



THOSE SPOTTED THINGS...



The chuditch continues its comeback

If you go down to the bush today, your chances of seeing the chuditch are a lot better than they used to be.

Extensive fox baiting, and the moving of captive-bred individuals to strategic areas, have resulted in substantial growth of the previously small and restricted populations of chuditch—those spotted things that were becoming such a rare sight for Western Australians.

BY BRENT JOHNSON



The distinctive chuditch (*Dasyurus geoffroii*) is now being seen in increasing numbers, particularly at night when this rabbit-size marsupial is most active. Its white-spotted brown coat acts as an effective camouflage as it forages about in the bush looking for a meal of insects, spiders, lizards and other small animals.

The chuditch is smaller than a cat. Males grow to about one-and-a-half kilograms, the smaller females half a kilogram less. They are efficient hunters. They can move swiftly through the forest and can also climb in search of food and shelter. Chuditch require large territories; a single individual may have a home range of several square

kilometres. Within this territory they will seek refuge or den sites among hollow logs, burrows and rock crevices. A female will produce up to six tiny young in autumn, then deposit them into one of her den sites about two months later. She will return frequently to feed them until early summer, when they will venture out of the den and make their own way into the surrounding bush. They have a life expectancy there of about four years.

This little native predator was once widespread throughout much of Australia, but its numbers, like those of many other unique Australian mammals, have been dramatically reduced. Once at the top of the Western

Australian food chain, the chuditch has been forced to compete for food with the feral cat and the fox—carnivores from overseas. It has also become the prey of these introduced killers. Land clearing, disease and changes to fire regimes may also have contributed to its decline. Persecuted also by the early settlers because it liked their chickens, the chuditch's numbers dropped to a few thousand, and it survived only in the jarrah forest and small parts of the southern Wheatbelt. After this rapid decline, it was listed as threatened in Western Australia in 1983.

The chuditch, as a native predator, plays a significant role in the ecosystem. Its demise would probably have led to major changes in the food chain. In 1991, CALM prepared a management program for the chuditch, and from this a Recovery Plan was developed. The early stages of this plan were reported in *LANDSCOPE* (see 'Return of the Chuditch', Summer 1992-93).

Following successful large-scale fox baiting under CALM's Western Shield project, the chuditch and several other threatened species have been able to fight back. They have increased their populations in their existing core locations, and have also thrived when moved into parts of their former range: the quickest method of re-establishing the species throughout WA.



Previous page

WA's largest marsupial carnivore—the chuditch.

Photo - Peter Marsack/Lochman Transparencies

Above left: A chuditch check-up at Cape Arid.

Photo - Dorian Moro /CALM

Left: The chuditch will climb for food and shelter. They have been found occupying birds' nests at Lake Magenta Nature Reserve.

Photo - Jiri Lochman



TRANSLOCATIONS BEGIN

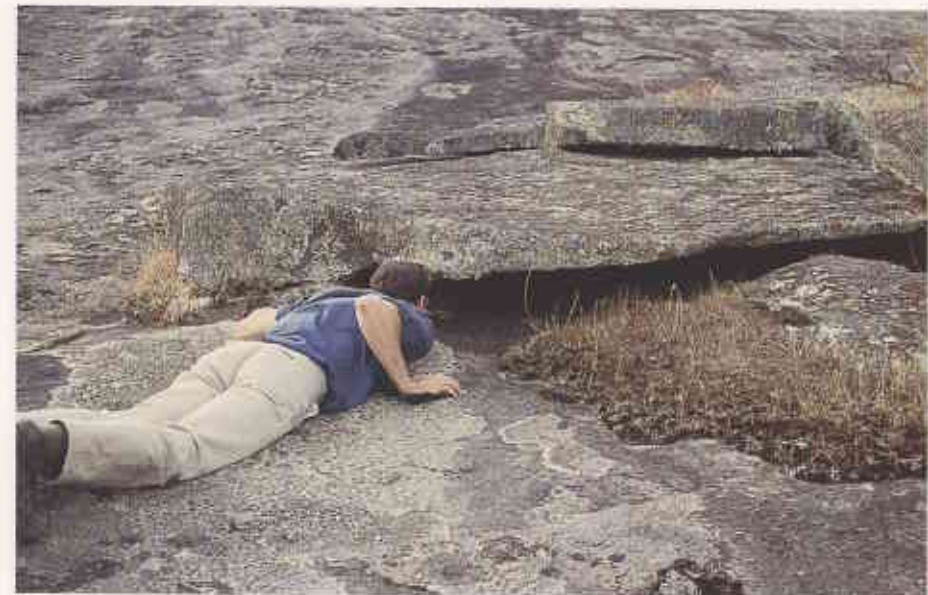
In 1992, Chuditch Recovery Team members Keith Morris and Peter Orell began the first major translocation to the Julimar Conservation Park, north-east of Perth. These pioneer chuditch had been bred at Perth Zoo as part of the recovery plan, then funded by CALM, Environment Australia, the World Wide Fund for Nature, Alcoa of Australia and the zoo. The Department of Defence, whose Bindoon training facility is close to the scene of the translocation, has also supported this work.

