No 4/92

DEPARTMENT OF CONSERVATION

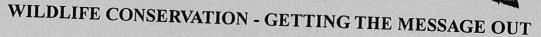
AND LAND MANAGEMENT

COMO, W.A

RESEARCH NEWS

The newsletter of the Research Division of the Department of Conservation and Land Management Jill Pryde Wildlife Research Centre PO Box 51 Wanneroo WA 6065

Telephone: 4055 105



Not long ago, my phone rang interrupting some deep and profound thoughts about nature conservation. The dialogue went something like this:

Caller: Hello, I understand you're the expert on rock-wallabies.

J. Kinnear (Rock-Wallaby Expert; RWE): Well, I know a little about them I suppose. But there is another bloke here called Onus who thinks he knows more.

Caller: Good to hear. Look, I'm a scout master in the hills here, and we have a group of 5-7 year olds (a Joey troop) who want to adopt rock-wallabies as their mascot.

RWE: Great idea. What species?

Caller: Yellowfoots; the ones you see at the zoo. The lads are doing their bit for wildlife conservation.

RWE: YELLOWFOOTS! But they're an eastern state species! You really should adopt our local species - the black-flanked rock-wallaby. Its endangered.

Caller: Oh, I didn't know that. I thought the only endangered species were the short-necked tortoise and the numbat. There is always something about them in the "West".

RWE: (Deep sigh of resignation): Well there are other animals in trouble too, but never mind that. Actually we are hand-rearing black-flanked rock-wallabies at home with the idea of establishing a breeding colony at the zoo. We have one at the zoo already, and soon we will be delivering another. The kids could help sponser a colony.

Caller: I agree; it would be more appropriate to support a local species. By the way, would you like to come out to speak to them? The kids would like a picture of a rock-wallaby for their club house. Do you have one? They have

RWE: Actually, we are raising a rock-wallaby at home at the moment. I could even bring her. Her name is Steffi.

Caller: Really! The kids would love that. What does Steffi like to eat?

RWE: Mostly the lounge room drapes at this stage. By the way, how much have the lads raised?

Caller: A dollar each.

RWE: (Pause) Well times are tough these days. Every bit helps. Well done. Incidentally, how does one get wildlife conservation across to 5-7 yr olds?

Caller: Try acting like Ronald McDonald.

Four individuals will soon be promoting rock-wallaby conservation in the hills to the scout movement. They are Tom, the WRC resident rock-walaby (weight, about ~5000 grams) and Steffi, (~600 grams) who will soon be on display at the Zoo. J. Kinnear will try to emulate R. McDonald. Louisa Kinnear, age 13 and an expert on rearing baby rock-wallabies, has volunteered to come along to help with rock-wallaby management.

RDPG MINUTES

Notes from RDPG meeting held on 14 May, 1992 at Woodvale.

Steve Hopper's move to Kings Park as Director

Andrew Burbidge congratulated Steve Hopper on his new appointment as Director of Kings Park. He takes up this position on 2 June 1992.

Budget

The budget report covers 88% of the year and the Research Division is currently 76% spent.

Salaries Allocation to Costs Centres

At the recent meeting between Corporate Executive and Regional Managers it was agreed that regions and branches would be accountable for salary budgets in 1992/93 from July 1 1992.

A set of guidelines will be prepared and sent out to Centres in due course. Research Division will manage its salaries at the Divisional level.

Retreat

RDPG will be travelling to Dryandra on the 23/24/25th June for this year's annual Retreat. Some of the agenda items include Review of past year including achievements; Priorities and goals - resource reallocations; CALM financial management programs; Communications Plan; Coordination of external grants; Role of Program Leaders.

Long Service Leave and Annual Leave Replacements for Admin/Support Staff

It was agreed that expressions of interest could be sought (within Research Division) to replace admin/support staff wishing to take Long Service Leave.

It must be noted however that no travel costs will be paid and all costs are to be met by the Research Centre where the person is taking leave.

New Technical Staff Positions - Research Division

The following transfers have been approved:

Bill Muir from Swan Region to Biogeography Program.

Brent Johnson from Pilbara Region to Fire Research Program.

