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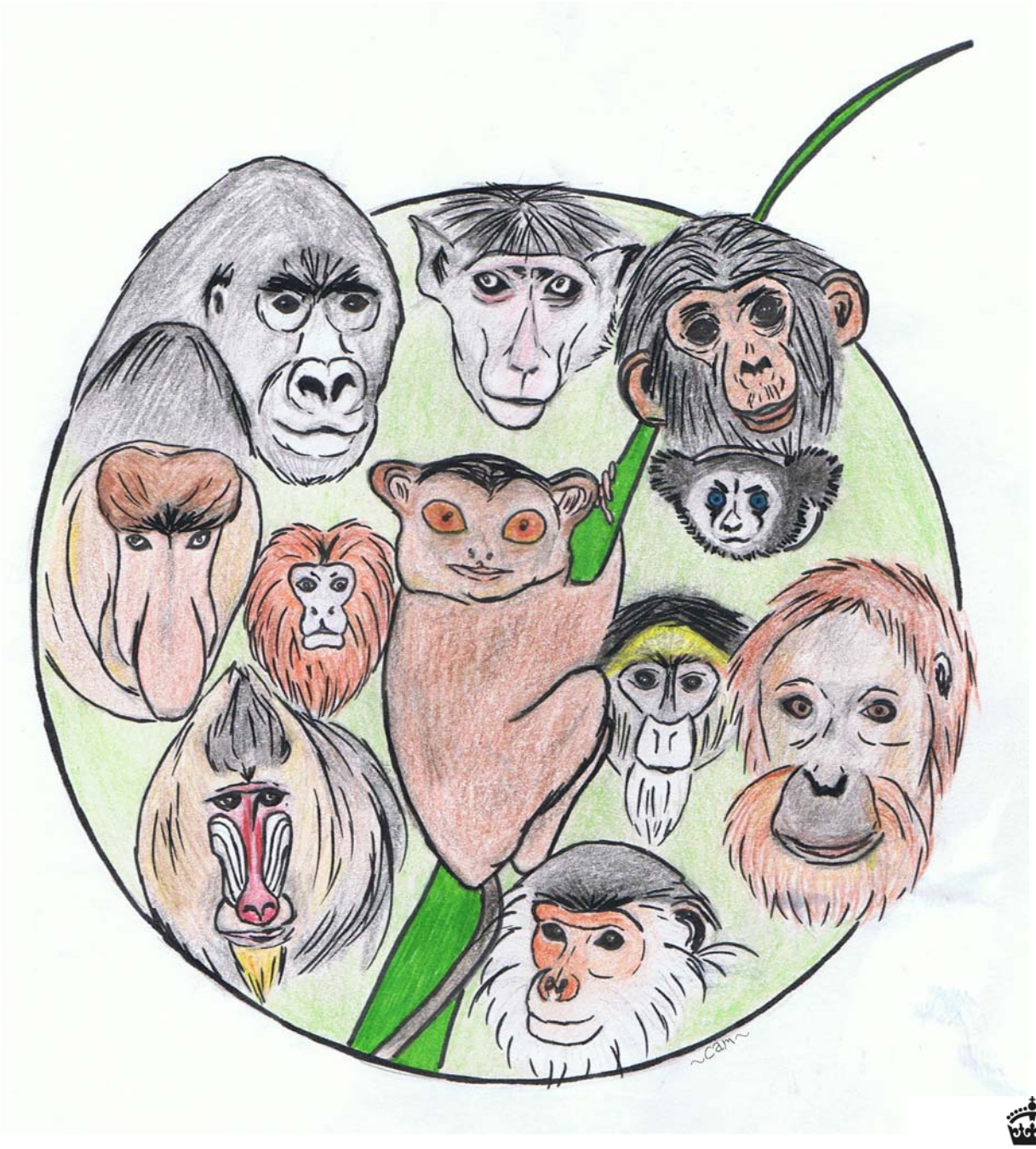


Journal of the MSc in Primate Conservation

THE QUEEN'S ANNIVERSARY PRIZES
FOR HIGHER AND FURTHER EDUCATION
2008

Canopy
Journal of the Primate Conservation
MSc Programme
Oxford Brookes University

Address
Canopy c/o Simon Bearder
Anthropology Department
School of Social Sciences and Law
Oxford Brookes University
OX3 0BP
UK

Web
MSc Primate Conservation
http://ssl.brookes.ac.uk/primates/home.htm

Front Cover Illustration
Camille Coudrat

Photos for the Apenheul Photospread were provided by:
Simon Bearder
Liv Caillabet
Diana Marsilio
Heather Maxwell

Contents

Letter from the Editors

Welcome again to the continued tradition of the Canopy journal, celebrating the successes of the winter semester, cohort 2008-2009. We would like to invite all our readers to enjoy sharing in the experiences of the staff and students of the MSc in Primate Conservation at Oxford Brookes University.

This edition focuses on wildlife trade mainly in primates, it includes for the first time, pictures of annual trip to the Apenheul Primate Park, Holland, along with articles submitted by past and present students. This year saw the successful completion of the First-Aid training course which proved an asset to a few since.

Over this semester we have had a very informative Monday seminar series delivered by amazing speakers, some of who had to endure extensive travelling to be here with us. We would like to offer our thanks to the speakers for their generosity and for giving us the opportunity to share in their work and life experiences.

The winter meeting of the PSGB will be held on December 3rd. We would like to extend well wishes to all participants and to congratulate all those who were able to submit an abstract of their previous and continuing research.

We hope you find our articles informative and you enjoy the artwork and photographs presented by our very gifted contributors.
It is with great enthusiasm that we have joined to bring you this issue of Canopy, thanks are extended especially to Dr. Corri Waitt. Without her guidance we would not have been able to bring Canopy to life.

Best Wishes,
The Editors.

Jermaine Clark (Guyana)
Camille Coudrat (Guadeloupe)
Iris Dröscher (Austria)
Fiona Rowe (Canada)
Carrie Stengel (USA)
Clare Vaughn (USA)

Spider monkey by Camille Coudrat

Letter from the Course Team

Twice each year a committee of students on the MSc in Primate Conservation edits an issue of *Canopy* to bring our work to a wider audience. Congratulations to the committee for this issue – we hope you enjoy the results of their work. I would like to draw your attention to three aspects of the MSc on behalf of the course team. First, the imminent launch of our new web site. Second, to extend an invitation to our Tenth Anniversary Conference in the Spring of 2010. And third, to welcome our newly appointed Honorary Research Associates.

Re-structured Primate Conservation web site

Oxford Brookes is due to launch a new edition of its MSc web pages in December 2008. This has been made possible by the remarkable dedication of Maria Hernandez White in our IT department who has changed our previous web site by incorporating subtle and innovative features that will make it more accessible and useful. It is designed to provide helpful information to anyone thinking of joining the course (course syllabus and module descriptions, facilities in Oxford, staff and student profiles, examples of past research projects etc). It also has an extensive library of original photographs of primates and related topics (habitats, fieldwork and course activities). Please help us to spread the word about this resource and we welcome contributions for our primate photographic library to turn it into the best such source on the web.

