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Dear Earthwatch volunteers,

We would like to extend our warmest thanks and appreciation for your assistance over the 2008 summer expeditions. We simply could not have done it without you (stagwatching trees by yourself is quite difficult!). Thanks for putting up with the mozzies, leeches, wire grass, peanut butter under the fingernails, rat poo, early mornings, late nights, bad jokes, wet socks and long drives in the forest. This year we managed to complete a large amount of field work, including checking nestboxes, surveying monitoring sites for the presence of Leadbeater's Possum and other forest marsupials, surveying small mammals on operational logging coupes and trapping the Mountain Brushtail as part of a long-term population study on this species.

As part of assessing the status of forest marsupials in the Central Highlands of Victoria, two Earthwatch expeditions in 2008 surveyed sites for the presence and abundance of nine species of arboreal marsupial. Volunteers surveyed potential nest trees over the 2008 summer field season, targeting a range of species including the Greater Glider, Mountain Brushtail Possum, Sugar Glider, Common Ringtail Possum, Agile Antechinus, Leadbeater's Possum, Feather-tail Glider and the Yellow-bellied Glider. The January team monitored 192 nestboxes suitable for hollow dependant fauna in the Toolangi and Mt. Margaret areas. A

total of 60 Mountain Brushtail Possums was trapped at a 35 ha (hectare) site at Cambarville, including 31 during the January camp and 29 during the March camp. Six logging coupes were surveyed for small mammals as part of the Variable Retention Harvesting Experiment (Cutting Experiment) in the Marysville and Toolangi wood production areas.

We sincerely hope that you all enjoyed your time in the central highlands and gained some insights into the effects of current forestry operations on the ecology and conservation of Australian forest marsupials and learnt about the various ways in which we are working with the timber industry and local government agencies to develop ecologically focused harvesting practices. We wish you all the best with all your future projects and look forward to hearing from you.

Yours sincerely,  
Damian Michael

A handwritten signature in black ink, appearing to read "Damian Michael". The signature is written in a cursive style with a long, sweeping tail on the final letter.



## EARTHWATCH INSTITUTE ANNUAL FIELD REPORT

**Project title:** *Australia's Forest Marsupials*

**Date completed:** 9 July 2008

**Completed by:** Mr. Damian Michael

**Period covered by this report:** January 2007 to March 2008

### Reporting on research objectives

1. Provide a summary of progress this year towards each of the objectives stated in your most recent research proposal.

**Objective 1:** Assess the extent of the present decline among populations of arboreal marsupials (including the endangered Leadbeater's possum), particularly in response to:

- a.) identified threatening processes such as the loss of hollow bearing trees; and,
- b.) cumulative changes in forest landscapes within wood production forests that result from sets of logged areas created by forest harvesting operations.

#### Stagwatch survey results

Leadbeater's Possum (*Gymnobelideus leadbeateri*) is an endangered species virtually confined to the montane (highland area below tree line) ash forests of the Central Highlands of Victoria, south-eastern Australia. Populations of the species are predicted to be in decline and are threatened in the medium to long term. A range of reserve-based strategies have been implemented in an attempt to arrest the decline of the species. This study was established to monitor changes in the population size since stagwatch surveys began in 1983 and to assess the effectiveness of current conservation strategies. A suite of other arboreal (tree-dwelling) marsupials also occupies Mountain Ash forests and the monitoring project will assist in the conservation of these species.

Volunteers counted various species of arboreal marsupial during dusk and night-time surveys. This field survey method is called stagwatching. Stagwatching involves each

volunteer observing a single potential nest tree for an hour over dusk. Volunteers counted the presence and abundance of species that emerged from potential den trees (Table 1) using key characters such as behaviour, shape, and size.

**Table 1.** The number of sites and trees stagwatched during the 2008 Earthwatch Expeditions.

	January 2008	March 2008	Total
Sites surveyed	9	10	18
Trees stagwatched	47	109	155

**Table 2.** The number of sites (n = 18) where individual species emerged from den trees or recorded on/off site during the 2008 Earthwatch expeditions.

