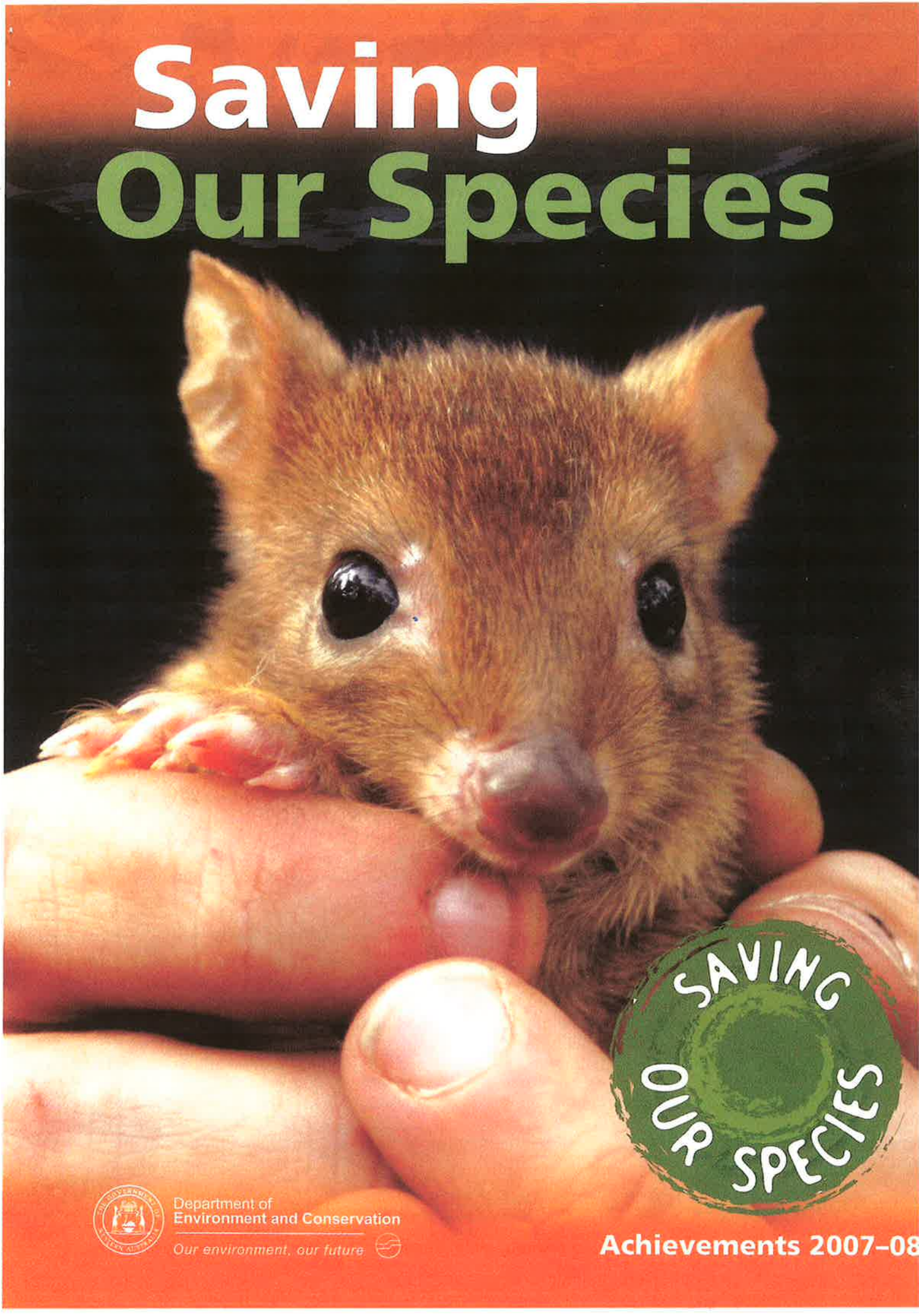
Saving Our Species



SAVING OUR SPECIES

Department of Environment and Conservation

Our environment, our future

Achievements 2007–08

Foreword

We live in a state that boasts an estimated 230 mammal species, more than 600 bird species, 560 reptile species, 80,000 insect species and more than 70 species of freshwater fish, as well as an impressive 14,000 species of vascular plants.

