Percy FitzPatrick Institute of African Ornithology

July 2001 – June 2002

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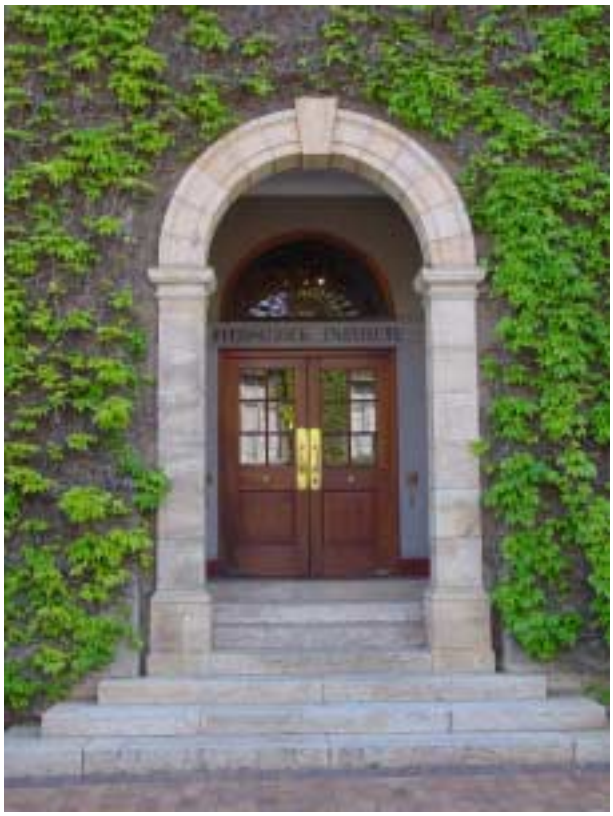

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Adv. W.P. Stanford, (Co-opted)
Prof. L.G. Underhill, (UCT)

* *Dr Mokhele has indicated that he will attend meetings of the Advisory Board if his presence is required for a specific purpose*.

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The Annual Report may also be viewed on the Percy FitzPatrick Institute's website:
http://www.fitzpatrick.uct.ac.za

Introduction

The period covered by this report marks the 10th anniversary of the coursework MSc Programme in Conservation Biology at the Percy FitzPatrick Institute. When considering the impact that the course has had on the building of capacity in conservation biology across Africa -- including South Africa and further afield -- it is clear that the last decade represents one of the most productive periods in the history of the Institute.

Over the past 10 years the CB programme has graduated 106 MSc students; a further 11 students are currently registered with the programme. Overall, students have hailed from 26 countries, including 13 African countries. Perhaps the most significant aspect of the course is the fact that over the past five years, the gender and racial balances have changed in the required direction. To this end, of the 11 students on the current course, 10 are non-South African, and eight are from African countries and its associated islands. The Masters Programme continues to attract excellent applications in large numbers, and this is partly the result of the increasing reputation and profile of the course, as well as the strong support that we have received from the John D and Catherine T. MacArthur Foundation.

But it would be untruthful to attribute the successes of the Conservation Biology course solely to the contributions of Institute staff. The Institute has drawn on the academic expertise of academic colleagues from Botany, Chemical Pathology, Economics, Institute of Marine Law, Leslie Hill Institute of Plant Conservation, Mathematics, Molecular Biology, Statistical Sciences, and Zoology. In addition, we have over the years contracted in the expertise of a range of experts from across the world including Germany, the United Kingdom, and the United States of America.

Institute staff and students have been active in numerous spheres and in our reporting some activities are likely to remain hidden. At the risk of excluding much that is valuable and commendable, I wish to draw your attention briefly to a few of the Institute's achievements over the past year:

- *Post-graduate students*. A total of 46 students were registered for MSc or PhD degrees at the Institute during the reporting period. This included two groups of coursework MSc students (totalling 26), and 20 MSc and PhD research students by dissertation. In addition, Institute staff co-supervised another eight students who were registered at external departments or universities.
- *Student output*. The reporting period saw an exceptionally large number of students graduating, viz. four PhDs, three MSc by dissertation, and 16 Conservation Biology MSc.
- *Honours teaching module*. Out of an Honours class comprising 13 students, nine chose to do the seven-week module on "*Birds as models of ecological theory*" presented by Institute staff.
- *Conservation Biology course*. Generous funding from the US-based John T. and Catherine D. MacArthur Foundation enabled us to award another five scholarships for students doing the coursework MSc degree in Conservation Biology during 2002, viz. Godlisten Matilya and Ronald Machange (both from Tanzania), Dianah Nalwanga (Uganda), Harison Randrianasolo (Madagascar) and Prince Kaleme (DRC). In addition, the 2002 group also includes students from Sierra Leone, Lesotho, the Canary Isles, Israel, USA and South Africa.
- *Scientific outputs*. Researchers based at the Institute have during the year 2001 produced a total of 37 peer-reviewed scientific papers. Several scientific books and chapters in books have also seen the light during this period.
- *International students and associates*. Half of our post-graduate students are of foreign extraction. In addition, three of our post-doctoral researchers are from abroad.
- *Seminars.* The reporting period reflects one of the most vibrant and diverse

seminar series ever seen at the Institute, and reflects its attractiveness as a destination for a wide range of visiting ornithologists and conservation biologists.

- *Staff achievements and awards*. Dr Peter Ryan has been promoted to Senior Lecturer; Prof. Tim Crowe was given a double merit award towards the end of 2001 and Chris Tobler attained Networking+ Certified Professional status.
- *Membership of Editorial Boards*. All the Institute's full-time senior staff members serve as members of editorial boards of one or more prestigious scientific journals, viz. *Biological Conservation, Cladistics, Journal of Avian Biology, Ostrich (2), SA Journal of Wildlife Research, and Systematic Biology*.
- *Conservation outcomes.* As part of Ross Wanless's MSc research project under the supervision of Prof Phil Hockey, the Aldabra Flightless Rail was successfully reintroduced to Picard Island, Seychelles. Also, Dr Peter Ryan published the management plan for Inaccessible Island.
- *Public awareness*. Institute staff members continue to make a formidable impact in the printed medium, and on radio and television. Staff and students produced almost 80 semi-popular articles and books during the reporting period. Amongst these is the completion of the third edition of best-selling "*SASOL Birds of Southern Africa*", of which Prof. Phil Hockey is an author.
- *Roberts' Project*. The Roberts Project continues to go from strength to strength under the able management of Sharon Hampson-Maree, and the watchful eyes of the editorial team comprising Richard Dean, Phil Hockey and Peter Ryan. The project is reaching a point of frantic activity as plans are on track for publication by late 2003.
- *Niven Library*. The library continues to provide a vital service to Institute staff and students, other university researchers and outside users both with affiliations to BirdLife South Africa, and from further afield. Our link to BirdLife SA continues to leverage vitally important journal exchanges with overseas institutions.

Dr Phillip Clancey, former Director of the Durban Museum who passed away in early 2001, left a significant proportion of his estate to the Percy FitzPatrick Institute in support of 'research of an evolutionary nature involving southern African birds'. These funds will be used in a strategic way so as to assist researchers to resolve some of the most exciting and relevant questions relating to bird systematics.

Early in 2002, Dr Peter Cook resigned as HOD, Zoology, and he has been replaced on the Board by Dr Jenny Day. Also, Dr Sibusiso Sibisi, Deputy Vice-Chancellor of Research, left UCT to take his new position as President of the CSIR. Dr Cheryl de la Rey, the new DVC Research, has replaced him. Several Board members have provided the Institute with advice and support in a variety of ways. I thank each and every one for their valuable support of the Percy FitzPatrick Institute.

Finally, I am grateful for the contributions that each of the Institute's academic staff, research associates and students have made towards the achievements of the Institute. I also wish to thank the Institute's core support staff, (Chris Tobler, Hilary Buchanan, Margaret Sandwith and Lionel Mansfield) for their solid support of the Institute's activities. Their skills, loyalty and dedication often go well beyond the call of duty. Finally, Andrew Jenkins and Melissa Stander (assisted by Hilary Buchanan) nearly broke their backs in order to revamp the format of this report. I trust that most (if not all) will agree that this is a significant improvement on the drier versions of before.

Morné A. du Plessis (October 2002)
Director

Annual General Meeting 2001: Percy FitzPatrick Institute board members, staff, students and colleagues. Photo: Chris Tober

Changes in Fitztitute personnel

***Dr Pamela Beresford** arrived at the Fitz in March to spend a year as a post-doctoral student with Prof. Tim Crowe. **Dr Penn Lloyd** has spent the year working with Prof. Tom Martin from the Montana Co-operative Wildlife Research Unit, spending some time in Montana and the rest gathering data from the Koeberg Nature Reserve research site. **Sharon Bosma**, a graduate of the 1999 MSc Conservation Biology Course, was contracted to smooth the way for the new Conservation Biology class, as well as to compile a database of past Fitztitute students and their current whereabouts. **Verna Love** moved on to a post with Cape Nature Conservation. **Danelle du Toit**, the Niven librarian, left the Institute for the corporate world at the end of May and her position has been taken over by **Mrs Margaret Sandwith**.*

Graduates and new students

***Raymond Jansen**, **Rita Covas**, **Deon Nel**, **Lorenzo Prendini** (PhD's), **Janette Law-Brown**, **Antje Leseberg** and **Michael Mangnall** (MSc's), **Frances Taylor**, **Lauren Waller**, **Sharon Bosma**, **Andrea Angel**, **George Amutete**, **Pippin Anderson**, **Anthony Cizek**, **Corli Coetzee**, **Benis Egoh**, **Wendy Foden**, **Cath Hughes**, **Emily Kisamo**, **Anthony Kuria**, **Sophie McCallum**, **Jo Shaw** and **Rowena Smuts (CB MSc's)** all graduated during the review period. **Amanda Hawn** registered for a MSc by dissertation in January 2002 under the supervision of Morné du Plessis, and eleven students began the MSc in Conservation Biology in January 2002.*

Director

Du Plessis, M.A. PhD (Cape Town) Professor: July - June*

Academic and Research Staff

Crowe, T.M. PhD (Cape Town) Associate Professor: July - June*
Dean, W.R.J. PhD (Cape Town) July - June
Hockey, P.A.R. PhD (Cape Town) Associate Professor: July - June*
Ryan, P.G. PhD (Cape Town) Lecturer: July - June*
Turpie, J.K. PhD (Cape Town) Senior Scientific Officer: July - June

Post-doctoral Fellows

Beresford, P. PhD (New York) March - June
Cuthbert, R. PhD (Otago) July
Fairbanks, D.H.K. PhD (Pretoria) June - July
Lloyd, P. PhD (Cape Town) July - December (external: University of Montana)

Research Associates

Jenkins, A.R. PhD (Cape Town) July - June
Milewski, A. PhD (Murdoch University, W. Australia) July - June
Simmons, R. PhD (Wits) July - June

Postgraduate students

Doctoral

Barnes, K.N. MSc (Cape Town) July - June
Bowie, R. MSc (Cape Town) July - June
Cohen, C. BSc (Hons) (Cape Town) July - June
Covas, R. MSc (Lisbon, Portugal) July - June
Jansen, R. BSc (Hons) (Port Elizabeth) July - December
Loewenthal, D. MSc (Cape Town) July - June
Muchai, S.M. MSc (Nairobi, Kenya) July - June
Nel, D.C. MSc (Cape Town) July - June
Prendini, L. BSc (Hons) (Cape Town) July - June
Seymour, C. MSc (Cape Town) July - June
Smith, B. MSc (Cape Town) July - June
Török, I. MSc (Justus-Liebig, Giessen, Germany) July - June

Masters by Dissertation

Anderson, H. BCom (Hons) (Pretoria) July - June
Bento, C. BSc (Hons) (Maputo, Mocambique) July - June
Boix-Hinzen, C. BSc (Hons) (Pietermaritzburg, Natal) July - June
Hamblin, J. BSc (Hons) (Cape Town) July - June
Hawn, A. BAS (Princeton University, USA) January - June
Law-Brown, J. BSc (Hons) (Port Elizabeth) July - December
Leseberg, A. BSc (Hons) (Cape Town) July - December
Louw, K. BSc (Hons) (Cape Town) July - June
Mangnall, M. BSc (Hons) (Cape Town) July - December
Murison, G. BSc (Hons) (Cape Town) July - June
Wanless, R. BSc (Hons) (Cape Town) July - June

Masters in Conservation Biology 2002

De Ponte, M. BSc (La Laguna, Canary Isles) January - June
Kaleme, P. BSc (Bukavu, DRC) January - June
Knox, D. BSc (U. North Carolina, USA) January - June
Machange, R. BSc Forestry (Sokoine, Tanzania) January - June
Maphisa, D. BSc Hons (Natal) January - June
Matilya, G. BSc Hons (Sokoine, Tanzania) January - June
Nalwanga, D. BSc Hons (Makerere, Uganda) January - June
Okoni-Williams, A. BSc Hons (Sierra Leone) January - June

Peleg, N. MSc (Ben-Gurion, Israel) January - June
Randrianasolo, H. DEA (Antananarivo, Madagascar) January - June
Savy, C. BSc Hons (Natal) January - June

Masters in Conservation Biology 2001

Angel, A. BSc Bio Sci (P.Univ Catolicade, Chile) July - February
Amutete, G. Dip. Sci.Ed (KSTC, Kenya), BSc (Hons) (Nairobi) July - February
Anderson, P. BSc (Hons) (Cape Town) July - February
Bragg, C. BSc (Hons) (Natal) July - June
Cizek, A. BSc (Cape Town) BSc (Hons) (Zimbabwe) July - February
Coetzee, C. BSc (Hons) (Pretoria) July - February
Egoh, B. BSc (Hons) (Uyo, Cameroon) July - February
Foden, W. BSc (Wits) Hons (Cape Town) July - February
Hughes, C. BSc Agric. (Pietermaritzburg) July - February
Kisamo, E.S. Dip. WLM, BSc (Dar Es Salaam, Tanzania) July - February
Kuria, A.G. BSc WLM (Hons) (Moi, Kenya) July - February
McCallum, S. BSc EnvSci (Hons) (Southampton, UK) July - February
Mills, M. BSc (Hons) (Cape Town) July - June
Shaw, J. BSc (Hons) (King's College, UK) July - February
Smuts, R. BSc (Hons) (Cape Town) July - February

Masters in Conservation Biology 2000

Bosma, S. BA, Dipl Ad. Ed, BSc (Hons) (Cape Town) July - December

Masters in Conservation Biology 1999

Mahumana, S. BSc (Hons) (Maputo, Mocambique) July - June
Taylor, F. BSc (Hons) (Pietermaritzburg, Natal) July - December
Waller, L. BSc (Hons) (Durban, Natal) July - December

Zoology (Hons)

Balme, G. July - December
Bayern , A. January - June
Popose, G. July - December
Ross-Gillespie, A. January - June
Schoeman, C. July - December
Stoffberg, S. January - June
Spottiswoode, C. July - December
Tuomi, E. January - June

Externally registered students

Doctoral

Radford, A. MSc (Oxon) July - June (registered at Cambridge, UK)
Scott, E. MSc (Cape Town) July - June (registered at UWC)
Wichmann, M. MSc (Marburg) July - June (registered at U.Potsdam, Netherlands)

Masters

Ranger, S. BSc (Hons) (Pretoria) January - June (registered at U. Pretoria)
Grant, T. BSc (Hons) (Pretoria) July - June (registered at U. Pretoria)
Mandiwana, T.G. BSc (Hons) (Venda) January - June (registered at Botany, UCT)
Nangammbi, T.C. BSc (Hons) (Venda) January - June (registered at Botany, UCT)
Seoraj, N. BSc (Hons) (Durban-Westville) January - June (registered at U. Durban-Westville)
Solms, L. BSc (Hons) (Pretoria) January - June (registered at U. Pretoria)
Techow, M. BSc (Hons) (UCT) January - June (registered at Molecular and Cell Biology, UCT)

External students are part-time postgraduate students not based at the Fitztitute, who normally receive scholarships/salaries from sources outside the Fitztitute.