Species	January 2008		March 2008		Total
	den trees	on/off site	den trees	on/off site	den trees
Greater Glider <i>Petauroides volans</i>	3	2	1	0	4
Mt. Brushtail Possum <i>Trichosurus cunninghami</i>	4	3	6	3	10
Leadbeater's Possum <i>Gymnobelideus leadbeateri</i>	3	4	2	2	6
Sugar Glider <i>Petaurus breviceps</i>	0	2	1	1	1
Agile Antechinus <i>Antechinus agilis</i>	0	1	1	3	1
Yellow-bellied Glider <i>Petaurus australis</i>	2	2	1	1	3
Ringtail Possum <i>Pseudocheirus peregrinus</i>	0	0	0	0	0
Feathertail Glider <i>Acrobates pygmaeus</i>	0	0	1	0	1
Total sites with animals from stags (den trees)	8	na	9	Na	17

**Table 3.** The number of individuals of each species observed emerging from den trees or recorded on site during the 2008 Earthwatch expeditions (abbreviations follow scientific names in Table 2.)

	Pv	Tc	Gl	Aa	Pa	Pp	Pb	Ap	Total
January 2008	3	13	7	3	2	0	3	1	33
March 2008	7	9	8	9	2	0	0	0	34
Total animals	10	22	15	12	4	0	3	1	67

Detailed statistical analyses of the results will continue during the winter and autumn of 2008. The data are being compared to the previous 16 years of surveys. However, it is possible to make several general comments on the data that are summarized in Tables 2 and 3.

- The Mountain Brushtail Possum was the most common arboreal species with twenty-two individuals observed emerging from den trees on 55.5% of sites.
- Leadbeater's Possum was recorded emerging from trees at six sites and seen off-site on a further six sites. (A result comparable with previous years). Leadbeater's Possum was generally recorded in dead trees at sites with a dense understory of *Acacia* spp. stems. Leadbeater's Possum has been shown to prefer these types of trees rather than large live hollow-bearing trees and a dense understory is thought to be suited to their non-gliding movement patterns.
- The Greater Glider was the third most abundant species with ten individuals from 22.2% of sites.
- The Yellow-bellied Glider was observed emerging from stags on three sites. This indicates that the species occurs at low-densities in the montane ash forests of the Central Highlands of Victoria.
- The Eastern Pygmy Possum was not observed during the summer expeditions. Only one Feathertail Glider was recorded this season. The Eastern Pygmy Possum and Feathertail Glider are often difficult to detect during stag-watching due to their small size and cryptic behaviour
- Sooty and Powerful Owls were not detected during this field season and are generally found at relatively low densities in the montane ash forests of the Central Highlands of Victoria.
- Typical patterns of emergence behaviour were observed among the various species of arboreal marsupials that were surveyed during the 2008 field season. The Greater Glider most often moved into the upper canopy of live *Eucalyptus* trees, and were not particularly active. The Mountain Brushtail Possum often climbed to the ground from nest trees and foraged on the forest floor. Leadbeater's Possum was extremely active, moving quickly through the midstory prior to commencing foraging. Smaller species such

as Leadbeater's Possum and Agile Antechinus tended to emerge early in the evening; larger species such as Greater Glider and Mountain Brushtail Possum emerged later in the evening.

- The results of the field expeditions highlighted the success of stagwatching as a survey method, particularly for Leadbeater's Possum.

**Objective 2:** Survey small mammal populations, birds and reptiles in logging coupes using live capture in mammal traps, and,

- (a) estimate abundance over time and,
- (b) the effect of retaining habitat islands in coupes on a range of forest biota.

### **Small mammal trapping results - Cutting Experiment**

There have been concerns about the long term impacts of clearfelling operations on environmental values in the montane ash forests of the Central Highlands of Victoria. In the case of montane ash forests, issues of the mitigation of logging impacts need to be addressed at the individual coupe level as well as at the landscape and regional levels (typically via intermediate and large-scale reserves and protected areas).

The Cutting Experiment involves comparisons between: **(1)** two different configurations of retained forest within otherwise clearfelled coupes, **(2)** current (clearfelling) practices, and, **(3)** a natural (unlogged) control. The total area of retained vegetation sums to 1.5 ha per on the two kinds of treatment coupes. The two configurations are – 1 x 1.5 ha (ie. 1 consolidated patch) and 3 x 0.5 ha (ie. 3 scattered clusters).

**(ha = hectares; 1 hectare = approximately 2.5 acres)**

During the 2008 Earthwatch expeditions, six logging coupes were surveyed for small terrestrial mammals, using sampling grids of 100 mammal traps, within the wood production forests of Marysville and Toolangi (Table 4).

