



western shield

securing our wildlife

In 1996 the then Department of Conservation and Land Management embarked on an ambitious wildlife recovery program that focused on broad-scale baiting for introduced predators and the reintroduction of native animals to areas where they once existed. Now in its 18th year, the program is going from strength to strength.

by Juanita Renwick,
Rhianna King and Mitzi Vance



Western Australia is renowned for being rich in native plants and animals and is home to 141 of Australia's 207 mammal species, of which 25 occur nowhere else in the world. Unfortunately, over the past 100 years, Australia has experienced the greatest extinction and decline of native animals seen anywhere in the world (see 'Western Australia's mammals: ensuring their future', *LANDSCOPE*, Winter 2015). Predation by introduced foxes and feral cats has played a key role in this decline and has contributed to the extinction of 11 species of native mammals in WA and forced dozens more mammals, as well as other fauna such as ground-nesting birds, pythons and other reptiles, to fight for survival.

In 1996, the then Department of Conservation and Land Management went on the offensive and launched a major campaign against introduced predators. Named 'Western Shield', it was launched with multiple objectives, including ensuring the sustainable recovery of extant populations of native animals and improving the conservation status of threatened native animals at a landscape scale within selected areas of WA.

The program was ambitious, but has since been credited with significant achievements in protecting and conserving our native wildlife. It continues to be one of the world's most comprehensive and innovative wildlife conservation programs.

