

# The New Guinea Tropical Ecology and Biodiversity Digest



February 2003

Issue 13

The beautiful illustration above is one of several created by Benson, an artist from Goroka. These ink drawings have been made into postcards and notecards that can be purchased to support the Tree Kangaroo Research Project. They are currently available at the Melanesian Art Gallery in Lae. For more information please contact Lisa Dabek, phone (1) 401-785-3510, fax (1) 401-941-3988, email [ldabek@rwpzoo.org](mailto:ldabek@rwpzoo.org)

**Please send all contributions and corrections to either the mail, fax, or email address listed below.**

**mail:** Debra Wright, P.O. Box 277, Goroka EHP, Papua New Guinea, **fax:** (675) 732-2461, **email:** [dwright@wcs.org](mailto:dwright@wcs.org)



**Please note our web address**



This issue we want to thank the Wildlife Conservation Society for providing financial support -- this is much appreciated!

If you have internet access, the digest is available on the web at: <http://www.wcs.org/home/wild/Asia/686/701/>

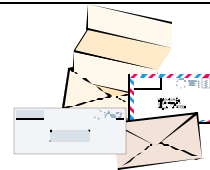
If you want to look at it there and/or print out a hard copy from this site that would save us photocopying and postage. Please send a note saying that this is fine for you and include your current e-mail address; we will send you an email announcement whenever a new issue comes out so you can check the web site. Thanks!

If you need back issues of the Digest, please let us know and we will mail them to you (or you can download them from the web site).

We try to get a new issue out every six months so the information stays relatively up-to-date. Please don't forget to send in any information you can contribute!

---

## Editorials and Letters



---

Anybody want to expound on his or her thoughts or solicit opinions about something? Please send in anything that you would like to see appear here! Opinions are from the author and don't necessarily reflect those of the editor or WCS.



# New Guinea Conservation Updates



Updates anyone??

## So What Actually is the Milne Bay Community-based Coastal and Marine Conservation Program? And What has been Happening?

From Jeff Kinch, Community Development and Artisanal Fisheries Specialist, Conservation International, PO Box 804, Alotau, Milne Bay Province, Ph: 641 0349, Fax: 641 0359, Email: [jkinch@conservation.org](mailto:jkinch@conservation.org)

### Introduction

As some of you may already be aware, Conservation International (CI), an eco-global NGO now residing in PNG has been contracted by the United Nations Development Program (UNDP) to execute the Milne Bay Community-based Coastal and Marine Conservation Program (CMCP). The CMCP constitutes the largest marine resource management initiative in PNG to date. It is to be an intended 10-year program (divided into two phases) assisting many communities with village-based marine resource management and conservation activities aimed at the betterment of their lives and the security of their livelihoods.

The ultimate goal of the CMCP is to secure a representative sample of globally significant marine biodiversity in Milne Bay Province (MBP) via the establishment of a community-based (and we hope community owned and driven) resource management framework with assistance from the national and provincial government, the private sector and other NGOs. Project activities have been organized into four Outputs. These are:

- An enabling environment for marine conservation and near-shore resource management is established at the Provincial, Local-Level and Ward Government levels;
- A representative network of community-based marine conservation and sustainable near-shore resource management areas is established;
- An environmental education program and conservation awareness activities are imparting marine conservation values and resource management skills to students in formal and informal settings; and
- Conservation objectives are overlaid into land use strategies on densely populated small islands.

The planning phase of the CMCP included two taxonomic surveys and identification of three project Areas of Interest (AOI) based mainly on biological criteria but with some consideration of economic and social issues. This was followed by a series of deliverables determined by the UNDP under the rules and principals of Public Involvement adopted by the Global Environment Facility (GEF) Council in 1996. The deliverables required included a conservation needs assessment; a social evaluation study; a stakeholder participation plan; a policy and planning needs assessment; a sustainable use options plan and a monitoring and evaluation plan. The rationale behind the need for these deliverables was also based on the lessons learned from previous Integrated Conservation and Development (ICAD) projects in PNG.

Following these experiences, it was decided that the collection of social and economic data was to be an integral

part of future UNDP-GEF sponsored projects. Subsequent to all this, a community engagement plan was then developed. Finally, in late 2001, a sedentary resources stock assessment was conducted with the Commonwealth Scientific and Industrial Research Organisation and the National Fisheries Authority to give an understanding of the marine resource status in the MBP.

To ensure stable conservation outcomes, the CMCP must be consistent with local peoples' priorities as any policies based on a denial of access to resources may appear manageable in the short term, but 'runs the risk of backfiring in the longer run' and subsequently, there needs to be a trade-off between ecological considerations on the one hand, and economic and social considerations of the targeted resource owners. It has been proven many times that positions based on ecological purism are unlikely to succeed. Therefore to succeed, the CMCP has to develop local-level capacity, building upon the existing knowledge and capabilities of communities.

### *The Community Engagement Program*

The Community Engagement Program (CEP) is modeled on the successful and community aware Bismarck-Ramu Group (BRG). At the village level, the CEP is meant to assist the capacity development of the Ward Development Committees (WDCs) and the general community for resource management goals, including development of marine resource management plans and the establishment of Locally Managed Marine Areas (LMMAs). The CEP involves selecting villagers from outside targeted communities but who can communicate in the target communities' languages. These villagers become Village Trainers (VTs) in Village Engagement Teams (VETs) and are given training in a variety of awareness and Participatory Rural Appraisal tools, and then they are sent on regular patrols to communities. The CEP is not in itself conservation driven, as the VETs do not preach conservation. They actually talk to villagers about fisheries management, a topic far more tangible than the abstract notions of biodiversity, as villagers in the MBP are generally more concerned with the immediate benefits of resource use (financial rewards and better services) rather than with understanding the interdependency of ecological systems. The VETS also focus on self-reliance and recently counter misguided program expectations.

### *Locally Managed Marine Areas (LMMAs)*

At the core of LMMA establishment are the issues of property rights and governance regimes. Marine tenure in most of the MBP is very loosely defined, but clans own islands and these clans are now beginning to claim

management rights over adjacent reefs. Because of this, large scale Marine Protected Areas or strict 'no-take zones' are not practical or culturally feasible. Many of the LMMAs that may be developed by villagers under the CMCP are likely to be small and numerous, often with small separating distances, thus forming a network of refuges. Such a network is thought to maximise the linking of larval sources and suitable settlement areas and therefore provide the means by which adjacent fishing areas are eventually replenished through reproduction and migration. This is particularly important now, since the stock assessment revealed that some species of beche-de-mer and giant clam stocks are heavily over-fished in some localities. Recent research on small-scale coastal fisheries in the Pacific has also shown that a degree of regulated access, enforced at the local level through community institutions and social practices has the best chance of success. One method of trialing LMMAs will be modifying the practice of traditional reef closure. These modified closures could be employed to enhance local self-sufficiency by promoting culturally appropriate and environmentally sustainable adaptations acceptable to people as they exploit their resources commercially.

#### *Progress to Date*

The CEP has now conducted two patrols and is preparing for its third. Currently, the CEP is working in 15 communities. These include Panaeati, Panapompom, Motorina, Brooker, Ware, Anagusa, Tewatera, Kwaraiwa, Skelton, Tubetube, Dawson, Nuakata, Iabam, Pahilele and East Cape communities. The communities at Motorina, Dawson and Anagusa were included after the first patrol after requests from neighbouring communities.

The first patrol went through a process of rooting people in their history, distinguishing between 'cargo' and community development and self-reliance. Villagers were then asked about their own perceptions of resource status and were given Community Profiles (which had been translated into their local language), which outlined their past and present population status, land area and the results of last years stock assessment for beche-de-mer and other commercially valuable resources. From this action, community discussion was generated on how to manage resources for sustainability. Concepts that were outlined included the establishment of LMMAs (using the analogies of hospitals and banks) and management plans.

The second patrol, utilising the catalyst of the first patrol has seen several communities thinking about designating some reef areas for fisheries management or starting to improvise management plans for certain areas or fisheries. This patrol was also used to disseminate education and awareness materials on marine resources (these also had been translated into the local languages). One team also participated in the first Brooker-Ware territorial mediation over the extensive Long-Kosmann reef area at Ware and patrolled again for a shorter period after this to attend the

second mediation at Brooker, and to conduct community engagement at Motorina Island.

Proposed LMMAs or management strategies for each AOI to date are as follows:

- Nuakata Islanders in AOI 1 have now set some rules on the harvest of the marine resources, which includes banning the use of derris root.
- Skelton, Kwaraiwa and Tubetube Islanders in AOI 2 have expressed an interest to setting-up LMMAs, (these are not yet defined) for management. This is despite the misconceptions, problems and rumours generated by CI's senior management and donor sojourn and a later visit by the National Department of Lands and Physical Planning.
- Brooker Islanders in AOI 3 are currently negotiating amongst themselves to set up several LMMAs over reefs surrounding Panuabwaubwa, Yotovi, Panasial, Abowat and Ehiki Islands to allow beche-de-mer stocks to regenerate.

#### *Conclusion*

The CMCP is making some progress, but care and good management are required, particularly in light of the aims and motives of CI's newly Moore Foundation funded Centre for Biodiversity Conservation, which the CMCP now finds itself subsumed in. The Chief Technical Advisor (CTA) is also now ready to come on board and the program document and budget was recently signed with the UNDP, GEF and CI. Once the CTA is in position, the recruitment of much needed staff can begin. The news about the CMCP is spreading and we are getting many requests from communities outside the program area for assistance. Also many other communities have started their own management initiatives, particularly in VET home communities, or in areas adjacent to targeted communities.

For the success of the CMCP, fisheries management will need to be used as a complementary tool to achieve the CMCP goal of protecting a representative sample of globally significant marine biodiversity. Taking a completely western approach to conservation by ignoring community needs will only create significant barriers to meeting project goals and make the project completely ineffective. A practicing and practical community-based (and not just with the rhetoric) approach is much more acceptable to villagers because it is based within the context of local social organization and broader institutional management systems, and is designed to enhance the ability of local communities to attain sustainable livelihoods. The bottom line for all conservation practitioners in PNG is that if local people are kept in isolation and not fully consulted or happy about program activities then that is the end of the program and the funding. For the CMCP in particular, it is hoped that changing paradigms that recognize and acknowledge villagers' needs and desires come first within program goals, and that this will ultimately lead to a better world for all, particularly in a world of changing social, political, economic and ecological circumstances.

## **Activity Update from the Wildlife Conservation Society's PNG Programme**

from Andrew L. Mack

Although we have been producing and distributing this Digest since 1995, many people are not familiar with the WCS-PNG Country Programme. This is because we are located in Goroka and emphasize fieldwork. We do not get

involved in policy and politics much and we have a rather modest budget compared to some of the other international conservation organizations. Here I would like to introduce the basics of our programme and will regularly update Digest

readers about WCS-PNG activities in future issues. Ideally all of the NGO's/conservation groups working in PNG will likewise submit updates for each issue so we can all stay informed.

The WCS-PNG Country Programme emphasizes building scientific capacity in PNG. This is done through training, research and infrastructure support. By the end of 2002, WCS-PNG is supporting eight staff and students, each with their own research interests. These are:

**Mr. Paul Igag** studying ornithology, particularly Palm Cockatoos.

**Mr. Banak Gamui** studying montane forest seasonality at Mt. Stolle.

**Mr. Katayo Sagata** studying PNG entomology and insect ecology.

**Ms. Miriam Supuma** studying forest ecology and tree demography.

**Mr. Muse Opiang** studying echidnas.

**Ms. Vidiro Gei** studying botany and plant systematics.

**Ms. Janet Gagul** studying forest ecology and ethnobotany.

**Mr. Arison Arihafa** studying forest ecology and gap regeneration.

WCS-PNG has three senior staff that advise on these projects and also conduct research. These are:

**Dr. Andrew Mack** studying ornithology, biogeography and forest ecology.

**Dr. Debra Wright** studying mammalogy, forest ecology and cassowaries.

**Mr. Ross Sinclair** studying conservation biology and megapodes.

WCS-PNG also collaborates with other researchers and supports university students from overseas. These include:

**Dr. Jack Dumbacher** studying Pitohuis, poisonous birds and biogeography.

**Mr. Edwin Scholes** studying bird of paradise evolution.

**Ms. Silvia Lomáscolo** studying the evolution of figs.

**Dr. Paige West** studying hunting and traditional use of wildlife.

**Mr. Craig Symes** studying bird usage of gardens and second growth forests.

WCS-PNG also collaborates closely with our partner organization, the Research and Conservation Foundation of PNG to promote research and conservation in the Crater Mountain Wildlife Management Area and throughout PNG. We collaborate on studies within the Crater WMA and support many Trained Local Assistants who work on a wide range of conservation research projects. We administer a research station in the Crater WMA and one on Mt. Stolle that provide environmentally impact-free incomes to rural landowners.

WCS-PNG teaches a month-long field course each year for third and fourth year UPNG and UniTech biology and environmental sciences students. This year WWF partnered with us on this course as CI has in the past. We assist a number of other UPNG students with their conservation-related honour's projects, such as **Ms. Manah Dindi**, **Ms. Jacinta Francis** and **Mr. Kasbeth Evei**, by editing, providing statistics advice or logistical support.

## Quarterly Report: WWF-Kikori Integrated Conservation and Development Project 1 October – 31 December 2002

From Max Kuduk

- Conservation Science staff and consultant Tanya Leary undertook and completed a 20 day quarterly biodiversity monitoring survey at Keboi Kerowa and Iviri eco-forestry areas from 2-21 December 2002. A total of 126 captures of 83 individual White-Bellied Mosaic-tailed Rats (*Melomys leucogaster*) were made at Iviri. Captured also were 43 individuals of four species of bats. At Keboi Kerowa 150 captures of 69 individual of *Melomys leucogaster* were made. Two *Uromys caudimaculatus* were also captured. A total of 16 animals were spooled and lined of which 15 were *Melomys* and one *Uromys*. Twenty-three individuals of six species of bats were also netted. The paired vegetation monitoring plots were also re-measured to monitor changes in the vegetation.
- Wildlife Conservation Society conducted a four-week training at Sirebi, Omo area in Kikori District from 2 November – 2 December 2002. A total of 21 participants had been drawn from UPNG, UNITECH, WWF, WCS and other organizations. The training was focused on field techniques to conduct biological surveys, collect data, analyse data, and write scientific reports.
- Barnabas Wilmot, the Assistant Secretary for Parks & Wildlife of the Department of Environment and Conservation (DEC) visited the project area from 28-30 November. A short presentation was made at CDI's Moro 2 camp, which was attended by Chevron's Community Affairs, CDI and WWF staff. The presentation was about the functions of DEC as a regulatory body that ensures protected areas such as Wildlife Management Areas that are gazetted and regulated.
- The Project obtained copies of the National Gazette No. G142 published on 5 September 2002. The rules of Lake Kutubu WMA were published in this edition of the gazette as a *Statutory Instrument* under the *Fauna (Protection and Control) Act* (Chapter 154).
- The project engaged two lawyers from CELCOR who conducted a 3 day Para-legal training workshop at Musula village in Bosavi area. Over 85 men and women community members attended the workshop. The workshop on Para-legal training was a first of its kind to be conducted in the Kikori Basin. The workshop aimed to educate community members about different laws and their rights to resource management use. The workshop was considered to be very informative as the participants said they learnt many new things related to law.
- Project staff facilitated logistics and accompanied EMTV crews to take footages of our activities in the project sites in October. They traveled to Ero village in Kikori and Musula village in Bosavi area to take footage of project activities, including eco-forestry, vanilla and butterfly farms managed by the locals. The Musula community expressed their gratitude by putting on a traditional singing. The documentary was telecast on EMTV's *Insait* program on Monday night, 4<sup>th</sup> of October 2002.

