

**Lessons in primate ecology and conservation:  
An analysis of effective conservation education learning activities and assessment**

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In collaboration with the Lemur Conservation Foundation and thanks to funding from the Primate Society of Great Britain, we took over 60 Malagasy students from three schools in Northeast Madagascar to Marojejy National Park to participate in a three-day place-based conservation education programme. Marojejy National Park (14°27'S 49°42'E) is located in the SAVA (Sambava - Antalaha - Vohémar - Andapa) region of Northeast Madagascar and is home to Critically Endangered species such as the silky sifaka (*Propithecus candidus*). The park supports an enormous diversity of reptiles, amphibians and flora, as well as 10 other lemur



*Silky sifaka Propithecus candidus*

species including white-fronted lemurs (*Eulemur albifrons*) and bamboo lemurs (*Hapalemur occidentalis*) (Andreone et al., 2000). It is considered a high-priority conservation area due to its high level of biodiversity and the intact status of its montane rainforests, the last such undisturbed in the country (Garreau & Manantsaram, 2003; Patel, 2007). Forest trips have been taking place in Marojejy since 2004; however, prior to my project and investigation, they had been lacking both a structured curriculum and, like many conservation education programmes, critical evaluations to understand the impacts and outcomes of these conservation efforts (Jacobson, 2010; Patel et al., 2005; Wallis & Lonsdorf, 2010).

Students participated in a holistic curriculum designed to engage their minds, hearts and bodies in exploring and learning about Marojejy National Park and its inhabitants. The curriculum drew from pedagogy in place-based education and was designed to use the national park as classroom, library and playground; and the guides as educators and libraries of

knowledge (Sobel, 2004). Guides led students through the park, stopping at interesting plants, animals, fungi and landscapes to explain their ecology, behaviour, appearance or significance. After their initial introduction into the forest, students were actively encouraged to explore the forest themselves by finding and asking questions about the things that interested them. This method gave students agency over their own learning process and allowed them to bring their own knowledge, experiences, and circumstances to their learning and exploration (Sobel 2004; Smith 2002). In an effort to foster active participation, we asked students to collect small samples of plants, fungi or fruit that they found interesting during our hikes. Then, during a discussion at camp, students explained why they picked the plant while guides gave more information about it. The highlight of each trip was a hike to see silky sifakas in some of their last remaining habitat.



Students in the Morojejy National Park

During free time, students engaged in creative learning activities, such as making drawings based on species in the park, decorating lemur masks and making puppets. During the evenings, students sang songs, reflected on the events of the day and participated in guide-led discussions on the importance of conservation.

Students' learning was assessed via pre-trip and post-trip evaluations. These evaluations asked students to write open-ended responses to the questions; "what do you know about

Marojejy?” and “write about your trip to Marojejy.” Students were also asked to draw a picture of nature and a picture of a lemur and label the species they had drawn as part of the evaluation.

We analysed the content of written responses as free-lists, comparing students’ pre-trip and post-trip answers to the question; “what do you know about Marojejy?” via cultural consensus analysis. The content of drawings was also treated as a free-list, with the different elements of pre-trip and post-trip evaluations compared using cultural consensus analysis. The content of post-trip evaluations to the question, “write about your trip to Marojejy” was qualitatively and quantitatively analysed for responses in the affective domain.

Students from all three schools achieved cultural consensus regarding their knowledge of Marojejy National Park following their trip and drew more accurate lemurs in post-trip evaluations. In their responses to the question, “write about your trip to Marojejy,” students indicated emotional responses in four out of five of the domains of affective learning.

This research highlights the impact of a place-based conservation education programme on learners’ knowledge and emotion. It demonstrates that even



Discussions at camp with guide and students

over a short-duration, place-based education can have a marked impact on learners. Its importance for conservation education should not be overlooked.

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