a thriving

commercial fishing industry. Up to 140 rock lobster boats work the region and contribute significantly to the local and State economies. Other expanding marine-based industries, such as aquaculture, provide valuable income and employment for locals, giving Jurien Bay a rare balance of recreation, commerce and industry, an idyllic holiday destination, a fishing paradise, and a pleasant place to live.

LIFE UNDER THE SEA

But Jurien Bay is far more than this. In recent years, its importance as one of the best examples of the marine environment of the central west coast has been recognised. It's here that the warm tropical waters to the north overlap the cool, temperate waters of the south. Because of this, the sea life surrounding Jurien Bay is an unusual and rich mixture of animal and plant communities.

A biological survey of Jurien Bay undertaken by the Department of Conservation and Land Management (CALM) in May 1997 found a remarkable total of 400 species, including nine species of seagrass, 134 species of large algae, 205 invertebrate species, and 63 species of fish. Some of the species collected, including a number of sponges, had never been recorded before

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Top: Perennial seagrass species, like *Posidonia sinuosa*, provide important nursery grounds for marine life.

Photo - Clay Bryce/Lochman Transparencies
Below: Rocky shores and islands are common along the central west coast and provide important marine habitat.

Photo - Dennis Sarson/Lochman Transparencies

Below: The western rock lobster is the centre of a lucrative local fishing industry.

Photo - Eva Boogaard/Lochman Transparencies



and were new to science. The survey also recorded the presence of a 'living fossil', the gastropod *Campanile symbolicum*, which has flourished for more than 200 million years.

Seagrasses thrive in vast meadows in the shallow, sheltered marine or estuarine environments of Jurien Bay. Three perennial species of seagrass dominate: *Posidonia sinuosa*, *Amphibolis griffithii*, and *A. antarctica*. The meadows are ecologically vital to the area, not only because they provide a habitat and nursery for a wide variety of marine life (including the commercially valuable western rock lobster), but also because they trap and bind sediments and keep the water generally very clear.

WHERE TIDES MEET

A whole ecosystem finds its home on Jurien Bay's intertidal limestone platforms. Here, small red or brown turf algae grow on exposed parts, while the large brown alga, *Ecklonia radiata*, grows where the outer edges of the platforms are permanently submerged. Littorinid snails or periwinkles, turban shells (*Turbo torquatus*) and Roe's abalone (*Haliotis roei*) are also found here, as is the common purple sea urchin (*Heliocidaris erythrogramma*).

Caves that are formed under the limestone on the seaward side of these platforms support a high diversity of invertebrates, including colourful gorgonian corals, sponges, ascidians and bryozoans—all exquisite to look at, but easily damaged. Yet more algae are found on the subtidal limestone reefs of Jurien Bay. The large red, brown and green algae occurring on these reefs provide food and habitat for fish and marine animals such as sea anemones, crustaceans, sea urchins and starfish.

BIG VISITORS

Jurien Bay's marine wildlife extends to a wide array of marine mammals. Thirty-five species of cetaceans—whales, dolphins and porpoises—have been observed off the coast. The killer whale (*Orcinus orca*) and family groups of the bottle-nosed dolphin (*Tursiops truncatus*) are frequent visitors.

Baleen whales occur in the deeper waters and include the great blue whale (*Balaenoptera musculus*), the humpback



whale (*Megaptera novaeangliae*) and the southern right whale (*Eubalaena australis*). It is the humpback whales' migration to and from northern tropical waters to mate and calve each year, that is providing potential for the popular commercial whale-watching expeditions from Jurien, adding another layer of opportunity to the region's growing tourism industry.

ON THE LAND

Jurien Bay's wealth of marine life is mirrored on land by a rich array of fauna. The nearby islands have been a refuge for species that have been decimated on the mainland by introduced predators. For example, the dibbler (*Parantechinus apicalis*), a small carnivorous marsupial, was thought to have been completely displaced from the area and in danger of extinction, until it was found on the islands in 1985 (see 'Dibblers' in this issue). The islands also support populations of skinks, one subspecies of

Top: Aquaculture is a developing industry on the central west coast.
Photo – Jiri Lochman

Above: Breeding colonies of the Australian sea-lion, *Neophoca cinerea*, occur on several of the small islands along the central west coast.
Photo – John Butler/Lochman Transparencies

which, *Egernia pulchra longicauda*, does not occur on the mainland.

The Australian sea-lion (*Neophoca cinerea*) has its main breeding sites on Buller Island, North Fisherman Island and the Beagle Islands to the north of Jurien Bay. Mothers and pups can often be seen resting on local beaches, their cute, furry appearance masking an aggression that can make them very dangerous to approach. Among the seabirds nesting on the islands are the crested tern (*Sterna bergii*), the pied cormorant (*Phalacrocorax varius*) and the bridled tern (*Sterna anaethetus*).

