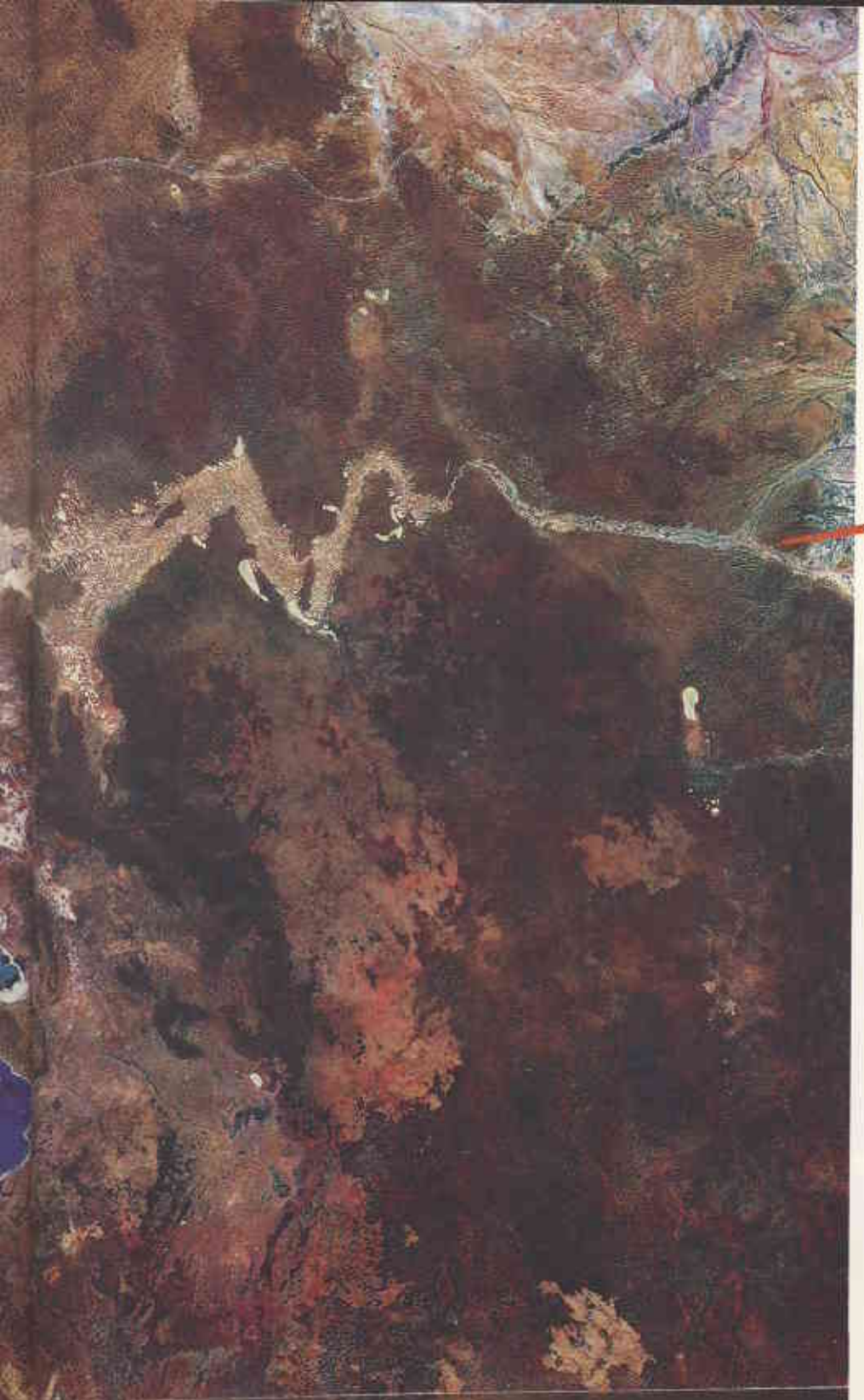

Bernier Island
Dorre Island
Cape Peron
Cape Inscription
Herald Bight
Shark Bay Marine Park
Wooramel Seagrass Bank
François Peron National Park
MONKEY MIA
Faure Island
Big Lagoon
PERON PENINSULA
DENHAM
FREYCINET
Dirk Hartog Island
NANGA PENINSULA
Eagle Bluff
Lharidon Bight
USELESS LOOP
Shell Beach
Steep Point
REACH
Hamelin Pool
EDEL LAND
Freycinet Estuary
Zuytdorp Cliffs
TAMALA



Desert Coast

One of the most fascinating places on earth straddles the 26th parallel on the coast of Western Australia.

