ASP AMERICAN SOCIETY OF PRIMATOLOGISTS BULLETIN
Banner artwork by Joel Ito

Carolyn L. Ehardt - Executive Secretary
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Spring/Summer '14

A Message from the President...

Dear ASP members,

This will be my last message to you as ASP President. I am very honored to introduce to you your new slate of elected Officers: ***Kimberley Phillips*** as President-Elect; ***Corinna Ross*** as Treasurer; and ***Justin McNulty*** as Executive Secretary. I know that they will do a fine job for us for the next two years. They will take office during the meeting banquet this year in Decatur, GA. At that time, we also will welcome ***Marilyn Norconk,*** who has served for the last two years as President-Elect, as our new President. Finally, ***Dorothy Fragaszy***, currently our Past President, will be cycling off the Board of Directors after six years. Many thanks to her for her exceptional service.

Since my last note, we also have formalized the status of two committees, the Primate Care Committee and the Media and Information Committee. These are now standing committees. This year, we will continue the ad-hoc Student Committee, as well. Students, please watch out for the fun events that they are planning for the Decatur conference, and please get involved (you can email the committee chair, Josh Smith, at hominoid@yorku.ca).

Please also watch out for fund-raising efforts from the Research and Conservation committees. While our dues have remained the same for many years, our Society has continued to spend money in high priority areas like small grants for Research and for Conservation. Those causes can use your help!

Finally, I hope to see you all in Decatur in September!

Karen Bales

ASP President
Professor and Vice-Chair of Psychology, UC-Davis
Unit Leader, Brain, Mind, and Behavior, California National Primate Research Center

37th MEETING OF THE AMERICAN SOCIETY OF PRIMATOLOGISTS 12-15 September 2014 Courtyard Marriott Decatur, Georgia

Opening Reception:
The opening reception will be held at the Old Courthouse on the Square from 6:30-8:30pm. It is located one block from Courtyard Marriott. Light appetizers, beer and wine will be served.

Closing Banquet:
The closing banquet will be held at the Sweetwater Brewery on Monday September 15th from 7-11pm. Bus transportation will be provided to and from the hotel to the brewery. Dinner, wine and Sweetwater's award winning beer will be served.

Tours:
The Yerkes Field Station tour will be held on Friday, September 12th at 10am. There will be limited availability. An email will be sent to all conference delegates for sign up opportunity.

Hotel Accommodations:
The Courtyard Marriott in Downtown Decatur has offered a special rate of $139.00 for a single or double room. You can reserve your room through this website http://cwp.marriott.com/atldc/asprimatologists. You must book by August 18, 2014 to receive this special rate! These rates are good for three days prior to and three days after the meeting. Guests are encouraged to make hotel reservations early as rooms at this special rate may fill up. Reservations can also be made through the Marriott Central Reservation number 1-888-236-2427. Please indicate that you are requesting the special rate for the American Society of Primatologists.

Flight Discounts:
Flight discounts have been offered by both Delta and American Airlines.

DELTA:

