MAKERERE UNIVERSITY
P.O Box 7062 Kampala Uganda
URL: http://www.cns.mak.ac.ug
Phone: +256 414 531902
e-mail: head@cns.mak.ac.ug
Fax: +256 414 531061

COLLEGE OF NATURAL SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

African Primatological Consortium (APC) conference, Makerere University, Uganda 15-16th December 2015

Theme: **Building African Primate Research and Conservation networks**

Booklet of abstracts

15th-16th December 2015

Introduction

One of the principal recommendations of the International Primatological Society Conference held Kampala in 2007 was to establish *the African Primatological Association* in order to address the low local interest in primatology. Members in the Universities of African countries were attempting to do research and attract young members to the field with little success. Following this recommendation, Japanese and African researchers at an International Symposium held in Mabali, DRC from 11th - 12th August 2011 under Asia-Africa Scientific platform proposed to form an African primatological consortium that would coordinate collaborative research and build the capacity of young primatologists. This idea was presented, discussed and adopted at the African primate symposium held in December 2014 at Makerere University. Subsquently, the symposium formed the African Primatological Consortium on 19th December 2014. The members present at the meeting agreed to actions for achieving African primates' conservation, including collaborative research, sharing of research findings, supporting and mentoring young African primatologists in order to contribute to African primate conservation.

This December 2015 conference whose theme is ***"Building African Primate Research and Conservation networks***" is therefore in line with the key priority actions for achieving effective primate conservation in Africa that were agreed upon at the inception of APC.

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0850-0900	Welcome Remarks from a Representative from Kyoto University	Prof. Furuichi	‘’
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1100-1120	The fruit phenology of *Musanga leo-errerae* and its importance for Chimpanzees diet in Kalinzu Forest, Uganda	Kagoro Grace	Deborah Baranga
1120-1140	Cognitive development assessed in object manipulation by Chimpanzees and Bonobos	Misato Hayashi	“
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	the low altitude forests of Eastern DRC	Ibungu	
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Conference Abstracts

Subtheme 1: Ecology and behavior of African Primates

1. Ecological Research now under Uganda Wildlife Research and Training Institute

Bakuneeta Chris

Department of Biological Sciences, Makerere University, Kampala, Uganda

cbakuneeta@cns.mak.ac.ug

Abstract

The first National Parks in Uganda were established in 1952 and 10 years later their research arm was established as the Nuffiled Unit of Tropical Animal Ecology (NUTAE). NUTAE functioned for 10 years and was replaced by the Uganda Institute of Ecology (UIE). The Institute functioned as research arm of Uganda National Parks till the Uganda National Parks were merged with Game Department to form Uganda Wildlife Authority (UWA. Under UWA, research was not prioritized and the institute was scrapped. All research in UWA was compressed into the Research and Monitoring Unit. This Unit has failed to conduct research that should guide management on wildlife resources. In 2014, the new Uganda Wildlife Policy identified the Uganda Wildlife Research and Training Institute (UWRTI) to lead the ecological/wildlife research in Uganda in partnership with Universities, and research institutions. The paper highlights the significance of scientific research in managing and conserving wildlife resources and points out the errors made in the past that should not be repeated.

2. Chimpanzee (*Pan troglodytes* Blumench) distribution and Population status in the Rwenzori Mountains National Park, Uganda

G. Isabirye-Basuta[1], S.Mugume-Koojo[1], E.Otali[2]

[1]Department of Biological Sciences, Makerere University ; [2]Makerere University Biological Field Station

Abstract

The study was aimed at establishing the distribution and populations of chimpanzees in the Ruwenzori Mountains National Park. Indirect signs (nests) were used to indicate the presence of chimpanzees. This was done on a monthly basis along transects for 8 months. The vegetation type (broad leaved, mixed broad leaved and bamboo forests) in which nests were found and their GPS coordinates were recorded. Chimpanzee density and population estimates were calculated based on the computer programme 'DISTANCE' and marked nest counts respectively. Our findings show that chimpanzees were present throughout the park almost up to highest limit of bamboo forest. Chimpanzee nests were found up to almost 3000 m above sea level. Chimpanzee density was estimated to be 0.47 per square Km^2. This density is almost the same as that documented by the previous study (Plumptre 2003). We used an area of 776 Km^2, that is the area covered by the montane broad leaved, and mixed bamboo and montane broad leaved forest as the area used by chimpanzees and obtained a total population of 466 individuals for the entire park which is slightly lower than the previous estimate of 500 individuals (Plumptre 2003). However given the fact that we spent more sampling time; and restricted our calculations to the area occupied by chimpanzees, we suggest that our estimate is more reliable than the previous

ones. It is also worth noting that few chimpanzee nests were found towards the forest edge in spite of the fact that the montane broad leaved forest appeared to be the most preferred habitat of chimpanzees based on presence of the nests encountered. The reason for this is probably due to high hunting pressure by local communities near the forest edge and park boundary.

