

Conserving the silvery-brown tamarin in highly degraded forests, Colombia

Conservation Leadership Programme: Final Project Report

PROJECT: CONSERVING THE SILVERY-BROWN TAMARIN IN HIGHLY DEGRADED FORESTS, COLOMBIA

ID: 02175714



Host country: Colombia

Site Location: Norcasia, Caldas

Project Duration: January 15, 2015 – September 1, 2016

Overall aim (10-15 words)

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October 15, 2016

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Acknowledgements

We are first and foremost thankful to CLP for their funding, support, training, mentorship and guidance throughout the project development. Without you this project would have been impossible, and thanks to you we are better scientists and conservationists. We are also thankful to CORPOCALDAS, for the permits and authorization to work in Norcasia as well as for their collaboration. Special thanks to all the community members of La Habana for their friendships, teachings and support, and for making us laugh so much. Moreover many thanks to Familia Jaramillo, and other cattle ranchers, for allowing us to work on their farms and for making us feel like home. Likewise to all the families in each one of the farms we worked for cooking us and taking care of us as if we were your family. Lastly, thanks to our families for you unconditional support throughout the project development.



SECTION 1

SUMMARY

Conservacion Titi Gris' aim is to build new scientific knowledge about the viability of silvery brown tamarin (*Saguinus leucopus*) populations in highly degraded habitats in Caldas, Colombia and raise stakeholders' awareness and understanding of the species importance in order to revise current conservation plans. We collected baseline information of silvery brown tamarin population densities, habitat use and home range size in five forest patches and two social groups respectively (**Figure 1**). Furthermore, we built strong relationships and partnerships with all the stakeholders in the study site. The project successfully conducted 5 environmental workshops in the local school, held 4 meetings with the local community, 1 meeting with the owners of the cattle ranching farms and several meetings with the environmental state corporation. The project raised awareness of the threats and degree of endemicity of tamarins, its role in the ecosystem and in the community's livelihoods and instilled a sense of pride and ownership in the community regarding the tamarin. Moreover, two cattle ranchers now understand and are aware of alternative cattle ranching practices and have accepted to implement silvopastures in their farms in the future. Finally, a collaborative research agreement has been signed with the state corporation and we are currently collaborating in the design of habitat corridors in Caldas.

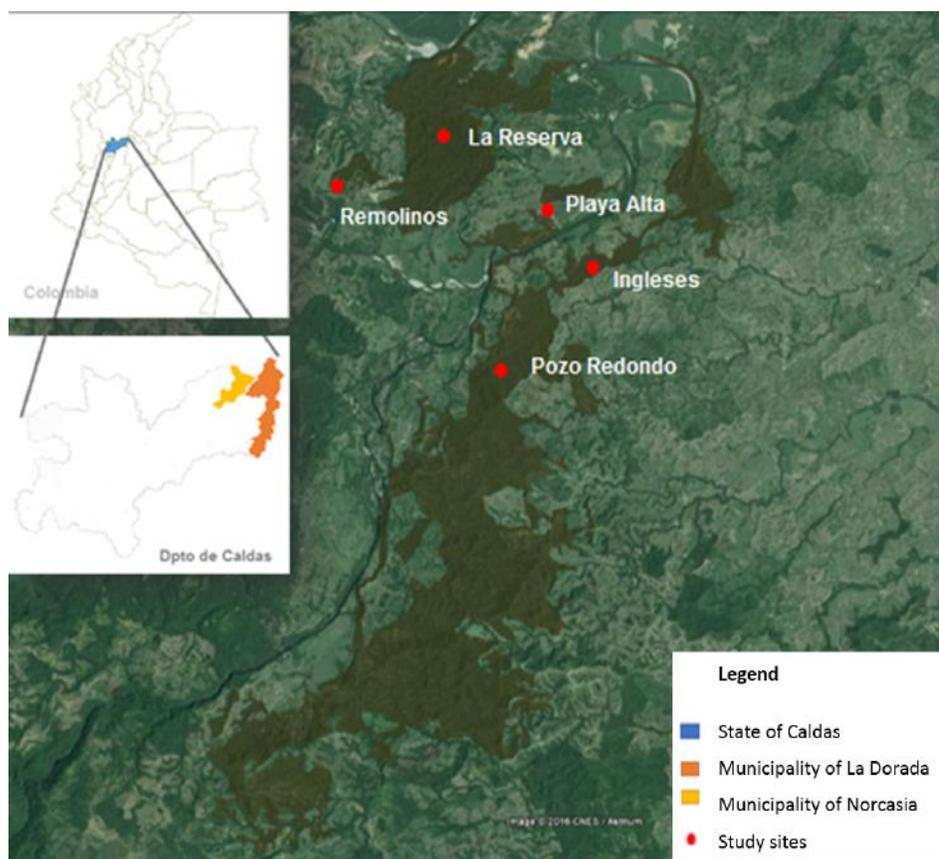


Figure 1. Map of the study site in the department of Norcasia, Caldas

INTRODUCTION

Of the 31 primates species in Colombia, 27 suffer from ongoing habitat fragmentation, and, of these species, six are considered endangered by the IUCN. *Saguinus leucopus*, the silvery brown tamarin, is an endemic primate of Colombia listed as an endangered species by the IUCN due to the serious reduction of its population over the last three generations as a result of ongoing threats that include deforestation and live capture for pet trade (Morales-Jiménez et al., 2008). Its small distribution is restricted to the Andean region of Colombia, an area facing an especially high impact of human activity and intensive colonization (Defler, 2003). About 85% of the tropical wet forest within the tamarin's geographic range has disappeared, and about 80% of the remaining forest is in different successional states. Moreover, cattle ranching occupy 80% of the tamarin's distribution, and most of that area is nearly deforested (Etter et al., 2005). To date, this species only occurs in one official protected area and urgent conservation efforts are needed to protect the silvery brown tamarin and other species whose distributions are restricted to the Andean Region of Colombia.