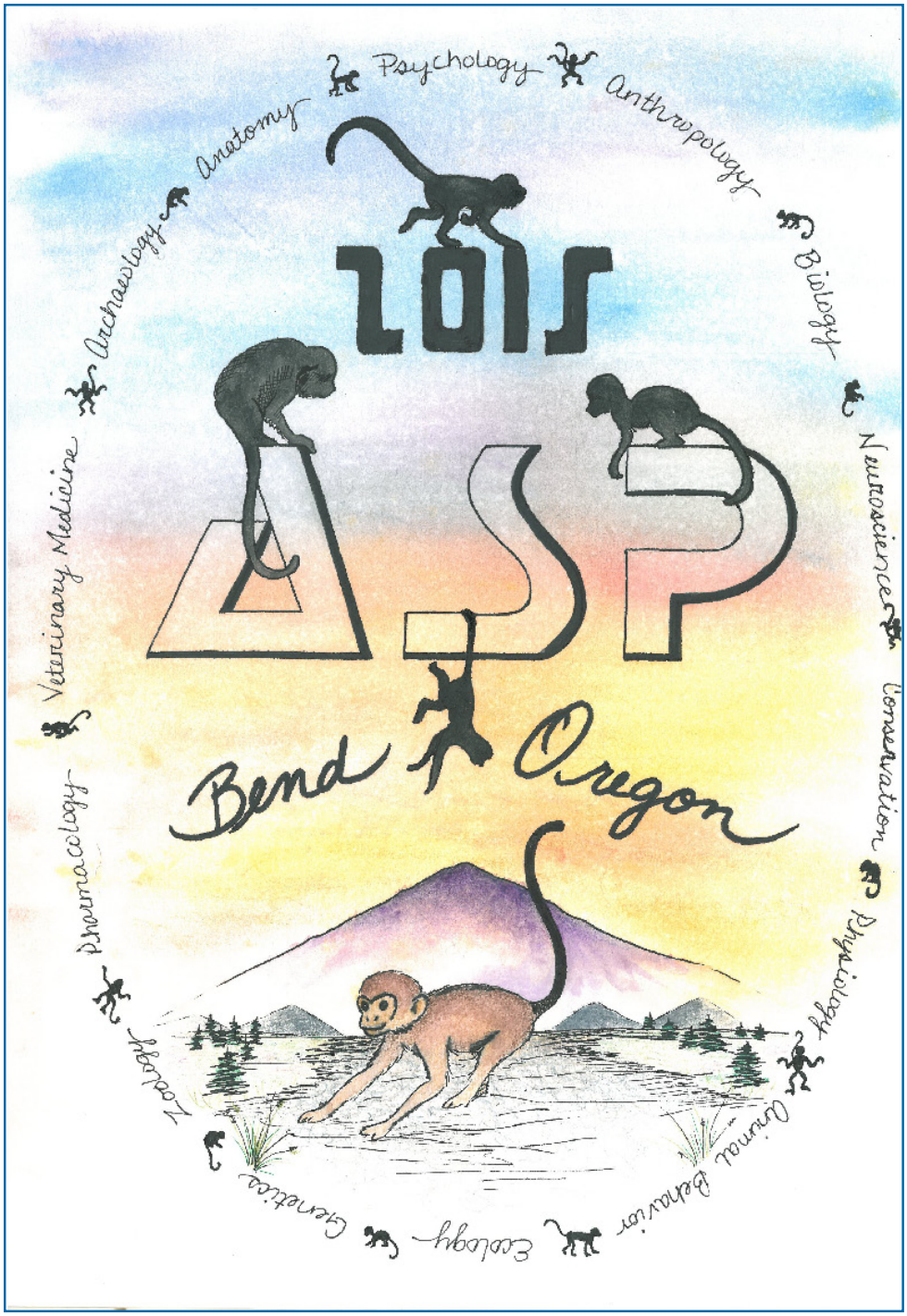
- The Delta meeting account code is **NMH5E**. The discount is good for 2%-10% off round-trip flights, based on fare class.
- Reservations and ticketing are available via www.delta.com. When booking online, select Book A Trip, click on More Search Options and enter the meeting code in the box provided on the Search Flight page.
- Reservations may also be made by calling our Delta Meeting reservations at 800-328-1111 Mon-Fri 7am-7pm CDT.
- *Please note that there is a direct ticketing fee for booking through the reservation number above.

AMERICAN AIRLINES:

- The AA discount code is: **2694BP**.
- This will be good for 5% off AA flights purchased on AA.com and is valid for travel from 9 Sept to 18 Sept 2014.

We look forward to seeing you in Decatur, GA, for another excellent ASP meeting...

ASP 2015 will be held 17-20 June at the Riverhouse Hotel and Convention Center Bend, Oregon



Bend is a vacation spot nestled between the high desert and Mount Bachelor and the Three Sisters, easily reachable from the Redmond Airport. Attendees should plan to come early and stay late to float the Deschutes River, which runs through the middle of the resort, or to see "Monkeyface" and all of the other natural wonders Central Oregon has to offer. Obsidian flows are nearby and Crater Lake, itself, is only a short distance away.

ASP Treasurer's Interim Report

I would like to extend my thanks to the Membership and Finance committee members, for their assistance and ideas in working to ensure the financial stability of ASP. The last few years have been difficult for the Society in terms of our membership numbers. Although 2013 membership year showed a slight increase in both total and paying members from 2012, by 2% and 3% respectively, overall our membership has declined over the last 10 years. At the end of the fiscal year (May 31, 2014), the membership was 420, a decline of 18% from 2013. Keep in mind that the 2013 numbers include individuals renewing or becoming members through December 31, 2013. If you know someone who hasn't yet renewed their membership, or become a member of our Society, please encourage them to do so. As a reminder, the Membership and Finance Committee created "Join ASP" posters that can be downloaded off the website. We will also make posters available at the 2014 meeting in Decatur for you to pick up. Please consider posting these posters in your department or organization.