Roberts' VII Project

Hampson, S. Project Manager (full-time) July - June
Law-Brown, J. Bibliographic Assistant (part-time) July - June
Leseberg, A. Bibliographic Assistant (part-time) July - June
Loewenthal, D. Bibliographic Assistant (part-time) July - June
Raine, M. Bibliographic/Research Assistant (part/full-time) July - June

Research Assistants

Kieny, F. December - March
Kleynhans, E. February - April
Lloyd, J. September - November
Radcliffe, B. September
Roos, C. June
Rubenstein, M. September - November
Sirami, C. December - March
Stevens, N . February - April
Crowe, K. July - June
Curtis, O. July - June

Support Staff

Principal Technical Officer

Tobler, C.J. July - June*

Administrative Assistant

Buchanan, H. July - June*

Library Staff

Du Toit, D. July - May*
Loubser, D. July - June
Sandwith, M. June*

Departmental/Accounts Assistant

Mansfield, L.F. July - June*

Webmaster

Stander, M. July - June

* Denotes permanent member of the UCT staff establishment. All other personnel are contractual or ad hoc appointees held against posts supported by grants in aid of research, bursary holders or part-time postgraduate students employed outside the Fitztitute.

Mission Statement

To promote and undertake scientific studies involving birds that contribute to the practice affecting the maintenance of biological diversity and the sustained use of biological resources.

Prof. Morné du Plessis *serves as a member of the International Ornithological Congress Committee, the Advisory Board to the Institute for Plant Conservation, the Council of BirdLife South Africa, the Steering Committee of SAFRING and the Advisory Committee of the Mammal Research Institute at the University of Pretoria. He was recently appointed Chairman of both WWF-SA's Conservation Advisory Committee and its Projects Approval Group and was elected Vice-President of the Board of Governors of the Africa Section of the Society for Conservation Biology. He is a member of the UCT Environmental Task Team, and served on the panel of Round V of the Innovation Fund. He serves on the editorial boards of the* Journal of Avian Biology *and the* Southern African Journal of Wildlife Research.

During the review period, Morné co-convened the Zoology Honours course and co-presented a module of this course and lectured part of a joint third year Behavioural Ecology course with staff from the University of Stellenbosch. He supervised five Zoology Honours students, two MSc students, two PhD students and worked with two post-doctoral researchers. He also co-supervised four MSc Conservation Biology students, provided project support to five further MSc CB students, co-supervised three students registered at other universities and supervised the Internship of two French students. He has continued writing monthly columns on bird behaviour and conservation for major Afrikaans newspapers, participated regularly in nature programmes on both radio and television and gave five presentations to membership-based societies. He reviewed numerous NRF proposals, served as an External Evaluator of the University of Pretoria's Centre for Environmental Studies, and reviewed at least 12 applications for research grants and at least 18 manuscripts submitted to scientific journals.

Prof. Morné du Plessis *together* ***with Assoc. Prof. Phil Hockey*** *leads the* ***Rare & Threatened Birds Research Programme***

Behavioural Ecology

Programme leader
Prof. Morné du Plessis

Research team
Mark Anderson (Northern Cape Nature Conservation)
Prof. Ben Burger (Chemistry Department, University of Stellenbosch)
Prof. Nick Davies (Cambridge University)
Dr Paul Meyer (Molecular and Cell Biology Department, UCT)
Dr Rob Simmons (Namibian Ministry of Environment and Tourism)

Green Woodhoopoe. Photo: Morné du Plessis & Christian Boix

Overview
Some of the specific objectives of projects within this programme during 2001-2002: (i) to establish the ecological and life-history underpinnings of cooperative breeding among birds in southern Africa, (ii) to uncover the factors underlying the divergent evolutionary pathways that may lead to regular *versus* opportunistic cooperative breeding, (iii) to assess whether there are any ecological or life history features that affect the persistence of lineages on Green Woodhoopoe territories, (iv) to investigate the role of territory quality in the dispersal decisions of woodhoopoes, (v) to investigate whether there is a correlation between degree of sociality and the extent to which information is transferred in alarm calls and, (vi) to establish whether or not hatching asynchrony in Monteiro's Hornbill is an adaptive trait.

Highlights
- The incidence of helpers at Sociable Weaver nests was found to be proximally controlled by food availability.
- Results from the long-term study of Green Woodhoopoes strongly support the resource dependent nature of familial success in this species, and also highlight the potential importance of family dynasties in other cooperative species with complex social dynamics and dispersal patterns.
- Preen gland secretions of the Green Woodhoopoe were found to function in chemical defence against both vertebrate predators and microbial pathogens.
- A pilot study on ant-eating chats commenced at Benfontein Farm in Kimberley; 10 territories were mapped and all possible individuals were colour ringed.

Students

Rita Covas (PhD, graduated June 2002); *Life histories and sociality in the Sociable Weaver.*

Janette Law-Brown (MSc, graduated December 2001); *Chemical defence in Red-Billed Woodhoopoes.*

Corrie Schoeman (BSc Hons, graduated in December 2001); *The role of territory quality on family stability and on the persistence and expansion of dynasties in cooperatively breeding green woodhoopoes (*Phoeniculus purpureus*).*

Andrew Radford (PhD, Cambridge) is working on foraging niche-separation and vocalisations of woodhoopoes.

Christian Boix-Hinzen (MSc); *Developing management tools for the Conservation of Hornbills in a developing country.*

Amanda Hawn (MSc, registered March 2002) is working on the effect of territory quality on dispersal decisions in a model population of Red-billed Woodhoopoe.

Nimmi Seoraj (MSc, University of Durban-Westville) is working on warning vocalisations and predator information transfer in social birds.

Samantha Stoffberg (BSc Hons) is working on the fitness consequences of gender differences in helping behaviour of woodhoopoes.

Auguste von Bayern (BSc Hons) is working on the senescence in woodhoopoes.

Lectures

Prof. du Plessis contributed to the teaching of a seven--week module to UCT Honours students on 'Birds as models of ecological theory'. He also taught on the Behavioural Ecology Field Course at De Hoop which is attended by 3rd year students from UCT and Honours students from the University of Stellenbosch and the University of the Western Cape.

Visitors

Prof. Jan Ekman (Uppsala University, Sweden)
Prof. Stephen Emlen (Cornell University, USA)
Prof. Tim Birkhead (University of Sheffield, UK)
Prof. Tom Martin (University of Montana, USA)
Prof. Tim De Voogd (Cornell University, USA)
Prof. Rob Slotow (University of Natal, Durban, SA)
Dr Ian Newton (Institute of Terrestrial Ecology , UK)
Dr Richard Pettifor (Institute of Zoology, London, UK)
Dr Andrew McKechnie (University of Natal, PMB, SA)
Tina Sommer (Freie Universitat, Germany)
Anat Shapiro (University of Tel Aviv, Israel)

Acknowledgements

De Beers Consolidated Mines Limited (particularly Dr Mark Berry and Mr Main), National Research Foundation, European Union, University Research Committee (URC), Sean Cockin, Frank Cockin, Johan Breetzke, Willem Fourie, Trevor Brown, Mike Putzier, Kei Mouth Municipality.

Assoc. Prof. Phil Hockey *is also the leader of the Ecology of Migration Research Programme.*

Prof. Morné du Plessis *is also the leader of the Behavioural Ecology Research Programme.*

Rare & Threatened Birds

Programme leaders
Assoc. Prof. Phil Hockey
Prof. Morné du Plessis

Research team
Dr Warwick Tarboton (Wakkerstroom Natural Heritage Association)
David Allan (Durban Natural History Museum)

Wattled Crane. Photo: Carlos Bento

Overview

This programme aims to develop an adequate biological understanding of the life-histories, population dynamics and ecological requirements of rare and threatened African birds to implement effective strategies for their conservation. During the past year, the following species have been focal taxa: Wattled Crane (Zambezi Delta, Mozambique), African Black Oystercatcher (South Africa and Namibia), Aldabra Flightless Rail (Aldabra Atoll, Seychelles), Knysna Warbler (Cape Peninsula), and Yellow-breasted Pipit (South African highveld). These are all Red Data Book species ranging in status from Critically Endangered to Vulnerable.

Highlights

- The only remaining viable population of Wattled Cranes in the Zambezi Delta is found in the Marromeu complex. Our analysis of satellite photographs suggests that key feeding areas of theses birds are being lost as the Zambezi flood plain dries out, and as human pressures on the environment escalate.
- We discovered that approximately 60% of juvenile Black Oystercatchers leave their natal territories and carry out "exploratory" dispersal, usually within 200 km of their birthplace. The remaining 40% make targeted longer-distance migrations of up to 2800 km to six small "nursery" areas on the coast of central and northern Namibia and southern Angola which lie outside the adults breeding range. These post-fledging movement patterns have no reported analogue in the bird world.
- The Aldabran Flightless Rail, once found throughout the Aldabras, is now restricted to Aldabra Atoll in the tropical western Indian Ocean where its range

has further contracted because of introduced predators. Predators have now been removed from Picard Island and, having assessed the suitability of the island, we undertook a soft-release reintroduction of rails. Birds bred successfully within the first year of release and the population is now growing exponentially.

- Our surveys suggest that the Knysna Warbler population on the Cape Peninsula has crashed by >50% in the past 20 years, and now probably numbers fewer than 40 pairs. Breeding success is low but there is no evidence that either habitat or food are limiting factors. High predation rates on females could be the key.
- The Yellow-breasted Pipit, a rare endemic of the montane grassland regions of southern Africa, is highly sensitive to burning and grazing regimes. Our studies show that by reducing the intensity of land-use (lowering grazing pressure and fire frequency) farmers can manage grasslands to favour pipit populations and simultaneously conserve tracts of this poorly protected biome.

Students

Antje Leseberg (MSc, graduated December 2001); *Demographics, foraging ecology and conservation of African Black Oystercatchers* Haematopus Moquini *in Namibian nursery areas*.

Doug Loewenthal (PhD); *Population dynamics and conservation of the African Black Oystercatcher* Haematopus moquini.

Muchane Muchai (PhD); *The effects of grassland management practices on the South African high-altitude grassland birds and their implication for the conservation of Yellow-breasted Pipit*.

Carlos Bento (MSc); *The status and prospects of Wattled Cranes* Grus carunculatus *in the Marromeu Complex of the Zambezi Delta*.

Ross Wanless (MSc); *The reintroduction of the Aldabra Rail* Dryolimnas cuvieri aldabraus *on Aldabra Atoll and Picard Island.*

Lectures

Prof. Hockey taught the module 'Community ecology and bioindicators' to the MSc Conservation Biology class. Both Prof. Hockey and Prof. Du Plessis contributed to the teaching of a seven-week module to UCT Honours students on 'Birds as Models of ecological theory'. In addition, many lectures were given to bird clubs, natural history societies and other NGO's throughout the year.

Yellow-breasted pipit. Photo: Warwick Tarboton

Visitors

Dr Richard Beilfuss, International Crane Foundation, USA
Dr Bob Cheke, University of Greenwich, UK
Dr Ross Coleman (University of Plymouth, UK)
Kariuki Ndang'ang'a, National Museums of Kenya
Dr John Hanks, Conservation International

Acknowledgements

This programme has been supported by WWF-SA, The Total Foundation, the Endangered Wildlife Trust, The Mazda Wildlife Fund, The National Research Foundation, MTN, Conservation International, The Cape Bird Club, The Somerset West Bird Club, South African National Parks, Cape Nature Conservation, Working for Water (DEAT), The Dutch Trust Fund, The Seychelles Island Foundation, The International Crane Foundation, The Disney Wildlife Conservation Fund, The Tony and Lisette Lewis Foundation, The Luc Hoffmann/Mava Foundation, The John D. and Catherine T. MacArthur Foundation, The Gordon Spriggs Scholarship Fund, University of Cape Town Research Committee and the Claude Harris Leon Foundation

Assoc. Prof. Phil Hockey *is a member of the Bird Taxon Advisory Group to the Pan-African Association of Zoological Gardens, Aquaria and Botanical Gardens, the Editorial Board of the journal Biological Conservation, the BirdLife South Africa Rarities Committee (past Chairman) and the Madagascar Rare Birds Panel. He is Editor-in-Chief of the rewrite of* Roberts' Birds of Southern Africa *and is a co-author of the best-selling* Sasol Birds of Southern Africa, *the third edition of which was published in 2002.*

Phil co-ordinates the Oystercatcher Conservation Programme, *which has proved to be a well-supported and high impact national project, and an international project on bird migration. In the year under review, he supervised the work of two PhD students, six MSc students and one honours student. He organised and taught a module in Community Ecology to the Fitztitute's Conservation Biology class and helped organise and teach an Ornithology module to the Zoology Honours students. He authored or co-authored two scientific papers, attended and presented oral papers at an international conferenc, and refereed 16 papers for seven journals.*

Assoc. Prof. Phil Hockey *together with* ***Prof. Morné du Plessis****, also leads the* ***Rare & Threatened Birds Programme***

Ecology of Migration

Programme leader
Assoc. Prof. Phil Hockey

Research team
Dr Richard Noskie (Northern Territories University, Australia)
Dr David Bishop (Consultant, Sydney, Australia)

Paradise-Flycatcher - an intra-African migrant.
Photo: PFIAO Collection

Overview

Although bird migration is the subject of much research worldwide, a disproportionate amount of this effort is directed at long-distance migrants. Long-distance migration is a derived rather than primitive trait and relatively little research has targeted shorter distance migrations such as occur within Africa, the Neotropics and Asia. It is these shorter-distance migrations that are likely to hold the key to understanding the origins of migratory behaviour. The main aim of this programme is to develop predictive capacity about which birds are likely to be migratory and under what conditions. Evidence suggests that migratory behaviour as a trait can be lost or evolved very rapidly, and it is thus reasonable to assume that new migration patterns will arise as a result of global climate change.

Highlights

- The migration behaviour of African birds is highly non-random. There is a strong positive relationship between the degree of residency and the mean temperature of the coldest month of the year. Once the latter exceeds 20°C, 90% or more of all breeding birds are resident.
- The influence of ambient temperature on migratory behaviour is mediated by habitat. Birds of dense, "buffered" habitats are less likely to be migratory than birds of open or sparsely vegetated habitats.
- Ultimately, both temperature and buffering drive migration through their influence

on food supplies. Species that experience considerable seasonal variation in food availability, notably insectivores, form the most migratory group. Among insectivores, those that catch their prey in unbuffered habitats (e.g. in the air above the vegetation canopy), are more likely to be migratory than those that hunt in buffered habitats such as forest floor leaf litter. In sub-Saharan Africa there is almost no migration by frugivores – fruit-eaters migrating south from the Palearctic do not range south of the Mediterranean Basin. Movement patterns of granivores, especially those of arid and semi-arid areas, are nomadic and unpredictable in response to local rainfall events.

- Africa is unique in having many species that migrate both north and south to breed from non-breeding grounds in the tropics. The reason for this is geographical, namely the symmetrical distribution of savannas north and south of the tropics. The timing of these migrations is determined by rainfall, thus migrants move north from the tropics in the boreal summer and south in the boreal winter. Those moving south breed at the time of year when Palearctic migrants are present, those moving north breed when Palearctic migrants are absent.
- Many Holarctic-breeding birds migrate south for the boreal winter. However, the pattern of southward species attenuation differs between the major flyways as a result of their geography. In Africa, the attenuation is gradual. In Asia and the Neotropics, it is rapid, with bottlenecks occurring at the southern tip of the Thai-Malay Peninsula and the Isthmus of Panama, respectively. A consequence of this is that whilst interspecific leapfrog migration is clear-cut in Africa, it does not exist in South East Asia. Geography thus plays an important role in shaping the dispersion patterns of migratory birds.

