mist-nets in three study sites, in primary forest and in 5-year-old and 10-year-old logged forests, in Sungai Lalang Forest Reserve, West Malaysia. A total of 58 species (271 individuals) was recorded in primary forest, 62 species (288 individuals) in 5-year-old logged forest, and 61 species (386 individuals) in 10-year-old logged forest. Assessment of feeding guilds indicated that insectivorous interior forest species dominated in primary forest, and frugivore/insectivore and nectarivore/insectivore species of secondary forest and forest edge in logged forest. The study revealed significant changes in species composition after logging, with retention of many original species but declines or disappearances in others. At the same time, secondary growth or colonizing species increased. This implies that the sensitivity of birds, particularly those of the understorey, to changes in forest condition may provide direct indications of the health of tropical forest ecosystems. Thus the maintenance of core components of biodiversity, such as understorey avifauna, may be key to the sustainable management and long-term productivity of tropical forests.

Farwig N, Bleher B, Böhning-Gaese K

Consequences of forest fragmentation on frugivores, seed dispersal and genetic structure of *Prunus africana* populations in Kenya

Institut für Zoologie, Abt. V Ökologie, Johannes Gutenberg-Universität Mainz, Becherweg 13, 55128 Mainz, Germany, farwig@uni-mainz.de, b_bleher@web.de, boehning@uni-mainz.de

Forest fragmentation can have consequences for species diversity and ecosystem processes such as seed dispersal and, in the long-term, may reduce genetic diversity among populations. In the fragmented Kakamega Forest, Kenya, we investigatedthese issues based on the frugivore community, seed dispersal and the genetic structure of adult and seedling populations of *Prunus africana* (Rosaceae). In the main forest and five forest fragments we quantified the overall frugivore community, the frugivores visiting 28 fruiting *P. africana* trees, and estimated seed dispersal. Using six microsatellite markers, we also analyzed the genetic structure of adult *Prunus* trees (N=93) and their seedlings (N=58). Samples of both adult trees and seedlings allowed examination of changes in gene flow between generations, adults reflecting the pattern before and seedlings after forest fragmentation. Although frugivore species richness was 1.1x lower in forest fragments than in the main forest, *P. africana* attracted 1.1x higher numbers of frugivores in the fragments. Correspondingly, seed dispersal was 1.5x higher in the fragments than in main forest sites. Genetic differentiation between populations of adult trees was very low (FST=0.03), with ~97% of the genetic variation within populations, reflecting extensive gene flow before fragmentation. Genetic variation between populations of seedlings was somewhat higher (FST=0.09), with ~91% of the variation within populations. We only recorded an isolation by distance pattern for seedlings. The slightly greater differentiation among populations of seedlings is the first sign of restricted gene flow caused by fragmentation. Yet even though overall frugivore abundance was lower in the fragments, quantitative seed dispersal was still as or more effective there, notwithstanding diminished gene flow indicated by genetic analyses in the past 80-100 years.

Sun Y-H

The Relationship between the bird fauna in the Conifer Forest around Qinghai-Tibet Plateau and in the Eurasian Taiga Forest

Institute of Zoology, Chinese Academy of SciencesBeijing 100080, China, sunyh@ioz.ac.cn

The forest around the Qinghai-Tibet Plateau is an area with high bird diversity and endemism. There are many endemic birds in this forest having sibling species or subspecies in the Eurasian Taiga forest, including the Chinese Grouse (*Bonasa sewerzowi*) and the Hazel Grouse (*B. bonasia*), the Sichuan Jay (*Perisoreus internigrans*) and the Siberian Jay (*P. infaustus*), the Sichuan Wood Owl (*Strix davidi*) and the Ural owl (*S. uralensis*), the Gansu subspecies of the Boreal Owl (*Aegolius funereus beickianus*) and its northern races, the endemic subspecies of the Three-toed Woodpecker (*Picoides tridactylus funebris*) and their northern races, etc. The evolution of the two bird faunas should be related to the uplift of the Qinghai-Tibet Plateau and the movements of the Pleistocene glacial rebound. Starting from 1995, we have been working on the Chinese Grouse, Sichuan Jay, Boreal Owl and the Sichuan Wood Owl in Gansu and Sichuan, and getting basic knowledge of these birds. During this round table discussion, we wish to discuss with the colleagues in Europe and compare the behavior, ecology, genetics and other aspects of these sibling species. In North America, there is another sibling species or subspecies in each of these groups, such as the Ruffed Grouse (*B. umbellus*), the Gray Jay (*P. canadensis*), the Boreal Owl (*A. f. richadsoni*), etc, we welcome people working on those birds attending the discussion.

Wunderle Jr JM[1], Henriques LMP[2], Willig MR[3]

Short-term responses of birds to reduced-impact logging in a lowland Amazon forest: Can reduced-impact methods help to retain avian biodiversity in tropical timber production forests?

(1) International Institute of Tropical Forestry, USDA Forest Service, P. O. Box 507, Palmer, Puerto Rico 00721, USA, wunderle@coqui.net (2) Museu Paraense Emilio Goeldi, C.P. 3999, 66017-970, Belem, Para, Brazil, Magalli@museu-goeldi.br (3) Ecology Program, Dept. fo Biological Science, Texas Tech University, Lubbock, TX 79409-3131, USA, willig@ttu.edu