3. Activity budgets of Bonobos living in semi-free at Lola Ya Bonobo Sanctuary, Democratic Republic of Congo: Preliminary data

***Maloueki Ulrich*[1,5], *Kikani Moseka Reguy*[1], *Kwetuenda Nzuzi Suzy*[2], *Mbangi Mulavwa Norbert*[3], *Mbomba Nseu Bekeli*[1], *Takoy Lomema André*[4]**

[1] Department of Biology, Faculty of Science, Kinshasa University, PO Box 190 Kinshasa XI, Democratic Republic of Congo; [2] Lola Ya Bonobo Sanctuary, "Petites Chutes de la Lukaya", Kimwenza, Mont-Ngafula, Kinshasa, Democratic Republic of Congo; [3] Research Center for Ecology and Forestry, Ministry of Scientific Research and Technology, Mabali, Equateur, Democratic Republic of Congo; [4] Deceased

Corresponding author's, e-mail: maloueki.ulrich@gmail.com.

Wild bonobo (*Pan paniscus*) populations are still decreasing because of disease transmission, bushmeat trade and the lack of lodging due to the logging. The critically endangered bonobo is a species which is endemic to the Central Basin rainforest of Democratic Republic of Congo and is the least studied of all great apes. We studied the activity budgets of semi-wild groups of bonobos in three enclosures of 10 ha (24 members), 15 ha (20 members) and 5 ha (17 members), from January 23rd to February 18th, 2015 at Lola Ya Bonobo Sanctuary. Each group was observed on rotating days using instantaneous scan sampling method performed for 10 minutes at every 5 minutes intervals. Our results indicated that bonobos spent on average 35% of total scans (n=4,301) of daytime performing other activities, 26% (n=3,298) moving, 12% (n=1,469) out of sight, 12% (n=1,510) resting, and 15% (n=1,870) performing social activities. Significant differences were observed in time budgets among each species from age/sex classes in different enclosures types. In conclusion, we suggest pursuing this study on a long-term basis to better understand the impact of environmental pressure on behavioral adaptation and conservations needs of bonobos, and how reintroduction will lead to successful conservation of bonobos in the wild. Keywords: *Pan paniscus*, Behaviour, Activity budgets, Conservation

4. Diet composition and feeding ecology of chimpanzees (P. t. troglodytes) in a lowland tropical forest of Moukalaba-Doudou National Park, Gabon

***Ebang Ella G.W*[1] *and Takenoshita Y*[2]**

Institute of Research in Tropical Ecology (IRET); University of Sciences and Technical of Masuku, Gabon (USTM); Chubu Gakuin University, Faculty of Child Studies, Faculty Member. Studies New Social Studies of Childhood, Psychology, and Zoology, Japan
Email: ebang.ghislain@gmail.com

Abstract

This study examined the dietary composition of chimpanzees, *Pan troglodytes troglodytes*, in the Moukalaba-Doudou National Park, south-western Gabon. The main study site (approximately 30 km^2 at an altitude of 50m) was located in the southeastern part of the park. Our study analyzed 361 fecal samples including 1119 minutes of observation. Results showed that the study population comprised of a high proportion of fruit eating individuals, followed by meat eating individuals and fewer insect consuming individuals. During the study period, no individuals fed on termites or driver ants. Fruits of *Ficus spp* were the most preferred. Preference for other fruit species varied between seasons. At Moukalaba, chimpanzees did not use fallback foods since , consumption of animals foods increased with increase in the number of fruit species eaten including the most preferred *Ficus spp.*More foods have been recorded for chimpanzee in Moukalaba but their foraging strategies to take complex foods such as vertebrates and insects as are actually unknown in Moukalaba Doudou National Park, Gabon. This study recommends an in-deepth investigation into complex feeding behavior of *Pan troglodytes troglodytes.*

5. The fruit phenology of Musanga leo-errerae and its importance for chimpanzee diet in Kalinzu Forest Uganda

[1]Grace Kagoro-Rugunda*, *[1]Jonathan Baranga and [2]Chie Hashimoto

[1]Department of Biology, Faculty of science, Mbarara University of Science and Technology, PO Box 1410, Mbarara, Uganda ; [2]Pimate Research Institute, Kyoto University, Inuyama, Aichi, 484-8506 Japan Corresponding email: kgraceug2002@must.ac.ug

Abstract

This study reports the rate of fruit phenological pattern of *Musanga leo-errerae* and how it sustains the chimpanzee population better than other fruits in Kalinzu Forest Reserve. We analysed 2635 faecal samples to determine the proportion of *M. leo-errerae* by composition of fruit diet compared with other fruits eaten by chimpanzees. *Musanga leo-errerae* trees were monitored for fruit production for four years. *Musanga leo-errerae* fruit production did not vary significantly between months (ANOVA, F = 2.0, d.f. = 11, P = 0.13). The size of fruit and rate maturation varied with seasons, although fruit production was synchronous and available all year round. From the 2635 faecal samples analyzed, 79.2% contained *M. leo-errerae* fruit seed. Chimpanzee diet in Kalinzu is 75% frugivorous, 37.2% of which is solely contributed by *M. leo-errerae* fruit. The continuous availability of *M. leo-errerae* fruit makes it the most important food for chimpanzees in this forest, especially during general fruit scarcity there by joining figs in importance for chimpanzee survival in tropical Africa.

