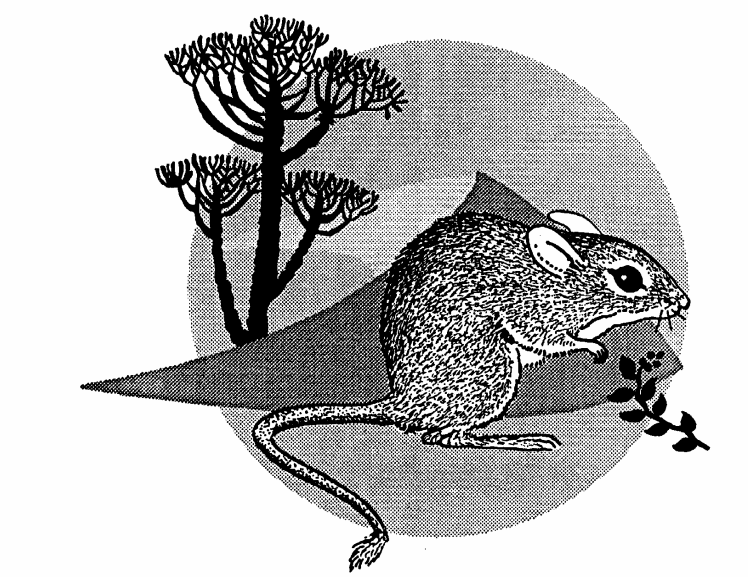
S/257/2000

TERRESTRIAL ECOLOGY RESEARCH UNIT

ANNUAL REPORT

1999

University of Port Elizabeth



University of Port Elizabeth, P O Box 1600, Port Elizabeth 6000
Tel: (041) 504 2308 Fax: (041) 504 2317 E-mail:
zlagik@zoo.upe.ac.za

Introduction

The Terrestrial Ecology Research Unit (TERU) was established within the Zoology Department, University of Port Elizabeth, during 1991 in response to a need for terrestrial ecology training opportunities for postgraduate students, and for terrestrial ecological research by conservation and management agencies.

TERU comprises staff and postgraduate students of the Zoology and Botany departments, with Prof. G. Kerley as Director, and an Advisory Board made up of representatives of user agencies and interested parties.

TERU operates within the budgeting and planning processes of appropriate University of Port Elizabeth Departments.

Products to date include 61 scientific publications, 12 book chapters, 9 chapters in conference proceedings, 37 professional reports, 33 popular articles, 98 conference presentations and 33 postgraduate theses or dissertations.

This is the eighth Annual Report and deals with the activities of TERU during 1999

Mission

"To train ecologists and conduct research on terrestrial environments, thereby contributing to the sustainable utilization of ecosystems, with emphasis on the Eastern Cape."

OBJECTIVES

1. **To train terrestrial ecologists through the medium of research and in consultation with user agencies**;
2. **To identify research priorities for terrestrial species and habitats;**
3. **To initiate appropriate research to provide information which will enable communities to make sound environmental management decisions;**
4. **To transfer information derived from these programmes to appropriate institutions.**

DIRECTOR'S REPORT

The Terrestrial Ecology Research Unit has had a very good year, with record levels of funding and productivity. In addition, the issue of organizational status has been clarified, with TERU now operating as an interdisciplinary research unit, and good progress has been made on revising the Unit's constitution. As evidenced by the contents of this report, TERU is firmly on track in achieving its mission and objectives. The value of these activities is also reflected in the number of awards made to TERU in 1999 (see report).

Funding continued to increase, and 1999 financial support (R525 000) was gratifyingly higher than the previous year (R467 697). A major feature of 1999 was the broadening of the funding base, with travel grants being a strongly supported component. These travel grants are highly relevant to TERU's objectives, as they broaden our exposure and also allow a very broad transfer of research information generated within TERU. In terms of sponsorship, TERU continues to benefit from the support provided by the Mazda Wildlife Fund, their loaned 4X4 twincab has also been supported by Gentyre. Future financial prospects look good, with major funding to be made available by the Global Environment Facility, via the World Bank. Although funds are always a limiting resource, it has been amply demonstrated that TERU is able to attract significant funding to carry out its mission.

Scientific productivity for 1999 was excellent, with ten scientific articles, one book chapter, one published conference proceedings, three professional reports, two popular articles and 17 conference presentations. Eight of the conference presentations were at international conferences, and five presentations were by invitation. This is a pleasing increase on the previous year's productivity; this trend is set to continue, with seven papers currently accepted but not yet published, and a further seven manuscripts submitted for publication.