Alan Clarke from Planning Branch to Woodvale - Wetlands & Waterbirds Research Program.

Keith Munghum from Land Information Branch to Busselton Research.

Other staff movements:

Karan Maisey has moved from Fire Program, Woodvale to Busselton into Plantations Research Program.

Paul van Heurck from Economic Entomology Como to Woodvale - Fire Research Program.

Alan Wills from Plantations Research to Economic Entomology Research Program, Como.

Angas Hopkins has now returned to the Division from Monday 18th May and will be working in the Fire Program.

New Book

Per Christensen's new publication "The Karri Forest" has been published.

New Research Division Guideline No 12 - Safety

Admin Assistants and Research Centre managers have received this new Guideline - if Research Scientists have not received a copy, please see the Admin Assistant at your Centre.

Publication Submissions

The question whether Poster abstracts should be approved was discussed and it was agreed to rely on people's integrity. Conference abstracts should go through the standard publication submission procedures. Guideline No 1 to be altered accordingly.

Next RDPG meeting will be held on 6th August at the Herbarium

Application for Interstate Travel

The Director of Research now approves all interstate travel. Consequently only one form needs to be filled out. This nullifies the two forms which previously required both the Director of Research and the Executive Director signatures.

Please note new form below. This will be distributed to Research Centre Managers and Admin Assistants.

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A.	Application Details			
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	Position			
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		Other Total	\$	
	Funding source			
	Destination			
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NEW ZEALAND PREDATOR WORKSHOP

In April, I travelled to New Zealand to present a talk on our predator studies. Getting there can be rather trying as the only direct flights from Perth are midnight horror journeys - the least said the better. Be prepared to write off a day.

In Wellington, I spent the afternoon at the Dept. of Conservation discussing radio-telemetry with some experts. I was hoping that they might have some fresh insights into contact radiotelemetry but I drew a blank.

From Wellington I flew to Christchurch where I was met by Dr. Charles Eason a toxicolgist who heads a research group investigating various approaches to vertebrate pest control. My visit was timely because Eason was hosting an eminent UK toxicologist, and he had already organized a mini-workshop to describe his research.

The major vertebrate pest control problem in NZ is the Brush-tail possum now estimated to number about 70 million. This would suggest that the species is not a candidate for the endangered species list in NZ.

We were given a guided tour of their field station which housed some gigantic possums. My first impression on seeing these possums was that megafauna has not died out after all; it simply went to NZ. I mean, have you ever seen a King Kong possum rear up in a menacing manner? They look positively life-threatening.

1080 baits are used to control possums, but Eason is working an ingenious alternative. Would you believe that the toxin is Vitamin D? A dose disturbs calcium metabolism which affects electrolyte metabolism which then eventually results in heart failure.

The beauty of it is that it is so target specific, a metabolic peculiarity restricted to possums. One dose is enough and a follow-up baiting with baits containing calcium potentiates the Vit. D.

I was absolutely amazed at the amount of 1080 they use to control possums, literally grams/kilograms of the stuff (we use milligrams for foxes). Because such large amounts are used, efforts have been made to determine the

environmental fate of 1080. Eason is very much involved here, and he has found that 1080 is rapidly degraded even when used in such large amounts.

He has developed an exquisitely sensitive (picogram level) analytical technique for analyzing 1080. It is not suitable for routine analysis of 1080 as it is very sophisticated method requiring highly skilled technicians and the instrumentation is very costly (GC with EC detector using 1080 halogenated derivatives). Nonetheless, I came away with some useful tips which we hope to incorporate into our own bioassy under development at Curtain Uni.

The Workshop

The workshop was held at a private ski resort in the mountains near Arthur's Pass. The accommodation was very basic about a star rating; the food was good, the days crisp and sunny.

Upon arrival, our driver got out and promptly removed the windscreen wiper blades and secured them inside the vehicle. Why? "Because Kias are about" was the answer.

Kias turned out to be large green alpine parrots, absolutely marvelous birds full of cheek and swagger. Instead of a beak, it has a shredder. It delights in shredding things like wiper blades, tents, sleeping bags, bags of flour etc.; apparently anything that's shredable gets shredded when kias are about. It is not threatened presumably because it can also shred the multitude of introduced predators that cause havoc with the NZ bird fauna.

