

## Silky Sifaka (*Propithecus candidus*) Conservation Education in Northeastern Madagascar

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### Introduction

The president and senior staff of Conservation International recently pointed out that “In terms of primate conservation, there is no doubt that Madagascar is the world’s single highest conservation priority” (Mittermeier et al., 2003, p. 1538). With five primate families found only on this island nation, Madagascar’s degree of primate endemism is more extreme than that of any other nation. This fact is reflected in the estimated 257 million years of unique primate evolutionary history on this island, and demonstrates extreme phylogenetic diversity unparalleled by any other place on earth (Sechrest et al., 2002). Moreover, more than 67% (43/64) of extant lemur taxa face a significant risk of extinction over the next several decades. In terms of total number and percentage, there are more threatened primates in Madagascar than in any other country (Mittermeier et al., 2003). Finally, the phrase “risk of extinction” carries a chilling reality in Madagascar, unlike other nations, where 17 or more primate species (in 9 or more genera!) actually have gone extinct within the last 2000 years. Such extinctions are generally attributed to the first arrival of humans to the island about 2000 years ago (Godfrey & Jungers, 2003).



The silky sifaka (*Propithecus candidus*, above) is a critically endangered indrid lemur living within the fragile borders of just two protected areas (Marojejy National

Park: <[www.marojejy.com](http://www.marojejy.com)> and Anjanaharibe-Sud Special Reserve) in the small mountains of northeastern Madagascar. With only an estimated 100 to 1000 individuals remaining in the wild (there are none in captivity), silky sifakas are one of the three rarest lemurs in all of Madagascar and are one of the Top 25 most endangered primates in the world, out of over 600 total primate taxa (Mittermeier et al., 2002). Silky sifaka conservation is threatened by human hunting (Safford & Duckworth, 1989; World Wildlife Fund staff at Andapa, Madagascar, personal communication, 2001, 2003; K. Keiser, personal communication, 2001), hunting by the fossa, a mammalian carnivore (personal observation, 2001; Wright, 1998), and habitat loss from almost annual cyclone damage (Wright, 1999) and slash and burn agriculture (Goodman, 2000).

### Human Hunting of Lemurs



Figure 2: Slaughtered lemurs.

Historically, as for other lemurs, the greatest conservation threat to the silky sifaka has been cultivation of hill rice through slash-and-burn agriculture or “tavy” (Mittermeier et al., 1994). Although human hunting of primates in Madagascar is generally less widespread than in Africa or Asia (Cowlshaw & Dunbar, 2000), nevertheless in some parts of Madagascar, such as Marojejy National Park, steady lemur poaching is evident. Tattersall (1982) suggested hunting must be occurring, given that the most accessible parts of Marojejy seemed “largely bereft of larger mammals and birds”. Duckworth et al. (1995) found numerous lemur traps and “villagers said that lemur hunting is their main reason for penetrating the reserve” (p.556). More recently, Goodman (2000) identified many human trails utilized by local people during lemur hunting, to gain access to hidden agriculture, and to harvest forest plants for medicinal and construction purposes. In

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2000, a silky sifaka was killed by a poacher, but confiscated by local authorities (see photo). Similarly, during the 14.5 months of my research from 2001 to 2003, several episodes of lemur poaching within “protected areas” were evident. Estimated lemurs killed per hunt ranged from several to 70, with each being sold for 25,000 FMG (US\$4) on average.

Unfortunately, there is no *fady* or taboo against hunting of the silky sifaka as there is against hunting of Indri, the largest extant lemur. Nor is there a shortage of meat in this cattle and rice culture situated within the wealthy vanilla-growing region of Madagascar. After questioning numerous local villagers and authorities as to the reason for lemur hunting, it became clear that upper middle class families enjoyed the taste of wild lemur as a delicacy or “picnic food”. Several individuals remarked that the meat tastes so good, one does not even need *sakai* or Malagasy hot sauce. Several individuals testified that the upper middle class hire local impoverished men and provide them with guns and bullets for the lemur hunt. It also became clear that many people living near these protected areas do not understand how rare and special these lemurs are. I therefore began a conservation education program in collaboration with local authorities, the Peace Corps, and Cornell University, with the support of the Conservation Committee of the American Society of Primatologists.

