

Project ID: 02154613

Participatory Conservation of the Critically Endangered Ecuadorian Brown-Headed Spider Monkey

North-western Ecuador

(Field dates from July 2013 to February 2015)

Proyecto Washu, University of Sussex, Ministry of Environment

Conservation and recovery of the remaining populations of ecuadorian brown-headed spider monkeys (*Ateles fusciceps fusciceps*)

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We thank the beautiful community of Chonta Duro, for trusting in us and letting us share with their children the love for primates and biodiversity. We will be working with them to accomplish this further.

Finally want to thank each of the families of our members, as without their full support, and most of all, their understanding, this work would be unpleasant.

1. SECTION 1

Summary

Proyecto Washu is a conservation organization for the Brown-headed spider monkey (*Ateles fusciceps fusciceps*). Our project integrates research and conservation with the inclusion of communities that live in the study area through three programs: 1. Research Program; 2. Environmental Education Program; and 3. Community Development Program. We conducted long term population censuses of the species in two sites: Tesoro Escondido (TE) and Pambilar Wildlife Refuge (PWR). One of the highest densities of the species was registered in TE, this supports the importance of this study area in the buffer zone of the cotacachi-cayapas ecological reserve, results will serve for future decisions about conservation priority areas for the species. Our second program involved around 100 children from 5 to 14 years old of an indigenous Chachi community the workshops focused on four main subjects (forest, animals, water and community & environment). Finally with our third program, we signed with 13 landowners of TE an agreement to start a cacao project linked with the conservation of the spider monkeys habitat. With this, more than 200 hectares of primary forests are protected for the next two years, our project is causing a great impact in the local area and at a national level.

Introduction

The critically endangered Brown-headed spider monkey (*A.f.fusciceps*) is in the top 25 most-endangered primates in the world (Schwitzer *et al*, 2014). A large home range, a requirement for primary forest and key role as seed dispersers make *A. f.fusciceps* an ideal flagship and umbrella species - their effective protection ensuring conservation of the majority of forest fauna. Targeted conservation based on protection of *A. f.fusciceps* is an urgent step towards designing priority conservation areas in the unprotected Chocóan forests.

Moreover there is the urgent need for effective conservation action to bring the species back from the brink of extinction. The goal of this project is to initiate focused participatory community conservation by; estimating population density of *A. f.fusciceps* in two priority sites at the northwest of Ecuador, identifying other areas with the presence of the species and empowering communities to conserve these priority forests.

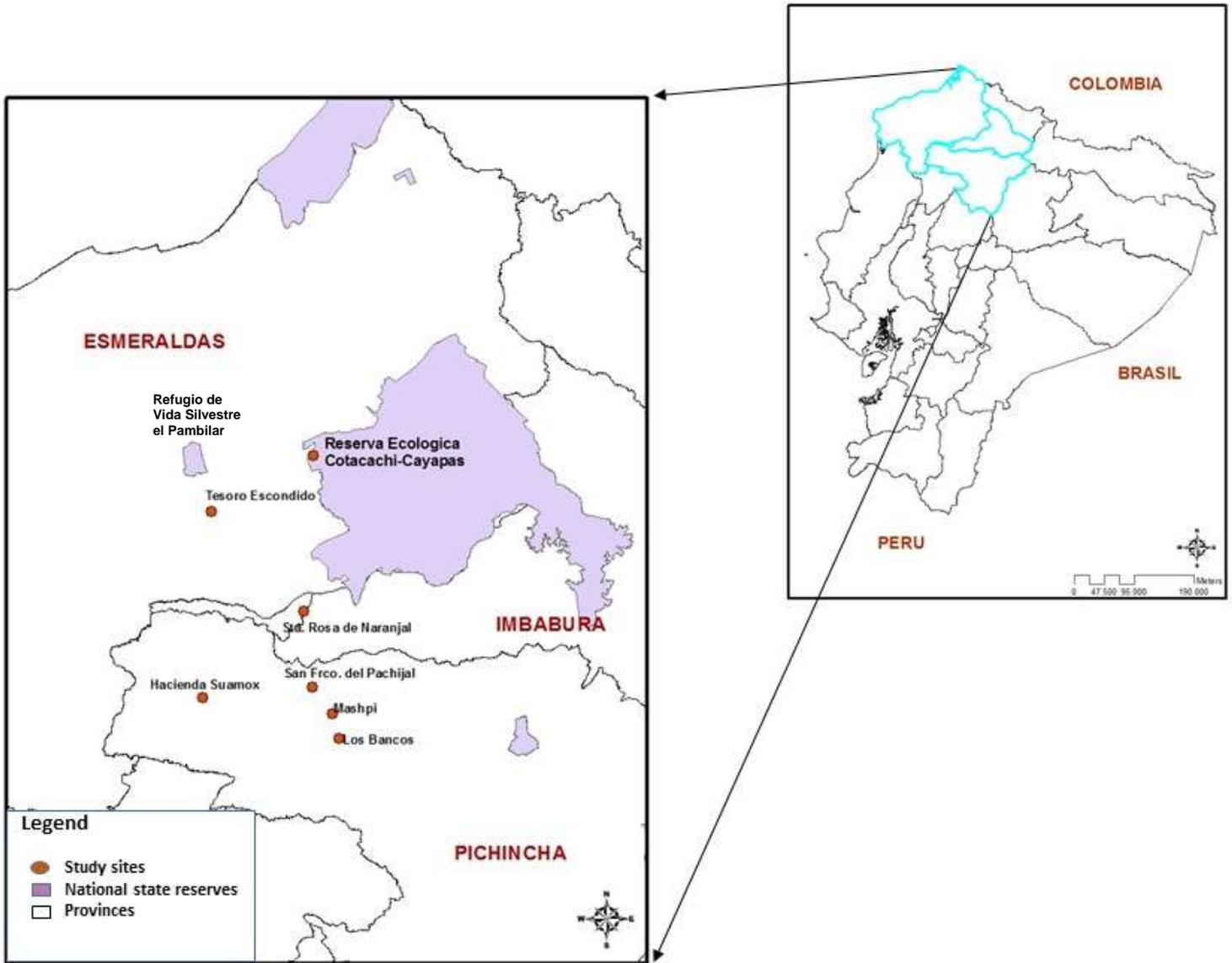
The habitat of this species, the Ecuadorian Chocó, is a biodiversity hotspot seriously threatened by deforestation and expansion of grasslands for cattle and monoculture (Myers *et al*, 2000). Habitat loss and fragmentation along with hunting have caused a severe reduction in population size of *A. f. fusciceps*.