- Project staff worked with the Kuu Theatre Group of Ero village to prepare and present drama plays for HIV/AIDS awareness. The activity was undertaken in collaboration with CDI Health Programme to mark World AIDS Day on the 1<sup>st</sup> December 2002 at Kopi camp. The theatre group travelled to Kutubu and presented the drama at several locations including Moro market, Sisibia, Inu, Waro and Pimaga villages from 2-6 December.
- WWF's Country Manager visited the project on 1 October. He attended the quarterly review meeting and made presentations on scaling up Ecoregion work, and gave an update on the status of WWF work in PNG. He also took time to make a quick visit to Musula to observe some activities we support in the Bosavi area. He met a local butterfly farmer and visited the butterfly farms; the vanilla plots, and also had a short meeting with the community members.
- WWF South Pacific Programme, PNG Senior Management Team held its quarterly planning meeting at Kikori Project site at CDI Camp from 23-24 October 2002. This was the first PNG Senior Management Meeting at the project site after the Kikori project was integrated to World Wide Fund for Nature from World Wildlife Fund - US. The Kikori project arranged a site tour of the Central Production Facility and the Agogo Production Facility within the Chevron-operated Oil and Gas Project and a site visit to Musula for the team to visit community initiated butterfly and vanilla farms.
- Canadian University Services Overseas (CUSO) Volunteers, Shaneel Pathak and David Jury, completed a mammoth task on repairing and upgrading the Moro Office computers in November. They worked long hours during the day and night to complete this task. Additionally they gave a PowerPoint presentation on the fixes, improvements, added functionality, issues that came up and a basic tutorial on hardware and software.
- The AusAID Accreditation team comprised of Susanne Clark (WWF Australia), Annie Kennedy (Consultant), Carolyn Nimmo (AusAID staffer) and David Syme (ADRA - NGO Rep) undertook an evaluation of funding provided to WWF's Forest of PNG Programme. The AusAID team visit to Kikori project was to assess and observe the kind of eco-forestry activities conducted by WWF SPP within the region, and to consider renewing accreditation for WWF Australia.

---

## Current Research Updates



If you have recently finished work or are currently doing a project, please send a summary for inclusion in the next newsletter- **thanks!** Remember that research articles should still be submitted to journals for publication. We just want to print a summary of your work to let people know what is going on without having to wait for the lag-time involved in regular journal publications and so that summaries of all current work in NG can be found in one location. We want to make it easy for everyone to keep informed about all of the current research in New Guinea, so please send your information!

### Group Structure of the Clown Anemonefish: *Amphiprion Percula*

Peter Michael Buston, PhD thesis, Cornell University, 2002

**Abstract:** One of the main aims of animal behavior research is to understand the causes of variation in the structure of animal groups. Group structure can vary with respect to the strategies of individuals (e.g. breeders vs. non-breeders), the relationships among individuals (e.g. despotic vs. egalitarian), and the number of individuals (e.g. tens vs. thousands). To understand group structure, the costs and benefits of group living must be investigated from the perspective of each individual. Most investigations of group structure have been conducted using birds, mammals, and insects in the terrestrial environment.

To broaden our understanding of group structure, I conducted a long-term field investigation of the group structure of the clown anemonefish, *Amphiprion percula* (Pomacentridae), in Madang Lagoon, Papua New Guinea. Groups composed of a breeding pair and 0-4 non-breeders occupied individual sea anemones (*Heteractis magnifica*), which provided the fish with protection from predators. Dominant residents have control over the group membership of their subordinates, and evict them under certain conditions. Non-breeders benefit from settling in an anemone and queuing to inherit a breeding position, but breeders gain nothing from

the presence of non-breeders. This asymmetry in the benefits of group living generates potential evolutionary conflict, because subordinates are always competitors for dominant status. This conflict is resolved through the formation and maintenance of a well-defined size hierarchy. The size hierarchy is maintained by the actions of dominants and subordinates: dominants evict their immediate subordinate when the size difference between the two individuals is small; subordinates restrain their growth, maintaining a discrete size difference between themselves and their immediate dominant, thereby avoiding eviction.

This work demonstrates the importance of determining which individuals control group membership, because the strategies of subordinates can only be understood in the context of their potential eviction. The work illustrates how knowledge of future benefits is crucial to understanding the current actions of individuals, because subordinates queue to maximize their chance of inheritance. Further, the work reveals how conflicts of interest, that are so pervasive in animal societies, can be resolved in truly remarkable ways, in this case by the social regulation of growth.

# Frogs and reptiles of Moro, Gobe and Kopi (Southern Highlands and Gulf Provinces), Papua New Guinea-- Results of a dry-season survey 19 October – 1 November 2001

From Stephen Richards; for copies of the full paper please contact Max Kuduk at WWF-Kikori

## Summary:

- 41 species of frogs and 27 species of reptiles were recorded from three localities during a 14-day survey in the Kikori ICDP area.
- 21 species of frogs appear to be new to science. At least one species of lizard is also new to science.
- The highest frog diversity was documented around Moro Camp. This diversity results in part from the variety of aquatic habitats at this locality.
- Extremely dry conditions and lack of standing water precluded a comprehensive survey of frogs at Kopi.
- Frog diversity in the region is exceptionally high and most of the undescribed species are currently known only from the project area. These data reinforce the significance of the Kikori ICDP project area as a region with exceptionally high biodiversity values.

## Low host specificity of herbivorous insects in a tropical forest Nature 416, 841 – 844; 25 April 2002

Vojtech Novotny, Yves Basset, Scott E. Miller, George D. Weiblen, Birgitta Bremer, Lukas Cizek & Pavel Drozd

**Abstract:** Two decades of research have not established whether tropical insect herbivores are dominated by specialists or generalists. This impedes our understanding of species coexistence in diverse rainforest communities. Host specificity and species richness of tropical insects are also key parameters in mapping global patterns of biodiversity. Here we analyse data for over 900 herbivorous species feeding on 51 plant species in New Guinea and show that most herbivorous species feed on several closely related plant species. Because species-rich genera are dominant in tropical floras, monophagous herbivores are probably rare in tropical forests. Furthermore, even between phylogenetically distant hosts, herbivore communities typically shared a third of their

species. These results do not support the classical view that the coexistence of herbivorous species in the tropics is a consequence of finely divided plant resources; non-equilibrium models of tropical diversity should instead be considered.

Low host specificity of tropical herbivores reduces global estimates of arthropod diversity from 31 million to 4-6 million species. This finding agrees with estimates based on taxonomic collections, reconciling an order of magnitude discrepancy between extrapolations of global diversity based on ecological samples of tropical communities with those based on sampling regional faunas.

## Do cassowaries “fish”?

From Robin Hide, Australian National University

I've recently come across two separate accounts from Papua New Guinea that describe cassowaries “fishing” for food; they are summarised below. I would be grateful for any further information about such (unlikely?) behaviour, or comments on these accounts.

During the Crane Pacific Expedition in 1928-29, the expedition boat *Illyria* visited the Sepik to make natural history collections. According to the expedition's historian, Sidney Shurcliff (1930: 226), the Head of the expedition's scientific staff, Karl Patterson Schmidt, told other team members: “...a rather delightful story about the cassowary which he says is well known in the world of science, although it has never been proven. According to the story, the cassowary fishes by going into the water up to his neck and fluffing out his hair-like feathers. Small fish, mistaking the feathers of the bird for a mass of water vegetation, soon take refuge in them. The cassowary, after waiting patiently in the water for a half hour or so, makes a sudden rush for the shore and shaking himself thoroughly proceeds to devour the fish thrown onto the ground.”

My first reaction to reading this was to suspect that Schmidt was pulling his colleagues' legs. I was surprised, however, the other day to come across a very similar account by the French anthropologist, Monique Jeudy-Ballini, from East New Britain.

*“The Sulka also attribute this bird with the peculiarity of using its body as a water trap. Its cunning consists in squatting in water holes with its wings outspread*

*so that little fish or crustaceans will enter the feathers to feed on parasites. They are rewarded for their greediness by being eaten in turn when the cassowary, hopping out of the water, shakes itself and gobbles them up as they fall to the ground.”* (Jeudy-Ballini, 2002: 203).

These accounts are somewhat similar to Saem Majnep's description, from the Kaironk Valley in the Simbai area of Madang, of cassowaries (*Casuarus bennetti*) killing lizards: “Another thing they are said to do, though I have not seen them do this myself, is use their wing-quills, which are quite sharp, to spear small lizards when these come out to sun themselves in the clearings where the cassowaries are lying. Cassowaries eat insects and other small creatures, as well as fruit.” (Majnep and Bulmer 1977: 154).

Bulmer noted that this story met with complete scepticism from Brian Reid, an expert on cassowaries (Majnep and Bulmer 1977: 156).

## References

Jeudy-Ballini, M. (2002). To Help and To “Hold”: Forms of Cooperation Among the Sulka, New Britain. In: M. Jeudy-Ballini and B. Juillerat, Eds. People and Things: Social Mediations in Oceania. Durham, N.C., Carolina Academic Press, pp. 185-209.

Majnep, I. S. and R. Bulmer (1977). Birds of My Kalam Country. Auckland, Auckland University Press.

Shurcliff, S. N. (1930). Jungle Islands: The “Illyria” in the South Seas. New York, G.P. Putnam's Sons.

## The ecology and evolution of parental care in the microhylid frogs of New Guinea

David P. Bickford, PhD thesis, University of Miami, 2001

**Abstract:** I studied the evolutionary relationships and parental care behaviors of an assemblage of 19 species of microhylid frogs from a mid-elevation site in Papua New Guinea. The microhylid frogs of New Guinea are an exceptionally diverse radiation of frogs (>150 species in >20 Genera) on the largest tropical island. Two novel parental care behaviors for male frogs (froglet attendance and froglet transport) are described and quantified and six ecological guilds are defined to better understand variation in parental care behaviors across species. Patterns of parental care behaviors found in ecological guilds of the assemblage were studied in the field with experiments and observations. I discuss the functions and importance of parental care in adaptive suites at the guild level. Results from adult removal experiments for clutches of two species (one terrestrial and one arboreal breeder) confirm that attendance significantly increases offspring survivorship. I show how the proximate causes of mortality in unattended clutches most likely reflect diverse selective pressures acting on species in different

microhabitats. Desiccation appears to be a major selective force molding the parental care behaviors of the arboreal frog, *Oreophryne* sp.; whereas predation appears to be the major selective pressure accounting for the parental care behaviors exhibited by the terrestrial frog, *Hylophorbus rufescens*. I sequenced DNA (1381 base pairs from the 18S and 16S rRNA genes) and coded 36 behavioral characters to hypothesize the phylogeny of Papuan microhylid frogs. Results of phylogenetic analyses suggest that (1) both of the currently recognized Papuan subfamilies, the Genyophryinae and the Asterophryinae, are artificial taxa and should be combined into the Asterophryinae (Gunther, 1858), (2) the currently recognized genera *Austrochaperina*, *Cophixalus*, and *Oreophryne* are polyphyletic, and (3) the previously proposed phylogenetic hypotheses of Wu (1994), the monophyly of both the subfamilies and genera of these microhylid frogs, are refuted. I discuss how specific parental care behaviors evolved in these frogs relative to ecological guilds in my preferred hypothesis of phylogeny.

## Comparative ecology and behavior of the mountain cuscus (*Phalanger carmelitae*), silky cuscus (*Phalanger sericeus*) and coppery ringtail (*Pseudocheirops cupreus*) at Mt. Stolle, Papua New Guinea

Leo A. Salas, PhD thesis, University of Massachusetts, Amherst, 2002

**Abstract:** Forty-seven mountain and silky cuscuses, and coppery ringtails were radio-tagged at Mt. Stolle, Papua New Guinea, from June 1995 to July 1998, and 15 of these were closely monitored. A total of 4,922 trees of 10 cm diameter were measured and identified from 5 randomly chosen hectares. About 70% of the trees were < 20 cm in diameter, and < 15 m high. Trees of the families Lauraceae, Myrtaceae, and Guttiferae represented > 45% of the sample. Bootstrap averages of numbers of trees and species per hectare were 978 and 119 respectively. Daytime searches required significantly more effort to find animals, and provided significantly fewer captured animals per unit effort, than nighttime searches. However, chances of capturing animals once detected were higher during daytime. Drug doses of 9-17 mg Kg<sup>-1</sup> immobilized animals within 1 minute, effects lasted 19 minutes, and recovery took an additional 28 minutes. Data for 10 species of Phalangerids and Pseudocheirids from 3 museum collections, and from measurements taken directly from the radio-tagged animals, were used to investigate the degree and nature of sexual dimorphism. Correlates of

dimorphism were evaluated in two of the monitored species by analyzing behavioral and ecological data, including behavior budgets for three broad categories (eating, sitting, and walking), time between feeding bouts, home range size, absolute and relative distance traveled per hour, and five denning hole characteristics (type, visibility, height, dbh and height of tree). Sexual dimorphism in which males are larger than females exists in New Guinean medium-sized arboreal marsupial species, but not as commonly as previously reported. Seasonal weight fluctuations in correlation with reproductive status were observed in mountain cuscus females only. Lastly, animals had selective diets and ate mostly superabundant (>10 trees/hectare) species; also, overlap in the diet between the sexes did not differ from random chance, and females had more diverse diets than males. Dens were numerous, but very few were used more than 5 times. Home ranges overlapped very little in animals of the same sex, but little to extensively between sexes. Behavioral data suggest a facultative polygynous mating system in mountain cuscus and coppery ringtail.

## Progress in New Guinea Palm Botany - The Palms of New Guinea Project

From Roy Banka, PNG National Herbarium & Botanic

### Introduction

The Palms of New Guinea Project which started in 1999 with the involvement of the PNG Forest Research Institute, through the National Botanic Gardens and the PNG National Herbarium in Lae, has over the past 2-3 years produced a reasonable amount of knowledge on the palm flora of the island of New Guinea, which is estimated to comprise over 300 species, of which many are yet to be described and documented.