Only limited information is available about the natural history of silvery brown tamarins, and there have been few studies about how this species has responded to prolonged habitat fragmentation, isolation and loss of its forests. Local populations of the silvery brown tamarin are decreasing at a fast rate, and most of the species' current distribution is composed of isolated small patches of forest. In East Caldas, of the five or six primate species historically distributed in the area, *S. leucopus* is the only one that is observed frequently (Defler, 2003). In this area, *S. leucopus* inhabits a heterogeneous landscape composed of a mosaic of pastures, gallery forests and secondary forest in different successional states (Rojas et al., 2008). Due to the fact that habitat loss is the most important factor that affects primate diversity in Colombia, and especially silvery brown tamarins, it is not only important to prevent such habitat destruction, but also to understand how the ecology, behavior and species survival is being affected by such habitat transformation.

The project goal was to promote silvery brown tamarin population survival and recovery in degraded habitats in the Municipality of Norcasia through up-to date scientific data, habitat conservation and community involvement. This project results' are one of the first information available on the viability of tamarins in highly degraded forests. One of the most important partners for the development of this project was the local community which support, involvement, acceptance and friendships were key to the project success. Among them, local cattle ranchers' support, enthusiasm and willingness were crucial for the project execution. Finally, the environmental state corporation and other NGO's working on tamarin conservation, such as WCS, were important partners during the project development not only as they provided feedback and advice, but which whom we had constant communication and exchange of materials and information. Overall the results of this project will provide guidelines for the identification of habitat characteristics needed for the survival of tamarin and for the accurate identification of habitat corridors that will generate connectivity between isolated tamarin populations.

PROJECT MEMBERS

Lina Maria Valencia

Project leader

Lina is a Ph.D. candidate in the Anthropology department at the University of Texas at Austin (USA). Her research focuses in understanding how habitat fragmentation affects primate dispersal, gene flow and genetic connectivity. Lina coordinated the project setup, implementation and closure. She created the research protocols and outreach materials, trained team members for research and outreach programs, assisted developing the workshops and meetings and wrote the reports. She also kept communication with all of the partners and was in charge of the meetings with the local state authorities and land owners



Christina Florez

Education and research coordinator

Christina is a Biologist from Universidad Nacional de Colombia. She has experience in rehabilitation programs and ecological research of howler monkeys (*Alouatta caraya* and *A.seniculus*) in Argentina and Colombia. She conducted her undergraduate thesis evaluating the effect of habitat fragmentation on silvery brown tamarin presence. Currently she works as a consultant conducting environmental impact assessments. Christina developed the outreach materials for the project and designed the conservation workshops. She led the meetings with the environmental state corporation and our other partners and was in charge of social media related to the project.



Maria Alejandra Forero

Veterinarian

Maria Alejandra is a wildlife veterinarian currently living in Mexico City working in the Chapultepec zoo. She has experience working with primates, especially tamarins in captivity. She was in charged of standardizing the trapping protocols and coordinating the tamarin baiting process.



Alejandra Osorio

Researcher and Communication Coordinator

Alejandra is a Biology student at Universidad de Caldas, Manizales. For her understanding ecological interactions, natural history and conservation of primates and tropical amphibians more than an interest, is a passion. She is currently developing her undergraduate thesis estimating activity patterns and home range size of silvery brown tamarins in degraded habitats, in order to understand how primates can live in degraded landscapes. Alejandra collected field data, led the conservation workshops and participated in the meetings we had with the environmental state corporation.



Daniela Acosta

Researcher and fieldwork coordinator

Daniela is a Biology student at Universidad del Magdalena in Santa Marta. She is highly interested in the ecology and conservation of primates and has more than one year of fieldwork experience on primate research working with the cotton top tamarin (*Saguinus Oedipus*) evaluating its population status and social structure. Daniela wants to pursue graduate studies to conduct research on big Apes. She has astonishing capacities to collect behavioral and ecological data. She conducted environmental workshops with the local community and contributed to the improvement of our research protocols.



Julieth Florez

Intern – Undergraduate student

Biology student from the Universidad del Tolima, Ibague. She has special interest in the study of mammals, with an emphasis in ecology, behavior, physiology and conservation. She developed her undergraduate thesis with the project, estimating population densities of *S. leucopus*. Julieth is very keen in understanding the effects of habitat degradation on people livelihoods and the ecosystem. Julieth developed outstanding skills during her participation in the project that ranged from primatology field techniques to experience working with communities and developing conservation workshops in the local school. She is currently writing her thesis and has showed impressive writing and analytical skills.



Grecia Lacayo

Researcher – Master's student

Grecia is originally from Los Angeles, California. She earned her Bachelor of Science in Biology at the University of San Francisco. After earning her degree, she went to Thailand to volunteer for marine conservation. She first became interested in primates during her time in Thailand where she regularly encountered long-tailed macaques. She earned her masters degree in Primate Conservation at Oxford Brookes University. She developed her master thesis on the habitat presence of *Saguinus leucopus* in cattle ranches. She had the opportunity to work in a primate country for the first time and gain experience in the field as well as working with communities. Grecia hopes to become further involved in the conservation of Neotropical primates.



Jessica Otalvaro

Intern – Undergraduate student

Jessica is a Biology student at the Universidad de Caldas, Manizales. She is currently analyzing and writing her undergraduate thesis in Universidad de Antioquia.