Students

Jane Hamblin (MSc); *The comparative dispersion patterns of Holarctic-breeding long distance migrants.*

Kirsten Louw (MSc); *The patterns and ecological correlates of migratory behaviours in the avifauna of sub-Saharan Africa*.

Acknowledgements

This research programme is funded through a grant to Phil Hockey from the National Research Foundation.

Assoc. Prof. Tim Crowe *is the current president of the Southern African Society for Systematic Biology, an Elected Fellow and member of the council of the Willi Hennig Society of Systematic Biology, a member of the International Ornithological Congress Committee, the editorial board of the journal* Systematic Biology, *the Council of the Iziko Museums of Cape Town and a research associate at the American Museum of Natural History in New York. He serves on the panel of assessors of the Systematics Committee and acts as external examiner for the third-year course in Conservation Biology at the University of Venda.*

Tim co-ordinates the Conservation Biology MSc course and runs the module Characterizing Biodiversity. *In the year under review he supervised or co-supervised one M. Tech student, two MSc students, four PhD students and one post-doctoral student. He taught modules to two undergraduate classes and three additional MSc classes in the Zoology and Botany Departments. He was author or co-author of five scientific papers. He attended and presented papers at four international meetings or conferences and gave talks to five membership-based societies. He refereed nine scientific papers for five different journals and reviewed three applications for research grants and three assessments for personal scientific evaluation for the National Research Foundation.*

Prof. Tim Crowe*, together* ***with Dr Peter Ryan****, also leads the* ***Systematics & Biogeography Research Programme.***

Gamebird Research

Programme leader
Assoc. Prof. Tim Crowe

Research team
Dr Brian Reilly (Department of Nature Conservation, Pretoria Technikon)

'Ideal' guineafowl habitat in KwaZulu-Natal. Photo: Tim Crowe's collection

Overview

This programme was initiated in 1990 and aims to identify the key factors that sustain or otherwise affect populations of gamebirds (e.g. guineafowl, francolins, spurfowl, sandgrouse and ducks/geese), develop area-specific management strategies for the species concerned, and to determine the extent to which they can act as indicators of the status of overall avian diversity. Publications produced by programme researchers have tended to focus on ecology, demography, ecotoxicology and parasitology of the species studied. This programme has wound down considerably over the last five years. The key practical products of this programme's research have been the development of biologically sustainable and economically viable wingshooting industries and area-specific management strategies for key gamebird species.

In terms of more academic research, key findings have emphasised the importance of maintaining gamebird meta-populations. These are structured populations the components of which (demes) provide immigrants for those that may be declining. For example, demographic and genetic research by Dr Rob Little demonstrated that the meta-populations of Greywing Francolins *Francolinus africanus* in the Eastern Cape are healthy and there is regular movement between demes. On the downside, Charles Ratcliffe (MSc December 2000) and a team of researchers showed that meta-populations of Helmeted Guineafowl in the Midlands of KwaZulu-Natal have collapsed over the last two decades and provided remedial measures that can reverse this demographic disaster.

A new project, the Riemland Gamebird Project, was launched in May 2002. This project is a joint endeavour with the Pretoria Technikon and involves Dr Brian Reilly as co-leader (with Tim Crowe) and M.Tech. student Ms Helen Prinsloo. The aims of this project are to identify the key factors that sustain massive populations of

Helmeted Guineafowl *Numida meleagris* in the vicinity of Petrus Steyn a small town in the Riemland Region of the northeastern Free State.

Highlights

- Production of a management strategy for mitigating the damage caused by Egyptian Geese *Alopochen aegyptiacus* on wheat/barley croplands on the Aghulas Plain.
- Production of management strategy for the sustainable utilization of Redwing Francolin *Francolinus levaillantii* (highland grasslands of Mpumalanga Province).
- Production of management strategy for the sustainable utilization of Swainson's Spurfowl *Pternistis swainsonii* (Springbok Flats, Limpopo Province).
- Launch of a new project (conducted jointly with colleagues and students at the Department of Nature Conservation at the Pretoria Technikon) on factors influencing the abundance and annual productivity of Helmeted Guineafowl *Numida meleagris* in the Riemland Region of the north-eastern Free State.

Students

Raymond Jansen (PhD, co-supervised by Dr Rob Little; graduated December 2001); *Population biology, behavioural ecology and management of the Redwing Francolin* Francolinus levaillantii *and Swainson's Spurfowl* Pternistis swainsonii.

Michael Mangnall (MSc, co-supervised by Dr Rob Little; graduated December 2001*); The demography of the Egyptian goose, its impacts on cereal crop agriculture on the Agulhas Plain, Western Cape, South Africa and measures to mitigate damage to crops by geese.*

Lectures

Tim Crowe gave three talks to various wingshooting (gamebird hunting) organizations outlining past and current research results. This has lead to the launching of the Riemland Gamebird Project.

Visitors

Prof. John Carroll (University of Georgia) and a group of students visited Raymond Jansen in Mpumalanga and our new study site in the north-eastern Free State to explore possibilities regarding future collaborative research.

Redwing Francolin: detail from Simon Barlow's illustration in Gamebirds of Southern Africa

Acknowledgements

In addition to funding to Tim Crowe from the National Research Foundation, The Honourable Charles Harris, Mr Peter Wales and a range of wingshooters provided the balance of funds necessary to launch the Riemland Gamebird Project. Tim would like to thank the host of colleagues (in particular Dr Rob Little), students, wingshooters (in particular Messrs Peter Johnson, Brendan O'Keeffe, David Lowry, Alistair Maclean, Roger Johnson and Peter Wales) and farmers for making this Programme possible and the Pretoria Technikon for input to keep it going.

Assoc. Prof. Tim Crowe
also leads the ***Gamebird Research Programme***

Dr Peter Ryan
also leads the ***Seabird Research Programme*** *and the* ***Island Conservation Programme***

Systematics & Biogeography

Programme leaders
Assoc. Prof. Tim Crowe
Dr Peter Ryan

Research team
Dr Nigel Barker (Rhodes University)
Drs George Barrowclough and Jeff Groth (American Museum of Natural History)
Dr Pamela Beresford (Percy FitzPatrick Institute)
Dr Paulette Bloomer (Department of Genetics, University of Pretoria)
Drs Mari Källersjö and Steve Farris (Swedish Museum of Natural History)
Dr Helen de Klerk (Western Cape Nature Conservation Board)
Dr Shannon Hackett (Field Museum of Natural History)
Prof. Mike Sorenson (Boston University)

A Wilkins' Bunting Neospiza wilkinsi *on Nightingale Island. Photo: Peter Ryan*

Overview
Members of this heterogeneous programme tackle a range of projects aimed at:

- discovering and determining the taxonomic validity of species
- inferring the phylogenetic (evolutionary genealogical) relationships of valid species
- identifying and explaining patterns of species distribution and diversity

The research approach in virtually all projects is multi-faceted, using a range of organismal and molecular data and analytical approaches.

The programme received several major boosts in the year under review. The most significant development was the Clancey bequest, which will greatly increase the capacity to tackle projects at UCT. At the same time, various avenues for international collaboration have opened up which will allow us to further the aims of the programme at little direct cost to the Fitztitute. The arrival of Dr Pamela Beresford on a post-doc has been extremely valuable for stimulating discussion and new research directions within the group, leading to some new and exciting projects

Highlights

- Notification that Dr Phillip A. Clancey (past Director, Durban Museum of Natural Science) had bequeathed a significant portion of his estate to the Fitztitute to

support basic research on the systematics and evolution of southern African birds.

- Finally finding polymorphic loci for *Nesospiza* buntings!
- Showing that Victorin's Warbler isn't a *Bradypterus*.
- Establishing a phylogeography for the *Apalis thoracica* complex.
- Establishing a phylogeny for the Galliformes (chicken-like landfowl) based on bone morphology and other organismal-level attributes.
- identification of patterns of species richness and endemism for Afrotropical birds.
- The appointment of Dr Lorenzo Prendini and Elizabeth Scott to curator posts at the American Museum of Natural History and Transvaal Museum respectively.
- The launch of a new project *Systematics of African Birds and Plants* within the South African/Swedish Bilateral Programme and funded through the NRF. The co-leader of this project is Prof. Birgitta Bremer, University of Stockholm and his South African based team members are Drs Nigel Barker (Rhodes University) and Terry Hedderson (Department of Botany, UCT).

Pale-legged burrowing scorpion. Photo: Lorenzo Prendini

Students

Lorenzo Prendini (PhD, graduated December 2001); *Systematics, evolution and biogeography of the southern African burrowing scorpions,* Opistophthalmus C.L. Koch (Scorpiones: Scorpionidae).

Keith Barnes (PhD, co-supervised by Dr Paulette Bloomer); *The evolution of Africa´s larks* Alaudidae.

Rauri Bowie (PhD); *Birds, molecules and evolutionary patterns among Africa's islands in the sky.*

Callan Cohen (PhD); *The evolution of the bustards: implications for African biogeography, evolution of display and conservation*.

Elizabeth Scott (PhD), University of Western Cape, co-supervisor Prof. Alan Channing*); The systematics of frogs of the Subfamily* Petropedetinae

Tyron Grant (MSc, University of Pretoria, co-supervisor Dr Paulette Bloomer); *The genetics of the rapidly evolving* Nesospiza *buntings of Tristan da Cunha.*

Tshifhiwa Mandiwana (MSc, co-supervised by Drs Pamela Beresford and Terry Hedderson, Department of Botany, UCT); *The systematics of 'red-winged" francolins* Scleroptila spp.

Tshifhiwa Nangammbi (MSc, co-supervised by Drs Pamela Beresford and Terry Hedderson, Department of Botany, (UCT) *The systematics of 'red-tailed' francolins* Peliperdix spp.

Liesl Solms (MSc, University of Pretoria, co-supervised by Dr Paulette Bloomer); *The systematics of African* Bradypterus *warblers and the phylogeography of the* Apalis thoracica *complex.*

Claire Spottiswoode (BSc Honours, co-supervised by Dr Terry Hedderson, Department of Botany, UCT) *The systematics of starlings*.

The skeleton (left) and the fossil remains (right) of two galliform species. Photo: Tim Crowe

Acknowledgements

Ms Hannekie Botha, International Liason Office NRF for advice on securing funds. The American Museum of Natural History (New York), Field Museum (Chicago), University of Pretoria and Boston University for access to facilities, specimen material and logistical support

Dr Peter Ryan *is on the Editorial Board of* Ostrich *and is a member of the IMAF Working Group of CCAMLR, the IUCN World Commission on Protected Areas and BirdLife South Africa's Rarities Committee. He is Secretary of the Gough Island Wildlife Reserve Advisory Committee as well as a Tristan da Cunha Conservation Officer.*

Peter continues to act as academic co-ordinator of the Conservation Biology MSc course and teaches four modules on this course. He contributed to the ornithology module of the Zoology Honours course and led the ornithology section of the Zoology third year field camp (although this was curtailed by the early arrival of his daughter, Molly). During the review period he supervised two CB MSc projects, two MSc students, two PhD students and one post-doctoral student. He authored or co-authored 13 scientific papers, was a member of the millennium expedition to Prince Edward Island and gave several talks to bird clubs and other special interest groups. In addition to his editorial role for Ostrich, *Peter reviewed nine manuscripts submitted to five scientific journals.*

Dr Peter Ryan *also leads a programme on* ***Island Conservation*** *and, together with* ***Assoc. Prof. Tim Crowe****, leads the* ***Systematics & Biogeography Research Programme***

Seabird Research

Programme leader
Dr Peter Ryan

Research team
Dr Rob Crawford (Marine and Coastal Management)
John Cooper (Avian Demography Unit, UCT)
Dr Richard Cuthbert (post-doctotal student at the Fitztitute, currently University of Canterbury, New Zealand)
Dr David Gremillet (CNRS, Strasbourg, France)
Dr Geoff Hilton (Royal Society for the Protection of Birds, UK)
Dr Deon Nel (BirdLife International, based in South Africa)
Dr Yan Ropert-Coudert (National Institute of Polar Research, Japan)
Prof. Les Underhill (Avian Demography Unit, UCT)
Barry Watkins (Marine and Coastal Management)

A Shy Albatross killed on a tuna longline off South Africa. Photo: Peter Ryan

Overview
This programme has a conservation component (assessing and reducing human impacts; monitoring population trends) and a less applied research component that uses seabirds as convenient biological models. For the last five years, the programme has been dominated by the need to assess and mitigate the impacts of longline fishing. The active research phase of this project is now winding down. We have a good idea of the current mortality associated with each fishery, have established effective mitigation measures for most fisheries, and are actively involved in policy development to ensure these measures are implemented. We have seen significant decreases in seabird by-catch rates in several fisheries, and it is hoped that this trend will continue.

The practical implementation of the findings of the past five years is being achieved through two major avenues. Firstly, the lessons learned are being incorporated into a National Plan of Action to reduce the incidental mortality of seabirds on longlines, as called for by the UN's Food and Agriculture Organisation. This document sets guidelines for each fishery, and will set the guiding policy for managing the seabird by-catch of these fisheries. Secondly, Dr Deon Nel (PhD graduate, June 2002) has taken up a position as seabird conservation officer for BirdLife International (based in Cape

Town), and his portfolio is to implement effectively the various mitigation measures identified (including educating fishers and fishery observers). We continue to collaborate closely in this regard.

Ongoing research into longline impacts is mostly through monitoring by-catch levels for the various fisheries, and collection of genetic material to identify the affected populations of seabirds. This work is being conducted in conjunction with colleagues in Australia and UCT's Department of Biochemistry.

We also continue to monitor the long-term performance of seabird populations, both in terms of overall population trends, and more specific demographic processes. A highlight in the current year was the millennium survey of seabirds on Prince Edward Island. Smaller than Marion Island, Prince Edward is seldom visited, and there has never been a mid-summer survey of its seabirds and seals. The survey was especially important because the island is home to almost 20% of Indian Yellow-nosed Albatrosses, a species known to be killed by several longline fisheries, and yet there had been no census since the 1970s. Fortunately the population remains healthy (unlike other populations of this species, which are decreasing at 2-3% per year).

Population estimates also were made for the first time for several key seabird species at Gough Island. These will form the baseline for ongoing monitoring of these populations. The most worrying finding was the very low breeding success of Tristan Albatrosses in most parts of the island, possibly as a result of mouse predation on large chicks. This alarming possibility will be investigated in a three-year programme from 2003. Mice also appear to be responsible for the low breeding success of the endemic Atlantic Petrels on the island.

On a more theoretical note, Michael Mills used data from the long-term monitoring colonies of Wandering Albatrosses on Marion Island and elsewhere to assess the demographic costs of losing a mate due to longline fishing. His individual-based model kept track of every bird in the population, and showed that simpler demographic models significantly underestimate the effects of adult mortality, especially if there is a skew in the sex ratio of birds killed (as is often the case for many fisheries).

In terms of more academic research, we have used the latest miniaturised data loggers to collect information on the foraging ecology of Cape Gannets. One of these loggers measures acceleration in two axes 16 times each second, allowing unprecedented insights into the gannets' spectacular plunge-dives. The other logger uses GPS signals to track a bird's position every second, allowing very detailed investigation of the birds' speed and locality while foraging. The main utility of this research is as a comparative tool to assess fish abundance. Gannets feed on commercially-important pelagic schooling fish, and these devices can be used to measure accurately the effort it takes them to provision their chicks, giving a real-time estimate of fish abundance over a large area.

Highlights

- Production of a draft National Plan of Action to reduce longline fishing impacts on seabirds.
- Fine-scale investigation of Cape Gannet foraging activity.
- A complete count of surface-nesting seabirds took place during the millennium expedition to Prince Edward Island.
- An impact assessment of helicopter-based tourism to Dassen Island.