**Table 4.** The number of small mammals recorded per coupe during the 2008 Earthwatch Expeditions. Asw = *Antechinus swainsoni* (Dusky Antechinus), Aag = *Antechinus agilis* (Agile Antechinus), Rfu = *Rattus fuscipes* (Bush Rat).

Region	Coupe	Treatment	Phase	Asw	Aag	Rfu	Total
Marysville	Queens	3 x 0.5	Pre burn	3	15	11	29
Marysville	Springfield	1.5	Pre burn	1	5	10	16
Toolangi	Toolangi TC2	Control	3 <sup>rd</sup> survey	0	2	2	4
Toolangi	Little Woodcutter	3 x 0.5	Pre burn	0	6	9	15
Toolangi	Delilah	3 x 0.5	Pre burn	0	7	16	25
Toolangi	Footprint	Clearfell	Post burn	0	2	4	6

### **Observations**

- The experiment has demonstrated wood production forest can be harvested safely for timber workers and also allow for the retention of variable sized patches of forest within coupes.
- All three species of terrestrial small mammal (Agile Antechinus, Dusky Antechinus and the native Bush Rat) can persist within the retained islands after the harvesting process although populations are significantly reduced.
- All three species of terrestrial small mammal can persist within the cut over area of the coupe although populations are much lower than original densities.
- Reptiles respond poorly to the harvesting process and are generally not detected within the cut over area or within the retained islands post harvest.

### **Objective 3:** Establish and monitor a network of nestboxes, and

- (a) examine the affect of habitat and placement variables on the occupation of nestboxes
- (b) detect the suite of tree hollow-dependant fauna in the Central Highlands.
- (c) measure the longevity of nestboxes placed in a forest environment.
- (d) examine the value of nestboxes as a conservation measure.
- (e) monitor individual and groups of animals using nestboxes
- (f) estimate genetic relationships within and between colonies of animals.

### Nestbox monitoring results

Nestboxes are a tool that can be utilised to study groups of tree hollow-dependent fauna and potentially assist in the conservation of species by providing sites for shelter and the rearing of young. The establishment of a network of nestboxes has been suggested as a method to address the loss of hollow-bearing trees in the Central Highlands. However, this approach would be very expensive in the long-term and does not address the underlying management problems that have contributed to the decline in hollow-bearing trees. This study was not established as a conservation measure, but to examine the variables that influence the occupation of nestboxes by arboreal marsupials. Our study is one of the first to create a statistically powerful design that will reveal the important variables on nestbox occupation.

A total of 96 nestboxes were established in November 1998. Four boxes were placed at each of 24 sites, twelve sites in 1980's regrowth and twelve in 1938 regrowth. At each site two boxes were placed at 3m above the ground, two boxes were placed 7m above the ground, two boxes had large entrance holes, and two boxes had small entrance holes.

The box and site variables will be analysed with presence data. These variables include:

- amount of *Acacia* nearby,
- the number of treeferns nearby,
- the number of potential hollow bearing trees nearby,
- the amount of vegetation near the box to provide access to and from the entrance hole,
- the aspect of the entrance hole (direction the entrance hole is facing),
- the aspect of the site (direction site is facing), and
- the slope of the site.

The boxes have been checked fourteen times since establishment. The boxes were last checked in January 2008, with disappointing results for the 2008 field season (Table 5).

**Table 5.** Presence of forest marsupials in the nestboxes (N = 96) for both forest types combined, checked in January 2008.

Species	Small Low	Small High	Large Low	Large High
Agile Antechinus	1	2	0	0
Leadbeater's Possum	2	1	0	0
Sugar Glider	1	0	0	0
Mountain Brushtail Possum	0	0	0	0
Common Ringtail Possum	0	0	0	0

## Trends and Observations

- ❑ Seven animals were recorded from seven boxes although arboreal marsupials were recorded from only four boxes (4% occupancy).
- ❑ Nests and nesting material were detected in approximately 19 boxes but occupancy rates were low.
- ❑ All detections of mammals was from 1980's regrowth.
- ❑ In general, Leadbeater's Possum has a preference for boxes with a smaller entrance. No preference is shown for box height.
- ❑ Previous surveys have shown that the Mountain Brushtail Possum and the Common Ringtail Possum prefer to occupy large boxes with a large entrance.
- ❑ In 1980's regrowth, the Mountain Brushtail Possum was typically were found in boxes within sites that have above average number of tree ferns.
- ❑ The average number of hollow bearing trees visible from each box in 1939 regrowth was 1.25. In 1980's regrowth this figure was 0.33. The average number of hollow bearing trees in the sites with evidence of habitation was 0.15.
- ❑ At the sites on which Leadbeater's Possum was detected there was an average *Acacia* spp. basal area of 5.28. The average for regrowth sites was 5.25, while the average for 1939 regrowth was 3.25.
- ❑ Nest boxes continue to fall at a rapid rate. In total, forty-five nest boxes (52%) have fallen down since establishment in 1997.

