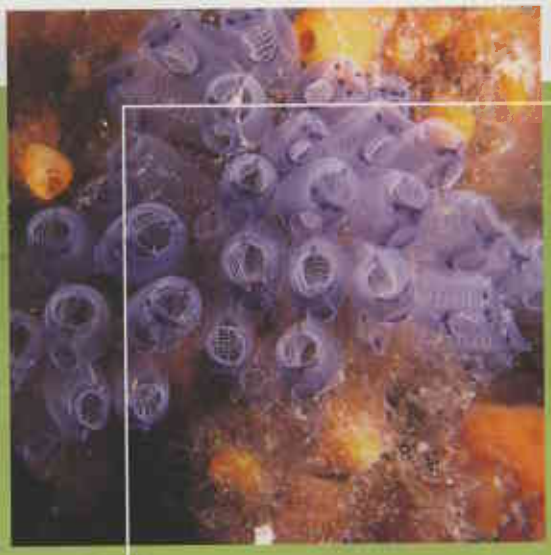

An underwater observatory, to be built at the end of the Busselton Jetty, will help people who have never dived or snorkelled to appreciate the wonders of the underwater landscape and its remarkable inhabitants

BENEATH THE BUSSELTON JETTY

by Ann Storrie

Busselton nestles between the picturesque shores of Geographe Bay and the Vasse River, 220 kilometres south of Perth. The area was first settled in 1834 when whaling was flourishing off the south-west coast and many ships used Geographe Bay as a safe anchorage. Lighters (flat-bottomed boats) were used for loading and unloading goods. In 1853, official sanction for the erection of a jetty in Geographe Bay was given, although work did not commence until 1865. The local timber industry provided the jarrah hardwoods used to construct the 158.4-metre-long jetty. Sailing ships were soon docking at the jetty and horsedrawn carts were used to carry goods to and from the town.

ADDING ON

Over the next ten years, drift sand built up under the jetty until it was almost unusable. Another 129 metres were added on to what is now known as the number one head. Drift sand continued to be a problem, and further extensions were carried out five more times between 1884 and 1896.

Trains replaced the horsedrawn carts in 1911. Steam engines were used for the next 50 years to haul timber, potatoes and other produce to and from the ships. Diesel engines were introduced in the 1960s. More extensions were made to the jetty's length in the 1900s. The final extension, completed in 1960, brought the jetty's length to 1,841 metres (nearly two kilometres), making it the longest timber jetty in the southern hemisphere.

During the 1960s, State Ships ceased to use Busselton as a port of call. As a consequence, the Port of Busselton was officially closed to shipping in 1973. Maintenance was discontinued, and the jetty timbers began to deteriorate from wood borers, rot and the occasional fire. In 1978, Cyclone Alby destroyed a large section of the shore end of the jetty. Townspeople banded together to try to save the jetty, and eventually persuaded the State Government and the Shire Council to provide funds for repair.

In 1987, the Jetty Preservation Society was formed to provide a community-based fundraising campaign. Admission fees to the jetty were introduced and many donations were received. Despite a devastating fire in December 1999 that wiped out 65 metres of decking, 200 metres from the end, government bodies and the general public have rallied to provide finance, not only for repair, but for many new and innovative changes to the old structure. A passenger train now takes visitors and divers close to the end of the jetty. It leaves on the hour from an interpretive centre at the start of the jetty. The interpretive centre contains information on the surrounding areas, souvenirs, comprehensive details of the jetty's history and stunning photographs of the marine life that thrives beneath it.

As well as providing a wonderful venue for fishing, crabbing, walking and sightseeing, the Busselton Jetty is

Previous page
Main: Under the Busselton Jetty.
Insets from left: The elusive leafy seadragon has been sighted a number of times at the Busselton Jetty.
Blue-throated ascidian.
Photos – Ann Storrie
Background: Fishing from the jetty—a popular pastime.
Photo – Sue Morrison

Left: A train takes visitors close to the end of the jetty.
Photo – Sue Morrison

Right: Busselton Jetty circa 1870.
Photo – Courtesy of Busselton Historical Society.