Students

Deon Nel (PhD, graduated June 2002; co-supervised by Dr Rory Wilson, Institut für Meereskunde, Kiel, Germany); *The impacts of long-line fishing on the seabirds breeding on Marion Island*.

Michael Mills (MSc Conservation Biology)*; Pair-bond disruptions and demographic bias associated with long-line fishing mortality: an individual-based model for assessing consequences for Wandering Albatross populations*

Mareile Techow (MSc, co-supervisor Dr Colleen O'Ryan, Molecular and Cell Biology, UCT); *Using molecular tools to identify population-specific markers for White-chinned Petrels*.

Lectures

An overview of longline fishing impacts off South Africa was presented at the Southern African Marine Science Symposium in Swakopmund, and again in a symposium at the IOC in Beijing. The preliminary results of the gannet foraging study was also presented as a poster at the Southern African Marine Science Symposium.

Visitors

Drs David Gremillet and Yan Ropert-Coudert visited Cape Town in January-February 2002 to investigate the fine-scale foraging behaviour of Cape Gannets using the latest in miniaturised data-loggers. David will return in November-December 2002 to continue this work.

Acknowledgements

The NPOA was written with the support of a grant to John Cooper from Marine and Coastal Management. Ongoing seabird monitoring at Marion Island is supported by grants to Dr Rob Crawford from the Department of Environmental Affairs and Tourism. Research on the fine-scale foraging behaviour of Cape Gannets was funded as part of a collaborative NRF-French programme. Follow-up funding for bird monitoring on Gough Island was approved recently, providing support for a three-year programme at the island.

Colleagues both at the university and in the field are thanked for their assistance. This is a truly collaborative effort. Special mention goes to Rene Osborne and Craig Smith, Marine and Coastal Management.

Dr Peter Ryan
also leads the ***Seabird Research Programme*** *and, together with Tim Crowe, the* ***Systematics & Biogeography Research Programme***

Island Conservation

Programme leaders
Dr Peter Ryan

Research team
Prof. Steven Chown (University of Stellenbosch)
Mr John Cooper (Avian Demography Unit)
Dr Rob Crawford (Marine and Coastal Management)
Dr Richard Cuthbert (post-doctoral student at the Fitztitute (currently University of Canterbury, New Zealand))
Dr Geoff Hilton (Royal Society for the Protection of Birds, UK)
Dr Deon Nel (BirdLife International (based in South Africa))

Dark-mantled Sooty Albatross, Inaccessible Island. Photo: Peter Ryan

Overview
This programme dovetails with the Seabird Research Programme, but covers the broader issues of island conservation, including the control of alien organisms and conservation of land birds on islands. Oceanic islands – those that have never been connected to a continental landmass - are among the most sensitive of terrestrial ecosystems. They have a large number of endemic species, many of which lack appropriate defences against introduced predators. This is a result of the disharmonic ecosystems that evolve at the highly isolated oceanic islands. Large stretches of sea prevent many elements typical of continental biota from colonising oceanic islands. When man and his commensals have invaded islands, the results have been catastrophic. Even where species persist, they are often at greatly reduced population sizes, and are thus prone to extinction from chance events such as environmental variability and catastrophes (e.g. cyclones).

Despite the sad history of human associations with islands – more than 90% of avian extinctions since 1600 have been of island forms – some relatively untouched islands remain. These are exciting laboratories for research in ecology and evolution, and also are worthy targets for conservation action. The FitzPatrick Institute has a long and proud record of island-based research, and this has been boosted during the year under review, with projects taking place at the sub-Antarctic Prince Edward islands.

Highlights

- The management plan for Inaccessible Island was published in 2001.
- Peter Ryan was the UK government's environmental inspector on the annual relief to Gough Island in September 2001.
- A monitoring protocol was established for threatened birds on Gough Island.
- The millennium expedition to Prince Edward Island took place in December 2001.

Students

Richard Cuthbert was a post-doctoral student at the Fitztitute from August 2000 to November 2001.

Lectures

Peter Ryan gave two popular talks on island conservation, and in September 2002 is giving a presentation on this topic at the Ocean Summit, a parallel event to the World Summit on Sustainable Development.

Visitors

James Glass, head of Tristan's Natural Resources Department and Chief Islander, was in Cape Town from April to August 2002. During this time he visited the Fitztitute and was advised on numerous matters of conservation concern at Tristan and Gough islands. James was co-author of the Inaccessible Island management plan.

Wandering Albatrosses. Photo: Peter Ryan

Acknowledgements

Monitoring and research activities at the Prince Edward Islands were supported by the Department of Environmental Affairs and Tourism, through grants to Dr Rob Crawford. An application for follow-up funding for bird monitoring on Gough Island was developed during the year under review, and we have recently heard that this was successful, providing support for a three-year programme at the island. Funds for students to work on the impacts of climate change on Lesser Sheathbills at Marion Island from 2004 have been obtained from USAID through a collaborative project headed by Prof. Steven Chown.

I am grateful to the numerous people who together help conserve our fragile islands. The ongoing support of the Tristan community is especially important.

Dr Jane Turpie
is a member of the Water Research Commission's CCWER committee. In the year under review she supervised four CB MSc students and taught a module in the Conservation Biology MSc course, including taking both the 2001 and 2002 classes on field excursions. As a participant in the international Millenium Ecosystem Assessment project, she attended meetings in Paris and Rome. She also attended several meetings of various national freshwater management agencies and commissions.

Environmental & Resource Economics

Project leader
Dr Jane Turpie

Research team
Alison Joubert (University of Cape Town)
Harold Winkler (University of Cape Town)
Randall Spalding-Fecher (University of Cape Town)
Dr Guy Midgley (National Botanical Institute)
Hugo van Zyl (Independent Economic Consultants)
Tony Leiman (University of Cape Town)
Bill Harding (Southern Waters)
Prof. William Bond (Botany, University of Cape Town)
Conservation Biology Masters students from 2001 and 2002

Elephant - a valuable ecotourism asset. Photo: J. Turpie

Overview

A number of projects have contributed to this research programme, covering a broad range of research topics. The projects mainly concentrate on the valuation of natural resources, trade-offs made in conservation and development decision-making, and the economic impacts of anthropogenic changes in the environment. Projects initiated, ongoing or completed during the review period include broad-ranging topics such as '*The value of biodiversity to South Africans, with emphasis on the Western Cape*', '*The economic impact of climate change in South Africa*', and more location-specific studies such as '*The contribution of different components of biodiversity to tourism value in Hluhluwe-Umfolozi Park*', '*The economic value and resource utilisation of the last remnant of tropical moist forest on Pemba Island, Tanzania*' and '*The potential impact of viticulture expansion on biodiversity in the Cape Floristic Region*'.

Highlights

- As part of efforts to develop the Cape Metropolitan Open Space System (CMOSS), we demonstrated the potential use of environmental resource economics methods to gauge how residents value different types of public open space. Sportsfields, parks and wetlands were most highly valued by Capetonians, and most respondents were prepared to pay to retain existing open areas.

- We found that the extent to which Western Cape residents value local biodiversity was strongly influenced by awareness, experience and interest in nature, and that these factors varied significantly according to race and income groups. Average respondents to a questionnaire survey were prepared to pay R370 per annum towards biodiversity conservation efforts. The total existence value of biodiversity to South Africans was estimated to be in the order of R2.6 billion per year.
- We predicted that the most significant economic impacts on South Africa of global climate change would be a decrease in tourism income, reductions in the existence value of biodiversity and the subsistence use of natural resources, and deterioration in human health. The overall scale of losses as a proportion of GDP are likely to be closer to those of Europe and America than to the rest of Africa, thanks to South Africa's dependence on healthy mining and manufacturing sectors.
- We found that the *Big Five* and the general scenery and wilderness experience contributed most to the overall enjoyment of tourists visiting the Hluhluwe-Umfolozi Park. The leopard was the most sought after member of the *Big Five* (favoured by 25% of interviewees), followed by lion (24%), rhino (21%), elephant (19%) and buffalo (10%). Tourists would have been willing to pay a 40% higher entry fee given their actual viewing experience, while they would have been prepared to pay 90% more for the hypothetical ideal viewing scenario.
- Predictive land-use modelling and logistic regression techniques were applied to determine suitable areas for wine cultivation (and hence potential areas for expansion) in the Cape Lowlands area. About 50 000 ha of the most threatened and irreplaceable natural vegetation types in the region (Renosterveld variants) were found to be suitable for viticulture. Protection of these natural areas against ploughing is vital if conservation targets for conservation in the Cape Floristic Region are to be met.

Students

Each year the Conservation Biology MSc students participate in the design and implementation of a project as part of their conservation economics module. In 2001, the contribution of different components (scenery and wilderness experience, the *Big Five*, other large mammals and birds, overall diversity of species) of the Hluhluwe-Umfolozi Park to tourism value of the park were examined. In 2002, the recreational value of De Hoop Nature Reserve was examined, and the financial viability of different types of tourism enterprises within and just outside the reserve were compared with the aid of an enterprise model.

Hilary Anderson (MSc) *A dynamic comparative econometric analysis of the value and prices of wildlife in South Africa.*

Emily Kisamo (MSc Conservation Biology, graduated June 2002, co-supervisor Prof. Timm Hoffman, Institute for Plant Conservation); *The impact of Community Conservation Initiatives in Tanzania: a case study of villages around Udzungwa Mountains National Park*.

Benis Egoh (MSc Conservation Biology, graduated June 2002); *Spatial patterns of natural resource use by communities in eastern Caprivi*.

Cath Hughes (MSc Conservation Biology, graduated June 2002, co-supervisor Dr Dean Fairbanks); *The potential impact of viticulture expansion on biodiversity in the Cape Floristic Region*.

Rowena Smuts (MSc Conservation Biology, graduated June 2002, co-supervisor Prof. William Bond, Botany Department, UCT); *The economic value and resource utilisation of the last remnant of tropical moist forest on Pemba Island, Tanzania*.

Dr Richard Dean *served as the Scientific Editor of* Ostrich *during 2001 and 2002 and as Editor and major contributing author of the* Roberts' VII *Project.*

During the review period he co-supervised two PhD students and one MSc student. He authored or co-authored five scientific publications and attended two scientific meetings. He also wrote many semi-popular articles in Karoo newspapers and hosted numerous talks and outings with Karoo residents and landowners to raise awareness of local environmental issues. He reviewed nine scientific papers submitted to eight different international journals and two reports to the World Wildlife Fund (USA).

Land-use & Biodiversity

Programme leaders

Dr Richard Dean
Prof Sue Milton (Conservation Ecology Department, University of Stellenbosch)

Research Team

Dr Nicki Allsopp (Agricultural Research Council, W Cape)
Mr Mark Anderson (Northern Cape Nature Conservation Services, Kimberley)
Dr J. Aronson (CNRS, Montpellier, France)
Dr Charles Boucher (Botany Department, University of Stellenbosch)
Dr John Donaldson (National Botanical Institute, Kirstenbosch, Cape Town)
Dr Karen Esler (Botany Department, University of Stellenbosch)
Dr Florian Jeltsch (Department of Ecology, University of Potsdam, Germany)
Dr Richard Knight (Botany Department, University of the Western Cape)
Ms Annalise le Roux (Western Cape Nature Conservation Board)
Dr Melodie McGeoch (Conservation Ecology Department, University of Stellenbosch)
Dr Guy Midgley (National Botanical Institute)
Dr Peter Ryan (Percy FitzPatrick Institute, University of Cape Town)
Dr Michael Schwartz (University of California at Davis, California, USA)
Dr Jane Turpie (Percy FitzPatrick Institute, University of Cape Town)
Ms N Visser (Western Cape Department of Agriculture)
Dr Thorsten Wiegand (Department of Ecological Modelling, UFZ, Leipzig, Germany)
Prof. Christian Wissel (Department of Ecological Modelling, UFZ, Leipzig, Germany)

Knersvlakte, Succulent Karoo. Photo: Andrew Jenkins

At present, two related ecological research initiatives fall loosely within this programme:

Functions, value, management and rehabilitation of biodiversity capital in the Northern and Western Cape Provinces

Overview

Cape biodiversity is rapidly being diminished by land transformation, alien plant invasion and climate change. Ecologists often find it difficult to argue that biodiversity should be conserved and rehabilitated to a near natural state following damage, largely because of the meagre scientific evidence to support the notion that diverse plant and animal communities are more valuable to South Africa than impoverished ones. A second difficulty is the need to advise on management to retain or restore

biodiversity in species-rich natural habitats or habitat fragments.

The Western and Northern Cape Provinces house the species-rich endemic floras of the Cape Floral kingdom, namely the Fynbos, Renosterveld and Succulent Karoo. The amphibian, reptile and invertebrate faunas of these regions also include many endemic genera and species. Little is known of the functional significance of Cape biodiversity in terms of maintaining soil fertility, stabilising biomass production under fluctuating weather conditions, or providing resistance to invasions of alien weeds. Recent research elsewhere indicates that diverse rangelands are more productive and more resistant to weed invasion than species-poor communities. The services that untransformed landscapes offer to rural and urban people include water and air purification, flood control, pollination, recreation, utility products (wood, flowers, medicines) and a reserve of genetic material for future development.

The climate of these areas ranges from Mediterranean to arid, and climate change predictions indicate further aridification within the next 50 years. The lowland areas are arable, and large areas of natural vegetation have been transformed for dryland agriculture. Recent development of irrigation infrastructure, of new agricultural markets for grain, oil, wine and vegetables, and of open-cast mining enterprises may threaten remaining fragments of natural lowland vegetation in the southwestern parts of the Western Cape. Arid savanna and Karoid areas within these provinces, that have no access to irrigation, are threatened by management designed to increase stocking densities for domestic livestock, and by an urban market for firewood from indigenous hardwood Acacias.

In general, this project aims to quantify rates and biodiversity costs of natural habitat transformation, understand the functions and value of biodiversity in the region, and provide guidelines for sustaining and restoring biodiversity in utilized and conserved rural and peri-urban Cape landscapes. Ultimately, the key outcomes of the project will be the development of (i) a theoretical framework for incentives and policy for biodiversity restoration based on an understanding of the role of vegetation diversity in for secondary production, faunal diversity and resistance to alien plant invasions, and (ii) recommendations for conservation management and rehabilitation of selected Cape vegetation types (particularly Renosterveld, Strandveld and Succulent Karoo) based on theoretical modelling, observation and experimentation.

Karoo ecosystem responses to land-use: changes in biodiversity, plant demography and soil processes

Overview

The key objectives of this project are (i) to investigate the effects of land-use in the Karoo on the distribution of nutrients, water and energy in rangelands, plant population processes invertebrate assemblages and invasive alien plant distribution and abundance, (ii) to model the probability, direction and rate of change in Karoo ecosystems following resource use or rehabilitation management, (iii) to build capacity in sustainable resource use through field training of postgraduate students, and (iv) to enhance public awareness of the role of ecological research in facilitating sustainable use of Karoo ecosystems.

Highlights

- Nearly 7000 km of roadside surveys of alien plants in the Karoo and Karoo-Kalahari, and Karoo-Fynbos ecotones indicate that the Australian saltbushes dominate disturbed vegetation on saline soils.
- A new model of plant growth and longevity based on two measurements of plant size makes it possible to estimate the age and growth rate of poorly known plant species.
- A project on the impacts on the avifauna of the replacement of native trees by non-indigenous trees has been completed.
- School pupils from a formerly disadvantaged rural community have been involved in SET-awareness activities including excursions to nature reserves where aspects of the science syllabus are demonstrated in the field.

Students

Colleen Seymour (PhD, co-supervised by Dr Jeremy Midgely); *The role of* Acacia erioloba *in preserving biodiversity in the Kalahari, Southern Africa*.

Matthias Wichmann (PhD, University of Potsdam, Germany, co-supervised with Dr Florian Jeltsch); *The influence of land-use and climate change on the biodiversity in dry savanna*.

