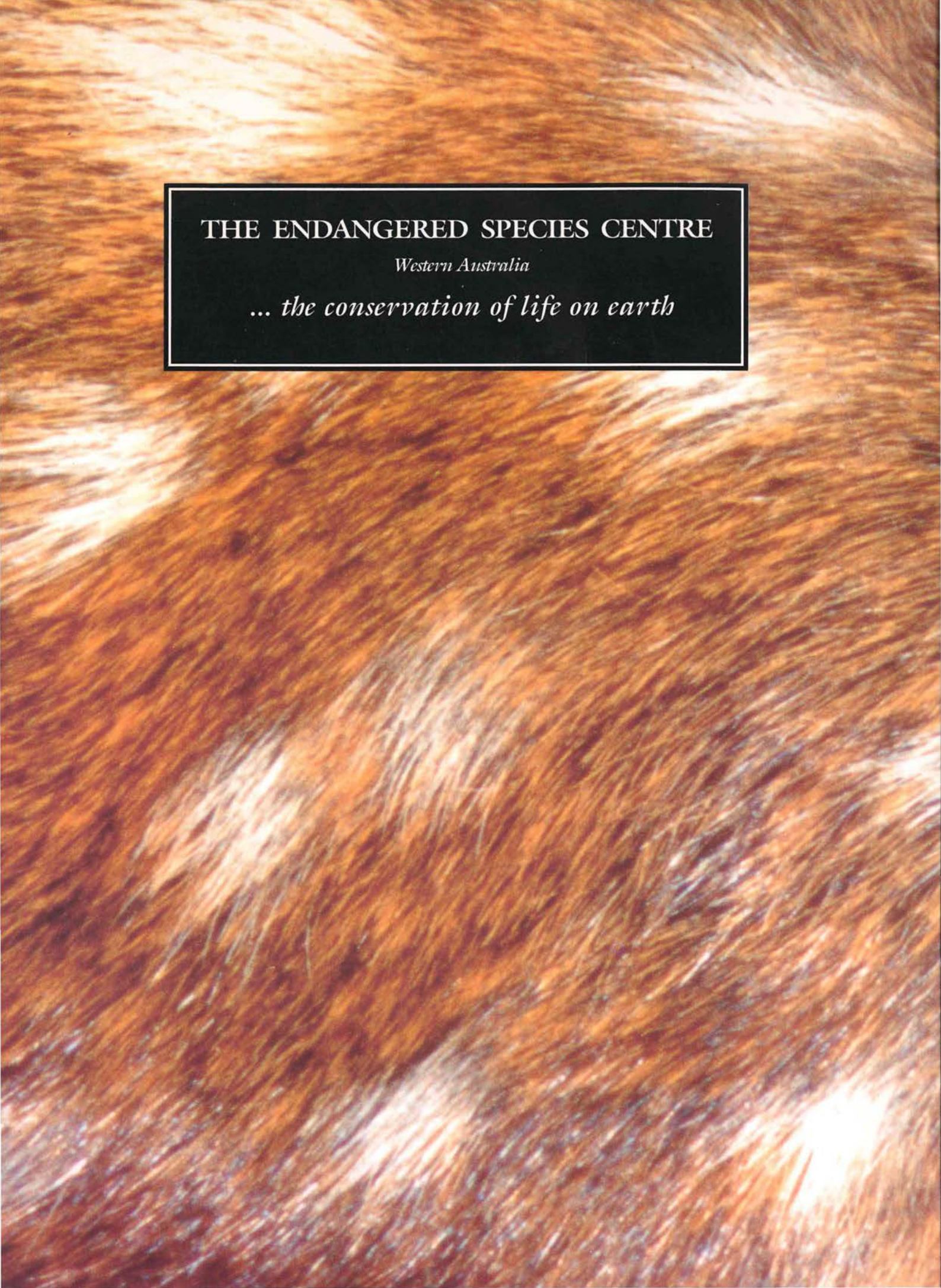


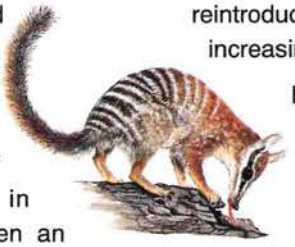
# THE ENDANGERED SPECIES CENTRE

*Western Australia*

*... the conservation of life on earth*

The variety of life on which we depend encompasses 10 million or so animal species, with 60-70 percent of them located in critical areas in only 12 countries. Governments and international conservation organizations have established numerous treaties and agreements to protect and maintain the rich biodiversity of these areas.