Thousands of these animal and plant species are at risk due to loss of habitat, disease, invasive weeds, feral animals, salinity and competition for food sources.

Tackling key conservation issues has been a priority for the State Government, and the two-year, $15 million **Saving Our Species** initiative has produced some exceptional results for our precious flora and fauna.

The future looks much brighter for the world's most endangered marsupial, the Gilbert's potoroo, while several weed populations have been dramatically reduced, allowing for the regeneration of native vegetation. Pest animal control programs have led to a significant reduction of their impacts at key conservation sites, surveys have provided knowledge critical for pest animal control in the future and support for the WA Cane Toad Initiative has maintained the effort to hold back the pest from the State's northern borders.

As **Saving Our Species** concludes, the Department of Environment and Conservation (DEC) continues to fund many of the successful flora and fauna conservation projects programs initiated under the program.

The DEC-funded 2008–09 Biodiversity Conservation Initiative is seeing $3.75 million put towards maintaining the effort in the control of *Phytophthora* dieback, pest animal control, weed control, biological survey and research as well as threatened species and ecological communities. Funding for the WA Cane Toad Initiative is also being maintained at $750,000 during 2008–09.

The third year of funding will enable the completion of projects initiated under **Saving Our Species**, and the consolidation of biodiversity conservation outcomes.

The future biodiversity of Western Australia relies on our actions today, and the State Government is committed to the protection of the flora and fauna to ensure future generations can appreciate and enjoy our unique biodiversity for years to come.

Front cover: Juvenile woylie.

Left from top: DEC's Keith Morris releasing possum at Lorna Glen; soil sampling at the Stirling Range National Park; the critically endangered cactus Dryandra (*Dryandra anatona*), which has undergone translocation; two weeks after spraying prickly pear at Oldfield River.

Pest animal control

Western Australia's biodiversity continues to be threatened by pest animals, including feral goats, camels, wild dogs, cats, foxes, feral pigs and donkeys, as well as birds such as starlings and rainbow lorikeets.

Through the **Saving Our Species** initiative, the State Government has shown its commitment to the control of these pest animals, which prey on native animals and compete with them for food and habitat, as well as spread diseases.

Highlights in 2007–08 included:

- the reduction of the feral goat population in Kalbarri, Kennedy Range and Cape Range national parks;
- the capture of almost 400 pigs in the Swan, South West and Warren regions;
- the reduction of the rainbow lorikeet population at key sites in the metropolitan area;
- feral donkey control in the Pilbara;
- 87 kilometres of fencing constructed for the goat proofing of the former Burnerbinmah pastoral lease;
- enhancement of wild dog control across the State and;
- the survey of feral camels in central Western Australia.

Pest herbivore population shrinks in Mitchell River National Park

Wild cattle are becoming increasingly common in Western Australia's north, where they pose a threat to biodiversity due to the impacts of grazing pressure, trampling of sensitive vegetation, and the degradation of natural waters.

In the past two years a **Saving Our Species** project has seen almost 2,000 pest animals, including 1,700 wild cattle, removed from Mitchell River National Park in the Kimberley as part of a project to protect the area from the impacts of pest cattle, feral donkeys and feral pigs.

Before the controls, the park contained a large number of cattle, which were degrading the landscape and threatening its biodiversity values.

Cattle and donkeys were monitored and culled in the west of the park to protect rainforest patches, seasonal wetlands, riparian areas and perennial grasses.

A survey of feral pigs was also carried out in the west of the park and 50 pigs were removed from the southern areas.

Post-cull surveys indicated that the pest cattle population in the control areas had been dramatically reduced, and with their low breeding rate, relative isolation and the effects of planned 2008–09 control operations, numbers are expected to remain very low.

Right from top: Feral goats at Yardie Creek Gorge in Cape Range National Park; feral pigs; camels.