Thidi Tshiguvho (MSc, University of Stellenbosch, co-supervised with Dr Isla Grundy); *The role of the sacred tradition in species and land conservation: The case of the Vhavenda of Northern Province, South Africa*.

Visitors

Dr Roland Brandl, Professor of Ecology at Phillips University, Marburg, Germany, and Chief Editor of Oecologia, spent a week with Dr Dean in the Karoo, discussing joint projects and future co-operative research.

Acknowledgements

Work on changes in woodland structure in Kalahari arid savanna was partly funded by the *Deutsche Ministerium für Bildung und Wissenschaft* (BMBF) (BIOTA - southern Africa project). Sponsors for the Karoo project are: National Research Foundation, Stellenbosch University, Potchefstroom University, National Department of Agriculture, Jan Kitshoff and the *BMDF*

Post-doctoral Fellows

Dr Pamela Beresford
Dr Dean Fairbanks
Dr Penn Lloyd

MSc student, Tshifhiwa Mandiwana, setting up an experiment in the Botany Department's Molecular Lab. Photo: Melissa Stander

Dr Pamela Beresford

Pamela arrived in Cape Town from New York for a post-doctoral appointment with Tim Crowe in March 2002. Her objectives during her association with the Fitztitute are to (i) explore options for collaborative field or laboratory projects designed to describe the evolutionary diversity of lowland forest birds, (ii) collect nucleotide data for clarifying the phylogenetic relationships of the montane francolin assemblage, (iii) complete and submit for publication a number of manuscripts currently in preparation, (iv) write new papers and (v) supervise students involved with molecular systematics research at the Institute.

Pamela has welcomed opportunities to become familiar with the academic *milieu* at UCT. She has attended a few classes in the Systematics and Biodiversity Science MSc programme (a programme run jointly by the Universities of Cape Town, Stellenbosch and the Western Cape), and gave three lectures to Fitztitute Conservation Biology MSc students and Zoology Honours students in April and May. She has contributed to project proposals and budgets for the molecular systematics component built into a large NRF proposal submitted by Tim Crowe. She has also interacted with academic and support staff in the departments of Botany, Molecular and Cell Biology and Zoology to establish a documented genomic bank of the Institute's genetic material, and advised about inter-institutional loan procedures for genetic material. She has organised laboratory space for herself and three students, and has started training these students on the acquisition of DNA sequence data, after providing handouts, technical literature, and advice about sample design. The students' first activities have included selecting exemplars from a tissue bank and performing genomic DNA extractions.

During the balance of her postdoctoral tenure she will collect sequence data for montane francolins, and submit manuscripts undergoing final revision with a number of co-authors.

Dr Dean Fairbanks

Dean obtained a post-doctoral fellowship to examine the destruction and fragmentation of habitats and what these processes may lead to in re-assembling biotic communities across South Africa. A framework aimed at understanding and predicting community responses to these destructive processes is still lacking within southern Africa. He proposed to analyse the landscape ecological dynamics of a region both spatially and temporally to facilitate integrated biodiversity management. Land-use will be a pivotal conservation issue in southern Africa in the coming decades as we tackle the management of land that has not been set aside in parks and reserves but adds to the regional conservation goals and protected area networks. During his tenure, Dean has been involved projects on the following topics:

- Spatial dynamics of Karoo endemic and nomadic birds.
- Ecological correlates of cooperative breeding in South African birds under anthropogenic landscape pressures (in collaboration with Prof. Morné du Plessis).
- The effects of space, climate and landscape attributes on the abundance and distribution of range-restricted and endemic birds of arid western South Africa.
- Regional land-use impacts affecting avian diversity patterns in southern Africa
- Relationships of four endemic fynbos nectar feeding birds to the phenology of proteoid plant species and anthropogenic land-use structure.
- Wine and conservation: the impact of viticulture expansion in the Cape Floristic region (in collaboration with staff at the Cape Conservation Unit, Botanical Society of SA)
- Examination of the ecosystem processes for the protection of Cape lowland vegetation (in collaboration with staff at the Cape Conservation Unit, Botanical Society of SA).
- Patterns of distribution of Zimbabwean birds - implications for a land-reform process.
- Vegetation ecosystem processes: modelling the vegetation characteristics of South Africa for input into faunal distribution and abundance studies (in collaboration with workers at the University of Idaho, USA).
- Savanna rangeland spatial-temporal fire dynamics in relationship to management and biodiversity maintenance (in collaboration with workers at the University of Idaho and Madikwe Game Reserve).
- Measurement and monitoring potential of coarse scale mult-temporal NDVI for species richness patterns in plants (with a collaborator at the Desert Research Institute, Nevada, USA).

During the review period, Dean has lectured and held discussions on landscape ecology and conservation planning, geographic information systems, and remote sensing for the Conservation Biology MSc course, has co-supervised four MSc thesis projects, and has helped to source data and information for research projects to be conducted at the Institute by incoming CB MSc Students in 2002. He is the Fitztitute representative on the UCT GIS research steering committee, and represented the Institute at the National Strategy Session on Bioregional Planning in November 2001. He presented a paper at the American Association of Geographers annual meeting in Los Angeles in March 2002, and presented guest lectures at the University of San Francisco and California State University, Chico.

Expansion of winelands near Riebeeck Kasteel. Photo: Krystal Maze

Dr Penn Lloyd

From July to November 2001, Penn was affiliated with the Institute as a recipient of a Claude Harris Leon Foundation Post-doctoral Fellowship. He worked in collaboration Tom Martin of the University of Montana, USA, as the co-ordinator of an intensive project examining the life-history traits of the shrubland breeding-bird community at Koeberg Nature Reserve. This research contributes to a pool of data gathered from replicate study sites in Arizona (north temperate), Argentina (south temperate) and Venezuela (equatorial) that are being used for a broader comparative study of the environmental factors shaping avian life-history evolution. In particular, we are examining how food availability, nest predation risk and probability of adult survival influence traits such as clutch size, nest attentiveness, incubation period, nestling feeding and growth rates, length of post-fledging care, and annual reproductive effort. Penn left in December 2001 to take up a further post-doctoral position at the University of Montana, but continues his affiliation with the PFIAO as a research associate when co-ordinating the on-going research programme at Koeberg Nature Reserve.

Research Associates

Dr Andrew Jenkins
Dr Antoni Milewski
Dr Rob Simmons

Peregrine Falcon, after ringing, before release. Photo: Andrew Jenkins

Dr Andrew Jenkins

Andrew took up a contractual post with the Institute at the beginning of 2002, conducting, managing and raising funds to sustain the embryonic Western Cape Raptor Research Programme. This is the administrative umbrella for a growing number of research projects focused on the biology and conservation of raptors in the Western Cape. An important objective of the programme is to identify the conservation needs of the region's birds of prey, and to develop parallels, overlaps and synergies between efforts to meet these needs and broader, human issues of regional and national environmental health and socio-economic upliftment.

The programme was initiated in 2001, and has grown to include three established, long-term studies of raptor populations (Peregrines, Rock Kestrels Black Sparrowhawks) in the Cape Town area, and some newer, more applied projects, that explore the suitability of raptors as indicator or surrogate species for the conservation of threatened or poorly conserved habitats e.g. Black Harriers in Renosterveld, Martial Eagles in the Karoo. Andrew and his co-workers (Odette Curtis, Koos de Goede, Anthony van Zyl and Rob Simmons) have made good progress with these projects in the review period, and achieved significant success in securing funding for future work. The Martial Eagle study is a by-product of a recently launched Fitztitute / Eskom collaboration to research and manage electricity supply interruptions associated with large eagle nests on transmission line pylons in the central and southern Karoo.

Andrew authored or co-authored two formal scientific and three semi-popular publications during the period under review, and supervised the projects of a Zoology Honours student and a CB MSc student.

Dr Antoni Milewski

Antoni continued his half-yearly association with the Fitztitute while based in Perth in Western Australia. During his time in South Africa, he presented a talk at the University of Stellenbosch on '*A new theory of vegetation height*' in September 2001, a seminar on '*Intercontinental anomalies in termites and ants*' at the Fitztitute in August 2001 and a presentation *on 'Mammals of the Cederberg'* to the Cederberg Conservation Group at Kirstenbosch in August 2001. He also facilitated several postgraduate discussion groups at the Institute during the review period.

Anthony van Zyl in the field. Photo: Andrew Jenkins

Dr Rob Simmons

Rob is employed as an ornithologist with the National Biodiversity Programme of Namibia's Ministry of Environment & Tourism. He is involved in a wide variety of biodiversity conservation research. His academic work for the Fitztitute includes the publication of the book *Harriers of the World*' (a synthesis of the evolution and behavioural ecology of this world-wide group of raptors). He completed the second year of a breeding and feeding ecology study of the endemic Black Harrier in October 2001, in collaboration with Fitztitute students and staff. His interests in the marked differences between temperate and subtropical birds are now focused on testing the problems associated with the Skutch-clutch dilemma in White-tailed Shrikes and other Namibian endemics. Rob also facilitates ecological and evolutionary studies in Namibia, including projects on vulture conservation, wetland bird monitoring, penguin breeding, the genetics of endemic species and the establishment of a new long-term ecological research station in the endemic-rich Erongo Mountains. Collaboration on satellite-tracking studies of flamingos with students from Ireland and East Africa are resulting in the first tentative pieces in the puzzle that will ultimately reveal where these long distance nomads start and finish their annual migrations.

Rob is on the editorial board of *Ostrich* and on the advisory committee of the Wetland International Africa group, and is a member of the Flamingo Specialist Group.

Contractual lecturers

Prof. Norman Myers *(Oxford University)*
Rainer Krug *(Stellenbosch University)*
Prof. Christian Wissel *(University of Leipzig)*
Prof. Eric Harley *(Chemical Pathology Department, UCT)*
Dr Colleen O'Ryan *(Molecular and Cell Biology Department, UCT)*
Prof. Timm Hoffman *(Institute for Plant Conservation, UCT)*
Dr Tony Starfield *(University of Minnesota)*
Dr Melodie McGeoch *(Stellenbosch University)*
Dr Dave Richardson *(Institute for Plant Conservation, UCT)*
Dr John Hoffman *(Zoology Department, UCT)*
Prof. Sue Milton *(University of Stellenbosch)*
Dr Dean Fairbanks *(Percy FitzPatrick Institute)*

Conservation Biology Masters Course

Course co-ordinators

Dr Peter Ryan
Assoc. Prof. Tim Crowe

Assistant course co-ordinator

Sharon Bosma

CB MSc students work-shopping ideas at Hluhluwe-Umfolozi. Photo: Jane Turpie

Overview

June 2002 saw the 10th cohort of Conservation Biology students graduate, and it was a bumper crop, with 15 students in the 2001/2002 class. Pippin Anderson was the top student, and a worthy recipient of the Dr H.E. Joosub Award. As usual, the individual research projects spanned a wide range of topics, indicating the broad-based nature of the programme.

Over the last 10 years the CB programme has graduated 106 MSc students, with only three students failing to complete the course requirements (of which two are still working on their research projects). A further 11 students are currently registered with the programme, and are working on their research projects. Overall, students have hailed from 26 countries, including 13 African countries. However, half of all graduates are South African, so the course has made a significant contribution to educating conservation biologists in South Africa. This is brought home when you repeatedly encounter past students in increasingly important conservation roles.

The success of the CB programme is also indicated by the number and calibre of applicants that the course attracts each year. The selection process for 2003 has been especially difficult because of the excellent group of applicants from all over the world. Next year (2003) also sees the first PhD student being taken on in Conservation Biology: Apophia Atakunda, the current head of planning for Uganda Wildlife, will be coming to Cape Town as a MacArthur Fellow.

We are extremely grateful to the many people who contribute to the ongoing success of the programme. Foremost among these are the module leaders, many of whom are based outside the Fitztitute: Dean Fairbanks, Eric Harley, Phil Hockey, John Hoffman, Timm Hoffman, Rainer Krug, Sue Milton, Norman Myers, Colleen O'Ryan, Dave Richardson, Tony Starfield, Jane Turpie and Christian Wissel. Many other people contribute through guest lectures or practicals. The programme also couldn't run without the sterling support of the Fitz and Zoology support staff, especially Meg Ledeboer who handles umpteen queries from potential students.

Conservation Biology Projects: 2001

George Amutete: *The effects of land-use intensity on bird communities in the Laikipia District, Kenya.*
Supervisors: M. du Plessis, W.R.J. Dean & L. Bennun

Pippin Anderson: *The role of* Cephalophyllum inaequale *in the restoration of degraded arid landscapes*.
Supervisors: T. Hoffman & P. Holmes

Andrea Angel: *Possible factors determining habitat restriction in a small, endemic, range-restricted marine invertebrate: an experimental approach.*
Supervisors: G.M. Branch

Christy Bragg: *Resource and landscape utilization by porcupines in a highly diverse geophyte region*.
Supervisors: J. Donaldson & P.G. Ryan

Anthony Cizek: *Patterns of distribution of Zimbabwean birds - implications for a land reform process.*
Supervisors: M. du Plessis, D. Fairbanks & P. Frost

Corli Coetzee: *The nitrogen stable isotope ecology of a natural rangeland system: Hluhluwe-Umfolozi Park*.
Supervisors: W. Stock & N.J. van der Merwe

Benis Egoh: *Spatial patterns of natural resource use by communities in eastern Caprivi*.
Supervisor: J.K. Turpie

Wendy Foden: *A spatial analysis of population health of* Aloe dichotoma *and* Euphorbia mauritanica *in the arid regions of southern Africa: are the impacts of climate change already apparent?*
Supervisors: W. Bond & G. Midgely

Catherine Hughes: *The potential impact of viticulture expansion on biodiversity in the Cape Floristic Region.*
Supervisors: J.K. Turpie & D. Fairbanks

Emily Kisamo: *The impact of Community Conservation Initiatives in Tanzania: a case study of villages around Udzungwa Mountains National Park.*
Supervisors: J.K. Turpie & T. Hoffman

Anthony Kuria: *Spatial temporal distribution of nectar-feeding birds in relation to their food plants' flowering phenology and land-use in the Fynbos Biome, South Africa.*
Supervisors: D. Fairbanks, M.A. du Plessis & A. Rebelo.

Michael Mills: *Pair-bond disruptions and demographic bias associated with long-line fishing mortality: an individual-based model for assessing consequences for Wandering Albatross populations*
Supervisors: P.G. Ryan & C.L. Moloney

Jo Shaw: *The relationship between spoor counts and density of a Black Rhinoceros* (Diceros bicornis) *population in north-western Namibia*
Supervisors: P.G. Ryan & M. Hearn

Rowena Smuts: *The economic value and resource utilisation of the last remnant of tropical moist forest on Pemba Island, Tanzania.*
Supervisors: J.K. Turpie & W. Bond

Sophie Vartan: *Overpopulation and inbreeding in small game reserves: the lion* Panthera leo *as a case study.*
Supervisors: M. du Plessis & R. Slotow.

The Journal Club - Conrad Savy (CB 2002)

This year, the students of the CB class chose to take part in a weekly journal club, instead of the proposed literature review exam. Scientific papers were chosen from three preferred journals: *Conservation Biology*, *Biological Conservation* and *Biodiversity and Conservation*, although with one notable exception coming from an article in the *Bombay Journal of Science*.

As with last year's club, two papers were presented each week during which students were given the opportunity to present a summary of their chosen articles and to guide discussion on the topic. Topics for discussion ranged from the practicalities of translocating troublesome animals, through various aspects of the application of ecological theory and local resource use to a critique of the philosophies behind global economic development and the consequences for sustainable development in the long term. A recurring theme in many discussions was the divide between academia and action. As a result, many papers propose possible solutions and guidelines but few appear to take the next step to implementation. A particularly interesting discussion was had on the nature of conservation biology education and its applicability to real world issues. Another controversy was over the comparison of global attitudes before the abolishment of slavery with current attitudes to sustainable energy and development.