Postgraduate students continue to be the central focus of TERU's activities. Besides two honours students who completed their projects in 1999, there were six PhD and four MSc students participating in TERU's research programmes. Steve Henley successfully upgraded his status to that of PhD candidate. Congratulations go to Ayanda Sigwela for the award of his MSc degree and Anna Whitehouse (ne• Woodd) on her marriage.

TERU was also fortunate in having Prof. Richard Cowling, the Director of the Institute of Plant Conservation, University of Cape Town, spend his sabbatical in the Unit. Richard made a stimulating contribution to TERU's activities during the year, and excitingly, will be joining TERU on a permanent basis in 2000.

The fact that TERU has had such an excellent year is a reflection of the hard work and commitment provided by staff and students. I would in particular like to thank Andr• Boshoff for his support. He and Richard Cowling have also been invaluable in developing new projects. Once again, the postgraduate students are to be thanked for their enthusiasm. A special word of thanks to all the funding agencies who continue to support TERU's training and research activities.

Prof. G I H KERLEY
DIRECTOR: TERRESTRIAL ECOLOGY RESEARCH UNIT

AWARDS

During 1999, the Unit received two national awards, both of these being for the Greater Addo National Park initiative. These were:

- The Mail & Guardian Green Trust Award, Overall Winner (Emerging Category).
- Wildlife & Environment Society of Southern Africa, President's Special Award.

These awards are a measure of the national recognition which TERU is attracting for its research.

Sarette Slabber and Steve Henley were awarded scholarships by the Israeli Government to attend the "Conservation of Desert Biodiversity" course in Israel, while Sharon Haschick and Justin Watson were awarded travel grants by the International Rangeland Congress. Our students are clearly able to compete internationally for these sorts of opportunities.

RESEARCH ACTIVITIES

Research activities are grouped into functional categories, and within these are reported on a biome specific basis.

ANIMAL / PLANT INTERACTIONS

Thicket: This research continues to focus on the comparison of domestic and indigenous herbivores in order to understand the degradation brought about by domestic herbivores. Sharon Wilson (nee Haschick, PhD) has been analysing her forage material collected during her experiments with indigenous and domestic herbivores. She presented some of these findings at the International Rangelands Conference in Australia in July. Ayanda Sigwela was awarded the MSc degree for his research showing that kudu and goat diets do overlap, particularly in winter, and that kudu, but not goats, are important seed dispersers. He has subsequently been preparing a PhD proposal. Janet Koekemoer (MSc) completed her fieldwork on the diet and habitat use of indigenous kudu and introduced impala, and plans to submit her thesis during 2000. Sarette Slabber (MSc) has initiated a project on the role of tortoises as herbivores in thicket vegetation. She is measuring tortoise digestive physiology and foraging behaviour in order to develop a model of the relative impact of tortoise and mammalian herbivores. Samantha Mendelson, an MSc student from University College, University of London, conducted her MSc project under the auspices of the Unit, comparing the role of the various large herbivores in seed dispersal in Thicket. Sam was awarded a distinction for this project. Graham Kerley has been continuing his research on the foraging behaviour of elephant, hampered by limited opportunities to conduct fieldwork. Initial results indicate that elephant prefer to feed at ground level, possibly necessitating a rethink on the "top-down" feeding hypothesis.

Desert: Graham continued his collaboration with Walt Whitford on the role of small mammals in desertification. He managed to visit Walt twice in New Mexico, USA, and they completed a manuscript showing major impacts of cattle grazing on plant community structure and seed removal dynamics. This work has now been accepted for publication

Dunes: Bridget Elliott, who completed her MSc in 1996, has been preparing manuscripts from her research, and has had a paper accepted on the patterns of development and succession of vegetated dune hummocks. Graham and Anton McLachlan have been collaborating on an invited chapter for a book on dune ecology.