Two hundred ninety-two individuals attended the 2013 Annual Meeting in Puerto Rico. The meeting cost the Society $110,492; revenue generated was $107,718. Thus, the Society lost almost $3,000. Over 200 individuals are registered to attend the 2014 Annual Meeting in Decatur, GA. It is important that, in addition to providing an excellent scientific program, the meeting be a financial success for the Society, as both the 2013 and 2012 meetings resulted in a net loss.

-- Kimberley Phillips, ASP Treasurer

Zanzibar red colobus Procolobus kirkii
Endangered

ASP CONSERVATION SMALL GRANT AWARDS FOR 2014

The ASP Conservation Committee reviewed 37 proposals, resulting in awards to nine recipients. The 2014 Conservation Small Grant recipients are:

Dena Clink. Utilizing vocal fingerprints to understand the impacts of experimental habitat fragmentation on Bornean gibbon (*Hylobates muelleri*) ecology at the Stability of Altered Forest Ecosystems project in Sabah, Malaysia.

Camille Coudrat. Preliminary data on the density, distribution, behavioural ecology and taxonomical status of white-cheeked gibbons (*Nomascus siki/N. leucogenys*) in Nakai-Nam Theun National Protected Area, central-eastern Laos.

Ashley Hurst. "Where do we go now? Exploring how different patterns of rainforest fragmentation impact black howler monkey (*Alouatta pigra*) movement outside of their home fragments.

Sonya Kahlenberg. Assessing Community Support for Grauer's Gorilla Conservation around Tayna Nature Reserve, Eastern Democratic Republic of Congo.

Moses Kugonza. Participatory Action Research for Primate Conservation and Community Development.

Meis Nangoy & Randall Kyes. Field Course in Conservation Biology & Global Health at the Tangkoko Nature Reserve, North Sulawesi, Indonesia.

Noemi Spagnoletti. We are all Primates! A community initiative involving rural schools to promote primate conservation in a semiarid habitat of Brazil.

Lina Maria Valencia. Effects of habitat fragmentation on movement patterns and dispersal of the endagered silvery-brown tamarin (*Saguinus leucopus)* in Norcasia, Colombia.

Alison Wade. Shared Landscapes: The human-ape interface at Mbulu Forest and the implications for conservation.

The total amount awarded was $10,492.

Congratulations to all...
Erin Riley, Chair, and Members of the ASP Conservation Committee

The ASP Conservation Committee would like to remind you of the ***upcoming deadlines for the ASP Conservation Small Grants (due 31 Jan 2015) and the ASP Young Conservationist Award (due 1 March 2015).***

CONSERVATION SMALL GRANTS (up to $1,500): Grant proposals are solicited for conservation research or related projects, including conservation education. ASP members working in habitat countries are especially urged to apply or to help someone from a habitat country submit a meaningful project that can be a portion of a larger effort. Recipients of grants must agree to submit a brief report (maximum 1-2 pages, single spaced), in a form suitable for publication in the ASP Bulletin, to the chair of the ASP Conservation Committee within 6 months of completion of the project.

Who is eligible: students, researchers, and educators of primate conservation from any country. Please note that non-ASP members and student applicants MUST submit a letter of recommendation with their application.

How to apply: please first visit the list of FAQ about the grant. Application forms will soon be available for download and can then be submitted online using the grant application system (available after January 1st, 2014). Applications will ONLY be accepted through the ASP online grant submission system. Please note that this system requires applicants to log-in to the ASP portal. You do not need to be an ASP member to apply, but you will need to register online in order to submit your application. All non-members and students are required to submit one (1) letter of recommendation (preferably from a current ASP member if a non-member; from an academic advisor if a student). Students and non-members will be asked to enter the email address of their letter writer. An email message will then automatically be sent to the letter writer with information on how to submit the letter.

Due date: 31 January, 2015

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YOUNG CONSERVATIONIST AWARD ($750): This award provides recognition and financial support for students and young investigators from habitat countries who demonstrate potential for making significant and continuing contributions to primate conservation. Past awards have been presented by U.S. Ambassadors or other senior officials, thereby obtaining favorable publicity for the award, its recipient, and primate conservation in the recipient's country.

Who is eligible: students, researchers, and educators from primate habitat countries for whom no more than five years have elapsed since receipt of their terminal degree.

How to nominate someone: send the following via email to the chair of ASP Conservation Committee, Erin Riley (epriley@mail.sdsu.edu): 1) The name, title and full mailing address of their nominee, along with a statement about the nominee's qualifications for the award, focusing on past and potential contributions to primate conservation. 2) A copy of the nominee's vita. 3) Supporting letters from other individuals acquainted with the nominee's work may be submitted.