Tenth Anniversary Conference – Spring 2010

The MSc anniversary is fast approaching and we intend to celebrate by organizing a two day conference at Oxford Brookes to which you are all invited. The meeting will be based around the subjects of our taught courses: Primate diversity and biogeography; human-wildlife conflict issues; conservation research methods; population genetics; captive management and rehabilitation; and environmental education. We will invite papers and posters, and hope to produce edited proceedings that will provide a useful text for conservation courses in the future. For further details please check the web site or email the address given below.

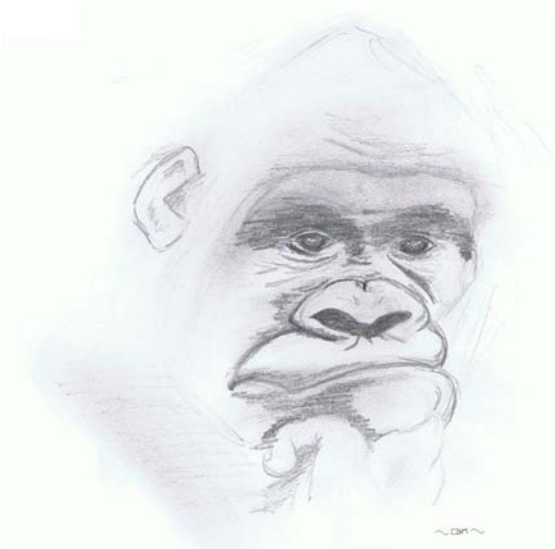
Honorary Research Associates

It gives us great pleasure to welcome Alison Jolly, John Oates, Debbie Curtis, John Fellowes, Sian Waters and Andrew Perkin to Oxford Brookes in an honorary capacity. They have made special contributions to the MSc teaching over the years and have been pivotal in helping us to maintain our research output. We are delighted to recognize their continuing support.

Do not hesitate to contact me if you need further information:
skbearder@brookes.ac.uk
Admissions: igeens”brookes.ac.uk
Prof Simon Bearder, Chair, Course Planning Committee

The 'Green Gold': Local Perspectives of Tourism around Bwindi Impenetrable National Park

by Alex Tumukunde



Gorilla by Camille Coudrat

The name of Bwindi Park comes from the word Mubwindi which means dark, impenetrable, fierce, muddy and isolated in the local language (Namara et al., 2000). Locally, Bwindi Impenetrable National Park (BINP) was extensively relied on for its resource products, and services. For the Batwa ethinic group, Bwindi forest was their home. Logging, mining, hunting, cultivation, beekeeping, and the collection of medicinal herbs and wild foods have been the main traditional activities in the forest (McNeilage & Robbins, 2006; Namara et al, 2000). This makes BINP important to the local community history, as it features in local stories, myth and legends (Namara et al., 2000). However, most of these traditional activities were terminated when it was turned into a national park, with exception of some medicinal plant extractions and bee keeping in a few areas (Bitariho et al., 2006). This raised tension between the local communities and park authorities, the former threatening by burning the forest and killing gorillas (Ndyakira, 1995; Hamilton et al., 2000; Blomley, 2001). Gorilla tourism however was started as a way of generating funds for its conservation while at the same time involving the local communities in management of the forest (McNeilage & Robbins, 2006).

The present study found that the local communities felt the government had sold the forest. Local people also wondered why tourists could travel across the seas to see gorillas in the forest, and viewed this suspiciously. Those individuals who were involved in mining and logging considered the government to have had struck a deal with the tourists to start mining gold in the forest. The local communities believe there is a lot of gold that they failed to mine within the forest, which is associated with spiritual powers. The tourists, who were in reality visiting gorillas, were thought to be surreptitiously surveying potential gold mining sites. They suggested that tourists could use technology to "overpower the jungle spirits" in order to mine the gold. However, over the past few years' this viewpoint has been changing.

It took a lot of effort for the park authorities to convince local communities that what they were doing could be beneficial. Interviews conducted in June-July 2008 with BINP local communities, indicate people's attitudes and suspicion has changed. Communities have started realising that what the park did was positive since benefits accruing from tourism have been visible. They referred to how during the time when mining and logging was prevalent, how locals never saw any beneficial developments taking place (e.g., schools and health center). It was stated that during that period, it was only a few individuals engaging in logging and mining who benefited, but not the whole community

They revealed that gold mines may have been exhausted, but the forest and its

animals are not. They instead referred to the gorillas as the "green gold" where one can pay a lot of money without taking it away. However, caution must be taken, like scrambling of access to the real gold; scrambles for the "green gold" in the form of quests for the habituation of more gorillas continues, potentially posing future risks.

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Esoteric Primates of Nigeria: Some Information on Abundance Estimates, Habitat Use, and a Comparison of Methods

by Leah Schein
L_Schein@yahoo.com

Photograph by Leah Schein

Bushbaby eye-shine

When I began to consider researching nocturnal primates, I thought I understood just how misunderstood they are. Sure, nocturnal primates need more research focused on them because they habitually get overlooked. The quiet kids in their class, their importance is disregarded until one day when they speak up with some profound truth that no one else had ever pondered. Their contribution may not be flashy, but they play a vital role in the development of their surroundings. The cryptic species that make up the subfamilies of Galaginae and Perodicticinae are restricted to mainland Africa. My project focused in the Southeast region of Nigeria, and was conducted in the secondary forest of Rhoko. This forest is managed by an NGO, CERCOPAN, and is jointly protected by CERCOPAN and the village of Iko Esai. Through a community-based conservation program, CERCOPAN has provided the village of Iko Esai with employment opportunities, training in alternative livelihoods, and community development projects and in return the village donated the land for the purpose of conserving the species within. Although founded to protect the resident mangabeys and mona monkeys that have been confiscated from the illegal pet trade in Nigeria, the forest serves as a safe haven for a number of wild primates.

Photograph by Simon Bearder

Angwantibo

Of the six nocturnal species I identified within the 400 ha core forest area, three are virtually unknown to us (*Arctocebus calabarensis*, *Perodicticus potto edwardsi*, and *Euoticus pallidus*). The remaining three (*Galagoides demidovii, G. thomasi*, and *Sciurocheirus alleni camerounensis*) fare slightly better, but are still desperately lacking the data needed to develop effective conservation action plans. These cute and quiet species are often misidentified by locals as not belonging to the Primate order, and thus the enforced primate hunting ban does not always protect them. The four bushbaby species, while still troubled greatly by deforestation and the encroachment of ever increasing human populations, manage to largely avoid hunting pressures. The potto and angwantibo, however, are not as lucky. Being slightly larger in size and utilising a slow quadrupedal locomotion make these primates a quick and easy snack for hunters in the forest.