On the mainland, the coastal dunes are home to the western grey kangaroo

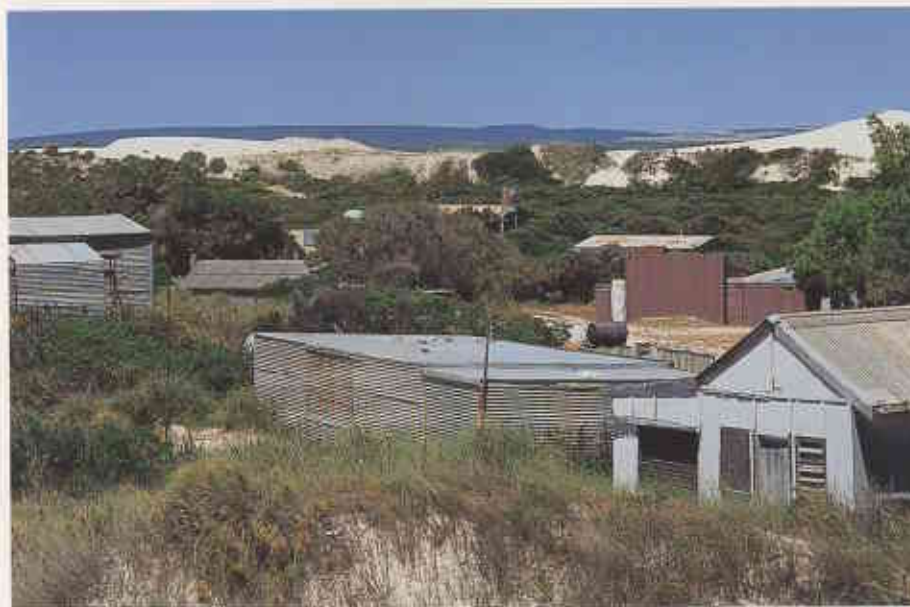


Left: Seabirds, like this crested tern, find suitable nesting sites on the small, isolated islands off the coastline in the Jurien area.

Photo – Jiri Lochman

Below left: Squatters' shacks, common along the central west coast, are gradually being renewed in line with the Government's Squatters Policy.

Photo – Jay Sarson/Lochman Transparencies



with three survivors.

It was not until 150 years later, in 1801, that the coast was explored and charted by a French exploratory and scientific expedition of three sailing ships under the command of Captain Baudin. It was Baudin who named Jurien Bay, immortalising Charles Marie Jurien, a member of the French Naval administration at that time. By 1829, with the establishment of the Swan River colony, shipping along the coastline had increased dramatically. The islands around Jurien Bay were hazardous to navigate, and there are four recorded shipwrecks along the 30-kilometre stretch of coastline between Cervantes and North Head.

Meanwhile, the expansion of farming saw the beginnings of Jurien Bay as it is today. As pioneers cleared the land for sheep and cattle grazing, a viable means of shipping their produce was needed.

In the 1850s, a 30-metre-long wooden jetty was built for loading wool, cattle and horsehide. Today, many of the street names in the Jurien townsite commemorate the local pioneering farming families, including Western Australia's first official millionaire, Walter Padbury. Farming still concentrates on livestock, but there are developing industries in growing wheat and white lupin. Native seed and wildflower collecting are also emerging as promising industries.

A LOBSTER TALE

The outbreak of World War II was to lead to a major advancement in Jurien's development. Rumours were rife that Japanese submarines were using the sheltered waters to surface and recharge their batteries. The rumours were so persistent that the Australian Army constructed a road in order to station soldiers at Jurien. With easier access to the coast, a local

(*Macropus fuliginosus*), the mootit or southern bush rat (*Rattus fuscipes*) and the noodji or ash-grey mouse (*Pseudomys albocinereus*), among many others. Shorebirds, for example, live here too: the sanderling (*Calidris alba*) and the red-capped plover (*Charadrius ruficapillus*) can be seen, as can the hooded plover (*Esacus magnirostris*).

THE HUMAN LINK

The human presence at Jurien Bay is as much a part of its natural history as its animals and plants. The Amangu and Juet clans of the Nyoongar people have occupied the region for at least 30,000 years. Stone artefacts and skeletal remains have been found in the region, and the coastal area between Green Head and Jurien Bay has the largest number of midden deposits in the whole of the south-west. Yam grounds are still evident in the fertile

soils of Cockleshell Gully and Hill River.

The European history of the area began with the arrival of the Dutch navigator Abraham Leeman in 1658. Leeman was sent to the Western Australian coast to search for survivors of the *Vergulde Draeck*. He and 13 crew left the Dutch East India Company ship *Waeckende Boeij*, moored off the coast, in a smaller search boat. A storm struck, causing their boat to hit a reef near Fisherman Islands, about 16 kilometres north of the present Jurien township.

Although the *Waeckende Boeij* searched for Leeman's party, it eventually departed, leaving Leeman and his crew behind. Realising he was marooned, Leeman decided to sail to Batavia in the Dutch East Indies (now Jakarta, Indonesia). He repaired the small boat, loaded it with dried sea-lion flesh, sea 'celery' and water and, five months later, arrived at his destination

enterprise sprang up canning rock lobster tails to export to American troops in the Pacific. After the war, the industry continued to grow, eventually becoming the backbone of the local economy.