6. Cognitive development assessed in object manipulation by chimpanzees and bonobos

Misato Hayashi

Primate Research Institute, Kyoto University 41-2 Kanrin, Inuyama, Aichi 484-8506, JAPAN
E-mail: hayashi.misato.4e@kyoto-u.ac.jp

Abstract
Object manipulation is a useful scale of comparison among primates since they are able to grab and handle objects with their hands. Although wild chimpanzees are known to use a variety of tools in many contexts, wild bonobos use tools less frequently and in limited contexts. However, both species are known to use tools in captivity. This study focused on the development of object manipulation in chimpanzees and bonobos as a prerequisite of tool use. In particular, the emergence of combinatory manipulation was closely investigated as it was exhibited in both chimpanzees and bonobos, yet categorized as a precursor of tool-using behavior. Combinatory manipulation such as nesting cups and stacking blocks appeared during their infancy (less than five years old). Both chimpanzees and bonobos started to show nesting-cup behavior before they started to show stacking-block behavior. This may indicate the fundamental similarities of their mode of object manipulation or tendency of manipulative patterns in their early phase of development. We still need more continuous developmental-data in bonobos but preliminary result showed that chimpanzees may start to show both types of combinatory manipulation from earlier ages compared to bonobos. In total, some cognitive tasks in captive settings illustrated that the basic capability of object manipulation was shared by both chimpanzees and bonobos and the levels of cognitive development assessed in object-manipulation paradigms were similar.

7. The importance fall-back fruits in the nutritional ecology of Grey-cheeked mangabeys (*Lophocebus ugandae* Groves) in Mabira and Lwamunda forest reserves, Uganda

M. Masette[1], G. Isabirye-Basuta[1] and D. Baranga[1]

[1]Department of Biological Sciences, Makerere University, P.O. Box 7062, Kampala, Uganda

Abstract
During periods of low food availability, frugivores are known to rely on fall-back fruits (FBFs) for their dietary requirements. However, the identity and role of FBFs in the diet of Grey-cheeked mangabeys (*Lophocebus ugandae* Groves) inhabiting Mabira and Lwamunda forest reserves is still a gray area. A 24 month study was undertaken to identify FBFs and preferred fruits, their availability and nutrient content. Availability index was used to distiquish between FBFs and preferred fruits. Fruit trees that were available for ≥ 10 months of the study period were denoted as FBFs while those that were available for < 10 months were classified as preferred or seasonal. Results indicated that *F. sur*, *F. mucoso*, *F. exasperata*, *C. indicum* and *M. eminii* qualified as FBFs while *C. durandii*, *C. africana*, *C. mildbraedii*, *B. unijugata*, *P. microcapa*, *R. edulis* and *M. arboreus* qualified as seasonal fruits. The ratio of FBFs to seasonal fruits was 2:1 in the severely degraded Lwamunda which was indicative of an ecologically unhealthy forest ecosystem. On the contrary, the 1:1 ratio in fairly undisturbed Mabira (M1) was regarded as fairly healthy. The protein, fat and sugar content of seasonal fruits doubled the respective amounts in FBFs. Generally, the incremental nutrient factor between individual seasonal fruits and FBFs varied from 0.08 to 3.68 depending on nutrient component, fruit type and habitat. Based on availability index, FBFs could not have possibly sustained the dietary requirements of mangabeys during the study period. There must have been another food source.

We suspected raided crops and domesticated fruits in Lwamunda and in the regenerating Mabira (M2) respectively. We therefore concluded that these were the actual FBFs

***Key words*:** Seasonality, food availability, macronutrients and fall-back fruits.

8. Mangabeys' Food Resources in Mabira Forest Reserve, Uganda

Baranga, D[1]., G. Basuta[1]., M. Masete[1] & W. Olupot[1]

1Department of Biological Sciences, Makerere University, P.O. Box 7062, Kampala, Uganda.

Abstract

Habitat disturbance has marked influence on food availability for primates, which have to survive in areas increasingly altered and degraded by human activities. A list of food tree species and parts consumed was compiled during 14 months of systematic and opportunistic field observations on 17 groups of mangabeys in Mabira Forest Reserve. Thereafter, a scan sampling method was employed to investigate the feeding activities of 3 groups of mangabeys for another 13 months. Each of the groups was located in areas with high, moderate and low levels of disturbance. The home ranges of the 3 groups in their respective Compartments were characterized through a tree census. Results indicated that mangabeys consumed more fruit (45.2%) than either seeds (19.3%) or young leaves (25.8%). Overall, out of the top 10 food tree species, figs (Ficus mucuso, F. sur and F. exasperata) constituted the greatest proportion (with more than 40%). This trend was also true of the mangabeys group in the compartment with moderate disturbance. For the group in the area with low disturbance, Celtis africana and Measopsis eminii and F. mucuso were the most frequent food tree species. However, in compartment with the highest level of disturbance, cultivated crops (namely, Passiflora edulis and Artocarpus heterophyllus were the most important food items followed by F. sur. Hence, habitat disturbance has important ecological implications to food availability with cultivated crops greatly supplementing the natural diet of primates.