SECTION 2

AIMS AND OBJECTIVES

The project's goal is to build new scientific knowledge about the viability of silvery brown tamarin populations in highly degraded habitats and raise stakeholders' awareness and understanding of the species importance in order to revise current conservation plans

To this end the project will:

1. Assess the effect of habitat fragmentation and degradation caused by cattle ranching on the population densities, habitat use and home range of silvery-brown tamarins.
2. Increase understanding and awareness of local stakeholders about the threats and degree of endemism of the silvery-brown tamarin and its role in the ecosystem and in the community's livelihoods.
3. Increase understanding and awareness of cattle ranchers of alternative cattle ranching practices that benefit both the beef production and the silvery-brown tamarin habitat.
4. Contribute with the information collected from this project to the revision of current conservation action plans for the silvery brown tamarin.

Changes to original project plan

The project's original objective was to collect ecological and behavioral data on 4 silvery brown tamarin social groups in 4 different forest patches (two degraded and two conserved) and place radio collars in one individual of each group. After consulting with other primatologists and researchers we decided to collect data of the whole group, rather than day-long focals of only one animal, in two social groups (one in each forest type), in order to have a greater sampling effort for each group. Although we could not affix a radio collar in an individual of each social group to facilitate animal follows as tamarins showed some aversion to bananas (as it has been seen for other species and localities), we were still able to successfully habituate the groups and followed them consistently. It was common that for some days of the month we could not locate the group, however instead of relying in the radio collars we continually asked the local community and ask them whether they had seen the tamarins recently and where. Nonetheless we successfully collected more data in the group living in the secondary forest than the one in degraded forest.

METHODOLOGY

Study area:

The study site is in the state of Caldas in the Magdalena Valley in the municipality of Norcasia (5°40'N y 74°47'O). The project was conducted in 5 cattle ranching farms (**Figure 1**) where secondary and early

successional forest persists. The study site is characterized for being a heterogeneous landscape composed of a mosaic of forest fragments embedded in a matrix of cattle pastures, crops and human settlements.

Fieldwork:

Landscape classification – We conducted informal interviews with the local community to identify areas where tamarins were present and mapped to obtain baseline data of the forest ecosystem. Additionally, in each area we identified and classified the different habitat types (i.e. silvopasture, forest, residential areas, etc.) by analyzing satellite images based on GPS points of each habitat.

Population densities – We used the lineal transect methodology (Buckland, et al 2011) to estimate tamarin densities. We surveyed 6 line transects (**Figure 2**) from January to June of 2015. Each transect was visited for eight days per month and was walked from 6:00 to 12:00am at an average speed of 1km/hour stopping every 10 minutes and waiting 5 minutes to detect any branch movement or vocalization. For each tamarin observation we registered the date, time, total number of individuals observed and their sex, geographic coordinates where the sighting occurred and perpendicular distance from the trail to the tamarin group.

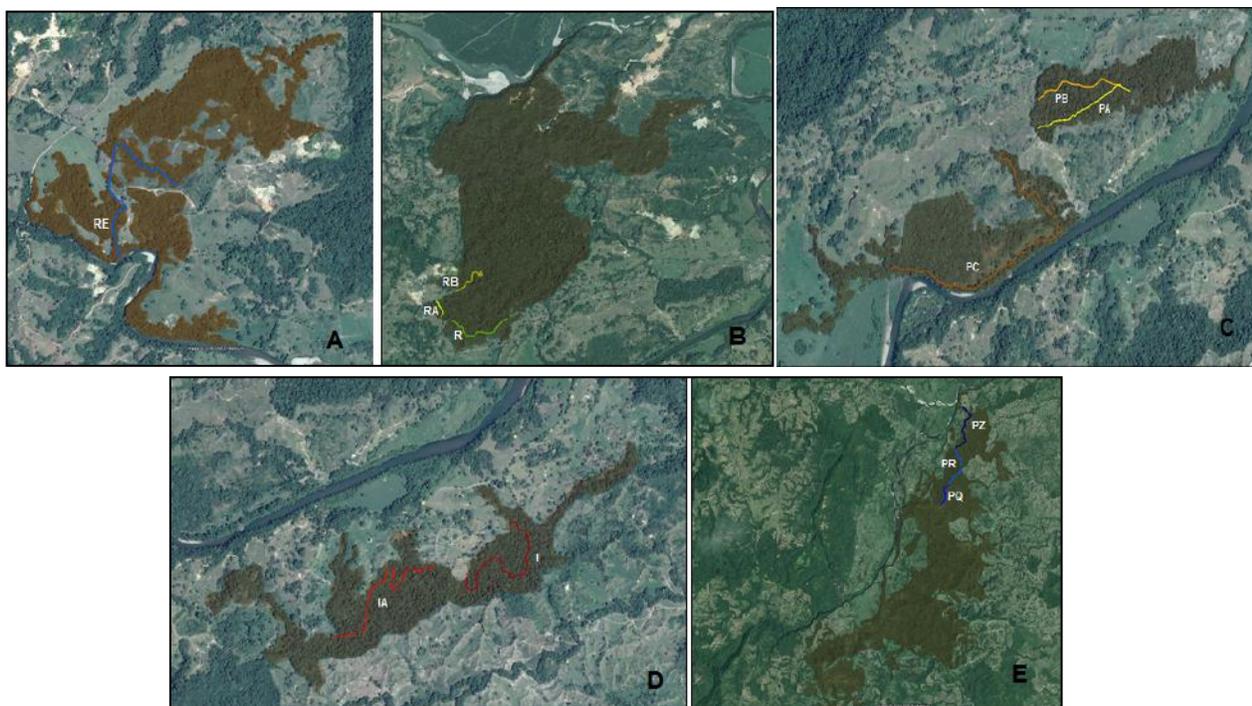


Figure 2. Line transects in study sites a) Remolinos, b) Reserva, c) Playa Alta, d) Pozo Redondo and e) Ingleses

Habitat use – We collected behavioral and ecological data from January to December 2015 of two tamarin social groups in one degraded and one secondary forest (**Figure 3**). We did day-long animal follows (~06:00 – 18:00) of each group for a period of two weeks per month. We used the “scan- sampling” methodology (Altman 1974) and collected behavioral data every 5 minutes of each individual of the group as well as the GPS location of the group every 15 minutes. We used this data to estimate activity budget, home range and daily path length for each group.