Below right: Diving under the jetty.
Photo – Gerhardt Saueracker/Lochman Transparencies

one of the easiest and prettiest dives in the world. Thousands of invertebrates have built up around the piles, creating a bevy of colours and forms. Many species commonly seen beneath the jetty are normally only found in deeper waters or under reef ledges, but exist here because the jetty protects them from the direct rays of the sun.

UNDERWATER OBSERVATORY

Imagine wandering through a forest, where thousands of flowering plants grow on every tree, and large flocks of birds fly in and around the branches. Tiny colourful animals hide among the flowers and the birds fly so close that their wings almost touch you as they soar past. Divers and snorkellers experience something akin to this when they swim near the end of the Busselton Jetty. Thousands of coral polyps that resemble tiny flowers radiate out from every pile. Like flocks of birds, enormous schools of fish swirl though the piles, streaks of sunlight glinting on their silvery bodies.

The scene is difficult to describe to the non-diver or non-snorkeller, but that problem is about to be solved. Several years ago, an underwater observatory was proposed for the end of the jetty. After much hard work from the Busselton Jetty Environment and Conservation Association, and with many generous donations, income from jetty admissions and government backing, the underwater observatory project is under way. It is expected to open to the public in March 2003.

Around 200,000 people visit the Busselton Jetty every year. This number is expected to increase, especially after the construction of the observatory. The underwater section of the observatory is being constructed in Bunbury and will be sunk at the Busselton Jetty before the top section is completed. It will be positioned about

Above and left: Artist's impressions of the future underwater observatory. The above-ground feature still requires funding.
Illustrations – Spowers Architects

Centre left: Yellowtail scads (*Atule mate*) form enormous schools.

Below left: Red-striped cardinalfish (*Apogon margaritophorus*).
Photos – Ann Storrie

150 metres from the end of the jetty (just seaward of the burnt out section), where maximum benefit will be obtained for viewing the marine life. A set of stairs will also be constructed close to the observatory. They will run from the top of the jetty to a landing at water level to allow divers safe access to the water. The stairs will also continue to just below water level for easy entry and exit.

Animals such as sponges, sea squirts, corals and bryozoans grow on concrete quicker than on wood. In a matter of months, the outside of the observatory will become a colourful mass of the invertebrates that live on the piles. Not only will visitors within the observatory be viewing the underwater world around them, but divers will be photographing and looking at the growth of animals on the observatory walls. Divers will be employed to keep the viewing windows clean of animals and algae that will also quickly grow on glass.

The observatory will consist of a deck-level entrance, foyer, circular staircase and an observation chamber. The observation chamber will sit approximately one metre above the seabed, supported on a piled foundation. It will be nine metres in diameter, with one metre windows in

the outer wall. The circular stairwell leading to the chamber will have one metre diameter viewing windows that follow the stairwell. There will be three landings on the stairwell that will allow people to observe the different animals that live from the top to the bottom of the jetty piles and the schools of fish that swim at varying depths under the jetty. A passenger lift will enable people with limited mobility to gain access to the chamber. Forty visitors will be allowed in at any one time.

THE FISH

So what will people see from the underwater observatory? When divers first descend the eight to nine metres below the jetty, they are often overwhelmed by the big picture. Enormous schools of yellowtail scad, long-finned seapike, herring, whiting, old wives, trevally and trumpeters are just some of the fish that school around. As divers swim slowly past the piles, the fish barely move, and the number of fish making up each school is breathtaking. Divers who sit quietly on the bottom, taking in this extravaganza, may experience one of their most memorable moments beneath the water. It will also be memorable for visitors to the observatory. Smaller schools of bullseyes, cardinalfish, gobbleguts, wrasse and black-headed pullers swim close to the piles. Pairs of talma (truncate coralfish), and many species of leatherjackets, are often seen selecting food from the large number of small animals that grow and live on the piles.

Other fish prefer to feed or even live on the bottom. Gurnard perch—large, colourful scorpionfish that rely on camouflage as they sit among the rubble—wait for a meal to swim within range. Banded sea perch and harlequinfish rest on the bottom watching for a passing fish, while goatfish forage among the sand for small invertebrates.