Due date: 1 March, 2015

Erin Riley, Chair, ASP Conservation Committee

The Awards and Recognition Committee congratulates the 2014 recipients of the Maderas Rainforest Conservancy Scholarships for education and training in field primatology:

Shasta Webb, Anthropology, Macalester College
&
Rebecca Reints, Biology, Regis University

Each year, the Maderas Rainforest Conservancy offers two scholarships that are awarded through the American Society of Primatologists. The scholarships are awarded to outstanding undergraduate and graduate students and include a field course that provides research and career training at La Suerte Biological Research Station, Costa Rica, or Ometepe Biological Research Station, Nicaragua. The goals of the Conservancy are to advance research, education and conservation of primates and tropical forests.

The Committee seeks applicants with promising careers who were dedicated to primate conservation research; this year, the Awards Committee received 11 applications. The scholarships are funded through an educational grant from the Maderas Rainforest Conservancy.

The American Society of Primatologists would like to thank Dr. Andrew Halloran and the Conservancy for offering the scholarships each year.

Applications for next year are due March 1st 2015 and can be submitted through the "Grants" section of the ASP website.

-- Peter Judge, Chair, Awards and Recognition Committee

The Awards and Recognition Committee would like to thank those in the membership who submitted nominations for the Society's awards. The recipients will be announced at the upcoming meeting in Decatur, Georgia...

Yellow Baboon
Papio cynocephalus
Least Concern

Updates from ASP Committee Chairs

Primate Care Committee

This committee's focus is on advocating for the appropriate care and welfare of nonhuman primates in all settings; cooperating with other organizations regarding issues of appropriate primate care; serving as a resource on research findings and methods relating to primate care, and encouraging the scientific investigation of appropriate primate care.

In 2013 we continued our involvement with some current issues related to the care of chimpanzees living at NIH-funded research facilities. Earlier we wrote a response to an Institute of Medicine committee which conducted an analysis of the scientific necessity of chimpanzees for NIH-funded biomedical and behavioral research. More recently we prepared comments on the report of the Working Group on the Use of Chimpanzees in NIH-Supported Research. We agreed with some of the Working Group recommendations, and disagreed with others. Both of these statements were approved by ASP's Board of Directors, and can be found on the ASP website under the heading "Resolutions, Policies & Statements".

One of our committee initiatives has been to establish a new ASP award called the "Primate Welfare Award" which has been approved by the Board of Directors. At the upcoming ASP meeting in September, this award will be given for the first time to an outstanding oral presentation or poster presentation, recognizing high quality research that enhances the welfare of captive primates or that provides a better understanding of the welfare of captive primates. We hope the award will encourage ASP members to present their most important findings related to primate welfare at the annual conference. We are pleased that so many have chosen to participate in the award process in its inaugural year!

The Primate Care Committee now has a presence on the ASP website under the tab "Welfare." There is some good information related to the training of captive primates included, and we are finalizing a statement on the social housing of primates involved in biomedical or behavioral research. Look for this on the ASP website in the future. We are focusing first on providing science-based information that we think will benefit ASP members, or others who visit the website. In the future we plan to add more information related to social housing and environmental enrichment to the website, and to provide more information that will help the general public better understand the welfare of primates living in all settings.

Our committee members are Melinda Novak, Julie Worlein, Alison Grand, Sian Evans, Kate Baker, Amy Fultz, Andrea Clay, Corrine Lutz, Kris Coleman, Tina Koban, Jaine Perlman, Jim Weed, Melissa Truelove, Alesha West, Greg Wilkerson, Michele Fahey, Stephanie Braccini, Lisa Reamer, Peter Pierre, and Stefanie Nelson. These individuals work with captive primates in a wide variety of settings, bringing a diverse set of perspectives to our committee's work.

Mollie Bloomsmith, Chair

Updates from ASP Committee Chairs (cont'd)

An Update from the ASP Conservation Committee: Survey on the Impact of the ASP Conservation Small Grant Program

Since 1989, ASP has provided funding in support of research and education projects aimed at promoting and effecting primate conservation. A total of 170 projects on 66 primate species have been supported in 40 countries. In an effort to assess the conservation impact of the ASP Conservation Small Grant program, the ASP Conservation Committee developed and administered a voluntary survey to former grant recipients from the years of 1997 – 2012. The results of this analysis will be presented at the upcoming meetings in Atlanta, September 2014.

The application deadline for the ASP Student Competition is:

15 August 2014

See the ASP website for details and instructions: https://www.asp.org/grants/studentprizeawards/index.cfm. Please contact the Education Committee Chair, Dr. Amanda Dettmer, at dettmera@mail.nih.gov with any questions regarding the Student Competition.