Peck *et al*, (2011) identified the Chocóan lowlands as a priority conservation area for *A. f.fusciceps*, this area is mainly in the province of Esmeraldas more specifically in the buffer zone of the Cotacachi Cayapas Ecological Reserve (RECC), communities living in this area depend exclusively on agriculture as their main source of economic income, especially wood, african palm and cacao. According to social indicators this region has high levels of poverty (73-78 %), and illiteracy (79.4% - 83.5%).

In this scenario the communities living near to the forests like Tesoro Escondido (TE) and indigineous Chachi community of Chontaduro are one of the key partners and stakeholders, their engagement through participatory workshops and training will provide these communities with the tools to enable them to start becoming the main actors in the conservation of their forests, and linking alternative livelihood specialists with communities will allow them to develop sustainable alternative livelihoods to logging and hunting.

Also in the area there are only two national government protected areas: Pambilar Wildlife Refugee (PWR) and the RECC, our project involves field work in the first by long censuses of the species and a rapid assessement to verify the presence of the species in the second one. In both we seek to involve mostly the park rangers to show them the conservation situation of the species, the importance and its role in the habitat. The park rangers and the Ministry of Environment are another key partner in the long term conservation efforts for the species.

STUDY AREA



Project members

Nathalia Fuentes: She has a BSc in Biology from the Universidad Central del Ecuador in 2011. Has experience in the study of primates with studies of the behavior of the species *Ateles hybridus* and *Alouatta seniculus* in Colombia. Subsequently, she did her thesis on the effects of fragmentation on population density, activity pattern, diet and home range of red howler monkeys (*Alouatta seniculus*) in a forest fragment in Colombia with the NGO Proyecto Primates. Also interested in the behavioral study of primates in captivity and wildlife (reintroduction and translocation of primates). She was the project leader in charge of coordinating the project setup, development and exit strategy. She also has experience in creating research protocols, training researchers, writing manuscripts and reports. Currently she is a researcher and project coordinator in Proyecto Washu.

Felipe Alfonso Cortes: BSc in Biology from the Pontificia Universidad Javeriana (Colombia). He has worked with primates since 2008, collaborating with the Colombian NGO Proyecto Primates. He began his career as a primatologist doing a study on the population density of *Ateles hybridus* and the primate community in a section of forest in the Middle Magdalena region of Colombia. He was Co-PI, coordinator of census surveys, trained researchers, coordinated the project setup, lead writing manuscripts and report development. Currently he is a researcher and project coordinator in Proyecto Washu.

Paola Moscoso Rosero: BSc in Biology from the Pontificia Universidad Catolica del Ecuador. She is member of the IUCN SSC Primate Specialist Group 2013-2016. Since 2005 she has been involved with investigation and conservation of primates of Ecuador, such as the PrimeNet Project (to develop a sustainable network for the conservation of primates in Ecuador). She was in charge of the Education programme and a researcher of this project until she was accepted as a PhD student in Biology at the University of Sussex (UK).

Citlalli Morelos Juárez: MRes in Biodiversity and Conservation University of Leeds, and she just got her PhD in Biology from the University of Sussex. Unfortunately she had to leave the project in early 2014, in order to finish her PhD.