Figure 3. Area image of study sites a) Secondary and b) Degraded forest.

Outreach activities:

Local school workshops:

We designed an environmental education curriculum to guide our activities and workshops in the school (**Figure 4**). We create a group of of 20 kids between 6 and 13 years old who participated in the project activities throught the year. The workshop activities included presentations, games, show and tell, story time trivia contests and were aimed to 1) evaluate the kid's perception of tamarins, the forest and their conservation, 2) increase their understanding and raise awareness about the threats and degree of endemicy of the silvery brown tamarin and 3) instill a sense of pride and ownership of the tamarin.



Figure 4. Preparing outreach material for conservation workshop

Meetings with stakeholders

We carried meetings with the local community to present the project objetives and results, and to conduct interviews to evaluate their perception of tamarins, the forest and their conservation. We conducted informal meetings with the farm managers to gather information on the farm management practices and based on this information we held a formal meeting with the farm owners to familiarize them with alternative cattle ranching strategies. Finally, we held a meeting with the Environmental State Corporation, CORPOCALDAS to disseminate the results of our project.

OUTPUTS AND RESULTS

OBJECTIVE 1. Assess the effect of habitat fragmentation and degradation caused by cattle ranching on the population densities, habitat use and home range of silvery-brown tamarins.

- We generated two landscape classification schemes of the study site, and identify viable habitat patches for tamarins (**Figure 5**).

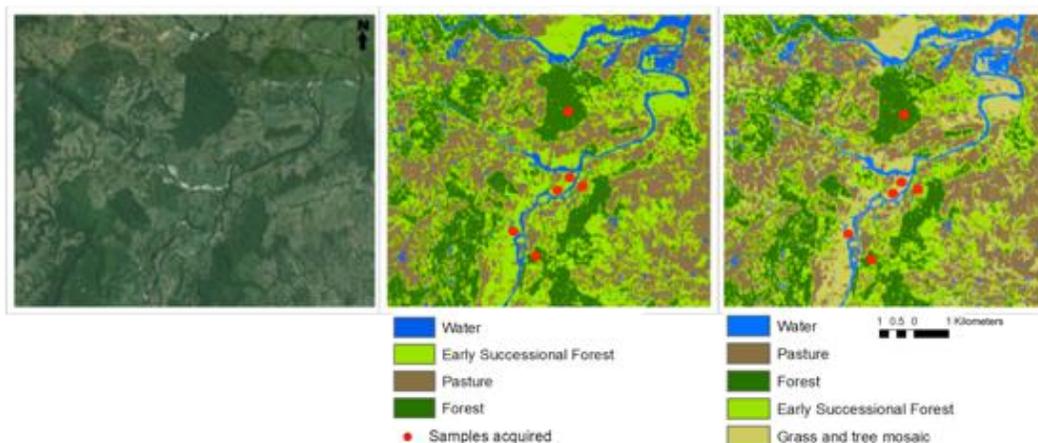


Figure 5. Satellite image and landscape cover classification with associated sampling locations in the Municipality of Norcasia and Dorada, Caldas

- Lineal transects were surveyed for 91 days. Each transect line had a length that ranged between 2 to 3.5km (Table 1).

Locality	Transect name	Length (m)	Replicates	Sample effort per transect (km)	Sample effort per locality (km)
Rio Manso (2925 m)	RE	1225	23	28.2	65.5
	R	800	22	17.6	
	RA	200	22	4.4	
	RB	525	22	11.5	
	RC	175	22	3.8	
Playa Alta (2725 m)	PA	575	14	8	38.1
	PB	500	14	7	
	PC	1650	14	23.1	
Los Ingleses (1900 m)	I	900	20	18	38
	IA	1000	20	20	
Pozo Redondo (3440 m)	PZ	1665	13	21.6	44.7
	PQ	1200	13	15.6	
	PR	575	13	7.5	
Total km walked					186.3

Table 1: Line transects, length and sampling effort.

- Population densities were on average higher in degraded forests (2.27 ind/km²) than conserved forests (1.4 ind/km²) (Figure 6). However that difference is not significantly different.

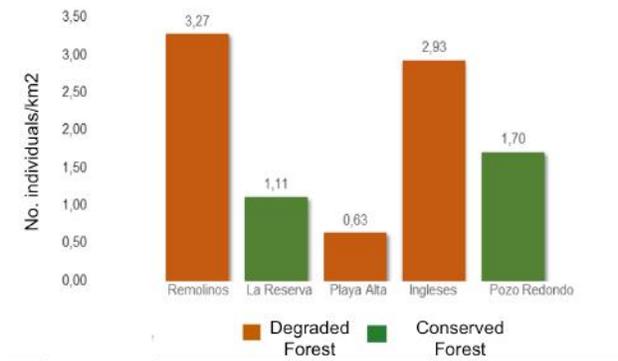


Figure 6. Population densities for tamarin groups inhabiting degraded and conserved forests

- We collected socioecological data during a year for each group (Total time for: Secondary forest: 495h; Degraded forest: 250h). On average both groups spent more time moving (43% and 66.8% respectively) than any of the other activities. The time spent feeding, resting and socializing varied between groups, with the group present in the secondary forest spending more time feeding (~23%) and engaged in social activities (11.28%) than the group in the degraded forest. The latter spent more time resting (26.38%) than feeding (~3%) and was not observed socializing (Figure 7a).
- The diet of both groups was very similar but the time spent feeding in each food resource varies. Both groups foraged for insects and ate insects, fruits, flowers and other items like sap, wood and small vertebrates, however the group in the degraded forest was not seen feeding on new leaves and small vertebrates (i.e. frogs from the *Hyla* sp). Both groups spent significantly more time feeding on fruits and foraging for insects (Figure 7b). When comparing both groups' diet, the group in the degraded forest spent significantly more time feeding on fruits (76.62%) than in the secondary forest (38.10%). The most common plant species that tamarins were seen feeding on were from *Bellucia* sp., *Rollinia* sp., *Inga* sp., *Cecropia* sp. and various species from the Melastomatacea family.