It is one of the world's most important natural areas, but few people have ventured beyond its more popular destinations.

Carolyn Thomson joined a natural history course run by the University of Western Australia to see why Shark Bay is unique.

BY CAROLYN THOMSON

Many people go to Shark Bay just to see the dolphins, then go home without seeing what the rest of the area has to offer. But a new course offered through the University of Western Australia's extension program takes us beyond the dolphins of Monkey Mia and has managed to pack almost every feature of natural or historic significance into a four-day educational tour of Shark Bay's arid environment, described by Dirk Hartog as a 'useless southland'.

When the course members arrived in June this year, one of the first things they noticed were emus, present in their thousands. The birds had descended on the area in plague proportions, many of them having walked up to 600 kilometres from drought-stricken inland areas such as Mount Augustus to reach the water and food sources replenished by winter rains near the coast.

This was the first time the extension course had been offered by the university. Ron Shepherd, the Conservation and Land Management (CALM) District Manager at Shark Bay, who has been based in the region for over two years, was the course leader. He met the group at Hamelin Station, gateway to the world-famous stromatolites. Like many of this region's most fascinating features, the stromatolites don't look very impressive on the surface - they look like someone has strewn hundreds of mound-like rocks into the shallow water. But scientists who discovered these unique formations, as recently as the 1950s, said that their discovery was like finding a living dinosaur.

Stromatolites (see 'Lilliput's Castles' in this issue of *LANDSCOPE*) are made by tiny single-celled organisms that are among the most primitive life forms on earth, appearing some 3.5 billion years ago. The dome-shaped structures may reach beyond a metre high and some at Hamelin Pool are thought to be about 2 000 years old. Even the mud-like layer that people were walking on was a kind of smooth microbial mat.

Nearby, at Hamelin, is the shell block quarry. Millions of shells of a tiny bivalve (*Fragum erugatum*) have been deposited in beds up to 10 metres deep along a stretch of coastline. Over time, the older and lower deposits compacted together, and early settlers found that the compacted shell made a handy building material. The settlers initially used cross-cut saws to cut through the shell - today they use chainsaws! As a result, many of the buildings in and around Denham and on local stations are made of shell blocks. Today, this activity is strictly controlled and blocks can only be cut to repair existing shell block buildings.

Denham, where course participants were based for two nights, was originally a pearling base known as Freshwater Camp. Today there is no timber near Denham, or the other old pearlers' camps around the Bay, because all the wood was used to heat the large pots in which the pearlers used to boil down the oysters. The women and children had the job of keeping the fires alight. Once a week the pots would be emptied to obtain the pearls and shells, which had sunk to the bottom. The streets of Freshwater Camp were constructed from the discarded pearl shells.

A trip on board the *MV Explorer*, a charter boat operated out of Denham, gave the group an opportunity to view the bay from a different perspective. The distinctive prongs of Peron and Edel Land Peninsulas, like fingers sticking out into the sea, form the massive bay, which is one tenth the size of Tasmania.

The Bay's important marine features include seagrass, growing in vast meadows; dugongs - 10 000 of them; wide intertidal flats; and sharks. When William Dampier visited the area in 1699 he noted: 'The sea fish that we saw here are chiefly sharks. There are an abundance of them in this particular Sound and I therefore give it the name of Shark's Bay'.

SEASNAKES AND SALT

The first port of call was Useless Loop. Town Manager Roy Tarpey showed everyone over the saltworks and the town.

It is a closed town with a population of 135, established in 1962 by the Adelaide Steamship Company but now owned by Shark Bay Salt. Around 700 000 tonnes of salt are exported each year.

The group were driven out to the salt harvesting area by minibus. Here, salt water from the Indian Ocean is channelled into a series of evaporation ponds until it finally precipitates as salt crystals. Useless Loop came by its name when French explorers put longboats ashore, thinking they were at the mouth of an inland river that would be a safe harbour: today, the geographical names of Useless Loop, Useless Inlet and Disappointment Loop are testimony to their frustration.

Even here, where the salt ponds look totally barren, there is an abundance of wildlife. Edel Land Peninsula has 12 snake species, and in the water there are seasnakes and stonefish. Wedge-tailed shearwaters nest under the conveyor belt on the salt island, built on the site of a former shearwater nesting colony. Ospreys nest on the ship loader, while up to 25 000 migrating waders visit Useless Loop every winter from as far away as Siberia.

