

**NATURAL RESOURCE PROTECTION AND MONITORING COMMISSION TO THE  
CALDERÓN RIVER AND AMACAYACU NATIONAL PARK BUFFER ZONE  
March - November, 2008.**



THIS DOCUMENT WAS PRESENTED TO THE *Natural Resource Protection and Monitoring Committee of the Amazonas Department* AS BASELINE INFORMATION FOR DECISION-MAKING CONCERNING THE FUTURE OF THE CALDERÓN RIVER AREA.

*"Peace is our biggest treasure in El Calderón"*. Don Luis Pinzón (Colono-Calderon basin).

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**Commission group:** Interdisciplinary team composed of 15 persons; two environmental police officers from National Police (Agents Carlos Ríos and Jorge Figueredo), Amacayacu National Park (**ANP**) representative Rodolfo Pinilla, Reserva Tanimboca representative Goran Mikhailovic, Reserva Cercaviva representative Oscar Tamayo, two Tikuna representatives from San Martín de Amacayacu (Javier Sánchez and Arturo Naranjo), one Yagua guide (Leoncio Murayari), two representatives from the *colonos*<sup>1</sup> established in the Calderón River (Hamilton Penagos y Deisy Gutiérrez) and five members of Fundación Entropika (Andrés Barona, Ángela Maldonado, Eliana Martínez, Raquel Tangoa and Eduard Mejía).

**Date:** March 7<sup>th</sup> - 15<sup>th</sup>, 2008.



### **Abstract**

In this paper we present the results of an investigation carried out by the Natural Resource Protection and Monitoring Commission to the Calderón River area. The purpose of this visit was to determine the extent of damage caused to the environment by human activity in the south-eastern buffer zone of Amacayacu National Park, between the Calderón River and Mata Matá creek. This investigation established that human activity was a threat to many important species in the area. A programme of further research into the ecology and geology of the area, and careful monitoring of human activity, with the co-operation of the local people, would be essential for the area's future protection.

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<sup>1</sup> “Colonos” are non-indigenous inhabitants from other parts of Colombia that have settled in the area.



## INTRODUCTION

The north-western region of the Amazon River basin has been considered one of the richest areas in terms of biodiversity and Colombia's only connection to the Amazon River; the "Trapecio Amazónico" (Amazon Trapezium), considered one of the most biodiverse areas in the Amazon River Basin (Schultes, 1990) covers part of this area. It is privileged in its geographical position at a confluence between the main distribution patterns that occur among Amazonian plants (INPA, 1999) and in a transition zone between the two geological formations present in the Amazon basin, known as the Guiana Shield formation and the Pebas formation. A gradient between these two formations is present in the **ANP**, in the area between the Calderón, Purité, Mata Matá, Amacayacu and Cotuhé rivers. This results in a high diversity of plant species in a relatively small area (Andrés Barona, pers. comm.). Downriver in Brazil, the Calderón is partially protected as it marks the northern edge of the *Eware I* and *Eware II* Indigenous Reserves (see map1).

The headwaters of the Calderón River are protected by law as part of the National Forest Reserve (**NFR**) in Colombia and are an important water reservoir for Leticia (the capital city of the Amazonas Department), with a high potential for conservation. It is the habitat of the neotropical river otter (*Lontra longicaudis*), classified by the IUCN as a Vulnerable Species (VU) with Deficient Data (DD) collected. This species is particularly susceptible to habitat degradation, overfishing and water pollution (Rodríguez-Mahecha *et al*, 2006). The tapir (*Tapirus terrestris*), classified as a Vulnerable species (VU) by the IUCN is also present (Naveda *et al*, 2008)<sup>2</sup>. Rivers are an essential part of the habitat of the tapir; this species is threatened by hunting, due to its long gestation period and parental care of a single offspring, as well as with deforestation (Rodríguez-Mahecha *et al*, 2006). This ecosystem is also home to the Harpy Eagle (*Harpia harpyja*), the largest bird of prey in the Americas and a species about which very little is known<sup>3</sup>.