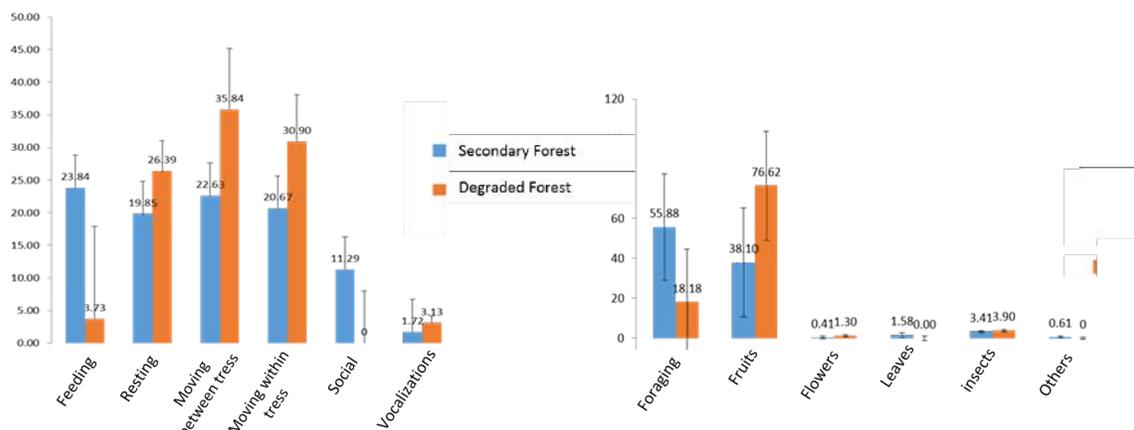


Figure 7. a) Activity budgets and b) diet of tamarin social groups inhabiting a secondary and a degraded forest

- Home range size differed between social groups, with the group inhabiting degraded forest having a smaller range compared to the secondary forest (Figure 8). Despite this, the average daily distance travelled by each group was not significantly different (1720.6m and 1158.9m respectively)

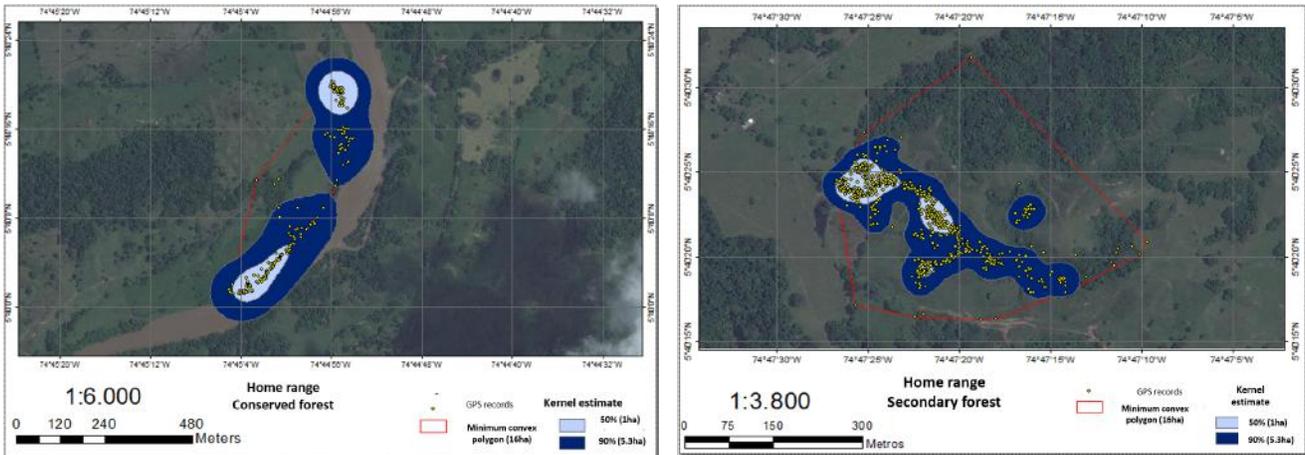


Figure 8. Home range size of tamarin social groups inhabiting a secondary and a degraded forest

OBJECTIVE 2. Increase understanding and awareness of local stakeholders about the threats and degree of endemism of the silvery-brown tamarin and its role in the ecosystem and in the community's livelihoods.

- We held various informal meetings with key community members, thanks to which we were able to build strong relationships with the community and get support as well as advice to develop the project.
- We conducted written and oral interviews to community members and children in the local school to better understand their perception of tamarins and the forest (e.g. as a nuisance, economic value, sense of pride or indifference) as well as their degree of awareness of the threats tamarins face has been acquired (Figure 9).
- Four meetings were held with the community to not only raise awareness and increase our understanding of tamarin-human interactions, but to hear their concerns regarding the project as well as present some of the major results and outcomes of the project.



Figure 9. Informal interviews conducted to the local community and cattle ranches managers.

- We develop six conservation workshops in the local school. Their key message “Let’s protect OUR tamarin that is UNIQUE in the world” was emphasized. Some of the outreach materials created and used during the workshops include a coloring and activity book, t-shirts and posters (Figure 10).



Figure 10. Environmental workshops conducted in the local community school “Institución Educativa Buenavista Posprimaria La Habana” in the Municipality of Norcasia.