The Julimar population is now well established. During their annual visits, CALM staff (from CALMScience Division and Mundaring District) frequently find females with their pouches full of six young—the maximum. Sightings by nearby landholders have increased, as, unfortunately, has the number killed on the road.

After this initial success, the Recovery Team decided to re-introduce chuditch to areas outside their current distribution. The first such translocation took place in October 1996, when 40 captive-bred chuditch were released into Lake Magenta Nature Reserve. This reserve contains large areas of eucalypt mallees and woodlands with surrounding heath and scrublands; it is semi-arid, and historically would have been capable of supporting a diverse range of fauna. As at Julimar, these animals were closely monitored, this time by staff from CALMScience and CALM's Katanning District. The use of volunteers during this intensive phase was also of great assistance to the project. A combination of radio-tracking and trapping has been undertaken since then, and a further 41 chuditch have been added to the original batch.

The released chuditch have responded to their newfound freedom in various ways. Some moved over considerable distances (20 km) in the space of a few days, while others quickly established territories close to the release point.

The population appears stable, although the threat from foxes and cats, which are regularly sighted around the reserve boundary, is still present. Breeding took place in the first year of



Above: CALM researcher Dorian Moro investigates the residence of a female chuditch during the Cape Arid translocation.

Photo – Brent Johnson/CALM

Right: A zoo-bred chuditch has its first taste of the sights and sounds of Cape Arid National Park.

Photo – Dorian Moro/CALM

Below right: CALM zoologist Peter Orell and Perth Zoo keeper Glen Gaikhorst prepare to release a chuditch at Lake Magenta Nature Reserve.

Photo – Brent Johnson/CALM



release, and offspring have been captured many times since. Monitoring will be conducted over the next few years, and some further research into the dietary and habitat requirements of chuditch in semi-arid areas, such as Lake Magenta, is currently under way. This is important; all biological data known about the chuditch come from forest areas, where dietary and home range requirements may be quite different.

Perth Zoo continued to produce chuditch for translocation. In March 1998, a further 20 were released into Cape Arid National Park, 150 kilometres east of Esperance. This translocation was designed to expand our knowledge of how chuditch would adapt to different habitats, as the park is

considerably to the east of Lake Magenta and contains a mixture of coastal and semi-arid vegetation.

With the assistance of the resident CALM Ranger, Allan Rose, these individuals have again been closely monitored. The work has produced some interesting information. After a period of weight loss, the chuditch returned to release weight within four to six weeks. For refuge they prefer



Left: With its mix of semi-arid and coastal vegetation, Cape Arid provided new challenges for chuditch bred at Perth Zoo.
Photo – Brent Johnson/CALM

Below: Chuditch are active and inquisitive foragers. They have been known to pay nightly visits to forest campsites.
Photo – Marie Lochman

rabbit burrows, whether disused or occupied. They do not mind tackling large prey; CALM staff have seen them kill rabbits and a young goshawk, and found a feral cat claw in a chuditch scat.

A further 20 chuditch were released in late April 1998, and the Recovery Team has already observed the birth of the first generation at Cape Arid. The site will be closely monitored, as feral cats have been sighted and trapped there recently. They may pose a threat, particularly to the newborn animals. (The presence of cats is not surprising

when you read passages from the old Israelite Bay jetty logbook. For example: 'arrived today: 100 cats—to keep the rabbits down'.)

The Recovery Team was also pleased that most of the translocated animals stayed close to their point of release. This may indicate that adequate food and shelter are available in that area. One exception was a male, from the second batch, caught by local CALM Wildlife Officers in a chicken pen northwest of Salmon Gums 10 weeks after release. This adventurous individual

had travelled more than 180 kilometres as the crow flies, and was found to be in excellent condition.

These translocations appear successful or likely to be so. Chuditch have also been released into the Mt Lindesay area near Denmark. Additional areas for future releases are being assessed, but all sites depend on continued fox baiting, regular monitoring by CALM staff, and careful management of the area. In this way, we hope to help create healthy and viable populations.



THE FOREST

Current management strategies are certainly working within the jarrah forest, where chuditch numbers are on the increase. Trapping by CALM District and CALMScience staff in recent times has shown that chuditch are now widespread throughout much more of the forest than previously recorded. Trials of a new trap bait, more attractive to chuditch than to woylies (*Bettongia penicillata*) and possums (*Trichosurus vulpecula*), are also promising. In some fox-baited areas of the forest, captures of these other species are so high that very few traps are left available for the more sparsely distributed chuditch. CALMScience staff at Manjimup have developed a new bait mixture that has resulted in many captures, and this could help to estimate population numbers more accurately.

Reports of captures are also becoming more common in and around Alcoa of Australia's bauxite mining operations in the northern jarrah forest. Fauna habitat dens are now routinely constructed as part of the forest rehabilitation undertaken by that company.

Other interesting records have come from the Leschenault Peninsula near Bunbury. This is a formerly disturbed coastal area that is being rehabilitated. Populations of western ringtail possum and quenda have been re-introduced after fox baiting (see 'Conserving the Western Ringtail Possum' in *LANDSCOPE*, Winter 1998). Some chuditch, however, have arrived there under their own steam. This shows the value of placing previously disturbed remnant areas under fauna management guidelines.