As one of the countries with such 'megadiversity', Australia is developing conservation strategies to protect the unique range of plant and animal species that are now seriously under threat.



Already, in the 200 years from the beginning of European settlement in Australia, there has been an unprecedented rate of species extinction. The 18 Australian mammals lost in the last 40-50 years constitute about half the mammal species lost the world in historic times.

For Western Australia, a prime conservation challenge of the next decade will be to halt the decline of the 88 species now judged to be endangered, and re-establish them in areas where they once flourished.

Illustrations by
Philippa Nikulinsky

◄ Cover texture
Chuditch fur
Jiri Lochman

## MANAGEMENT OF ENDANGERED SPECIES

It has become evident that the setting aside of national parks and nature reserves, although a vital first step, is not enough to prevent the decline of endangered species into extinction.

Active management of some species is essential if a natural heritage that is full, rich and diverse is to be maintained. Intensive management options such as captive breeding, translocation and reintroduction of species are becoming increasingly important.

Perth Zoo was already well-known for its management of several international captive breeding programs for endangered species, when captive programs for the western swamp tortoise, the numbat and the chuditch were established. These recovery programs were planned and implemented with the Department of Conservation and Land Management and the University of WA.

Now Perth Zoo has acquired 39 hectares of land at Byford, situated in the hills 40 kilometres south-east of Perth, to establish an Endangered Species Centre.

The property has dams, pastures, bushland and gardens, and incorporates a fine home - originally the Plaistowe Homestead - and outbuildings, which are partially restored.

When fully restored the buildings will house a major centre for the captive management of endangered species, research and environmental education programs.

# THE ENDANGERED SPECIES CENTRE

### *Sanctuary*

In the wild, species are conserved and managed by the Department of Conservation and Land Management (CALM). When necessary, critically endangered species of animals will be brought into the Endangered Species Centre so they can be bred back to viable numbers, and prepared for their reintroduction into the wild.

Perth Zoo's current captive breeding programs will be consolidated at the Endangered Species Centre so that these animals will have the best opportunity to breed successfully.

### *Research*

Success in breeding captive populations depends to a large extent upon research into reproductive biology, nutrition and behaviour. The Endangered Species Centre will generate valuable knowledge for wildlife management, both in Australia and overseas.

### *Conservation Biology*

Once established, the Centre will have a network of people with considerable skills and experience in captive breeding and recovery programs committed to sharing this knowledge with others.

As the list of successful recovery programs grows, the Endangered Species Centre will assist with the training of postgraduate students, zoo staff and wildlife managers, from Australia and overseas.

### *Education*

Building upon the established environmental education programs at Perth Zoo, the Endangered Species Centre will add a new dimension to learning opportunities through the introduction of field studies programs.

These programs will focus on the link between wildlife conservation, habitat preservation and ecologically sustainable development. The surrounding State forest and mine rehabilitation sites will provide suitable settings for the learning activities.

