

## **BERENTY RESEARCH PROJECTS 2009-2010**

### **THESES**

RAKOTOMALALA Nirina Lalaina. 2009. *Essai de détermination des lignées maternelles dans trois groupes de Lemur catta (Linné, 1788) de la réserve de Berenty, par les études des interactions sociales*. Mémoire de fin d'études en vue de l'obtention du certificat d'Aptitude Pédagogique de l' Ecole Normale Supérieure de l'Université d'Antananarivo.

TSARAMANANA Raymond Donald. 2009. *Etudes comparatives des comportements de Lemur catta (Linné, 1758) pendant la saison humide de 2006 et 2007 en fonction des disponibilités alimentaires dans la réserve de Berenty*. Mémoire de fin d'études en vue de l'obtention du certificat d'Aptitude Pédagogique de l' Ecole Normale Supérieure de l'Université d'Antananarivo.

RAVAHATRAMANANJARASOA Fefy Niaina. 2010. *Relations intersexuelles des individus adultes sifaka, Propithecus verreauxi, pendant la période de copulation, dans la réserve de Berenty*. Mémoire de fin d'études en vue de l'obtention du certificat d'Aptitude Pédagogique de l' Ecole Normale Supérieure de l'Université d'Antananarivo.

### **FILMS AND TELEVISION**

2010 July : AFRICAN VOICES of CNN-TV « The Lemur Lady »:

<http://www.cnn.com/2010/WORLD/africa/07/22/hanta.rasamimanana.lemur.lady/index.html>

**WEBSITE** Created by Chris Klimowicz, The University of Michigan - Dearborn

<http://www-personal.umd.umich.edu/~fdolins/berenty/index.html>

### **2009-2010 RESEARCH**

#### **LEMUR TROOP A1 DEMOGRAPHY AND SOCIAL BEHAVIOUR**

WALKER-BOLTON, Amber, Dept. of Anthropology, University of Toronto, Toronto, ON, Canada

A1 group was observed for six days from June 14<sup>th</sup> 2009 to August 30<sup>th</sup>. Individuals observed:

Adult Females - Fyawn, Chris, Flavia, Finch, Frances, Simi, and Coco

Adult Males - Hank, Dave, Nok, and Scott

Juveniles - Spat, Sprite, 7UP

Simi is the alpha female. Finch and Flavia spend a great deal of time grooming and cuddling with each other. Flavia is heard to spat to Finch once. Hank is alpha male. Simi leads troop movement once, Flavia leads troop movement once (both after vocalizing to group). Sprite may be Flavia's son from appearance and behaviour. Nok is vigilant after intergroup interaction, looking toward where Restaurant group left to while others feed.

## **RING-TAILED AND BROWN LEMUR DEMOGRAPHY—ENTIRE RESERVE**

RAZAFINDRAMANANA, Josia. Doctoral student at Oxford Brookes, UK.

Censused *Lemur catta* troops in entire reserve. The total reserve population in 2008 was 472 + 102 new born infants. As of January 2010, the 2009 total population decreased to a total of 462 + 115 infants: 267 (plus 68) in Malaza, 195 (plus 47) in Ankoba. In 2010, the total population again decreased to a total of 409 + 94 infants: 243 (plus 52) in Malaza, 166 (plus 42) in Ankoba.

Censused *Eulemur* population in entire reserve. In 2009, the total was 562 (plus 80 juveniles): 358 (plus 50) in Malaza, 204 (plus 30) in Ankoba . In 2010, the total increased to 576 (plus 93 infants): 366 (plus 56) in Malaza, 210 (plus 37) in Ankoba.

## **LEMUR MATING BEHAVIOR AND OLFACTORY COMMUNICATION: TROOPS A1 AND C1**

WALKER-BOLTON, Amber, Dept. of Anthropology, University of Toronto, Toronto, ON, Canada, assisted by RANDRIATSARA Fetra

Observations were conducted from March 21<sup>st</sup> to June 7<sup>th</sup> 2010. Groups C1 and A1 were studied. All members of A1 observed in 2009 were seen in 2010 except: Scott, Hank and Coco. New members not seen in 2009 were: Frank, Alec, and Eric. Coco was very advanced in age so it is expected that she died of natural causes. The rest of the changes were all adult males so it is expected that they transferred to neighbouring groups.

C1 group consisted of 4 adult females, 4 adult males, and 4 juveniles. Observations were conducted from 0630 to 1700 hrs five days a week. This data collection resulted in a master's dissertation at Roehampton University. The data collected were used to describe olfactory communication networks and patterns of female mate choice and male mating success. Social network analysis was employed to quantify male olfactory signaling and test explicit predictions of sexual selection theory. Relationships were examined for individual male rates of behaviour as well as dyadic rates of behaviour between male- female pairs. Evidence was found that male olfactory signalling impacts female choice and male mating success as strong correlations were found between these measures when male rank was controlled for. Female ring-tailed lemurs were found to show mate choice for the males with whom they had strong olfactory connections. Male mating success was strongly linked with male olfactory signaling to pre-oestrous and oestrous females independent of male rank.



Amber and Fetra in Berenty elementary school during poster contest

## LEMUR TROOP LEADERSHIP, MATING BEHAVIOR AND SOCIAL BEHAVIOR

MERTL-MILLHOLLEN, Anne. Departments of Anthropology at Portland State University, Portland, Oregon, and at University of Oregon, Eugene, Oregon, assisted by MILLHOLLEN Emily.

Student: RAHARISON, Sahoby Marin, ESA

During late May-June and again in early July, collected ranging and feeding data on Troop D1A to compare with prior years of data. Although the troop continued to range in its historical home range near the river, it had extended its range to the south to include a stand of *Opuntia* as one of its feeding sites. It also utilized a nearby tree for sleeping in the south part of its range. In the past decades, the sleeping trees were always nearer the river. Will continue to study home range and resource utilization for this troop in the future.

Students: KUYKENDALL, Adam T., NIEMEYER, Alicia, and PETERSON, Stacie. Department of Anthropology; Portland State University; Portland, Oregon 97201

During June-early July 2010, collected 200 hours of continuous *ad libitum* and 5-minute interval point focal animal behavior samples during 21 full days following *Lemur catta* troop CX, comprised of four females and one male. In addition, collected 5-minute interval point samples of group behavior, where feeding behavior took precedence. From these data, examined the following:



- A comparison of within-group affiliative and agonistic behaviors at different proximities to estimated territorial boundaries, with between-group competition positively reinforcing within-group affiliative relationships (KUYKENDALL)



- The way in which dominance hierarchy position influences lemur feeding time, with higher ranking individuals having preferential feeding opportunity in less resource-abundant patches (NIEMEYER)

Alicia Niemeyer (photo by Stacie Peterson)



Stacie Peterson (Photo by Adam Kuykendall)

- A comparison of focal animal and group scan sampling methods indicating that the focal animal sampling method gave more accurate rates for feeding (PETERSON)
- Observed polyestrous mating by two females. None of the troop females gave birth subsequently that year. This was a small troop of four females but only one male.
- Observed leadership in linear group progressions: although all troop members led occasionally, the dominant female led most often. Additionally, on two separate days when a female was in estrus during the polyestrous cycle, the estrous female led the troop outside of its range, thus including males from other troops in the male mating competition.

In a separate experiment, recorded sniffing responses to feces from other troops to determine whether lemurs might use feces as an olfactory information source. They showed no response to feces (MILLHOLLEN and MILLHOLLEN)

Recommendations. Historically, small troops show poorer reproductive success than do medium-size troops. In the future, this is a worthwhile topic for investigation since reproductive success is vital to lemur survival.