Prior to colonisation by Homeo sapiens, NZ terrestial mammals were absent. Birds filled the empty mammal niches. The polynesians introduced a rat. The Brits excelled in this; they tried to introduce every exotic mammal they could get their hands on so it would seem.

As a result, the predation ecology is hideously complex. NZ has feral cats, ferrets, weasels and stoats. The Polynesian rat, the Norway rat and the ship rat along with the possum complicate matters even further - they are believed to be

nest predators. To top things off, the native raptors cannot be ignored.

Many endemic birds are threatened; not surprisingly, the predation ecology is poorly understood because of the multitude of potential predators. Given these circumstances, it is fair to say our counterparts in NZ have a long way to go. One gets the impression that they sometimes feel a bit overwhelmed and who could blame them.

I described our work to the participants and judging from the subsequent discussions, it seemed to have been received with considerable interest.

The editor of some NZ biological journals was present and after hearing my talk asked me if our work had been published. I said that I was currently experiencing difficulties with Australian referees at this stage. On hearing this, the editor then invited me to publish our studies in NZ journals. I'm seriously considering this invitation.

A highlight of workshop proceedings were the talks on feral cat control. The Kiwis have managed to eradicate cats from islands and in the course of doing have acquired an enormous

amount of experience and knowledge. Some of the trapping techniques were demonstrated. Under development are new baits, scents, and lures which are under test in the field. Curiously, cat's are attracted to L-alanine sprinkled on baits. Extensive bait preference trials have been carried out with feral cats and surprisingly, fish (widely used) ranks rather low on the palatabilty scale.

Perhaps most of all, it was stressed that cat eradication requires dedication and commitment. Success depends a great deal on stubborn persistence and staying power combined with an attitude that seeks to exterminate the last cat. The message here is that any cat control program that we undertake must not be undertaken with the view that a quick fix is likely. One must be prepared for the long haul.

Despite this we can take heart because the New Zealanders have shown that it can be done even under very difficult circumstances. If they can do it, so can CALM, perhaps with a little help from our NZ friends.

Jack Kinnear

A WORD FROM THE SCIENTIFIC EDITOR

Authors who are preparing MSS for scientific or technical publications by CALM please note that I will be on leave from mid-July until 7 September.

If you ensure that approved MSS reach me before 1 July they will be registered and forwarded to referees so that they will be in process during my absence. If this is not possible, then please hold onto them and submit to me upon my return in September.

New Publications

The following titles have recently been published and should be available either from Stores or Enquiries at Como.

The Karri Forest: Its Conservation Significance and Management by P.E.S. Christensen.

Wildlife Management Program No. 8 The Management of Sandalwood by I.G. Kealley.

Technical Report No. 27 Application of Dendrochronology, Stem Analysis and Inventory Data in the Estimation of Tree and Stand Ages in Karri Forest by M.E. Rayner.

Occasional Paper No. 1/92 Application of Modern Inventory Techniques in the Forests of Western Australia. Edited by R.D. Spencer.

Occasional Paper No. 3/92 Drupella cornus: a synopsis - proceedings of a workshop held at CALM, Como, W.A. November 1991. Edited by S. Turner.

Marianne Lewis

Scientific and Technical Publications

The following have recently been approved for submission for publication.

J.P. Pigott, P.H. Brown and M.R. Author(s):

Williams

Advances in direct seeding native trees on farmland in the W.A. wheatbelt -

research conducted near Narrogin

1984-1990.

For

Title:

publication in: CALM Research Bulletin

Author(s): Title:

P. Newbey and G.R. Siemon Stability of furniture panels manufactured from jarrah.

For

publication in: WURC Technical Report No. 27

Author(s):

J.A. Friend, G.R. Friend, N.D. Thomas and D.S. Mitchell

Title:

Short-term impact of fire on a population of *Phascogale calura*. II. Movements, home range and nest

selection.

publication in: Australian Mammal Society Newsletter

Author(s):

G.R. Friend, J.A. Friend, D.S. Mitchell and N.D. Thomas

Title:

Short-term impact of fire on a population of *Phascogale calura* 1. Population dynamics and habitat

Abstract for verbal paper at Aust.

publication in: Mammal Society

Author(s):

B.L. Shearer

Title:

The Problem of Disease

For

publication in:

Workshop Proceedings "Bridgetown Greenbushes Friends of the Forest" -Perup Workshop Oct '91.