- We created a Facebook page and a website to inform the general public and the local community about the results and activities of the project. A total of 1109 people have liked the Facebook page

and through it local community, students (national and international) and researchers have contacted us inquiring about volunteer and research opportunities, scientific data and/or advice into how to conserve tamarins in other parts of the country. Furthermore, the local community has shared some of the Facebook posts to promote tourism in the area.

- We created banners of the project at the entrance of the community and in the banks of the La Miel River “Welcome to La Miel River, home of the silvery brown tamarin” to promote tourism and instill pride in the community (Figure 11).



Figure 11. Banners of the project at the entrance of the community and in the banks of the La Miel River “Welcome to La Miel River, home of the silvery brown tamarin”

- We participated in an initiative of the community that involved building feeding platforms for tamarins in forest remnants in proximity to houses. Although this is not the best long-term solution for tamarin conservation, we were very happy to participate in this activity as community leaders requested for our help in a project that resulted from our efforts to raise awareness of tamarins threats. We were very sure to clarify that the solution was not to create platforms (as this can attract pet traders which do not exist in the area) but instead to do reforestation projects in the area (Figure 12).



Figure 12. Local community and team working together identifying key feeding sites for tamarins.

Objective 3. Increase understanding and awareness of cattle ranchers of alternative cattle ranching practices that benefit both the beef production and the silvery-brown tamarin habitat.

- We interviewed farm managers to understand the cattle ranching practices of two farms and gather information on beef production, landscape management and market costs and revenue.
- We built a strong relationship with the owners and managers of two cattle ranching farms where we are currently working. We have kept constant communication with farm owners and had a formal meeting with the owners of two of the four cattle ranching to familiarize them with alternative cattle ranching strategies that benefit both cattle ranching and tamarin habitat (**Figure 13**).
- We created some outreach materials, such as ponchos and coffee mugs with the message “Tamarins live in my farm and I protect them”, to instill pride and ownerships in cattle ranchers (**Figure 14**).



Figure 13. Informal meeting held with the owners of one of the cattle ranching farm owners



Figure 14. Ponchos and mugs given to the managers of the cattle ranching farms with the message “Lets protect the tamarin, is UNIQUE and OURS”

Objective 4. Contribute with the information collected from this project to the revision of current conservation action plans for the silvery brown tamarin.

- We signed a collaborative agreement with the environmental state corporation, CORPOCALDAS, and are currently collaborating in this and other research and conservation projects, specifically in the design of habitat corridors for tamarins
- We held a final meeting with CORPOCALDAS, biologist from Universidad de Caldas and the local news to disseminate the results of our project and share experiences learnt. A sample of all the outreach materials resulting from the project was given to CORPOCALDAS for potential future use in other areas of tamarin distribution.

COMMUNICATION & APPLICATION OF RESULTS

The project results have been disseminated via different media. For the local community and general public we created a Facebook page and website for the project, and the local newspaper in the city of Caldas, publish a small article of the (<http://www.lapatria.com/medioambiente/luchan-por-la-conservacion-de-los-tities-grises-316057>). Furthermore the Latin American Primatological Society publish an article of our project in their summer issue (https://issuu.com/slprim/docs/boletin_verano_invierno_/1).

We also held a formal meeting with CORPOCALDAS and other biologist in Caldas to disseminate our results and receive feedback on the project (Figure 15). We will present to CORPOCALDAS a detailed report of the project results, in conjunction with Lina's PhD research results, to collaborate in the design of habitat corridors for the species. Finally, we have presented and will present the results of the project in different scientific meetings. In the 2016 International Primatological society meeting in Chicago we presented the outreach materials resulting from the project in a workshops of Latin America Conservation held by the Primate Education Network (Figure 16). Moreover, the results of the project will be presented in the Student Conference on Conservation Science -New York in October 20-22, 2016, and we are currently preparing the manuscripts for publication.

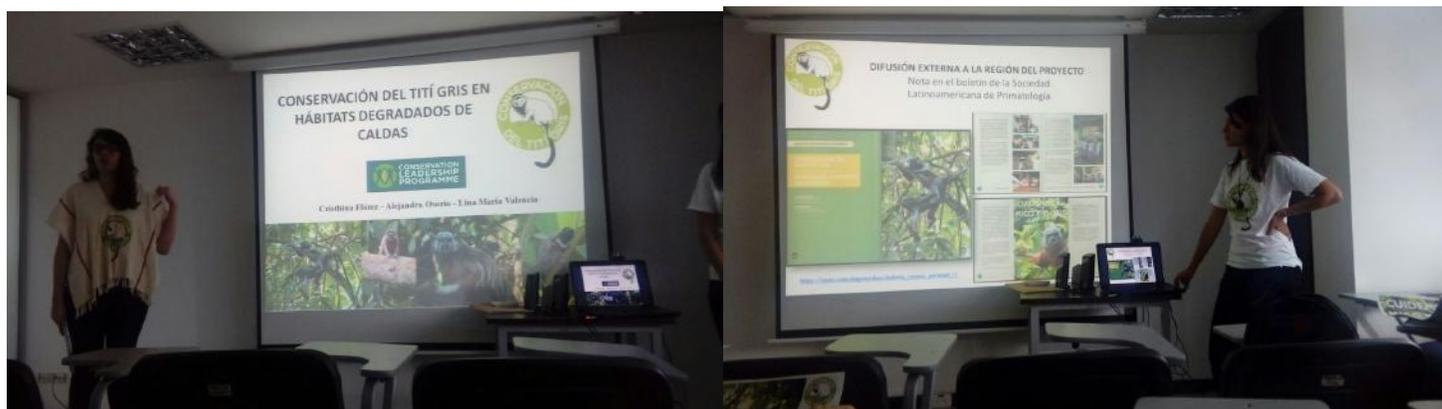


Figure 15. Meeting with CORPOCALDAS and dissemination of the project results.