Vervet Chlorocebus pygerythrus
Least Concern

Updates from ASP Committee Chairs (cont'd)

ASP Student Committee (Ad Hoc)

The ASP Student Committee was formed in 2012 as a result of discussion the "ASP at 50" discussion which addressed ways to improve ASP. The mission of the ASP Student Committee is to strengthen ASP's appeal to students, to build the ASP student membership, to enhance the student member experience, and to provide a resource that brings together students, faculty, researchers, and all ASP members. From 2012-2013, the Student Committee was essentially just the chair (me: Joshua Smith). The first Student Committee meeting was held at the 2013 annual meeting, where the committee grew to approximately five members. At the 2013 meeting we also held the first Student Mixer with a $200 budget generously provided by ASP. Since the 2013 meeting we have been working to expand the committee, to develop student resources, and to plan student events for the 2014 meeting. We are currently working on a Student Committee website where students can learn more about ASP, the Student Committee and its activities, and being a student member, find resources (e.g., an interactive listing or map of student member locations, a listing of primate graduate schools, a directory of ASP member websites and blogs, and a student FAQ). The website will also feature a section highlighting current student research as both the graduate and undergraduate levels (including a brief research description, photos, and links to research presentations and write-ups or publications). Additionally, we are in the planning stages for two student events to be held at the 2014 meeting: 1) a Student Mixer and meet and greet with Atlanta area primatologists (both ASP members and nonmembers) and 2) Student/Full Members Speed Meetings (a rapid meeting and networking session where students can meet informally with and pick the brains of established ASP full and retired members).

Joshua Smith, Chair

Sanje mangabey Cercocebus sanjei
Endangered

ASP again particpated in the USA Science and Engineering Festival, Washington, DC

OFFICIAL PARTNER

USA SCIENCE & ENGINEERING FESTIVAL

The 3rd Annual USA Science & Engineering Festival was held in Washington, DC from April 25-27, 2014. ASP once again hosted a booth, "Are You Smarter Than a Monkey?" to teach the public all about primates, from taxonomy to research to conservation. We engaged the public with several hands-on activities including a color-sorting task, termite fishing, and primate puzzles. Over the course of the weekend, we interacted with thousands of people and publicized the great work our society's members. The event was a huge success, and would not have been possible without all of the volunteers:

Amanda Dettmer Chair)	Anike Oladeji	Doree Fragazy
Justin McNulty	Elizabeth Simpson	John Capitanio
Ashley Murphy	Karen Hambright	Sarah Barks
Chris Catalfamo	Neal Marquez	Denisse Guitarra
Annika Paukner	Alya Wilson	Nejra Isic
Anna Casey	Grace Maloney	James Erard

Thank you to all who helped make this outreach event a huge success!

See photos - next pages...

Celebrating ASP Science at the USA Science and Engineering Festival, Washington, DC

ASP's "Are You Smarter Than A Monkey?" booth

Amanda Dettmer helps two young girls with the color sorting task

Kids learning about termite fishing and primate color vision. Volunteers pictured are Ashley Murphy (front) and Amanda Dettmer (back)

ASP had a constant stream of visitors, often with a line of people waiting to try their hands at termite fishing and color sorting

A young girl attempts a primate puzzle board

From L-R: Chris Catalfamo, Ashley Murphy, and Justin McNulty volunteering at ASP's "Are You Smarter Than A Monkey?" booth

Conservation Small Grants Award Report:

Chimpanzee (*Pan troglodytes*) Ranging Patterns in Fragmented Habitat

Maureen S. McCarthy, M.S.
University of Southern California, Department of Biological Sciences

Supervising Professor: Dr. Craig Stanford, University of Southern California

Background

Chimpanzees (*Pan troglodytes*) have been studied in a variety of habitats across their geographic range, including woodland, rainforest, and savanna [1-3]. Despite the importance of ecological influences on chimpanzee behavior, however, they have rarely been studied in fragmented habitats. Instead, most studies of wild chimpanzees have focused on a few communities at long-term sites in protected areas [1, 2, 4, 5, 6]. Nonetheless, in West Africa, up to 81% of chimpanzee populations live outside protected areas, in fragmented and unprotected forests [7]. Habitat fragmentation is also a pervasive issue in the East African country of Uganda. Uganda has one of the highest deforestation rates in Africa [8] and ones of the highest human population growth rates in the world [9], yet contains a population of 5,000 chimpanzees [10]. In Western Uganda, as many as 260 chimpanzees live in forest fragments of the Murchison-Semliki landscape [11]. This recent estimate, which is considerably higher than prior estimates [10], underscores the importance of studying this potentially large but little understood chimpanzee population.