New King Miranda Albuquerque: Intern and undergraduate field assistant in Pambilar Wildlife Refuge. Successfully graduated as a Biologist from Universidad de Piura (Peru) in 2015.

David Mantilla: Undergraduate field assistant for the presence/absence of the species surveys in six localities. Currently analyzing and writing his undergraduate thesis in Universidad Central del Ecuador.

Silvana Urbina: Biologist from Pontificia Universidad Javeriana (Colombia). She joined Proyecto Washu at the end of 2014 she is currently the manager of community development and economic alternatives linked to conservation in the community of Tesoro Escondido. She started working with primates in 2010 as a thesis student for NGO Proyecto Primates, there she studied the activity pattern, diet and seed dispersal of *Alouatta seniculus*, *Cebus albifrons* and *Ateles hybridus* in a forest fragment in Colombia.

2. SECTION 2

Aim and objectives

Our overall goal is the conservation and recovery of the remaining populations of Ecuadorian brown-headed spider monkeys (*Ateles fusciceps fusciceps*) within a community-based framework ensuring protection and adequate management of the last forest remnants of the Ecuadorian Chocó through sustainable activities and awareness of endangered species conservation. To contribute to this our project objectives were:

Objective 1 - Estimate the population density of *A. f. fusciceps* in two sites (Cooperative Tesoro Escondido and Pambilar Wildlife Refuge) in north-western Ecuador.

Objective 2 - Determine primate species presence/absence and current threats in six sites by playback and reconnaissance surveys.

Objective 3 - Identify site-specific threats at study sites.

Objective 4 - Engage local communities directly in conservation of this species and the forests through participatory workshops and environmental education sessions.

Changes to original project plan

The participatory workshops were initially proposed in 8 workshops for two communities (Hoja Blanca and Chontaduro), but in the first stage of the project development we identified that the community of Tesoro Escondido had an important amount of primary forests (more than 2500 hectares) in which we were conducting the censuses research, consequently due to the high number of sightings of Brown-headed spider monkeys we decided to focus these workshops with this community that also lives closer to the forest and in which the expansion of the agricultural activities and possible presence of Botrosa timber company were persistent threats to this primary forests.

The sites from the rapid assessments originally proposed changed because we realized that the sites were close to our census sites where we already know about the presence of the species, because of this we decided to find other sites more spread in the north-western Ecuador, especially in the province of Pichincha in which we had historical reports but the high pressure of anthropogenic activities had fragmented the original forests. Finding the species in this fragmented landscape would be extremely important for these sites because it would be more urgent to take action to preserve these individuals.

Methodology

Population density surveys were calculated with the line transect method and following the recommendations suggested by Peres (1999). We laid out a series of line-transect surveys at census sites, each line transect had a minimum 3km in length. For each spider monkey observation, we recorded; number of individuals per group, perpendicular-radial distance, and sighting angle. We used Distance 5.0 for data analysis when the minimum number of sightings were accomplished, also we performed the King estimator (Leopold, 1933).

Within the wildlife biology literature, there is ample debate on the accuracy and precision of line transect methods due to the practical difficulties to comply with all required assumptions (Marshall et al. 2008). Nevertheless, line transect methods still remain the most used techniques

for assessing primate population densities. Independent of their accuracy, these methods can be used to compare relative differences in population densities between different areas (assuming a similar precision in data collection) (Link *et al*, 2010).

To determine presence/absence of the species we conducted playback and reconnaissance surveys for eight days at least, depending on the availability of forested areas, some areas were forest fragments in which the forest coverage was walked in fewer days. Playback surveys were conducted every 250 m along existing trails (Moscoso.2010, Baird.2007), we used the loud call of the species, differing from previous studies performed in the species (Moscoso, 2010; Baird, 2007). We decided to use this vocalization because this is a vocalization that spider monkeys use to find other individuals when there is fission in smaller sub-groups or solitary individuals.

In study points we have discussed with local people about species existence and possible threats in the areas. We recorded all the possible anthropic activities that were found in the field. People surveyed give us valuable information, being an excellent source of information specifically on type of land use and if there exists any alternatives so as to protect the forests.

For environmental education we worked in 4 different groups, according to the ages of the children (from 5-6 / 7-9/ 10-13/ 14-18 years old). The methodology we used during the program included techniques of the Waldorf Pedagogy. This type of pedagogy is based on an anthroposophical view and understanding of the human being and its method of teaching is usually through the arts and the encouragement of the creativity and games.

Since we started to develop the cacao agreement linked to the conservation of spider monkeys habitat we started to have monthly communication sessions with the people involved. The cacao agreement had a forest monitoring using drones, this was possible with the support of the University of Sussex and a national Drone business (Drone & GIS).

For the project communication looking to raise awareness in the public and the scientific community a website and facebook account were created, radio interviews were performed in a national radio station. Finally we presented our project in national and international congresses.

Outputs and Results

Line transect surveys in Pambilar Wildlife Refuge finished with eight sightings of the Brown-headed spider monkeys with a survey effort of 14.8 km². King method show a population density in this protected area of 3,49 Ind/Km².