Students generally found the journal club discussions allowed a broader exposure to the literature and an excellent opportunity to exchange ideas and share experiences, something that would be severely lacking in an examination. It was felt, however, that discussions would have benefited greatly from the input and experience of those active in academia generally, and conservation management in particular. This is something that should be addressed for future journal clubs.

Partnerships for strengthening conservation biology in Africa

Report on an international workshop held in Nairobi, Kenya, 10-13 September 2001 - Prof. Morné du Plessis

An international workshop was held on 10-13 September 2001 at the International Livestock Research Institute, in Nairobi, Kenya, to share information about the status of conservation biology in Africa and to discuss ways to strengthen it, especially through regional and international collaboration. Thirty-six participants from 13 countries represented a broad range of stakeholders in conservation biology: national parks management agencies, universities, non-governmental organisations (NGOs), primary and secondary educators, research centres, professional societies, donors, and graduate students.

The workshop was structured around two themes: conservation research and its communication and application and human resource development. Sessions focused on conservation science in NGOs and public agencies; graduate education; marine science and conservation; invertebrate conservation; long-term ecological research; women in conservation biology; creating an Africa section of the Society for Conservation Biology (SCB); and conservation biology in primary and secondary education.

An overall concern for conservation biology in Africa, as elsewhere, is how to translate conservation research into practical action. This requires attention to three areas: communication, setting the research agenda, and directly applying scientific methods to practical problems.

Communication is a clear priority – both within the research community and between it and other stakeholders. Site-based networks need to be further developed as dedicated platforms for communication and conservation science across Africa.

In defining an African research agenda, there must be a balance between working at the cutting edge of theory *versus* doing applied research. A balance might be found through a series of regional priority-setting exercises that draw together researchers with managers, educators, policymakers and other stakeholders from outside the research community.

There is need to improve environmental impact assessment policies and practice through stronger linkages with conservation biology in order to not only anticipate and mitigate potential negative impacts on biological diversity, but also to pro-actively explore development alternatives that could enhance biodiversity. Conservation science also has a major role to play in developing sound methods for monitoring and evaluating the effectiveness of conservation actions.

Graduate education is key to strengthening and sustaining conservation science in Africa. Yet, many countries lack graduate programmes in conservation biology. New programmes may be necessary in some regions, but weaknesses in graduate education may also be effectively addressed through partnerships among existing programmes. There is enormous potential for institutions to help each other to rise to international stature in research and training. A first step would be a comprehensive review of courses and programmes in Africa, involving experts from within and outside the region to evaluate programmes and identify specific strengths, deficiencies, and partnership opportunities.

The challenges faced by conservation biology in Africa are shared with many other disciplines. Conservation Biologists need to work in concert with their colleagues in other sciences to effect change. For example, the conservation biology community in Africa must join the chorus for improved telecommunications on the continent to improve information access. In the short term, email access is common and any networking initiative should take advantage of it. Web based information “portals” or gateways should allow for email access, while CD technologies can also be used to great effect.

Institutional weaknesses also plague conservation biology and affect universities, research centres, and public as well as private agencies. Strong institutions are not built through short-term investments in a few select areas as it is commonplace among donors. More comprehensive and long-term approaches are required. At the same time, recipient institutions do not always plan for the recurring costs of new investments, and in the face of competing priorities, governments have difficulty ensuring adequate support for conservation, science and higher education.

2001 CB Masters class and lecturers. Photo: Chris Tobler

Roberts' VII *team*

Editor-in-chief
Assoc. Prof. Phil Hockey

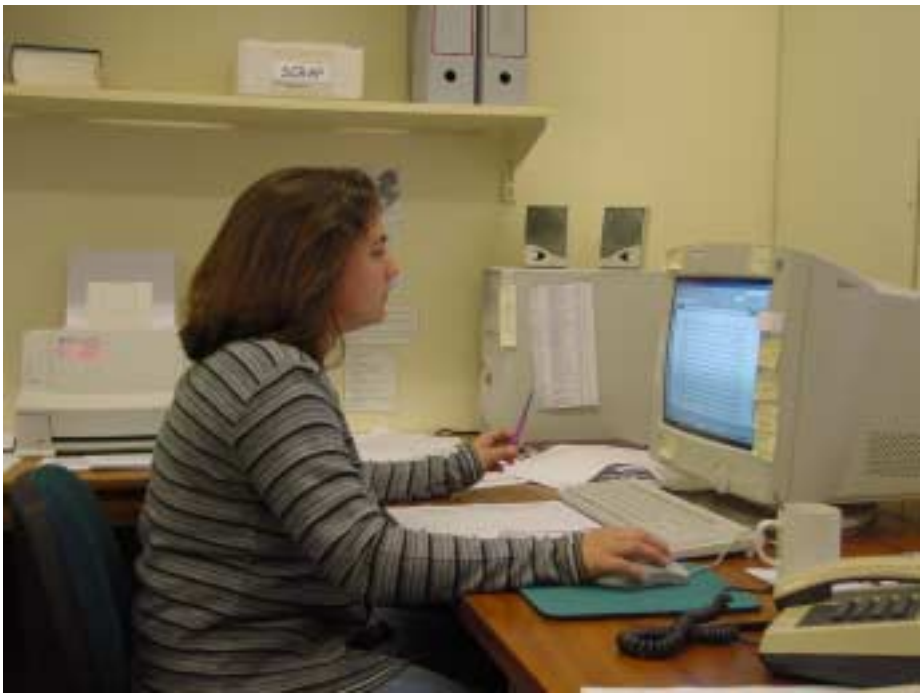
Editors
Dr Richard Dean
Dr Peter Ryan

49 contributing authors
(18 are staff or students at the Institute)

7 artists

The *Roberts' VII* Project

Project Manager
Sharon Maree



Project Manager, Sharon Maree, at work in the Roberts Office. Photo: Melissa Stander

ORNITHOLOGY FOR THE NEW MILLENIUM

To create an invaluable research tool in handbook format, summarising what is known about the biology and habits of southern African birds

The *Roberts' VII* project was originally assigned as a four-year contract to the Institute to produce a rewritten edition of *Roberts' Birds of Southern Africa*. The project has since been extended by 6 months to allow for the completion of the artwork and species accounts. An additional 8-10 months is allowed for publication and printing and a provisional shelf date for the final product is set for November 2003.

Work on the project was started in early 1998, with preliminary research on format and style, editorial and co-authorship proposals and budget layout. Our proposals were approved in June 1998, and the project was officially announced to the birding community at the International Ornithological Congress in Durban in August 1998.

During the course of the first year, potential contributing specialists were approached and subcontracted to produce the text accounts for the 955 southern African bird species. Thirty-two of the 49 contributing authors have contributed ten or more species accounts and will be will be acknowledged as authors on the title page.

Bibliographic database

One of the first projects initiated was the development of an electronic bibliography of Afrotropical bird literature (**B**ird **I**nformation **R**etrieval **D**atabase - BIRD). The database was designed to aid authors in their literature search for writing species accounts. Over the years, we have employed 25 students to index scientific and semi-popular literature on a part-time basis, and 6 full time staff that both indexed and captured the data. BIRD currently holds over 50 000 records, of which more than 35 000 have been keyworded. The remaining 15 000 references are citations of imported references

(such as books, conference proceedings and obscure articles) that have not been a priority for *Roberts' VII.*

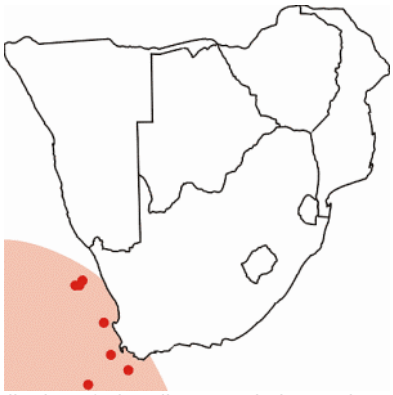
Towards the end of 2001, we were approached by the National Inquiry Services Centre (NISC) with a proposal to take over the production and maintenance of BIRD and to ensure its existence (and financing) into perpetuity. NISC is USA-affiliated and publishes CD and Internet databases/bibliographies. BIRD will be added to NISC's Wildlife Worldwide database, the largest index to literature on wild mammals, birds, reptiles and amphibians in the world. This database offers a global perspective making it the ultimate source of wildlife information. The contract with NISC was signed in June 2002 and it promises to be a continued asset to the Percy FitzPatrick Institute (as an affiliate to its production).

Artwork

Seven local artists were commissioned to produce a total of 80 colour plates for the new edition of Roberts. The standard of the artwork has been over and above our highest expectations! The editors, together with some local birding experts, have reviewed nearly all the illustrations and have instructed the artists to make the necessary changes. We expect that the plates will be finalised within the next few weeks.

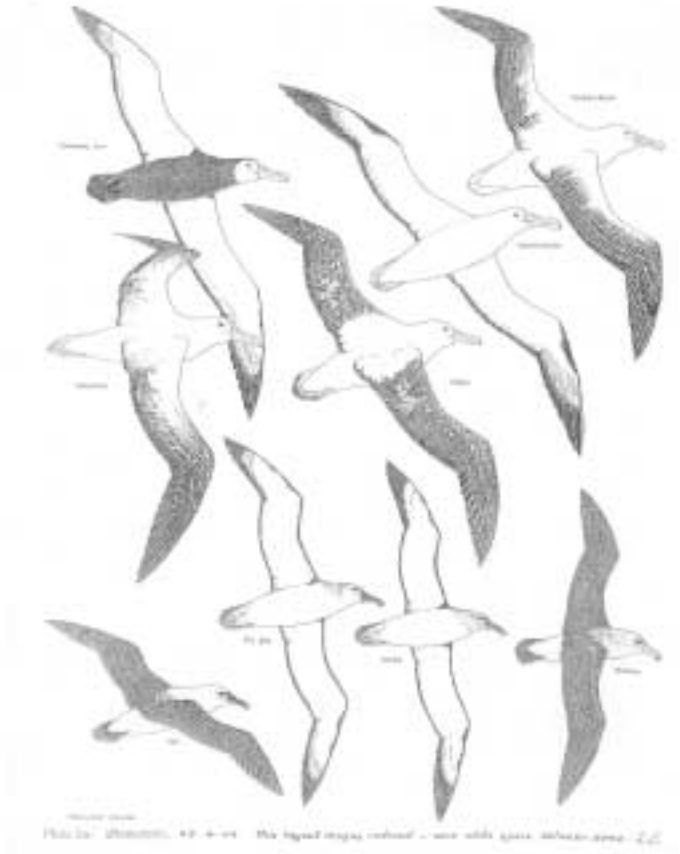
Internet

The Percy FitzPatrick Institute's web-site provided an ideal opportunity to make draft texts available to birders for comment and input. This venture has been received with great applause and has created the opportunity for enthusiastic birders to have a sneak preview of the contents of the new Roberts. It also played a valuable role in enabling the birding community to become actively involved in data gathering and helping to fill some of the gaps that exist in our knowledge of southern African birds. In many instances, the unpublished data received from the birding public are the only source of reference available to us. Continued web-postings will be made until final proofs are ready for printing. We envisage posting completed family accounts, in PDF format, incorporating maps and full text proofs, as a "last chance to contribute" option, as well as serving to keep the birding community enthused about the final product.



Distribution of Shy Albatross Thalassarche cauta

Black Eagle Publishing has been contracted to publish *Roberts' VII*. We've started to submit species accounts and artwork to the design team for layout and proof printing. The samples we've received to date, have been inspiring and an assurance of the quality that is undoubtedly to follow.



An early version of the layout for the Albatross plate for Roberts' VII

Acknowledgements

Tony and Lisette Lewis Foundation and the John Voelcker Bird Book Fund for funding the project.

Niven Library

Librarians

Danelle du Toit (July 2001 - May 2002)
Margaret Sandwith (June 2002)

The Niven Library. Photo: Melissa Stander

During the period under review the Niven Library focused mainly on the management and promotion of its collection to secure a more effective information service for all its users.

Staff and staff development

The Librarian, Danelle du Toit, resigned in March 2002 and Margaret Sandwith replaced her from June 2002. Des Loubser has continued working as a volunteer on Friday mornings and we appreciate his contribution in processing reprint requests. Lionel Mansfield has also assisted the Librarian with book covering. The Disability Unit at UCT consulted the Librarian on how to establish and maintain a small information centre. Experience gained at the Niven Library gave her the opportunity to share her knowledge on collection development and management, library management software and classification and indexing schemes.

Library development

Collection management

Weeding: For a library to provide an effective information service, its collection has to be kept up-to-date and relevant to its user community. Weeding or de-selection is a continual evaluation of resources intended to remove inaccurate, irrelevant, damaged or outdated items from the collection. In collaboration with senior staff of the Institute and the Zoology Department, the Niven Library decided to remove very old editions of Zoology textbooks, some duplicate and foreign titles as well as previous editions of newer, up-to-date or revised titles available in the Library. All books weeded were offered to staff of the Fitztitute and Zoology Department or donated to other departments, i.e. Oceanography and Botany, as well as CAFDA Books, a community fund-raising organisation. It was decided not to weed any ornithology or birding titles.

Shelf Check: The Niven Librarian did an intensive shelf check at the beginning of 2002. The book collection and the archive room were checked and approximately 130 titles were missing from the shelves (99 titles were found missing in the previous shelf

check in 1997). The main reasons for the missing books are staff and students who borrow books after hours without completing an issue slip or who misplace books while on loan to them. Library users should be aware that they are responsible for the replacement of items lost while on loan to them.

Promotion of the Niven Library Collection

On Saturday, 25 August 2001, the Society of Bibliophiles in Cape Town visited the Niven Library to view all rare and valuable books. They were very impressed with our outstanding collection and had very interesting discussions on the binding of and beautiful illustrations in some of the 18th to mid-20th century books.

Assistant Professor Nancy J. Jacobs, a historian from Brown University, USA, visited the Niven Library in 2001 to do research on European and African knowledge about and interest in birds. She regarded the Richard Brooke Memorial Reprint Collection as an invaluable source of information and was very impressed with the unpublished data on the history of ornithology kept in the Niven Library. Her enthusiasm motivated the Librarian to compile a bibliography on the biographies of well-known ornithologists and bird artists and the development and impact of ornithology in Southern Africa published in *Bokmakierie* and *Birding in Southern Africa*

Upgrading the Niven Library System

After years of motivation to have the Niven Library System upgraded, it seems that this long-term objective is soon to be realised. On 6 March 2002 the departmental libraries at UCT met with the Cape Town representative of Mindex, suppliers of Inmagic products to discuss the possibility of sharing the cost. The option to split the cost amongst the interested departmental libraries will allow the Niven Library to upgrade its system from a DOS operating system to the Windows version, DB/TextWorks, as well as to publish its holdings unto the Internet using Inmagic's Webpublisher.

Table 1. Niven Library stock circulation over the last three years

	2001/02	2000/01	1999/2000
Monographs	537	658	565
Reprints	153	133	220
Total	690	791	785

On average, 58 items have been borrowed per month during this period.

Document Delivery

A document delivery service is provided to users from other institutions such as national and international universities and technikons, governmental institutions, NGO's, ornithological societies and for private research.

Table 2. Niven Library inter-library loans over the last three years

	2001/02	2000/01	1999/2000
Photocopies supplied	130	208	189
Requests not satisfied	33	69	76

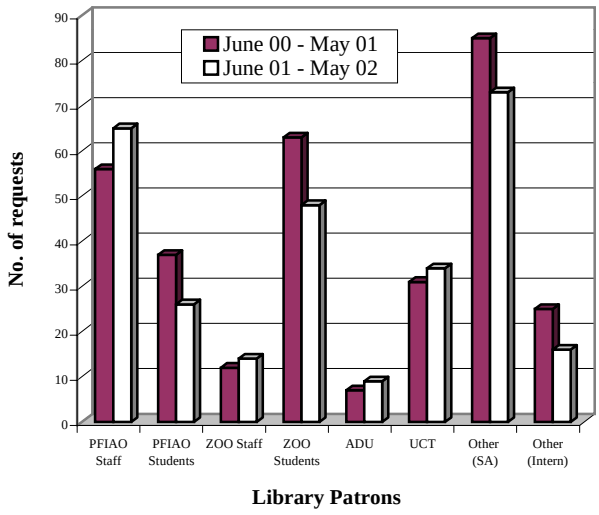
Approximately 68% of the photocopies requested were supplied free of charge to other tertiary institutions. This is within the IULC agreement between librarians of tertiary institutions. Cash redeemed from coupons received in payment for inter-library loans totalled R902.50.