National government limitations in the administration of the **NFRs** and the characteristics of the Calderón River area (the social aspects and environmental

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<sup>2</sup> *Tapirus terrestris* is considered to be Vulnerable due to an ongoing populations reduction estimated to be slightly greater than a 30% in the past 3 generations (33 years) due to habitat loss, illegal hunting and competition with livestock, and estimated on current rates of decline this rate of decline is inferred to continue for the next 3 generations (33 years). Although this rate of decline seems improbable considering the occurrence in the vast Amazon - the fact is that the species has been extirpated over large portions of its range and severely reduced in other large portions (Naveda *et al*, 2008).

<sup>3</sup> Three members of the Commission observed a pair of Harpy Eagles copulating on the forest floor, between Sabalillo Creek and "Viga Gruesa", during the journey to the Calderón River.

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dynamics along with the will to unite efforts towards its adequate management) make the area ideal for the development of participatory scientific research. This would be an appropriate tool for getting to know local inhabitants through the study of the flora and fauna, monitoring of natural resource extraction and environmental education focusing on the sustainable use of the natural resources in the Calderón headwaters.

Local inhabitants of the headwaters of the Calderón River are interested in implementing alternative methods for the use and conservation of natural resources in the area. The León de Judá community, a highly organised group of people who rely on agriculture, are keen to learn about the special soil conditions in the Amazon forest and the proper use of the land. CORPOAMAZONIA's *Comité de Vigilancia y Control al Tráfico Ilegal de los Recursos Naturales en el Departamento del Amazonas* (Natural Resource Protection and Monitoring Committee of the Amazonas Department, CVCDA)<sup>4</sup> offers a space in which all the actors involved in shaping the future of the Calderón River share a place for dialogue and for planning and performing actions for the benefit of this area of the **NFR** and its population.

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<sup>4</sup> CORPOAMAZONIA is the governmental entity in charge of the administration of natural resources in the Amazonas Department. The CVCDA was established to aid the monitoring of illegal natural resource extraction, as the entity responsible for taking action.

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**RECENT HISTORY OF THE AREA**

**Early to mid 1980s:** Forest clearing for illegal drug trafficking aircraft runways in the Calderón River area.

**Late 1980s and 1990s:** End of the drug traffic bonanza in the area. The area begins to be illegally exploited by Brazilians, inhabitants of Leticia, and *colonos*.

**1998:** León de Judá community established, (following the ideas of their sect leader Ezequiel Ataucusi Gamonal, who predicted the end of the world in the year 2000; the forest being the place of salvation from the final apocalypse). The local community increased fivefold, increasing the pressure on the area's natural resources, due to a rapid expansion of agriculture. Hunting also increased, affecting the populations of large mammals, especially the tapir (*Tapirus terrestris*).

**Beginning of 2005:** *Caminos de Vida del Calderón* (Ways of life for the Calderon) is published. This was the final report of a six-month study by Fundación Cercaviva, commissioned by CORPOAMAZONIA into the social, economic and environmental dynamics of the Calderón River area.

**June 2005:** Official visit by CORPOAMAZONIA, *Departamento Administrativo de Seguridad* (Security Administrative department) (DAS), and *Fiscalía* (office of public prosecutor) to the Calderón River. The following agreements were made with the León de Judá community:

1. Forest clearing is illegal.
2. No more families can join the community to establish themselves in the area.
3. The community can request for a Forest Use Permit from CORPOAMAZONIA.
4. The community will collaborate with the national authorities in the protection of natural resources and will report any illegal actions in the Calderón River area<sup>5</sup>.

**October 2005:** DAS commission to verify illegal forest clearing of 8.8 hectares in the Calderón River area. CORPOAMAZONIA determined the total area that was cleared and total volume of lumber.

**End of 2005:** Reference to an existing process of colonisation in the Calderón River area which could impact negatively on conservation in the protected area (UAESPNN, 2005).