Author(s):

K.D. Morris and P. Copley

Title:

The successful reintroduction of the Greater Stick Nest Rat to Western

Australia.

Australian Mammal Society Meeting For

publication in: Abstracts 1992

Author(s):

Andrew A.E. Williams

Title:

New Distribution Records for Cephrenes trichopepla (Lower) and Cephrenes augiades sperthias (Felder) (Lepidoptera:Hesperiidae)

Publication in: W.A. Naturalist

Author(s):

N.L. McKenzie, G.R. Beeston, P.J. Bowen, A.A. Burbidge, A.H. Burbidge, N. Gibson, S.D. Hopper and G.J.

Keighery

Title:

Environmental Regionalisation for Conservation in Western Australia Proceedings of a workshop at ERIN in

For Publication in: May

Author(s):

S.J. Little and G.R. Friend

Title:

Structure of invertebrate communities for different-aged kwongan vegetation at Tutanning Nature Reserve

For

Publication in: CALM Technical Report

Author(s):

I. Abbott

Title: Insects in eucalypt plantations in

Western Australia

Publication in: Australian Forestry

Author(s):

G.L. Stoneman, B. Dell and N.C.

Turner

Title:

Factors affecting the establishment of Jarrah (Eucalyptus marginata) from seed in the Northern Jarrah Forest of Western Australia: Mortality of the

Forest

Publication in: Journal of Applied Ecology

Research Project Plans

The following Research Project Plans have been approved this month.

No:

13/91

Title:

Screening jarrah provenances for resistance to Phytophthora cinnamomi

Jarrah resistance to Phytophthora cinnamomi - seed orchid

M. Stukely

No:

Title:

Supervising

Scientist:

Supervising Scientist:

M. Stukely

No: Title:

Regeneration of Acacia aphylla

Supervising Scientist:

D. Coates/J. Alford

No:

8/92

Title:

Efficacy of low concentration of the fungicide phosphorous acid in controlling *Phytophthora cinnamomi* in

Banksia coccinea

Supervising Scientist:

B. Shearer

No: Title: Supervising Scientist: No: Title: Supervising Scientist: No. Title: Supervising Scientist: No: Title: Supervising Scientist: No: Title: Supervising

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Scientist:

Supervising Scientist:

Title:

9/92 Plant Propagation Centre Stock Control System

M. Choo / Y. Woods

10/92 An investigation of the social organisation of introduced red foxes

N. Marlow

12/92 The determinations of the intra-specific contact rate of red foxes

N. Marlow

13/92 Measurement of fox density

> D. Algar 14/92

Field performance of root-trainer pots for regeneration of karri coupes

Scientist: P. Hewett

> 15/92 An assessment of the impact of the fox on medium-sized mammals in the

jarrah forest (Operation Foxglove) Supervising Scientist: K. Morris

> 16/92 Population genetics of the brush-tailed Bettong in Western Australia

> G. Hall

17/92

Population monitoring of the Brush-tailed Bettong in Western Supervising Australia Scientist

G. Hall Extinct Sorry Extinct

Suddenly, Bobby felt very alone in the world.

19/92

Title: Conservation of the Shark Bay Mouse -Phase 1: Research on Bernier Island

Supervising Scientist: K. Morris

No:

No: 21/92

Title: Conservation status of the Nullarbor Quail Thrush

Supervising Scientist: A.H. Burbidge

No: 22/92

Title: Regeneration of four locally endemic forest eucalypts in gaps following fire

Supervising Scientist: G. Wardell-Johnson

No: 23/92

Title: Effect of end treatment on CCA preservative penetration in regrowth karri transmission poles

Supervising Scientist: G. Brennan

No: 24/92

Title: Relationships between the growth of Pinus radiata and soil and site properties in the Albany area.

