

Report: Assessing the current status of the Sumatran striped rabbit (*Nesolagus netscheri*) in Sumatra, Indonesia



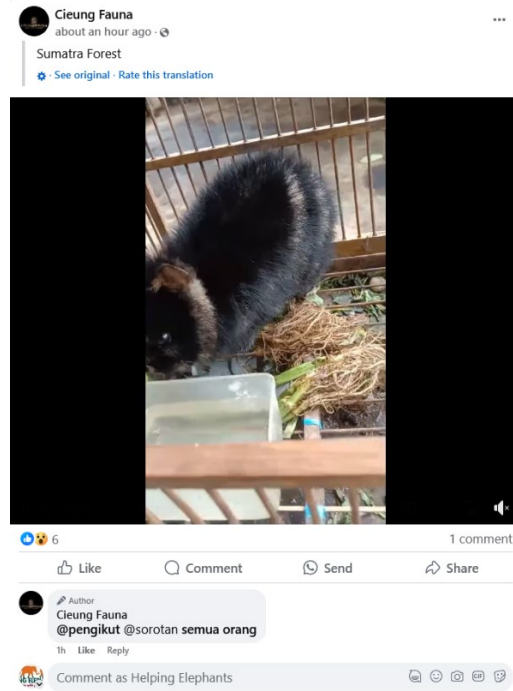
**Faculty Development Grant Report by Jennifer McCarthy, Ph.D.
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Project Overview:

This grant was requested to support my research on one of my study species, the Sumatran striped rabbit (*Nesolagus netscheri*). There are only two extant species in the *Nesolagus* genus, the Sumatran striped rabbit and the Annamite striped rabbit (*Nesolagus timminisi*). Both species are considered extremely rare and have only been widely known to science for the last two decades. While the Annamite striped rabbit has been studied to some extent, the Sumatran striped has not been the subject of any targeted, long-term research and there continues to be a glaring paucity of ecological information on the species. Though it is known to be endemic to the Western side of the Indonesian island of Sumatra along the Barisan Mountain range, its exact distribution in Sumatra is unknown. In particular, the northern boundary of the species occurrence has remained uncertain. In addition, there is little information on the dietary and habitat requirements of the species, or on their interactions within the ecological community. What little data there is on the species has largely come from camera traps (motion-triggered cameras) deployed to study other species. The lack of cohesive data on the species has made it impossible to generate even a rough estimate of the overall remaining population of the species and so their status remains uncertain. This makes it extremely difficult to implement any targeted conservation plans for the Sumatran striped rabbit.

I currently serve as the Co-Chair of the Striped Rabbit Working Group (SRWG) within the Lagomorph Specialist Group, a committee within the Species Survival Commission of the International Union for the Conservation of Nature (IUCN). In this position, myself and my Co-Chair, Andrew Tilker, oversee the direction of global research and the establishment of conservation priorities for the two striped rabbit species. We have worked to create a coalition of scientists that work together to implement research and prioritize the elucidation of the ecology of the striped rabbits. In 2019, we received a grant to organize the first meeting of the IUCN Striped Rabbit Working Group in Bogor, Indonesia. The group has been working to increase our knowledge of the two species and to prioritize conservation goals. Perhaps most concerningly, in 2018, the group was made aware of the first Sumatran striped rabbit specimens appearing in the Southeast Asian underground illegal pet trade. Since 2018, Sumatran striped rabbits have continued to show up for sale to exotic pet collectors in private WhatsApp and Facebook groups. More recently, several Sumatran striped rabbit individuals have been confiscated by the Indonesian Forestry Department officials. These individuals are usually found in small villages bordering the forest and the local villagers possessing them have indicated an intent to sell them in some of the larger pet markets in the capital city Jakarta. The number of individual Sumatran striped rabbits seen in underground wildlife trade groups, confiscated by local Indonesian Forestry officials and showing up in large-scale seizures of illegal wildlife and wildlife products has continued to increase significantly over the past several years.



A juvenile Sumatran striped rabbit advertised on Facebook in captivity in Indonesia in December of 2024. (Chris Shepherd)

The lack of data on the Sumatran striped rabbit and the increasing appearance of the species within the mix of the illegal wildlife trade which is currently booming across Asia, has escalated the urgency of creating a strong and cohesive conservation plan for the Sumatran striped rabbit before they go extinct. Accordingly, the IUCN SRWG developed two main priorities: to work with our network of scientists in Sumatra to analyze and write up the available data on the Sumatran striped rabbit; and to develop and submit a larger grant focused specifically on trying to address the issue of illegal trade of Sumatran striped rabbits before they are hunted into extinction. Utilizing this Faculty Development Grant, I sought to focus specifically on pushing forward these two priorities.

Project Goals and Objectives:

The goal of this project was to update the known ecological information for the Sumatran striped rabbit and to begin to collect resources to address the issue of illegal trade of the species. To accomplish this, the project had two specific objectives:

Objective 1. To analyze and publish the data that we have collected on the Sumatran striped rabbit.

Objective 2. To identify and submit a larger grant focused specifically on addressing the illegal trade of the Sumatran striped rabbit.