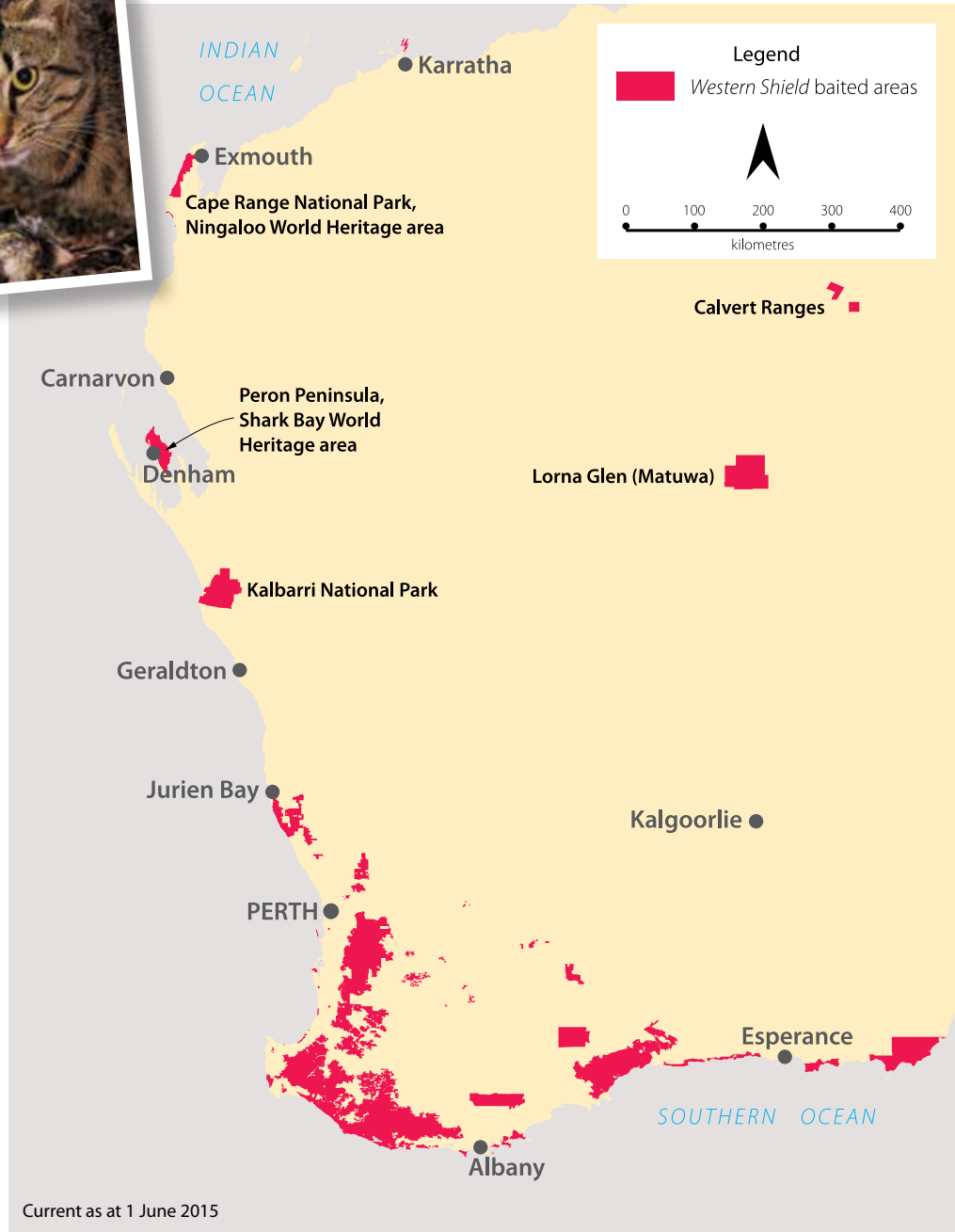
AFFECTING THE CAUSE

In the 1980s and 1990s, pioneering research indicated that fox and feral cat control was required to recover a range

Main Juvenile woylie.
Photo – Sabrina Trochini

Inset left Western ground parrot.
Photo – Brent Barrett/Parks and Wildlife

Inset right Numbat.
Photo – Doug Coughran/Parks and Wildlife



of native species, particularly mammals. Nowadays this notion is unanimously accepted and baiting constitutes a major component of the program.

Each year about one million baits (mostly fox baits) are laid across more than three million hectares of Parks and Wildlife-managed lands from as far north as the Pilbara, through the forests of the south-west, to areas east of Esperance on the south coast. About 380,000ha of this baiting is carried out in the rangelands for feral cat control. The baiting is carried out through on-ground distribution as well as aerial delivery with baits that contain the poison 1080 (sodium fluoroacetate), which is found in the native plant genus *Gastrolobium*. Most native animals have a high tolerance to the poison but it is toxic to introduced predators.

A new feral cat bait, *Eradicat*®, has been developed by Parks and Wildlife and successfully trialled in WA's arid, semi-arid and south coast regions (see '*Eradicat*®' on page 24). It has been registered for operational use and is paving the way for landscape-scale feral cat control in targeted areas across the State for the first time.

When the program was first launched, it was hoped that about 30 native species would be 'significantly more abundant and widespread' thanks to fox and feral cat control. The program has since been credited with reducing fox numbers

by at least 55 per cent in south-west baited areas, and protecting populations of 53 threatened mammal, bird and reptile species in *Western Shield* baited areas. At least 29 of these species show improvements in population size and distribution. Also of note, there has been a dramatic increase in population and distribution of priority species including the quokka, western brush-wallaby and chuditch. Populations of the quenda and tammar wallaby have also recovered and both species have been removed from the threatened species list.

RECOVERY ACTIONS

Another component of the program has been to improve the conservation status of native animal populations through their reintroduction to selected baited areas within their former range. Since 1996, 140 translocations have been carried out for 27 native species, including 20 mammal species, five bird and two reptile species.

Two captive breeding centres – one at Dryandra Woodland (see '*Parks for People: Dryandra Woodland*' on page 10) and the other at Francois Peron National



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Park – have produced more than 2000 individuals of 14 threatened fauna species for translocations. This has also resulted in advancements in knowledge of husbandry techniques, disease management and pre-release behavioural training.

In some species, populations have recovered to such an extent that WA animals are being used to re-populate other parts of Australia. In one example, Western Australian chuditch have been translocated to South Australian (see ‘Postcards to home’, *LANDSCOPE*, Summer 2014–15) in 2014.



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Far left A photo of a fox captured by a camera trap.

Photo – Parks and Wildlife

Inset A feral cat devouring a bird.

Photo – Jiri Lochman

Left Carpet pythons are being protected under *Western Shield*.

Photo – Sallyanne Cousans

Above Installing a predator-proof fence at Perup Nature Reserve.

Photo – Peter Nicholas/Parks and Wildlife

MONITORING

Over the duration of the program, *Western Shield* has elicited long-term data that has been used to help guide management planning and species recovery. Thirty-six sites have been the subject of ongoing monitoring and the information gleaned has helped with population management planning for a range of threatened species including critically endangered woylies in the south-west and black-flanked rock wallabies in the Wheatbelt. *Western Shield* monitoring is also supporting the Woylie Disease Outbreak Investigation – a collaboration between the Australian Wildlife Conservancy, WWF, Parks and Wildlife, James Cook University and the Department of Environment, Water and Natural Resources in South Australia. Monitoring has played a role in determining source populations for translocations including the chuditch translocation to South Australia and of animals to the Dryandra Woodlands. The data collected has also supported changes in listing for threatened and priority species.

