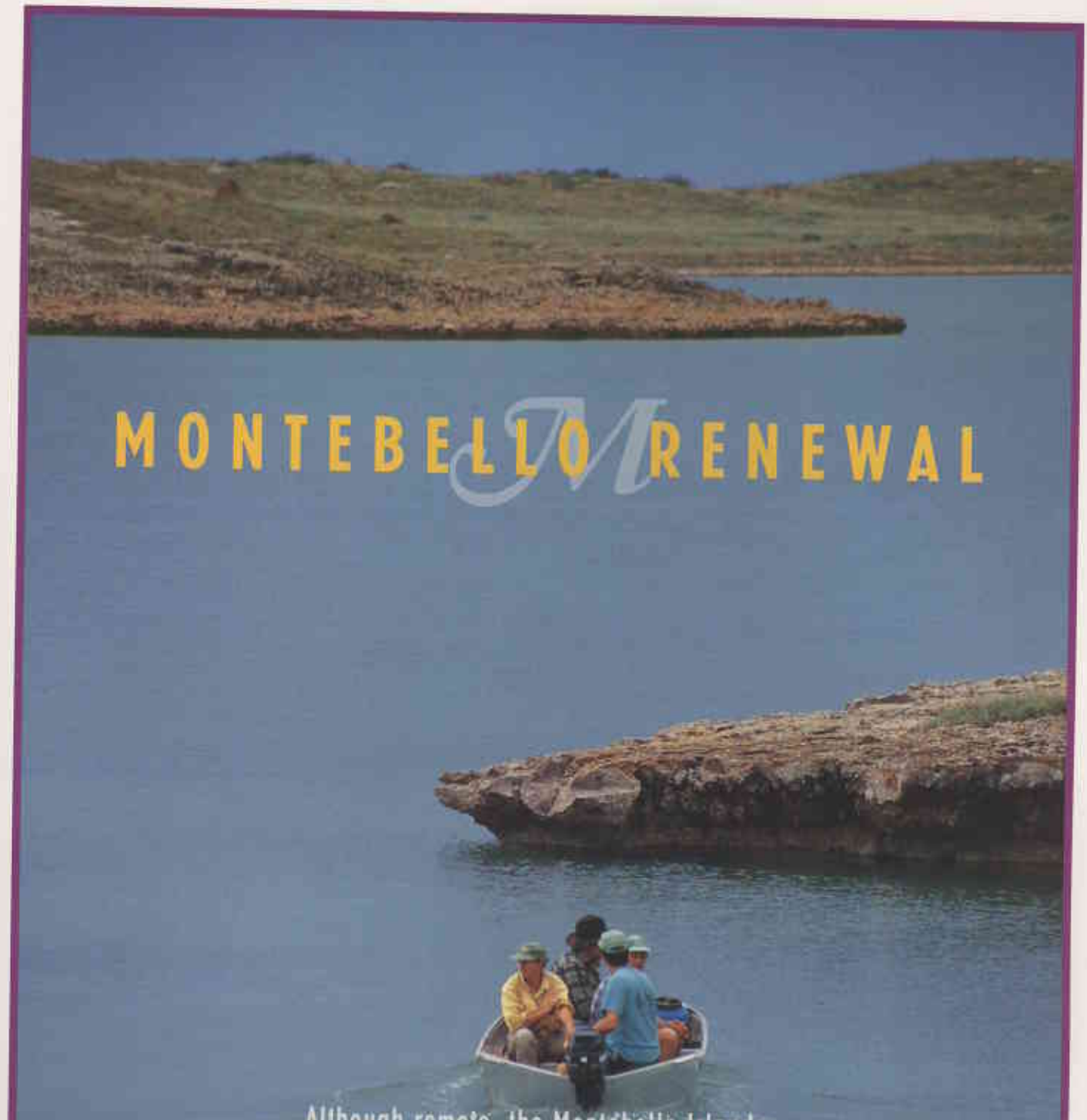


MONTEBELLO RENEWAL

Although remote, the Montebello Islands, off the Pilbara coast, have suffered considerable abuse at the hands of humans. *Montebello Renewal*, part of CALM's major wildlife conservation initiative code-named *Western Shield*, is designed to remedy some of that abuse.

