Return to Mondrain

In March 2002, a large wildfire ignited by lightning burnt more than 80 per cent of Mondrain Island, about 42 kilometres south-east of Esperance in the Recherche Archipelago. When Department of Conservation and Land Management (CALM) researchers visited the island the following November some species could not be found. What would they find exactly two years later?

On our November 2002 island visit (see *LANDSCOPE*, Spring 2004), many shrubs and trees had resprouted, while seedlings of other species carpeted the ground. However, a few species of plants and animals could not be located, or were present only in low numbers, and we feared that such a large fire had the potential to cause population extinctions. So we returned in November 2004 to check on these species and to resample our vegetation quadrats established in November 2002.

Anxious return

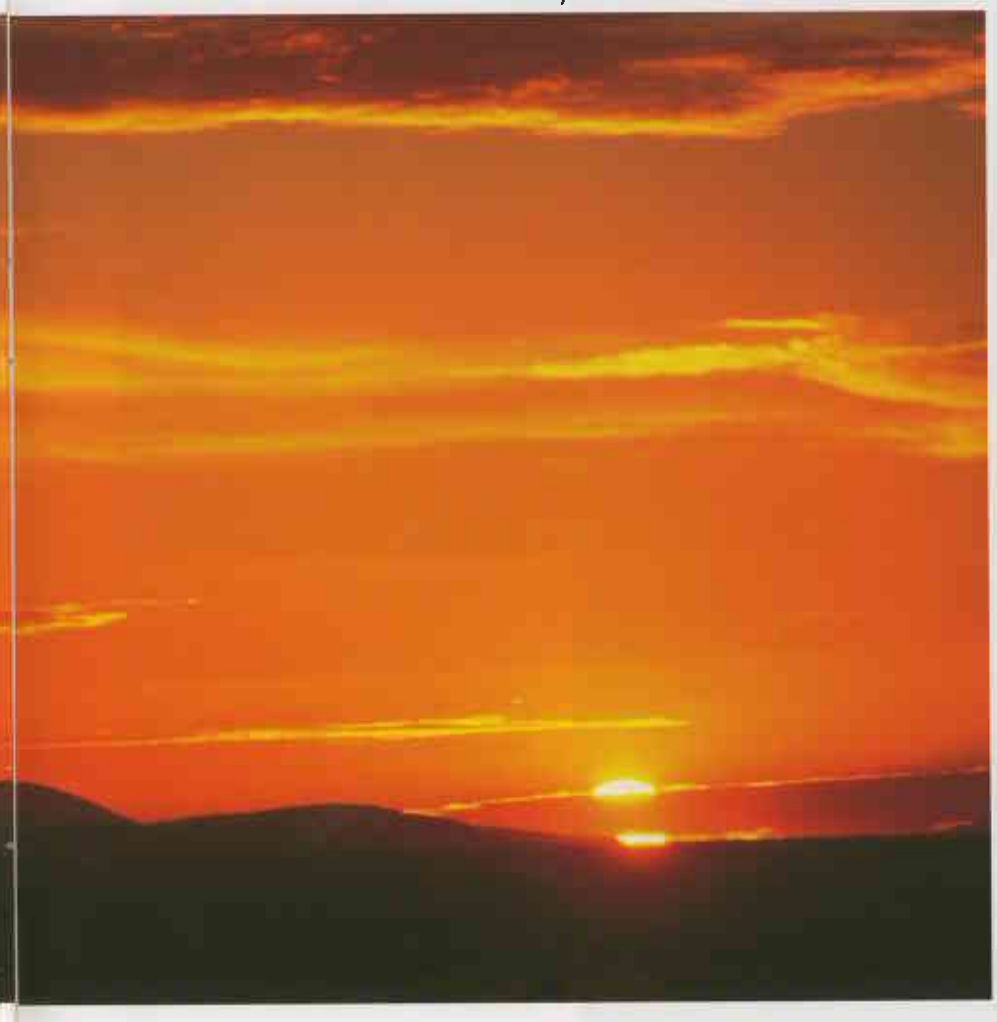
As a boat containing CALM staff David Pearson, Sarah Comer, Anne Cochrane, Ryan Butler and Sandra Gilfillan edged away from the mainland en route to Mondrain Island, we were greeted by a large rolling southerly swell. Landing on the northern end of Mondrain Island is tricky when a swell is running, but despite getting drenched we landed safely and set up camp.

The first thing we noticed was the incredible regrowth behind the landing site, creating a surreal green backdrop with blackened trunks still protruding skyward. Dense climbers, especially climbing lignum (*Muehlenbeckia adpressa*), trailed over the top of this regrowth, and made walking through the bush difficult and exhausting. Another big difference was the vibrant chorus of scrub-wrens, singing honeyeaters and silvereyes in regenerating scrub near our camp.

Dense regrowth

The following day, the botanists set out to score their distant vegetation plots, a daunting task since the regrowth was dense and above head height. It was interesting to note the turnover of species since our last visit. Some species that were highly visible in November 2002 were no longer abundant. These included short-lived species that colonise areas after fire, like Hooker's sida (*Sida hookeriana*) and native parsnip (*Trachymene pilosa*). More long-lived species were now abundant and fruiting, such as large-flowered rulingia (*Rulingia grandiflora*) and lilac hibiscus (*Alyogyne huegelii*). Large swathes of native albizia (*Paraserianthus lophantha*), more than five metres tall, impeded movement in the gully behind the campsite, as did the impressive regrowth of coastal moort (*Eucalyptus utilis*). A number of peas and wattles had flowered and fruited, and were in the process of releasing seed to replenish the soil seed bank. Two plant species (*Phyllanthus* and *Pimelea*) that were abundant in 2002 were noticeably absent in our woodland plots in 2004, although the plots themselves had almost 100 per cent ground cover. The king leek orchid (*Prasophyllum regium*) was no longer seen in our heath plots, and these sites, bare and sandy in 2002 (90 per cent bare sand) now had less than 25 per cent bare ground,

by David Pearson, Sarah Comer and Anne Cochrane



Opposite and this page
Above from left Bushfire.
Photo – Len Stewart/Lochman Transparencies
Sunrise at Mondrain Island.
Photo – Jiri Lochman
Bearded dragon.
Photo – Anne Cochrane

demonstrating the amazing growth over the past two years. In contrast, the number of species scored within each plot had diminished, attesting to the dominance of annual and biennial species in the early post-fire years.