Supervising Scientist: R. Harper

No:

Title: Development of a soil and land evaluation package for plantation

establishment and subsequent management

Supervising Scientist: R. Harper

No. 26/92 Title:

Relationship between branch size, success of occlusion and branch angle to recovery for regrowth karri grown

under wide spacing

G. Brennan

Trials, Tribulations & Titillation - Experiences of a CALM Volunteer

Names have been changed to protect the innocent. (You will not win a Freddo for guessing who Blurp is).

(From his diary)

Day 1 - Tue 10 Dec 1991

We left Perth at about 11am to travel to Kalgoorlie, stopping only for lunch at Cunderdin and once just outside Kalgoorlie for a radio check. We arrived in Kalgoorlie in the late afternoon and drove to the CALM workshop where we were to stay the night. After unloading some of the gear from the ute we went into town and had a meal at the Boulder Block Hotel. After tea we drove around town a bit then went back to the workshop. The worst thing was trying to sleep while being attacked by swarms of mozzys.

Day 2 - Wed 11 Dec 1991

We arrived at the reserve at around 6.30 pm unloaded the ute and then went out to open 5 of the vertebrate pitfall grids. In one of the pits we found a *Varanus gouldii*, the pit was probably opened by a dingo and the goanna had fallen in and been living on whatever fell in after it. Blurp decided not to catch the animal until tommorow because we had nothing to put it in. Once the pits were open we returned to camp and I cooked tea while Blurp and Daniel set up the tent and other things.

Day 3 - Thurs 12 Dec 1991

Today we got up to 5am and checked the pits we had opened last night the animals we caught are listed in my data. Amongst the animals was the goanna we found last night its tail tip was missing but other than that it seemed to be alright.

After lunch we went out to open the remaining two vertebrate grids which had also been burnt by the recent fire. These grids had originally been unburnt grids to be compared to the other grids which had been burnt deliberately but the lightning had fixed all that. With the fences fixed we went for a drive around the area to see where the fire had been and where it had come from then we returned to camp for tea and a shower. On our arrival back Blurp noticed that the 44 gallon drum full of water was missing from the back of the ute, it must have fallen off somewhere. Blurp and I went off to find the drum while Daniel started tea. We found it on

top of one of the dunes, it had been thrown off while we were checking the fire damage and had turned a sharp corner. The next problem was how to get it back onto the ute as it was full of water and very heavy. After some struggling we managed to lift it on and returned to camp for a most enjoyable shower.

Day 5 Sat 14 December 1991

Last night was very windy, the tarp on the tent was blown undone and Blurp had to get up to tie it down again. It was probably the coldest night we had had so far. We got up a bit late this morning as it had been a restless night. It was around 6.30 am by the time we got out to the pits and found massive numbers of animals in them. It took us 7 and a half hours to process them all so it was 2pm before we got back to camp. Among the animals were 2 Dunnarts that were taken back to camp to be fitted with devices.

While I was handling a *Ctenotus shomburgkii* (stripy skink) to get the weight, it escaped from my hand and ran into a gap between the cab and canopy of the ute. We were unable to get it out so we left it there.

Day 6 Sun 15 December 1991

We woke at 6am and checked the pits it took about 4 hours. When we got back to camp I checked on the skink that had got stuck in the gap between the canopy and cab. It was still there but it had turned itself around and was nearly out so I was able to poke a stick down into the gap and prod it out. It ran out onto a ledge underneath the tray of the ute so I had to crawl under the ute to get to it again. I tried to grab it but it ran back up into the gap it had come from so I gave up again and went to have some breakfast. After breakfast I checked the skink again and it was almost out so with the help of Daniel we were able to block off its access to under the tray and prod it out again. This time it ran onto the tray and straight into a calico bag which just happened to be sitting open on the tray. It was later released at the place where it was caught.

After that bit of excitement we went out to the invertebrate pits. We also started digging more

vertebrate pits at a new unburnt site to replace the ones burnt by the recent fire.

Lunch came as a welcome break but not for long as straight after lunch we continued digging holes and burying buckets up to their lips until 5.30pm then we went to check on the traps until dark. Back at camp we looked forward to a shower and a roast dinner.