The Library has send 485 [554] requests for Fitztitute publications to 40 [50] countries (see publications below). In addition to the Inter-library loans and reprint requests, we have also received 349 [245] requests for photocopies.

The cash photocopy facility in the library was mainly used by undergraduate students. Approximately 10017 [13700] copies with a cash value of R2659.10 [R3425.00] were made. As from 18 February 2002 the cost increased from 25c to 30c per page.

The Library received approximately 285 research requests from the staff and students of the PFIAO, the Zoology Department and users from other institutions and individuals, both local and international (see Fig.1). Requests for literature searches, bibliographic references and biographical information are only but a few examples.

Figure 1 : Research Requests



At the end of May 2002 the bibliographic records on the OPAC system totalled 40906 [40147]. Added to the collection were books ordered by members of the Percy FitzPatrick Institute, donated books and 42 review books for BirdLife South Africa.

Table 3. Niven Library acquisitions over the last three years

	2001/02	2000/01	1999/2000
Monographs	200	277	133
Journals	952	909	754
Newsletters	359	475	423
Reprints	514	681	242

Prof. Brian Davies from UCT Zoology Department donated back issues of *Studies from the Fisheries Research Board of Canada, Environmental Research, African Journal of Aquatic Science, Mitteilungen. Internationale Vereinigung fur Theoretische und Angewandte Limnologie, Journal of the North American Benthological Society*, and *Bulletin of the North American Benthological Society.* Back issues of *Ecology, Ecological Monographs, Grassland Society of South Africa. Proceedings, Memoirs of the Survey of South Africa* and *Archives of Natural History* were received from the National Botanical Institute at Kirstenbosch. The Zoology Department, SAFRING and the African Seabird Group continued to donate their exchange journals to the Niven Library. Due to financial constraints BirdLife SA had to cease their contribution to the binding funds. The Zoology Department has allocated funds towards the binding of periodicals in the Niven Library.

Table 4. Niven Library – total volumes bound over the last three years

	2001/02	2000/01	1999/2000
PFIAO	205	204	98
BirdLife SA	0	0	60

Future development

In July 2002 the Institute signed an agreement with the database publishing company NISC for the development of an ornithological database. The Roberts VII bibliography formed the starting point for the database and this is being further developed using the ornithological collection in the Niven Library. Benefits which will accrue to the Institute from this partnership are:

- access to lapsed and additional ornithological journal titles which NISC will source for the library collection;
- access to the NISC database Wildlife World Wide for members of the Percy FitzPatrick Institute staff, students and users of the Niven Library.

The accession of additional journal titles will however pose a space challenge to the Niven Library, one which will have to be resolved within the coming year.

Acknowledgements

We acknowledge with thanks donations from the following: African Seabird Group, M. Akam, R.L. Alexander, L. Atkinson, Avian Demography Unit, BirdLife

Botswana, Blackwell Science, W.D. Borello, B. Brain, J. Buki, C. Cohen, J. Cooper, R. Covas, T.M. Crowe, B.R. Davies, J.A. Day, W.F. de Boer, W.R.J. Dean, M.A. du Plessis, D. Fairbanks, J.G. Field, P. Hale, C. Hanel, J.Harrison, G. Haynes, D. Hey, P.A.R. Hockey, J. Jarvis, J. Jordaan, R. Kruger, S. Kuiper, J. Law-Brown, P. Lorber, J. Mendelsohn, A. Milewski, S.J. Milton, P.D. Morant, H.K. Morgan, C. Muller, N. Myers, H.D. Oschadleus, D. Potts, D.M. Richardson, P. Richardson, P.G. Ryan, SAFRING, G. Seekings, C. Spottiswoode, P. Steyn, Struik Publishers, J.K. Turpie, L. Underhill Water Research Commission, G.E. Woolfenden, C. Zerner, Zoology Department.

During the period 1 June 2001 to 31 May 2002 (previous year's numbers in brackets) 485 [554] requests for reprints of the Percy FitzPatrick Institute's publications were received by the Niven Library, in addition to those submitted directly to authors in personal letters. The breakdown by countries is:

Alaska 1(0), Argentina 27(25), Australia 16(9), Austria 12(5), Belgium 2(5), Benin 30(0), Botswana 1(1), Brazil 5(14), Bulgaria 1(0), Canada 24(11), Chile 6(0), China 2(1), Cuba 1(0), Czech Republic 9(6), Ecuador 1(1), France 25(36), Germany 3(14), Hawaii 1(2), India 5(2), Iran 24(23), Iraq 2(0), Israel 1(0), Italy 14(7), Kenya 10(0), Namibia 2(3), New Zealand 1(2), Norway 1(0), Peru 1(0), Poland 8(3), Portugal 4(22), Senegal 2(2), South Africa 98(87), Spain 15(60), Suriname 1(0), Sweden 1(0), Swaziland 9(0), Turkey 2(0), United Kingdom 11(7), United States of America 104(97), Zimbabwe 1(9).

These figures clearly show the predominance of internationally conscious scientific effort in the United States of America, Argentina and France. In addition to requests sent to the Niven Library, members of the Percy FitzPatrick Institute send reprints of their papers to workers around the world who are known to be interested in the topics concerned. Reprints are also given out directly to visitors to the Niven Library on request.

Scientific Publications

Peer-reviewed scientific publications in 2001

ASHKENAZI, S. 2001. Long-term trends in the breeding populations of waterbirds 1951-1985) at a sewage treatment plant. *Ostrich* 72:10-19.

COOPER, J., BROOKE, M. de L., BURGER, A.E., CRAWFORD, R.J.M., HUNTER, S. & WILLIAMS, A.J. 2001. Aspects of the breeding biology of the Northern Giant Petrel (*Macronectes halli*) and the Southern Giant Petrel (*M. giganteus*) at sub-Antarctic Marion Island. *International Journal of Ornithology* 4:53-68.

COOPER, J. & RYAN, P.G. 2001. The Agreement on the Conservation of Albatrosses and Petrels: implications for research and monitoring at the Prince Edward Islands. *South African Journal of Science* 97:78-79.

DEAN, W.R.J. & MILTON, S.J. 2001. The density and stability of birds in shrubland and drainage line woodland in the southern Karoo, South Africa. *Ostrich* 72:185-192.

DEAN, W. R. J. & MILTON, S.J. 2001. Responses of birds to rainfall and seed abundance in the southern Karoo, South Africa. *Journal of Arid Environments* 47:101-121.

DICKINSON, H.C., FA, J.E. & LENTON, S.M. 2001. Microhabitat use by a translocated population of St Lucia whiptail lizards (*Cnemidophorus vanzoi*). *Animal Conservation* 4:143-156.

DOUTRELANT, C., LEMAITRE, O. & LAMBRECHTS, M.M. 2001. Song variation in Bue Tit *Parus caeruleus* populations from Corsica and mainland southern France. *Ardea* 89:375-385.

DU PLESSIS, M.A. 2001. An African perspective of cooperative breeding in birds (abstract). *Ostrich Supplement* 15:1.

DU PLESSIS, M.A. 2001. Letter: Academia as a nursery ground for conservation biology. *Conservation Biology* 15:1477.

FRONEMAN, A., MANGNALL, M.J., LITTLE, R.M. & CROWE, T.M. 2001. Waterbird assemblages and associated habitat characteristics of farm ponds in the Western Cape, South Africa. *Biodiversity and Conservation* 10:251-270.

JANSEN, R., LITTLE, R.M. & CROWE, T.M. 2001. Breeding biology of the Redwing Francolin in the highland grasslands of Mpumalanga Province, South Africa. *Ostrich* 72:20-23.

JANSEN, R., ROBINSON, E.R., LITTLE, R.M. & CROWE, T.M. 2001. Habitat constraints limit the distribution and population density of redwing francolin, *Francolinus levaillantii*, in the highland grasslands of Mpumalanga province, South Africa. *African Journal of Ecology* 39:146-155.

JENKINS, A.R. & HOCKEY, P.A.R. 2001. Prey availability influences habitat tolerance: an explanation for the rarity of peregrine falcons in the tropics. *Ecography* 24:359-367.

KEMP, A.C. & BEGG, K.S. 2001. Comparison of time-activity budgets and population structure for 18 large-bird species in the Kruger National Park, South Africa. *Ostrich* 72:179-184.

LEE, N.M. & HOCKEY, P.A.R. 2001. Biases in the field estimation of shorebird prey sizes. *Journal of Field Ornithology* 72:49-61.

LLOYD, P., LITTLE, R.M. & CROWE, T.M. 2001. The breeding biology of the Namaqua Sandgrouse, *Pterocles namaqua*. *Ostrich* 72:169-178.

LLOYD, P., LITTLE, R.M. & CROWE, T.M. 2001. Food availability and seasonal variation in nest predation pressure as factors influencing the timing of breeding in the Namaqua Sandgrouse in the Nama Karoo, South Africa. *African Zoology* 36:1-11.

LLOYD, P., LITTLE, R.M., CROWE, T.M. & SIMMONS, R.E. 2001. Rainfall and food availability as factors influencing the migration and breeding activity of Namaqua Sandgrouse, *Pterocles namaqua*. *Ostrich* 72:50-62.

MALAN, G. 2001. The avifauna of riparian-*Pinus* habitat edges at Mooiplaas forestry estate, KwaZulu-Natal, South Africa. *South African Journal of Wildlife Research* 31:73-84.

MALAN, G. 2001. Otomyine rodent refuge habitat: does it represent habitat quality for pale chanting-goshawk families? *South African Journal of Wildlife Research* 31:49-58.

MALAN, G. & ROBINSON, E.R. 2001. Nest-site selection by black sparrowhawks *Accipiter melanoleucus*: implications for managing exotic pulpwood and sawlog forests in South Africa. *Environmental Management* 28:195-205.

MANGNALL, M.J. & CROWE, T.M. 2001. Managing Egyptian geese on the croplands of the Agulhas Plain, Western Cape, South Africa. *South African Journal of Wildlife Research* 31:25-34.

MILTON, S.J. & DEAN, W.R.J. 2001. Seeds dispersed in dung of insectivores and herbivores in semi-arid southern Africa. *Journal of Arid Environments* 47:465-483.

MUCHAI, M. 2001. Effects of grassland management practices on the reproductive success of South African high-altitude grassland birds (abstract). *Ostrich Supplement* 15:31.

NEL, D.C., LUTJEHARMS, J.R.E., PAKHOMOV, E.A., ANSORGE, I.J., RYAN, P.G. & KLAGES, N.T.W. 2001. Exploitation of mesoscale oceanographic features by grey-headed albatross *Thalassarche chrysostoma* in the southern Indian Ocean. *Marine Ecology Progress Series* 217:15-26.

PRENDINI, L. 2001. Further additions to the scorpion fauna of Trinidad and Tobago. *Journal of Arachnology* 29:173-188.

PRENDINI, L. 2001. Phylogeny of *Parabuthus* (Scorpiones, Buthidae). *Zoologica Scripta* 30:13-35.

PRENDINI, L. 2001. A review of synonyms and subspecies in the genus *Opistophthalmus* C.L. Koch (Scorpiones: Scorpionidae). *African Entomology* 9:17-48.

PRENDINI, L. 2001. Species or supraspecific taxa as terminals in cladistic analysis? Groundplans versus exemplars revisited. *Systematic Biology* 50:290-300.

PRENDINI, L. 2001. Two new species of *Hadogenes* (Scorpiones, Ischnuridae) from South Africa, with a redescription of *Hadogenes bicolor* and a discussion on the phylogenetic position of *Hadogenes*. *Journal of Arachnology* 29:146-172.

RATCLIFFE, C.S. & CROWE, T.M. 2001. Declining populations of helmeted guineafowl in the Midlands of KwaZulu-Natal, South Africa: a review of causes and remedies. *South African Journal of Wildlife Research* 31:161-171.

RATCLIFFE, C.S. & CROWE, T.M. 2001. The effects of agriculture and the availability of edge habitat on populations of Helemeted Guineafowl *Numida meleagris* and on the diversity and composition of associated bird assemblages in KwaZulu-Natal province, South Africa. *Biodiversity and Conservation* 10: 2109-2127.

RATCLIFFE, C.S. & CROWE, T.M. 2001. Habitat utilisation and home range size of helmeted guineafowl (*Numida meleagris*) in the Midlands of KwaZulu-Natal province, South Africa. *Biological Conservation* 98:333-345.

RYAN, P.G. 2001. Morphological heritability in a hybrid bunting complex: Nesospiza at Inaccessible Island. *Condor* 103: 429-438.

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SEYMOUR, C.L., DE KLERK, H.M., CHANNING, A. & CROWE, T.M. 2001. The biogeography of the Anura of

sub-equatorial Africa and the prioritisation of areas for their conservation. *Biodiversity and Conservation* 10:2045-2076.

THOMPSON, M.W., VINK, E.R., FAIRBANKS, D.H.K., BALLANCE, A. & SHACKLETON, C.M. 2001. Comparison of extent and transformation of South Africa's woodland biome from two national databases. *South African Journal of Science* 97:179-183.

TURPIE, J.K. & JOUBERT, A. 2001. Estimating potential impacts of a change in river quality on the tourism value of Kruger National Park: an application of travel cost, contingent and conjoint valuation methods. *Water SA* 27:387-398.

WILLIAMS, J.B. 2001. Energy expenditure and water flux of free-living Dune Larks in the Namib: a test of the reallocation hypothesis on a desert bird. *Functional Ecology* 15:175-185.

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BARNES, K.N. 2001. Lesotho. (In: Fishpool, L.D.C. and Evans, M.I., eds. *Important birds areas in Africa and associated islands: priority sites for conservation.* Newbury: Pisces Publications. pp. 465-471).

BARNES, K.N., JOHNSON, D.J., ANDERSON, M.D. & TAYLOR, P.B. 2001. South Africa. (In: Fishpool, L.D.C. and Evans, M.I., eds. *Important birds areas in Africa and associated islands: priority sites for conservation.* Newbury: Pisces Publications. pp. 793-876).

BARNES, K.N. & MONADJEM, A. 2001. Swaziland. (In: Fishpool, L.D.C. and Evans, M.I., eds. *Important birds areas in Africa and associated islands: priority sites for conservation.* Newbury: Pisces Publications. pp. 891-895).

DEAN, W.R.J. 2001. Angola. (In: Fishpool, L.D.C. and Evans, M.I., eds. *Important birds areas in Africa and associated islands: priority sites for conservation.* Newbury: Pisces Publications. pp. 71-91).

HUYSER, O. 2001. Bouvetoya (Bouvet Island). (In: Fishpool, L.D.C. and Evans, M.I., eds. *Important birds areas in Africa and associated islands: priority sites for conservation.* Newbury: Pisces Publications. pp. 113-115).

NEL, D.C. & RYAN, P.G. 2001. The impact of long-line fishing on wandering albatrosses and other seabird populations:1-23. Final report to SACAR submitted on 1 April 2001. Duration of project: April 1996 to March January 2001.

PRENDINI, L. 2001. Substratum specialization and speciation in southern African scorpions: the effect hypothesis revisited. (In: Fet, V. and Selden, P.A., eds. *Scorpions 2001: In Memoriam Gary A. Polis*. Burnham Beeches, UK: The British Arachnological Society. pp. 113-138).