9. Without Words: How do we investigate meaning in Great Ape Communication

Catherine Hobaiter

University of St Andrews, School of Psychology and Neuroscience, St Mary's College, St Andrews, KY16 9JP, Scotland

Abstract

Signal meanings in animal communication have generally been identified as the information exchanged between individuals. Using this approach, non-human primate signals have been shown to encode a rich range of information, such as context or signaler identity. In human language meaning has been treated differently. We focus not just on the information encoded in the signal or its effect on the receiver, but on what the signaler *intended* to communicate. With increasing evidence that non-human great apes share our capacity for intentional goal-directed

communication, we can begin to ask the question of what great ape signals mean. But where to start? Given that intended meaning is an internal mental state, what are the external, measurable features of a communicative event that we can use to decode meaning? Humans communicate by combining signals from speech, gesture, facial-expression and body movements into a single stream. Yet, comparative studies of primate communication have traditionally focused on single signal types in isolation. Despite a significant body of work, little is known about how great apes combine different signals. Here I present data on one approach to investigating meaning in great ape signaling, the 'Apparently Satisfactory Outcome'; and discuss when, how, and why wild chimpanzees combine signal types.

10. Grauer's gorilla ranging patterns in the low altitude forests of Eastern Democratic Republic of Congo

Urbain NGOBOBO –AS- Ibungu[1], Escobar Binyinyi[2], Wasso KITWANDA3, Guillaume Kapepa[4], Damien Caillaud[5]

[1]Dian Fossey Gorilla Fund International, Nkuba village, Walikale, North-Kivu, Democratic Republic of Congo, Goma, Democratic Republic of Congo, urbainngobobo@gmail.com; [2]Goma, Democratic Republic of Congo, escobinyinyi@gmail.com; [3]Walikale, Democratic Republic of Congo, [4]Walikale, Democratic Republic of Congo, guillaume.kapepa@yahoo.fr; [5]Atlanta, Gorgia, USA dcaillaud@gorillafund.org

Abstract

Grauer's gorillas are among the world's most endangered primates. Past research on Grauer's gorillas has focused on a high-altitude population from Kahuzi-Biega National Park. Yet, most Grauer's gorillas live in the low altitude primary forests of the east of the Congo basin, where terrain, climate and food availability greatly differ from montane forests. We continuously tracked a single Grauer's gorilla group ranging at an altitude of 600m between Maiko and Kahuzi-Biega National Park for over four months. Along the group's trail, we systematically collected GPS data every 50m, identified food remains and counted nest sites. During the study period, the group's home range had a diameter of around 10 km and nest sites included 20 nests on average. The group's daily travel distance typically ranged between 500m and 2,000m. However, the gorillas only used a small portion of the available habitat. They preferred travelling along valleys and avoided hilltops. The analysis of multispectral satellite imagery revealed that the vegetation in these valleys is different, with a more open canopy than the hilltops. The vegetation undergrowth of the valleys is denser, providing the gorillas with the Zingiberacea, Marantaceae and Commelinaceae plants they consumed. Understanding habitat requirements of low altitude Grauer's gorillas will help conservationists identify other areas in eastern Congo that are susceptible to host large Grauer's gorilla populations and will help focus conservation efforts.

11. Primate tracking; patterns and behavior of chimpanzees on private land in 2014

Lilly Ajarova

Chimpanzee Sanctuary & Wildlife Conservation Trust, 1 Bank Close, Entebbe Town
P.O. Box 884, Entebbe - Uganda

Abstract

We present here a study of *Pan troglodytes schweinfurthi*, the eastern chimpanzee sub species in context to primate tracking, a conservation monitoring tool that Chimpanzee Trust employs to collect data on their behavior and ecology on private land. We studied different chimpanzee groups by tracking and documenting observation and localities throughout the year. A troupe of vocalizing chimpanzees was located and one individual singled out for observation noting, with 5 minute periodic documentation of what he/she did, and the habitat found. Chimpanzee Trust tracked chimpanzees, on private land in Hoima and Kibaale districts, of the Albertine Rift, a species rich region, home to a range of flora and fauna. Uganda has a population of 5000 chimpanzees (Plumptre *et al*., 2003), with approximately 260 individuals found outside protected areas (McLennan, 2008), where the Trust operates. With human population growth of 4.3% in Hoima and 5.5% in Kibaale (UBOS, 2014) and deforestation rate of 7% on private land (WCS, 2011); there is an increase in the overlap of needs between humans and chimpanzees resulting in ecological and behavioral evolution. The Trust used locally trained Conservation Ambassadors to carry out the digitalized data collection. Chimpanzee Trust documented behavior and ecological patterns, in addition to identifying seasonal chimpanzee patterns in the landscape, this as a means of supporting informed decision making for the conservation of this endangered species. The tracked chimpanzees preferred different habitat types and were observed carrying out particular tasks, depending on the season and community dynamics in the areas they are located.

12. Mother-dependent dominance changes among male bonobos at Wamba

Takeshi Furuichi, Tetsuya Sakamaki, Hungjin Ryu, Kazuya Toda

Primate Research Institute, Kyoto University, Inuyama, Aichi, 484-8506 Japan

Abstract

During the 30 years of study of the E1 group of bonobos at Wamba, we have observed five females in the alpha female position and four males in the alpha male position. The three females who had late adolescent or adult sons when they acquired the alpha status helped their sons to acquire the alpha male status. The other two females did not have adult or adolescent sons when they acquired alpha status. In these cases, non-related males were in the alpha position, but those two females behaved dominantly over the alpha males. In two observed cases, the takeover of alpha male status was preceded by the acquisition of alpha status by their mothers. Since 2013, we have been observing a third case of dominance changes among mothers and among sons. An adolescent male JR began showing persistent displays against the current alpha male NB, but such attempts were usually unsuccessful. However, after the alpha female Ki, mother of NB, was attacked by many other females and got injured, JR's challenge became more persistent and more successful. Jk, mother of JR, became more aggressive and attacked males rival to JR. Although challenges by JR and Jk ended unsuccessful by 2015, various interactions observed

during these two years further supported our hypotheses on the females' influence on the status of their sons, and the competition among females for increasing grand-offspring.