Though limited data suggest chimpanzees are not restricted to forest patches in human-altered habitats [12–14], no research to date has extensively examined these patterns. Such research is necessary to better understand the flexibility of chimpanzee behavioral ecology. Tutin and White [15] suggested the large home ranges typical of chimpanzees may partly be an adaptation to traveling between patches of forest separated by savanna during prior periods of their evolutionary history. Thus, chimpanzees may be well adapted for some of the ecological constraints imposed by anthropogenic habitat fragmentation. The goal of this study is to investigate the influence of habitat fragmentation on chimpanzee ranging patterns to better ensure their survival in this growing habitat type.

Methods

Fieldwork (completed)

The study area lies in the Murchison-Semliki landscape, which stretches between Murchison Falls and Semliki National Parks in Western Uganda. It lies along the northern range of the Albertine Rift and is mosaic habitat composed of farmland and villages, lowland riparian forest fragments, swamps, and savanna grasslands. The study area is a sub-section of this entire landscape, however. Two large, continuous forests in this region, the Budongo and Bugoma forests, contain populations of approximately 584 and 570 chimpanzees, respectively [10]. The study area stretches between them, measuring approximately 40 km long by 20 km wide. This farm-forest mosaic and has been identified as a potential wildlife corridor [10].

McLennan [11] estimated that as many as 260 chimpanzees live in the fragmented forests between the Budongo and Bugoma. These chimpanzees may comprise as many as 8-10 distinct communities (McCarthy, pers. obs.) and are the study subjects for this project. They are unhabituated to researcher presence, though they are well-accustomed to humans, since humans typically live in close proximity to them. Researchers avoided habituating these chimpanzees due to potentially negative consequences, including increased crop-raiding, heightened disease transmission, increased aggression and stress in chimpanzees, and an increased risk of chimpanzee poaching [16-18].

Because these chimpanzees were not habituated to researcher presence, a combination of approaches including direct observations (chimpanzee sightings) and indirect evidence (nests, wadges, feces, and hair) were used to determine home range size. In particular, chimpanzee fecal samples were collected noninvasively to obtain genetic evidence of chimpanzee movement patterns. Samples were collected over one year from nest sites and other locations in the study area using the collection method and two-step storage protocol described by Nsubuga et al. [19]. All observation waypoints were recorded using a Garmin 60CSx GPS.

I collected 865 total fecal samples over one year. Total sample size exceeded the target of 760 samples, 3 times the estimated population size (260), based on standard genetic mark-recapture methods [20].

Lab Work and Analysis (ongoing)

Genotyping is currently being used to help determine minimum home range size. Through the analysis of fecal samples containing genetic material, genotyping allows for identification of distinct individuals in the study area. DNA is currently being extracted using the Qiagen QIAamp DNA stool kit, and amplified using well-established polymerase chain reaction (PCR) procedures [22]. To genotype samples, DNA is being extracted and amplified at 11 highly polymorphic microsatellite loci using the method described in Arandjelovic et al. [21]. I am conducting genetic analyses at the Molecular Genetics Laboratory at Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.

Because the total collected samples exceeded the target, I should be able to obtain a narrow confidence interval estimate for chimpanzee population size. Further determining minimum home ranges requires knowing where one community range ends and the next begins. Chimpanzees are territorial, so we usually see little range overlap except at boundaries and where dispersal occurs [2]. Because these chimpanzees are unhabituated, however, behavioral observations of ranging were rare. Instead, genetic data will provide crucial information to help determine minimum range size. Spatial genotype clusters will denote members of a single community. Additional evidence of community dynamics will emerge through *nest groups*, clusters of same-age nests indicating parties of individuals who nested together in a social group [11]. Fecal samples were often found in association with nest groups and were noted accordingly. Additional insights into community dynamics can be gathered from kinship analyses. Because chimpanzees are philopatric, brothers usually belong to the same community (except in rare cases; [23]). Genotypes for male kin in two separate locations should indicate that both fall within the range of a single community. Overlap between apparent community ranges may indicate home range overlap or dispersal events, and will be evaluated according to individual sex (since females usually disperse), habitat type (to determine whether resources draw multiple communities to an overlap zone), and degree of overlap (both spatial overlap area and number of individuals in apparent overlap). Therefore, although estimating home range size is difficult for unhabituated chimpanzees, genetic analyses will greatly facilitate this by providing substantial evidence of intra- and inter-community dynamics.