In Tesoro Escondido we registered a high number of sightings (193) for the species with a survey effort of 32,67 Km². DISTANCE estimation for Tesoro Escondido show a population density of 9,6 Ind/km² with an upper confidence limit of 22 Ind/Km². This estimation was supported with the King method with an estimation of 20,75 Ind/km².



Photo 1. Brown-headed spider monkey (*Ateles fusciceps fusciceps*) in Tesoro Escondido Coop.



Photo 2: Individual of *A. fusciceps fusciceps* (Juvenile) in Tesoro Escondido



Photo 3. New King Albuquerque in Pambilar Wildlife Refuge



Photo 4. Parabiologists: Wagner Encarnación, Yonathan Loor and Galo Conde in Tesoro Escondido forests.

The presence/absence surveys unfortunately have only found brown-headed spider monkeys in Santa Rosa del Naranjal (SRN) and Cotacachi-Cayapas Ecological Reserve (RECC) both sites were expected to still have populations of the species, in SRN we have one sighting, instead of, in the RECC we had 25 sightings. The other sites, all in the Pichincha province didn't have presence of the species.



Photo 5. Playback methodology with parabiologist Galo conde in San Miguel de Los Bancos

Based on the information provided by locals in the study sites, it was identified that logging activities started from 25 to 30 years ago in 4 of the 6 places surveyed for presence of the species. Since then, land has been used for cattle raising and monocultures of palm hearts (*Cocos nucifera*), cacao (*Theobroma cacao*) and naranjilla (*Solanum quitoense*). Three of the four localities also have tourism activities in specific areas, which means that the long term impact will not result in a total loss of the remaining forest.

RECC and PWR are protected by the government. However, buffer areas have communities of Chachis and settlers that continue with logging activities. The main threat in TE is deforestation due to logging activities carried out by the company Botrosa S.A.



Photo 6. David Mantilla in presence/absence activity in Santa Rosa del Naranjal

The first participatory workshop has an assistance of 23 persons, people from different stakeholders as rangers of the Ministry of the Environment, Tesoro Escondido farmers, rangers of private reserve Jocotoco Foundation went to this workshop. After this, the workshops were focused on the people of Tesoro Escondido. Ten communication sessions between farmers and staff of our project were performed with an average of 10 people attending this sessions. 13 farmers signed an agreement ensuring the protection of 281 hectares of primary forest for the next two years. An image of 1200 hectares has resulted from drones flights conducted in TE for the farmers involved in the agreement.



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Photo 7. Tesoro Escondido community workshop with cacao specialist Samuel Von Rutte.



Photo 8. Samuel Von Rutte teaching fermentation qualities (Left). Cacao beans with different quality (Righth)

The Environmental Education Program (EEP) conducted seven workshops of environmental education with the participation of around 100 children, from 4 to 18 years old, in the Cecib Fiba Jaki School. We also included in the program adult members of the community, such as teachers and children's parents, which generated a closer link between the EEP and the community. Three libraries were built in 3 towns of the area, an organic garden and a place to put compost in the school also resulted from the EEP. In every workshop we showed movies and documentary films related with nature and environment conservation. People of all ages were present in this activity.



Photo 9. Workshop “Discovering the animals of the forest”



Photo 10. Workshop “Living the forest”

Communication & Application of results

Results had been presented in two scientific congresses: The XXV International Primatological Society Congresses in Hanoi, Vietnam and the XXXVIII National Biology Conferences in Manta, Ecuador. With this we generated great visibility of the importance of the species and current conservation status, project member Paola Moscoso after this congress was included in the IUCN/SSC primate specialist group and attended to the IUCN red list meeting in Houston (USA) this year in which the results of our project were taken into account for the description of the actual situation of the species.

The results of the project had been shared within the local government agencies of the Ministry of Environment in the Provinces of Esmeraldas and Pichincha. Our results and activities are constantly shown in our Facebook and web page to reach a general and public audience.

Monitoring and Evaluation

Attendees were recorded at each participatory workshop to monitor the TE farmers involvement, and children involved in the EEP.

Supported by the University of Sussex we were able to conduct aerial photography with drones, an image of 1200 hectares resulted from the flights, with this image we conducted the monitoring and evaluation of the agricultural zones of the farmers who signed the agreement.

Creation and signing of the agreement between farmers of TE, Proyecto Washu (PW) and Dr. Mika Peck was a evaluation for the effectiveness of the participatory workshops

Achievements and Impacts

Our study is the first density estimate based on a long period of survey time, this long census provides new valuable information about the population density of the critically endangered brown-headed spider monkey. The density in TE is the highest registered for the species showing that this zone is a key area for the species supporting what was suggested by Peck *et al.* 2011 about the importance of the buffer zone of the RECC. With the presence/absence surveys we are providing valuable data on the distribution of the species in a wider area than was initially proposed, this contributed to greater knowledge about the actual situation of the species. Unfortunately the reduced numbers in sites surveyed was reduced, this highlighted the urgency of conservation actions in the areas in which populations of the species can still be found. All this new and current data of the species in this area has been shared with the scientific community, the local people, and the Ministry of Environment of Ecuador, this led us a big opportunity to show the importance of the area for future action plans for the species in the country.