An additional 96 nestboxes have been erected in Toolangi State Forest and Mt. Margaret State Forests to assess the effect of entrance position and thermal properties of different boxes. These boxes are grouped in eight clusters consisting of six boxes at both sites giving a total of 48 boxes per site. All boxes in this experiment are attached to trees at a height of 5m above ground and are made of plywood or PVC piping.

The boxes have been in place for 5 years with evidence of *Antechinus agilis* in seven boxes and feral honey bees in eight boxes. Only two boxes supported nests of Leadbeater's Possum. Eight boxes (8.3%) have fallen down since establishment.

A scientific paper on the occupancy rate, rate of attrition and level of pest infestation of boxes will be submitted for publication in late May 2008.

**Objective 4:** Monitor a population of mountain brushtail possums:

- (a) measure population dynamics of the mountain brushtail possum via a trapping program,
- (b) examine the genetic relationships between individuals in the population,
- (c) examine the health and blood chemistry of the mountain brushtail possum
- (d) measure the survival and breeding success of mountain brushtail possums.

#### **Mountain Brushtail Possum Trapping results**

Trapping of the Mountain Brushtail Possum continued during the summer of 2008 – a project that has been ongoing continuously since 1991. All trapping occurred at Cambarville, an area supporting large stands of old-growth and mixed aged Mountain Ash forest.

The capture rates were similar to previous surveys. This season, sixty animals were trapped in the 35 ha trapping grid located at Cambarville with 12 of these being new captures (Table 6). The population density at Cambarville has been found to be unusually high. Since the last trap survey, there has been unexpectedly high recruitment of juveniles/subadults to adults.

Ear tissue samples have been collected from each animal for long-term maternity-paternity and other genetically-based analyses. DNA analysis has revealed that the animals occurring in the Central Highlands of Victoria are a genetically different species than the animals that live further along the Great Dividing Range in northern NSW and Queensland. Therefore, the animal previously known as *Trichosurus caninus* has been re-described and is now called *Trichosurus cunninghami*, the Mountain Brushtail Possum. Northern animals are known by the common name Short-eared Possum.

**Table 6.** Recaptures and new captures of the Mountain Brushtail Possum *Trichosurus cunninghami* at Cambarville over Earthwatch expeditions.

	1998	1999	2000	01/02	02/03	03/04	2007	2008
Recaptures	20	17	19	37	60	50	28	48
New captures	13	14	14	44	13	14	7	12
Total	33	31	33	81	73	64	35	60

## Project development

As the basis of our research involves a long-term monitoring program, consistency with the main objectives is one of our primary motivations but as existing data is analysed new experiments are often developed, such as the Variable Retention Harvesting Experiment, which pioneer alternative methods to achieve the main objectives.

## Non-technical summary of results

1. Give an account of the data collected and results (inputs and data) for the period covered by this report, mentioning any emerging trends.

Earthwatch expeditions in 2008 surveyed sites for the presence and abundance of nine species of arboreal marsupials. Volunteers surveyed potential nest trees over the 2008 summer field season, targeting a range of species including the Greater Glider, Mountain Brushtail Possum, Sugar Glider, Common Ringtail Possum, Agile Antechinus, Leadbeater's Possum, Feather-tail Glider and the Yellow-bellied Glider. The January team monitored 192 nestboxes suitable for hollow dependant fauna in the Toolangi and Mt Margaret areas. A total of 60 Mountain Brushtail Possums was trapped at a 35 ha site at Cambarville, including 31 during the January camp and 29 during the March camp. Six logging coupes were surveyed for small mammals as part of the Variable Retention Harvesting Experiment (Cutting Experiment) in the Marysville and Toolangi wood production areas.

The number of arboreal marsupial recorded on monitoring sites, Mountain Brushtail Possums and small mammals trapped were consistent with those trends of previous years. The trend we are seeing is that all arboreal marsupials are still in slow decline, however results from the stagfall measurements suggest that natural stagfall is beginning to stabilise. The use of nestboxes by arboreal mammals over the course of the experiment has been disappointingly low. The low occupancy of boxes has also been compounded by nestbox attrition, to the extent that over 65% of boxes have fallen from the trees. Another

phenomenon is that nestboxes are increasingly being colonised by feral honeybees and wasps.