Although conservation education programs near or within protected areas in developing nations are relatively recent (Jacobson & Padua, 1995), such efforts are an increasingly routine goal of wildlife researchers. Although very few doubt the importance of such endeavors, some question whether quantitative evidence exists as to their effectiveness (e.g. Cowlshaw & Dunbar, 2000). There have been some well-documented successes. Blanchard (1995), for example, demonstrates dramatic population size increases (doubling in some cases) in Canadian seabirds following an intensive decade of local environmental education. Significant changes towards pro-conservation attitudes and increases in animal recognition by local peoples have been documented in mountain gorillas (Weber, 1995) and golden-lion tamarins (Dietz & Nagagata, 1995) following educational programs.

### **Conservation Education: Appeal to Hearts and Minds**

A two-pronged strategy towards conservation education about the silky sifaka was adopted. The first component might be considered the “cognitive” component while the second can be labeled the “emotional” component.

The goal of the first component was to increase awareness and knowledge in local villagers and children about the uniqueness of, and existing threats toward, silky sifakas. This goal was pursued through:

- 1) twelve slide presentations at primary and secondary schools adjacent to the remaining habitat of the silky sifaka;
- 2) distribution of large, color laminated silky sifaka photos with informational text on the reverse side;
- 3) distribution of world maps to each school;
- 4) distribution of large colored laminated lemur field guides in three languages to each school and to the authorities supervising the protected areas;
- 5) mounting and distribution of large informational signs with photos and text in three languages at the main ecotourist camp site and in nearby cities;
- 6) training of local villagers as ecotourist guides; and
- 7) radio interviews.

All of the presentations and interviews were conducted in the local dialect of the Malagasy language with the assistance of local teacher Rabary Desire and Peace Corps volunteer Paul Atkinson. These presentations took place from November to January, 2004. Since that time Paul Atkinson and Rabary Desire have continued to deliver similar presentations at more schools with funds donated by myself and equipment supported by the Conservation Committee of the American Society of Primatologists.

The goal of the second “emotional” component was to associate conservation of the silky sifaka with positive emotional experiences. In other words, we hoped to appeal to their hearts as well as their minds. Traynor (1995) points out that “increased knowledge about the environment does not automatically result in behavior that is environmentally responsible. Affective and social factors must also be addressed since people’s behavior depends not only on their skills and knowledge but also on their feelings, motivation, and commitment” (p.17-18).

Towards this end, a wildlife art contest was conducted with local children following a several-hour discussion of biodiversity, endemism, and ecotourism. Throughout this time there was an interactive discussion of current local environmental threats. All interested children were provided with colored pencils and paper. It was our hope that this artwork could ultimately be sold to ecotourists visiting the park since there are presently no local crafts for sale at the park entrance. Children that showed the most interest or effort in their artwork and/or during the interactive discussion were invited in groups (average size, 14 kids) for free 3-day trips into Marojejy National Park to observe and learn about the silky sifakas.

Four groups, totaling 55 children, were brought into the park. These trips took place between June and August, 2004. All of these children live adjacent to the park but had never been within the park boundaries. They were all extremely excited and very happy to make the trip. While hiking to camp we played a species identification game, where all known plant and animal species were called out as they were encountered. We took turns tell-

ing the group about our favorite animal or plant and why we liked it so much. While in camp, we read a conservation story book about a Malagasy hunter who is slowly convinced by his ancestors and the creatures of the forest, who speak to him in his dreams, to respect nature as that is the wish of the ancestors. Then all the children acted it out as a skit. We discussed the behavior and conservation threats to silky sifakas. Then we asked the children to make up songs about what they learned and we all sang those songs. At dawn we tracked and observed the group of silky sifakas that were the subject of my research.

Silky sifakas are absolutely stunning, gorgeous animals with creamy white pelage that has inspired their nickname, “Angels of the Forest”. Virtually all observers, particularly the children, appeared awe-stricken, lost in wonder and joy at their first live sighting of this special lemur. All children returned home with silky sifaka flags and other conservation-related mementos.

