The greater bilby (*Macrotis lagotis*) is arguably one of Australia's most endearing animals. But, sadly, its appeal has not protected it from wide-scale population decline. Once known to occur across about 70 per cent of Australia, its population has now contracted to the driest and least fertile areas of its former range. Thankfully, much work has been done, and is continuing, to protect this species and to hopefully restore it to parts of its former range. Joining in the forces at work is an unlikely ally—an introduced animal, the horse.

Reintroductions

This unique project is occurring at Lorna Glen—a 244,000-hectare former pastoral station in the southern rangelands—where, between 2007 and 2009, 128 mostly captive-bred bilbies were reintroduced. The reintroductions followed four years of introduced predator control and other conservation activities carried out by the Department of Environment and Conservation (DEC) and the Wiluna Aboriginal community, and were part of *Rangelands Restoration*—a long-term program to re-establish 11 locally extinct native animals (see 'Into the wild: restoring the rangelands fauna', *LANDSCOPE*, Winter 2009 and '*Western Shield*: protecting our native fauna' on page 9).

In order to gauge the success of the reintroductions, several criteria were developed to form the basis of follow-up monitoring. It was hoped that at least 60 per cent of the bilbies would survive the reintroduction and maintain or increase body weight within four months of being released. It was also hoped that pouch young and new bilbies would be observed within 10 months and the population would have exceeded 200 by August 2010. Knowing whether the population is increasing, decreasing or is stable with time since reintroduction is crucial for gauging the success of the reintroduction. Initially, intensive radio-tracking and some associated trapping were carried out to monitor the bilbies soon after release. However, ongoing monitoring of bilby populations poses a number of challenges. Bilbies are difficult to trap and they are challenging to monitor because of their low density, mostly

The great bilby muster

Once a common mode of transport, horses recently proved to be a vital tool in surveying for bilbies at Lorna Glen.

words by Rhianna King and Neil Burrows, photos by Judy Dunlop

Above Volunteer Shane Burrows with 'Abby' and 'Zena'.

Above inset Releasing a bilby at Lorna Glen as part of the reintroduction program.

solitary behaviour and great mobility. Large-scale trapping grids were used at Lorna Glen but these too proved to be ineffective. It was determined that the best way to monitor them was to look for evidence of tracks, digs, scats and burrows.

Best mode of transport

DEC scientists used all-terrain vehicles (ATVs) on and off tracks and set off on foot to find signs of bilby activity. Unfortunately, neither technique was very effective. Using ATVs from existing roads and tracks yielded few signs of bilbies. And there were concerns about using ATVs off the tracks because of unacceptable levels of damage to the soil and vegetation and to the vehicles. Observations on foot were limited by the number of observers available and the amount of ground they could cover each day. The group needed to find a reliable and cost-effective alternative. So a trial using horses began.

Two stock horses were floated from Mount Magnet to Lorna Glen where they were kept in a secure yard. They were fed a diet of horse muesli and steam-cut chaff for three days before making the trip, and during the survey, to ensure they didn't introduce more weeds to the area. Then, DEC senior principal research scientist Neil Burrows, volunteer and horse owner Shane Burrows, and DEC technical officer Judy Dunlop—all accomplished riders—set off on pre-determined line transects in search of bilbies and signs of other animals around the Possum Lake area. For the purpose of the trial, a relatively small search area of 2,800 hectares surrounding the Possum Lake release site was delineated on a map and a total of 27 kilometres of transect was searched within this area.