CONSERVATION BIOLOGY

Thicket: Anna Woodd (PhD) has continued her work on the conservation biology of the Addo elephant population. She completed her collection of material for DNA analysis to investigate patterns of paternity in the elephants, and is currently in the process of subjecting this to DNA satellite analysis at UCT. She has also been productive, with two papers published and another two papers accepted for publication. Anna is currently discussing the implications of her research findings, that the Addo elephants appear to be genetically depauperate, with South African National Parks. Steve Henley's (PhD) project was successfully upgraded to doctorate status and he has been investigating the implications of habitat degradation on habitat suitability for duiker, bushbuck and kudu. Steve was awarded a scholarship to attend a course in Israel, and he extended this visit to conduct research on the interactions between forage quality and habitat use by desert herbivores. Bronwyn Chabie showed that the bird communities in transformed thicket were depauperate compared to pristine Thicket, this study comprising her Honours project.

Desert: Cynthia Hunter had to return to the USA under the conditions of her study permit, and has therefore been delayed in the write-up of her PhD thesis on the environmental and anthropogenic factors which drive buffalo movements. Hopefully she will soon have this project back on track.

Forest: The planned first phase of the long term experiments on the effects of domestic herbivores on forest habitat structure was completed and a report will be submitted to WWF-SA, who funded the project. Guy Castley (TERU graduate, now SA National Parks) was invited to present some of these findings at the Forest and Woodlands conference. It is proposed that this project should be continued, with the experimental setups being maintained, and a major assessment of the experimental effects in four years time.

General: Andr• Boshoff's ongoing interest in vulture conservation resulted in the publication of a scientific paper and a popular article during 1999. Andr• is also developing a project on the impacts of powerlines on large birds, which should be initiated in 2000.

CONSERVATION PLANNING

Thicket: TERU continued to play a significant role in the Greater Addo National Park (GANP) initiative. During February, TERU convened a Stakeholders Meeting, at the request of the World Bank (Washington DC, USA) acting on behalf of the Global Environment Facility. The World Bank is potentially interested in providing substantial donor funding towards achieving the vision of GANP. This Stakeholders Meeting, funded by SA National Parks and the World Bank, was extremely successful, being attended by the full range of stakeholders, who unanimously supported the GANP concept.

Graham and Andr• have continued to provide information on the GANP project, between them giving talks to a total of 17 community, NGO and service groups.
Graham was invited to the World Bank global headquarters in Washington DC (USA), where he presented a seminar on GANP and briefed a number of World Bank officials on the concept.
TERU gained national recognition in the form of a number of awards for the GANP proposal (see Awards). The GANP concept has also attracted international attention. Graham and Andr• were invited to contribute a paper for the international journal *Ecosystem Health*. Graham was also invited to lead a session of the International Congress on Ecosystem Health: Managing for healthy ecosystems, which was held in Sacramento, California, in August. He, Andr• and Dr Mike Knight (SA National Parks) jointly presented four talks in this session, the central concept being that it is possible to link biodiversity conservation and human development. These presentations were very well received, and they have submitted an invited chapter for a book on ecosystem health.

Andr• Boshoff continued to develop the "Conservation Planning in the Thicket Biome" project which is to be supported by the Global Environment Facility, via the World Bank. This project has been approved, but the political protocols in getting it implemented have been tortuous. The project will be initiated in May 2000, and will provide a major impetus to the conservation of this hitherto poorly conserved biome, and its surrounds.

Fynbos: Richard Cowling, Director of the Institute for Plant Conservation, spent his sabbatical with TERU working on the terrestrial component of the Cape Action Plan for the Environment project, funded by the World Bank/Global Environment Facility. Apart from preparing the basis for seven manuscripts, Richard attended two research meetings and presented three seminars and several popular lectures. In addition, Richard was available for consultation by students. Richard's work on the strategic and systematic conservation planning for the Cape Floral Kingdom has been recognised as innovative and novel, and a special issue of the prestigious journal *Biological Conservation* is being planned.

Andr• Boshoff and Graham conducted a research project on the planning for the conservation of mammals as part of the CAPE project. They compiled information on the historical distribution and habitat requirements, and combined this with estimates of the habitat-specific area requirements for demographically and genetically viable populations of the medium to large-sized mammals in order to contribute to a conservation plan for these species in this region. This project required the development of some novel approaches, and they have been invited to submit a publication on this work to the international journal *Diversity and Distribution*. This work was also presented at two conferences during 1999. They are collaborating with Richard Cowling and Bob Pressey (National Parks, New South Wales, Australia) on further analysing this data set.