Photo by Simon Bearder

Allen's bushbaby

Threat levels are constantly increasing and it is important that we, as researchers, do our part to help mitigate the damage. Currently listed as Least Concern by the IUCN Redlist, the Calabar angwantibo (*A. calabarensis*) has no prior field data to provide information on distribution or abundance. This is the first study to quantify abundance estimates for both the Calabar angwantibo and the Northern needle-clawed bushbaby (*E. pallidus*). Findings show that all six species have relatively low densities even within the protected forest habitats. In order to improve future research, I also conducted a comparison of data collection techniques. Contrasting line transects with point surveys, it appears the former is more effective for sighting galagines while the latter is more effective with the perodicticines.

Photo by Simon Bearder

Northern needle-clawed bushbaby

Time may be running out for these and many other of the nocturnal strepsirrhines. The IUCN listings are doing irreparable harm by not highlighting the need for even the most basic data. While Vulnerable may be a more appropriate listing for the angwantibo, current listings do not allow conservationists to showcase this species due to a lack of funding and international interest as a result of the improper classification of Least Concern. Not Evaluated should be considered as being just as critically in need of data collection as the more highly regarded Vulnerable. While at least this listing does not give false hope as Least Concern may do, it does not meet the tough criteria of many funding institutions. I hope that the results of this project help to shed light on these mysterious species and help to motivate future researchers to take the plunge into the wonderful world of the Nigerian night. We cannot afford to wait until they speak up, and they cannot afford to wait until the world is ready to listen.

Exploring the Role of Anthropogenic Pressures and Human Perspectives in the Conservation of a Population of the Grey-Shanked Douc Langur

by Lauren Wright
lauren_wright21@yahoo.com

In 2005, a large population of the Critically Endangered grey-shanked douc langur (*Pygathrix cinerea*) was discovered by a WWF-Indochina team in Quang Nam province, central Vietnam. The uniqueness of this discovery can be understood by the relatively high population count and high population density within a continuous evergreen forest. After three annual short-term surveys from 2005-2007 by WWF-Indochina and Conservation International biologists, it was approximated that the population totalled 180 individuals, within a range estimated to be 10km^2 (B. Rawson & B. Long, unpubl. data). A population of this size would represent one of the largest known grey-shanked douc langur populations on a national and global scale. The findings stimulated immediate curiosity as to why this population of grey-shanked douc langurs existed in such large numbers and high densities, within a small range, when compared to other known populations of grey-shanked douc langurs.

Photo by Lauren Wright

My research project aimed to ascertain the many interplaying factors involved in the conservation of this population. A case study approach was taken in order to comprehend these factors within a historical framework. Anthropogenic pressures and threats, particularly hunting and selective logging, were assessed through comprehensive interviews in the villages adjacent to the forested area in which the douc langur population occurs. Exploration of local values, perceptions and beliefs with regards to the natural environment and its protection, were undertaken with sensitivity to the how the human perspective is meaningful in understanding conservation issues.

Douc langur by Camille Coudrat

The population was found to be quite distinctive in that the anthropogenic threats it had confronted in the past, had been dramatically reduced in recent years. Although threats to the population still exist at the site, several factors have contributed to the relative protection of the population, including: decreased accessibility to forested areas in which the douc langurs occur; local taboos towards the eating primates; inefficient non-selective hunting methods; and increased perceived protection of the forest. Further survey research in the study area is required to ascertain the exact area of occurrence and density of the population. Hopefully, research findings obtained in this study will contribute to implementing the most effective and appropriate conservation initiatives for this extraordinary grey-shanked douc langur population.

Environmental Education Evaluation in Bangladesh

by Corrin La Combe
Corriny@hotmail.com

A large majority of the ecological and conservation crises that we face today are the result of anthropogenic factors. Assuming that knowledge, awareness and skill can alter human behaviour, the role of environmental education (EE) in conservation is substantial. EE has been described as a continual process through which individuals acquire the information, motivation and abilities needed to make informed decisions about and take appropriate actions towards current and future environmental problems. Informing people about the environment, evoking empathy towards environmental issues and provoking environmentally 'friendly' actions, however are not easy tasks.

Photo by Corrin La Combe

Developmental agendas, cultural allegiances, socio-economics, and cognitive levels of EE target audiences dictate the way EE programmes must be conceptualized, developed and implemented. Considering the complexity of these forces, shortcomings and inadequacies are not uncommon in the field of EE. Consequently, contemporary researchers interested in EE are urged to evaluate, modify, and refine existing EE programmes rather than expending energy on developing new ones. It is hoped that evaluation and refinement will not only strengthen individual programmes, but will also shed light on the intricacies of the practice.

To this end, during the summer of 2008, an EE programme relating to the

Photo by Corrin La Combe

plight of hoolock gibbons, deforestation and other environmental vulnerabilities of Bangladesh was evaluated in terms of its ability to promote pro-conservation knowledge, attitude, and behaviour. Data on participants' opinions and activity preferences were also collected and compared via gender and demographic location to further identify which activities work best for which respective target audience.

Evaluation revealed that Bangladeshi children generally have a positive attitude towards EE. Moreover results indicate that the programme was successful in meeting its objective of increasing pro-conservation knowledge and attitude in two of the three study sites assessed. Rural group results were not as promising as those received from the suburban and urban groups, but this seemed to be a more a consequence of differences in education quality between sites and/or methodology incompatibility rather than a result of some programme shortcoming. The largest increases in pro-conservation responses were achieved in urban sites, which indicate that EE may have the greatest impact potential in urban areas of Bangladesh.

Using data collected, it was recommended that programme facilitators increase the amount of information and/or

number of activities in the programme that relate to hoolock gibbon ecology and proper behaviour in zoos and national parks, as this was identified as one established objective of the programme that was not being achieved to maximum potential.

Preference and opinion responses coming from the urban, suburban and rural sites did not differ that dramatically, nor

Photo by Corrin La Combe

did preferences and opinions between males and females. Students overwhelmingly indicated that they believed they learned the most from the story-book activity that is included in the programme. This book was carefully designed by the Principal Investigator to include scenarios and characters that would stimulate ownership and empowerment feelings in readers. Initial feedback indicates that this book is and will be quite a successful conservation tool. Additional research should be conducted on the impact potential of story books in EE programmes.

In addition to this, it is strongly encouraged that more people conduct projects in EE research and evaluation. The breadth of knowledge that was exchanged between the Principal Investigator and the in-country developers of the EE programme was enormous and invaluable. The sense of team work and coupling of strengths that comes together when researchers partner with local grassroots organizations to conduct EE is second to none. Try it and see!