The involvement of various international palm experts from around the world in the Fairchild Tropical Garden (USA), Aarhus University (Denmark), James Cook University (Australia), Herbarium Bogoriense (Indonesia),

Gardens Lae, PNG Forest Research Institute Universitas Negeri Papua, Manokwari (West Papua-Indonesia), PNGFRI (Papua New Guinea), and coordinated by the Royal Botanic Gardens Kew (UK), has formed a very strong collaboration and network that has contributed a lot to a better understanding of the New Guinea Palm Flora. This collaboration is continuing with an aim to produce a book titled "Palms of New Guinea", produced through contributions from collaborators on selected palm genera in New Guinea which is expected to be made available at the end of the project in the next 2-3 years. During the course of this collaboration, there have been some achievements in Papua New Guinea, with the involvement of the Forest Biology Programme at PNGFRI.

One of the aims of the project was to involve indigenous botanists in New Guinea, so they could participate more actively in doing real plant taxonomy research in documenting the palm species in New Guinea themselves, as part of a capacity building concept. With the decrease in the number of *active botanists* in New Guinea, the Palms of New Guinea Project aims to equip New Guinean botanists with the necessary skills, so they are capable of continuing independent taxonomic research in documenting the flora of the region after the end of the project. Some of the progressive results of that collaboration and capacity building are discussed.

### Progressive Results on NG Palm Flora Documentation

- *Field Work*

Field work has been an essential part of this collaboration, as some of the important taxonomic characters in palms are field characters only observed in the field. For example the habit of a palm as seen in the field whether it is solitary or clustered, the number of leaves in the crown, presence or absence of the crown shaft, and the positioning of the inflorescences are some of the vital taxonomic characters, which are not often found in herbarium sheets after the plant has been collected. Such lack of field information has also been a contributing factor to the lack of knowledge of the New Guinea Palm Flora, as collections in the past have not included some vital field information needed to document the New Guinea Palms.

A good number of field collections have been made since 1999 - 2001 in New Guinea, and from these collections several new species have been described and published, while others are still under study. Field collections have been conducted in the Sandaun Provinces, East Sepik, Madang, Morobe, Milne Bay, Central, Gulf, Southern Highlands and Western Provinces. More field work will be undertaken over next 1-2 years leading up to the publication of the book, as there appear to be more undescribed taxa out there as seen in our recent trips.

- *LAE Herbarium Palm Specimen Database*

The Palm specimens at the Lae Herbarium have been databased in Excel by Dr. Anders Barfod, Anders Kjaer (Aarhus University Denmark) and Roy Banka (PNGFRI). This database of over 1600 palm specimens is available to researchers who are interested in New Guinea palms. Information on species names, collectors, collecting dates, localities, coordinates, habitat, etc. are now available in the database. A hardcopy of the palm database is available at the Lae Herbarium under the Palm Section (Monocots). There are plans underway to have this palm specimen database online so that it can be made more readily available.

- *A Checklist of New Guinea Palms*

An up to date Checklist of New Guinea Palms has been produced, and is continuously being updated as new species are being described and genera being revised. The checklist is informative and provides information on synonyms, type material, herbaria in which type material is held, collector(s), specimen numbers, references as to where the type species was collected and described. This information is now available from PNGFRI.

- *Field Guide to Palms in PNG - A Generic Key*

A publication titled "Field Guide to Palms in Papua New Guinea" by Barfod, Banka & Dowe (2001) is now available from PNGFRI. The palm field guide has been produced with

the aim of making it more user-friendly, as it tries to avoid the use of taxonomic jargon as much as possible. It uses field characters which are easy to observe in the field by non-experts, so you can readily put a name to a specimen using the field characters illustrated in the booklet. It also has a multi-access key which helps in identifying palms encountered in the field. The field guide was published by Aarhus University in Denmark.

- *Contributions by New Guinean Botanists (Authors) for the Palms of New Guinea Book*

As part of the capacity building programme under the project, the following New Guinean Botanists have been involved in producing accounts of New Guinea Palms.

- Charlie Heatubun (West Papua) - revised the genus *Sommieria* published in Kew Bulletin 2002
- Roy Banka (PNG) - revised the genus *Rhopaloblaste* which will be submitted to Kew Bulletin
- Rudi Maturbongs (West Papua) - Studying the genera *Daemonorops* and *Calamus*
- Jack Wanggai (West Papua) - Studying the genus *Actinorhytis*

The other genera are being studied by other international collaborators, who are also contributing authors to the book.

- *Some New Species described and published under the Project Collaboration*

- *Licuala crassiflora* Barfod sp.nov. - PNG
- *Gronophyllum cariosm* Dowe & Ferrero sp.nov. - PNG
- *Calamus maturbongsii* Baker & Dransfield sp.nov. - West Papua
- *Hydriastele rheophytica* Dowe & Ferrero sp.nov. - West Papua & PNG
- *Calamus essigii* W.J.Baker sp.nov. - PNG
- *Calamus maturbongsii* W.J.Baker & J.Dransf. sp.nov. - West Papua

There are several more new species which are now being described and will continue to be published. Also new records are being made from areas where collections have not been made, for example the species *Pinanga punicea* which was only known from Sandaun Province, has been collected for the first time in Kikori (Western Province) which is a new record that gives new information about its distribution.

### Work Currently in Progress

Roy Banka was currently in RBG Kew for four months (August – November 2002) revising the genus *Rhopaloblaste* Scheff as a contributing chapter for the Palms of New Guinea Book.

Roy Banka (PNGFRI), Rudi Maturbongs, Charlie Heatubun & Jack Wanggai (Universitas Negeri Papua) have now started to work on another field guide titled "**Field Guide to the Palms of New Guinea**". This guide aims to cover the whole island of New Guinea, and will include colour photos of the common New Guinea palm species.

Roy Banka has now entered all the information on Palm Characters from PNG Palms Field Guide into the "Lucid Software" and only needs more pictures and a bit of editing to produce the Electronic Version of the PNG Palm Field Guide. He spent two weeks in Aarhus University in Denmark (23<sup>rd</sup>

October – 4<sup>th</sup> November 2002) to collect more palm photographs for the electronic key.

Field work is still being planned to make more collections as there are signs that more new material is out there waiting to be collected and described.

### Summary

The Palms of New Guinea Project has achieved reasonable results in the past 2-3 years, and the most notable achievement to date is the involvement of local New Guinea Botanists actually revising and contributing taxonomic accounts of the New Guinea Palm Flora.

The collaboration has also benefited palm experts in various institutions internationally, who have come together to share results, and make considerable progress in the palm knowledge not only of New Guinea but also worldwide. The project has been supported by the British American Tobacco (BAT), the Pacific Biological Foundation, Darwin Initiative Funding through the Papua Plant Diversity Project, and the host institutions of the collaborators; James Cook University

(Australia), Fairchild Tropical Gardens (USA), Aarhus University (Denmark), Universitas Negeri Papua (West Papua), Herbarium Bogoriense (Indonesia) and the PNG Forest Research Institute (Papua New Guinea).

### Acknowledgements

Without the help of the following institutions and individuals in PNG who have provided field support and logistics, this project would not be progressing with much success, and they are: Chevron WWF Kikori & Moro (Max Kuduk, Olo Gebia, Ziggi, Amos Ona, Tanya Leary and all staff), Ok Tedi Mining Company (Monica Rau and Staff), Provincial Forestry Offices (Southern Region; Auto Sabuin, Charles, Leo Eturu, Simon Peter, Jim Silu, William Nimo: Mamose Region; Andrew Wallam, Boni Ando, Hubert and all staff), JANT (Madang), and all the villages in PNG Bewani, Finschhafen, Amele, Alotau, including all the collectors and field assistants who have made a tremendous contribution to the project.

## The Effect of Habitat Types and Baits on the Capture of Small Mammals in Yongsu Dosoyo, Jayapura, Indonesia

From Freddy Pattiselanno, Animal Science Laboratory University of Papua, Manokwari; Paulus A. Samori, Paradisea Foundation, Manokwari; and Nelson Kainama, Conservation and Natural Resource Institute of Irian Jaya, Sorong

**Abstract:** This research was designed to study the effectiveness of bait used in different habitats on the capture of small mammals in Yongsu Dosoyo, Jayapura. It was carried out as part of a training course lead by Conservation International Papua. We used a factorial design with 3 different baits (roasted coconut, banana, and smoked fish) in 2 habitat types (garden and late succession forest). Twelve traps were randomly located in each habitat for four nights.

The trapping period yielded only five captures comprised of 4 species. Two traps baited with smoked fish in

late succession forest were found broken; we believe that carnivorous mammals broke these traps. Only one mammal was captured in late succession forest habitat (baited with smoked fish), *Murexia longicaudata* (Dasyuridae). The other four captured mammals were all rodents and were captured in gardens: three baited with roasted coconut and one with ripe banana. A Kruskal-Wallis Test ( $P > 0.5$ ) showed no difference in effectiveness between baits in the two habitats for the capture of small mammals.



This section is for anyone to use. You can send in announcements (for example, to advertise an upcoming meeting). You can also send in any requests for information that you think other newsletter recipients could help with (for example, if you are writing a paper about forest structure and want to find out who is currently working in this area or who you could collaborate with or exchange info with). Please send any announcements or information requests to Deb.

### World Heritage Site Listings

from Steve Heydon

The October 2002 National Geographic magazine has a list of the World Heritage sites. I was amazed to see that there are no sites listed for Papua New Guinea. World Heritage sites are either cultural or natural places of "outstanding universal value". They vary from European cathedrals, Algerian rock paintings, Alberta fossil beds, to any kind and number of national parks and animal breeding sites. The list is maintained by the United Nations Educational,

Scientific, and Cultural Organization (UNESCO). Once countries sign a treaty known as the World Heritage Convention, they must pledge to protect and preserve sites that get designated as World Heritage sites. I was wondering if readers might be interested in writing a short paragraph or two to The New Guinea Tropical Ecology and Biodiversity Digest with specific places or regions of PNG they feel are deserving of World Heritage status.

## Ian Thornton

from Pat Woolley

Ian Walter Boothroyd Thornton, Foundation Professor of Zoology and Professor Emeritus at La Trobe University, passed away on 1 October 2002. Ian was born in Yorkshire in 1926 and graduated from Leeds University, where he also completed his PhD. He held university positions in Khartoum and Hong Kong before coming to Australia.

His early work in insect ecology and systematics established him as a leading authority on the insect order Psocoptera, and his interests expanded to cover many aspects of evolution and island biogeography, on which he also became an internationally recognised expert. His early book

on the Galapagos ('Darwin's Islands', 1971) remains a classic, and he later led a series of expeditions to the Krakatau archipelago, culminating in his 'Krakatau: the destruction and reassembly of an island ecosystem' in 1996. More recently he led an expedition to Long Island and Motmot, Papua New Guinea and the results of this appeared in 2001 as a special issue of the Journal of Biogeography, 'Long Island, Papua New Guinea: a nested pair of colonisation sequences'.

Ian's scientific work was recognised by the award of D.Sc. from Leeds, and election as a Fellow of the Australian Academy of Science. He was an inspiration to many.

## Niigata Papua New Guinea Association

From Carlo Capua, President, Niigata PNG Association, email: [cacapua@hotmail.com](mailto:cacapua@hotmail.com)

*Mission:* Plan and support activities that build relationships and promote cultural exchange between citizens of Japan and Papua New Guinea, and provide support for children who cannot afford school and families who cannot afford shelter.

*The need:* In March of 2001, nineteen English teachers from Japan volunteered for a Habitat for Humanity mission in Papua New Guinea's Waria Valley. During a brief visit to the community school we were exposed to bare classrooms that severely lacked school supplies. Moreover, most students knew little about Japanese and American culture.

*The chance:* As teachers, this was a perfect chance to promote culture through education. After returning to Japan, we organized a national concert tour (including 2 performances in Tokyo and 1 at the 2002 World Cup in Niigata) by authentic PNG performers from Waria Valley. The response was tremendous. Our students pitched in, donating over 20,000 unused school supplies and exchanging letters with their peers in PNG. The Papua New Guinea government, PNG Embassy in Japan, and Air Niugini continue to support our efforts as well.

*The future:* We have developed a very effective

relationship with the Village Development Trust, teaming up with the locals to build houses together. As a result,

- Communities have become motivated and proactive, building guest houses to host future volunteer groups
- There is a greater respect for nature; villagers cut and mill their own timber
- Popularity of the concept of Eco-Tourism is growing
- We can see each other's culture with our own eyes, enabling us to change media-driven stereotypes

We eventually hope to:

- Extend our volunteer/cultural exchange to other parts of PNG,
- Train Waria Valley high school graduates to become teachers, and
- Create a student exchange between Japan, PNG, and the USA.

Any assistance or guidance you could offer would be greatly appreciated.

We hope to continue bringing Japan and PNG together, one friendship at a time.

Please visit our website at [www.tomorrowsforest.com](http://www.tomorrowsforest.com) for more information.

## Fireflies

I am a conservation officer from the Malaysian Nature Society. I am doing a survey on fireflies in Malaysia where we have two synchronous firefly species, *Pteroptyx tener* and *P. malaccae* which gather together in trees and flash together. The genus *Pteroptyx* is quite widespread around the South East Asian region including PNG. I have heard of *P.*

*cribellata* in New Britain, which also has synchronous flashing. I would like to learn more about fireflies in PNG. Is there anyone studying fireflies in PNG? If you have any information on this, please contact Sonny Wong at [natsoc@po.jaring.my](mailto:natsoc@po.jaring.my)

## Quolls

Dr. Karen Firestone, Research Scientist at the Australian Museum, is looking to obtain tissue samples of both New Guinean species of quolls (*Dasyurus albopunctatus* and *D. spartacus*) for population and conservation genetic studies. If you or someone you know is doing field studies in

the regions that these species are found, please contact Karen at [karenf@austmus.gov.au](mailto:karenf@austmus.gov.au). Opportunity abounds for collaborative studies on the molecular ecology, conservation genetics, and phylogeography of these little known New Guinea species.

## Scholarships for GIS Training

Every Year the Society for Conservation GIS (SCGIS) invites international conservationists using GIS to apply to their International Scholarship Program. This program brings international conservationists to the USA to

work with other Conservation GIS users, receive training from ESRI and attend the SCGIS and ESRI conferences in California in July. If you would like to apply for one of these scholarships go to <http://www.scgis.org/scholarship.html>.

# Society for Conservation Biology

We invite you to join the SCB—the premier international scientific conservation society.

Why become a member?