Horsing around

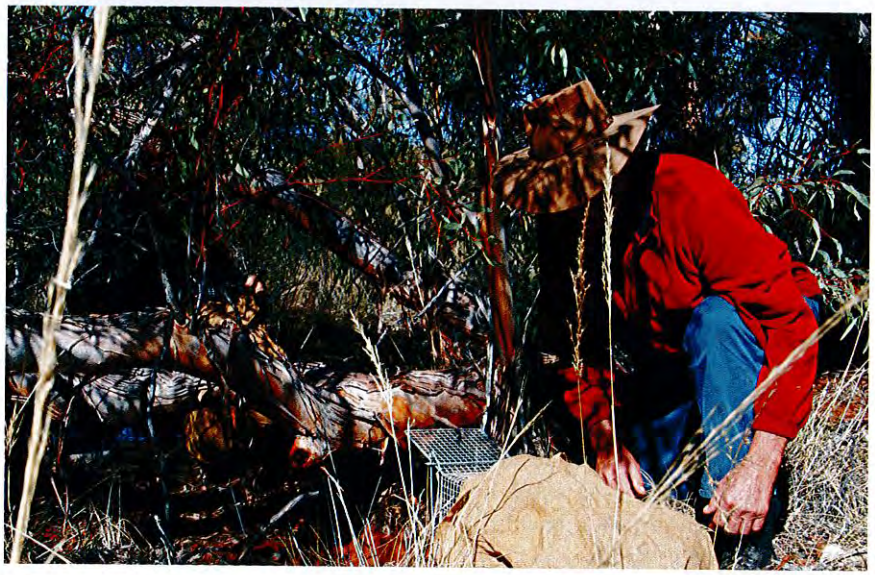
The horse trial was a resounding success. From horseback, the group got clear, uninterrupted views of either side of the transect from which

they could observe burrows up to 15 to 20 metres away and diggings and tracks up to five to 10 metres away. The horses easily negotiated all types of terrain encountered, including sand dunes, recently burnt and long unburnt spinifex, thick shrub, mulga groves, rocky outcrops and calcrete at an average speed of 4.4 kilometres per hour over the 27 kilometres, much faster and much further than could be achieved by humans on foot. 'Picking' their own way along the transect, the horses did not have to be continually steered, so the riders could focus on observing. And, perhaps most importantly, the horses had a relatively low impact on the vegetation and soil and their tracks would be more or less undetectable after the next good rain. The only down side: the horses were irritated by the flies, which were the worst the group had encountered at Lorna Glen.

And what of the bilbies?

In addition to fresh echnida tracks and associated diggings and four sets of cat tracks which were believed to be made by one or two animals, the group observed 10 new and nine old bilby burrows. Assuming the transects were representative of the country surveyed, this equates to one new bilby burrow per 12.15 hectares and either a new or an old burrow every 6.39 hectares. Based on these figures, it can be estimated that there are 47 bilbies active in the Possum Lake area—a very pleasing result. The survey was also able to determine the northern, eastern and western extent of bilby dispersal from the Possum Lake release site. The trial survey did not extend to the other bilby release sites, so the fate of those animals is uncertain, but if the population at Possum Lake is any indication, then the signs are good.

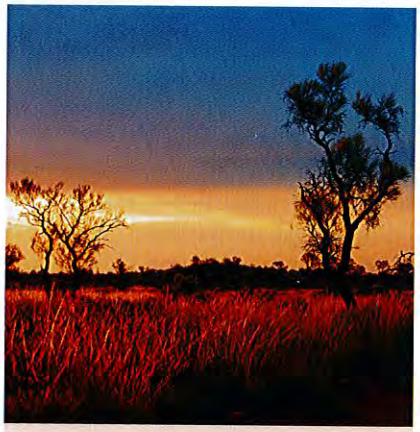
The trial demonstrated that horses, the original form of transport used by European settlers to explore these lands more than 100 years ago, can once again have a valuable role in the rangelands. A more extensive bilby survey will be undertaken at Lorna Glen shortly, using nine volunteers who will each ride about 100 kilometres over four days, surveying an area of about 35,000 hectares. The results of this survey will provide a better understanding of the success of bilby reintroduction to Lorna Glen.



Left A bilby burrow at Lorna Glen.

Below left Releasing one of the captive-bred bilbies.

Below Lorna Glen at sunset.



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