Any survivors?

David began searching for signs of reptiles and mammals. Mondrain Island has a rich assemblage of reptiles but, in November 2002, death adders (*Acanthophis antarcticus*) were not observed and only a small number of carpet pythons (*Morelia spilota*) and few dead lizards were located. Had slow-moving species such as death adders and bobtail skinks survived the fire?

In 2004, fence skinks (*Cryptoblepharus virgatus*) were common, running up and down blackened trunks, while red-legged skinks (*Ctenotus labillardieri*) and ornate rock-dragons (*Ctenophorus ornatus*) scuttled away under rocks. A lone bobtail was seen picking its way through a maze of fallen branches. In patches of unburnt woodland around granite boulder piles, black-footed rock-wallabies (*Petrogale lateralis*) basked in the sun, and their tracks and droppings indicated that they were moving far out into the burnt areas, attracted by succulent green feed.

After sunset, we waited for fleshy-footed shearwaters to return to their burrows to feed their chicks and rest. Before the fire, hundreds of shearwaters would arrive each evening, wheeling silently on long wings, before crashing ingloriously into the bush alongside their burrows and wailing to their mates and chicks. Many adults and chicks died in the fire and only a handful appeared each evening in the burnt areas near our camp. These long-lived birds return to the same nesting burrows year after year, so their populations could take decades to recover.

Trapping undertaken over two nights captured eight bush rats (*Rattus fuscipes*) in unburnt vegetation, versus 17 in burnt woodland, showing that bush rats had quickly colonised burnt areas after the fire.

Slippery customers

After four days of walking and almost giving up hope, we saw our first death adder, basking at the edge of unburnt vegetation. Another was seen the next day on the other side of the island. It was great to find evidence that

Above Regrowth with burnt stags.
Photo – Anne Cochrane

Left A fleshy-footed shearwater at its nest.
Photo – John and Val Butler/Lochman Transparencies

Bottom left Death adder.
Photo – Jiri Lochman

some had survived, but how long would it take for them to recolonise the island when their main prey of small skinks seemed to be so reduced?

The overcast weather wasn't ideal for finding crowned snakes, which were present in large numbers on our two previous visits to the island after the fire. Four were found, one a female with six embryos (they bear live young). This species presumably survived the fire by retreating into burrows, but—as with death adders—their main prey of skinks had not survived as successfully. Fortunately, snakes have slow metabolic rates and can go without food for months, allowing them to cope with food shortages.

Only two carpet pythons were found in the first three days. But on day four Ryan stumbled across a rare and amazing sight—a tangle of carpet pythons on a granite slab near the ocean. Five males were entwined around a larger female, and one had his tail linked to her in a mating embrace. Another male was tightly coiled away

Above *Acacia subcaerulea.*

Right Phenomenal regrowth on Mondrain Island two-and-a-half years after the fire.

Below right Lilac hibiscus (*Alyogyne huegelii*).
Photos – Anne Cochrane

from the main group, as if annoyed at not being involved. So intent were the pythons on their serpentine sex that they paid little attention to us!

Unexpected find

On the eastern side of Mondrain Island, near a small soak at the ocean edge, large numbers of rock-wallabies were seen scurrying amongst the deep crevices that split the granite. Anne startled a small bird when she sat down nearby, and it darted under a rock. One by one, we peered under the rock, one cheek resting in the water to get low enough. None of us recognised this unusual bird in the dim light, but after consulting a bird book we realised we had seen the first spotless crake ever recorded in the Recherche Archipelago.

It would appear that the rapid growth of native plants, through both resprouting and seedling regeneration has provided insects, birds, mammals and reptiles with sufficient habitat and a food source to enable recovery after fire.

Fire is a powerful force across

Above Spotless crake.
Photo – Stuart Miller/Lochman Transparencies

Left Black-footed rock-wallabies.
Photo – Babs and Bert Wells/CALM

Below Boat leaving Mondrain Island.
Photo – Anne Cochrane

Western Australia, even on its southernmost islands. The 2002 wildfire on Mondrain Island will continue to impact on the wildflowers and wildlife for years. All reptile, mammal and bird species previously known from the island survived the fire to varying extents. Some will recover rapidly and reoccupy the regenerating vegetation. Others, such as death adders, which bear young infrequently, may take decades to recover to their former numbers.

Despite the damage that fire causes, it also initiates a remarkable birth and renewal process. Opportunistic plant species that have waited in the soil as seed finally germinate, grow, flower and set seed, only to disappear once again. Large and woody shrubs are cleared away for new and vigorous growth. It appears that the rapid growth of native plants has provided insects, birds, mammals and reptiles with sufficient habitat and a food source to enable recovery after fire.

We hope to be able to continue to monitor the recovery of plants and animals on Mondrain Island over the next decade, in order to improve our understanding of the impacts of wildfire on island communities and so guide decisions on whether or not to intervene when lightning strikes these islands.

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