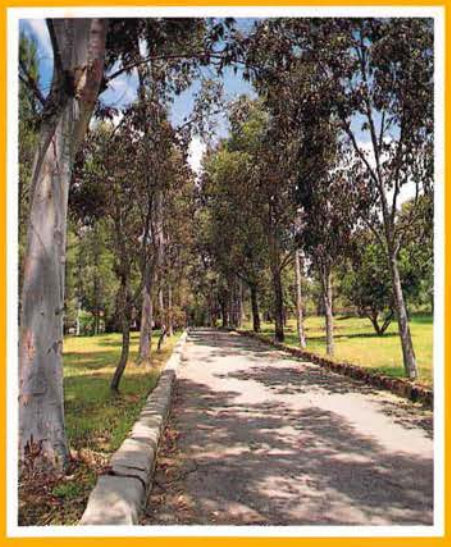
### *Display of wildlife*

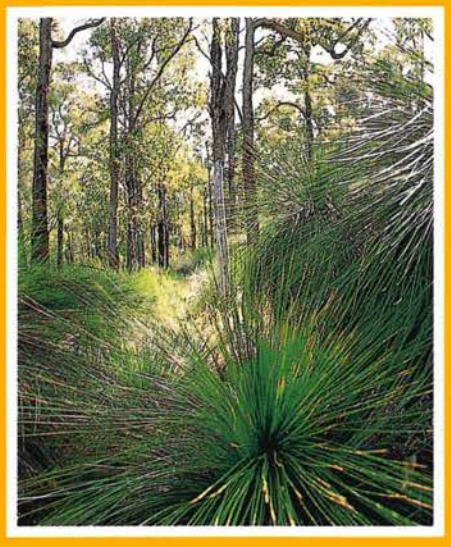
With the decline in the numbers of animal species, many Western Australians have not had the opportunity to see some of the wildlife native to the State.

A permanent display of rare or endangered species at the Centre will give the community, as well as interested tourists, the chance to observe these special animals.

The Endangered Species Centre will be a focus for the community's deep concern to hold species 'back from the brink', and a means to extend that concern to broader environmental issues.

▲ Photographs of the
◄ Plaistowe Homestead and the
► surrounding environment
Evan Collis





# ACHIEVING SUCCESS IN 1995

## STAGE ONE

***staff:***
***Property manager/horticulturalist***
***apprentice gardener***
***education assistant***

### ESTABLISH

- fox-proof fencing
- animal enclosures
- water and reticulation supply
- building restoration
- seminar rooms
- kitchen and dining facilities
- lecture theatre
- education programs
- nature trails
- plant nursery
- animal food production

## STAGE TWO

***add staff:***
***technical assistants***
***conservation biologist***

### RESOURCE

- animal breeding facilities
- research laboratory
- accommodation facilities
- lecture theatre
- seminar rooms
- educational programs

## STAGE THREE

***add staff:***
***education camp co-ordinator***

### PROMOTE

- animal exhibits and display
- conservation biology program
- environmental education
- programs, training courses
- conference venue
- camp facilities

Numbats
Jiri Lochman

Chuditch
Todd Soderquist

Western swamp tortoise
Wade Hughes / Lochman Transparencies

PERTH ZOO
WESTERN AUSTRALIA

DEPARTMENT OF CONSERVATION
AND LAND MANAGEMENT

THE UNIVERSITY OF
WESTERN AUSTRALIA

If you would like to help in establishing the first Endangered Species Centre in W.A. or would like further information, please contact the Public Relations officer at ...

PERTH ZOO
WESTERN AUSTRALIA

20 Labouchere Road
South Perth
PO Box 489 South Perth
Western Australia 6151
Telephone (09) 367 7988
Facsimile (09) 367 3921

# NUMBATS

## FACTS ABOUT NUMBATS

| | |
|---|---|
| STATUS: | Rare with a restricted range. |
| | Total population is less than 2,000. |
| HABITAT: | Now found only in eucalypt woodland |
| | in the south-west of Western Australia. |
| DIET: | Termites. About 20,000 are eaten per day. |
| BREEDING: | Season – young born in January, |
| | independent in November. |
| | Gestation – 14 days. |
| | Litter size – usually 4. |
| | Size at birth – 1 cm. |
| ADULT WEIGHT: | Male – 550g-700g |
| | Female – 450g-650g. |
| CLASSIFICATION: | Order – Polyprotodonta |
| | Family – Myrmecobiidae |
| | Genus and Species – |
| | *Myrmecobius fasciatus* |

## THE NUMBAT

In a land of extraordinary wildlife, the Numbat stands out as unusual. It is a marsupial but has no pouch so the young have to hold on tight to their mother's teats with their mouths and forepaws. The numbat is one of only two marsupials that is diurnal (active in daylight) and it is the only marsupial to feed exclusively on termites. It is so remarkable that it was declared the mammal emblem of Western Australia in 1973, but tragically it is now extremely rare in the wild. To ensure the long-term survival of the Numbat, the Perth Zoo and the Department of Conservation and Land Management are working together to run a captive-breeding programme for the Numbat. With less than 2,000 left, the world needs more Numbats.