National biodiversity - BIOMAP: TERU is one of the partners in the BIOMAP project, which aims to generate a national biodiversity information system. This will unify the currently dispersed and inaccessible databases, and in combination with the appropriate analytical tools, make them available to the various decision-makers. BIOMAP is funded by the Department of Arts, Culture, Science, and Technology Innovation Fund, under the auspices of the South African Integrated Spatial Information System. The other BIOMAP partners are the Department of Zoology and

Entomology, University of Pretoria and the Institute for Plant Conservation, University of Cape Town. BIOMAP will have two operational nodes, one at Pretoria and the other with TERU. Ms Rebecca Sims was seconded from the University of Pretoria in November in order to establish the TERU node, and she will be transferred to TERU in 2000.

REHABILITATION ECOLOGY

Thicket: Justin Watson's (PhD) research on the natural patterns and regeneration processes of Bontveld and rehabilitation options is already proving of value in the management of PPC Cement's mine in the Grassridge area. Justin has completed his data collection and is in the process of writing up his dissertation. He presented some of these findings at the International Rangelands Conference in Australia in July. Graham Kerley's collaborative research with Dave Tongway and John Ludwig (both of CSIRO, Australia) on landscape function in the Thicket has demonstrated significant loss of soil resources in areas utilised by goats compared to those used by elephant. These findings, which contribute to our understanding of why degraded Thicket regenerates so poorly, were also presented at the International Rangelands Conference. Wendy Todkill (MSc) has completed her experiments in which she investigated the use of various micropatches in the rehabilitation of degraded Thicket. She successfully showed that these brushpiles resulted in increased soil nutrients, complimenting the work on landscape function. Wendy is in the process of finalising her thesis. Andrew Hall continued with his rehabilitation experiments in the PPC Loerie limestone mine, and has also been researching alien plant control at this site. This information will be used to develop the Environmental Management Plan required for the closure of the mine.

CONTRACT RESEARCH

Due to commitments to other research activities, contract research was relatively limited during 1999. A project was undertaken on the conservation planning of mammals in the Cape Floristic Kingdom (see Conservation Planning), and ecological and management advice was provided to private wildlife based ventures (see list of Reports).

SCIENCE MANAGEMENT

Graham Kerley served as Vice-President of the Zoological Society of Southern Africa. He also formed part of a team funded by the National Research Foundation (SA) and National Science Foundation (USA) and tasked with developing an understanding of the philosophy and science of Long Term Ecological Research during a visit to a number of LTER research sites in the USA. The aim of this exercise was to assist South Africa in developing its own LTER programme. Graham

served as Chairman of the Savanna Ecology Forum, and convened and hosted the annual meeting of this forum in Grahamstown in November.

COMMUNITY SERVICE

- Graham Kerley continued to act as manager of the Grysbok Environmental Education Trail on the UPE Campus, with Ayanda Sigwela serving as co-ordinator.
- Graham also served on the Provincial Environmental Advisory Council (Eastern Cape).
- Andr• Boshoff and Graham gave a number of presentations on the Greater Addo National Park Initiative, addressing a broad range of communities.
- Andr•, Graham and Steve Henley provided professional advice to private wildlife based ventures.
- Steve and Justin Watson served as founding directors of the Surfers' Environmental Association, an environmental advocacy group.

1999 PRODUCTS

SCIENTIFIC ARTICLES

1. WOODD, AM. 1999. A demographic model to predict future growth of the Addo elephant population. *Koedoe* 42:97-100.
2. KERLEY, GIH, BOSHOFF, AF & KNIGHT, MH. 1999. Ecosystem integrity and sustainable land-use in the Thicket Biome, South Africa. *Ecosystem Health* 5:104-109.
3. KERLEY, GIH, TONGWAY, D & LUDWIG, J. 1999. Effects of goat and elephant browsing on soil resources in Succulent Thicket, Eastern Cape, South Africa. *Proc. VI International Rangeland Congress* 1:116-117.
4. HASCHICK, SL & KERLEY, GIH. 1999. Plant spinescence and biodiversity: responses of indigenous and domestic browsers to plant defences. *Proc. VI International Rangeland Congress.* 1:544-546.
5. WATSON, JJ, CAMPBELL, EE & KERLEY, GIH. 1999. Bontveld rangeland communities determined by soil features. *Proc. VI International Rangeland Congress. 2:804-806.*
6. BIGGS, HC, KERLEY GIH & TSHIGUVHO , T. 1999. A South African long-term ecological research network: a first for Africa? *S. Afr. J. Sci.* 95:244-246.
7. PIPER, SE, BOSHOFF, AF & SCOTT, HA. 1999. Modeling survival rates in the Cape Griffon *Gyps coprotheres*, with emphasis on the effects of supplementary feeding. *Bird Study* 46:(Suppl)S230-238.
8. ADAMS, NJ, KERLEY, GIH, & WATSON, JJ. 1999. Disturbance of incubating African black oystercatchers: is heating of exposed eggs a problem? *Ostrich*. 70:225-228.
9. WOODD, AM. 1999. Twin elephants born in Addo. *Pachyderm.* 26:125.