2. How do these data contribute to achieving **conservation impacts?** (e.g. actions based on results, management plans, site protection)

Data from the long-term monitoring program is used to calculate population viability models and has been used in the preparation of a plan of management and recovery plan for Leadbeater's Possum. Data from the Variable Retention Harvesting Experiment (Cutting Experiment) will be used to assess the efficacy of alternative harvesting systems and formed a strong bond between research and forestry operations.

3. What is/ are the **significance/ benefits** of your research at the following levels?

- Local (to the area of the research site)

Our research directly involves local community groups such as The Friends of Leadbeater's Possum, the Central Highlands Alliance Group, The Field Naturalists Club of Victoria, the Wilderness Society, staff from Healesville Sanctuary, Parks Victoria, Department of Sustainability and Environment, VicForests and logging contractors as well as students from the Australian National University.

Through their involvement these groups are informed and kept updated on forest marsupial conservation issues and latest data trends which are used to help lobby the government on community concerns with traditional logging practices.

- National / Regional

The establishment of the Yarra Ranges National Park and special protection zones for Leadbeater's Possum within the Toolangi and Marysville State Forests were a result of the long-term research.

- International

The numerous publications that have stemmed from this work have international significance and promote as well as guide current ideas on sustainable forestry practices worldwide.

## Communication of results

**Printed:** peer reviewed scientific publications; books / book sections; reports, management plans or policies; fact sheets, brochures, leaflets, pamphlets, posters, academic dissertations, annual reports, proceedings of conferences or workshops; letters; newsletters.

The data from the survey of arboreal marsupials contributes to a long-term monitoring project. The results of this monitoring program, once complete, will be published in internationally recognised scientific journals. The results from other studies will also be published as data collection and analysis is completed. Publications resulting from the work so far are provided below; others can be cited at the following website: <http://cres.anu.edu.au/people/userprofile.php?user=davidl> .

Lindenmayer, D.B., Cunningham, R.B., and McCarthy, M. (1999). The conservation of arboreal marsupials in the montane ash forests of the central highlands of Victoria, south-eastern Australia. VIII. Landscape analysis of the occurrence of arboreal marsupials. *Biological Conservation*, **89**, 83-92.

Lindenmayer, D.B., Cunningham, R.B., MacGregor, C., Michael, D., and Incoll, R.D. (2002). A long-term monitoring study of the population dynamics of arboreal marsupials in the Central Highlands of Victoria. *Biological Conservation*, **110**, 161-167.

Lindenmayer, D.B., R.B. Cunningham, C.F. Donnelly, M.T. Tanton, and H.A. Nix. 1993. The abundance and development of cavities in montane ash-type eucalypt trees in the montane forests of the Central Highlands of Victoria, south-eastern Australia. *Forest Ecology and Management* **60**: 77-104.

Lindenmayer, D.B., R.B. Cunningham, and C.F. Donnelly. 1997. Tree decline and collapse in Australian forests: implications for arboreal marsupials. *Ecological Applications* **7**: 625-641.

Lindenmayer, D.B., B. Mackey, I. Mullins, M.A. McCarthy, A.M. Gill, R.B. Cunningham, and C.F. Donnelly. 1999f. Stand structure within forest types – are there environmental determinants? *Forest Ecology and Management* **123**: 55-63.

Lindenmayer, D.B., Cunningham, R.B., Donnelly, C.F. Triggs, B.J. and Belvedere, M. (1994). The conservation of arboreal marsupials in the montane ash forests of the Central Highlands of Victoria, south-east Australia. V. Patterns of use and the

microhabitat requirements of the Mountain Brushtail Possum, *Trichosurus caninus* Ogilby in retained linear strips (wildlife corridors). *Biological Conservation*, **68**, 43-51.

Lindenmayer, D.B., MacGregor, C.I., Cunningham, R.B., Incoll, R.D., Crane, M., Michael, D.R., Rawlins, D., and Tribolet, C.R. (2003) The use of nest boxes by arboreal marsupials in the forests of the Central Highlands of Victoria. *Wildlife Research*, **30**, 259-264.

Lindenmayer, D.B., Dubach, J., and Viggers, K.L. (2002) Geographic dimorphism in the Mountain Brushtail Possum – the case for a new species. *Australian Journal of Zoology*, **50**, 369-393.