The community work with Tesoro Escondido farmers was developed, raising increased awareness about the forest and the importance of the conservation. This main stakeholder had the most evident change in behaviour with the creation of an agreement signed by 13 landowners who will not expand their crops and cattle ranches for 2 years initially, they improved the cacao quality production implementing the best pre-post harvesting process. Most recently five of these owners received an international organic certification, increasing the reach with direct buyers-like the French small chocolate company Bouga Cacao. Other direct buyers have shown real interest for the near future with our support and the University of Sussex.

During the EEP we made a strong link between the Chachi community and PW. It was our first approach to this indigenous community, so we established a good relationship between the community, mainly with the children, and the project members. Through this program we achieved the loss of fear to be in the forest for children and for them to change their view of the forest to become a place they can 'enjoy and have fun in'. We also increased the knowledge of the children on many environmental topics that are essential for the conservation of both ecosystems and their components, such as the forest, animals, water and trees. Up to now, we have also raised awareness, not only with children, but also with adults. Some of the adults of the community told us they "have stopped hunting the brown headed spider monkey".

Communication of our activities and results in social media like Facebook had great impact having already more than two thousand followers, we achieved capacity building in the academic audience by the involvement of 2 biology students from Peru and Ecuador. Additionally we managed to involve local people as primatologists in the primate surveys at the study sites.

Capacity Development and Leadership capabilities

We have noticed that during the development of the project, the team members have gradually performed in a more confident and accurate way. Every team member leading a program in PW has become more reliable and has increased the impact they have in their field. In the community development program, our convening power has excelled as reflected in the great attendance of our workshops; we have also generated more interest and commitment in the community towards the importance of conservation. In environmental education we have gained the trust of the parents in our team to teach their children. In the research field, our work has inspired the new generation of biologists who now believe that it is possible to go beyond merely scientific research and work towards protecting the endangered species. We know that our project is pioneering in Ecuador and as nationwide leaders we are very committed to involve more people and to propitiate the development of an integral and multidisciplinary work. To sum up, the whole process has been very enriching for the personal and professional development of each of our members; we have acquired more confidence and knowledge during this time; we have also received more support for our work, being reflected in three more grants received after earning the CLP grant.

3. SECTION 3

Conclusion

Proyecto Washu has become, at the end of this project, a leading local organization focused on the conservation of one of the most endangered primates in the world, the brown-headed spider monkey (*A. f. fusciceps*). Establishing an integral project where the community are directly involved in conservation actions. The presence of the species in localities that are not protected by the government show the importance of preserving areas such as TE and Santa Rosa del Naranjal.

The economic alternatives linked to the conservation of the species and the environmental education, created the foundation for empowering communities and protecting the species by reducing threats like expansion of agricultural barriers and deforestation.

Communication and outreach activities gave us the opportunity to raise awareness and reach different kinds of audiences from the scientific community to the general public. Relevant knowledge has been spread on the protection of the species and their threatened habitat at national and international levels.

Problems encountered and lessons learnt

The purpose of this section is to provide information on lessons learned during the project work that can be usefully applied to other CLP projects. Please answer the below fields:

- *Which project activities and outcomes went well and why?*

The activities carried out with Cacao Nacional as an economic alternative was an excellent strategy for the preservation of the forest. Even more, by improving this product through the implementation of training, it created a space for the farmers to interact as well as a union between them. Organically handling the crops has benefited the forest as well as the families' health.

The activities carried out to evaluate the status of the populations of the species went according to the methodologies proposed, giving accurate data for the different population estimations.

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

The field work on primate presence-absence and population censuses was affected during the rainy season. To improve the data collection, the survey effort was extended in each locality and will also be carried out in different seasons using other funding sources.

The absence of the environmental education leader in the Chachi community of Chonta Duro interrupted the process. In order to continue with the program, two more people were integrated; however, the relationship with the community was not easy due to the cultural differences. Nevertheless the activities will be resumed promptly.

The activities of scientific tourism with Operation Wallacea were not carried out since it was concluded that the geography of TE was too demanding for the British students. They also determined that logistics were difficult for the company. Furthermore, the community members and PW agreed that the economic contribution of Operation Wallacea would not have been relevant as an economic alternative for TE.

- *Briefly assess the specific project methodologies and conservation tools used.*

The methods applied were very effective; the verification of the presence of the species in certain areas has ratified the need to implement the pilot plan, first developed in TE, in other localities. Participatory workshops were made to identify main alternatives with the direct stakeholders.

The approach to the Chachi community of Chonta Duro worked as a platform in order to start supporting the residents in activities that tackled their wellbeing. They are currently being consulted with regards to their waste management plan and are seeing PW as an ally when looking for academic support for their school and community.

