WORLD WIDE FUND FOR NATURE AUSTRALIA PROGRESS REPORT

A. Project No and Title

P144: Fire and Invertebrate Conservation in Mallee-Heath Remnants.

B. Report Type

Progress Report No. 2., 25 June 1990. End of year 1 of three year project.

C. Authors of Report

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D. Collaborators

Australian National Insect Collection, Canberra.
Western Australian Museum, Perth.

E. Objectives of Project

a) To examine the consequences of instigating deliberate burning for ecological management in remnant semi-arid vegetation by studying components of the fauna which are likely to show a range of responses to fire.

b) Use these data to develop general principles and policies for predictive fire management in such ecosystems.

F. Research Methodology

a) Studies are conducted in the Stirling Range National Park.

b) Three fires are planned in 1990-1991: a spring burn in 1990 over 20 ha, and two autumn burns in 1991, one over 20 ha and the other a routine operational burn over 400 ha.

c) Regular pre-and post-fire sampling using pitfall traps, sweeping and beating and interception traps over 3 years.

d) Trap catches of Coleoptera, Arachnida, Hymenoptera, Diptera, Hemiptera and Orthoptera are separated and identified to lowest taxonomic level possible. The remainder of the catches are stored unsorted.

G. Summary of Work to Date

a) Permanent trapping grids were selected and established in a range of sites with different fire histories during June 1989.

b) Trapping was conducted in June, August, October and December 1989, and February, April and June 1990.

c) Sorting and identification of the June, August, October and December catches has been completed. Sorting of the material caught in February is progressing.

d) Measurement of habitat attributes has continued.

e) Eleven new species of melolonthine beetles have been discovered, all from the October and December 1989 samples. In addition, several species of identified melolonthines have been collected which were not previously represented in the Australian National Insect Collection.

f) Of significance in February 1990 was the discovery of a third species of the genus *Nickerlea* (Coleoptera : Cicindelinae). Previously this genus comprised two poorly known species, including one from inland Western Australia (Hall and Friend 1990; J. Roy. Soc. W.A. 73, 57-59).

H. Preliminary Recommendations for Management

This project is part of a multidisciplinary study on fire behaviour and fire effects on the biota, and as such has the potential to provide managers with data on which to formulate ecologically sound fire management policies.

However, it is too early in the project to make management recommendations.

I. Work to be Completed

a) Continue, and complete, pre-fire sampling.

b) On-going sorting and identification of invertebrates from trapping occasions.

c) Complete pre-fire habitat analysis.

J. Difficulties Encountered

Wildfires in the Fitzgerald River National Park delayed routine autumn burning in the Stirling Ranges this year. Therefore the operational burn over 400 ha of the Two Mile Lake area which was planned for autumn 1990 has been postponed until autumn 1991.

K. Budget Report

World Wildlife Funding for the 12 month period ending 30 June 1990.

	Budget	Expenditure
Salaries	17 750	15 430
Equipment	500	361
Plant	1 250	1 738
Administration & Publication	750	0
Total	$20 250	$17 529

Resources from Department of Conservation and Land Management for the 12 month period ending 30 June 1990.

	Budget	Expenditure
Salaries and Travel	15 000	15 792
Equipment	1 500	1 804
Plant	3 600	1 138
Administration, Computing & Publication	4 500	2 800
Total	$24 600	$21 534

L. Reports or Publications Arising

Hall G. P. and Friend G. R. (in prep) A new species of *Nickerlea* (Coleoptera : Cicindelinae) from the Stirling Range National Park, Western Australia. Rec. W. Aust. Mus.

Proposal for a book entitled "Natural History of the Stirling Range National Park" edited by G. P. Hall and G. R. Friend.