Weeds

The eradication, control or substantial reduction of priority environmental weed populations has been a major commitment of the **Saving Our Species** initiative.

Weeds pose a major threat to Western Australia's biodiversity, as they compete with native plants for water, nutrients and space, alter habitats, displace food sources for native grazers and smother and suppress germination of native vegetation seedlings.

There are an estimated 1,350 species of environmental weeds in Western Australia, of which 34 are a high priority for eradication under the State's 1999 Environmental Weed Strategy.

Highlights in 2007–08 included:

- the control of 5,376 hectares of neem trees around Kununurra;
- the localised eradication of dense succulent weed species in the Shire of Ravensthorpe;
- the identification, mapping and control of targeted weed species within the Shark Bay World Heritage Property; and
- control of weed populations in Kings Park and Bold Park.

Invasive weeds controlled at Blackwood

The lower south-west region of the Blackwood District is renowned for its unique flora and fauna and spectacular natural assets. This precious ecosystem is at threat from four major invasive environmental weeds, which **Saving Our Species** has moved to control.

The project has resulted in the reduction of known populations of dolichos pea (*Dipogon lignosus*) within Leeuwin-Naturaliste National Park, Bramley National Park and Davies Shire Reserve. Populations of asparagus fern (*Asparagus scandens*) in Bramley National Park, Augusta Shire Reserve and Barrett Street Shire Reserve and African thistle (*Berkheya rigida*) in the Leeuwin-Naturaliste National Park have also been controlled.

Monitoring points have been established at three of the infestations to measure the recovery of native species. The information collected will ensure conservation gains are maintained and that the management of these areas is appropriate.

Monitoring has provided critical information about the effectiveness of control techniques and the development of more targeted and effective treatments. This has led to modified treatments of weed infestations such as a garden geranium (*Pelargonium alchemilloides*) infestation at Hamelin Bay, where trials are expected to achieve effective control.

Left from top: Control of heavy infestations of arum lily on Chandala Nature Reserve is showing positive results; a dolichos pea infestation at Jarrahdean in the Blackwood District; DEC employee Gen Harvey spraying century plant at Fitzgerald River National Park.

Dieback

Considered one of the most serious threats to Western Australia's biodiversity, *Phytophthora cinnamomi* has infected hundreds of thousands of hectares in the south-west and is also widespread in gardens and bushland across the Perth metropolitan area.

The disease, known as *Phytophthora* dieback, is caused by a soil-borne organism that attacks the root systems of plants and kills them by limiting or stopping the uptake of nutrients and water, which in turn causes the destruction of habitats for native wildlife. About 2,300 of the south-west's 5,700 flora species are susceptible to *Phytophthora* dieback.

The **Saving Our Species** initiative established a number of continuing projects that aim to prevent the spread of *Phytophthora* dieback and protect the State's flora and ecosystems from the devastating effects of this disease by addressing management and control issues.

Highlights in 2007–08 included:

- the trial of new phosphite control techniques at Fitzgerald River National Park and Stirling Range National Park; and
- the application of phosphite to endangered flora populations and threatened ecological communities in the Albany, Esperance, Busselton and Frankland districts.

Phytophthora dieback infestation contained at Bell Track

The Fitzgerald River National Park features about 1,800 species of flowering plants and is world renowned for its biodiversity values. But an infestation of *Phytophthora* dieback within a single 185-hectare micro-catchment in the park threatens its unique plants and animals.

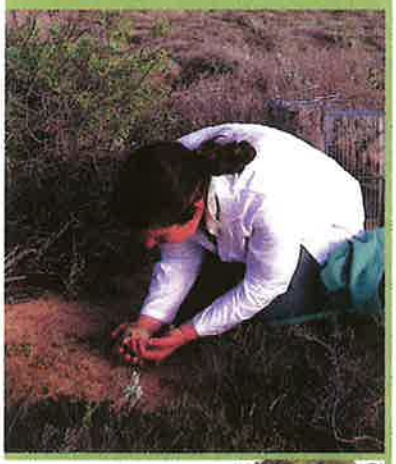
Several management strategies have been undertaken in the past two years to contain the isolated infestation of dieback at Bell Track through **Saving Our Species** funding.