BY ANDREW BURBIDGE

In 1912, P D Montague, a scientist sponsored by the prestigious Royal Society of London, spent three months on the Montebello Islands making scientific collections for the British Museum. While collecting specimens of the many species of native animals, he noted two aliens—black rats (*Rattus rattus*) and feral cats (*Felis catus*). He also found evidence of two species of native mammals on the 1022-hectare Hermite Island, the largest island in the group. One of these species, the golden bandicoot (*Isoodon auratus*), had recently become extinct and, because of the presence of cats, Montague predicted the same fate for the second species, the spectacled hare-wallaby (*Lagorchestes conspicillatus*).

Montague believed the rats and cats originated from a shipwreck in the 1890s. However, the most probable cause was that they escaped from the many pearling vessels that operated in the area late last century, as rats became established on several other Pilbara and Kimberley islands around the same time.

Later visitors to the islands found Montague's prediction about the hare-wallabies to be correct. They also found

that two species of birds had become extinct—the black-and-white fairy-wren (*Malurus leucopterus leucopterus*) and the spinifex-bird (*Eremiornis carteri*). Rakalis (water-rats, *Hydromys chrysogaster*) had also been recorded at the Montebellos, but have not been seen for some time.

The next major disturbance to the islands' environment was in the 1950s, when they were used by the British as a site for testing atomic weapons. In 1952, Operation Hurricane began. A nuclear device was exploded below the waterline in a Royal Navy frigate, HMS *Plym*, off Main Beach at Trimouille Island. Another series of tests, code-named Operation Mosaic, occurred in 1956. In these tests, two weapons were exploded on 30-metre towers, one at Gladstone Point on Trimouille Island and another near Burgundy Bay on Alpha Island. When the British shifted their nuclear weapons' testing program to Maralinga in South Australia, many tonnes of equipment used in the military operations were left lying around to rust (see 'Beyond the Bomb', *LANDSCOPE*, Winter 1988).

Until July 1992, the islands were officially a Prohibited Area under Commonwealth legislation. However, this did not stop numerous visits, including some biological survey work, from being undertaken. It merely prevented anyone suing the Commonwealth for damages if they had been injured or become ill as a result of the nuclear weapons program.

The islands were returned to Western Australian control and declared a Conservation Park in 1992. They are

Previous page
After a hard day's work, a work crew sets out to catch dinner on Stephenson Channel, Hermite Island.
Photo – Jill Pryde

Below: Hermite Island. Hurricane Hill Hut can be seen in the foreground.
Photo – Bill Morrow

vested in the National Parks and Nature Conservation Authority (NPNCA) and managed by the Department of Conservation and Land Management (CALM). A cultured pearl farm is located in sheltered waters within the archipelago, and there is an increasing use by tourists, especially for fishing expeditions.

AFTER THE BOMBS

The black rats and feral cats survived the nuclear weapons' testing program and remained a major barrier to any attempt at reconstructing the native fauna and using the islands as a haven for species threatened by feral predators on the mainland. For some time, CALM had intended to eradicate the rats and cats, and initial funding from the Commonwealth enabled planning to get under way.

Carrying out biological surveys of the islands was the first step, so as to document what occurred there and to ensure that the eradication techniques employed did not affect native species. This work, which was assisted by the Pilbara Regiment of the Australian Army, revealed only two species that might take poisoned grain or pellets—the bar-shouldered dove (*Geopelia humeralis*) and the brown quail (*Coturnix australis*). A bait station, which allowed the entry of rats, but prevented these birds having access to poison, was developed and field-tested on one island in August 1995. Follow-up surveys showed that rats were successfully eradicated, with no known bird deaths.

Bait stations and rat poison ready for transport to equipment dumps. Hurricane Hill Hut is in the background.
Photo – Andrew Burbidge

Bait and bait stations slung under the helicopter on its way to an equipment dump.
Photo – Bill Morrow

The next step was to repeat the exercise on all the islands in the archipelago. Black rats can easily swim at least a kilometre between islands, so it was necessary to eradicate them on all islands in the Montebellos at the same time. Cats once occurred on at least the two larger islands, but the surveys showed that they had died out on Trimouille, leaving a single population on Hermite Island.

The scale of the operation soon became apparent. CALM's previous experience with rat eradication on islands showed that bait stations needed to be established and serviced on a 50-metre grid. Calculations showed that about 11 500 bait stations would be needed and that the operation would take eight people three months to complete. The difficulties of working in a remote area compounded the logistical problems associated with the project.