- The SCB was founded in 1985 to promote the scientific study and conservation of the world's flora, fauna and ecosystem processes and the dissemination of this knowledge to biologists, managers, agencies, and other professionals
- The society provides an active network of scientists, natural resource managers, conservationists, and policy makers
- The SCB publishes *Conservation Biology*, the premier journal in the field as well as *Conservation Biology in Practice*
- The society organizes annual meetings, providing the opportunity to interact with colleagues on an international level
- The society sponsors annual awards to outstanding conservationists
- The SCB aims to maximize the international impact of the science and practice of conservation biology by forming several world regional sections including a fully constituted sections for Australasia (Australia, New Zealand, Papua New Guinea and the Pacific Islands)

## The Australasian Section of SCB:

The discipline of conservation biology is widely practiced under various guises but, until now, has not been fully served by a dedicated professional society within the region. This will change with the recent formation of the Australasia section of the SCB.

We aim to: promote excellent conservation science and practice throughout the region; serve as a regional contact network between conservation biologists and diverse conservation agencies; encourage interdisciplinary approaches to conservation issues in Australasia; advocate the inclusion of science into biodiversity policy, decision-making, and management in Australasia; and contribute to the international activities of SCB.

**Now is the time to join the Society, become involved, and have a say in how the future of the Australasian section of the Society develops.**

We look forward to your active participation in establishing a flourishing program of activities for the Australasia section and your contribution to the international affairs of the SCB.

**Visit our web site to join the SCB and the Australasia section today! <http://www.conbio.net/scb/>  
Basic membership rates now available!**

## ASTER Images

If you use Landsat and other sources of spectral imagery in your conservation work you may be interested in ASTER imagery. Aster images come in a number of formats and record data for 14 spectral bands. The ASTER images of most use to conservationists record data in three spectral bands that correspond approximately with Landsat bands 1, 2 and 3,

have a 15m pixel size and cover an area of approximately 60km x 60km. Additionally Aster images only cost \$50 each. If you would like know more about ASTER go to <http://redhook.gsfc.nasa.gov/~imswwww/pub/imswelcome/plain.html> or contact Gillian Woolmer ([gwoolmer@wcs.org](mailto:gwoolmer@wcs.org)).

## Pacific Islands Field Training Program, Roviana, Solomon Islands

"Human Dimensions to Marine Resource Utilization in the Solomon Islands: Fostering Pacific Island Student Participation in Research and Educational Activities"

**Dates:** July 20 - August 15 2003

**Director:** Dr. Shankar Aswani, University of California, Santa Barbara

Funded by the National Science Foundation Faculty Early Career Development Program, 2003-2008

### Program Description

The Pacific Islands Field Training Program admits undergraduate and graduate applicants primarily of Pacific Island descent and is of NO COST to participating students. Ten students are selected to join the program and each field season consists of an intensive 4-6 week summer session. Students will be introduced to a Melanesian cultural setting while simultaneously being trained in quantitative and qualitative ethnographic and marine science field methods.

The Pacific Islands Field Training Program is part of a five-year project that integrates research on common property institutions and marine resource utilization strategies

in New Georgia, Solomon Islands. The research focuses on the key socio-cultural, economic, political, ecological, and historical factors that affect common property regimes and shape human resource use strategies. Studying the dynamics of common property institutions and the factors that enhance cooperation amongst social actors in this case study will advance our understanding of the conditions that encourage stakeholders to protect, or not, their marine resources. The project also integrates indigenous ecological knowledge and marine science to understand various dimensions of marine resource utilization in the region.

The broader impacts of this research will be its value to conservationists and policy makers in the Pacific Region. The project will help formulate fisheries management initiatives like marine protected areas (MPAs). In fact, this project is part of a larger ongoing project, which seeks to establish a network of marine protected areas in South New Georgia, Solomon Islands. Please see

<http://www.anth.ucsb.edu/faculty/aswani/macarthur/index.html> And

<http://www.anth.ucsb.edu/faculty/aswani/packard/index.html> to review these projects.

The Pacific Islands Field Training Program targets students primarily of Pacific Island descent, although students of all backgrounds will be considered and are encouraged to apply. There is no application fee and if you are accepted you will be contacted to discuss travel arrangements. All travel, food, and lodging costs will be paid for by the Pacific Islands Training Program but plan on bringing spending money for souvenirs and gifts for your host family.

If you are interested in applying, please submit the following:

1. Application (coming soon)
2. Waiver (coming soon)

3. Recommendation

4. Proof of medical insurance

\*THE APPLICATION DEADLINE IS MAY 1, 2003\*

Return the forms by May 1, 2003 to:

Dr. Shankar Aswani

Pacific Islands Field Training Program

Department of Anthropology

University of California, Santa Barbara

Santa Barbara, CA 93106-3210

For more information on applying to the Pacific Islands Field Training Program email [imanley@umail.ucsb.edu](mailto:imanley@umail.ucsb.edu)

For more information visit

<http://www.anth.ucsb.edu/faculty/aswani/Career.htm>

## FUNDING OPPORTUNITIES AND JOBS

Note: Some of the following opportunities are sourced from INCL

### Small Grants Programme for Operations to Promote Tropical Forests

The "Small Grants Programme for Operations to Promote Tropical Forests" (SGP PTF) is a European Commission (EC) funded initiative implemented by the United Nations Development Programme (UNDP) and executed by the SEAMO Regional Centre for Graduate Study and Research in Agriculture (SEARCA).

The SGP PTF has recently issued the first set of formal Calls for Proposals through a series of workshops and media releases. In addition details of these Calls, Guidelines for Applications and more detailed information with respect to

SGP PTF operations can be obtained at the recently launched

website available at [www.sgpptf.org](http://www.sgpptf.org)

For more information please contact:

Mark Sandiford

Regional Programme Coordinator

EC/UNDP SGP PTF, SEARCA College

Laguna 4031, Philippines

Tel. No: (63-49) 536-2290 loc. 395 or loc.418

Fax No:(63-49) 536-2477

Email: [mark.sandiford@undp.org](mailto:mark.sandiford@undp.org)

### Rufford Small Grants Facility

In 1999 the Whitley Laing Foundation added the Rufford Small Grants to its portfolio of funding available for nature conservation projects. These grants have been made possible by The Rufford Foundation. Rufford Small Grants are aimed at smaller conservation programmes than those covered by the main Awards, including pilot projects. They are not designed to provide a small part of the funding for a large undertaking. The project requiring funding must be directly linked to field work and Rufford Small Grants may not be used to pay the costs of attending conferences or for tuition fees. Undergraduate projects are not eligible.

The Rufford Small Grants Facility offers 30 grants each year, up to a value of £5,000 per grant. Applications can

be made at any time, with quarterly deadlines at the end of January, April, July and October. Following these deadlines, applications are assessed with notification being made within two months. There are no interviews. Please use the new application form. Grant recipients are expected to produce formal or informal progress reports during the course of the project, and copies of any papers published should be forwarded. A formal written report must be submitted to the Whitley Laing Foundation within 12 months of receiving a Rufford Small Grant.

For more information please see

<http://www.whitley-award.org/rufford.html>

### The International Foundation for Science

From Wendy Tan, CI:

The IFS invites young developing country scientists to submit research project proposals. Proposals may address biological,

chemical and physical processes as well as social and economic relationships important in the conservation, production and renewable utilisation of the biological resource base. Contact: E-mail: [info@ifs.se](mailto:info@ifs.se) Web: [www.ifs.se](http://www.ifs.se)

### Green Grants

From John Ericho, RCF:

Green grants give funds directly to small grassroots

organization for environmental causes; they can be found at [www.greengrants.org](http://www.greengrants.org)

### Scholarships for Systematists from Developing Countries

SSE is pleased to announce the availability of four scholarships for scholars from developing countries to attend workshops and courses in systematics, or to visit a molecular lab for training. The emphasis of this program is the transfer of knowledge to the scholar's home country. Courses such as the Molecular Evolution Workshop at Woods Hole and the applied Systematics Course at Bodega Bay are appropriate for

this funding, in addition to other equivalent opportunities.

Support for attending a course will be contingent on admission to the course through the normal admissions process. A letter expressing interest in support should be sent to Dr. C.

Cunningham, Executive Vice President, SSB, National Center for Ecological Analysis and Synthesis, Suite 300, 735 State Street, Santa Barbara, CA 93101-3351 or by email to

[cliff@duke.edu](mailto:cliff@duke.edu). The letter should include a discussion of how the knowledge acquired will be transferred to the country of the scholar's origin, and a justification of the course itself as

providing appropriate training. Applications will be evaluated as they are received.

## CONFERENCES AND MEETINGS



**Theme:** Biological Conservation through Research and Education

**Dates:** 23-25 August 2003

**Host:** The Wildlife Conservation Society-PNG Program (WCS-PNG)

**Venue:** The University of Goroka, Goroka, EHP, PNG

The Fifth New Guinea Biological Conference is scheduled for the 23<sup>rd</sup> - 25<sup>th</sup> August 2003. This falls on a weekend and the Monday following that. Participants should arrive in Goroka by Friday, 22<sup>nd</sup> August for final registration. Presentations will take place on Saturday, Sunday and Monday. Optional fieldtrips will be arranged for Tuesday the 26<sup>th</sup>.

Presentations can be oral or in poster form and must be based on original research in any of the biological sciences. The official language for the meeting is English. Oral presentations should be 15 minutes long with three of these minutes allowed for questions. This time limit will be strictly enforced.

The final deadline for abstracts is **31<sup>st</sup> May 2003** but we encourage abstracts to be sent in as early as possible.

Abstracts should be in English and should be fewer than 250 words. The abstract should include specific information about the results and conclusions of the research. Abstracts that state: "results will be discussed" will not be accepted. We accept mailed or faxed hard copy abstracts recognizing not everyone has access to computers and email; however, we especially welcome submissions in electronic format (email text or attachments). Files formatted in Microsoft Word are preferred. The abstract should include (see below for a sample abstract): type of presentation (poster or oral), the author(s), contact details for the author(s), title of the presentation, who is presenting the paper, whether the presentation is by a student (determines eligibility for student awards), state what sort of audio-visual equipment you will require (e.g., slide projector, power point), and abstract text.

We will make every effort to fit in as many submitted papers as possible, but note that time is limited. If more abstracts are accepted than can be accommodated as spoken presentations, we may request that some be presented as posters.

Other information will be brought to you in the next announcement in April. This will include: Travel – flight schedules and land transport information, Accommodation and Meals – options and costs, Conference registration costs, and Optional post-conference field trip information and costs.

For any enquiries please contact: The 5th BioCon Organizing Committee, Wildlife Conservation Society-PNG, P. O. Box 277, Goroka, EHP, PNG, Tel: (+675) 732-3836, Fax: (+675) 732-2461, Email: [2003biocon@global.net.pg](mailto:2003biocon@global.net.pg)

**Sample abstract** (Please copy this format as closely as possible):

**Presentation type:** Oral Presentation

**Authors:** Mack, Andrew L. and Gretchen Druliner

**Contact details for author(s):**

Andrew L. Mack: Wildlife Conservation Society, P.O. Box 277, Goroka, EHP, Papua New Guinea; Email: [amack@wcs.org](mailto:amack@wcs.org)

Gretchen Druliner: The Peregrine Fund, 5666 W. Flying Hawk Ln., Boise, ID 83709, USA; Email: [druliner@earthlink.net](mailto:druliner@earthlink.net)

**Title:** A Non- Invasive Method for Measuring Movements and Seed Dispersal in Dwarf Cassowaries (*Casuarius bennetti*)

**Presenting author:** Gretchen Druliner

**Is the presenter a student?** Yes

**Audio – visual equipment required:** Powerpoint Projector

**Abstract text:**

We describe a method for measuring gut passage time and seed dispersal distance for a large terrestrial frugivore. We attached temperature data loggers to radio transmitters in baits that were ingested by free-ranging dwarf cassowaries (*Casuarius bennetti*). The data loggers passed through the gut in 3-4 hours and they were deposited 240-325 m from the place of ingestion. Thus the data loggers serve as an analogue for dispersed seeds, giving us probably gut passage rates and dispersal distances. Additionally, the data loggers revealed that cassowaries re-ingest faecal matter, the first observation of coprophagy in wild cassowaries.

## INTERNET SITES TO CHECK OUT:

(Thanks to the INCL for many of these resources)

**Currency Converter:** user friendly currency conversion website: [www.oanda.com/convert/classic](http://www.oanda.com/convert/classic)

**For fellowships and scholarships:**

see <http://wwf-efn.org/grants.cgi>

**Science Image Online:** An image library specialising in science and nature, presented by CSIRO, Australia's major

science research organisation. The images on this site are copyrighted. They are available for media stories about CSIRO, private and educational use at no charge. The images are also available for commercial uses. Please look at our pricing and conditions for further information. Visit [www.scienceimage.csiro.au](http://www.scienceimage.csiro.au)

**Free access to journal Nature:** Free access to the electronic version of the science journal Nature is being made available to the world's poorest countries. The access will be provided through the Health InterNetwork Access to Research Initiative (HINARI), a scheme launched by the World Health Organisation in January to increase access to scientific literature in developing countries, whose research institutions are often unable to afford the subscription fees charged by journal publishers (see WHO initiative gives free electronic access to journals). At present, researchers in countries with a Gross National Product (GNP) below US\$1,000 per head can gain free access to almost 1,000 journals through HINARI. From next year, it is intended that the journals will also be available at greatly reduced prices to countries with a GNP between US\$1,000 and US\$3,000 per head.

The link to the journals:

<http://www.healthinternetwork.org/scipub.php?lang=en>

The link to register for access if you are in a developing country:

<http://www.healthinternetwork.org/src/registration.php>

**New Guinea Ferns:** I have placed most of my working documents, retyped and unedited, on the web as a tool for anyone that wants to use them. We are currently working on an illustrated interactive key to the Australian ferns. A range of fern information can be found at:

<http://www.anbg.gov.au/projects/fern/> including keys to the genera in Papuasias (though they need updating). From Jim Croft, [jrc@anbg.gov.au](mailto:jrc@anbg.gov.au), [www.anbg.gov.au/jrc/](http://www.anbg.gov.au/jrc/)

**New site for Parataxonomist Training Center:**

<http://www.entu.cas.cz/png/index.html> This site details our research, educational and conservation activities in PNG. It can also serve as an information resource as many of our research and educational materials can be downloaded from the site. Note that the site has also a 'Links' section; if you think your organisation has similar focus and you want to cross-link your and our sites, let us know. Any feedback on the www site is most welcome. From Vojtech Novotny & the Madang Parataxonomist Team, Parataxonomist Training Center Ltd., P.O. Box 604, Madang, Papua New Guinea, Ph./fax: +675 852 1587, [binatangi@datec.com.pg](mailto:binatangi@datec.com.pg), <http://www.entu.cas.cz/png/index.html>

**Flora and Fauna International website:**

<http://www.fauna-flora.org>

**Trees of Borneo: Online keys:**

<http://www.phylodiversity.net/key/> An online key to the Trees of Borneo, using data and images prepared by Jim Jarvie, and key software by Cam Webb.

