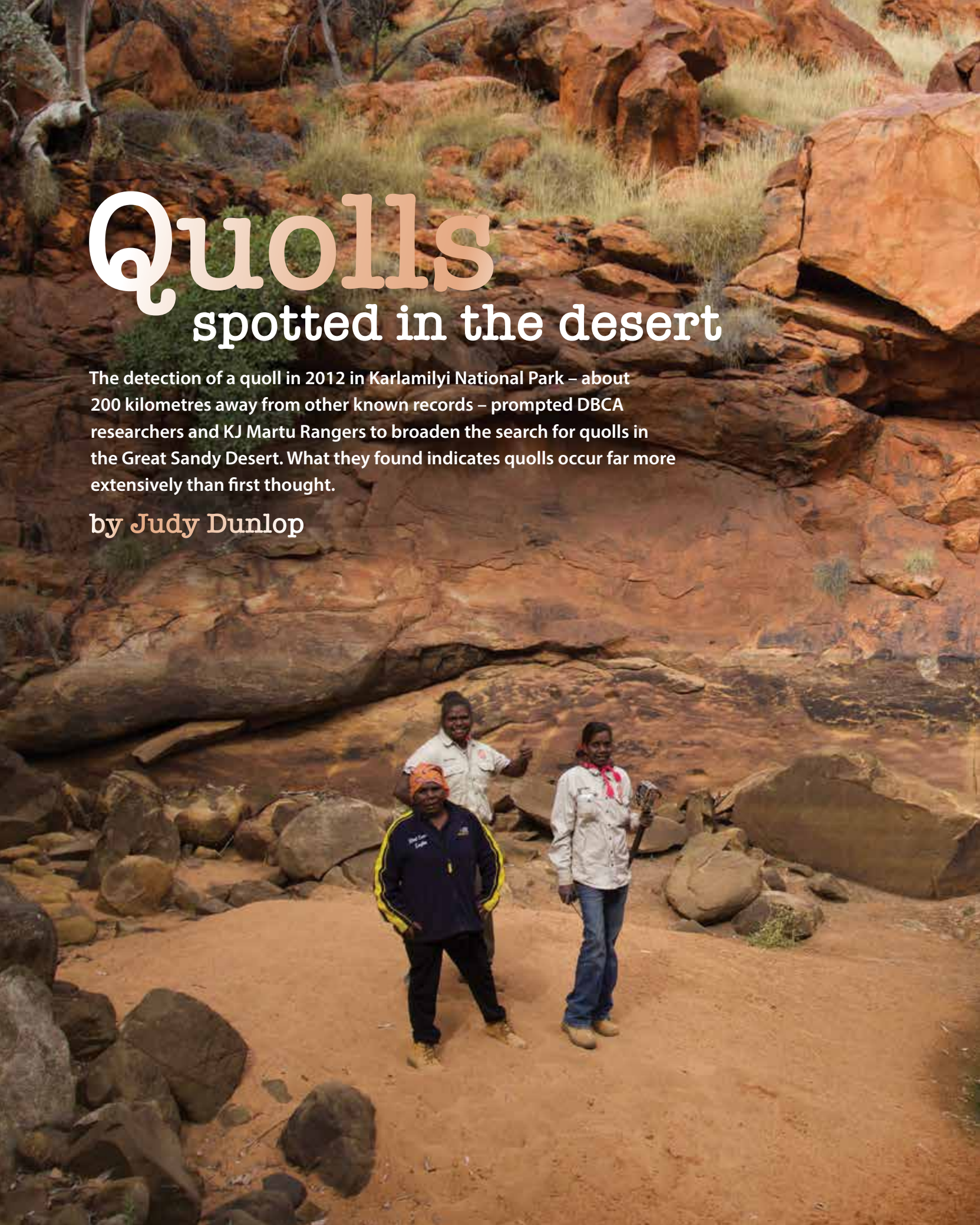
Quolls
spotted in the desert

The detection of a quoll in 2012 in Karlamilyi National Park – about 200 kilometres away from other known records – prompted DBCA researchers and KJ Martu Rangers to broaden the search for quolls in the Great Sandy Desert. What they found indicates quolls occur far more extensively than first thought.

by Judy Dunlop



In 2012, ecologists who were working at Desert Queen Baths in Karlamilyi National Park – Western Australia's largest and most remote national park – set up motion-sensing cameras to observe what animals were living in the area. The cameras snapped a number of species going about their gorge-dwelling lives. But one animal in particular piqued our interest. The cameras captured a lone northern quoll (*Dasyurus hallicatus*) that was visiting the waterholes around Desert Queen Baths. This was a significant discovery, as it was about 200 kilometres further east than most other records of northern quolls. And it was the first time since the 1960s that the Martu elders, who live on this Country, had seen a quoll there.