CALM established a transportable building and store on Hermite Island in 1993, which was to be the base for the operation. Dubbed 'Hurricane Hill Hut' (partly because of its exposure to the frequent strong winds that occur in the

Barge *Karinyah II*, supplied by West Australian Petroleum (WAPET), unloading at Hermite Island.
Photo – Andrew Burbidge

area during the cooler months, and partly derived from Operation Hurricane), this building was too small and not sufficiently equipped to cater for the eight people needed for the project for several months. The remoteness of the area also meant considerable logistical difficulties in getting equipment and people to and from the islands.

HELP WANTED

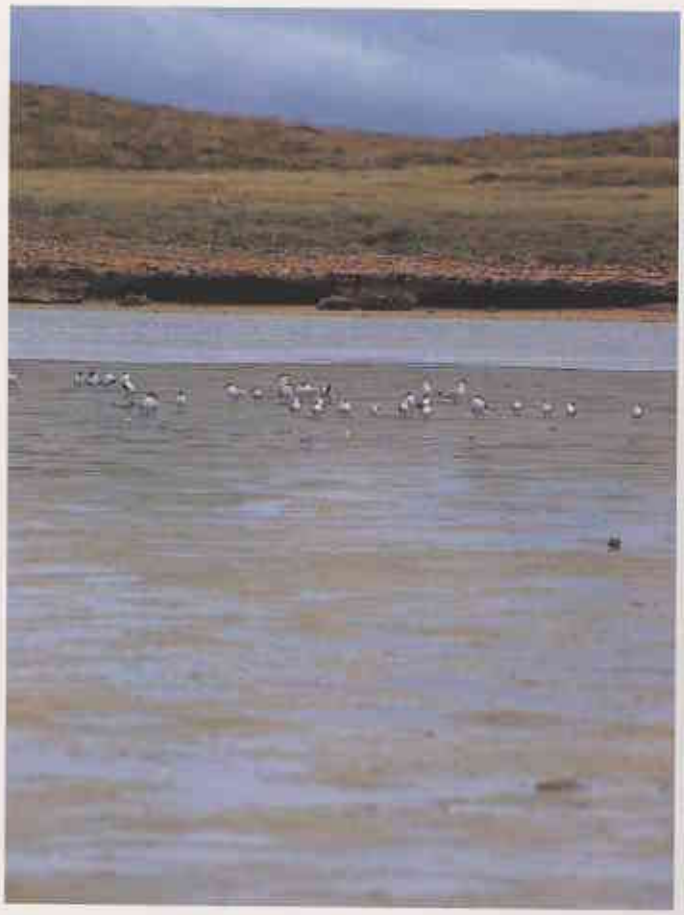
It soon became apparent that the project would not be possible without support from industry and volunteers. CALM sought help from sponsors, particularly from the oil companies that operate in the area. West Australian Petroleum Pty Ltd (WAPET) came to the rescue as *Montebello Renewal*'s major sponsor and provided a barge to transport the fuel, dry food and other equipment needed for the project, and to remove equipment, empty fuel drums and rubbish left after the program was completed. WAPET also provided seats every week, free of charge, on their charter flights between Perth and Barrow Island to enable 'crew changes' of staff and volunteers. The crews were then picked up from Barrow Island airport, 40 kilometres away, by helicopter, or by boat from WAPET Landing, near the northern end of Barrow Island.

Apache Energy donated seats on their helicopter between Karratha and Varanus Island (20 kilometres south-east of Hermite) and also provided fresh food every fortnight and helicopter support. The 13 800 plastic bottles used for the bait stations were supplied free of charge by ACI Plastics Packaging, a major sponsor of *Montebello Renewal*. The rodenticide used was Talon G, manufactured by Crop Care Australasia, who supplied 3.5 tonnes

Top left: Phil Fuller services a bait station on Carnation Island.
Photo – Andrew Burbidge

Centre left: One of the baiting crews. Rear – Brent Johnson, Jill Pryde, Martin Clarke, Andrew Burbidge, Jane McRae and Howard Robinson, front – helicopter pilot Tony Scolori, and Diana Papenfus.
Photo – Jill Pryde

Left: Jill Pryde, Jane McRae, Brent Johnson and Howard Robinson placing bottles onto lengths of light rope.
Photo – Martin Clarke



Above left: Caspian and crested terns on the Hermite Island mudflats at low tide.
Photo – Jill Pryde

Above: White-breasted sea-eagle nest with dead rat on Brook Island.
Photo – Martin Clarke

at a discount price. The bait stations were either pinned to sand with wire pins (17 000 were used) or glued to rock with Selley's All Clear, some of which was donated by Selley's Chemical Company. Australian Customs Service vessels delivered spare parts and special orders during their patrols. The total value of sponsorships for *Montebello Renewal* was more than $75 000.