- *Please state important lessons which have been learnt through the course of the project and provide recommendations for future enhancement or modification to the project activities and outcomes.*

We have learned more about the community involvement in conservation actions, the constant communication with the people is totally relevant to planned successful activities instead of schedule an choose topics that researchers can think as solution or alternatives for the people living near the study areas. Involvement of people of sites in the surveys are INDISPENSABLE because they know how to travel in the forests, and also give important information about situations in the sites.

It is recommended to do field work in two different seasons of the year (rainy season, dry season) as it affects the data collection and the fruiting season also varies throughout the year.

In the future

As an outcome of the trust CLP had in our project and the results obtained, we received a grant from Network for Social Change (NSC), making it possible to continue our work for one more year. In addition, the integral work of PW resulted in an invitation from the Ecuadorian Ministry of Environment to create “the group of experts for the conservation of primates of the Ecuadorian coast”. The aim of the group is to establish survey protocols, standardise methodologies and generate a conservation program for the four species of the Ecuadorian coast, using the brown-headed spider monkey as the flag species. Through this collaborative work, we hope areas of conservation priority will be established and this data will support the decision as to whether to extend the ecologic reserve Cotacachi Cayapas proposed by the government.

Despite the government not having funds available for the implementation of this initiative, we believe that establishing a relationship with them is an excellent opportunity to have an active role in the decision making process. This will allow us to use the experience we have acquired in order to have a wider impact in terms of conservation in the Ecuadorian Chocó.

Section 4:

Appendices

Output	Number	Additional Information
Number of CLP Partner Staff involved in mentoring the Project	3	
Number of species assessments contributed to (E.g. IUCN assessments)	1	
Number of site assessments contributed to (E.g. IBA assessments)	0	
Number of NGOs established	1	
Amount of extra funding leveraged (\$)	29000	
Number of species discovered/rediscovered	0	
Number of sites designated as important for biodiversity (e.g. IBA/Ramsar designation)	0	
Number of species/sites legally protected for biodiversity	1	
Number of stakeholders actively engaged in species/site conservation management	3	
Number of species/site management plans/strategies developed	1	
Number of stakeholders reached	4	
Examples of stakeholder behaviour change brought about by the project.	1	
Examples of policy change brought about by the project	0	
Number of jobs created	3	
Number of academic papers published	0	
Number of conferences where project results have been presented	2	

Appendix 4.1 CLP M&E measures

Appendix 1. Snapshot of the International Primatological Society web page with the abstract of the project presentation held in Vietnam 2014.



HOME
TRAVEL & ACCOMMODATIONS

ABSTRACT GUIDELINES
CHICAGO CITY GUIDE

PRE

Abstract # 969:

Scheduled for Saturday, August 16, 2014 01:45 PM-02:00 PM: **Session 614 (Function Room III) Oral Presentation**

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INTEGRAL PROJECT DEVELOPMENT FOR THE CONSERVATION OF THE BROWN HEADED SPIDER MONKEY (ATELES FUSCICEPS, ATELIDAE) IN THE ECUADORIAN CHOCÓ, PROYECTO WASHU

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Proyecto Washu is a conservation initiative in North-western Ecuador for the critically endangered Brown-headed spider monkey (*Ateles fusciceps fusciceps*) recognized as one of the 25 most endangered primates of the world. Its habitat, the Ecuadorian Chocó, is a biodiversity hotspot seriously threatened by deforestation. Our project integrates the research and conservation with the inclusion of communities that live in the area through three programs: 1. Research Program; 2. Environmental Education Program; and 3. Community Development Program. The first one started in 2012 with the long term population census of *A. fusciceps* in four line transects of 4 km in Tesoro Escondido Coop. Preliminary data analysis with DISTANCE 5.0 showed a density of 9,6 Ind/km², that would be the highest registered for the species. Our second program involved around 100 children between 5 and 14 years old of an indigenous Chachi community -in the same area- in workshops focused on four main subjects (forest, animals, water and community & environment). And the third one included small projects such as the formation of young "parabiologist", who worked with us in the primate censuses. Moreover we are developing strategies for sustainable alternatives such as a Cacao Production Project and also a Honey Beekeeping Activity. Proyecto Washu is the first conservation initiative for *A. fusciceps*, causing an impact in the area and also producing ecological information of this species.

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Appendix 2. Abstract of the presentation of results in the Biology conferences held in Manta, Ecuador 2014.