10. MASON, MC, KERLEY, GIH, WEATHERBY, CA & BRANCH, WR. 1999. Leopard tortoises (*Geochelone pardalis*) in Valley Bushveld, Eastern Cape, South Africa: specialist or generalist herbivores? *Chelonian Cons. Biol*.3:435-440.

BOOK CHAPTERS

- MILTON, S J, DAVIES, RAG & KERLEY, GIH. 1999. Population level dynamics. In: *The ecology of the Karoo,* eds Dean, WRJ & Milton, SJ. Cambridge University Press, Cambridge. pp 183-207.

PUBLISHED CONFERENCE PROCEEDINGS

- KERLEY, GIH, MASON, MC, WEATHERBY, A & BRANCH, WR. 1999. The role of tortoises in the Thicket biome, South Africa: important meso-herbivores in a mega-herbivore dominated ecosystem? *Proc 1997-1998 Symposia, Desert Tortoise Council* 34-40.

REPORTS

1. BOSHOFF, AF & KERLEY, GIH. (eds) 1999. Proceedings of a Greater Addo National Park Stakeholders Workshop. *Terrestrial Ecology Research Unit Report* 25:58pp.
2. BOSHOFF, AF. & KERLEY, GIH. 1999. Conservation planning in the Cape Floristic Region: distribution, conservation status and spatial population requirements of the medium- to large-sized mammals. *Terrestrial Ecology Research Unit Report.* 26:141 pp.
3. BIGGS, H, KERLEY, GIH, TSHIGUVHO, T. Inspirations and lessons for setting up an LTER Network in South Africa, as derived from a visit to several key USA sites. National Research Foundation, Pretoria. 30 pp.

POPULAR ARTICLES

1. BOSHOFF, A. & SCOTT, HA. 1999. Where vultures still fly - reviewing 25 years of vulture conservation in the Western Cape. *African Wildlife*. 53(1):7-9.
2. BOSHOFF, AF & KERLEY, GIH. 1999. Success or failure? Returning the Redbilled Oxpecker to the Eastern Cape. *African Wildlife.* 53 (5):14-16.

CONFERENCE PRESENTATIONS

1. BOWERS, SN, DOWNING, TG, KIRBY, R, KERLEY, GIH & WOODD, AE. A RAPD analysis of the 'Single Dominant Bull' hypothesis in the Addo Elephant National Park, South Africa. Poster, 5th Intl. DNA Fingerprinting Conference, Port Elizabeth, January.
2. TODKILL, WB, KERLEY, GIH & CAMPBELL, EE. A down-under approach to the rehabilitation of degraded Valley Bushveld in the Addo Elephant National Park. Poster, 34th Congress of the Grassland Society of Southern Africa, Warmbad, February.
3. KERLEY, GIH, WATSON, JJ & BOSHOFF, AF. Can quail be managed? **Invited** oral presentation, National Gamebird Federation Workshop, Pretoria, April.
4. KERLEY, GIH, TONGWAY, D & LUDWIG, J. Effects of goat and elephant browsing on soil resources in Succulent Thicket, Eastern Cape, South Africa. Poster, VI International Rangeland Congress, Townsville, Australia, July.
5. HASCHICK, SL & KERLEY, GIH. Plant spinescence and biodiversity: responses of indigenous and domestic browsers to plant defences. Poster, VI International Rangeland Congress, Townsville, Australia, July.