13. Mixed-species associations of guenons in the Kalinzu Forest and the report of AA seminar held in Kalinzu in August 2015

Chie Hashimoto, Emi Tokushige

Primate Research Institute, Kyoto University, Inuyama, Aichi, 484-8506 Japan

Abstract

There are six diurnal species inhabiting the Kalinzu Forest, Uganda; chimpanzees, blue monkeys, red-tailed monkeys, l'hoest's monkeys, anubis baboons, black-and-white colobus monkeys. We have been conducting a long-term research on chimpanzees, three species of guenons and colobus monkeys. All members of research groups are identified in chimpanzees, l'hoest's monkeys, and colobus monkeys, while half of members are identified in blue and red-tailed monkeys. Blue and red-tailed monkeys make mix-species associations and they tend to forage together. Go and Hashimoto (2010) reported that red-tailed monkeys maintained the mix-species associations by following blue monkeys. As the habituation level is improved, we recently observed many affiliative interaction including grooming and playing, and observed behaviors further suggesting the purposes or roles of mixed-species association. In this presentation, we will also report the JSPS Core-to-Core Program "field training seminar" held in the Kalinzu Forest in August 2015. We invited five graduate students from three countries, including two Congolese, two Japanese, and one Ugandan students. They observed chimpanzees, guenons, and colobus monkeys and practiced recording behavioral and ecological data. They also practiced in population census of nocturnal primates. On the last day, they presented the results of their observation and had discussion among them. By attending the seminar, those students not only learned methodology of studying primates but also formed a close academic net-work.

14. Progress of studies of primates in DRC by Japanese researchers

***Francis** BUKASA*

Direction de la Coordination de la Recherche Scientifique Secrétariat Général à la Recherche Scientifique, Ministère de la Recherche Scientifique et Technologie

Abstract

CREF / Mabali is located 1401km from the town of Mbandaka. It was created by Royal Decree on 01.07.1947 under the name IRSAC, it was changed to CRSN/Lwiro station / Lwiro and then and eventually to CREF / Mabali. Recognizing that human activities are the basis of degradation and deforestation, CREF / Mabali is partnering with students from Kyoto University Primate Institute to conduct studies mainly on bonobos in the scientific reserve LUO. Some of the studies conducted include; Social games in bonobos, comparison of social and individual behaviour of

chimpanzee and bonobos. These collaborative studies between Japanese and Congelese have had a great impact on the conservation of primates in CREF/Mabali.

Subtheme 2: Primate Health and emerging Diseases

1. Pathogenesis and immune responses in newborn African Green Monkeys (Cercopithecus aethiops) inoculated with Simian Immunodeficiency Virus

Maria N. Kiio[1], Bosire N. Valeria[1], Damian Odoyo[1], Elephas Munene[1], Moses Otsyula[1], Atunga Nyachieo[2]& Onkoba W. Nyamongo[1]

[1]Tropical Infectious Disease Department, Institute of Primate Research; [2]Reproductive Biology and Health Department, Institute of Primate Research

Corresponding email: Valeriabosire6@gmail.com

Abstract

The Simian Immunodeficiency Viruses (SIVs) are a diverse group of viruses that naturally infect a wide range of African primates, including African Green Monkeys (AGMs). It has been shown that *in vivo* passage of SIV in rhesus macaques results in selection of pathogenic virus that causes Simian Acquired Immunodeficiency Syndrome. However, AGMs infected with SIV do not show signs of immunodeficiency and pathogenesis. Therefore, the present study sought to determine whether pathogenicity occurs in newborn AGMs following *in vivo* serial SIVagm passage. One newborn AGM was inoculated with cell-free SIVagm that was isolated from plasma of a naturally infected AGM and subsequent bone marrow serial transfusions were done to other three AGMs at intervals of two weeks. Virus isolation and quantification was determined by limiting dilution co-culture method. Virus presence was detected by antigen capture ELISA and polymerase chain reaction. Seroconversion was determined by antibody ELISA and confirmed by Western blot. Virus isolation and seroconversion confirmed successful SIVagm passage in newborns. After one year, all the animals did not show clinical symptoms due to SIVagm infection. Bone marrow transfusions from SIVagm infected newborn into naïve newborns induced persistent infection and anti-SIV antibody response. However, the newborns did not show pathogenesis suggesting that AGMs possess inherent resistance that either kills SIVagm or renders immune cells non-functional.