One of the most interesting fish that lives on the bottom is the anglerfish. Several individuals live under the Busselton Jetty. They are masters of camouflage and look exactly like the surrounding sponges. They may be pink, yellow, orange or black, with skin

Above: Old wives (*Enplosus armatus*) school around the jetty piles.
Photo – Sue Morrison

Right: Juvenile western red scorpioncod (*Scorpaena sumptuosa*).
Photo – Ann Storrie

textures and bodies pitted just like a sponge. The anglerfish's fins are modified to form tiny 'feet' upon which a coating of algae aids camouflage. Although the anglerfish can move by either walking on its pelvic fins, or 'crutching' by rocking back and forth on its fins, these fish do not usually move far. Despite this, they are the fastest vertebrate predators on Earth. Their first dorsal spine is modified to form a lure, or esca, which has a small piece of tissue (the bait) at the tip. They wave this to attract other fish that, when within range, can be sucked into the anglerfish's mouth.

PILES OF LIFE

The jetty piles are covered with colourful soft corals, sponges, sea squirts, bryozoans and other animals that grow on, or encrust, the structures. Space is at a premium, and there is very little bare timber on most of the older piles of the jetty. The colours are amazing, although a torch is needed to show them in their true brilliance, as colours are absorbed by water. For this reason, artificial lighting is planned for intermittent use around the observatory.

The dominant coral that grows on the piles at the end of the jetty is a telesto soft coral. Its beautiful white polyps protrude from a matrix that looks like branches of trees sprouting from the timbers. These 'branches' are often bright red or orange, due to an encrusting sponge that grows over the pale-coloured matrix. The telesto corals also provide habitat for many other animals. The telesto nudibranch is a sea slug whose red or orange body matches the sponge-coated matrix of the telesto, and it has cerata, or outgrowths on its body, that are white and fluffy like the polyps. Decorator crabs also camouflage themselves among the corals. They pick the polyps and plant them on their backs. The coral grows happily on the crab as it now has a mobile existence.

Many other nudibranchs (see also 'Slugs of the sea', *LANDSCOPE*, Spring 1996), such as the short-tailed nudibranch, are common on the piles and among the rubble on the bottom. These colourful orange creatures are often observed mating, and they are so common here that they are often referred to as 'Busselton Jetty nudibranchs'. Another beautiful example is a bright purple aeolid with long, sausage-like protrusions (cerata) on its body. It is an uncommon nudibranch, but has been seen many times under the Busselton Jetty.

Brightly-coloured sponges, such as the rose sponge, are often eaten by nudibranchs whose colours and textures are very similar to the sponge. Other molluscs, crabs, shrimps, worms and starfish and their relatives also feed on the plentiful supply of sponges and other invertebrates on the piles. Tiny fish live among these animals. Colourful little tripplefins dart around

Above left: Several well camouflaged anglerfish (*Allenichthys glauerti*) live under the Busselton Jetty.

Left: Decorator crab (*Naxia* sp.) 'decorated' with telesto coral.
Photos – Ann Storrie

Right: Colourful telesto coral (*Carijoa* sp.) and old wives.
Photo – Peter & Margy Nicholas/Lochman Transparencies

Below right: The short-tailed nudibranch (*Ceratosoma brevicaudatum*) is found in astonishing numbers under the Busselton Jetty.
Photo – Sue Morrison

the piles, the males bobbing the bright red blotches under their chins to attract females. The false Tasmanian blenny has a wide mouth, two fluffy bright yellow antennae, known as cirri, and large, bulging eyes that can swivel in different directions. It loves to make its home in crevices in the old timber or in empty mollusc shells. It is often seen at the top of the jetty piles and, most commonly, around the piles close to the beach.

Fallen timbers, rubble, sand and silt on the bottom under the decking also provide shelter and food for many invertebrates, such as cuttlefish and octopuses. The giant cuttlefish sometimes hides under the fallen timber and, although cuttlefish do not usually inhabit permanent lairs, some have been observed for several months under the same timbers of the jetty. Octopuses make permanent lairs under the rubble or in hollows in the wood. They disguise their lairs by piling debris, rocks or shells in front of the entrances.