## GOING...GOING...

Like so much of Australia's wildlife, the Numbat declined soon after European settlement. As is shown over the page the Numbat occurred across much of southern Australia in 1850 but is now found on less than 1% of its former range. The Numbat was in balance with its environment until European settlement of Australia. People upset that balance in three ways.

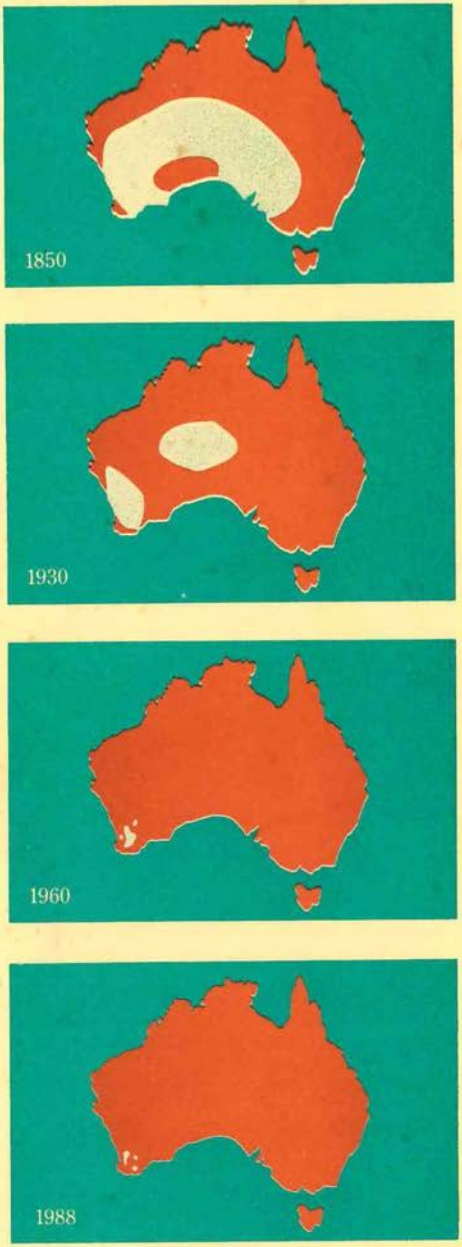
## FOXES

The Fox was introduced to Australia for sport. Despite the efforts of the gentleman hunters, however, Foxes spread rapidly. First released near Melbourne in the 1860s, they reached Kalgoorlie in 1917 and Perth only a few years later. The expansion of the Fox proved disastrous for the Numbat because it was an unfamilar and efficient predator. The range of the Numbat contracted as the Fox spread from east to west.

## FIRE

Despite the presence of the Fox, the Numbat managed to survive in some desert areas in Western Australia until the 1960s. The Numbat persisted in these areas because of a remarkable relationship with the Aboriginal desert dwellers. Numbats died out when the Aboriginal people settled around missions.