The Useless Loop community has instigated an important nature conservation program run in conjunction with CALM and the CSIRO. Local residents have erected an electric fence across Heirisson Prong, and the Agricultural Protection Board eradicated foxes, rabbits and cats from the area. Next year the CSIRO will reintroduce the endangered boodie back on to the mainland and will monitor the mammals' progress. The company will eventually hand the whole area over to the State government to manage as a nature reserve or national park.

SEAGRASS AND DUGONGS

Ron Shepherd gave a lecture on the natural history of Shark Bay to a fascinated audience.

He explained that the Shark Bay Marine Park was officially declared only a week before the visit. The park covers 1 000 nautical miles of coastline and an area three times the size of the Ningaloo Marine Park. Shark Bay has enormous biodiversity, lying on the transition line between vastly different environments: it is on the northern extremity of many species typical of the south and the southern extremity of many northern species.

The Wooramel seagrass bank is the most striking and important feature of the park (see 'Grasses of the Sea' in this issue of *LANDSCOPE*). Other marine life includes tropical species typical of

Pages 10-11
Main: Landsat imagery of Shark Bay supplied from the Australian Centre for Remote Sensing (ACRES) and digitally enhanced by the Remote Sensing Applications Centre.
Department of Land Administration, WA

Cape Peron in the new François Peron National Park.
Photo - Carolyn Thomson

Emus are common in the Shark Bay area.
Photo - Jon Green

Top right: The Zuytdorp Cliffs, south of Shark Bay, are buffeted by heavy swells.
Photo - M&I Morcombe

Town Manager Ray Tarpey at the Useless Loop saltworks.
Photo - Carolyn Thomson

Green turtles are often found in the shallow seagrass beds.
Photo - Jiri Lochman

CALM District Manager Ron Shepherd examines seagrass from the Shark Bay Marine Park.
Photo - Carolyn Thomson

Curious dugongs often come to investigate boats and human visitors to the Bay.
Photo - Van Worley

Ningaloo, as well as temperate species found near Perth.

Aborigines have inhabited the Shark Bay region for many thousands of years and at least 103 Aboriginal sites are documented on Peron Peninsula. They were probably among the first Australian Aboriginals who had contact with Europeans. It is believed that the survivors of the *Zuytdorp* wreck made it to shore and may have integrated with the local Aborigines, becoming the first European inhabitants of Australia. Genetic research is under way to investigate this theory.

With the lecture over, the boat was on the move again. Several large pods of dolphins, often accompanied by calves, were spotted and the boat stopped several times to give everyone the chance to watch them at close quarters. The Shark Bay dolphins are accustomed to people and they often treat visitors to synchronised swimming displays, with four or five dolphins surfing the same waves together. This time they also accompanied the boat, swimming around and under it for several minutes.

Eventually, the *Explorer* anchored on a shallow seagrass bed, where an ancient green turtle was sitting motionless on the sea floor, only a few metres from the boat. It soon decided to come up for a breath of air and a swim. The bulky old animal may have been anywhere from 30 to 70 years old.

The most intrepid members of the group ventured into the Bay's cool winter waters with wetsuits and snorkels to see what they could spy in the seagrass. Ron Shepherd brought up some sea cucumbers, various molluscs and some seagrass, and everybody returned to the boat to examine his finds and have lunch. When he swam out to look for a bailer shell, a curious dugong came to investigate and made a slow circuit around the boat, giving everyone a good opportunity to see one of these shy mammals. It was the first dugong of the year to be seen in this spot, which is a favourite winter feeding area. Male animals are often solitary but females generally live in herds, affording protection for the young calves. The large brown animals are fairly slow-moving.

Twice in the last decade a number of killer whales herded a big group of dugong into a shallow bay and embarked on a killing and feeding frenzy. The fishermen who went out to investigate what they thought was a large school of fish came face-to-face with huge dorsal fins slicing through the red and boiling water, and made a hasty retreat.

After lunch the boat moved through South Passage, between the mainland and Dirk Hartog Island, to reach Steep Point, the westernmost point of Western Australia. It was fairly calm, and the boat continued for a couple of kilometres along the Zuytdorp Cliffs, named after the Dutch merchant ship *Zuytdorp*, wrecked along this coast in 1712. The

cliffs are a magnificent sight, rising to 170 metres above sea level. They are greatly undercut by the heavy swells of the Indian Ocean, which constantly buffet and tear away at the limestone.

Later, the *Explorer* anchored just off Dirk Hartog Island. The passengers enjoyed a spectacular sunset while boat operators Al and Kaye Dyson prepared a fish barbecue. It was a fitting end to an enjoyable and enlightening day.