Day 9 Wed 18 Dec 1991

The mozzys weren't too bad last night so I got quite a bit of sleep. This morning was spent packing the ute and getting ready for the trip to Perth. We dropped into the office in town to say goodbye then we left around lunch time. We arrived back at Perth in the evening just in time for some rain.

WEEK 3 AND 4 CALM WOODVALE RESEARCH CENTRE

This week and next week was to be my lab work to finish my 4 weeks work experience. My first task was to enter trapping data collected from this and previous trips onto computer.

This was very tedious and took a long time but it had to be done. I also processed weather data that had been collected by an automatic weather station out at the reserve. The station records the weather data every hour for months.

On Wednesday Blurp was riding home from work and was knocked off his bike by a car and broke his collarbone so he was unable to come in to work for the rest of the week. This didn't mean that I couldn't work so I still had to do the data entry and weather data. On Friday afternoon I finished the weather data so I was able to do some specimen preserving.

Week 2 of my lab work was spent finishing off the data entry and driving Blurp around because of his broken collarbone.

The end of the week was mainly spent preserving specimens and digging around in the freezer for more specimens to preserve.

The end

Mouse Balls

Reproduced here is a memo that went out to all IBM branch offices in Hong Kong. It was sent to the 'South China Morning Post' newspaper and appeared in 'Lai See's' daily column.

The subject matter is deadly serious to the computer literate, but the rest of us may react differently.

MOUSE BALLS: If a mouse fails to operate or should it perform erratically, it may need a ball replacement. Because of the delicate nature of this procedure, replacement of mouse balls should only be attempted by properly trained personnel.

Before proceeding, determine the type of mouse balls by examining the underside of the mouse. Domestic balls will be larger and harder than foreign balls. Foreign balls can be replaced using the pop-off method. Domestic balls are replaced using the twist-off method. Mouse balls are not usually static sensitive. However, excessive handling can result in sudden discharge.

It is recommended that each replacer have a pair of spare balls for maintaining optimum customer satisfaction, and that any customer missing his balls should suspect local personnel of removing these necessary items.

To re-order, specify one of the following: P/N 33F8462 - Domestic mouse balls P/N 33F8461 - Foreign mouse balls

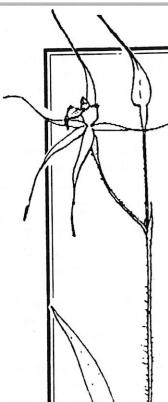
Revised Policy Statement

No 8 - Budget Preparation and Control

Please replace Policy Statement No. 8 - Financial Management, dated April 1986 with this new policy.

NEXT NEWS DEADLINE

July Mid-July



Seminar

Thursday 18th June 1992

Water Relations, Leaf Area and Jarrah Growth

by Stuart Crombie

Management objectives for designated Multiple Use Jarrah Forest call for some thinning of regenerating stands to promote growth on retained trees.

Results of the Inglehope thinning experiment 25 years after initial treatment indicate that:

- i) thinning did not reduce stand basal area increment (BAI) as stand basal area was reduced from 30 m² ha⁻¹ to 10 m² ha⁻¹; (1300 stems ha⁻¹ reduced to 300).
- supplying Nitrogen and Phosphorous fertilizer trebled unthinned stand BAI and increased LAI of moderately thinned stands by up to 50 percent.
- iii) Leaf Area Index (LAI) of heavily thinned stands had not regained prethinning values after 25 years.
- iv) thinning relieved summer water deficits by up to 40 percent; supplying fertilizer increased water deficits by up to 70 percent compared to unfertilized unthinned stands and by more than 100% compared to heavily thinned stands.

Implications of changes in leaf area and summer water deficits for jarrah growth and survival in response to thinning, disease and summer drought will be discussed.

Venue: CALM Wildlife Research Centre Ocean Reef Road (near Joondalup Drive) Woodvale Time: 3.00pm

PACIFIC ONSERVATION BIOLOGY

Subscription Details

Per Annum

Individual Aust. NZ

Aud 558

Other countries

Aud \$81 (US \$65)

Delivered by air

r

Libraries

Aust. NZ

Aud \$175

Other countries

Aud \$218 (US \$175)

Delivered by air

Indigenous Pacific Islanders pay half advertised rates.