Chuditch have also been recorded recently near Perth Airport, Midland, Herne Hill, Gnangara and along the Moore River near Guilderton, indicating a widespread return to the Swan coastal plain.

CONCLUSION

The Recovery Plan aims to have the chuditch downlisted to Lower Risk (Conservation Dependent) by 2001. With the successes outlined above, we are well on the way to achieving that



goal. As more areas become available for translocations through an expansion of fox baiting and the development of a suitable cat bait, we will see new populations established. The forest populations should continue to flourish and expand, and the appearance of 'one of those spotted things' in country and coastal areas (and no doubt 'chook' sheds) will become more commonplace. We trust that the modern 'settler' is more understanding of the night-time foraging habits of the chuditch.

Many Western Australians now readily identify this important member of our wildlife community. With continued cooperation between CALM, Perth Zoo, landholders and the general community, the chuditch may eventually return to its role near the top of the food chain, throughout much of Western Australia.



Top left: CALM Technical Officer Tania Butler prepares to release a chuditch into an area of Salmon Gum woodland in Lake Magenta Nature Reserve. Photo – Brent Johnson/CALM

Top right: CALM researcher Dorian Moro locates a well-concealed chuditch burrow at Cape Arid National Park. Radiotracking is a most effective means of gathering data on chuditch. Photo – Brent Johnson/CALM

Above: All chuditch are anaesthetised and given health checks at Perth Zoo prior to release. Some are also fitted with radio-collars like this individual. Photo – T. Butler

Brent Johnson is a senior technical officer with CALMScience Division and can be contacted on (08) 9405 5100 or email (brentj@calm.wa.gov.au).

The author would like to thank Keith Morris and Peter Orell and other team members for their considerable input into many aspects of the Chuditch Recovery Plan. Perth Zoo has also made a valued and significant contribution to the successful translocation program.

Winner of the 1998 Alex Harris Medal for excellence in science and environment reporting.

LANDSCOPE



VOLUME FIFTEEN NUMBER 1, SPRING 1999



In 'Photographing a Temperate Wonderland' (page 10), photographers Sue Morrison and Ann Storrie share their experiences .



In 'Those Spotted Things' (page 22), we see how fox-baiting and captive breeding continues to swell populations of this popular native mammal.



Snakes. You either love them or hate them, but how do we live with them? See story on page 45.



Many farmers and landowners are turning to plantation pine for a variety of good reasons. Five of them tell us why. See 'A Crop of Forests' on page 38.



As habitat changes, so do species populations. But just when does a species become threatened? See 'Healing the Land' on page 49.

FEATURES

PHOTOGRAPHING A TEMPERATE WONDERLAND
SUE MORRISON & ANN STORRIE.....10

RESTORING DIVERSITY, RESTORING HOPE
LEONIE MONKS & DAVID COATES.....17

THOSE SPOTTED THINGS
BRENT JOHNSON.....22

KARIJINI NATIONAL PARK
ALAN THORNE.....28

ADVENTURES IN THE FOREST
LIZ MOORE33

A CROP OF FORESTS
ANDREW RADO & JULIA BERNEY.....38

SNAKES
PETER MAWSON.....45

HEALING THE LAND
IAN ABBOTT & MATTHEW WILLIAMS49

REGULARS

BUSH TELEGRAPH.....4

ENDANGERED
CUNDERDIN DAVIESIA.....53

URBAN ANTICS
RUBBISH TIPS AND HINTS.....54


COVER

The magnificent gorges of Karijini National Park are a refreshing retreat from the arid plains above. They also have a fascinating geological history. See story on page 28.

Illustration by Philippa Nikulinsky



Executive Editor: Ron Kawalliak
Managing Editor: Ray Bailey
Editor: David Gough
Story Editors: Mandy Clews, Verna Costello, Louise Johnson, Sandra Toby, Carolyn Thomson-Dans, Mitzi Vance, Penny Walsh
Scientific/technical advice: Andrew Burbidge, Greg Keighery, Ian Abbott, Neil Burrows, Paul Jones and staff of CALMScience Division
Design and production: Tiffany Aberin, Maria Duthie, Sue Marais
Illustration: Gooitzen van der Meer, Ian Dickinson
Marketing: Estelle de San Miguel ☎ (08) 9334 0296 Fax: (08) 9334 0498
Subscription enquiries: ☎ (08) 9334 0481 or (08) 9334 0437
 Colour Separation by Colourbox Digital
 Printed in Western Australia by Lamb Print
 © ISSN 0815-4465. All material copyright. No part of the contents of the publication may be reproduced without consent of the publishers.
 Please do not send unsolicited material to LANDSCOPE, but feel free to telephone the Editor.
 Visit LANDSCOPE online on our award-winning Internet site NatureBase at <http://www.calm.wa.gov.au>

 Published by Dr S Shea, Executive Director
 Department of Conservation and Land Management,
 Dick Perry Avenue, Como, Western Australia