Figure 16. Outreach materials presented in the 2016 International Primatological Society meeting

MONITORING AND EVALUATION

To monitor the success and effectiveness of the project we conducted interviews before the project start and after its completion. Through these questionnaires we evaluated if there was a change in community behavior, specifically assessing whether the perception towards tamarins and the community knowledge of tamarin threats had changed. Additionally, throughout the project after each activity we had informal conversations with the school teachers and community leaders to assess the success and team performance in each activity and the perception of the community towards our project and us in order to gather recommendations for future events. For example, at the beginning of the project we organized meetings with the community and advertised them via posters and voice-to-voice. After realizing that attendance levels were very low, community leaders advised us to held our meetings the same days were they had to meet with the hydroelectric company that hires 80% of the community.

ACHIEVEMENTS AND IMPACTS

Our project has positively contributed to the conservation of tamarins by building scientific knowledge of the species in degraded habitats, and by fostering partnerships and strong relationships with the community and environmental organizations.

- The project has built local capacity in Colombia and has contributed to the education of the next generation of researchers and leaders in conservation. We provided the opportunity to 4 female undergraduate students, 3 veterinarians and 5 volunteers to participate in the project. They had the chance to develop research projects and learn all the complicated data collection methodologies used in primatological studies as well as acquire skills in geographic information systems, statistical analysis and scientific writing.

- We have collected data on the presence, abundance, ecology and behavior of wild silvery brown tamarins in fragmented forests due to cattle ranching. Based on informal interviews and GPS data we have accurately classified the landscape of the study area, built baseline information on the forest ecosystem and identified habitat types important for tamarins.

- We have built a strong relationship with the local community and have raised awareness of the degree of endemism of the silvery brown tamarin and the importance of its conservation to the community livelihoods. We have emphasized our motto “Let’s protect OUR tamarin that is UNIQUE in the world” and the community is now aware of the benefits tamarin and forest conservation bring to tourism, as they are an endemic species that are primarily found in Norcasia. In fact, some members of the local community have expressed their desire to develop and implement reforestation projects and build feeding platforms and canopy bridges in strategic areas so that tourists can observe the tamarins. Moreover, the community has used the project and the tamarin as a strategy to increase tourism in the area and consequently improve their livelihoods.
 - We have built a strong relationship with two of the farm owners and managers of the farms. We have been able to better understand the cattle ranching practices they use and we have raised awareness of alternative and sustainable cattle ranching strategies that benefit the meat production and biodiversity conservation in their farms. We have discussed the feasibility of implementing silvopastoral systems that involve live fences, and they have shown their willingness to implement these systems, but have emphasized the lack of funds and time to do so. Thus, we have explored the use of economically important tree species that provide ecosystem services and that can establish connectivity among fragments, for which we as a project are thinking of applying for funds.

 - We have developed a collaborative agreement with CORPOCALDAS, the environmental state corporation and we have been working together in the development of a plan to implement habitat corridors in the state of Caldas.

CAPACITY DEVELOPMENT AND LEADERSHIP CAPABILITIES

Through the CLP project all the team members have acquired skills that ranged from fieldwork to leadership and communication. We have learnt how to implement a conservation project, and in doing so we have gained amazing skills that range from managing a field team, to training undergraduate students, to developing outreach materials and to communicate with different stakeholders. Most importantly we have learnt to problem solve and be creative and proactive, while adapting the project according to the difficulties encountered in the field. Although it was a hard lesson, we realized that in order for success to occur we needed to be patient, lenient and adapt our behavior and expectations according to the situation. Moreover through the project we have started to look at conservation problematics from different angles and in a more holistic approach trying to integrate different aspects of the problem in our project. Lastly, we have learnt to communicate our project to different audiences, really understanding and valuing what is at stake for each stakeholder.

SECTION 3

CONCLUSIONS

Thanks CLP! This was an amazing and rewarding experience!

The purpose of this project was to build new scientific knowledge about the viability of silvery brown tamarin populations in highly degraded habitats and raise stakeholders' awareness and understanding of the species importance, in order to revise current conservation plans. Our results contributed to the conservation of tamarins in Caldas and elsewhere. We gathered empirical evidence that tamarins have the ability to cope with forest fragmentation and they can modify their ecology and behavior to exploit degraded habitats resulting from cattle ranching, information that will be use to design habitat corridors for the species. The local community in Norcasia, Caldas, are now aware of the importance of tamarins and their uniqueness, and are now using that as a tool to increase tourism in the area. Cattle ranchers are now aware of how tamarins can coexist in their farms with the cattle and we are currently exploring alternative and more sustainable cattle ranching practices. This project allowed us to develop an excellent network with other conservation organizations and a good partnership with CORPOCALDAS. Due to lack of spare time of the team members, we have not yet publish the outputs of our project through scientific journals but will plan to do so at the end of 2016.

Problems encountered and lessons learnt

Which project activities and outcomes went well and why?

For this project it was crucial to understand the local community and cattle ranchers' perception about tamarins and their habitats and evaluate any change in perception and behaviour after project completion. For us, one of the most important outcomes that have resulted from the project is the strong relationships we have established with the local environmental authorities, landowners and the local community. However, we want to clarify that this has been the result of persistence, trial and error of different ways to approach them and patience. We spent a significant amount of time talking and meeting with all the stakeholders, listening to their experiences and truly understanding what is at stake for them.

Which project activities and outcomes have been problematic and in what way, and how has this been overcome?

One of the main problems we encountered at the beginning of the project was the lack of support by some of the community members and lack of attendance to our meetings. Although we conducted a meeting with the community to familiarize them with the project objectives, methods and team members, after a couple of months of being in the field some community members thought our trapping methods were causing the death of the tamarins and thus had a negative perception of our project. This was overcome by holding several other meetings and by having the support of the community leaders.