2. Serological Survey and Molecular characterization of Herpesvirus PAPIO 2 in wild caught Olive Baboons from selected Regions in Kenya

Sharon Chepkwony[1, 2], Nicholas Kiulia[1], Michael Gicheru[2], Atunga Nyachieo[1]

[1]Department of Reproductive health and Biology, Institute of Primate Research, P.O Box 244481-00502, Karen Nairobi Kenya. Email: shachero09@yahoo.com; anyachieo@yahoo.com; [2]Department of Zoological Sciences, Kenyatta University, P.O Box 43844-00100, Nairobi Kenya.

Abstract

Herpes simplex virus (HSV) infection is caused by HSV-1 and HSV-2. HSV has been associated with the risk of miscarriage, premature labor, low fetal growth rate, meningitis, chronic skin

infection and physical disability. Available drugs for HSV only lengthen recurrence period and hence development of an infection animal model phylogenetically close to human such as a baboon is crucial for testing of new interventions. Baboon herpes, herpesvirus papio 2 (HVP-2) produces a disease that is clinically similar to HSV. In Kenya, screening and molecular characterization of baboon herpes circulating strains has not been evaluated. This study sort to determine the prevalence of HVP2 in baboons and identify the circulating strains. The infected animals were identified by detection of anti-HVP-2 antibodies in sera from 189 baboons captured from different geographical regions in Kenya using enzyme linked immunosorbent assay (ELISA). In order to identify the circulating strains of HVP-2, polymerase chain reaction (PCR) was used to amplify the unique long (UL23) region that code for thymidlne kinase. Positive amplicons from PCR were sequenced. This study showed that 87% of the baboons in Kenya have been exposed to HVP-2 infection. Over 70% of baboons from six sampled regions in Kenya had been exposed to HVP-2. About 90% of the female and 83% of the male baboons were seropositive. HVP-2 strain A951 was identified. This data provides baseline information important for characterization of the baboon as an infection model to study the pathogenesis and evaluate the new interventions for HSV.

3. Sero-Prevalence of Foamy Viruses in Olive Baboons from Tana River and Tsavo National Park, Kenya

Peris Ambala [1], ***Maloba F.*** [2], ***Mwangi D. K.*** [1], ***Kagira J*** [4]., ***Kivai S.*** [1], ***Ndere D.*** [3], ***Ngotho J.M*** [6]., ***Akinyi M.*** [1]

[1]Institute of Primate Research, Karen, Nairobi (ambala@primateresearch.org); [2]Department of Zoological Sciences, Kenyatta University; [3]Kenya Wildlife Service, Nairobi, Kenya; [4]Jomo Kenyatta University of Agriculture and Technology, Kenya; [5]Mount Kenya University, Thika, Kenya

Abstract

Zoonotic diseases comprise of 60.3% of all emerging and re-emerging diseases. Non-human primates (NHPs) are the closest relative to man physiologically and evolutionary thus a major cause of concern in zoonoses. Among zoonotic viruses are Simian foamy viruses (SFV). Foamy viruses are ssRNA viruses in the genus spumavirus, family Retroviridae. Simian foamy viruses are known to infect NHPs and a few human cases have been reported with no pathogenicity. Lack of pathogenicity in humans contrasts with the massive in-vitro lytic properties of SFV in monkey and human cell lines. Despite the fact that NHPs have increasingly been implicated as potential sources of emerging viral infection, scientific data on SFV in Kenyan NHPs is not available. The present study investigated sero-prevalence of SFV circulating in NHPs from Tana River and Tsavo regions in Kenya. A total of 83 olive baboons (58-Tana River and 25-Tsavo) were sampled for blood samples and serum extracted for ELISA. The sero-prevalence of SFV was at 30.12% (25/83) in *Olive baboons*. Of these, 21/58 (36.21%) were from Tana and 4/21 (19.05%) were from Tsavo respectively. More females 13/35 (37.14%) compared to males 12/48 (25%) were infected. There was no statistical significance between Tana and Tsavo regions and between sexes when Chi-square test was used ($P < 0.05$). In conclusion, this study provides strong evidence of SFV infection circulating in Olive Baboons in Kenya. Based on the findings

in this study, I recommend strengthening of the country's surveillance systems on zoonotic diseases of NHPs origin.

Subtheme 3: **Conservation and management of African primates and other wildlife**

1. The Role of the academia in effective conservation of African non-human primates

Adalbert Aine-omucunguzi

African Institute for Capacity Development, Uganda

Abstract

The importance of primates as key elements in the functioning of tropical forest communities, as bioindicators, and as target species in the development of ecotourism is well known. For many decades, many conservation programmes have focused on the preservation of non-human primates and their habitats. Despite these conservation efforts, preservation of no-human primates especially ape has remained a great challenge particularly in Africa. This failure to achieve effective conservation of primates is partly due to non-harmonization of conservation efforts implemented by different actors. This paper examines the role that the academia should play to ensure that Africa achieves effective conservation of non-human primates. The paper analyses opinions that were solicited from some renown primate researchers in Africa.

2. Beekeeping as a Conservation tool: Opportunities and Challenges in Uganda

Moses Chemurot[1,2]

[1]Department of Biological Sciences, School of Bio-sciences, College of Natural Sciences, Makerere University, P.O. Box 7062 Kampala, Uganda; [2]Laboratory of Molecular Entomology and Bee Pathology, Ghent University, Krijgslaan 281 S2, B-9000 Ghent, Belgium.