**Biodiversity Conservation:** For the recent PMSEIC report that has provided the prime minister and cabinet with some cost efficient options on biodiversity conservation, see <http://www.dest.gov.au/science/pmseic/meetings/8thmeeting.htm>

From Professor Hugh Possingham, Director of The Ecology Centre, The University of Queensland, St Lucia, QLD 4072 Australia, Email: [hpossingham@zen.uq.edu.au](mailto:hpossingham@zen.uq.edu.au),

<http://www.ecology.uq.edu.au/> (The Ecology Centre);

[www.acfonline.org.au/docs/publications/tp009.pdf](http://www.acfonline.org.au/docs/publications/tp009.pdf) (The business of biodiversity);

<http://www.dest.gov.au/science/pmseic/meetings/8thmeeting.htm> (PMSEIC report); Software downloads:

[http://biology.anu.edu.au/research-](http://biology.anu.edu.au/research-groups/ecosys/Alex/ALEX.HTM)

[groups/ecosys/Alex/ALEX.HTM](http://biology.anu.edu.au/research-groups/ecosys/Alex/ALEX.HTM) (ALEX for PVA);

<http://www.ecology.uq.edu.au/marxan.htm> (Reserve design software)

**Small-scale CDM projects:** UNFCCC, Bonn, 28 January 2003, The Executive Board that oversees the Kyoto Protocol's Clean Development Mechanism (CDM) has finalized key procedures for investments in small-scale projects for limiting greenhouse gas emissions in developing countries, thus paving the way for an early launch of the first CDM projects. Meeting last week in Bonn, the Board adopted a CDM Glossary of terms used in the Project Design Document, which helps project proponents to understand CDM terminology. It also finalized the package of simplified modalities for small-scale CDM projects, including a "simplified CDM project design document" for registering such projects, and an "indicative list of simplified baseline and monitoring methodologies" helping project proponents to lower costs for complying with CDM rules. Project developers and interested public are invited to visit the UNFCCC-CDM web site (<http://unfccc.int/cdm/>) from which all relevant documentation can be obtained.

The 1997 Kyoto Protocol established the CDM as a way of promoting sustainable development while minimizing the costs of limiting greenhouse gas emissions. In return for investing in a sustainable development project that reduces or avoids emissions in a developing country, companies will earn "certified emission reductions" that developed countries may use to meet their Kyoto commitments. The CDM's "operational entities" will play a crucial role by checking whether projects conform with the CDM's rules. They will be responsible for validating proposed projects before they are registered by the CDM's Executive Board. They will also verify and certify the emission reductions achieved by a registered CDM project before the Board issues the "certified emission reductions". Applications for accreditation of "operational entities" can be submitted to the Climate Change Secretariat in Bonn.

Further information on the CDM and its procedural guidelines for accrediting "operational entities" can be found at <http://unfccc.int/cdm/>. For more information please email [cdm-info@unfccc.int](mailto:cdm-info@unfccc.int)

**IUCN New Specialist Group Websites:**

<http://www.iucn.org/themes/ssc/plants/plantshome.html> The Medicinal Plant Specialist Group (MPSG) now has a new website. It can be reached directly at <http://mpsg.org>, or by following links from the MPSG listing on the SSC's Specialist Groups web page at

<http://www.iucn.org/themes/ssc/ssg/ssg.htm> The website has been designed and is managed by Dr Reza Azmi, an MPSG member based in Malaysia. Recent issues of the MPSG newsletter, Medicinal Plant Conservation, are posted on the site, along with the current programme, activities, and membership.

**IUCN Today now available online:** This electronic version has replaced the printed version and can be found on IUCN's website at [www.iucn.org/members/today.htm](http://www.iucn.org/members/today.htm) From this page, you can select whichever of the three IUCN official languages you prefer for reading.

**BirdLife International's Globally Threatened Bird Update** aims to feed the latest information on threatened birds into the 2004 IUCN Red List of threatened species - and, most importantly, into setting priorities for bird conservation. The project will build on the wealth of information already compiled by BirdLife and others on the status of the world's

birds, including, for example, Threatened birds of the world (2000) and Threatened birds of Asia (2001).

We'd like to invite you to take part in this important project. An exciting component is the launch of discussion forums on BirdLife's website, where contributors can share information on Globally Threatened Birds. Specifically you can: 1. See which species are proposed for revised threat status; 2. Contribute, comment or give new information on the proposed revisions; 3. Suggest other species that may need revising. The discussions forums are organised by region and in some cases by species group (e.g. seabirds).

We are now launching the Threatened Asian birds forum, and invite you to join in. For background to the project and links to the forums, click the Globally Threatened Bird Update button on the BirdLife homepage <http://www.birdlife.net> or go straight to <http://www.birdlife.net/gtbirds/index.cfm>. You can browse the discussions as a guest, but to post a comment or to contribute new information you will need to login.

You don't need to keep visiting the forum through the web. You can choose to receive emails with new postings automatically, or daily or weekly digests. These can cover the whole forum or particular species only. You can also contribute your information by replying to email messages. The new system will make it much easier to credit information from particular contributors, and to acknowledge the large pool of experts whose participation is vital for ensuring that accurate and up-to-date data are used in assessing the threat status of these birds.

The Globally Threatened Bird Update focuses on species whose threat status may need revising (or assessment for the first time). It will complement and link to the 'Red Data Book: Threatened Birds of Asia' website project - another BirdLife initiative being developed by the Asian Partnership. This will shortly be up and running, and more detailed bird data relevant to the RDB accounts can be added here.

We expect the discussion forums to be an ongoing process and part of an annual cycle to review the status of threatened birds. For this round, we will aim to reach decisions on revised assessments by July 2003. This will allow

them to feed into the 2004 IUCN Red List, which will comprise a major review and revision of several taxonomic groups.

BirdLife is the official Listing Authority for birds for the IUCN Red List. While we provide coordination and facilitation, the quality and relevance of the information itself rely fundamentally on the participation of thousands of individual experts and key organisations, notably the bird specialist groups. We hope very much that you will want to be part of this important project, and look forward to your contributions.

If you have any questions or suggestions, don't hesitate to contact Stuart Butchart ([stuart.butchart@birdlife.org.uk](mailto:stuart.butchart@birdlife.org.uk)) who is coordinating this initiative.

**ConserveOnline** is a cooperative information sharing project, started with The Nature Conservancy who has partnered with Conservation International's Center for Applied Biodiversity Science (CABS), the Biodiversity Support Program, NatureServe, parts of the US Forestry Service, the Society for Conservation Biology, and the American Museum of Natural History.

Go to [www.conserveonline.org](http://www.conserveonline.org) to run searches on and download these groups' documents (with option of Spanish and Portuguese). There are three parts of the database: Documents and links; Maps and data; and, Communities (discussion groups and listservs). You can run simple or complex searches on any or all of these. You can find scientific research reports, policy documents, and data at this site.

Some of your searches may return results with the option to download the document. Others may require a payment to download.

**Pacific Economic Bulletin:** The May issue (Volume 17 Number 1) is now available at <http://peb.anu.edu.au/current-issue.htm> You can Search for articles using the country and author indexes, Order single articles, Download policy dialogue papers, or Subscribe: Single copies (A\$20) and subscriptions (A\$40).

## Research Sites

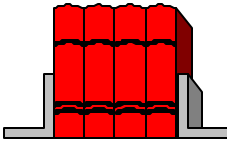


This section is for contributions describing research facilities in New Guinea. If you have information about a place where researchers are welcome to come and work, please send a summary. Include the location, altitude, available facilities, logistics of getting there, and a contact name, address and fax number. Thanks!

## Diseases you should know about



This section is to make sure that we are all aware of the various diseases we need to look out for in New Guinea. Many diseases you would not get in town, but only by working in the forest or in a village, and doctors might not be able to diagnose these diseases easily. If you know about a disease that we should be aware of, PLEASE send in a description, or at least the name of the disease, so we can look up information on it to include in a future issue of this newsletter—thank you!



# Available Publications and Items

If you know about any books or items we should know about, please send the details!

## From the FRI Herbarium in Lae at K50 per copy:

PNG Palm Field Guide. 2001. Barfod, Banka & Dowe.

## From James Menzies, [james@jmenzies.fsnet.co.uk](mailto:james@jmenzies.fsnet.co.uk) :

A bibliography to New Guinea mammalian literature is available in Science in New Guinea, Vol 27, or by ordering a disk directly from the author, James Menzies. The bibliography on disk is in the program Papyrus, is continuously updated, and can be accessed even by users who don't have the original Papyrus programme. The charge to cover expenses for mailing, etc. is \$25.

## From any book dealer:

The Cane Toad by Christopher Lever. 2001. Westbury Academic and Scientific Publishing. Price GBP44.00. Includes a chapter on the cane toad in PNG.

## The INCL Newsletter:

The Indonesian Nature Conservation newsLetter (INCL) is a non-profit internet e-mail list for announcements and news about topics related to nature conservation in Indonesia. Messages appear in digest format and are sent out once a week in both English and bahasa Indonesia, text or HTML format (English and Bahasa Indonesia editions differ and are not just translations). To (un)subscribe or if you have questions or contributions for inclusion: send an email to Ed Colijn ([edcolijn@bart.nl](mailto:edcolijn@bart.nl)) or Muchamad Muchtar ([ngo-move@indo.net.id](mailto:ngo-move@indo.net.id)).

## RAP Bulletins from Conservation International:

A Marine Rapid Assessment of the Raja Ampat Islands, Papua Province, Indonesia, RAP Bulletin of Biological Assessment 22, McKenna, S.A., G.R. Allen and S. Suryadi (eds.), 2002, Conservation International, Washington DC

A Biodiversity Assessment of Yongsu - Cyclops Mountains and the Southern Mamberamo Basin, Papua, RAP Bulletin of Biological Assessment 25, Stephen J. Richards & Suer Suryadi (eds.), 2002, Conservation International, Washington DC.

For more information please contact CI Papua: Tommy Wakum/Yance de Fretes, Conservation International Indonesia Kantor Jayapura, Jl. Bhayangkara I No. 33, Jayapura 99112, Papua, Tel. (0967) 523 423, Email [ci-irian@jayapura.wasantara.net.id](mailto:ci-irian@jayapura.wasantara.net.id) or Amalia Firman/Suer Suryadi, Conservation International Indonesia Kantor Jakarta, Jl. Taman Margasatwa No. 61, Jakarta 12540, Tel. (021) 7883 8624, Email: [ci-indonesia@conservation.org](mailto:ci-indonesia@conservation.org)

For more information on purchasing RAP Bulletins, please contact: The University of Chicago Press, 11030 S. Langley Avenue, Chicago, IL 60628, Tel: 1-800-621-2736, Fax: 1-800-621-8471, WWW: <http://www.press.uchicago.edu>

To obtain books and reprints from CI, contact: Leslie Rice, Tel: (202) 912-1249, Email: [l.rice@conservation.org](mailto:l.rice@conservation.org)

## From [KM.Kego@upng.ac.pg](mailto:KM.Kego@upng.ac.pg) Secretary, Science in New Guinea:

Kumar, R. 2001. Insect Pests of Agriculture in Papua New Guinea. Part I. Pests of tree crops and stored products. Science in New Guinea. 723 pages. (K80.0)

## From Strand Books in New York <http://www.strandbooks.com/profile/?isbn=0198546513&itemno=0> or <http://www.strandbooks.com/> and use search:

Megapodes : Megapodiidae. 1995. by Darryl Jones, Rene W.R.J. Dekker, Cees S. Roselaar, text; Ber Van Perlo, illustrations. (Bird Families of the World series). This volume describes and illustrates the twenty-two species in this bird family distributed over Australia, Papua New Guinea, Indonesia, the Philippines, the Nicobar Islands, and some southwest Pacific islands.

Following a nine-chapter overview, the book provides twenty-two species accounts, each one giving a complete description of the bird in its natural habitat. With an 8-page colorplate section; b&w illus. 262p. Strand Price: \$12.95, ISBN 0198546513, Binding: Hardcover

## From Ani Mardiatusti, Email: [aniipb@indo.net.id](mailto:aniipb@indo.net.id) or PILI-NGO Movement, Eka M. Putri, Email: [eka@pili.or.id](mailto:eka@pili.or.id)

CITES Implementation in Indonesia. Soehartono, T. & A. Mardiatusti. 2002. Jakarta: Nagao NEF. xxxi+339 pps.

'CITES Implementation in Indonesia' presents a general view on wildlife trade in Indonesia, including its problems, control, enforcement, and conservation efforts. As CITES is a relatively new tool to many of us, the CITES mechanism, both at the international and national levels, is introduced in Chapter 2. The next eleven chapters deal with the trade in some important wildlife commodities from Indonesia. The trade in reptiles, for skins and as pets, is discussed in Chapter 3. Following on, Chapter 4, deals with the international trade of live birds from Indonesia, particularly Psittacines.

Bearing in mind that Indonesia is known as the biggest coral exporter in the global market, the trade in corals was also assessed and is outlined in Chapter 5. Plant species are also discussed and presented in Chapter 6, specifically the trade in

gaharu, a resinous wood product, derived from the tree species *Aquilaria* spp.. Chapter 7 deals with the trade in the Asian Arowana, an expensive freshwater fish species that has been traded due to its beauty and because of mythical beliefs. Following the Asian Arowana, in Chapter 8 we present the trade data for primates, particularly, the Long-tailed Macaque *Macaca fascicularis*. This species has been subject to heavy trading because of its use as a laboratory animal for testing drugs and research related to human health.

Another plant species which was recently listed in the CITES Appendix, Ramin *Gonystylus bancanus*, is presented in Chapter 9, followed by a discussion on the trade of Birdwing Butterflies in Chapter 10. The next chapter, Chapter 11, looks at the issue of edible nests made from the saliva of the Edible-nest Swiftlet *Collocalia fuciphaga*, which have been traded for several decades due to the popular belief that the nests are able to cure many illnesses, prolong life, and improve human health. The ensuing two chapters deal with some important CITES decisions, namely Significant Trade Mechanism (Chapter 12) and the Testing of Appendices Criteria (Chapter 13). Several Indonesian species were taken as samples in order to assess the application of the criteria to determine CITES category. Finally, Chapter 14 discusses the future of CITES and international trade in Indonesia. This book also includes Annexes containing the text of CITES, a list of the Indonesian species on the CITES Appendices, and one important CITES resolution regarding criteria for the amendment of the Appendices.