Photo by Corrin La Combe

Tarsier by Camille Coudrat

Trade in *Nycticebus* Past and Present: An Assessment of Southeast Asian Markets and Internet Websites

by Angelina Navarro-Montes

The ecology and morphology of *Nycticebus* spp. (slow lorises) leaves them vulnerable to deforestation and hunting. Although legally protected, past studies have shown this genus to be in high demand within Southeast Asia for pets, meat and traditional medicine. Previous research has highlighted the trade of the slow loris, however, huge gaps remain in such data as the trade is rarely documented to species level. The taxonomy of the slow loris is under constant revision, with five species currently recognised. Recently, the IUCN Red List has classified all *Nycticebus* spp. as Endangered or Vulnerable and CITES have moved the slow loris to Appendix I. Research compiled for the 14th Conference of the Parties Proposal of CITES was expanded upon highlighting the lack of population data available and that most sightings of the slow loris are from trade surveys.

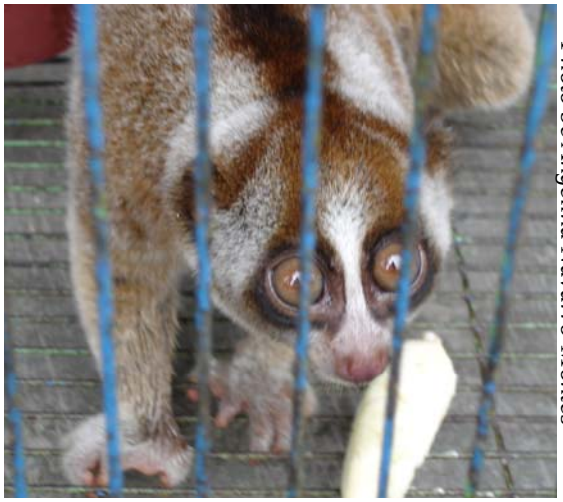

Photo be Angelina Navarro-Montes

In most SE Asian countries, *Nycticebus* species are in high demand for traditional medicines (see picture) and as pets (Martin, 1992; Theile, 1998; Malone *et al*, 2002). All parts of the slow loris (including hair, brain, urine and skin) are believed to be useful for various aliments: the hair is believed to accelerate healing of wounds; bones are believed to be luck-bringing accessories; extracts from the eyes is turned into 'love potion'; and the flesh is thought to cure leprosy, asthma and stomach ailments (Mittermeier, 1987; Nekaris & Schulze, 2004; Shepherd *et al*, 2004; Walston, 2005). Slow lorises are available in the markets and pet shops and are available on the Internet. The JWCS (Japanese Wildlife Conservtaion Society) investigation into slow loris availability within Japanese pet shops found that most of the animals were advertised as captive-bred, quite contrary to Internet retailers who show that their animals originated from Indonesia and China.

Data were collected via primary and secondary research. Primary data consisted of observations in Indonesian markets during 2007, assessments of public perceptions of internet media sharing websites, and a survey of retail websites selling lorises. Secondary research included previous studies from Southeast Asia from the past 15 years.

Twenty-four previous surveys (1990 – 2006) observing wildlife trade (including *Nycticebus* spp.) within Cambodia, Malaysia, Myanmar, Thailand and Vietnam were reviewed. Data for quantities observed showed a total of 686 slow loris individuals to be available over a 13 year period (no data are available for 1991, 1992, 1995 or 1998), providing an average of 52 animals per survey.

Twenty-six previous surveys (1996 – 2006) observing wildlife trade (including *Nycticebus* spp.) within Indonesia were compared to data collected during a market survey in 2007. Of the surveys analysed (including primary data); 15 collected data on quantities and 12 collected data on both quantities available and price. Data for quantities observed showed a total of 2290 slow loris individuals to be available over an 11 year period, providing an average of 88 per survey.

A total of 91 videos of *Nycticebus* spe-

cies were found on media sharing websites YouTube and FlipClip. Of these, 75 were of an illegal nature, showing pet slow lorises. Public perceptions for videos on FlipClip and chat rooms were not possible to analyse due to translation inadequacies. YouTube showed 44 videos of slow lorises of which over 60 per cent were of a pet slow loris. A total of 601 comments were noted over the 44 videos, showing a high frequency of negative responses. Of the retail sites observed, the three main suppliers of *Nycticebus* species were based in Japan. Although researchers found that most slow lorises were labelled as 'sold out', a small data set was achieved. By combining these data with previous studies by JWC (2007), analyses could be made showing retail websites offered all five species of slow loris with the average number of 4 animals available per retail website.

Usually the most abundant primate in market surveys across SE Asia, the genus *Nycticebus* has been seriously impacted by human activities. *N. javanicus* and *N. pygmaeus* are already showing dramatic reduction of numbers in market surveys, indicators that slow loris populations are not withstanding such large scale take-offs (Streicher, 2004; Nekaris 2008, *pers comm*). Although snap-shot surveys are important in providing an idea of wildlife trade, it is impossible to estimate accurately any idea of actual turnover of species within trade without conducting regular year round surveys that cover every seasona and area. Relationships should be established with vendors to gain inside information about off-takes and turnover.

As a wide variety of protected wildlife is traded and promoted as pets on the internet, and information for users is lacking. There is a universal deficiency of knowledge relating to the scale and impact of Internet trade on protected primates such as *Nycticebus*. International and domestic regulations need to adapt quickly to incorporate internet trade if it is to remain effective in protecting endangered species from overexploitation (IFAW, 2005). Immediate action is also required from local and international governments, NGOs, enforcement agencies, internet service providers, site owners and internet users to stop illegal trade of wildlife through technology. Irrespective of the amount of data collected through trade surveys, there still remains a fundamental gap in population data for slow loris species (Nekaris & Nijman, 2007). For example, during the past decade, *Nycticebus pygmaeus* has been mostly identified from animals in trade rather than in habitat (Streicher, 2004). Once considered to be a common mammal of SE Asia, slow lorises are facing a catastrophic population decline, caused by over exploitation and habitat loss, thus making the future of this genus bleak. Such a large volume of trade has led to the conclusion that *Nycticebus* species cannot endure current levels of trade (Nekaris & Nijman, 2007).

If populations, and ultimately trade in *Nycticebus* species does decline, then Southeast Asia could see an increase in harvest and trade of other primate species as demand remains. With the development in economy and increase in disposable incomes, consumptive utilisation of wildlife will become more prevalent with ever increasing human populations. Upholding regulations with strict penalties, along with education, remains paramount.

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Photo by Amal Jospeh

Photograph taken at our trip to the Cotswolds in September

Articles

Bushmeat Hunting on Bioko Island with Specific Attention to Pennant's Red Colobus (*Procolobus pennantii*) and the Drill (*Mandrillus leucophaeus poensis*)

by Camille Coudrat and Carrie Stengel
08079702@brookes.ac.uk
carriestengel@gmail.com

Bioko is a small land-bridge island located 32 km off the coast of Cameroon and measures approximately 69 by 32 km in size with a land mass of 2,017 km squared (Fa *et al.*, 2000). Although small, Bioko Island is a hotbed of fauna diversity. There are 11 resident primate species, nine of which are subspecies found only on Bioko. Within the last 25 years, these primates have fallen under increasing hunting pressures and their long-term survival is now questionable.