#### **Lessons Learned: Village School Presentations**

The participation of local teachers greatly facilitated the effectiveness of the school presentations. We actively recruited their assistance, which not only made the teacher feel more involved with what we were doing but also ensured a far more orderly classroom. A slide projector designed for use in developing countries worked very well. It has few moveable parts, projects only one slide at a time, and is powered by a rechargeable battery that can be charged using either solar panels or traditional wall outlets. A teacher recommended we use a battery-powered megaphone to maintain the attention of large groups of children. This was valuable advice. Not only did use of the megaphone permit more people to hear what was being said, it also instantly quieted down the crowd. Although in some cases we spoke to groups as large as 200, in the end we felt that more learning took place in groups of 75 or less. Whenever possible, we divided classes to reduce the group size. Questions were encouraged at all times. We asked the children for their help in saving the silky sifaka. We asked them for advice and ideas. Nearly every student who asked a question or responded to one received an informational photo. The participation of local teachers helped the children to overcome politeness and fear and ask a question.

All presentations were given in the local dialect of the Malagasy language, unless the teacher requested we speak in French. During the presentations, we changed speakers several times to maintain student attention and interest. Typically I began with basic slides about silky sifaka location, rarity, and behavioral biology. After 15 minutes or so, Rabary Desire, a gifted speaker, local environmentalist, and teacher would step in and ask more personal questions of the students, such as “Have you ever seen this animal? Why should we protect this animal? What do you think the threats are to this animal?” Desire would

then go on and speak about the next batch of slides covering threats to these animals. Finally after 30 minutes, just as the students were losing interest, Nestor, our most vibrant speaker, would take the stage.

Nestor is a forest guide who tracked and followed wild silky sifakas with me for 14.5 months. He was originally a local farmer and can speak to the students more as an average local man. He spoke emotionally and passionately from the heart about how he used to be a hunter, and now after learning so much about these animals, all he wants to do is protect them and learn about them. Nestor described what an average day is like in the forest. He shared several funny tales of his work tracking the silky sifakas, such as the time one of my field research assistants was afflicted with a leech sucking on her eyeball, and the time I developed an abscess from a poisonous insect bite that became larger than a white man’s fist. He acted it out so well as he spoke. He returned to silky sifaka behavior and acted out an adult female cuffing a male, and showed how the silky sifakas played with one another and showed clear sleeping partner preferences. The students absolutely loved it, and wanted to hear more. Towards the end, he became very serious and described how the silky sifakas appeared in his dreams and that is why he respects them so much and how he tracked them with such ease. The students too become very quiet with serious looks on their faces. Dreams are taken very seriously in Malagasy culture; some believe that is how ancestors communicate with the living. The teacher nodded that the time was up and invariably we were followed by huge groups of children as we left. They had so many questions. We stayed for a long time afterwards and sat with them and talked and laughed. When we finally left, they begged us to return and we could only say “We hope so, but you are the ones who can make the difference.”

#### **Lessons Learned: Ecotours with Local Children**

The Malagasy conservation literature we had with us frequently provided some activities of interest to the students. When discussing this literature we did not read in a formal, rigid manner – rather we kept things open and tuned to the students’ interests. If they started acting parts out, we proposed a skit. If they started singing, we all made up songs and shared them with the group. Despite this flexibility, we had a specific curriculum that we wanted the students to learn. At the end of each night in the forest we would review exactly what we had learned about the silky sifaka and conservation threats. We were pleasantly surprised how eager the children were to learn these facts once they had seen the animal in the wild.

However not all of our games and literature were a success. In particular, a conservation-oriented Malagasy language crossword puzzle was generally not understood or of interest to the students. It was like nothing they had ever seen before and perhaps too formally academic.

Finally, deciding which students would be permitted to attend these forest trips was extremely challenging. The initial art contest and question-and-answer session proved effective in identifying many interested students; however there were still far too many students than we were able to bring. We finally asked local teachers to choose the best or most deserving students among those remaining.

### Conclusions

Overall, we found all teachers and students to be very interested in the silky sifaka and genuinely concerned about its plight. As is often the case (Weber, personal communication), people were most curious about the behavior of these lemurs. The donated informational photos, field guides, and maps were in great demand. We felt it was important to provide local people with conservation mementos they could take home, keep for a long time, and show to their friends. In all cases, it proved crucial to visit the schools in advance and schedule presentations with the permission and assistance of school officials. It was not difficult to make radio announcements of upcoming presentations or set up radio interviews. Again, we found that the radio stations were eager to interview us and provide information to their audiences. After this experience, it seems clear that local conservation education can have a great positive impact on the conservation of the silky sifaka.

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