A call for volunteers within CALM produced more than enough people to run the project, and names had to be drawn to choose those who would go. In all, 24 volunteers donated two weeks of their holiday time to the project. This equated to a value of more than $50 000.

Hurricane Hill Hut was modified by enclosing the verandah with tarpaulins, and volunteers slept in tents erected near the hut. A new generator was purchased, which, together with a reverse osmosis plant, overcame the lack of fresh water. About 1.2 million litres of salt water were pumped 130 metres from a nearby channel to produce 13 000 litres of fresh water during the three months of the project. A helicopter was chartered for the first four weeks of the project, when all the outlying islands were baited and equipment dumps installed on the other islands. After this, CALM's vessel *Pseudorca II* carried the baiters around the islands and transported people and food between the Montebellos and Barrow and Varanus Islands.

After the bait stations were put in place, they were partially filled with Talon G. Four to seven days later, each bait station was revisited to top up the bait as necessary. Sometimes, the bottle had to be replaced as the rats, in their eagerness to get at the bait, would chew large holes in it. Then, another four to seven days later, each station would be visited and checked again. On some islands, with particularly heavy rat infestations, the bottles had to be visited a fourth time. In total, the work crews walked about 2 500 kilometres.

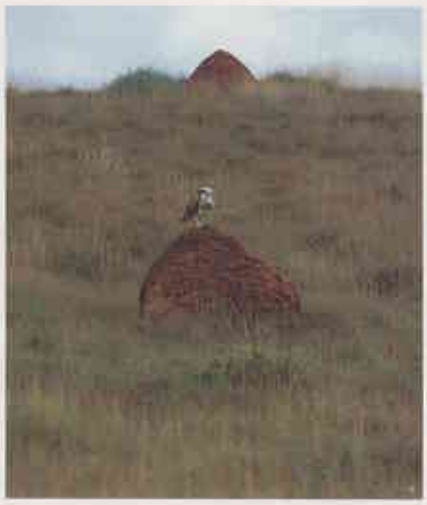
More than 80 islets and rocks were 'bombed' with plastic bags containing Talon G, three times from the helicopter and once from the boat. Bait stations were unnecessary as islets are not visited by grain-eating birds.

ISLAND LIFE

Working on the Montebello Islands during winter sounds idyllic, and at times it can be, but the baiting crews had to put up with discomforts as well—biting sandflies, unseasonable heavy rain, strong winds causing rough seas, and walking long distances, frequently on very rough terrain. During June, exceptionally heavy rains fell in the Montebellos, with more than 90 millimetres falling in one day. The rain caused some of the Talon G pellets to rot, necessitating the re-baiting of the whole of Trimouille Island and some other areas. In July, further rain fell from the remnants of a tropical cyclone.

Added to this was the necessity of working in areas with residual low-level radiation, a legacy of the nuclear weapons tests. Everyone wore personal gamma dosimeters (which measure exposure to gamma rays) and when walking in the two radiation zones—one on Trimouille and one on Alpha Island—wore dust masks to minimise exposure to alpha particles.

Montebello Renewal was a real team affair. Some 45 people were directly involved in the project, with many others providing support. The project brought



Above: An osprey perched on a termitarium on Hermite Island.
Photo – Jill Pryde

Left: Unseasonable rain caused problems for walkers and increased the food available to feral cats.
Photo – Jill Pryde

together CALM staff who would not normally work together and, in many cases, had never met each other. All brought the same enthusiasm and dedication to the job, and all returned home with the feeling that they had made a positive contribution to a worthwhile venture.

NATIVES UNTROUBLED

During the latter part of the project, all islands in the archipelago were checked for rat activity, and all indications were that the project had been successful. However, the islands will need careful monitoring over the next few years before eradication can be assured. Should any rats remain, further baiting will take place as required.