The main threat that has been responsible for the decline of all primate species on Bioko Island is bushmeat hunting and trade (BBPP, 2006). Bushmeat has long been a part of rural African diets. With increasing urbanization, it has become a major source of both income and protein for city people, leading to the dramatic rise of the commercial bushmeat trade (Albrechtsen *et al.*, 2007; Fa *et al.*, 2000).

Pennant's red colobus was named one of the world's top 25 most endangered primate species by IUCN in 2006. It is extremely vulnerable to hunting, likely because it moves in large noisy groups. Although there are no reliable estimates of the current total population, the species is thought to be restricted to the south western corner of the island (Struhsaker, 2005). Bushmeat market surveys indicate that Pennant's red colobus is becoming scarcer as there has been a steep decline in the amount and body size of carcasses available for sale.

The drill is currently listed as Endangered on the IUCN Red List. They are highly sought after by hunters and can be relatively easy to hunt using shotguns as they are a large bodied terrestrial species (Butynski & Koster, 1994; Fleagle, 1999). It was estimated in 2000 that about 500 drills were still in the Pico Brasile area and 2000-3000 were in the southern highlands (Fa, 2000). Eight years later, it is possible to theorize those numbers are now significantly lower. Due to a high rate of harvest, the Bioko drill could easily be depleted within the next decade.

Only a small proportion of the population can afford the average bushmeat prices (Fa *et al.*, 2002). Primates such as the drill and Pennant's red colobus are consumed by wealthier households on Bioko Island as only the wealthy have adequate buying power (Albrechtsen *et al.*, 2006). As primates become scarcer, prices will increase which may encourage hunters to pursue these species even more, driving them further towards extinction. The implications of bushmeat as an increasingly rare commodity available only to those who can afford it needs to be understood in terms of Equatorial Guinea's current economic growth.

Within the last decade, the economy of Equatorial Guinea has skyrocketed. The discovery of oil in the mid 1990s resulted in a massive boom in the economy and population. Despite such gains in the economy, benefits have not trickled down to the rural masses. The misallocation of wealth from oil has effectively made the poor poorer and the rich richer. Class polarization will encourage a greater strain on natural resources. This coupled with population growth and a decline in bushmeat supply will push the monkeys of Bioko Island to the edge of extinction.


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It is inevitable the human population of Bioko Island will increase and have an impact on natural resources. Successful solutions will involve multidisciplinary approaches and a full integration of conservation and development efforts (Gulland *et al.*, 2003). The critical situation of Pennant's red colobus and the drill illustrate the urgent need for swift action and the necessity to look at all factors that contribute to wildlife loss from the role played by the individual hunter to those played by the government and economy.

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Ring-tailed lemur by Camille Coudrat

The Santa Martha Animal Rescue Centre: A Hope for Animal Conservation and Welfare in Ecuador

by Camille Coudrat
08079702@brookes.ac.uk

Photo by Camille Coudrat

From August to October 2007, I worked as a volunteer at Santa Martha, an animal rescue centre located in Ecuador near the village of Tambillo, an hour south of Quito, the capital. The centre is located in an area of the Andes called "The Avenue of Volcanoes", making its surroundings unique and unforgettable.

Santa Martha Rescue Centre is a non-governmental organisation that was founded in 2001 by the owners of the property. It rescues wild animals that have been victims of animal trafficking. The staffs work closely with the Environmental Ministry of Ecuador and local police who bring newly confiscated animals on a weekly basis. Most of the wild animals have been kept illegally in houses, hostels or are confiscated from markets. Thus, a wide variety of species are represented at the rescue centre, including: monkeys (capuchins, howlers, woolly monkeys, tamarins, marmosets, squirrels monkeys), other mammal species (pumas, ocelots, lions, jaguars, spectacled bears, kinkajous, tayras), various species of birds (parrots, eagles, toucans), as well as reptiles (Galapagos tortoises, aquatic turtles, iguanas).

Photo by Camille Coudrat

The centre depends totally on the work and donations from volunteers. As a volunteer there, I prepared the food and fed all the animals every morning, and cleaned cages every evening. During the day, we were involved in various projects, mainly the construction of new cages. The constant challenge was to improve the captive management of all the animals and to help return to the wild those that are fit to be released. Indeed, the centre has as its main objective the release of native animals in their natural habitats. This is not simple and it requires time and multiple permissions from the government. Hence, this is an investment for the long term.

This experience gave me a realisation of the issues involved in wild animal pet trade, as well as an idea of captive management before the reintroduction of wild animals in their natural habitat.

Rescue centres worldwide are extremely important not only for primates but for a variety of animals. The purposes of rescue centres vary from the improvement of well-being of animals victims of the pet trade, the release back into the wild, and the education of people about wildlife conservation. It can make a difference, even if it is a small one.

http://www.santamartharescue.org/

Ten Questions on the Topic of the Primate Pet Trade

by Carrie Stengel & Jermaine Clark with additional input from Liv Caillabet
carriestengel@gmail.com
jermaine.clark@brookes.ac.uk

Current MSc students Carrie Stengel and Jermaine Clark sat down with Dr. Vincent Nijman and fellow student Matthew Todd to discuss their opinions on the primate pet trade. Dr. Nijman has conducted extensive research in Indonesia and has worked throughout Southeast Asia with TRAFFIC. Matthew is the owner of a reptile shop in Manchester and comes into contact with wildlife trade both here in the UK and abroad in Thailand where he lives part time. Having different backgrounds and experiences, they both offer unique insights into the primate pet trade.

Question: Can you describe your experience with the primate pet trade and where?
Vincent: My research has taken me mainly to western Indonesia where I've observed the presence of primates both as pets and on animal markets. Some common species I regularly observed include long-tailed and pig-tailed macaques, silvered and ebony langurs and several species of slow lorises.
Matthew: It's been mainly in the UK, Thailand, Cambodia, and Japan. In Japan my experience was linked to Southeast Asia with slow loris trade mainly. I encountered it as a resident in Japan, Cambodia, Thailand. Gotten a little bit into Lao from the periphery of reptile trade within the UK because I own a reptile store.

Question: Have you observed any significant trends in terms of species or reason a primate is purchased?
Vincent: In Sumatra it is evident that primates are utilised both as pets, and, some species and less frequently as food, with rare occasions where they are used in other ways.
Matthew: Within the UK it's an "I want something different" status sort of a thing. Usually common marmosets. With travellers or gypsies here it goes hand in hand with owning parrots, it's just something they do. Within Southeast Asia, seems there are a lot more women buyers than in Europe. It's a companion thing, people even joke about it like- "the family is gone, nest is empty, must be time to get a monkey" like we would here about getting a dog. It's a minor part of it but an interesting one. They often start out with more common species and progress to getting rarer ones.