6. WATSON, JJ, CAMPBELL, EE & KERLEY, GIH. Bontveld rangeland communities determined by soil features. Poster, VI International Rangeland Congress, Townsville, Australia, July.
7. KERLEY, GIH, KNIGHT, MH & BOSHOFF, A. The threat of desertification to ecosystem health and services in the Thicket Biome, Eastern Cape, South Africa. **Invited** oral presentation, International Congress on Ecosystem Health: Managing for healthy ecosystems, Sacramento, California, August.
8. KNIGHT, MH, BOSHOFF, A & KERLEY, GIH. A biodiversity hotspot: opportunities and threats in the Eastern Cape, South Africa. **Invited** oral presentation, International Congress on Ecosystem Health: Managing for healthy ecosystems, Sacramento, California, August.
9. KERLEY, GIH, KNIGHT, MH & BOSHOFF, A. Towards ecological and economic sustainability of alternative landuses in the Eastern Cape, South Africa: conservation for the people. **Invited** oral presentation, International Congress on Ecosystem Health: Managing for healthy ecosystems, Sacramento, California, August.
10. BOSHOFF, A, KERLEY, GIH & KNIGHT, MH. The Greater Addo National Park: a regional and national conservation and development opportunity. **Invited** oral presentation, International Congress on Ecosystem Health: Managing for healthy ecosystems, Sacramento, California, August.
11. BIGGS, H, KERLEY, GIH, TSHIGUVHO, T. Inspirations and lessons for setting up an LTER Network in South Africa, as derived from a visit to several key USA sites. Oral presentation, International Long Term Ecological Research Meetings, Skukuza, August.
12. CASTLEY, JJ, KERLEY, GIH & SIMELANE, TS. Forest vertebrate diversity: status, threats and priorities in the Eastern Cape. Oral presentation, Forests and Woodlands Conference, George, September.
13. SIMELANE, TS, KNIGHT, MH & KERLEY, GIH. An overview of traditional natural resource harvesting and its impact on the conservation of biodiversity. Oral presentation, Forests and Woodlands Conference, George, September.
14. WHITE, RM, BAXTER, R, KERLEY, GIH, VAN TETS, IG & BARNARD, RTF. An opportunistic creature: reproduction of the striped field mouse (*Rhabdomys pumilio*) in southern Africa. Oral presentation, 8th International Symposium on African small mammals, Paris, France, July.
15. WHITE, RM, BAXTER, R, KERLEY, GIH, VAN TETS, IG & BARNARD, RTF. Environmental control of reproduction of the striped field mouse (*Rhabdomys pumilio*) in southern Africa. Oral presentation, Zoological Society of Southern Africa Annual Symposium, Pietersburg, July.
16. BOSHOFF, AF & KERLEY, GIH. Conservation planning in the Cape Floristic Region: what do we know about the medium- to large-sized mammals. Oral presentation, Wildlife Management Symposium, George, September.
17. BOSHOFF, AF & KERLEY, GIH. Distributions and estimated spatial requirements for medium to large sized mammals in the Cape Floristic Region. Oral presentation, Fynbos Forum, Stilbaai, September.

POST-GRADUATE TRAINING

Honours Projects

1. CHABIE, BPM. 1999. Avifauna community turnover in degraded Thicket vegetation. Unpubl. BSc(Hons) project, University of Port Elizabeth.
2. SETLALEKGOMO, MR. 1999. Effects of changes in ambient temperature and wind speed on the body temperature of adult Angora goats. Unpubl. BSc(Hons) project, University of Port Elizabeth.

Postgraduate degrees completed

1. SIGWELA, AM. 1999. Goats and kudu in Subtropical Thicket: dietary competition and seed dispersal efficiency. M.Sc. thesis, Univ. Port Elizabeth.

Postgraduate degrees in progress

1. HASCHICK, S.L. Resource partitioning by herbivores in Valley Bushveld. PhD student, Univ. Port Elizabeth.
2. HENLEY, S.R. The predictive value of habitat models: comparing subtropical thicket herbivores. PhD student, Univ. Port Elizabeth
3. HUNTER, C.G. Environmental and human influences on movement by buffalo herds in Botswana and Zimbabwe. PhD student, Univ. Port Elizabeth.
4. KOEKEMOER, J. Potential dietary and space use competition between impala and kudu. MSc student, University of Port Elizabeth.
5. SIMELANE, T.S. The role of National Parks in conserving traditional natural resources. PhD student, Univ. Port Elizabeth.
6. TODKILL, W.B. Rehabilitation of Valley Bushveld in the Addo Elephant National Park. MSc student, University of Port Elizabeth.
7. WATSON, J.J. Dynamics of Bontveld and rehabilitation implications. PhD student, Univ. Port Elizabeth.
8. WOODD, A.M. The Addo Elephants: conservation biology of a small closed population. PhD student, Univ. Port Elizabeth.
9. HALL, AV. Revegetation and alien plant control of a limestone quarry. MSc student, University of Port Elizabeth.
10. SLABBER, S.S. Tortoises as mesoherbivores in the Thicket Biome. MSc student, University of Port Elizabeth.