Corresponding author email: mchemurot@cns.mak.ac.ug

Abstract

The beekeeping sector in Africa is an important source of food and employment for many rural households. It is important in rural poverty alleviation, environmental conservation and diversification of exports**.** Therefore, some conservation programmes continue to promote beekeeping along protected areas with the hope that it will reduce pressure on wildlife resources

and promote the conservation of wildlife and their habitats. Despite such conservation efforts, the role of beekeeping in conservation remains to be clearly understood particularly in Africa. This paper examines the role of beekeeping in conservation in Uganda. The paper analyses opportunities and challenges for the beekeeping sector and provides recommendations for adopting beekeeping as a conservation tool.

3. Use of Cybertracker and SMART for improved great ape conservation at multiple sites: bridging the gap between conservation practitioner and conservation researcher

Jef Dupain, Alain Lushimba, Julien Nkono, David Williams

Abstract

AWF launched its African Ape Initiative in 2013. One of the objectives is the sustainable conservation of representative populations of all nine African ape subspecies. This is mainly done through support to conservation practitioners for improved protection of priority populations, with emphasis on the effective application new law enforcement monitoring (LEM) tools like Cybertracker and SMART, combined with facilitation of inter-site sharing of lessons learned. Currently 5 sites, harboring 5 of the 9 subspecies, are involved. Despite site specificities, the conservation managers/practitioners agreed to report on standardized metrics that allow for inter-site comparison in patrol effort, status and related trends of conservation targets, salient threats, and potential management impact. This will facilitate inter-site dialogue on overcoming common challenges towards improved adaptive management.

Two major challenges appear when considering both the potential for effective reporting and efficient decision-making. The push for quantitative, evidence-based conservation and scientific rigor calls for conservation area managers to invest in resource and time-intensive field data collection. Resource-constrained managers, however, must balance that call against the need to ensure the data collection program investment is cost-effective and permits agile decision-making. Management operates most effectively when the LEM program delivers up-to-date, readily assimilated information that informs quick and targeted responses to identified threats. The rapid-response emphasis stresses flexible work planning and daily engagement contrary to the more conventional monthly/quarterly action planning. Both challenges will be presented as a request for ideas and suggestions.

4. Great Ape nest and Elephant dung decay rates in TOU Campo-Ma'an (South Cameroon)

Julien Nkono[1], Paul N'goran[2], Zacharie Nzooh[3], Martin Tchamba[4]

[1]Head of Research and Monitoring Unit of Campo-Ma'an National Park: atibebe2015@gmail.com; [2] Regional Bio-Monitoring Coordinator (World Wide Fund for Nature Regional Office for Africa / Green Heart of Africa): PNgoran@wwfcarpo.org; [3]Bio-Monitoring and Wildlife Management Coordinator (World Wide Fund for Nature Cameroon Country Program Office): znzooh@wwfcarpo.org; [4] Head of Forestry Department of Faculty of Agronomic and Agricultural Sciences in Dschang University (Cameroon): mtchamba@yahoo.fr

Abstract
From June 2014 to January 2015 we collected data on the decay rates of great apes' (*Gorilla gorilla gorilla* and *Pan troglodytes troglodytes*) nests and African forest elephant' (*Loxodonta africana cyclotis*) dung. We estimated their densities in the Campo-Ma'an Technical Operational Unit were estimated. The overall objective was to obtain a reliable estimate of densities of great apes and elephants in the landscape, for their better conservation and management. The retrospective method described by Laing and al. (2003) was used. The logistic regression model was developed using software R for Windows and Excel. The conversion formula described by White and Edwards (2000) to estimate densities and abundances of elephants and great apes was also used. Up to 112 elephant dung heaps and 170 ape nests were marked at intervals of 15 days and revisited after inventory. The logistic regression model gave an average lifespan of 132.5 ± 3.76 days for great ape nests and 105.7 ± 5.98 days for elephant dung. Applying these estimates on their densities and on respective dung and nest production rates by Ekobo (1995) and Sanz (2004) gave 0.12 [0.09 to 0.15] elephants / km^2 or 544 [425-695] elephants and 0.48 [0.38-0.60] ape / km^2 or 2199 [1736-2786] great apes. This study recommends that decay study of animal indices should be conducted simultaneously with wildlife inventories.

5. romoting the Landscape Approach for Conservation in West Africa using the Western Chimpanzee (*Pan troglodytes verus*) as Flagship

Ibrahim A. Bakarr

Department of Wildlife Management and Conservation, School of Natural Resource Management, Njala University, PMB, Freetown, Sierra Leone

Corresponding author: Email: iabakarr@njala.edu.sl

Abstract
The Upper Guinean forest ecosystem in West Africa is well established as a globally important ecoregion for biodiversity conservation. The creation or improvement of several protected areas has helped to increase the prospects for safeguarding endemic and/or highly threatened species within the ecosystem, including one of West Africa's most important flagships, the Western Chimpanzee (*Pan troglodytes verus*). The chimpanzee is particularly significant because threats to its survival are symbolic of the overall conservation dilemma in the Upper Guinea ecosystem – habitat fragmentation, bushmeat hunting, pet trade, and conflicts with humans. Due to their global appeal and conservation significance, chimpanzees present a unique opportunity for promoting the landscape approach to conservation in the Upper Guinea region. With support from the US Fish and Wildlife Service, Njala University has developed a two-year initiative that will use targeted conservation actions and training on Chimpanzees to strengthen leadership for wildlife conservation in Sierra Leone and Liberia. The initiative includes a multidisciplinary training program designed to develop a cadre of professionals from relevant government agencies, non-governmental organization, and other entities in the two countries that are engaged in conservation activities. The emphasis on conservation action and training is intended to facilitate direct link between science, policy, and practice, which will support overall needs for multi-stakeholder engagement and governance across landscapes in the Upper Guinea region.