RYAN, P.G., PURVES, M. & COOPER, J. 2001. Problems with pirates: toothfish longlining and seabird bycatch at the Subantarctic Prince Edward Islands (abstract). (In: Melvin, E.F. and Parrish, J.K., eds. *Seabird bycatch: trends, roadblocks, and solutions*. Proceedings of the symposium held on February 26-27, 1999, Blaine, Washington. Fairbanks, Alaska: University of Alaska Sea Grant, AK-SG-01-01. pp. 195).

RYAN, P.G. & GLASS, J.P. 2001. Inaccessible Island Nature Reserve Management Plan. Government of Tristan da Cunha, Edinburgh, Tristan da Cunha. 65 pp.

SIMMONS, R.E., BOIX-HINZEN, C., BARNES, K.N., JARVIS, A.M. & ROBERTSON, A. 2001. Namibia. (In: Fishpool, L.D.C. and Evans, M.I., eds. *Important birds areas in Africa and associated islands: priority sites for conservation.* Newbury: Pisces Publications. pp. 639-660).

WANLESS, R.M. 2001. The conservation and rehabilitation of a World Heritage Site: the status and conservation of Aldabra's endemic avifauna. Technical Report to Conservation International and the Centre for Applied Biodiversity Sciences. 12 pp.

WOEHLER, E.J, COOPER, J., CROXALL, J.P., FRASER, W.R., KOOYMAN, G.L., MILLER, G.D., NEL, D.C., PATTERSON, D.L., PETER, H-U., RIBIC, C.A., SALWICKA, K., TRIVELPIECE, W.Z. & WEIMERSKIRCH, H. 2001. A statistical assessment of the status and trends of Antarctic and Subantarctic seabirds:1-43. Cambridge, England: Scientific Committee on Antarctic Research. Bird Biology Subcommittee.

79 semi-popular articles were produced by the Fitztitute in the year under review. Almost half of these were published in Afrikaans publications like Buite Burger, Beeld *and* Volksblad *and written by Prof. Morné du Plessis. 22 of the remaining articles were published in the bimonthly* Africa – Birds & Birding *in which the Institute has a regular column 'News from the FitzPatrick Institute'.*

Included in the list is a book on the natural history of the African Penguin. Phil Hockey, who authored the book, has a second book to his name for the period under review having recently co-authored the third edition of 'Sasol Birds of Southern Africa'. *This will appear in next year's publication list.*

Semi-popular Publications

Semi-popular articles published in 2001

ALTSTEDT, G. & BOIX-HINZEN, C. 2001. Pelagic magic: havsfågelskådning utanför Afrikas sydspets. *Roadrunner* 9(1):18-27.

ANDERSON, M.D. & HUYSER, O. 2001. Ornithological activities in the Northern Cape. *Indaba Inyoni* 4(1):36-37.

BARNES K N. 2001. Ecuador: the Andes to the Amazon. *Africa Birds and Birding* 6(2):60-64.

BARNES, K.N. 2001. The little twitch: a new birding world record! *Promerops* 248:20-21.

BARNES, K.N. & BOIX, C. 2001. Taiwan: the Republic of China. *Africa Birds and Birding* 6(1):64-68.

BARNES, K.N. & FISHPOOL, L. 2001. Important Bird Areas: conserving Africa's hottest birding hotspots. *Africa Birds and Birding* 6(5):26-29.

BOIX-HINZEN, C. 2001. Tödliche untreue. *GEO: das neue bild der erde* 3:170-171.

COHEN, C., SPOTTISWOODE, C. & ROSE, B. 2001. Pelagic seabirding off Cape Town, South Africa. *Bulletin of the African Bird Club* 8(1):12-17.

CROWE, T M & RATCLIFFE, C.S. 2001. Farming it out: the decline of Helmeted Guineafowl in KwaZulu-Natal. *Africa Birds and Birding* 62):48-52.

CURTIS, O. 2001. "Till death us do part". *Promerops* 246:17.

CURTIS, O. & JENKINS, A.R. 2001. It's never too late to learn: the effects of pesticides on southern African environments. *African Wildlife* 55(1):13-15.

CURTIS, O., JENKINS, A.R. & SIMMONS, R.E. 2001. The Black Harrier: work in progress. *Africa Birds and Birding* 6(5):30-36.

DEAN, W.R.J. 2001. The distribution of vultures in Angola. *Vulture News* 45:20-25.

DEAN, W.R.J. & DRINKROW, D. 2001. South African eggs of the Egyptian Vulture *Neophron percnopterus*. *Vulture News* 45:29-30.

DE GOEDE, K. & JENKINS, A. 2001. Electric eagles of the Karoo. *Africa Birds and Birding* 6(4):62-67.

DU PLESSIS, M.A. 2001. Albatros bly gevlleuelde akrobaat. *Buite-Burger*:4, November 27.

DU PLESSIS, M.A. 2001. Bokmakierie se roep raak mens tot in jou siel. *Beeld*:8, Mei 19.

DU PLESSIS, M.A. 2001. Bokmakierie se roep sit die soet in die koffie. *Volksblad*:6, Mei 26.

DU PLESSIS, M.A. 2001. Bokmakierie se roep skeur harte. *Buite-Burger*:3, April 24.

DU PLESSIS, M.A. 2001. Dit is heelwat meer as net vere wat voël maak. *Buite-Burger*:2, Julie 31.

DU PLESSIS, M.A. 2001. Dit was '9 krismisse werd'. *Buite-Burger*:2, Februarie 27.

DU PLESSIS, M.A. 2001. Dramatiese, elegante kraanvoël-vredesdans. *Beeld*:10, September 29.

DU PLESSIS, M.A. 2001. Die een se dood 'n ander se Krismis. *Volksblad*:12, Februarie 3.

DU PLESSIS, M.A. 2001. Fisant en patrys maak oral sy stem kenmerkend dik. *Volksblad*:4, April 28.

DU PLESSIS, M.A. 2001. Fisant, patrys maak stem oral dik. *Buite-Burger*:2, Maart 27.

DU PLESSIS, M.A. 2001. Geveerde vennootskappe het baie voordele. *Beeld*:8, Maart 10.

DU PLESSIS, M.A. 2001. Goue oomblik met 'n vleiloerie in die hand. *Beeld*:8, Julie 7.

DU PLESSIS, M.A. 2001. Hadedas borduur Afrika-stiltes. *Buite-Burger*:3, Oktober 30.

DU PLESSIS, M.A. 2001. Hadida ... is hy musikaal of moedswillig? *Beeld*:12, Desember 22.

DU PLESSIS, M.A. 2001. Hadidas borduur Afrika-stiltes. *Volksblad*:15, November 24.

DU PLESSIS, M.A. 2001. Heelwat meer as net vere maak dié voël. *Volksblad*:14, Augustus 18.

DU PLESSIS, M.A. 2001. Kapokvoëltjie wis sy spore soos 'n ware meester uit. *Volksblad*:5, Julie 21.

DU PLESSIS, M.A. 2001. Klein kapokkie wis sy spore soos ware meester uit. *Buite-Burger*:4, Junie 26.

DU PLESSIS, M.A. 2001. Kransduif is net soms 'n model van vrede. *Beeld*:10, Agustus 4.

DU PLESSIS, M.A. 2001. Laat die albatros tog nooit 'n visstorie word. *Beeld*:14, November 24.

DU PLESSIS, M.A. 2001. Mag die aristokraat van die vleiland grasieus bly voortdans. *Volksblad*:16, Oktober 27.

DU PLESSIS, M.A. 2001. Met lente op pad, gaan voëls wild aan die broei. *Buite-Burger*:3, Augustus 28.

DU PLESSIS, M.A. 2001. O' die grasieuse dans van die kraanvoël. *Buite-Burger*:3, Oktober 2.

DU PLESSIS, M.A. 2001. SA se eie Pavarotti's, Domingo's, Carrerasse. *Beeld*:8, Junie 9.

DU PLESSIS, M.A. 2001. Simbool van vrede kan ook baklei. *Buite-Burger*:2, Mei 29.

DU PLESSIS, M.A. 2001. Simbool van vrede kan ook baklei. *Volksblad*:5, Junie 23.

DU PLESSIS, M.A. 2001. Statige uil het sy eie manier van dinge doen. *Buite-Burger*:2, Januarie 23.

DU PLESSIS, M.A. 2001. Tarentaal meer as net Afrika-uitvoerproduk. *Beeld*:8, Februarie 10.

DU PLESSIS, M.A. 2001. Uil het statige manier van dinge doen. *Volksblad*:10, Februarie 24.

DU PLESSIS, M.A. 2001. Uile, wyse 'raadsmense' én gevaarlike spoke. *Beeld*:8, April 7.

DU PLESSIS, M.A. 2001. Voëlkyk 'n al hoe gewilder tydverdryf. *Buite-Burger*:4, Desember 18.

DU PLESSIS, M.A. 2001. Voëls se broeistreke bly interessant. *Volksblad*:5, September 29.

DU PLESSIS, M.A. 2001. Die voëltjie wat sorg dat sy deur altyd toe is. *Beeld*:10, September 1.

DU PLESSIS, M.A. 2001. Wie dra die broek in langtoon-voël se huis. *Beeld*:8, Januarie 13.

DU PLESSIS, M.A. 2001. Windverwaaide vleiloerie se besoek was kleintyd al nege Krismisse werd. *Volksblad*:11, Maart 31.

DU TOIT, D. & DU PLESSIS, M.A. 2001. The Niven library: a treasure on your doorstep. *Promerops* 245:10-11.

DU TOIT, D. & DU PLESSIS, M.A. 2001. The Niven library: an ornithological treasure. *Indaba Inyoni* 4(2):17-18.

HOCKEY, P A R. 2001. African island extinctions. *Africa Birds and Birding* 6(2):32-40.

MILEWSKI, A.V. 2001. A theory out of Africa: acacias on two

continents. *Wildlife Australia* 38(1):8-11.

OSCHADLEUS, D, UNDERHILL, L.G. & RYAN, P.G. 2001. Cory's & Scopoli's Shearwaters. *Africa Birds and Birding* 6(2):22-23.

PFIAO. 2001. Fitztitute benefactors promote Conservation Biology. *Africa Birds and Birding* 6(1):12.

PFIAO. 2001. Fitztitute spearheads international migration study. *Africa Birds and Birding* 6(2):11.

PFIAO. 2001. News from the Percy FitzPatrick Institute. *Africa Birds and Birding* 6(3):15.

PFIAO. 2001. News from the Percy FitzPatrick Institute. *Africa Birds and Birding* 6(5):15.

PFIAO. 2001. News from the Percy FitzPatrick Institute. *Africa Birds and Birding* 6(6):17.

PFIAO. 2001. Tracking albatrosses. *Africa* Birds *and Birding* 6(4):15.

RYAN, P.G. 2001. Adopt an albatross! Promerops 247:11.

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Seminar Programme

Visitors to the Institute are invited to present talks on their various fields of expertise. Other presenters include students who have recently completed research projects or have recently arrived from other universities (particularly post-doctoral students). Seminars are usually held on Tuesday afternoons in the Niven Library and are open to anyone interested in attending. They are advertised in the University's Monday Paper, *on the Institute's website and via an email mailing list.*

In addition to formal seminars, the Institute's staff and students regularly present talks to local clubs, societies and other interest groups and are often called upon to give interviews for local and national radio and television.

Seminars

Seminars presented in the Institute from July 2001 to June 2002

July 3
Janette Law-Brown, Percy FitzPatrick Institute
Chemical warfare - it's for the birds! Chemical defense in the Red-billed Woodhoopoe

July 3
Verna Love, Percy FitzPatrick Institute
The effects of human disturbance on waterbirds: case study of Knysna estuary, South Africa

July 23
Prof. Tim Birkhead, University of Sheffield, UK
Sperm competition in birds, sex cells and paternity

July 25
Dr Andrew Mckechnie, Percy FitzPatrick Institute
Cool birds: a review of avian hypothermic responses and a conceptual model for the evolutionary and ecological determinants of avian torpor

August 14
Bill Clark, Raptor expert
Talk on using primary and secondary moult sequence to age accipitrid raptors

August 15
Simon Ferrier, New South Wales National Parks and Wildlife Service, Australia
Biodiversity surrogates and regional conservation planning – where to from here

August 21
Dr Antoni Milewski, Research Associate, Percy FitzPatrick Institute
Termites: overlooked brokers for ecosystems in southern Africa

September 7
Dr Rob Slotow, University of Natal
Controlling juvenile delinquency in elephant – the problem of young males killing rhino

September 18
John Lloyd, Montana Co-op Wildlife Research Unit, USA
Habitat-specific life history patterns in birds: the effect of exotic plants on Chestnut-collared Longspur

September 25
Rita Covas, Percy FitzPatrick Institute
What is driving life history evolution in the southern hemisphere? Reproduction and survival in the sociable weaver

September 28
Dr John Hanks, Conservation International, Cape Town
Transfrontier Conservation Areas (TFCAs) in southern Africa: their role in conserving biodiversity, socio-economic development and promoting a culture of peace

October 9
Prof. Tim de Voogd, Cornell University, USA
The evolution of learning in bird song

November 16
Prof. Jan Ekmann, Director of the Centre for Evolutionary Biology, Uppsala University, Sweden
Delayed dispersal and the value of "home" in Siberian jays

January 17
Dr Henk Visser
Applications of the doubly-labelled water method in shorebirds and seabirds

February 8
Richard Pettifor
Informal discussion: The individual optimization of fitness

February 20
Prof. Ian Newton
Lifetime reproduction in Sparrowhawks

March 6
Dr Richard Beilfuss, International Crane Foundation
Hydrological degradation, vegetation change, and restoration potential: the story of an African floodplain

March 19
Prof. Graham Martin, University of Birmingham
Through bird eyes: some comparative aspects of eye structure and visual fields

March 20
Andrew Knight, PhD student
Bioregional conservation planning in the Cobar Peneplain Biogeographic Region, Australia: Implementing a foundation for conservation action

April 22
Dr Brian Walker, CSIRO, Australia
Resilience analysis and management

April 23
Dr Chrissy Howell, University of Missouri, USA
Modeling Biodiversity: Lessons from Brazilian Birds and South African Plants

May 7
Christina Sommer
Aspects of vocal communication in the co-operatively breeding Arabian babbler

May 14
Dr Bob Cheke, University of Greenwich
A model for forecasting breeding by *Quelea quelea lathamii* in southern Africa

May 21
Prof. Les Underhill, Avian Demography Unit, UCT
Patterns of variation in the primary moult of individual feathers of shorebirds

May 28
Dr Sue Jackson, University of Stellenbosch
How digestive physiology constrains foraging options in birds

May 29
Prof. William Bond, Botany Dept, UCT
Defences of plants against extinct browsing birds (New Zealand moas)

June 20
Paul Ndang'ang'a, Ornithology Dept, National Museums of Kenya
Highland grassland decline in Kenya: implications for endangered Sharpe's Longclaw

Presented here are a few of the articles on the Institute and the activities of the staff and students. Articles such as those found in the University's Monday Paper *are also available on the University's website.*
The Institute's website (http://www.uct.ac.za/depts/fitzpatrick), apart from informing the online public of research and teaching programmes and staff and student activities, hosts the Roberts Project pages. These include the most up-to-date list of species that will appear in the new edition of Roberts *and all the draft texts currently available.*
Black Eagle Publishing, the publishers of Roberts' VII, *have also kindly agreed to allow the Fitz to host PDF files of all the 'News from the FitzPatrick Institute' articles published to date in its popular bimonthly birding magazine,* Africa – Birds & Birding.

Electronic & Popular Press

UCT's *Monday Paper*

mondaypaper
WEEKLY NEWSPAPER OF THE UNIVERSITY OF CAPE TOWN

Birds on a wire cause power problem

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Financial Report

The Financial Report is available on request from the Percy FitzPatrick Institute