XXXVIII Jornadas Nacionales de Biología

DENSIDAD POBLACIONAL DEL MONO ARAÑA DE CABEZA CAFÉ (*Ateles fusciceps*) EN DOS LOCALIDADES DEL NOROCCIDENTE ECUATORIANO

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Actualmente el mono araña de cabeza café (*Ateles fusciceps*) se encuentra en la categoría En Peligro Crítico de extinción (CR) según la UICN y el Libro Rojo de los Mamíferos del Ecuador (2011) por esto se considera como el más amenazado del país y uno de los 25 más amenazados del mundo. Durante los años 2012 y 2013 se llevaron a cabo censos poblacionales en dos localidades del noroccidente Ecuatoriano: La cooperativa tesoro escondido y El refugio de vida silvestre el Pambilar (RVSP). Estos sitios se encuentran en la zona de amortiguamiento de la Reserva Ecológica Cotacachi-Cayapas, identificados como lugares prioritarios para la conservación de la especie. Con el fin de estimar la densidad poblacional de *A. fusciceps*, se siguieron las normas generales de transectos en línea descritas en Peres (1999), realizándose recorridos en 6 transectos (3 en cada uno de los sitios) con un promedio de 3 kilómetros de longitud. El esfuerzo de muestreo realizado en Tesoro Escondido y el RVSP fue de: 32,67 km² y 14,8 Km² respectivamente, de igual manera el número total de avistamientos de la especie en cada uno de los sitios fue de 193 y 13 respectivamente. Con estos datos los resultados obtenidos por medio del estimativo de King fueron los siguientes: 20,75 Ind/Km² para Tesoro Escondido y 3,49 Ind/Km² para el RVSP. La densidad poblacional de monos araña encontrada en estos dos sitios representa un fuerte aporte a la información actual de la especie ya que la densidad poblacional en Tesoro escondido se convierte en la mayor registrada para la especie en la literatura específica. A su vez lo registrado en el RVSP demuestra la importancia del área protegida y los bosques circundantes como los de la cooperativa tesoro escondido donde posiblemente existan las últimas poblaciones saludables del mono araña de cabeza café.

Palabras clave: *Ateles fusciceps fusciceps*, Densidad poblacional, Tesoro escondido, Conservación, Ecuador.

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Appendix 3. Ecocert Organic certification of the cacao producers in Tesoro Escondido.

The screenshot shows the Ecocert website interface. At the top, the Ecocert logo is displayed with the tagline "Certification body for sustainable development". Below the logo, there is a navigation menu with "GROUP ECOCERT" and "FAQ". The main content area is titled "OPERATOR" and contains the following information:

- Name: **JAVIER CEDENO**
- ECOCERT internal number: 147578
- Town: Elby Altam
- Country code: EC

Below the operator information, there is a section titled "LIST OF CERTIFICATES". A note states: "Important notice: the issuance of a new certificate supersedes all previous versions with effect from the date of issue. Previous certificates will be displayed in 'Archive' section. For operations made before the validity period of the current certificate, please click on 'Show Archive'".

CERTIFICATE NUMBER	DATE OF ISSUE	YEAR	STANDARD	STATUS	LANGUAGE	ACCREDITED
147578EC1500218 (EQU)	2015.08.20	2015	ECOCERT ORGANIC STANDARD - FARMING	VALID	ES/ES	CERTIFIED

At the bottom right of the table, there are buttons for "Show archive" and "Show archive".

Appendix 4. Snapshot of the facebook page of Proyecto Washu.