ArcGIS software will be used to map genotypes. The presence of individual genotypes among multiple forest fragments would support the hypothesis. Kinship will be determined using KINSHIP software to conduct maximum likelihood tests indicating sibling relatedness based on shared alleles [22]. Minimum home range size will be estimated using the 100% minimum convex polygon method.

Lab work and analysis began in October 2013 and is expected to last for one year, until October 2014.

Project Significance

Evidence of chimpanzee movement across a human-altered landscape may imply broad gene flow between the Budongo and Bugoma Forests [10]. It would also suggest that chimpanzees in this fragmented habitat should be targeted for conservation. To date, little such effort has been applied here, since it is generally considered more prudent to conserve chimpanzees in less degraded habitats. This may also suggest local chimpanzee populations in individual fragments need not be targeted with drastic conservation measures like translocation, since populations may be replenished through re-colonization from nearby populations. This study will help clarify the mobility of these chimpanzees while providing critical information to direct conservation measures for endangered chimpanzees in Uganda and elsewhere.

Acknowledgements

For permission to conduct this research, I thank the Uganda Wildlife Authority, the Uganda National Council for Science and Technology, and the Uganda National Forestry Authority. This research was supported by the American Society of Primatologists, the University of Southern California Dornsife College of Letters, Arts and Sciences, Primate Conservation, Inc., the Nacey Maggioncalda Foundation, and the German Academic Exchange Service.

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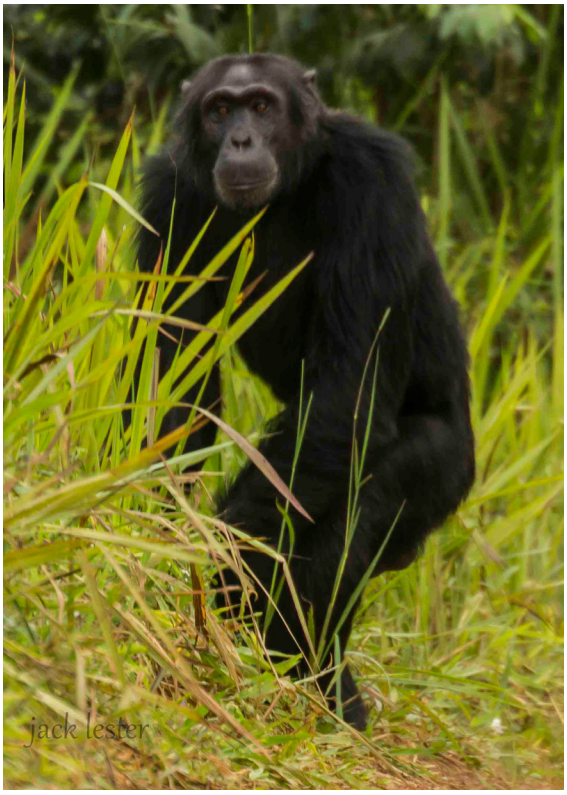
Forest clearing in the study area, Western Uganda. Photo by Maureen McCarthy.



Male chimpanzee, Western Uganda. Photo by Jack Lester.

A chimpanzee nest found in the study area. Photo by Maureen McCarthy.

Forests in Western Uganda are being clear-cut for agriculture. Photo by Maureen McCarthy.

Conservation Small Grants Award Report:

The search for Sibree's dwarf lemur (*Cheirogaleus sibreei*) in southeast Madagascar

James P. Herrera
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Biodiversity worldwide is threatened by human activities. Tropical ecosystems are especially vulnerable and harbor the greatest diversity of life. Madagascar is one of the most crucial conservation priorities in the tropics due to the high microendemism and rapid habitat loss. Lemurs are flagship species that have received great conservation attention due to the diversity of species and the fragmented landscape in which they live. While some species are widespread and occur in multiple forest types, others are geographically restricted and their habitats are often under heavy anthropogenic pressure. Some species are limited to ranges that are unprotected and fragmented, like Sibree's dwarf lemur, *Cheirogaleus sibreei*. This species was thought to be extinct until 2009, when it was found in a forest fragment in central eastern Madagascar (Tsinjoarivo). *C. sibreei* is considered Critically Endangered because of its small geographic range and population size. In this project, I explored a high-mountain site in Ranomafana National Park (RNP) to determine if *C. sibreei* was present there, as previously suspected (PC Wright, pers. comm.).

The most important outcome of this project is confirming the presence of Sibree's dwarf lemur in RNP, the only known protected area where this species occurs. This is a range extension of approximately 260km south from its only other known site, Tsinjoarivo. Tsinjoarivo is an unprotected forest fragment, suffering from continued logging and clearing for agriculture. Confirming the presence of Sibree's dwarf lemur in a protected area is a huge aid to its conservation.