6. Translocation of Mount Kenya guerezas (*Colobus guereza kikuyuensis*): Human-non-human primates conflict mitigation

Peter Fundi; Stan Kivai and Tom Kariuki

Abstract

Conversion of ecosystems for farming, plantations and urban or sub-urban developments is reducing a diverse range of habitats creating conflict zones between wildlife and humans. Translocation process is widely acknowledged as a human-wildlife conflict management tool with conservation and economic incentives. However, the process should be undertaken with caution to avoid translocating a problem. In Nyandarua county of Central Kenya, destruction of forests outside protected areas is a major threat to wildlife populations, including Mount Kenya guereza (*Colobus guereza kikuyuensis*). In an effort to save populations of Mount Kenya guerezas from these degraded forests and curb human-colobus interactions, we sought to translocate vulnerable groups of 100 individuals to Karura forest in two phases. Phase one, between May–September 2014, had a target of 40 individual and achieved 87.5% success; while, phase two, between December 2014 and May 2015, targeted 60 individuals and achieved 75% success. The project has garnered community support due to its effectiveness in curbing human-colobus conflicts.

7. Karisoke Research Center integrated approach to gorilla conservation

JP Samedi Mucyo

Dian Fossey Gorilla Fund International

Corresponding email: samucyo2007@yahoo.fr

Abstract

Karisoke Research Center was established by Dr. Dian Fossey in 1967 with the objective to study and protect the remaining mountain gorillas in the Virungas. Nearly 50 years later, the pioneering work of Dr. Dian Fossey, the gorilla health monitoring program, the flourishing tourism program, the involvement of park neighboring communities in conservation activities, the political support by the three countries where mountain gorilla live, have made the mountain gorillas the only great ape species growing in numbers. A recent study (Robbins *et al.*, 2011) has revealed that the extreme conservation practices are the reason of such increase. The Dian Fossey Gorilla Fund International uses a multi-faceted, integrated approach to achieve its mission. This approach will be discussed introducing the 4 strategic areas of focus namely ; 1. Protection of gorilla populations as well as their forest home 2) Scientific research on gorillas and the surrounding biodiversity 3) Training the next generation of conservationists and 4) Helping communities through education outreach and health initiatives. Finally,the use of electronic devices to collect long term data will also be discussed highlighting the increased data quality but also the challenges and lessons learned during the transition from the traditional data collection method.

8. Does conditionality for accessing conservation incentives reduce threats to great apes?

Eric Okwir,[1] Paul Okimat,[1] Andrew Wange,[1] and Caroline Asiimwe[1]

[1] Budongo Conservation Field Station, Masindi, Uganda ; Address correspondence to ericokwir10@gmail.com

Abstract

Around many protected areas, livelihood projects aspiring to minimise threats to endangered species like great apes are being undertaken. While conditionality for participation increases likelihood of success, few projects institute conditionality for their participants because its impact on threats remain unclear. We assessed impacts of conditionality on sustaining saving among households, reducing poaching, and risk of disease that are threatening chimpanzees around Budongo Forest Reserve, Uganda. Participants from 120 households were engaged in a project applying compulsory saving on household income, cessation of poaching, participating in joint snare patrols, and ownership of functional sanitation facilities as conditions for accessing the project incentive of household micro-enterprises. Savings were tracked for a year to assess impact on sustaining saving among households. Long-term data on snare recovery was used to assess impact on poaching, while impact on reducing risk of disease was assessed using observational data on ownership of functional sanitation facilities. Households saving income increased by 67%, with average savings of $ 3.7 in the first month, which declined to $ 0.7 in the sixth month. Mid-year re-application of conditionality reinvigorated savings before they declined again. Snare recovery data showed poaching declined by 3% in the forest compartment adjacent to the project village, and joint snare patrols also reduced patrolling time. A 51% increase in ownership of functional sanitation facilities was also observed after enforcing conditionality. Our findings suggest whereas conditionality fosters reduction of poaching and risk of disease, its chances to sustain saving among households may require regular enforcement and longer project timelines.

9. International Outreach and Support by Kyoto University Research Administration Office

Fumitaka Wakamatsu

Office of Research Administration, Yoshida Honmachi, Sakyo-ku, Kyoto City, 606-8501, Japan

Abstract

Kyoto University Research Administration Office (KURA) was established in 2011 to strengthen the university's research activities and contribute to creating a top-level research environment for its academics. KURA's international division engages in a wide range of activities to support collaborative research and international dissemination of research results. This presentation will introduce KURA's outreach activities and support, such as gathering information about research trends, supporting the acquisition of competitive grants, and assisting in the planning and

operation of research. The presentation provides useful information for primatologists who wish to cultivate or deepen opportunities for joint research with Kyoto University's researchers.