**May 17<sup>th</sup> 2006:** Meeting of CVCDA considered the importance for relevant organisations to carry out a visit to the headwaters of the Calderón in order to verify the existence of new clearings and the extension of earlier ones, to identify

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<sup>5</sup> Document signed by the local and governmental authorities participating.

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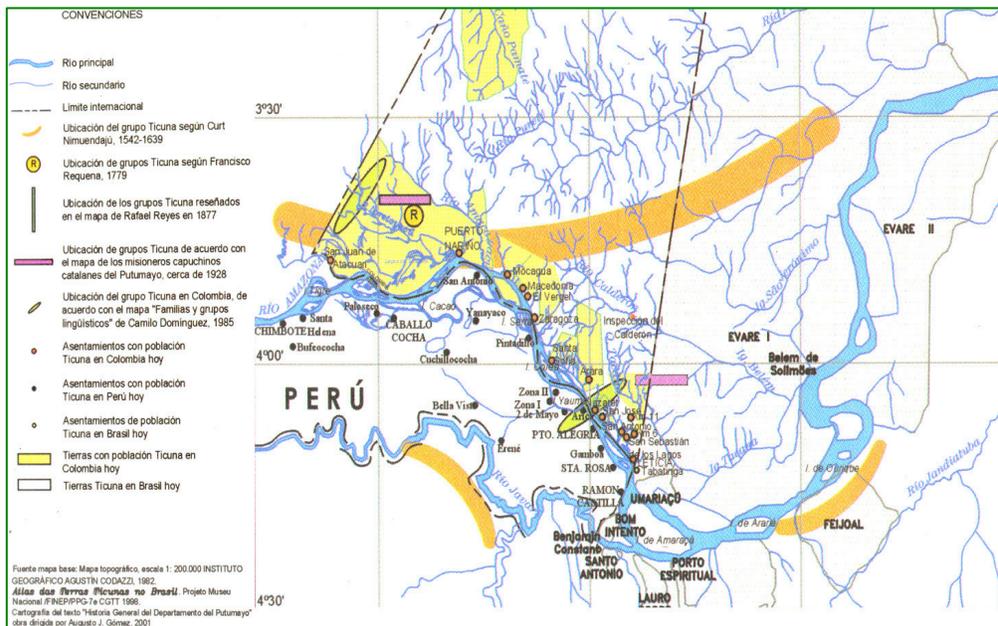


who was responsible for this activity and to initiate appropriate legal proceedings against them.

**2007:** PNN AMACAYACU carried out investigation in the vulnerable zones of the protected area and their surroundings, with the active participation of local organisations and community members through the project *Fortalecimiento de la Gobernabilidad en el Amazonas Colombiano en los Parques Nacionales Naturales* (Strengthening the Governability of the Natural National Parks of the Colombian Amazon). The purpose of this was to strengthen the ability to monitor, govern and protect the area, its culture, and its natural resources through sustainable management.

Fundación Entropika began to participate in the CVCDA to bring further momentum to the project and also to support the proposals of the document *Fronteras Vivas en Sector del Trapecio Amazónico – Sistemas Agroforestales en el Calderón* (Living Frontiers in the Amazon Trapezium Sector – Agroforest Systems in the Calderón). This was presented by the Junta de Acción Comunal de la Comunidad Calderón (Calderón Community Action Committee), regarding the sustainable use of land in Amazonia.

**December 2007:** Monitoring Commission to the Calderón River by the CVCDA was cancelled by CORPOAMAZONIA. This led to Fundación Entropika funding this monitoring commission of March 7<sup>th</sup>-15<sup>th</sup> 2008.



Map 1. Location of Tikuna indigenous group during 1542-1639 (orange line), described by Curt Nimuendaju, including the Calderon basin as part of their traditional territory (modified from Riação Umbarila. 2003).