## THE DIMINISHING RANGE OF THE NUMBAT



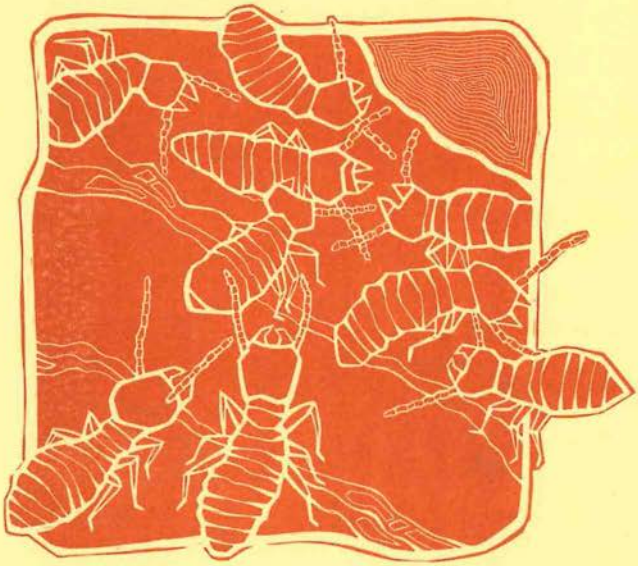
Although the Aboriginal people hunted the Numbat for food, they also helped it to survive by regularly starting small bushfires. This pattern of burning created a patchwork of small, open areas and dense, unburnt vegetation. The small, burnt areas acted as firebreaks to prevent large fires, but all this changed when the Aboriginal people gave up their traditional lifestyle. Fires became less common but each burnt a larger area of land; the old patchwork soon disappeared. If the Numbats survived the big fires, they found themselves faced with endless tracts of burnt countryside where they were more exposed to predators, including Foxes. The Numbat might have survived the change in the frequency of bushfires if the Foxes hadn't been present, but the combination of fires and Foxes was too much. The Numbat was "finished" in the desert.

## FARMING

Until the early 1960s, the Numbat was still widespread in the area of Western Australia known as the wheatbelt. This changed with increased clearing for agriculture. Most of the Numbat's habitat was bulldozed and only small areas survived in reserves. The remaining Numbats were isolated in these reserves, and the small colonies were especially vulnerable to that enemy, the Fox. Ironically, some of the areas cleared turned out to be unsuitable for agriculture and are now being reafforested. If the clearing had been planned with the knowledge we have today, there would probably have been space for both farms and Numbats in the wheatbelt.

## HELP FOR NUMBATS

Numbats had become so rare by the late 1960s that research was undertaken to identify their needs and their problems. In addition, an insurance policy, in the form of a captive breeding programme, was taken out for the Numbat.



Research was carried out at Dryandra, the last stronghold of the Numbat. Scientists used radio-tracking equipment to pry into the daily lives of Numbats, and learnt much about when and where they feed, where they shelter, how much space each Numbat needs, and so on. They also learnt that, even at Dryandra, Foxes are the bane of the Numbat's life. Identifying the problem, however, is only half the solution.

Numbers of Foxes in Dryandra were controlled by baiting with a poison called 1080. This could be used without risk of poisoning Numbats or any other native animals because Foxes are extremely sensitive to 1080 whereas native animals in these areas are not. A poison very similar to 1080 occurs naturally in

many plants of the south-west and animals that have evolved in the south-west, alongside those plants, are resistant to the poison in the plants and to 1080. Foxes are not. As soon as the baiting of Foxes began, the tide was turned. The number of Numbats in Dryandra increased. The baiting of Foxes even made it possible to reintroduce Numbats to another wheatbelt reserve. For the first time in over a hundred years, Numbats are on the increase. It is sad to have to poison any animal, but when protecting the last Numbats in the world, the decision was clear.

Despite these successes in the wild, Numbats are far from secure and need the insurance of a captive colony. Numbats were first bred in captivity in 1985 by the Department of Conservation and Land Management, with the support of World Wildlife Fund Australia. Earlier efforts had failed because each animal requires up to 20,000 termites per day; that's 100,000 termites per day for a female with four grown young! The breakthrough came with the discovery that Numbats could be maintained on an egg-milk custard sometimes used by zoos to keep Echidnas. For Numbats, vitamins, calcium carbonate, sand and a sprinkling of termites are added to the mixture. The colony was transferred to Perth Zoo in 1986.

## THE NUMBAT NEEDS FRIENDS

The Numbat needs all the help it can get and there are many ways in which you can do your bit.

1. Report sightings of Numbats to the Department of Conservation and Land Management. Remember to record where and when.
2. Take care of the Numbat's home when you visit it; prevent bushfires, keep family pets under control and leave logs and rocks where you find them.
3. Don't release unwanted pets into the bush.
4. Observe the Numbat here, at the Zoo, and record your observations for us. See the tear-off Numbat questionnaire for instructions.
5. Assist by donating to the Numbat breeding programme. (See back for information.)