FINANCIAL SUPPORT 1999

Research Grants	**Programme**	**Amount**
South African National Parks	Thicket	R 20 000
South African National Parks	Greater Addo NP	R106 488
National Research Foundation		
(Sustainable use)	Thicket	R152 100
(Vegetation potential)	Thicket	R 53 000
PPC Cement	Thicket	R 25 000
(Mine rehabilitation - joint project with EE Campbell)		
WorldWide Fund for Nature - South Africa	Forest	R 1 500
University of Port Elizabeth	General	
(Research Committee Grant)		R 12 000
Publications output 1998	General	
(Research Committee Grant)		R 8 600
Travel		
University of Port Elizabeth		R 10 230
(Travel Grant: G. Kerley)		
International Rangeland Congress		
(Student support: S. Haschick & J. Watson)		R 9 000
National Research Foundation		
(Travel Grant: G. Kerley)		R 10 000
Environmental Protection Agency (USA)		R 12 000
(Travel Grant: G. Kerley)		
University of Port Elizabeth (COAD)		
(Travel grant: S. Henley)		R 3 600
Awards		
Mail & Guardian Green Trust Award	General	R 10 000
Israeli Government Scholarship (S. Henley & S. Slabber)		R 42 500
Contracts		R 38 903
Bursaries*		
University of Port Elizabeth		
Koekemoer, J.	R2 540	
Slabber, S.	R3 400	
Haschick, S.L.	R4 200	
Bursary subtotal		R 8 940
	TOTAL	**R525 061**

In Kind Contributions

The loan and maintenance of the 4x4 pickup by Mazda Wildlife Fund represents a saving of about R20 000 on transport expenses.

Gentyre donated a set of Continental tyres for the vehicle, valued at R5000.

South African National Parks provides access and acommodation for TERU research in the Addo Elephant National Park.

*Note that National Research Foundation Grant-Holder Bursaries are included within the Programme amounts listed above.

ADVISORY BOARD, STAFF AND STUDENTS 1999

Advisory Board
Dr M. H. Knight, South African National Parks (Chairman)
Ms J. Bowler, Jennifer Bowler Consulting
Dr E. E. Campbell, Botany Department, University of Port Elizabeth
Mr P. W. Coetzee, Western District Council
Mr L. Els, Ministry for Economic Affairs, Environment & Tourism (Eastern Cape Province)
Dr R. Little, WorldWide Fund for Nature-South Africa
Mr P. Niven, Amanzi Estates
Dr A.R. Palmer, Agricultural Research Council
Mr J. Pauw, Foundation for Research Development
Dr W. Nombekela, Department of Agriculture (Eastern Cape)
Prof. T. Wooldridge, Zoology Department, University of Port Elizabeth

Staff
Prof. G. I. H. Kerley, Director
Dr A. F. Boshoff
Mr A. M. Sigwela
Ms R. Sims (seconded from the University of Pretoria from November)

Visiting Scientists
Prof. R. M. Cowling (on sabbatical from University of Cape Town)

Postgraduate students (and their academic departments)

Ms B P M Chabie (BSc(Hons)) -	Zoology
Ms M. R. Setlalekgomo (BSc(Hons))	Zoology
Ms J. Koekemoer (MSc)	Zoology
Ms W. B. Todkill (MSc)	Zoology and Botany
Mr A.V. Hall (MSc)	Botany
Ms S. Slabber (MSc)	Zoology
Mr S. R. Henley (PhD)	Zoology
Ms C. G. Hunter (PhD)	Zoology
Mr T. S. Simelane (PhD)	Zoology
Mr J. J. Watson (PhD)	Zoology and Botany
Mrs S. L. Wilson (PhD)	Zoology
Ms A. M. Woodd (PhD)	Zoology

Visiting students
Ms S. Mendelson (University College, University of London)

Function of the Advisory Board
The function of this Board is to review and advise on the activities of the Terrestrial Ecology Research Unit, and to report back to the Council of the University of Port Elizabeth via the Faculty of Science.