Question: Is the primate pet trade as rampant as it is perceived to be by some conservationists?
Vincent: In my opinion it is quite severe: in Indonesia every animal market has primates for sale. The sale is widespread and very often those selling them also have some as pets. People keep protected species such as gibbons simply because law enforcement with respect to wildlife protection is lacking. The sale of most of the primates is done openly, except for orang-utans and the a lesser degree gibbons.
Matthew: Probably more so in Asia, but a lot less so than in the UK. Often times you will see a lot of adverts for primates in the UK but often they are a trick to get people to put down deposit money. They haven't actually got the primates.

Question: What would be the best short-term method to have an impact on decreasing trade?
Vincent: In Indonesia the rules and regulations are for protecting species and regulating wildlife trade are excellent, however, enforcement is lacking. Actual punishment of the perpetrators for breaking the law and widely publicising the prosecution of the offenders in the media is needed so as to act as deterrents. Provided

this is done effectively and at a large scale, I predict a reduction in the trade in the short-term. It is not seen as a priority in the Indonesian society to do anything about trade in primates, it just seems to have not been put on the list of priorities.

Matthew: In Asia- stop punishing customers, punish sellers instead. Everyone knows who they are and they need to be prosecuted. In the UK- put everything on the DWAL (Dangerous Wild Animal License) even a marmoset. Although they are small, they can be dangerous.

Question: What would be the best long-term method to decrease trade?

Vincent: Enforcement of the already established laws and penalise the traders. This would better the conditions for legal trade and would create a larger disparity between the law holders and breakers.

Matthew: In my opinion, there should be laws against privately owned primates unless you are a sanctuary, but even then many sanctuaries are not required to have proper licensing at the moment. There should be a strict code they should have to adhere to.

Question: What positive aspects or effects come from the primate pet trade?

Vincent: No, there are none, don't keep primates as pets.

Matthew: In Asia, it's a source of income for poor people but it's often not them that get a fair share of the profits. In the UK there are no benefits.

Question: How would you describe the role Great Britain plays in the primate pet trade?

Vincent: I am not really familiar with the situation in the UK. Of course I do know it is legal to keep some primates as pets here in the UK but this is not allowed in other European countries. For example – in the Netherlands it is not allowed, Europe should be more uniform, no primate pets.

Matthew: Its home to a few key individuals who know zoo keepers in other countries, like Belgium for example, who use their contacts to keep the door for trade open.

Question: And as compared to other western countries?

Vincent: Traders sell primates to other countries, native Indonesian primates would be found in other countries.

Matthew: In America there is a huge "monkey in a diaper" market- it's a very established trade. People keep them for totally different reasons. Although it is not a western country its interesting to note that often Thailand plays a big role in laundering an animal through their borders. They will import, and re-export to get appropriate papers for illegal animals.

Question: What measures should be taken here in Great Britain and in other western countries to decrease the primate pet trade?

Vincent: Western countries should increase pressure on countries that allow open trade in protected primates. This hopefully will reduce both domestic and international levels of trade. Within the UK we should strive for a ban on keeping primates as pets.

Matthew: Exactly the opposite of what they are doing here in the UK. They have taken a lot of animals off the DWAL system; they should putting them all on.

Question: Is there anything else you would like to say about the primate pet trade?

Vincent: No I guess this covers most of it.

Matthew: Just with that last point, in the past DWAL authorities have been accused of using that license to throw anything on there that they don't want sold for other reasons than the animal being dangerous. But a big defence authorities can have is saying there are unknown dangers as far as spreading pathogens, etc.

Researching the primate trade in the greater Mekhong area

by Matthew Todd
matthew.todd@brookes.ac.uk

Photo by Matthew Todd

The dwelling of a friend on the Mekhong River at Lao PDR, approx. 18km from Vientiane.

Introduction

The greater Mekhong area may be briefly defined as encompassing: Yunnan province, China; Lao PDR; Vietnam; eastern Thailand; and Cambodia. This is an area of great biodiversity yet an area of dramatic commerce. During my time in the region (1992 – present), many positive changes have taken place: the fall of the Khymer Rouge, a near eradication of organised banditry along the river banks of Lao PDR and the establishment of many more 'easy' border crossing points such as the Thai / Lao Friendship Bridge between Nong Khai, Thailand and Vientiane, Lao PDR. Today, the illegal wildlife, logging, amphetamine and gemstone trade threatens the stability of the area, and plans for huge dams upstream in China threaten the very existence of the magnificent Mekhong delta in Tien Giang, Vietnam. It is also in this frontier that the Asian wildlife trade flourishes, perpetuated by others far removed from the region.

Wildlife Trade Research

Research into the trade of wildlife in the greater Mekhong frequently translates into relatively 'instant' results for conservation through policy amendment by governments as signatories to conventions such as CITES and as members of ASEAN. This is a fertile field indeed for anyone interested in participating in this relatively new field of conservation research. Traditionally the wealth of investigation into wildlife trade has been carried out by journalists and non-scientists rather than scientists. Investigations of this kind have been presented as newspaper reports or archived in newsletters for various conservation and welfare organisations such as IPPL (International Primate Protection League). Only now is this field of research gaining in acceptance by the scientific community. TRAFFIC South East Asia (see http:// www.traffic.org) in particular is playing a key role in publishing material with a clear scientific base. Future long-term, systematic monitoring of markets should produce large amounts of data for scientific analysis and will increase in acceptability among the scientific community.

Methods

Data Collection.

After initial identification of sales venues, research in this area is basically two fold: primary data collection through continuous market surveys and data collection by interview of: a) dealers, and b) consumers. Continuous market monitoring programs have not yet been established anywhere in the greater Mekhong area. Data collection on this will commence as part of TARGET (the author's project concerning the primate trade in Southeast Asia), following a training session for local volunteers, from December 2008 onwards on the Thai / Cambodia border at Chong Jom / O Smach and Hat Lek / Cham Yeam; Lao PDR / Vietnam border at Bo y / Attapeu and in China at the flower and bird market, 'Huaniao Shichang' in Kunming.

Photo by Matthew Todd

A gibbon held at an illegal wildlife trading facility in Battambang, Cambodia awaiting export to China.

Dealing with Dealers.

Interviews with dealers present the most logistical problems, and potential danger. In this environment, researcher are dealing with men (usually) who are sophisticated perceivers of interpersonal communications. It is necessary, but not always easy, to remain convincing in your cover, perhaps as a potential client. Scientists new to the field of wildlife investigation frequently underestimate the intelligence, capabilities and sophistication of wildlife dealers. Demographic and socioeconomic data suggests that wildlife dealers in the region are very different from dealers operating at sales venues in the main cities of Southeast Asia, such as Wong Wen Yai and Chatuchak Market, Bangkok. In the greater Mekhong area, these are not the educated sons and daughters of wealthy business people, these are often people who have transcended the poverty of rural Asia, creating extensive international social networks across all levels of traditionally hierarchical societies in their largely successful pursuit of wealth. They are highly sensitive to detection techniques, supply cessations and market trends. Evidence even exists of counter surveillance techniques, and one dealer operating in Surin province, Thailand employed local police to further his knowledge of forestry department and customs operations.