I set Havahart and Sherman brand live-traps (25-60 traps per night) on trails throughout the study area between August 2012-February 2013 and October 2013. In total, I captured nine individuals from RNP that match the external morphological description of *C. sibreei* (Figure 1). Further, morphometric data support that the *C. sibreei*-like individuals from RNP most closely match confirmed *C. sibreei* from Tsinjoarivo (Discriminant Function Analysis, 100% of RNP *C. sibreei*-like individuals predicted to be Tsinjoarivo *C. sibreei*). Lastly, female *C.sibreei*-like individuals from RNP have the distinctive female genital morphology described for *C. sibreei* from Tsinjoarivo. These morphological results strongly suggest the individuals at RNP are indeed *C. sibreei*. I have returned to Stony Brook University to begin genetic analysis in January 2014 to confirm the species I have captured with molecular evidence.

The second most important outcome of this study is discovering that the habitat where Sibree's dwarf lemur occurs on Mt Maharira is in stark contrast to the rest of RNP. While RNP is predominantly rainforest on eastern slopes, Mt Maharira contains elements of dry forest otherwise found in western Madagascar. The orography and topographic continuity of Mt Maharira with the western high-plateau create a unique biome, isolated from other such forests by as much as 200km. Having a better understanding of the habitat requirements for Sibree's dwarf lemur will help target further sites for survey and protection. For example, I used local maps as well as remote sensing and GIS to identify remaining forest similar to Mt Maharira. I targeted a forest north of RNP with similar topography and part of the central high plateau and have confirmed a third site with Sibree's dwarf lemur. This site north of the park is currently under consideration for addition to the protected area system, and the presence of the Critically Endangered Sibree's dwarf lemur in the forest may tip the scale in favor of protection.

Lastly but equally important is that this study supported local rural communities bordering RNP. I hired up to 12 local villagers as guides and research assistants throughout this project and for many of them, this was the first time they earned a salary. I also hired a total of 100 different people for temporary work as porters to the field site. I bought

food locally and from numerous different local people, spreading the economic aid as far as I could. I also supported a Malagasy graduate student from the University of Antananarivo, Tongasoa Lydia. Lydia has been assisting me in my project as well as developing her own PhD project, complimentary to my study. I helped Lydia

design her research project and seek funding from granting agencies. She is now an independent researcher near to completing her dissertation fieldwork.

The next steps I will take in this project will be to increase survey effort in the unprotected forests north of RNP, where I have also discovered a population of *C. sibreei*. This species appears to be abundant in the western forests north of RNP, a relatively large patch of unique high-plateau forest. The unprotected forest is used heavily by local populations. My future goals include: [1] conservation research focusing on refining the geographic distribution and population size estimates for *C. sibreei*, and [2] developing sustainability projects for the local population. Expanding my survey area, I will include some of the last remaining patches of high-plateau forest in southeast Madagascar to identify forests that support populations of *C. sibreei* and prioritize them for preservation. Further, I will use my trapping data to estimate population densities and total population sizes via Mark-Recapture techniques. Important sustainability projects I will initiate include: clearing fire-breaks between agricultural lands and remaining forest patches, training in hillside terrace farming as an alternative to slash-and-burn agriculture, and reforestation using a mixture of native and fruit-crop trees. I have initiated some of these projects during October – December 2013 with funding from the Margot Marsh Biodiversity Fund. Further, I have been advising the local population who agree to establish an association focusing on protecting and managing the remaining forests locally; this community-based management project is called "Ny alan'olona": the people's forest. I have received some funding to continue this project into 2014 (Muhamed bin Zayed Species Conservation Grant).

Through these research and development activities, I hope to preserve more of the last remaining high-plateau forest, one of the most endangered habitats in Madagascar, and its unique biota, including Sibree's dwarf lemur.

Figure 1. Photographs documenting color variation and possible species differences observed in captured dwarf lemur populations. Each set of photographs documents facial, ventral, dorsal, and genital variation among captured dwarf lemurs. Dwarf lemurs in (a) and (b) are captured individuals that are most likely *Cheirogaleus crossleyi* and (c) is one *C. sibreei*. Note also morphological variation, especially ventral color variation, in *C. crossleyi* (a and b). Genital morphology is depicted in both sealed (a) and sexually receptive (b) females of *C. crossleyi* and in a sealed *C. sibreei*.

a)

Figure 1 (cont'd):

b)

c)