**From the WWF Kikori Integrated Conservation and Development Project, P.O Box 842, Port Moresby, NCD, PNG, Emails: Ted Mamu [tdmm@chevrontexaco.com](mailto:tdmm@chevrontexaco.com), Olo Gebia [ogeb@chevrontexaco.com](mailto:ogeb@chevrontexaco.com), or Amos Ona [ona@chevrontexaco.com](mailto:ona@chevrontexaco.com):**

Publication series	Mini-Posters (Pidgin & English)	Leaflets (Currently Most in English)	Training Manuals (mostly in English)
<b>Development</b>	58	37	
<b>Conservation</b>	59	33	
<b>Kikori Basin Nature Resources</b>	32	13	
<b>Culture</b>	35	6	
<b>Education</b>	10	7	
<b>Community Organisation</b>	28	5	
<b>Small Income Generation</b>	65	2	
<b>Non-sustainable Logging</b>	26	9	
<b>Promotional</b>	1	1	
<b>Vanilla</b>	29 sets	0	1
<b>Insect</b>	0	0	1

These publications currently come in three main formats: mini-posters (designated by the code **MP**), leaflets (or in melanesian tok pisin language *toksave* materials) (designated by the code **T**), and training manual materials (designated by the code **M**). We call our posters ‘mini posters’ because the posters come in A3 and sometimes A4 size, and so they are smaller than some posters we normally see used in education.

KICDP leaflets normally have authorships noted on them, but mini-posters do not. During the period of main publication creation - from 1999 to 2001 - we purposely focused far more on getting across the educational messages than worrying about taking credits for who created what. This also set a good philosophy for the project – concentrating on disseminating information and messages, rather than promoting ourselves. That’s why you’ll see no authorships noted on these posters. We give out our mini –posters to any interested NGOs, Government agencies, CBOs and any groups or individuals upon request free of charge.

**From Canberra Mailing, PO Box 462, Fyshwick, ACT 2609, Australia, Phone: (61) 2 6269 1222, E-mail: [customer.service@canmail.com.au](mailto:customer.service@canmail.com.au) or from the website: <http://rspas.anu.edu.au/lmp/>**

Hanson, L.W., Allen, B.J., Bourke, R.M. and McCarthy, T.J. (2001). *Papua New Guinea Rural Development Handbook*. The Australian National University, Canberra. 326 pp. ISBN 0 9579381 0.

This resource book has recently been published by the Land Management Group, Department of Human Geography, Research School of Pacific and Asian Studies at the Australian National University in Canberra. This is part of an AusAID-funded project titled “Information for Rural Development in Papua New Guinea”. The data presented in the book are based on new analyses conducted by the Land Management Group and build on three major PNG databases – PNG Rural Information System, Mapping Agricultural Systems of PNG, and the National Nutrition Survey. The book was launched in February 2002 by Sir Moi Avei, the former Minister for National Planning in PNG.

There are eight themes in the book, which are applied to every province (19) and rural district (85). (The four urban districts in Port Moresby and Lae are not covered). The themes are introduction (location etc), population (including internal migration, where data are available), access to services, income from agricultural sources, subsistence agriculture (main crops and intensity of land use), land potential, agricultural pressure/potential and disadvantaged people. This last parameter is based on land potential, pressure on land, cash income and access to services. Each theme is supported by a provincial-level map; and all themes except the introduction are supported by a bar graph showing the population for each class in the theme at the district level. For example, there are five classes for access to services and for cash income from agriculture. National level

maps are also presented, with some basic statistics on the number of people in each major class. The entire book is done in colour, including all maps and colour codes for each theme and province.

The 85 rural districts are then ranked from worst to best for the following parameters: land potential, agricultural pressure, access to services, income from agriculture and child malnutrition. These factors are combined to rank the districts from the worst (Middle Ramu and Telefomin) to the best (Goroka, Hagen, Kokopo, Rabaul and Gazelle). A comparison is then made between the worst 20 districts identified in this new analysis with comparable rankings done in the mid-1970s and 1980s. Most of the districts identified in the new study have previously been identified as among the worst in PNG on a combined index.

The book is illustrated with over 40 photographs from throughout PNG, which highlight aspects of the eight themes.

**Community-based Forest Resource Conflict Management: A Training Package. To obtain free copies of this training manual please email: [fonp-documents@fao.org](mailto:fonp-documents@fao.org)**

A new comprehensive training package on community-based forest resource conflict management has been published by the Forestry Policy and Planning Division of the Food and Agriculture Organization of the United Nations and the Regional Community Forestry Training Center based in Bangkok, Thailand. This training package examines conflict within forest resource use and community-based forest management and offers strategies for managing it.

The training package aims to support diverse and multiple forest user groups to manage conflicts that inevitably arise in the protection, use and control of forest resources. A related goal is to strengthen participation and, thus, the role and recognition of local stakeholders (forest-dependent communities) in forest management.

To achieve this, the objectives of the training package are to:

- increase knowledge about conflict in community-based forest management;
- improve understanding of how processes and outcomes of community-based forest management and conflict are related, and how both need to be planned for and reviewed together;
- provide tools and aids for training in conflict analysis, selection of appropriate strategies, negotiation and facilitating resolution processes.

Who will use the training package?

- These materials are designed for training rather than direct intervention. This package has been prepared primarily for trainers who help people and organizations that work collaboratively in community forestry. It is expected that such trainers are already knowledgeable and experienced in community-based forest management.
- The trainers' target audience is expected to be forest management practitioners, including forest agency staff, project/programme managers, staff of non-governmental organizations (NGOs); community-based organizations; and development workers who:
  - act as resource persons to forest resource users who have requested assistance with a conflict or want to develop their skills in mitigating potentially destructive situations;
  - help local communities become more focused, confident and effective in addressing and anticipating conflict;
  - are themselves embroiled in conflict or planning interventions that are intended to address conflict; or
  - are trying to improve the effectiveness of community-based forest management processes.

What is the training package?

- This set of training materials provides background information, training activities, case studies, workshop aids, how-to instructions on workshop design and references to prepare and support trainers in conflict management. The various sections of the training package are divided into two main parts:
- Part 1 (Sections 1 to 7): Theoretical information to ensure the user has sound understanding and knowledge of conflict and conflict management as it applies to community forestry. These sections describe:
  - a conflict management process map;
  - key elements of conflict;
  - how conflict management strategies relate to broader activities of community-based management;
  - the theory of conflict analysis;
  - a review of conflict management options;
  - guides to developing a management strategy;
  - techniques for facilitating conflict management;
  - an annotated bibliography containing a set of useful references on conflict and conflict management.
- Part 2 (Sections 8 to 10): This is the trainer's toolkit for use in the delivery of training workshops for people working in community forestry or involved in forest management-related conflicts. Resources include:
  - case studies;
  - instruction sheets for a range of participatory learning activities;
  - information on how to design and carry out participatory training workshops.

**From CSIRO Publishing:**

*Australian Tropical Rain Forest Plants: Trees, Shrubs and Vines*, BPM Hyland, T Whiffin, DC Christophel, B Gray & RW Elick, October 2002, CSIRO PUBLISHING, CD-ROM & 24pp manual, ISBN: 0 643 06872 4 , \$120.00. *Australian Tropical Rain Forest Plants* is an interactive identification and information system for 2154 species of trees, shrubs and vine of northern Australia's rain forests. Based on *Australian Tropical Rain Forest Trees and Shrubs*, it now includes more than 455

vine species. VISIT

<http://www.publish.csiro.au/books/bookpage.cfm?PID=3400><http://www.publish.csiro.au/books/bookpage.cfm?PID=3207>

*Hair ID: An Interactive Tool for Identifying Australian Mammalian Hair*, Hans Brunner, Barbara Triggs & Ecobyte Pty Ltd, August 2002, CSIRO PUBLISHING, CD-ROM, ISBN: 0 643 06826 0 , \$195.00. *Hair ID* provides a practical and cost-effective means by which researchers, ecologists and environmental consultants can analyse mammalian hair samples for a range of purposes such as surveys of distribution patterns and dietary studies of predators. VISIT

<http://www.publish.csiro.au/books/bookpage.cfm?PID=3395>

*AusGrass: Grasses of Australia*, D Sharp & B Simon, August 2002, ABRs/Queensland EPA/CSIRO PUBLISHING, CD-ROM & manual, ISBN: 0 643 06861 9, \$99.00. *AusGrass* is the largest and most comprehensive identification guide to a plant group ever published. Using either interactive or dichotomous keys, *AusGrass* enables quick and accurate identification of any of the 1323 species of grass, native or naturalised, growing wild in Australia. VISIT

<http://www.publish.csiro.au/books/bookpage.cfm?PID=3296><http://www.publish.csiro.au/books/bookpage.cfm?PID=3284>

*Spiders of Australia: Interactive Identification to Subfamilies*, R Raven, B Baehr & M Harvey, October 2002, ABRs/CSIRO PUBLISHING, CD-ROM, ISBN: 0 643 06870 8, \$89.95. *Spiders of Australia* is a comprehensive information package and identification tool for spiders, one of the most numerous and abundant of all terrestrial organisms in Australia. The CD-ROM covers all families and subfamilies in Australia and New Guinea, and all but two families in New Zealand. VISIT

<http://www.publish.csiro.au/books/bookpage.cfm?PID=3399><http://www.publish.csiro.au/books/bookpage.cfm?PID=3285>

*Setting Policy Priorities for the Development of Tree Crop Industries in Papua New Guinea*, ACIAR Monograph 80, March 2002, ACIAR paperback, 48pp, ISBN: 1 86320 303 6, \$10.00. VISIT

<http://www.publish.csiro.au/books/bookpage.cfm?PID=3250>

*Policy Options for Tree Crop Industries in Papua New Guinea*, ACIAR Monograph 81, March 2002, ACIAR paperback, 210pp, ISBN: 1 86320 305 2, \$15.00. VISIT

<http://www.publish.csiro.au/books/bookpage.cfm?PID=3251><http://www.publish.csiro.au/books/bookpage.cfm?PID=3279>

## Orchids of Southeast Asia on CD-ROM

This project is co-ordinated by E.F.de Vogel and implemented by A. Schuiteman, assisted by De Vogel.

The CD-ROM "**Orchids of New Guinea Vol. I: Illustrated Checklist and Genera**" (ISBN 90-75000-20-0) consists of descriptions of all 132 New Guinea orchid genera, an orchid terms glossary with over 500 entries, an illustrated dichotomous key and an interactive multimedia key to the genera. The main body of the work is a checklist of all c. 3000 orchid taxa occurring in New Guinea, complete with the synonymy as now understood, indicating the types and where they are located, the distribution of the taxa, and including concise cultivation notes for each species. It is illustrated by c. 1000 colour photographs and over 1000 digitised flower analyses in pencil from the archives of J.J. Smith. The CD-ROM was published 28 February 2001. In book form it would cover more than 850 pages of text and (with 4 illustrations per page) 500 pages of illustrations. It is part of a planned series of 5 to 6 CD-ROM's on New Guinea orchids which in their turn are part of a much larger project: Orchids of Southeast Asia on CD-ROM, covering 8000 orchid species.

The CD-ROM "**Orchids of New Guinea Vol. II: Dendrobium and Allied Genera**" was published in July 2002. This consists of descriptions of all 567 species of New Guinea Dendrobiinae with the synonymy as now understood. It covers the genera *Cadetia* (47 species), *Dendrobium* (421), *Diplocaulobium* (71) and *Flickingeria* (8). The orchid glossary is upgraded and extended to 568 entries and provided with 164 new illustrations. The dichotomous key with a total of 144 couplets identifies 4 genera, 25 sections and about 100 species in selected sections. The interactive multimedia key to the 4 genera and 25 sections is based on 28 characters and 71 character states. Both keys are fully illustrated with a total of 166 new illustrations. The types are listed as well as the herbaria where they are located; 571 photographs of types are included, from the Bogor and Leiden Herbaria. The distribution of the species is given, and 273 newly prepared distribution maps with indication of altitudinal zones are added. The whole is further illustrated by 558 colour photographs, 420 earlier published line drawings (of which 270 are by Schlechter), and 625 digitised flower analyses in pencil from the archives of J.J. Smith. In book form this manuscript would cover more than 1100 pages of which some 400 pages of text and (with 4 illustrations per page) almost 700 pages of illustrations.

**Continuation of CD-ROM project Orchids of Malesia on CD-ROM.** The volunteer Mr. P. Hartog continues his invaluable help with scanning the original pencil drawings of New Guinea orchids by J.J. Smith. A total of c. 3700 original pencil drawings of New Guinea orchids by J.J. Smith have been digitised; these are all coded, and entered in a database. Of these, c. 1650 images are used in the two already prepared CD-ROM's. Some 1000 non-New Guinea drawings by J.J. Smith remain to be coded and entered in a database.

A total of 150 illustrations from various books were scanned by De Vogel, in addition to the 490 illustrations from Schlechter's New Guinea publications earlier prepared. About 1500 additional slides have been digitised and entered in a database. The number of top photographers contributing their Southeast Asian orchid slide collections for free use in this project has grown to over 30. De Vogel continued co-ordination and fundraising.

**Species reference system for Southeast Asia, Australia and the Pacific.** Updating the database ASORCH (now more than 26,600 records), the framework of the CD-ROM projects is continuing. Almost 700 records were added and data on some 1200 variety names were collected in Harvard and need to be typed in. De Vogel spent one week in Harvard and two weeks in Herbarium Bogoriense to sort out types and include the data. Type reference inclusion for the non-Malesian species is continuing.

**Orchid Network.** Dr. E.F. de Vogel continued his efforts to organise and finance a network of co-operating scientists in Southeast Asia and the Western part of the world with the aim to produce an encyclopedia on CD-ROM of all 8000 Southeast Asian orchid species. A Memorandum of Understanding between National Capital Botanical Gardens Port Moresby, Papua New Guinea and NHN has been signed on co-operation in field work, training and education; one with Royal Botanic Gardens Kew is pending.

The CD-ROM's can be purchased from the Publications Department of the National Herbarium of the Netherlands (NHN). The price is fixed at EUR 59 per CD-ROM, plus mailing costs. Conditions for sale: Banking costs, now Euro 9.07, are charged unless paid by Eurocheque, or VISA or Mastercard. Discount for booksellers and subscription agencies depends on quantity and is 20% for small quantities; for bulk sales higher discount can be negotiated. For orders in the European Union 19% VAT will be charged.

The address of our institute is: Nationaal Herbarium Nederland (NHN), Einsteinweg 2, P.O. Box 9514, 2300 RA Leiden, The Netherlands.