Viggers, K.L. and Lindenmayer, D.B. (2000). A population study of the Mountain Brushtail Possum, in the Central Highlands of Victoria. *Australian Journal of Zoology*, **48**, 201-216.

McKenney, D.W., and D.B. Lindenmayer. 1994. An economic assessment of a nest box strategy for the conservation of an endangered species. *Canadian Journal of Forest Research* **24**: 2012-2019.

**Visual:** artwork; visitor centre, poster or display, slides, photographs

In addition to scientific publications, reports and text books, we have produced a series of visual posters outlining the results of past and present studies conducted in the Central Highlands of Victoria. For example the posters include 1) the efficacy of spotlight surveys in tall forest, 2) the results of the nestbox experiment, 3) the use of hair tubes to survey small mammals, and 4) the use of the stagwatch technique to monitor arboreal possums. A brochure on how to identify Leadbeater's habitat was also produced and available from Victorian Natural Resource agencies and the Visitor's Centre located in Marysville. Volunteers are briefed early in the expedition on marsupial identification via power point slide presentations; DVDs outlining how the research in Victoria fit in with our broader research agenda in South-eastern Australia and other supporting video material.

**Digital:** database; internet - websites, email group/ blog/forum; CD Rom, e-newsletter

For further information volunteers are directed to our website:

<http://fennerschool.anu.edu.au/research/cle>

**Mass media:** broadcast production; film; TV, radio, print (newspaper/ magazine coverage); Press releases; press conference; interview, article creation; press trip

Professor David Lindenmayer and other staff members are regulars on national TV and radio programs discussing a wide range of conservation issues.

**Meetings and conferences:** presentations/ lectures; conferences; workshops; training sessions; discussions; local community meetings and events.

ANU researchers regularly give presentations to local community groups and local government agencies on the latest results and research developments. We have also run a number of training sessions geared at identifying critical Leadbeater's habitat and regularly engage local community groups in our survey work. We also regularly attend Friends of Leadbeater's Meetings and workshops with local government agencies.

**Educational resources:** lesson plans; resource packs

Our research team has been working closely with a team of independent school curriculum writers on developing educational packages on sustainable forestry and forest conservation issues targeted at years 7 – 10. These educational packages will be taught in the geography, math and science classes. In addition we are working closely with web site designers and computer programmers in developing interactive web games promoting concepts such as ecologically sustainable forestry, farming practices and fire regimes which will also be used in Australian schools nationally.

## Educational Opportunities

1. Does your project directly or indirectly involve the following groups in your research topic?
  - Local communities - yes
  - Students – yes, undergraduate and honours students.
  - Early career scientists – yes, masters, doctoral and post doc students.
  - Other groups – family, friends, local business proprietors, staff from local government natural resource management agencies and other biological scientists both national and international.
2. How does your research help these groups better understand and act towards the conservation of a sustainable environment?

Our research directly involves local community groups such as The Friends of Leadbeater's Possum, the Central Highlands Alliance Group, The Field Naturalists Club of Victoria, the Wilderness Society, staff from Healesville Sanctuary, Parks Victoria, Department of Sustainability and Environment, VicForests and logging contractors as well as students from the Australian National University.

Through their involvement these groups are informed and updated on forest marsupial conservation issues and latest data trends which they can use to help lobby the government on community concerns with traditional logging practices.

3. Has your project contributed to the completion of Masters' or PhD theses or degrees, or other educational research findings?

The research program currently involves post doctoral students and will in the future involve PhD students.

## **Acknowledgements**

Without the support from Earthwatch volunteers, it would be extremely difficult for us to carry out the type of survey methodology we use to census arboreal marsupials in Mountain Ash forests. Their contribution has enabled us to collect valuable data on the impact of current forestry operations on populations of forest marsupials. Information gathered to date has been used in the construction of the Yarra Ranges National Park as well as special protection zones for the endangered Leadbeater's Possum within the wood production forests of the central highlands. Data has also been used to produce a Recovery Plan for Leadbeater's Possum, and through an operational experiment (Cutting Experiment) we work closely with the industry to develop sustainable harvesting practices via the retention of habitat patches within otherwise clearfelled forest. We would also like to extend our appreciation to staff from the Australian and American Earthwatch Institutes, Parks Victoria, Victorian Department of Sustainability and Environment and Vic Forests for their ongoing support of our research.