Reduced-impact logging, in which damage due to felling, skidding or log processing is minimized, has been touted as a means for retaining avian diversity in timber production forests in the tropics. Yet the effects of such methods on bird communities have rarely been investigated. Here we describe two mist netting studies that assess short-term responses in birds to low harvest (18.7 m^3/ha) reduced-impact logging in a terra firme forest in the Tapajós National Forest, Brazil. In the first study, birds were sampled in 60 m mist net lines, starting with a baseline one month prior to harvest followed by sampling for five years in control and cut blocks. A second study, which lacked a pre-harvest baseline record, used physiognomy specific sampling (i.e. gaps vs. understory) to compare samples in cut and control blocks at 20 to 42 months post-harvest. As expected, the results of the two studies were not fully concordant, given that physiognomy was not considered in the first study and that pre-harvest baseline samples were missing from the second. The physiognomy-specific study found increases in nectarivores and frugivores in

cut forest, especially in cut gaps where guild members evidently tracked resource blooms. Understory sampling in the first study, in turn, detected a post-harvest decline in terrestrial insectivores and mixed-species flock insectivores in cut forest, in contrast to the other study in which insectivores, especially mixed-species flock insectivores increased in cut forest, particularly in gaps. Army ant followers were unaffected by cutting in both studies. Overall, both studies found no significant differences between control and cut forest in species richness, diversity (H'), rarity, and dominance. In general, effects of logging were relatively minor; low harvest rates and reduced-impact methods may thus help to retain aspects of avian biodiversity in Amazon forest understories.

O27: Population recovery

Brooke M[1], Martins T[2], Hilton G[3]

Prioritizing the world's islands for vertebrate eradication; Or how to obtain maximum conservation bangs for bucks spent

(1) University of Cambridge, Dept. of Zoology, Downing Street, Cambridge CB2 3EJ, UK, m.brooke@zoo.cam.ac.uk (2) University of Exeter in Cornwall, Centre for Ecology and Conservation, University of Exeter in Cornwall, Tremough, Penryn, TR10 9EZ, UK, T.L.F.Martins@exeter.ac.uk (3) Royal Society for the Protection of Birds, The Lodge, Sandy, Beds SG19 2DL, UK, geoff.hilton@rspb.org.uk

Despite the expected economic benefits of biodiversity conservation, current conservation resources fall well short of those needed to prevent major extinctions. Accordingly, conservation biology has long been preoccupied with optimizing the selection of protected areas. However, no commensurate attention has yet been paid to the issue of prioritizing the restoration of islands, even though, over the last 400 years, far more species have gone extinct on small islands than continents. Consequently, a large proportion of conservation effort is now devoted to removing the major cause of such extinctions from islands: invasive alien vertebrate species. With the development of anti-coagulant toxins and effective bait delivery systems, quite large islands can now be cleared of invasive vertebrates. Because of the urgency of the situation, a robust strategy for allocating available funds is needed quickly. The prioritization of eradication programs requires, for each candidate island, a system for objective estimation of the conservation gain, and an internally consistent method of predicting its financial cost. Using a global data file on vertebrate eradications, we show that costs can be predicted from basic information of island area, species to be eradicated and distance to main airport. We also describe a method for assessing the conservation benefit to birds. We can therefore offer the conservation community the tools for assessing which islands yield the greatest conservation bangs for each buck spent on vertebrate eradication. Lists of the islands which we consider should be high priority targets for future eradications will be presented.

Ndang'ang'a PK

Enabling implementation of action plans for threatened birds in Africa: The Species Interest Group approach

BirdLife Africa Partnership Secretariat, ICIPE Campus, Kasarani Road, P. O. Box 3502 - 00100 Nairobi, Kenya, paul.ndanganga@birdlife.or.ke

The protection offered by protected areas and the identification by BirdLife International of Important Bird Areas, provides the basis of strategies for bird conservation that are site based. Some species, however, occur largely outside protected areas, are present in low densities over very large areas, or face threats that site protection alone cannot address. For such species, site-based strategies must be complemented by a targeted single species approach. From April 2001 to March 2004, the BirdLife International Africa Species Working Group implemented a Species Action Planning project in 17 mainland BirdLife Africa partner countries. It promoted participative action planning for globally threatened birds in Africa and trained African conservationists in principles and methods of species conservation. An African format and process for producing Species Action Plans (SAPs), was developed; and seven international and 15 national SAPs for seven priority globally threatened species were prepared through participative stakeholder workshops. At least 11 Species Interests Groups (SIGs) were established from this project as vehicles for implementing the SAPs. To move from the stage of producing SAPs to their implementation, follow-up work started in April 2004. Its aim was to build the capacity of and enable SIGs to drive the implementation of the produced SAPs and significantly contribute to conserving Africa's threatened species. Practical training has been given to the SIG coordinators, and the SIGs are being activated and energized to reach as many individuals as possible in the entire BirdLife Africa network of countries and beyond. As a result, the SIGs are playing their role as key promoters of the species conservation concept in Africa and are now implementing some of the species conservation projects in at least 10 countries. Further research to enhance knowledge of the conservation biology of most of the threatened species has also been stimulated.

Bassett SM[1], Travers CE[2]

The role of captive rearing in kiwi conservation

(1) The University of Otago, Zoology Department, The University of Otago, PO Box 56, Dunedin, New Zealand, suzanne.bassett@stonebow.otago.ac.nz (2) Kiwi Encounter, Rainbow Springs, PO Box 25, Rotorua, New Zealand

In the absence of conservation management, populations of kiwis (*Apteryx* spp.) on mainland New Zealand are declining at a rate of 6% per year, primarily due to depredation by stoats. One response has been to artificially incubate wild-laid kiwi eggs, and raise the chicks to "stoat-proof" size in captivity before release into the wild (Operation Nest Egg). Little is known of the artificial incubation requirements of kiwis, and hatching success is often low. Since 1996, we have been involved in a collaborative research program focusing on increasing kiwi hatching success. Prior to our study, average hatching success at the Kiwi Encounter captive breeding centre was 40%. Using knowledge of the incubation requirements of other ratites, and an adaptive management framework, we have increased hatching success to over 90%. Similarly, post-hatching mortality of captive kiwi