WILD DOLPHINS

No trip to Shark Bay would be complete without a visit to the dolphins of Monkey Mia. These wild animals have been coming to the beach for 30 years of their own free will to interact with humans. They are not the only regular visitors to Monkey Mia - dolphin researchers from the University of Michigan have been based in the area since the early 1980s.

A big group of people, which included members of the course and other interested passers-by, gathered on the beach to hear researcher Andrew Richards impart some fascinating information about dolphin social dynamics and other aspects of the research. But the talk was cut short when the dolphins came in to the shore, and everyone deserted the scientist to meet the animals.

Before heading to the State's newest national park, most of the people in the group took the chance to explore the Monkey Mia Nature Trail, which crosses the coastal dunes to the red sandhills and returns along a quiet beach.

PARK AT PERON

Peron Station was purchased by the Government in October last year in order to establish a national park. The peninsula and the new national park are named after François Péron, who was aboard the *Géographe* during its explorations along the Western Australian coast in 1801 and 1803.

Peron's natural features include the dramatic colour contrasts of the coast at Cape Peron, at the end of the Peninsula. Big Lagoon is another scenic feature. Many of the interdune depressions contain evaporite pans called birridas. The pans range from 100 metres to a kilometre wide and several contain marine lagoons.

The park is covered in low acacia shrubland which is home to the thick-billed grass wren, once widespread in the arid areas of the State but now restricted to a small area that includes Peron. Since CALM took over the management of the area, 16 500 sheep, 1 000 goats, a small number of horses and cattle, and many kilometres of fenceline have been removed from Peron during its conversion to a national park.

The old homestead provided the ideal spot for a bush barbecue and billy tea, and some of the group members took a refreshing dip in the artesian bore, the only water available at the station.

The next day, group members readied themselves for the return to Perth and the routine of their nine-to-five jobs. But they hadn't quite finished with Shark Bay. On the way to the main highway, the bus pulled in to Shell Beach, a stretch of coastline about 60 kilometres long, where billions of *Fragum* shells have been deposited 25 to 30 feet deep.

There was also a chance to examine the unique Shark Bay sandalwood, which differs from that found in other parts of WA. Sandalwood was one of the State's major exports late last century and early this century. This small tree is a semi-parasite that partly feeds from the roots of other plants. The heartwood is highly valued in South East Asia for its aromatic oils. Sandalwood growth is very slow; in the arid regions it takes 50 to 90 years to reach 125 mm in diameter. In the Shark Bay region, sandalwood regrows from the stump. Research also indicates that it grows and regenerates much faster than in other arid areas.

The Shark Bay region is an acquired taste. But those who take the time to look past the friendly dolphins never fail to fall in love with this unforgettable place.

Dolphin researcher Andrew Richards talking to the course participants about his work at Monkey Mia.
Photo - Carolyn Thomson

Group members were treated to a bush barbeque at the Peron Homestead.
Photo - Carolyn Thomson

Carolyn Thomson is a CALM Communications Officer and the editor of *North-West Round* and *Wildflower Country*. She can be contacted at CALM Corporate Relations Division on (09) 389 8644. The Shark Bay course will be run again in 1992. Those interested in participating should contact Jean Collins at the University of Western Australia on (09) 380 2579.

LANDSCOPE

VOLUME SEVEN NO.2 SUMMER EDITION 1991-92

When European scientists first set foot on our shores they found a bewildering array of animals and plants. Péron the Explorer *takes an intimate look at the French scientist whose name lives in Western Australia's newest national park. See page 20.*

This tour of the Gascoyne's desert coast guides you through Shark Bay and WA's newest national park. See page 10.

Close to where the fictional Gulliver is believed to have been shipwrecked lives one of the world's oldest organisms. Lilliput's Castles, *on page 34, describes the creatures and the ecosystem they have built.*

Seagrass covers 3 700 square kilometres of the ocean floor around Shark Bay. Grasses of the Sea, *on page 42, takes us on a journey through these underwater meadows.*

At first glance, Shark Bay is dry, arid and inhospitable. But if you look more closely you discover its Hidden Treasures. *See page 16.*

F E A T U R E S

R E G U L A R S

C O V E R

Green turtles (Chelonia mydas), *the commonest turtles found along our coast, begin to congregate in the waters of Shark Bay from the end of July. The Bay is the southernmost nesting area for these long-lived animals. During summer, female green turtles lay their eggs on the white sandy beaches of Bernier, Dorre and Dirk Hartog Islands, and occasionally at the northern tip of Peron Peninsula. Illustration by Philippa Nikulinsky.*

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