RESERVATION

To help preserve the magnificent environment under the jetty, the area is included in a proposed Geographe Bay marine conservation reserve, to be managed by the Department of Conservation and Land Management. Public consultation on the reserve proposal will be undertaken this year.

Many studies are being carried out on the water quality in Geographe Bay, the rich seagrass beds that surround the jetty, and the numbers and distribution of marine life in the area. Marine biological surveys carried out on the HMAS *Swan*, after its sinking near Dunsborough, showed a dramatic increase in fish life. Species increased from almost zero on that site to more

Left: The cuttlefish (*Sepia* sp.) can instantly change the colour and texture of its skin.
Photo – Sue Morrison

Below left: A diver with a gurnard perch (*Neosebastes pandus*).
Photo – Ann Storrie

than 80 within a couple of years. The *Swan* dive site has already proved to be one of the biggest attractions to divers in this State.

Fishing from the Busselton Jetty is a major recreational activity. However, application has been made to create a fishing free zone from the end to 258 metres shoreward. Since the fire in December 1999, people have not been able to reach the end of the jetty except by boat. The fish life in this area has increased dramatically during this time. John Dory and samsonfish that were occasionally seen out from the jetty now regularly swim through the piles. The schools of yellowtail scad and long-finned pike have dramatically increased, and the amount of rubbish—such as bait bags, fishing lines, sinkers, hooks, cool drink cans, plastic bags, fast food containers and thongs—under the end of the jetty has reduced.

The Busselton Jetty is a unique structure that already attracts thousands of people to this area. The construction of the underwater observatory and the proposed marine conservation reserve are exciting initiatives that will enhance the region, help to conserve the environment, and encourage people to observe the beauty around them.

Ann Storrie is a freelance writer and underwater photographer. She has co-authored two full-colour books (*The Marine Life of Ningaloo Marine Park* and *Wonders of Western Waters: the Marine Life of South-Western Australia*) that also feature many of her photographs. Ann can be contacted on (08) 9385 9355.

A book on the marine life of the Busselton Jetty by Sue Morrison, Peter Morrison and Ann Storrie will be published by the Department of Conservation and Land Management by the end of this year.

Winner of the Alex Harris Medal for excellence in science and environment reporting

LANDSCOPE

VOLUME SEVENTEEN, NUMBER 4, WINTER 2002

An exciting range of recreational opportunities are being offered in some national parks, creating employment for locals. See page 28.

Native animals need tree hollows and people need wood. How are these conflicting uses managed? See page 20.

The search to find out the cause of a new tree killer known as Mundulla Yellows. See page 41.

Declining water levels threaten a remarkable community of cave-dwellers in Yanchep National Park. Turn to page 34.

Re-discovering the long-forgotten memoirs of a Kimberely pioneer. See page 48.

COVER

Leafy seadragons are occasionally seen in the seagrass around the Busselton Jetty (see page 10). They are in the same family as seahorses but, unlike seahorses, they have leafy appendages that make them almost invisible in their surroundings. The male carries the eggs in the skin beneath his tail. After hatching, the young swim off to fend for themselves.

Cover illustration by Philippa Nikulinksy

FEATURES

REGULARS

Executive editor: Ron Kawalilak.
Editors: David Gough, Carolyn Thomson-Dans.
Story editor: Verna Costello.
Scientific/technical advice: Andrew Burbidge, Keith Morris, Kevin Kenneally, Paul Jones and staff of Science Division.
Design and production: Tiffany Aberin, Maria Duthie, Gooitzen van der Meer.
Illustration: Gooitzen van der Meer.
Cartography: Promaco Geodraft.
Marketing: Estelle de San Miguel ☎ (08) 9334 0296 Fax: (08) 9334 0498.
Subscription enquiries: ☎ (08) 9334 0481 or (08) 9334 0437.
Colour separation by Colourbox Digital.
Printed in Western Australia by Lamb Print.

Please do not send unsolicited material to *LANDSCOPE*, but feel free to telephone the editors.
Visit NatureBase at www.naturebase.net

Published by the Department of Conservation and Land Management, Dick Perry Avenue, Kensington, Western Australia.

GOVERNMENT OF WESTERN AUSTRALIA
DEPARTMENT OF Conservation AND LAND MANAGEMENT
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