The crayfishers who based their industry there built squatters' shacks for temporary accommodation during the fishing season. So began a Jurien Bay tradition, the beach shack. There are currently 1,000 such structures in the area, accommodating a range of commercial and recreational users. In accordance with the wise management of the coastline, these shacks will be removed when their leases expire in 2001.

PROTECTING THE PRIZE

The unique riches of Jurien Bay, its diversity of aquatic and terrestrial life, its popularity for recreation, its prosperous fishing industry, its beauty and tranquillity, and the character built into its 30,000 year history of human presence, will not be there forever

Below: Limestone outcrops, white mobile dunes and turquoise seascapes provide contrasting features in the early morning light.

Photo - Len Stewart/Lochman Transparencies

without some planning. An area with so many diverse values needs protection and careful stewardship to keep its pristine waters, magnificent coastline and complex ecosystems safe for future generations to enjoy and prosper from.

The influx of greater and greater numbers of people seeking to enjoy what Jurien Bay has to offer is leading to growing pressure, which could irreparably damage the delicate environment. For example, most of the seagrass meadows, which form the basis of the rich marine life in the area, are still in excellent condition. But if they are lost or damaged, these meadows would be unlikely to recover fully, and the many species that rely on them could be put in danger.

The Government, through CALM,

proposes to establish a marine reserve in the Jurien Bay area. The Jurien Bay Marine Reserve would include all the islands of the bay and would extend to the edge of WA's territorial waters. Setting up such a reserve relies heavily on public participation, because the conservation and social values of any area fall first and foremost under the stewardship of the community, who have the greatest knowledge and experience of the area, and the greatest stake in its future. A plan to conserve the area needs to take into account all the interests that people may have at stake, whether environmental, commercial, recreational or social, so that the widest range of uses can be accommodated while the conservation values are looked after.

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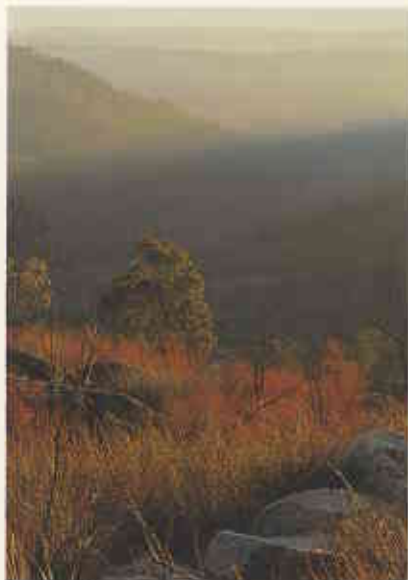
Further information about the proposed Jurien Bay Marine Reserve is available from CALM's Marine Conservation Branch, 47 Henry Street, Fremantle, or from CALM offices in Moora, Lancelin and Geraldton.



LANDSCOPE

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VOLUME FOURTEEN NUMBER 2, SUMMER 1998-1999



This land, where the Avon River cuts through the Darling Range, was home to WA's most notorious bushranger. His story is on page 10.



Just when everyone thought it was extinct, this small mammal suddenly reappeared. See 'Dibblers' on page 28.



100,000 hectares of bluegums by the year 2000. Was it a realistic target? See 'From Blue sky to Blue Chip' on page 35.



'What about the Animals', on page 21, discusses early findings from the Kingston Study.



'Karla Wongi: Fire Talk', on page 48, is a Nyungar perspective on the use of fire in the south-west of WA.

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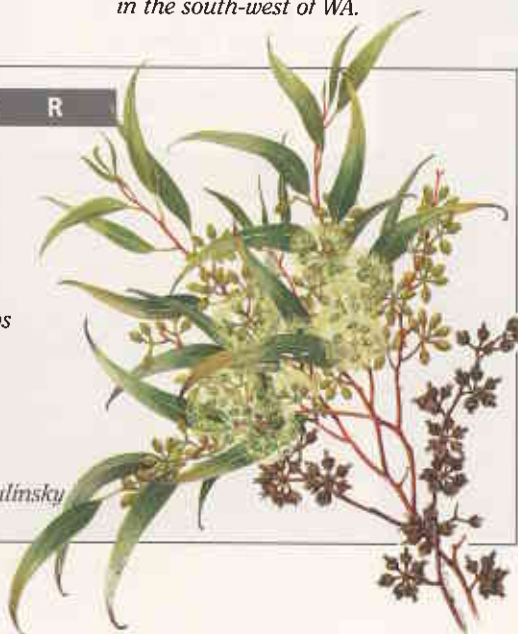
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COVER

One of Western Australia's best-known woodlands may be under threat now, but research by CALMScience Division staff is playing a key role in safeguarding their future. See 'Small Steps to Save Salmon Gums', on page 17

Illustration by Philippa Nikulinsky



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