Briefly assess the specific project methodologies and conservation tools used.

We adapted some of the activities proposed in response to the experiences in the field. The more you know the stakeholders involved in your project, the more you are aware of the best technique to approach them taking into account what is in stake for them.

Please state important lessons which have been learnt through the course of the project so far.

We learned that the best way to approach and build a relationship with the community is not through the project itself but through everyday conversations about life. We realized that as we are highly interested in understanding their everyday lives, motivations and goals they are so with us. Building a friendship was the key to getting their support, admiration and trust. Cattle ranchers were more responsive to us when they first got to know us as people, and not just as researchers, and when they were aware of the fact that we understood their business and were concerned not only on the tamarins but on how to conserve tamarins within the management plan of the farms. We realized that by having a cup of coffee in the afternoon once a month and spending the time to know each other, it was easier to approach them.

IN THE FUTURE

We are currently analyzing more in depth our data to present our results in scientific meetings and prepare the manuscripts for publication. Additionally, we are currently preparing a very detailed report for CORPOCALDAS to present the final results of the project as well as a proposed management plan for habitat corridor design. With these results in hand we plan to discuss with them the feasibility of receiving government funds and technical advice for the development and implementation of silvopastures. Moreover, as a team we are starting to brainstorm the next phase of the project where we would like to test different management practices in the farms that include different restoration plots and designs. We are currently preparing a management plan specific to each farm where different landscape configurations will be tested that benefit tamarin connectivity between isolated patches of forest and that can be used within each farm management practices (e.g., paddock and fences). Lastly we expect to continue collaborating with Corpocaldas and other NGO's to foster a national plan to promote tamarin conservation in degraded forests.

FINANCIAL REPORT

Itemized expenses	Total CLP Requested (USD)*	Total CLP Spent (USD)
PHASE I - PROJECT PREPARATION		
Communications (telephone/internet/postage)	50.00	50.00
Field guide books, maps, journal articles and other printed materials	100.00	169.50
Insurance	0.00	
Visas and permits	0.00	
Team training	150.00	75.00
Reconnaissance	0.00	
Other (Phase 1)	140.00	222.50
EQUIPMENT		
Scientific/field equipment and supplies	2,080.00	1544.70
Photographic equipment	0.00	
Camping equipment	0.00	
Boat/engine/truck (including car hire)	900.00	900.00
Other (Equipment)	0.00	
PHASE II - IMPLEMENTATION		
Accommodation for team members and local guides	2,880.00	2027.55
Food for team members and local guides	3,360.00	4449.00
Travel and local transportation (including fuel)	1,000.00	1150.00
Customs and/or port duties	0.00	
Workshops	1440	1185.76
Outreach/Education activities and materials (brochures, posters, video, t-shirts, etc.)	1,700.00	1977.50
Other (Phase 2)	100.00	163.50
PHASE III - POST-PROJECT EXPENSES		
Administration	100.00	83.33
Report production and results dissemination	200.00	160.00
Other (Phase 3)	100.00	116.67
Total	14,300.00	14,275.00

APPENDICES

CLP M&E measures table

Output	Number	Additional Information
Number of CLP Partner Staff involved in mentoring the Project	1	Through the project development we kept constant communication with WCS colombia and received advise from them
Number of species assessments contributed to (E.g. IUCN		

assessments)		
Number of site assessments contributed to (E.g. IBA assessments)		
Number of NGOs established		
Amount of extra funding leveraged (\$)		
Number of species discovered/rediscovered		
Number of species discovered/rediscovered		
Number of sites designated as important for biodiversity (e.g. IBA/Ramsar designation)		
Number of species/sites legally protected for biodiversity		
Number of stakeholders actively engaged in species/site conservation	5	Local teachers, local community, kids from the local school, CORPOCALDAS (environmental state corporation) and cattle ranchers.
Number of species/site management plans/strategies developed	2	We are currently developing a management plan for one of the farms to implement sustainable cattle ranching that provides habitat corridors for tamarins. Additionally we are collaborating with Corpocaldas to design a management plan to build habitat corridors for tamarins in Caldas.
Number of stakeholders reached	50	Local community and community leaders, school principal, farm owners, CORPOCALDAS research director, professors for universities and researcher from WCS.
Examples of stakeholder behaviour change brought about by the project.	4	Local community interested in building feeding platforms for tamarins to ensure their survival in degraded forests. Local community using tamarin as a flagship species to promote tourism. Cattle ranchers considering the use of sustainable cattle ranching strategies.
Examples of policy change brought about by the project		
Number of jobs created	10	Cooks, local field assistants, boat drivers.

Number of academic papers published	0	Currently working on the manuscripts
Number of conferences where project results have been presented	1	NY Student Conference in Conservation Science

List of primate species observed in the field site:

SCIENTIFIC NAME	COMMON NAME
<i>Saguinus leucopus</i>	Silvery brown tamarin
<i>Alouatta seniculus</i>	Red howler monkey
<i>Cebus albifrons</i>	White faced capuchin monkey
<i>Aoutus sp</i>	Owl monkey

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Address list and web links

Website: www.conservaciontigris.org

Facebook page: <https://www.facebook.com/pages/Conservaci%C3%B3n-Titi-Gris->

[Conservation-Silvery-brown-tamarin-Colombia/1541738879443465](#)

Publications in newspapers: <http://www.lapatria.com/medioambiente/luchan-por-la-conservacion-de-los-tities-grises-316057>

Other publications: https://issuu.com/slaprim/docs/boletin_verano_invierno_/1

Distribution list

Conservation Leadership Programme

CORPOCALDAS

Colombian Association of Primatology