The beauty and genius of a work of art may be reconceived,
'though its first material expression be destroyed;
a vanished harmony may yet again inspire the composer;
but when the last individual of a race of living things breathes no more,
another heaven and another earth must pass
before such a one can be again.

William Beebe (1877-1962)
Naturalist. Director of the American Zoological Society.

Send your tax deductible donation
to assist the Numbat breeding programme to:
Perth Zoo Sponsorship Trust:
Numbat Conservation

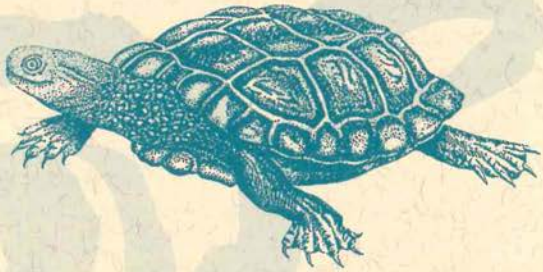
PERTH ZOO

Conserving our
Wildlife Heritage

20 Labouchere Road
South Perth 6151
Western Australia
Ph: (09) 367 7988
Fax: (09) 367 3921

# Western Swamp Tortoise

## Australia's Rarest Animal



***This is Australia's most endangered vertebrate and one of the world's rarest species. Thought to be extinct for over one hundred years, the Western Swamp Tortoise has been rediscovered and is being given a chance of survival at the Perth Zoo.***

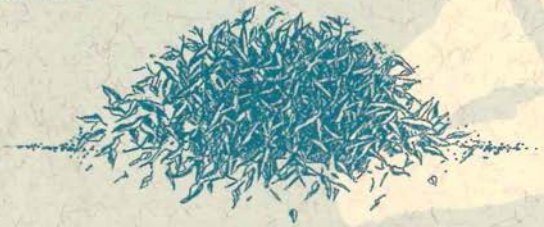
## A REDISCOVERY

The Western Swamp Tortoise is on the verge of extinction with less than 80 remaining.

It was discovered in 1839 when a single specimen was collected and sent to the museum in Vienna, Austria. No further tortoises were seen for more than 100 years and the species was feared extinct. Then, in 1953, they were re-discovered when a boy found one crossing a road in Upper Swan and took it into the W.A. Naturalists Club Wildlife Show.

After much searching it was discovered that swamp tortoises still occurred in two small areas of natural habitat remaining on the edge of the Perth metropolitan area. These areas were purchased by the Government, with the aid of a Public Appeal, and set aside as Nature Reserves in 1962. Today they are called the Twin Swamps and Ellen Brook Nature Reserves.

The tortoises live in swamps that fill only during the winter and spring and are dry during summer and autumn. While the swamps contain water the tortoises swim around feeding on small aquatic invertebrates. When the swamps are dry they aestivate in holes in the ground or under deep leaf litter.



## WHY IS THE SWAMP TORTOISE SO RARE?

Firstly, they have a very low reproductive potential, laying only 1-5 hard-shelled eggs in the nest, and do not reach sexual maturity until they are 10-15 years of age.

Secondly, it seems that at the time of European settlement Western Swamp Tortoises occurred only in a very small area, centred in the Swan Valley. This was the first area developed for agriculture in the state.

Thirdly, the introduced fox has taken a heavy toll of tortoises that aestivate under leaf litter.

The swamp tortoise is now extinct in the Twin Swamps Nature Reserve. The Ellen Brook population, protected in recent years by a fox-proof fence, has remained at about 25 individuals.

## CAPTIVE BREEDING

In 1988, as a consequence of the low numbers in the wild, Dr Gerald Kuchling of The University of Western Australia initiated the current captive breeding program at Perth Zoo. It is supported by the Western Australian Department of Conservation and Land Management, the Australian National Parks and Wildlife Service, World Wide Fund for Nature Australia and The University of Western Australia.

The first important step was to get the captive animals to reproduce. Ultra-sound scanning was used to determine the reproductive ability of females. Specially designed enclosures and an improved diet then stimulated these females to lay a total of twelve eggs. Only five of these survived but, since 1989, the survival rate has improved steadily.