The islands were also checked for native fauna. No deaths of native fauna could be attributed to the project—bar-shouldered doves were still abundant, ospreys (*Pandion haliaetus*) were incubating eggs or raising young, and reptiles, including bungarras or sand goannas (*Varanus gouldii*), were still abundant. Spotted and marsh harriers (*Circus assimilis* and *C. approximans*), brahminy kites (*Haliastur indus*), black-shouldered kites (*Elanus notatus*) and Australian kestrels (*Falco cenchroides*) appeared to be as abundant as they had been before baiting commenced. One dead brahminy kite was found on Trimouille Island and may have died from secondary poisoning (from eating dead or dying rats), but it had been dead for some time and the cause of death could not be determined.

Early in the project the crews were concerned to see a pair of white-breasted sea-eagles (*Haliaeetus leucogaster*) eating dying rats on one island. However, they noted that only the flesh was being eaten, not the stomach and intestines that contained the poison bait. Late in the project, this island was re-visited and it was pleasing to see that the sea-eagles were still present and apparently healthy. There was no sign of rats.

In August, cat baits were laid on Hermite Island from a helicopter provided by Apache Energy. The baits used were those developed by CALM's cat researchers and have proved successful in controlling cats under certain conditions. Unfortunately, track counts on beaches revealed no significant reduction in cat numbers. This was probably because of the exceptionally good season that prevailed in the Montebellos during 1996, as research results suggest that cats, which are primarily live hunters rather than carrion feeders, will not take baits when there is abundant natural live food. So cat control will have to continue, perhaps for some years.

As the last people moved out of Hurricane Hill Hut at the end of August, a pair of welcome swallows (*Hirundo neoxena*) moved in to build a nest on the verandah beams. With no rats, many species of animals will now be able to raise young without the threat of unwarranted predation.

Montebello Renewal is now well under way. Work in the future will concentrate on monitoring for any remaining rats and controlling cats. Once the rats are declared eradicated, introductions of threatened species to some islands can begin. And once the cats are gone, the reconstruction of the fauna that Montague recorded over 80 years ago can begin.

Andrew Burbidge is Director of CALM's WA Threatened Species and Communities Unit and is based at CALM's Wildlife Research Centre at Woodvale. He can be contacted on (09) 405 5128 or by e-mail at andrewb@wood.calm.wa.gov.au.

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- Selley's Chemical Company
- The Pilbara Regiment, Australian Army
- Australian Customs Service

... and last but not least, the volunteers!

LANDSCOPE

VOLUME TWELVE NUMBER 2, SUMMER 1996–97

Shannon National Park is the home of the Great Forest Trees Drive, another nature-based tourist attraction for the south-west. Read the story on page 17.

The rugged Kimberley coast was the location of the first maritime LANDSCOPE *Expedition. Read all about it on page 10.*

A huge volunteer effort has helped with the renewal of the Montebello Islands and the eradication of feral animals. (See page 47.)

Science has long-known the relationship between plants and habitats. Now we are 'Prospecting for Plants' using landforms as a guide. (See page 23.)

One hundred years ago, two members of an expedition to the Great Sandy Desert became lost. Read what happened to them in 'Land of the Lost' on page 36.

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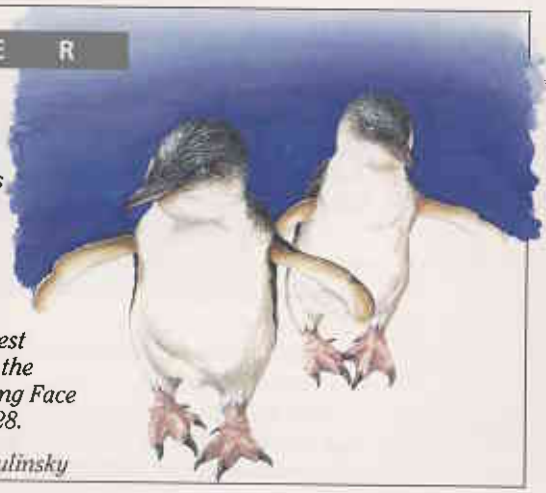
*The scientific name of the little penguin (*Eudyptula minor*) means 'little diver'. The wings of these flightless seabirds have evolved into flippers for underwater propulsion. The little penguin is the smallest of the 17 penguin species. Penguin Island has the largest colony of little penguins on the west coast. See 'The Changing Face of Penguin Island' on page 28.*



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