During interviews with dealers, researchers should strive to be as convincing as possible, suppress immediate concerns for the animals present, know terminology and be prepared to encapsulate all of this in an entrepreneurial shawl. Researchers should be knowledgeable of approximate prices of taxa and their trade names. A convincing 'client' from UK / USA would use common terminology (i.e. 'crabby' for *Macaca fascicularis* – the crab-eating macaque) and by contrast a European (usually Dutch or German) dealer would use the species part of the latin name (ie 'fascicularis' rather than *'Macaca fascicularis'*). It is pertinent to remember that dealers have access to the internet and use forums as a source of information, and as a consequence build up expectations of different traders from different areas of the world. Simply put – they expect certain vocabularies and attitudes from certain nationalities, which is reinforced by subsequent meetings with foreign dealers. Therefore it is good practice to act as they would expect to remain a plausible and convincing 'consumer' at all times.

The Modern Wildlife Trade

Today, the wildlife trade in the Mekhong area is inextricably tied to the drug trade, specifically marijuana and methamphetamine ('ya baa' – Thai language, literally 'crazy medicine'), illegal logging. For example, known wildlife dealers use the forest canopy at Khao Yai National Park in Thailand to shade tracts of marijuana from remote detection strategies by law enforcement departments.

Logging operations frequently benefit the wildlife trade in the region by providing locations for capture and routes for transportation. Since the logging ban of 1989 in Thailand, Chinese logging operations shifted to Cambodia, and then to Lao PDR following the subsequent to the ban of 2001. This game of 'cat and mouse' between logging companies and regional policy makers has opened up new routes, trade venues, and human connections for the supply of wildlife intended for the pet trade and traditional Chinese medicine on a commercial scale. It should be noted that

'folk medicine' practiced by tribal peoples, ethnic Khymer and ethnic Vietnamese has minimal effects on wildlife abundance while it remains a non-commercial service provided by village healers. Shipments of logs, gems or drugs are frequently supplemented by a wildlife 'add-on' reducing overall transportation costs. Rarely do animals constitute the full shipment.

Implications of corruption.

The wildlife trade in the greater Mekhong is facilitated by traditional processes of graft and corruption. Border police are frequently locked into long term relationships with charismatic and influential dealers associated with crime. Regular routes and drivers are employed and shipments are well known to corrupt officials in advance as the trade relies on direct corruption rather than covert operation and movement. The only time these established chains are broken is with crackdowns from central government, usually Thailand. It should be noted that sporadic Royal Thai Army patrols at borders do not usually interfere in the wildlife trade, as traditionally, border police and army are institutions in conflict and avoid communication and joint operational activity.

Dealers' attitudes to punishment and detection.

Given the oppressive economic climate of the region, at least for rural villagers, it is not surprising that any established avenues of revenue gain are transmitted from one generation to the next, with each new generation traders become more efficient and successful. Lack of detection and low prosecution rates cause perpetuity through generations and lateral spread in the form of new dealers and operations as the industry grows. As outlined, this is a fertile field for research and one in which the traditional transmittance of generational knowledge tells the trader simply that detection translates into a cost to be absorbed by the operation, therefore dealers tend not to be overly concerned with detection and are forthcoming with information because of their motivation to increase revenue.

The Future: Concluding Notes

The generous input of research carried out by Shepherd, Nijman and other TRAFFIC authors (see 'further reading' section) is a modern benchmark in the field. Future reports should be presented in the form of scientific papers and employ techniques modelled by TRAFFIC. Detailed and appropriate statistical analysis is essential in establishing investigations into trade as papers acceptable for publication by science based conservation journals.

To conclude on a positive note, the battle is far from lost. People of the greater Mekhong area seem to harbour an entrepreneurial gene that has transcended all attempts by despotic rulers and communist organisations in the region to stifle its fruition. This varied mix of peoples from all parts of Indochina has both the economic ability and adaptability to trade without harming the area in which it carries out business. For these reasons I have great faith in the people of the greater Mekhong and the future of the wildlife they live alongside.

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Photo by Iris Dröscher

Microhabitat Variables Influencing Home Range Use in Two Troops of Western Purple-Faced Langurs (*Trachypithecus vetulus nestor)* in Talangama, Sri Lanka.

by Richard Moore
rich_s_moore@hotmail.com

Despite being one of the smallest countries in Asia, Sri Lanka is one of the most biologically diverse. In fact, it is recognised, together with the Western Ghats of India, as being one of the top 25 World Biodiversity Hotspots (Myers *et al.*, 2000). Unfortunately, from an environmental perspective, Sri Lanka also has one of the highest human population densities in Asia which, similar to many other parts of the world, is thought to correlate strongly with increased deforestation (Erdelen, 1988). Deforestation, leading to habitat loss and fragmentation of forests, is a severe threat to terrestrial biodiversity and primates are among the species affected (Brookes *et al.*, 2002; Strier, 2007).

Photo by Richard Moore

The threat of deforestation is evident in Sri Lanka where all of the primates are endangered. Among these, the Horton Plains slender loris (*Loris tardigradus nycticeboides)* and the Western purple-faced leaf monkey (*Trachypithecus vetulus nestor*) are Critically Endangered and have even been included on a list of the World's top 25 Most Endangered Primates (Mittermeier *et al.* 2006).

T. v. nestor is endemic to the Wet Zone of Sri Lanka. This area is presently experiencing severe deforestation and fragmentation of forests (Rudran, 2007; Dela, 2007, Moore, 2008). Since the 1930s, 90% of its known range has now become built up with houses, temples, gardens and other areas of human activity, and is thought to be the main reason for the 80% decline in the population over the last three generations (Dela *et al*. 2002 in IUCN 2006).

My study concerns the survival potential of *T. v. nestor* within this anthropogenic dominated landscape, with a focus on the microhabitat variables that influence its presence in small forest fragments. The research was carried out in the Talangama Wetland area of Sri Lanka's Wet Zone for three months in 2007. Detailed measurements of microhabitat variables in the home ranges of two neighbouring troops were taken, including species richness, numerous tree parameters, tree densities and percentage of food trees. Subsequently, the time *T. v. nestor* spent in each sub-site within the home range was also recorded (a period of nine days for each troop), and statistical tests were conducted to investigate any variable that may influence the primate's presence within that area.

Bivariate correlative tests show significant positive relationships between time spent in different areas and mean basal area ($r_s = 0.66$, $p<0.001$), tree height ($r_s = 0.50$, $p<0.05$) and DBH ($r_s = 0.59$, $p<0.05$). A multiple regression analysis using the backwards regression method reveals that the strongest positive influence on primate presence is mean basal area (where the adjusted $r^2 = 0.37$, $p<0.01$).