Publications Department Administration: Tel.: +31 71 5273570, Fax: +31 71 5273511, Email: [zoelen@nhn.leidenuniv.nl](mailto:zoelen@nhn.leidenuniv.nl)

Information about the CD-ROM project and contact persons for potential donors:  
Ed de Vogel, email: [devogel@nhn.leidenuniv.nl](mailto:devogel@nhn.leidenuniv.nl) tel. +31 71 5273553 or André Schuiteman, email: [schuiteman@nhn.leidenuniv.nl](mailto:schuiteman@nhn.leidenuniv.nl) tel. +31 71 5273553

More information can be found on the website of the National Herbarium of the Netherlands:  
<http://nhncml.leidenuniv.nl/rhb/>

Other information on the CD-ROM is to be found on the website of Wolfgang Bandis ch in PNG:  
<http://www.orchidspng.com/> Click on the left upper button under New Guinea Orchid Project. Also browse through his many pages full of other information on New Guinea orchids and his gallery of photographs.

The digitised Type collection of the National Herbarium can be consulted at: <http://nhncml.leidenuniv.nl/rhb/> Click on Type collection, then on the picture of the herbarium sheet. Enter the search criteria in the appropriate boxes. When you are on the specimen detail screen you can click on the thumbnail picture to enlarge the picture of the type sheet.

## Scientific Literature



If you haven't sent your publication list in yet (your papers about New Guinea), please send these citations to Debra so we can include them in a future issue. It doesn't matter if you have one paper, or 30 papers-- the rest of us want to know about it! We would really like to know what you have found out about New Guinea; that is the purpose for this newsletter—to share information. If you have more than one page of citations, please send your list on disk or by email (preferably in Word) if possible-- thanks!

### **Insect Publications from Michael Schneider:**

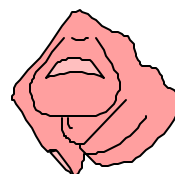
- Schneider, M. (1999): Entomology - A Textbook for Students, Agriculturalists and Foresters in Papua New Guinea; Training Manual No. 19; Bulolo University College; Bulolo; PNG; ISBN 9980-85-259-3; 312 p.
- Schneider, M. (1999): Key to the Forest Insect Pests of Papua New Guinea; interactive CD-ROM and Internet version (<http://www.fzi.uni-freiburg.de/InsectPestKey-long%20version/index.htm>); ISBN 9980-85-260-7
- Dobunaba, W. J. and Schneider, M. (1999): Binatang - A Pictorial Catalogue of Papua New Guinea's Insects; Interactive CD-ROM; ISBN 9980-85-261-5
- Mebs, D., Zehner, R. and Schneider, M. (2000): Molecular Studies on the Oubain Binding Site of the Na<sup>+</sup>, K<sup>+</sup>-ATPase in Milkweed Butterflies. *Chemoecology* 10: 201-203
- Jenkihau, A. S., Bowin, S. T. and Schneider, M. (2001): Effects of Aqueous Neem and Melia azedarach Extracts on the Early Development of *Eurema blanda*. *Science in New Guinea* 26 (1, 2, 3): 27-33
- Schneider, M. (2001): Observation on the Aggregation Behaviour of *Arcte coerula* Guenée (Lepidoptera: Noctuidae). *Science in New Guinea* 26 (1, 2, 3): 34-37
- Mebs, D. and Schneider, M. (2002) Aristolochic acid content of South-East Asian troidine swallowtails (Lepidoptera: Papilionidae) and of Aristolochia plant species (Aristolochiaceae). *Chemoecology* 12: 11-13

### **Scolecophidian snake papers from Van Wallach:**

- Wallach, V. 1995. A new genus for the *Ramphotyphlops subocularis* species group (Serpentes: Typhlopidae), with description of a new species. *Asiatic Herpetol. Research* 6: 132-150.
- Wallach, V. 1996. Systematics status of *Ramphotyphlops flaviventer* (Peters) and related forms (Serpentes: Typhlopidae). *Amphibia-Reptilia* 17: 341-359.
- Wallach, V. 1997. Two new blind snakes of the *Typhlops ater* species group from Papua New Guinea (Serpentes: Typhlopidae). *Russian J. Herpetol.* 3: 107-118.
- Shea, G. M., and V. Wallach. 2000. New records and data for typhlopoid snakes from Papua New Guinea. *Sci. New Guinea* 25: 67-69.

**Medicinal Plant literature from Dede Omoloso:**

- Khan, M.R., Komine, K. and Omoloso, A. D. Antibacterial activity of *Uvaria cordata*. *Fitoterapia*, LXIX: 177-8 (1998).
- Khan, M.R., Komine, K. and Omoloso, A.D. Antibacterial activity of some Annonaceae Part I. *Fitoterapia*, LXIX: 367-68 (1998).
- Khan, M.R., and Omoloso, A.D. *Momordica charantia* and *Allium sativum*: Broad spectrum antibacterial activity. *Journal of Pharmacognosy*, 29: 155-58 (1998).
- Khan, M.R. and Omoloso A. D. Antimicrobial activity of *Micrechites novoguineensis*. *Fitoterapia*. 70: 290-92 (1999).
- Khan, M.R., Komine, K. and Omoloso, A.D. Antimicrobial activity of *Gonothalamous grandiflorous*. *Pharmaceutical Biology*, 37: 340-42 (1999)
- Khan, M.R., Kahara, M. and Omoloso, A.D. Antimicrobial activity of *Evodia elleryana*. *Fitoterapia*, 71: 72-74 (2000)
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Eupomatia laurina*. *Pharmaceutical Biology* (Accepted 2000)
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Omalanthus nervosus*. *Fitoterapia* 72: 281-83 (2001)
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Harpullia ramiflora*. *Fitoterapia* 72: 298-300 (2001)
- Khan, M.R., Kahara, M. and Omoloso, A.D. Antimicrobial activity of *Picrasma javanica*. *Fitoterapia* 72: 406-8 (2001)
- Omoloso A.D and Vagi J.K. Broad Spectrum Antibacterial Activity of *Allium cepa*, *Allium roseum*, *Trigonella foenum graecum* and *Curcuma domestica*. *Natural Products Sciences*, 7: 13-16 (2001)
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Horsfieldia helwigii* and *Melia azedarach*. *Fitoterapia*, 72: 423-27 (2001)
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Cantanopsis acuminatissima*. *Fitoterapia*, 72: 174-76 (2001)
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Cassia alata*. *Fitoterapia*, 561-64 (2001)
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Clematis papuasica* and *Nauclea obsversifolia*. *Fitoterapia*, 72: 575-78 (2001)
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Biden pilosa*, leaves of *Bischofia javanica*, root bark of *Elmerilla papuana* and *Sigesbekia orientalis*. *Fitoterapia*, 72: 662-65 (2001)
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Symplocos cochinchensis*. *Fitoterapia*, 72 (2001) 825-828
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Lithocarpus celebicus*. *Fitoterapia*, 72: 703-5 (2001)
- Khan, M.R., Kihara, M. and Omoloso, A.D. Antimicrobial activity of *Psychotria microlabastra*. *Fitoterapia*. 72: (2001) 818-821
- Khan, M.R., Kihara, M. and Omoloso, A.D. Broad spectrum antibacterial activity of the leaves, stem and root barks of *Myristica subabulata*. *Natural Products Sciences*, 7: 9-12 (2001)



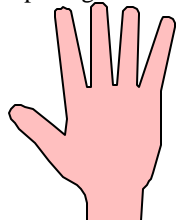
## We Want You!

To make this newsletter more useful, we want YOUR contribution! Please send changes or additions to the mailing list. Please send a paragraph to introduce yourself and tell us what your interests are. Please send a list of any publications you have about New Guinea. Please send a paragraph about any recent research or work you have done in New Guinea. Please send editorials, letters, announcements, etc. In other words, send anything of interest to your fellow researchers and conservationists -- share with us! We want this to be YOUR newsletter!-- Think of us as just the compilers! (Send all this good stuff to Debra Wright at the addresses/numbers listed on the first page of this newsletter)



## Our Current Mailing List

Included with this issue of the Digest, you will find updates for the 2002 Mailing Directory. We hope this will facilitate communication between all of us. Please help us by sending the names and addresses of anyone else who would like to get a copy of the Digest. Also, please check your address, phone, fax, and e-mail. If anything is wrong, please drop us a line so we can correct it. If you would rather not receive the newsletter, please let us know so we can save the paper and postage. If you have email or internet service, please let us know if you would like to get the newsletter via email, or if you would like to get an announcement via email when a new issue is posted on the web and you can look at it there. These options will save us paper and postage. Thanks!



**Goodbye until next time!**

**Lukim yu bihain!**

**Sampai jumpa lagi!**

## Changes and Additions to the 2002 Directory

### **Abare, Rupunae**

Community Resources Management  
Trainer, WWF SPP Pacific Ecoregions  
Centre, Private Mail Bag, Madang  
Madang Province  
Phone: (675) 852 3720  
Fax: (675) 852 3721  
Email: [rabare@wwfpacific.org.pg](mailto:rabare@wwfpacific.org.pg)

### **Anderson, Kylie L.**

Entomology, Australian Quarantine  
Inspection Service  
Northern Australia Quarantine Strategy  
PO Box 1054, Mareeba QLD 4880  
Phone: (61) 07 4048 4736  
Fax: (61) 07 4092 3593  
Email: [kylie.anderson@aqis.gov.au](mailto:kylie.anderson@aqis.gov.au)

### **Ansingsang (Taufa), Joice**

90 Bauman Way, Blackwater,  
Queensland 4717, Australia  
Email: [ansingsang@bigpond.com](mailto:ansingsang@bigpond.com)

### **Balke, Michael PhD**

The Natural History Museum  
Cromwell Road  
London SW7 5BD  
Email: [michael\\_balke@yahoo.de](mailto:michael_balke@yahoo.de)

### **Benet, Ariadna PhD**

Pacific Ecoregions Center (PERC)  
Private Mail Bag, Madang, PNG  
Phone: (675) 852 3720  
Fax: (675) 852 3721  
e-mail: [abenet@wwfpacific.org.pg](mailto:abenet@wwfpacific.org.pg)  
or [abenet@pngimr.org.pg](mailto:abenet@pngimr.org.pg)

### **Betz, Will MSc**

Email: [arfak@harboret.com](mailto:arfak@harboret.com)

### **Bonaccorso, Frank PhD**

Email: [bonafrank@gru.net](mailto:bonafrank@gru.net)

### **Bowe, Michele**

Email: [mbowe@wwfpacific.org.pg](mailto:mbowe@wwfpacific.org.pg)

### **Buston, Peter PhD**

National Center for Ecological Analysis  
and Synthesis, University of California  
735 State Street, Suite 300  
Santa Barbara, California 93101-5504  
Phone: (1) 805 892 2522  
E-mail: [buston@nceas.ucsb.edu](mailto:buston@nceas.ucsb.edu)

### **Capua, Carlo**

President, Niigata PNG Association  
6913 Chickering Rd.  
Fort Worth, TX 76116  
Email: [cacapua@hotmail.com](mailto:cacapua@hotmail.com)  
[www.tomorrowforest.com](http://www.tomorrowforest.com)

### **Chatterton, Paul**

Ecoregions Coordinator  
WWF SPP Pacific Ecoregions Centre  
Private Mail Bag, Madang  
Phone: (675) 852 3720  
Fax: (675) 852 3721  
Email: [pchat@wwfpacific.org.pg](mailto:pchat@wwfpacific.org.pg)

### **Clayton, Dale H. PhD**

Associate Professor, Dept. of Biology  
257 South 1400 East, Univ. of Utah  
Salt Lake City, Utah 84112-0840  
Phone: (1) 801-581-6482  
Fax: (1) 801-581-4668  
Email: [clayton@biology.utah.edu](mailto:clayton@biology.utah.edu)  
<http://darwin.biology.utah.edu>

### **Compton, James**

TRAFFIC Southeast Asia  
Unit 9-3A, 3<sup>rd</sup> Floor,  
Jalan SS23/11, 47400 Taman SEA,  
Petaling Jaya, Selangor, Malaysia  
Phone: 603-7880-3940  
Fax: 603-7882-0171  
Email: [tsea@po.jaring.my](mailto:tsea@po.jaring.my)

### **Dindi, Manah**

Niugini Kina Corporation, c/o Patrick  
Puri, P.O. Box 7711, Boroko, NCD  
Phone: (675) 323 0485  
Email: [ya\\_a\\_tex@yahoo.com](mailto:ya_a_tex@yahoo.com)

### **Evans, Barry**

46 Shaw St, Auchenflower  
QLD 4066, Australia  
Tel/Fax: +61 (0)7 3870 8854  
Mobile: +61 (0)4 0879 2262  
Email: [barryevans@bigpond.com](mailto:barryevans@bigpond.com)

### **Faidiban, Oktovianus Rudolf**

Papua University  
Jl. Gunung Salju, Amban, Manokwari  
98314 West Papua, Indonesia

### **Fairchild, Stephen**

Senior Producer, Television & Media  
Wildlife Conservation Society  
Old Lion House, 2300 Southern Blvd.  
Bronx, NY 10460, USA  
Phone: (1) 718-220-5189  
Email: [sfairchild@wcs.org](mailto:sfairchild@wcs.org)

### **Firestone, Karen PhD**

Research Scientist, Evolutionary  
Biology Unit, Australian Museum  
6 College Street  
Sydney, NSW 2010, Australia  
Phone: (61) 2 9320 6454  
Fax: (61) 2 9320 6059  
Email: [karenf@austmus.gov.au](mailto:karenf@austmus.gov.au)

### **Gagul, Janet**

Email: [jgagul@yahoo.com](mailto:jgagul@yahoo.com)

### **Gillison, David**

Email: [david.gillison@verizon.net](mailto:david.gillison@verizon.net)

### **Hadden, Don and Llana**

P. O. Box 6054, Christchurch 8030,  
New Zealand  
Mobile: (61) 04 3995 8220 (Australia)  
Email: [hadden@clear.net.nz](mailto:hadden@clear.net.nz)

### **Heydon, Steven L., Ph.D.**

Bohart Museum, Dept. of Entomology  
University of California  
One Shields Avenue  
Davis, CA 95616 USA  
Phone: (1) 530 752-0493  
Fax: (1) 530 752-9464  
Email: [slheydon@ucdavis.edu](mailto:slheydon@ucdavis.edu)

### **Hobart, Flint**

Papua Manager  
Conservation International  
1919 M Street, NW, Suite 600  
Washington, DC 20036 USA  
Phone: (1) 202 912-1224  
Fax: (1) 202 912-1046  
Email: [fhobart@conservation.org](mailto:fhobart@conservation.org)

### **Homberger, Dominique G. PhD**

Professor of Zoology  
Dept. of Biological Sciences  
202 Life Sciences Building  
Louisiana State University  
Baton Rouge, LA 70803-1715  
Phone: (1) 225 578-1747  
Fax: (1) 225 578-2597  
Email: [zodhomb@lsu.edu](mailto:zodhomb@lsu.edu)