Aims and Scope

The Pacific region has protound and urgent problems in conservation and land management. The region also has people with worldclass skills and training in conservation oriented biological research. One broadly recognized impediment to effective conservation and management is inadequate communication among research biologists and conservation managers and administrators.

Pacific Conservation Biology is a new quarterly journal that will enhance this communication. It will provide a forum for it discussion about regional conservation problems, this debate about priorities and mechanisms for conservation oriented biological research, and (iii) dissemination of the results of relevant research. Emphasis will be placed on making clear the relevance and management implications of the research. The primary audience is the research biologists, wildlife managers and administrators of government and non-government conservation agencies. To this end, the editors are drawn from government conservation agencies, research organizations and universities in Australia and New Zealand.

Each issue will include (i) a section of news and correspondence. (ii) a forum with a key discussion paper and responses, and (iii) contributed papers that present high quality original research. Reviews of relevant topics, especially those that focus on the region, are welcome.

Editorial Process

In keeping with the demand for and nature of the information, the journal will provide a rapid turnaround for papers. All items will be subject to rapid assessment of suitability by Associate Editors. Papers judged to be unsuitable because of inappropriate content or the need for major revision will be returned to authors within two weeks. Papers judged suitable will be forwarded to members of the Review Panel for detailed assessment. Authors of review or discussion papers should submit a precis to the Editor for preliminary assessment before preparing the full paper. The minimum time from submission to publication (e.g., for news and correspondence items) should be around 4–6 weeks.

Content of Papers

Papers on any aspect of conservation research or management are welcome. Papers describing research results should conclude with a section outlining the implications for management or management-related research. Similarly, papers about management issues should address the requirements for research. There are three categories of manuscript:

- (i) short (less than 1000 words) news and correspondence items:
- (ii) contributed papers (typically 2 000 to 10 000 words); and
- (iii) forum essavs (1000-2 000 words) and reviews (less than 10 000 words).

The last category is intended to highlight research and management issues of particular relevance to the region and most contributions will be invited. However, the editor would welcome suggestions

Submission of Papers

Authors should submit three copies of their paper to the Editor and indicate the category of their paper. Abbreviated Instructions to Authors are attached — more detailed instructions are available from the Editor. The final version can be supplied on computer disc as well as hard copy.

Editor

Dr. CRAIG MORITZ

Senior lecturer in Zoology and a foundation member of the Centre for Conservation Biology, University of Queensland.

Associate Editors

John Craig, Department of Biology, University of Auckland, New Zealand: Gordon Grigg, Centre for Conservation Biology, University of Queensland: Stephen Hopper, Department of Conservation and Land Management, Wanneroo, Western Australia: Jiro Kikkawa, Centre for Conservation Biology, University of Queensland: Roger Kitching, Division of Environmental Science, Griffiths University, Queensland: David Lamb, Centre for Conservation Biology, University of Queensland: Harry Recher, Department of Ecosystem Management, University of New England, New South Wales; Paul Sattler, Queensland Department of Environment and Heritage: Denis Saunders, CSIRO Wildlife and Ecology, Midland, Western Australia: Alan Saunders, Threatened Species Unit, Department of Conservation, New Zealand.

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- Forman, R. T. T. and Gordon, M., 1984. Landscape ecology principles and landscape function. Pp. 61-67 in Methodology in Landcape Ecological Research. V ed by J. Brandt and P. Agger. Roskilde University Centre: Denmark.
- Hobbs, R. J. and Hopkins, A. J. M., 1990. From frontier to fragments: European impact on Australia's vegetation Pp. 93-114 in Australian Ecosystems: 200 years of Utilization, Degradation and Reconstruction ed by D. A. Saunders, A. J. M. Hopkins and R. A How. Ecological Society of Australia.
- Hopkins, A. J. M. and Saunders, D. A., 1987. Ecological studies as the basis for management. Pp. 15–28 in Nature Conservation: The Role of Remnants of Native Vegetation ed by D. A. Saunders, G. W. Arnold, A. A. Burbidge and A. J. M. Hopkins. Surrey Beatty & Sons: Chipping Norton.

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