The purpose of this study was to compare the health and well-being of people and wildlife in community protected and non-protected forests in eastern Madagascar. Forest loss on the island of Madagascar contributes to both the endangerment of some of the world’s most threatened species and the spread of poverty-linked infectious diseases in human populations. The practice of slash-and-burn agriculture has resulted in the loss of 40% of the island’s forest since 1950. Community-driven conservation efforts may offer the potential to improve human health and well-being while simultaneously protecting endemic wildlife.

In this study, we captured small mammals using Sherman traps and assessed the species diversity, invasive rodent distribution, mass, and ectoparasite counts for small mammals in both the protected forest and in a disturbed habitat. To assess human health, Association Mitsinjo, the local community conservation center, administered surveys to the local villages. One village was surrounded by protected forest and two were surrounded by deforestation. Surveys assessed the economic status, education, and personal health of the inhabitants.

We found that small mammal diversity in the protected forest was greater than in the disturbed forest. Invasive rodents were more prevalent in the disturbed forest. Mass and ectoparasite counts were not significantly different between the two sites for any species captured (p=0.38 and p=0.31). The two villages surrounded by disturbance had 103 responses from 50 households with a mean age of 33. The single smaller village surrounded by protected forest had 15 responses from 5 households with a mean age of 29. Comparing the health of villages over 6 months prior to the survey, people living in the protected forest village had more fever incidents but fewer fleas and no ticks, lice or diarrhea. People living in disturbed villages had fewer fever incidents but more lice, fleas, ticks, and diarrhea. We surveyed 16 guides and 46 agricultural workers. Comparing the health of people in these occupations over 6 months prior to the survey, we found people who work as ecotourism guides had more ticks and diarrhea, fewer fever episodes, and no lice or fleas. People who work in agriculture had many more fever occurrences, more lice, and more fleas but fewer ticks and cases of diarrhea. People living in the protected forest village reported less income than those living in the disturbed village. Guides reported greater income than agricultural workers.

This research suggests that community conservation can benefit human health and well-being while simultaneously protecting native forests and endemic species diversity. Community conservation has the potential to be an effective public health strategy.

Statement of Research Advisor:
Jordan Broadhead has a deep interest in disease ecology and how human and animal health are linked. Jordan led this particular project investigating whether wildlife conservation can play a role in improving human health and well-being. Jordan made two trips to the island of Madagascar for this research, and in collaboration with Association Mitsinjo, the University of Antananarivo, and students from the Auburn College of Veterinary Medicine and Emory University, Jordan participated in all parts of the project from wildlife field sampling to helping with survey design and analysis and presentation of results at national conferences.—Sarah Zohdy, Forestry and Wildlife Sciences.