These results highlight the importance of larger, more mature trees to *T. v. nestor*. Mature trees, in contrast to immature ones, usually offer the primates a greater yield of fruit, thicker branches for resting on, protection from predators and shelter from harsh weather conditions (Huang *et al.*, 2003). Moreover, although there was no significant relationship found between percentages of feeding tree and presence, which is often a good indicator of site preference for primates (Li *et al.*, 1999; Raemaekers, 1980), it is probable that a few large, mature trees were sufficient in resources and shelter to prolong the duration of their stay, especially in such a sparse forest environment. In the Talangama area, where less than 3% of original forest remains (Rudran, 2007), their reliance on fruit trees, in particular jack fruit (*Artocarpus heterophyllus)* which are predominantly used by humans, makes the survival of this taxon almost fully reliant on the continued tolerance shown by local people.

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Photo by Richard Moore

University Events

Primate Conservation Seminar Series

Each semester, weekly seminar guest lecturers present talks on topics of relevance to primate conservation. The seminars are open to anyone and take place Mondays from 6pm to 7pm at Oxford Brookes University, Headington Campus in the Lloyd Boardroom.
If you would like to share your research and experiences with us and are interested in becoming a guest speaker please feel free to contact Prof. Simon Bearder at:

Email: skbearder@brookes.ac.uk
Tel : 01865 483760
Fax : 01865 483937

Below is the list of guest lectures from the winter semester 2008:

29 September 2008
Dr Susan Cheyne, Orang-utan Tropical Peatland Project, University of Oxford
Asian ape conservation: fieldwork, food and the forest

Dr Susan Cheyne spoke about her research at the Natural Laboratory of Peat Swamp Forest, Sebangau National Park, Central Kalimantan, working with the Orang-utan Tropical Peatland Project and Oxford University. The talk focused on current research on orangutans and gibbons. Research questions included current population trends and the impacts of various threats such as illegal logging and forest fires on populations, as well as the level of overlap between orang-utan and gibbon populations, for example in form of food competition.

6 October 2008
Sam and Noga Shanee, Neotropical Primate Conservation
Conserving the yellow-tailed woolly monkey in Peru

Sam and Noga Shanee are past students of the MSc Primate Conservation and have founded together with Lizzie Cooke the non-profit organisation Neotropical Primate Conservation in 2007. They visited to speak about their project 'La Esperanza community conservation in Peru', aiming at the conservation of the critically endangered yellow-tailed woolly monkey endemic to a small range in Peru. The project has four objectives - scientific investigation, reforestation, education and sustainable development.

13 October 2008
Dr Christoph Schwitzer, Bristol Zoo
Research for conservation: studying critically endangered lemurs in Sahamalaza, northwest Madagascar

Dr Christoph Schwitzer, head of research at Bristol Zoo, talked about ongoing field reserach on the critically endangered blue-eyed black lemur and the Sahamalaza sportive lemur in association with the 'Association Européenne pour l'Etude et la Conservation des Lémuriens' (a consortium of European Zoos). All lemurs are endemic to Madagascar and 66% of the lemur species are classified as threatened. Less than 7000 indviduals of the blue-eyed black lemur are left in the wild. It is the flagship species for all conservation efforts in the Sahamalaza region.

20 October 2008
Ian Redmond, GRASP
Save the primates to save the world: can carbon markets solve traditional conservation problems and slow dangerous climate change at the same time?

Ian Redmond, an advocate of great ape conservation, helped to launch GRASP (The Great Apes Survival Project) and founded the Ape Alliance (an alliance of NGOs working on great ape issues). Moreover, in 2006 he was appointed an Officer of the British Empire (OBE) for his achievements. During his talk he highlighted the importance of conservation at the level of species function protection, i.e. enough habitat and a sufficient number of individuals of a species need to be protected so that a species can still fulfill its ecological role in its environment.

27 October 2008
Helen Buckland, UK Coordinator,
Sumatran Orangutan Society
The future of orangutans

Helen Buckland, a past MSc Primate Conservation student, is the UK branch coordinator of the Sumatran Orangutan Society. She visited to talk about the work of the society, including tree replanting and education projects in the Gunung Leuser National Park, Sumatra. The Leuser Ecosystem is one of the most important remaining habitats for wild Sumatran orangutans. So far 300,000 seedlings have been replanted. During the talk she highlighted the negative impact of expanding oil palm plantations on the conservation status of orangutans.

3 November 2008
Dr Mika Peck, University of Sussex
The reality of primate conservation at the grassroots level: A case study of the PRIMENET-project in NW Ecuador

Dr Mika Peck is the coordinator of the Darwin Initiative funded Primenet Project and visited to talk about the conservation of brown-headed spider monkey in Ecuador. This species is named as one of the 25 most endangered primates by the IUCN and serves as a flagship species to promote primate and habitat protection in NW Ecuador. Its distribution is restricted to the Choco-Darien biodiversity hotspot and only 20% of its habitat remains. The main threats to the species are deforestation and hunting.

10 November 2008
Mary Blanchard, PREMOG, University of Liverpool
Locomotion, behaviour and ecology of lemurs in Mantadia, Madagascar.


Photo by Hajarimanitra Rambeloarivony

Mary Blanchard is member of the Primate Evolution and Morphology Research Group at the University of Liverpool. She visited to talk about her PhD research on locomotor ecology of wild populations of *Indri indri*, *Propithecus diadema diadema* and *Hapalemur griseus griseus* in Mantadia National Park. These species are threatened by graphite mining, slash and burn agriculture and forest use. After witnessing some cases of predation on her lemurs, she is no embarking on a study on the behaviour and ecology of fossa, one of the lemurs' main predator.

17 November 2008
Ha Thang Long, University of Cambridge and Endangered Species Rescue Centre, Cuc Phoung National Park, Vietnam
The grey-shanked douc langur in the wild

Ha Thang Long is past student of the MSc Primate Conservation and is currently pursuing his PhD at the University of Cambridge. He visited to talk about his research on the critically endangered grey-shanked douc langur endemic to Vietnam. His research focuses on behavioural aspects, social organisation and habitat use of this species. Conservation issues are hunting (for food and medicine), capture for the pet trade and habitat loss. Central to the conservation for the conservation of this species are captive breeding, increase in local awareness and local capacity building.

24 November 2008
Prof. Robin Dunbar, Director of Institute of Cognitive and Evolutionary Anthropology University of Oxford.
Time as an ecological constraint

Robin Dunbar's research interests are the evolution of sociality and social behaviour of humans, nonhuman primates and ungulates. Furthermore, he is author of several books such as 'The human story' and 'Grooming gossip and the evolution if language'. He visited to talk about how group sizes in primate populations are determined by predation risk and cognitive constrains or time limits. He concluded his talk by pointing out what big challenge climate change will present for the survival of many primate populations in the near future.


Photo by Amal Joseph

Photo by Iris Dröscher

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