In December 2007 a three-kilometre, two-millimetre-thick plastic membrane and an inhibiting chemical dispersal system was installed to act as a physical barrier to prevent root-to-root transmission of the disease.

More recently, almost 9,000 native plant seedlings were planted to retain surface water in the area and prevent water-borne transmission of the disease beyond the Bell Track catchment. The seedlings also serve to replace some of the plant diversity lost due to the impacts of the disease.

Seed was collected during the spring and summer of 2007–08, from five species that naturally occur in Fitzgerald River National Park. The seed was propagated and the seedlings hand-planted months later by DEC staff, volunteers and Ravensthorpe District High School students.

Right from top: Washing down to prevent the spread of dieback; vegetation structure reconstruction at Bell Track to manage surface water flow; aerial phosphite application at Bell Track; soil sampling at the Fitzgerald River National Park.



Threatened species and ecological communities

A major priority for the **Saving Our Species** program has been the survey, identification and protection of a variety of threatened species and ecological communities in the State.

Many animals unique to Western Australia are under threat due to loss of habitat, predation by other animals, human influences and disease.

Similarly, plant species that are known only to occur in Western Australia are at risk from invasion by introduced weeds, clearing, overgrazing, salinity and diseases such as *Phytophthora* dieback.

Highlights in 2007–08 included:

- on-ground protective works to conserve six critically endangered, three endangered, two vulnerable and three priority orchid species in the south-west;
- monitoring of population size and health of threatened mammal species on Bernier and Dorre islands;
- the preparation of recovery plans for five critically endangered flora species;
- the introduction of 46 bilbies and 71 brushtail possums to Lorna Glen Station;
- on-ground management actions to protect 16 high conservation value Bush Forever sites; and
- compilation of a Biodiversity Management Plan to protect threatened flora within a biodiversity hotspot near Moora.

Third site established for world's most endangered marsupial

Before the Saving Our Species program was established to save the world's most endangered marsupial, the Gilbert's potoroo, the small mammal was known only to exist in one surviving population of less than 40 animals on the Mount Gardner peninsula in Two Peoples Bay Nature Reserve near Albany.

The Gilbert's potoroo has been given a second chance at a future after a **Saving Our Species** program established a second population of the animal at Bald Island off the coast of Albany. Giving further hope to the survival of this species, a third population is about to be established following the construction of a fenced reserve area near Albany.

Saving Our Species has had great success establishing the species at Bald Island and this new fenced reserve area will further boost Gilbert's potoroo numbers. The potential risk of the current existing populations being wiped out by disaster such as wildfire means that creating a second, secure mainland population is a critical priority.

The new fenced reserve has been built in a remote part of Waychinicup National Park, in long-unburnt vegetation including some dense heathland almost identical to the potoroo habitat at Two Peoples Bay Nature Reserve. About 380 hectares of bushland is surrounded by eight kilometres of two-metre-high fence that will protect the potoroos from foxes and cats.

The enclosure will be suitable for multi-species recovery providing protection and refuge for other threatened species inhabiting this area, particularly the dibbler (threatened), noisy scub-bird (endangered), western bristlebird (vulnerable), western whipbird (endangered) and the western ground parrot (critically endangered).

Left from top: Jo Williams of the Australian Wildlife Conservancy releasing a trapped Western Barred bandicoot; planting local mixed species seedlings at Lake Bryde Recovery Catchment; the fence surrounding the potoroo reserve area near Albany; the world's most endangered marsupial, the Gilbert's potoroo. Photo – Dick Walker/Gilbert's Potoroo Action Group

Biological survey and research

Biological survey and research is vitally important if we are to discover more about the flora and fauna that makes Western Australia's biodiversity so distinctive.

Gaining a clear understanding of the location, population and threats to species and communities enables the establishment of conservation initiatives to protect the future of these precious plants and animals.