After a couple of attempts, DBCA researchers and Kanyirninpa Jukurrpa (KJ) Martu Rangers managed to trap a single male quoll at Desert Queen Baths in 2016 (see 'Quolls on Country', *LANDSCOPE*, Autumn 2017). We took DNA samples and collected other data, before releasing it back into the gorges. This capture broadened the known range of this elusive mammal, and made us wonder just how extensively quolls occur through the rocky areas of the Great Sandy Desert.

WIDENING THE SEARCH

So, in 2017–18 we broadened the search for northern quolls and set camera traps in likely habitat. KJ Martu Rangers and DBCA staff set 25 cameras in six clusters in likely habitats, such as rocky caves, breakaways and ranges. We chose the sites by examining mapping data for likely habitat that was steep, rocky, and was close to ephemeral waterholes or creeks. The areas we selected were only accessible by helicopter, but MetalsX (Nifty Minesite) staff were working with the KJ Martu Rangers to carry out aerial burning on traditional lands, so we were able to tag along to assess the areas by air, before landing and setting the cameras.

The cameras remained *in situ* for nine months before we returned in June 2018 to collect them. Once we had collected the cameras, groups of people huddled around laptops, by the campfire, and excitedly flicked through several thousand photos, to see what had been snapped. More than 40 different species of bird, reptile and mammal, including native and introduced animals were recorded. These included echidnas foraging at night, perenties, feral cats, wallaroos and red kangaroos, birds of prey, camels and a fox.

QUOLLS!

Much to our delight, northern quolls were captured by three of the six camera groups, in caves and by waterholes; one within 10 hours of the camera being deployed! Northern quolls had never been recorded at any of these locations before,

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Main KJ Martu Rangers, whose traditional lands include Karlamilyi National Park and the surrounding Martu Determination Area, worked with DBCA scientists to set camera traps in likely northern quoll habitat.
Photo – Judy Dunlop/DBCA
Background Northern quoll.
Photo – Jiri Lochman
Insets Northern quolls were captured by six of the 25 camera traps set up.

Left The camera traps captured pictures of 40 species of bird, reptile and mammals, that were attracted to the scent lure, including (clockwise from top left) Euros, spotted harriers, crows, magpies, painted finches, feral cats, dingoes and perenties.
Photos – DBCA

and the groups of cameras were about 20 kilometres apart from each other, so it's unlikely that the same individuals were traversing between groups. We used the quolls' individual spot patterns to estimate that there were most likely six quolls in total, of both sexes. Smaller, young quolls were seen after the breeding season, indicating the population is having some success at maintaining itself.

WHAT DOES IT ALL MEAN?

Quolls have now been detected in this area in four of the last five years, with the searches getting broader each time. This indicates that the marginal desert habitat is supporting a low-density population of quolls that are successfully breeding and surviving. Northern quolls have a frenetic life cycle whereby all the one-year-old males expend so much energy in the breeding season, and have such extreme hormonal spikes that their immune system collapses, that they die in October after they have bred – similar to many other small dasyurids. Young emerge from their mothers' dens in January to February, so the photos of small animals in January confirms breeding is occurring there.

This project demonstrates the value of collaborative efforts between multiple groups to undertake novel work; in this case, a government department, traditional owners and industry worked together to achieve conservation goals.

And it is another example of how many secrets the arid zone and natural environment hold – science is still discovering new records of species and even making new discoveries in some places. We will continue working with Indigenous ranger groups on Country to survey for threatened species and enhance the natural values of their traditional lands.

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Partnerships

KJ Martu Rangers live on their traditional land, which includes Karlamilyi National Park and the surrounding Martu Determination Area. They have been working hard to improve the burning regime of an area almost as large as Tasmania, clean up waterholes, map culturally important areas and survey threatened species like quolls, bilbies and rock-wallabies. MetalsX (Nifty Minesite) is supporting this work, which is improving the nature conservation values of the landscape surrounding their copper mine. And, in partnership with DBCA, these projects are contributing to the protection of this remarkable area and the species that occur there.

Top left Northern quolls occur in habitat that is typically steep, rocky and close to ephemeral waterholes and creeks.
Photo – Jiri Lochman

Above left The spectacular Karlamilyi National Park.

Above DBCA staff worked with KJ Martu Rangers.

Below A helicopter was used to identify likely quoll habitats.
Photos – Judy Dunlop/DBCA

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