Species protected under the *Western Shield* program

Common name	Scientific name
<i>Mammals</i>	
bilby	<i>Macrotis lagotis</i>
black-flanked rock-wallaby	<i>Petrogale lateralis lateralis</i>
brush-tailed mulgara	<i>Dasyercus blythi</i>
brush-tailed phascogale	<i>Phascogale tapoatafa</i>
chuditch	<i>Dasyurus geoffroii</i>
dibbler	<i>Parantechinus apicalis</i>
Gilbert’s potoroo	<i>Potorous gilbertii</i>
golden bandicoot	<i>Isodon auratus</i>
heath mouse, dayang	<i>Pseudomys shortridgei</i>
malleefowl	<i>Leipoa ocellata</i>
northern quoll	<i>Dasyurus hallucatus</i>
numbat	<i>Myrmecobius fasciatus</i>
quenda	<i>Isodon obesulus fusciventer</i>
quokka	<i>Setonix brachyurus</i>
tammar wallaby	<i>Macropus eugenii derbianus</i>
water rat, rakali	<i>Hydromys chrysogaster</i>
western brush-wallaby	<i>Macropus irma</i>
western mouse	<i>Pseudomys occidentalis</i>
western ringtail possum	<i>Pseudocheirus occidentalis</i>
woylie	<i>Bettongia penicillata ogilbyi</i>
<i>Birds</i>	
Australian bustard	<i>Ardeotis australis</i>
bush stone-curlew	<i>Burhinus grallarius</i>
fairy tern	<i>Sterna nereis nereis</i>
hooded plover	<i>Charadrius rubricollis</i>
noisy scrub-bird	<i>Atrichornis clamosus</i>
southern emu-wren	<i>Stipiturus malachurus hartogi</i>
western bristlebird	<i>Dasyornis longirostris</i>
western ground parrot	<i>Pezoporus flaviventris</i>
<i>Reptiles and turtles</i>	
carpet python	<i>Morelia spilota imbricata</i>
flatback turtle	<i>Natator depressus</i>
green turtle	<i>Chelonia mydas</i>
hawksbill turtle	<i>Eretmochelys imbricata bissa</i>
loggerhead turtle	<i>Caretta caretta</i>



A TEAM EFFORT

The success of *Western Shield* is due in part to the partnerships Parks and Wildlife, and its predecessors, has forged with industry, community and ‘friends’ groups, tertiary and research institutions and other local and interstate government agencies. The program has been supported by sponsors such as Alcoa, BHP Billiton Worsley Alumina (Worsley) and Tronox. Previous sponsors have included Cable Sands, Westralia Sands/Illuka, BHP Billiton (Ravensthorpe Nickel Operations), Tectonics Resources and First Quantum Minerals.

More than 108,000 students have directly taken part in *Western Shield* activities through the use of a free classroom resource and field nature conservation experiences and camps run by the department.

FORWARD MOTION

A review of *Western Shield* has guided the way forward for the program and helped redefine its priorities. Until now, monitoring – via cage traps and cameras as well as with radio-collars – has been geared towards collecting data about numbers of native animals and building profiles of their population distribution. However, Parks and Wildlife is broadening its monitoring program to collect information on foxes and feral cats. This will help build a holistic profile of the landscape and help tailor management strategies.

The approval in early 2015 of *Eradicat*® for use in broad-scale predator control across the State will complement the broad-scale fox control currently being undertaken and see *Western Shield* enter a new phase.

These measures, together with the ongoing support and input from industry and the community, will ensure *Western Shield* continues to help reverse the effects of long-term predation by foxes and feral cats and ensure WA’s precious native wildlife is protected for the future.

Above left Parks and Wildlife’s Juanita Renwick and Tracy Sonneman carrying out field experiments.

Photo – Ashley Millar/Parks and Wildlife

Above Parks and Wildlife’s *Western Shield* excursion for schools at the Perth Hills Discovery Centre.

Photo – Jennifer Eliot

Right Loading baited sausages onto the plane for aerial drops to control foxes and feral cats.

Photo – Peter Nicholas/Parks and Wildlife

Below *Gastrolobium* is a native plant that contains the poison 1080.

Photo – Parks and Wildlife

Eradicat®

The armoury in the fight against foxes and feral cats has been boosted thanks to the approval of *Eradicat*® for use in predator control across the State. Parks and Wildlife scientists developed *Eradicat*®, which has been used successfully in trials to control feral cats on Faure Island in Shark Bay, Cape Arid National Park on the south coast and at Lorna Glen (Matuwa) in the northern Goldfields. The *Eradicat*® baits will complement broad-scale fox control undertaken in *Western Shield*.



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