Several biological survey and research projects have been initiated in Western Australia under **Saving Our Species**, with the knowledge gained through the surveys helping identify areas that require protection and determining which species occur in the State and what they need to survive.

Highlights in 2007–08 included:

- 500 plots established across the Ravensthorpe and Banded Ironstone Ranges to collect environmental data and comprehensive flora lists resulting in 3,218 voucher collections lodged in the WA Herbarium;
- invertebrate sampling at 74 sites in the Ravensthorpe Ranges resulting in 1,325 voucher collections of Arachnida and Myriapoda identified and lodged at the WA Museum;
- the identification of burning patterns, biodiversity impacts of wildfires and establishment of fire recovery plans in the Kimberley and Wheatbelt;
- a special edition of the WA Herbarium journal *Nuytsia* produced, including formal descriptions and up-to-date conservation assessments for 95 new plant taxa, of which 36 are from Banded Ironstone Ranges, six are from Ravensthorpe Range and 78 are listed on Western Australia's Declared Rare and Priority Flora Lists.

Study reveals effects of fire regime on Wheatbelt flora and fauna

The interactions between fire and biodiversity have long been poorly known in Western Australia's Wheatbelt, with the lack of scientific information on fire behaviour and its effect on the natural diversity of the region prompting a study of fire, fragmentation, weeds and the conservation of plant diversity in Wheatbelt nature reserves.

The joint project between CSIRO and DEC, through **Saving Our Species**, is helping provide a better understanding of fire regimes and management procedures in conservation reserves in the eastern Wheatbelt Lake Magenta region.

The project so far has delivered an abundance of information that will assist with ecosystem management and conservation.

One outcome of this project has been the improved understanding of the ecological impacts of scrub-rolling, which involves the use of heavy earth moving machinery to flatten vegetation for fire break purposes. The investigation of the impacts of the practice on mallee heath found that scrub-rolling and burning posed a greater threat to many conservation priority plant species compared to burning alone, and that population of these species should be identified and excluded from scrub-rolling operations.

Right from top: A golden bandicoot near Surveyor's Pool in the Mitchell River region of the north Kimberley. Golden bandicoots have declined across much of northern Australia; *Diporiphora bennettii*, a ground-active dragon preferring recently burnt or open habitats in the north Kimberley; a group of field naturalists from Victoria assisted DEC officers in trapping bats in a fauna survey near Badgingarra; one of the bats trapped as part of a fauna survey at Hi Vallee farm near Badgingarra.

WA cane toad initiative

Saving Our Species has supported the fight against the encroachment of the cane toads through the WA Cane Toad Initiative, an ongoing program launched by the State Government in 2004.

The initiative has been aiming to fight the entry and establishment of cane toads in Western Australia, protect biodiversity assets at greatest risk from cane toads, raise public awareness of the cane toad threat, and ensure effective statewide coordination of initiatives.

The WA Cane Toad Initiative team has covered 950,000 hectares in the course of their work, travelling 50,000 kilometres in four-wheel drive vehicles and 7,000 kilometres on quad bikes. More than 5,000 trapping sessions have resulted in the capture of 5,636 toads.

The cane toad front line is nearly 500 kilometres long and the advance of the toads has been contained within 80 kilometres during 2007–08.

The DEC surveillance and control team based in Kununurra has continued to undertake on-ground operations, mostly in the Victoria River District of the Northern Territory.

DEC is also working cooperatively with the Northern Territory Government and community groups such as Kimberley Toad Busters and the Stop the Toad Foundation to fight the westward expansion of the pest.

Research into the potential impacts of cane toads on the vertebrate fauna of the Kimberley is continuing with particular emphasis on species likely to be at greatest risk such as frog-eating reptiles (pythons and goannas) and the carnivorous northern quoll.

DEC is also contributing to the establishment of a cane toad genome research program in collaboration with The University of Western Australia.

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Left from top: DEC volunteer assisting with cane toad control; cane toads in a culvert near the Victoria Highway in the Northern Territory; Nifty the sniffer dog detecting cane toads with field worker Sandy.

All photos by DEC unless otherwise stated