## THE FUTURE

There is still a long way to go before the rescue project can be said to be a total success. Utilizing the breeding potential of the current adults is the main aim of the project at the moment. Rearing hatchlings to maturity, which may take as long as 10-15 years, and facilitating their subsequent release into a secure habitat in the wild must then be achieved.

Constraints remain, however, and must be taken into account before any reintroduction into the wild can be considered. These include:

- The lack of sufficient suitable habitat to sustain a large population.
- The predation level by introduced foxes, feral dogs and cats.
- The risk to the long term genetic health of the species because of the necessity to breed from such a small group.

The Twin Swamps Nature Reserve is currently being surveyed with a view to rehabilitation. It will be necessary to secure the reserve from the detrimental effects of introduced predators, fire and the reduction in the water table in order to re-establish a viable population.

*Breeding ponds at the zoo.*

*"Many of Australia's endangered species have suffered from the twin threats of habitat destruction and fox predation. Conservation authorities across the continent are working to reduce these threats, but when populations become critically low, captive breeding by zoos and wildlife departments is proving a valuable tool in rescuing species from extinction. The Western Swamp Tortoise is one endangered species which with the additional aid of public support may be saved."*

*John De Jose*
*Director, Perth Zoo*




## HOW YOU CAN HELP THE WESTERN SWAMP TORTOISE

- Send your donation to Perth Zoo, Sponsorship Trust/Conservation, PO Box 489, South Perth.
- Stop the reduction of the water table — SAVE water in the home.
- Prevent bush fires.
- Be aware of the damage caused by feral dogs and cats.



PERTH ZOO
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20 Labouchere Road, South Perth, Western Australia 6151

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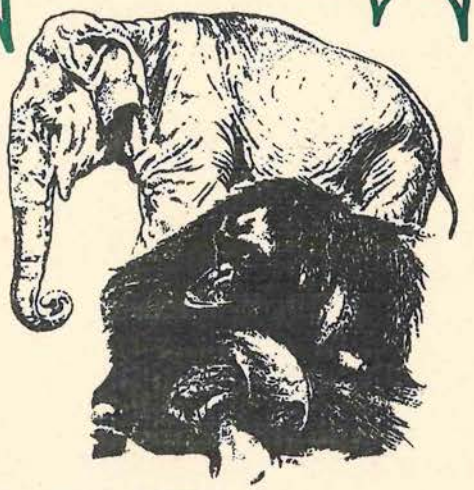


# PERTH ZOO SOCIETY $5 MILLION INAUGURAL APPEAL

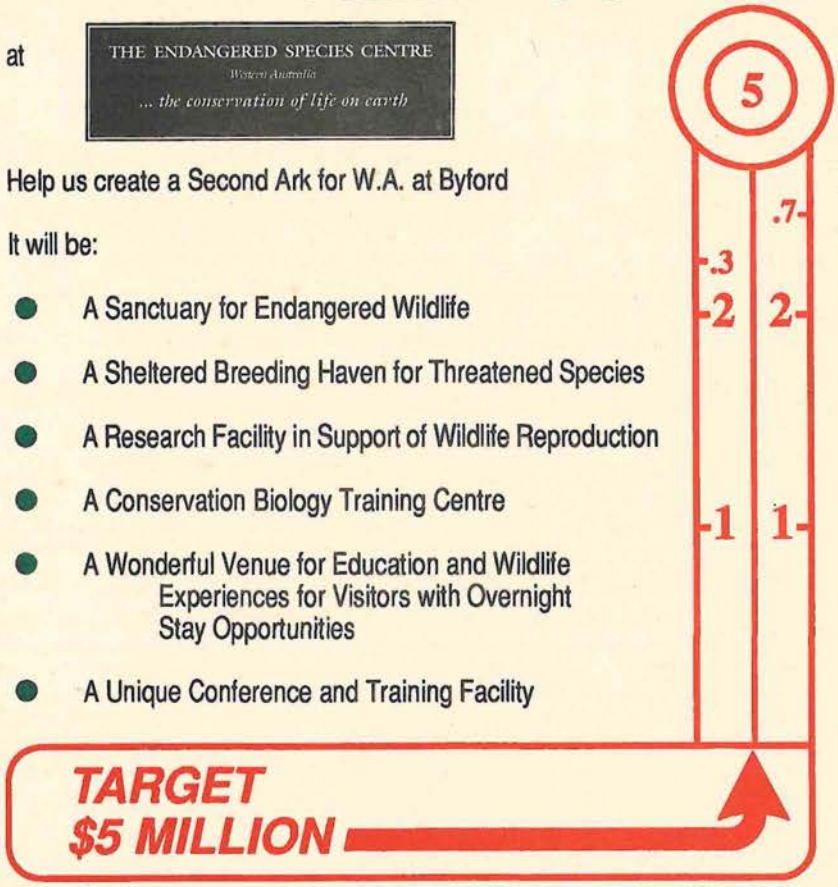
## "HELP US TO HELP THEM"