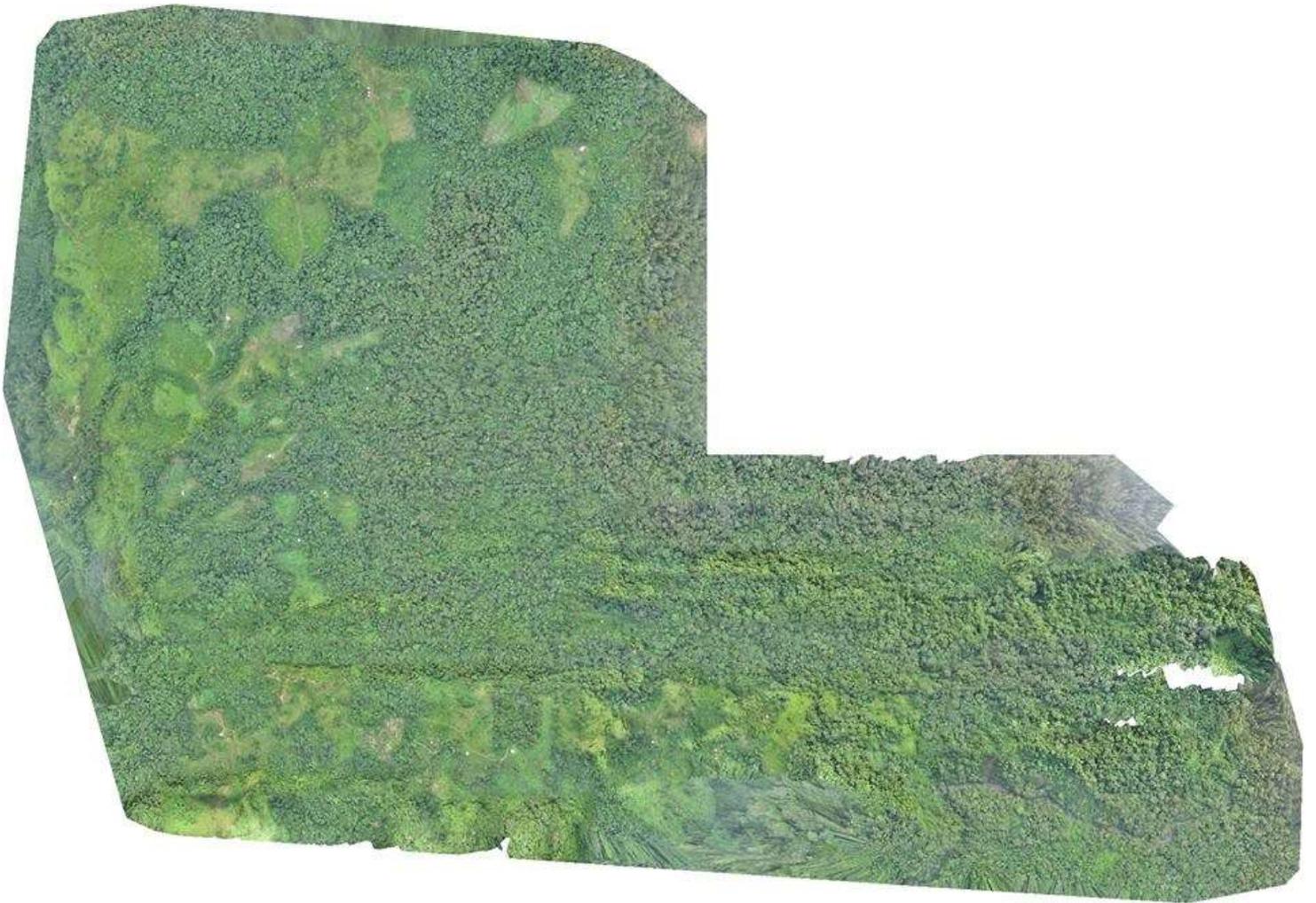
The screenshot shows the Facebook page for "Proyecto WASHU". The page header includes the name "Proyecto WASHU" and navigation options like "Page", "Messages", "Notifications", "Insights", "Publishing Tools", "Settings", and "Help". The profile picture is a circular logo featuring a frog. The cover photo shows a sloth in a tree. The page is identified as a "Non-Governmental Organization (NGO)".

Key statistics shown on the right side of the page include:

- THIS WEEK:** 1,292 Post Reach
- 181 Post Engagement
- 1 of 1 Response Rate
- 7 minutes Response Time

The "Timeline" section shows a post from "Proyecto WASHU" with the text: "La sentimos por todo lo que hemos perdido, ahora que somos conscientes, contestamos al mundo". The post is promoted by "Redeseta Fuentes" and has 15 likes.

Appendix 5. Aerial image result of drone flights 1200 hectares total, focused in the agricultural zones of the landowners of Tesoro Escondido who signed the agreement for protect the forest.



Appendix 6. Project Images of the activities.



Photo 1 & 2. Project member Paola Moscoso at the congress of the International Primatology Society in Hanoi, Vietnam.

Appendix 6. Project Images of the activities.



Photo 3. Creation of the community library in Cristobal Colon Town with the support of the Ministry of Education of Ecuador.



Photo 4. Creation of the community library in Cristobal Colon Town with the support of the Ministry of Education of Ecuador.

Appendix 6. Project Images of the activities.



Photo 5. Project leader Nathalia Fuentes with farmers of Tesoro Escondido in organic cacao implementation workshop.



Photo 6. A screening “Night CLub of Cinema” were developed during the Environmental Education workshops in the School of Chonta Duro Town.

Appendix 6. Project Images of the activities.



Photo 7. Personalized teaching experience with Tesoro Escondido farmers.



Photo 8. Preparation of cacao paste.

Appendix 6. Project Images of the activities.



Photo 9. Workshop ““Animal Behaviour”

Appendix 6. Project Images of the activities.



Photo 10. Workshop “The Water cycle”



Photo 11. Workshop “Building our own organic garden”

Appendix 6. Project Images of the activities.



Photo 12 & 13. Drone flights in Tesoro Escondido for the cacao agreement.

Appendix 6. Project Images of the activities.



Photo 14. Workshop with the children of Tesoro Escondido, trip to the forest.

Appendix 6. Project Images of the activities.



Photo 15. Project leader Nathalia Fuentes developing the art crafts workshop in Tesoro Escondido.

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Address list and web links

An annotated list of useful names, addresses and websites

- <http://blog.pix4d.com/post/125935771931/preserving-the-endangered-spider-monkey-in-ecuador>
- <https://www.youtube.com/channel/UCKwaiOYvrRKiSfJ67Dw5Dfw>
- https://www.youtube.com/watch?v=t_VHx08tYHs
- <https://www.youtube.com/watch?v=udvLizVKTT4>