### **Horak, Marianne PhD**

ANIC (Lepidoptera), CSIRO  
Entomology, GPO Box 1700  
Canberra, ACT 2601, Australia  
Phone: (61) 02-6246 4259  
Fax: (61) 02-6246 4264  
Email: [Marianne.Horak@csiro.au](mailto:Marianne.Horak@csiro.au)

### **Hunnam, Peter**

259 Lambert Road, Indooroopilly,  
Brisbane, Queensland 4068 Australia  
Phone: (61) 7 3371 6475  
Email: [hunnam@bigpond.com](mailto:hunnam@bigpond.com)

### **Ilagi, Puana**

Chief Veterinary Officer/Chief  
Quarantine Officer (animals), National  
Quarantine and Inspection Authority  
(NAQIA), PO Box 741, Port Moresby  
Phone: (675) 325 9977  
Fax: (675) 325 9310  
Email: [pngnaqs@dg.com.pg](mailto:pngnaqs@dg.com.pg)

### **James, Roger**

Conservation International  
180 Gladstone Rd, Mosgiel  
Otago 9007, New Zealand  
Email: [rjames@conservation.org](mailto:rjames@conservation.org)

**Kare, Barre D.**

Fisheries Manager (Lobsters & Prawns)  
National Fisheries Authority  
PO. Box 2016  
Port Moresby, NCD, PNG  
Phone: (675) 309 0444 or 0440  
Fax: (675) 320 2061  
Email: [bkare@fisheries.gov.pg](mailto:bkare@fisheries.gov.pg)

**Kawanamo, Miller**

Bank South Pacific, P O Box 1143  
Boroko NCD, PNG  
Email: [mkawanamo@bsp.com.pg](mailto:mkawanamo@bsp.com.pg)

**Kinch, Jeff**

Community Development and  
Artisanal Fisheries Specialist  
Conservation International  
PO Box 804, Alotau  
Milne Bay Province PNG 211  
Ph/Fx: (675) 641 0359  
Email: [jkinch@conservation.org](mailto:jkinch@conservation.org)

**King, Timothy**

Email: [tim@global.net.pg](mailto:tim@global.net.pg)

**Konia, Ruth**

Information and Communications  
Officer  
WWF SPP PNG Country Programme  
PO Box 8280, Boroko, NCD, PNG  
Phone: (675) 323 9855  
Fax: (675) 325 3224  
Email: [rkonia@wwfpacific.org.pg](mailto:rkonia@wwfpacific.org.pg)

**Kumar, Ray PhD**

Email: [ento\\_raykumar@yahoo.com](mailto:ento_raykumar@yahoo.com)

**Lekitoo, Marlyn**

Papua University  
Jl. Gunung Salju, Amban, Manokwari  
98314 West Papua, Indonesia

**Lindgren, Eric**

Email: [ericlindgr@msn.com](mailto:ericlindgr@msn.com)

**Lomáscolo, Silvia**

Department of Zoology  
University of Florida, P.O. Box 118525  
Gainesville, FL 32611-8525 USA  
Phone: (1) 352 373-8168  
Email: [slomascolo@zoo.ufl.edu](mailto:slomascolo@zoo.ufl.edu)

**Lopez Vaamonde, Carlos PhD**

Institute of Zoology  
Zoological Society of London  
Nuffield Building, Regent's Park  
London, NW1 4RY U.K.  
Phone: +44 (0)20 7449 6627  
Fax: +44 (0)20 7586 2870  
E-mail:  
[carlos.lopez.vaamonde@ioz.ac.uk](mailto:carlos.lopez.vaamonde@ioz.ac.uk)

**Lovave, Michael MSc**

Email: [mjlovave@yahoo.com](mailto:mjlovave@yahoo.com)

**Lumatauw, Sintje**

Papua University  
Jl. Gunung Salju, Amban, Manokwari  
98314 West Papua, Indonesia

**Mamu, Ted**

Email: [tdmm@chevrontexaco.com](mailto:tdmm@chevrontexaco.com)  
or [tmamu@wwfpacific.org.pg](mailto:tmamu@wwfpacific.org.pg)

**McCall, Daniel R.**

PNG Conservation Manager  
WWF SPP PNG Country Programme  
PO Box 8280, Boroko, NCD  
Phone: (675) 323 9855  
Fax: (675) 325 3224  
Email: [dmccall@wwfpacific.org.pg](mailto:dmccall@wwfpacific.org.pg)

**Miller, Scott E. PhD**

Acting Chair, Dept. of Systematic  
Biology, Smithsonian Institution  
PO Box 37012  
National Museum of Natural History  
W620, MRC 105  
Washington, DC 20013-7012  
Phone: (1) 202 357-1355  
Fax: (1) 202 786-3141  
Email: [miller.scott@nmnh.si.edu](mailto:miller.scott@nmnh.si.edu)

**Mitare, Angela**

Email: [a\\_mitare@yahoo.com.au](mailto:a_mitare@yahoo.com.au)

**Mogina, Jane PhD**

Biology Dept. UPNG  
University P.O. Box 320  
University NCD PNG  
Email: [moginaj@upng.ac.pg](mailto:moginaj@upng.ac.pg)

**Monare, Steven Tikemalo**

Bulolo Forestry College, PO Box 92  
Bulolo, Morobe Province PNG

**Mowbray, David Lindsay PhD**

Environmental Sciences, UPNG  
Email: [david.mowbray@upng.ac.pg](mailto:david.mowbray@upng.ac.pg)

**Naiman, Tom PhD**

WCS International Education  
Phone: (1) 718-220-6818  
Fax: (1) 718-733-4460  
Email: [tnaiman@wcs.org](mailto:tnaiman@wcs.org)

**Nasa, Absoloam**

UNITECH Forestry Graduate  
P.O. Box 1594, Goroka, EHP PNG

**Negehove, Raymond MSc**

Senior Environmental Rehabilitation  
Officer, Department of Environment  
Porgera Joint Venture - Gold Mine  
PO Box 484, Mt Hagen  
Western Highlands Province, PNG  
Phone: (675) 547 8905  
Fax: (675) 547 6611  
E-mail: [raynegehove@hotmail.com](mailto:raynegehove@hotmail.com)

**Nugroho, Bambang**

Papua University  
Jl. Gunung Salju, Amban, Manokwari  
98314 West Papua, Indonesia

**Ohee, Henni**

Mahasiswa Magister Biologi  
Konservasi, Universitas Indonesia  
Email: [fish\\_hen@yahoo.com](mailto:fish_hen@yahoo.com)

**Olson, David M. PhD**

Program Director, Wildlife  
Conservation Society- South Pacific  
Program, P.O. Box 3080, Lami, Fiji  
Phone: (679) 362 020  
Email: [dolson@wcs.org](mailto:dolson@wcs.org)

**Omoloso, Dele PhD**

PNG University of Technology  
Dept. of Applied Sciences  
Lae, Morobe Province, PNG  
Phone: (675) 473 4551 or 4558  
Fax: (675) 473 4558  
Email: [domoloso@hotmail.com](mailto:domoloso@hotmail.com)  
or [dpomoloso@appsi.unitech.ac.pg](mailto:dpomoloso@appsi.unitech.ac.pg)

**Opnai, L. Joel**

Fisheries Management Advisor (FMA)  
Forum Fisheries Agency  
PO Box 629, Honiara, Solomon Islands  
Phone: (677) 21-124  
Fax: (677) 23-995  
Email: [joel.opnai@ffa.int](mailto:joel.opnai@ffa.int)

**Ormsby, Alison**

9114 Coronado Terrace  
Fairfax, VA 22031 USA  
Email: [Alison.Ormsby@antiochne.edu](mailto:Alison.Ormsby@antiochne.edu)

**Paris, Robert**

Senior Environmental Scientist  
GPO Box 685, Brisbane QLD 4001  
Phone: +61 (0)7 3023 6000  
Fax: +61 (0)7 3023 6023  
E-mail: [rob.paris@arup.com.au](mailto:rob.paris@arup.com.au)

**Pattiselanno, Freddy**

SEARCA International Residence  
4031 Laguna College  
Los Banos, The Philippines  
Email: [fpattiselanno@yahoo.com](mailto:fpattiselanno@yahoo.com)

**Philip, Miriam**

Wetlands Management Officer  
South Pacific Regional Environment  
Program (SPREP), P O Box 240  
Apia, Samoa  
Phone: (685) 21 929  
Fax: (685) 20 231  
Email: [miriamp@sprep.org.ws](mailto:miriamp@sprep.org.ws)

**Possingham, Professor Hugh**

Director of The Ecology Centre,  
Department of Mathematics  
and School of Life Sciences,  
The University of Queensland  
St Lucia, QLD 4072 Australia  
Phone: (61) 7 3365 9766  
Email: [hpossingham@zen.uq.edu.au](mailto:hpossingham@zen.uq.edu.au)

**Prum, Richard O. PhD**

Associate Professor, Ecology and Evolutionary Biology, Curator, Ornithology, Dyche Hall  
University of Kansas,  
Lawrence, KS 66045  
Phone: (1) 785 864-3897  
Fax: (1) 785 864-5335  
Email: [prum@ku.edu](mailto:prum@ku.edu)

**Ragin, Alois**

Kikori ICAD  
P.O. Box 842 Port Moresby  
Email: [lsg@chevrontexaco.com](mailto:lsg@chevrontexaco.com)  
or [aragin@wwfpacific.org.pg](mailto:aragin@wwfpacific.org.pg)

**Randa, Sangle**

Papua University  
Jl. Gunung Salju, Amban, Manokwari  
98314 West Papua, Indonesia

**Reeder, Prof. John C.**

PNG Inst of Medical Research  
PO Box 60, Homate Street  
Goroka EHP 441 PNG  
Phone: (675) 732 2800  
Fax: (675) 732 1998  
Email: [general@pngimr.org.pg](mailto:general@pngimr.org.pg)

**Salas, Leo**

Jl. Pemuda, No. 92  
Tanjung Redeb, Berau  
Kalimantan Timur 77311, Indonesia  
Email: [lsalas@fondoperegrino.org](mailto:lsalas@fondoperegrino.org)

**Schneider, Michael PhD**

C. P. 2766, Maputo, Mozambique  
Home Phone: +258 (0)1 494 790  
Cellular: +258 (0)82 885 603  
Work Phone: +258 (0)1 496 238  
Fax: +258 (0)1 492 176  
Email: [michael@virconn.com](mailto:michael@virconn.com)

**Scholes, Edwin**

E151 Corson Hall, Cornell University  
Ithaca, NY 14853  
Phone: (1) 607-257-8135  
Email: [escholes@ku.edu](mailto:escholes@ku.edu)

**Seeto, Pamela**

Regional Advisor- Western Pacific  
Program, The David and Lucile Packard  
Foundation, PO Box 5911  
Boroko, NCD PNG  
Phone: (675) 325 6586  
Fax: (675) 323 9618  
Email: [pseeto@packard.org](mailto:pseeto@packard.org)

**Soderstrom, Bob and Kerry Hellmuth**

62 Pima Court, Boulder, CO 80303  
Email: [bob@bobandkk.com](mailto:bob@bobandkk.com)

**Stephens, Suzette**

Conservation Scientist  
The Nature Conservancy  
Jl. Pemuda, No. 92  
Tanjung Redeb, Berau  
Kalimantan Timur 77311, Indonesia  
Email: [sstephens@samarinda.org](mailto:sstephens@samarinda.org)

**Stevenson, Todd C.**

Melanesia Coordinator  
Conservation International  
1919 M Street, NW, Suite 600  
Phone: (1) 202 912-1561  
Fax: (1) 202 912-1046  
Email: [t.stevenson@conservation.org](mailto:t.stevenson@conservation.org)

**Sutherland, Silas**

5 Melia Pl, Bellingen, NSW, 2454  
Australia  
Email: [sirsilas@bigpond.com](mailto:sirsilas@bigpond.com)

**Tan, Bian**

Email: [Bian\\_Tan@bgci.org.uk](mailto:Bian_Tan@bgci.org.uk)

**Tapilatu, Ricardo F.**

Marine and Fisheries Dept.  
The State University of Papua  
PO Box 023, Manokwari 98314  
Papua, Indonesia  
Phone: (62) 986 - 211675  
Fax: (62)986 - 211675, 211455, 214510  
Mobile: (62) 81 7981 2554  
Email: [rftapilatu@yahoo.com](mailto:rftapilatu@yahoo.com)

**Taylor, Meg**

Compliance Advisor/Ombudsman  
International Finance Corporation  
2121 Pennsylvania Ave  
Washington DC 20433 USA  
Email: [mtaylor@ifc.org](mailto:mtaylor@ifc.org)

**Thomas, William H. PhD**

Director  
The New Jersey School of Conservation  
Montclair State University  
1 Wapalanne Road  
Branchville NJ 07826 USA  
Phone: (1) 800-624-7780  
Fax: (1) 973-948-5131  
Email: [thomasw@mail.montclair.edu](mailto:thomasw@mail.montclair.edu)

**Uy, Albert PhD**

1600 Holloway Avenue  
Department of Biology  
San Francisco State University,  
San Francisco, CA 94132-4163, U.S.A.  
Phone: (1) 415 338-6381  
Email: [uy@sfsu.edu](mailto:uy@sfsu.edu)

**van Mastrigt, Henk**

Biara S. Fransiskus,  
A.P.O. - JAYAPURA  
Kotakpos 1078  
Jayapura 99010 Indonesia  
Phone: (62) 967 - 533139  
Email:  
[henkvm@jayapura.wasantara.net.id](mailto:henkvm@jayapura.wasantara.net.id)  
has butterfly and moth collection (over  
36,000 specimens)

**Vatnabar, Pelis**

PNG Forest Research Institute  
P.O. Box 314, Lae, PNG  
E-mail: [ptvatnabar@hotmail.com](mailto:ptvatnabar@hotmail.com)

**Wallach, Van PhD**

Museum of Comparative Zoology  
Harvard University, 26 Oxford St.  
Cambridge, MA 02138, USA  
Home Phone: (1) 617-868-0436  
Work Phone: (1) 617-495-2472  
Fax: (1) 617-495-5667  
Email: [vwallach@oeb.harvard.edu](mailto:vwallach@oeb.harvard.edu)

**Watson, Janine**

5 Melia Pl  
Bellingen, NSW, 2454, Australia  
Email: [kulele@bigpond.com](mailto:kulele@bigpond.com)

**Weiblen, George PhD**

University of Minnesota  
Email: [gweiblen@umn.edu](mailto:gweiblen@umn.edu)

**Wilson, David**

Center for Resource and Environmental  
Studies, Australian National University  
Canberra, ACT 0200 Australia  
Phone: (61) 2 612 58136  
Fax: (61) 2 612 50757  
Email: [davidw@cres20.anu.edu.au](mailto:davidw@cres20.anu.edu.au)

**Yeates, David**

CSIRO Entomology  
P.O. Box 1600  
Canberra ACT 2601 Australia