at THE ENDANGERED SPECIES CENTRE
Western Australia
... the conservation of life on earth

Help us create a Second Ark for W.A. at Byford

It will be:

- A Sanctuary for Endangered Wildlife
- A Sheltered Breeding Haven for Threatened Species
- A Research Facility in Support of Wildlife Reproduction
- A Conservation Biology Training Centre
- A Wonderful Venue for Education and Wildlife Experiences for Visitors with Overnight Stay Opportunities
- A Unique Conference and Training Facility




at PERTH ZOO
WESTERN AUSTRALIA

Help us develop the Zoo - Ark of the West

The Zoo needs to:

- Move Lions into the African Savannah, extending the exhibit
- Modify the Asian Elephant quarters to accomodate more elephants
- Begin the preparation for spectacular South East Asian Rainforest Exhibits
- Plan a new home in the Rainforest enclosures for the worlds most successful breeding colony of orang-utans already thriving at Perth Zoo
- Develop research support and further motivate environmentally caring behaviour in the community

Australia has the worst record of animal extinctions in the world and the evidence is that in the next 5-10 years this is going to get rapidly worse. 88 native species are currently identified as endangered in WA, with many more in serious trouble.

## WE NEED YOUR HELP TO HELP THEM!

You can donate at any branch of the R&I Bank or send to the Perth Zoo Society, PO Box 879, South Perth,WA 6151. If you would like to assist the fundraising effort or are interested in finding out about Corporate Sponsorship opportunities, call our Endangered Species Helpline on 474 0382.

PERTH ZOO SOCIETY

Founder Benefactors

R&I

## PERTH ZOO SOCIETY INC

The Perth Zoo Society is an independant non-profit Association which raises funds and awareness in support of conservation. It was founded specifically to assist Perth Zoo in the fulfilment of its Mission, which is: **"to contribute to the conservation of wildlife and to encourage the development of positive community attitudes towards wildlife and conservation of life on Earth."**

PERTH ZOO
WESTERN AUSTRALIA

Director: John De Jose

20 Labouchere Road, South Perth. Western Australia. 6151. Telephone: (09) 367 7988 Facsimile: (09) 367 3921

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***Thanks again***

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Telephone (09) 367 7988
Facsimile (09) 367 3921

Director: John DeJose

# LAUNCH OF THE PERTH ZOO SOCIETY'S INAUGURAL APPEAL *HELP US TO HELP THEM* AT THE SITE OF THE PROPOSED ENDANGERED SPECIES CENTRE OF WA

# SUNDAY MAY 24 1992

## PROGRAMME

| | |
|---|---|
| *10.30 -* | *Guests arrive. Morning coffee and exhibition in the marquee* |
| *11.00* | *Official Announcements and Presentation* |
| | *Kath French, President of the Zoological Gardens Board* |
| | *The Hon Bob Pearce, Minister for the Environment* |
| | *Kevin Edwards, Chairman, Perth Zoo Society Council* |
| | *John DeJose, Director of Perth Zoo* |
| *11.30* | *Tours of House and Grounds Commence* |
| *12.30 - 2.30* | *Barbecue Lunch and Bush Band* |