Project Activities:

Objective 1

This objective necessitated the collection of all available information on the Sumatran striped rabbit. I began by doing an extensive literature search along with colleagues from Indonesia and aided by a student researcher from Lincoln University. We collected all literature published on the species since it was first scientifically described in the 1800's through the most recent manuscripts published. From this

data we created a comprehensive literature review for the Sumatran striped rabbit. Next, we focused on gathering unpublished data from in-country researchers. There is a plethora of camera trap projects in Sumatra focused on larger, more charismatic species such as the Sumatran tiger and the Sumatran rhino. Many times these projects might record photographs of the Sumatran striped rabbit that might provide important ecological and distributional information on the species. However, these photographs are often discarded as they are not of the target species. By reaching out to in-country researchers, I hoped to use this as another way to gather information on the species. This task was time consuming and slow as response rates were sluggish and many times the researchers had to dig through old data to get location information. But the data was valuable and provided an inexpensive way to gain additional information on the distribution of the Sumatran striped rabbit. Working in collaboration with colleagues from Indonesia, we then produced the first manuscript on possible survey sites for the Sumatran striped rabbit for submission to a peer-reviewed journal, Integrative Conservation. The manuscript was submitted for review in November of 2024. I expect that we will be able to submit a second manuscript for review this Spring that will focus specifically on laying out a conservation plan for the species. This upcoming manuscript will include an undergraduate Lincoln University student researcher as a co-author.

Objective 2

To accomplish this objective, I have been collaborating with Chris Shepherd. He is the Executive Director of the Monitor Conservation Research Society (Monitor). Monitor is a “*non-profit organization dedicated to lesser-known species and issues involved in wildlife trade*”. The organization has a significant presence in Indonesia and has worked on assessing the trade of numerous other species in the country. Together with Dr. Shepherd we have worked on a grant proposal that would allow us to examine archived court records for the presence of the Sumatran striped rabbit in confiscated illegal wildlife seizures. This would allow us to gain a greater appreciation of the scale of unreported trade of the species. The funding requested would also allow for Monitor to specifically investigate private sales channels for the presence of the Sumatran striped rabbit so that we can get a more accurate assessment of the scope of the illegal trade of the species. Finally, the proposal would allow for the education of local government officials who are often unaware that the Sumatran striped rabbit is a wild and endemic species in Sumatra. This may help to increase enforcement and reporting. We had planned to submit the proposal this upcoming funding cycle, but the organization that we had planned to apply to has not opened a call for proposals yet, so we are currently investigating other funding avenues.

Project Outcomes:

At the outset of the project, I stated that the success of this project will be measured by:

1. *The submission of a manuscript to a peer-reviewed journal of international scope, as well as by official recommendations to the IUCN Lagomorph Specialist Group. The manuscript will update the ecological knowledge on the Sumatran striped rabbit and aid in the formation of a conservation plan for the species.*

We have submitted the following manuscript for review to Integrative Conservation, a peer-reviewed journal of international scope:

Down the rabbit hole: Expanding ecological knowledge and identifying potential survey sites for the extremely rare Sumatran striped rabbit, *Nesolagus netscheri*. In Review. Aseny, N., Lidra, T., McCarthy, J., Novarino, W., Ashrifurrahman, Fadhullah, A., Askhia, E., Hanif, M., and Harapan, S. Integrative Conservation.

I expect that we will have an additional journal article published this Spring which focuses specifically on outlining a conservation plan for the species. This manuscript will include a Lincoln University undergraduate student researcher as a co-author. I also expect that we will be able to recommend a reassessment of the species the IUCN which will result in a third publication in the terms of a IUCN Red List Assessment for the Sumatran striped rabbit.

2. *The identification, preparation and submission of a larger grant focused on addressing the illegal trade of Sumatran striped rabbits.*

I have worked with Dr. Chris Shepherd from Monitor in order to develop a grant proposal for submission in the upcoming funding cycle. We have had to adjust slightly as our intended funding source has not opened a call for proposals yet, but we anticipate submitting the grant to an agency this spring.

How Project Is Being Used to Enhance Teaching and Learning at Lincoln University:

I have already integrated the research from this project into my teaching at Lincoln University. I currently use the Sumatran striped rabbit as a case study for my Environmental Science course when we are talking about the global loss of biodiversity. I have updated this case study to include more recent information, and task the students with creating their own realistic conservation plan for the species given the information that they have. I also plan to use this data in my Conservation Biology course as a more detailed Course-based Undergraduate Research Experience (CURE) for the students. Students will utilize real data from the research in order to practice analyzing data and writing a full scientific research paper.

In regards to the enhancement of research at Lincoln University, the manuscript produced from this study was submitted for review to a journal that is international in scope. I expect that at least one more manuscript will be produced from the data and will also be submitted to a journal of international scope. The data will also result in a third publication of international scope in the form of a IUCN Red List Assessment for the Sumatran striped rabbit. The research has also been completed with collaborators from around the world, increasing the visibility of Lincoln University as an institution and allowing me to maintain my connections as an international researcher. Finally, I expect that we will be able to submit a larger grant proposal this Spring that would facilitate the continuation and expansion of the research.

How Project Outcome Has Been and Will Be Shared:

The project outcome has been shared outside of Lincoln University through the submission of a manuscript to a peer-reviewed journal of international scope. I expect that at least two more manuscripts will result from this project, both international in scope and one including a Lincoln University student researcher as a co-author. The research will also result in the submission of a larger grant focused on the illegal trade of the Sumatran striped rabbit and I anticipate that that research will

also result in widely distributed peer-reviewed publications. Within Lincoln University, I will disseminate the results of this research through this report to the Faculty Development Committee, as well as to the faculty and student body during an oral presentation given during the Lincoln University Undergraduate Research Symposium.

Budget:

I requested two months of Summer salary at \$7,000 to support my work on this project. No other supplies were requested or obtained.