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## RESULTS

### TRAIL FROM THE ROAD (22 KM) TO THE CALDERÓN RIVER

**ACTIVITY:** 21 kilometre journey through primary forest to reach the Calderón River.

**Objective:** To verify the actual state of the cleared forest areas along the trail.

**Start time:** 5:00 a.m. **End time:** 4:30 p.m.

Three illegal forest clearings were visited during the trip to the Calderón River:

FOREST CLEARING "OWNED" BY:	SOUTH	WEST	ACTUAL STATE
Álvaro Aguiar	3°59'46.9"	69°58'14.1"	MAINTAINED
Alfonso Cubillos and José Gutiérrez	3°58'31.2"	69°57'41.4"	ABANDONED
Edison Toro	3°56'56.8"	69°56'53.0"	ABANDONED

Crops such as pineapple, copoasú and peach palm are still growing in the clearing made by Mr. Alvaro Aguiar. A house was constructed and has been kept in good condition, but was found unoccupied during the visit.

The forest area cleared by Mr. Alfonso Cubillos and Mr. José Gutiérrez is abandoned. The house found here is uninhabited although might be used by the locals as a stop in their journey to Leticia.

Mr. Edison Toro's clearing is also abandoned. He has been fined by CORPOAMAZONIA for clearing 20 hectares of primary forest inside the **NFR**.

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**VISIT TO THE COLONIST SETTLEMENT IN THE CALDERÓN RIVER**

**ACTIVITY:** Initial approach to the *colono*<sup>6</sup> population.

**Objective:** Initial understanding of the local social and environmental dynamics in the area and to identify new forest clearings and new local inhabitants as part of the monitoring activities.

The following timetable was followed:

<b>DATE</b>	<b>ACTIVITY</b>	<b>Start time</b>	<b>End time</b>
March 9 <sup>th</sup> (Sunday)	Initial approach and informal meeting.	10:00 am	11:00 am
March 10 <sup>th</sup> (Monday)	<i>Commission</i> meeting with the <i>colonos</i> .	9:30 am	11:30 am
March 11 <sup>th</sup> (Tuesday)	Visit to other <i>colonos</i> communities upstream.	3:00 pm	5:30 pm

The majority of the *colono* settlers are single men over the age of 40 and the rest are small family groups. They have a local Community Association that lacks organization and they work independently, causing little impact on natural resources. One of the first *colonos*, Don Luis Pinzón, is very interested in local incentives to promote economic alternatives like cupana (guarana) crops or native forest species like abarco<sup>7</sup>. He proposes that for each hectare that is replanted with native species, another hectare of primary forest can be used to establish crops.

Five new *colonos* have settled in the area and four new forest clearings have appeared since Cercaviva's evaluation at the end of 2004. A new visit must be scheduled by CORPOAMAZONIA to verify the extension of the clearings and to obtain new information in order to update the data on the local population.

Alfredo, one of the *colonos* told us that in 2006 someone allegedly from the community of El Vergel used fish poison in the headwaters of the Calderón River.

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<sup>7</sup> Abarco (*Cariniana decandra*) is well known for its excellent wood. Abarco is similar to a species catalogued in *Libro Rojo de Especies Maderables de Colombia*, 2007. Natural populations are vulnerable and alternatives like native tree reforestation in degraded areas has to be evaluated and could even generate economic benefits for local inhabitants on the long term basis.

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Fish species like *acarahuasa* (oscar fish) (*Astronotus ocellatus*), silver arawana (*Osteoglossum bicirrhosum*) and gamitana (*Colossoma spp.*) were seriously diminished as a result. Amacayacu National Park works with El Vergel, which is located in its jurisdiction. This offers an interesting opportunity for dialogue with the community and for environmental education activities that might prevent similar events in the future.

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**VISIT TO THE LEÓN DE JUDÁ COMMUNITY**

**ACTIVITY:** Initial approach to the community.

**Objective:** To perform a basic assessment of the community.

The following activities were carried out:

<b>DATE</b>	<b>ACTIVITY</b>	<b>Start time</b>	<b>End time</b>
March 8 <sup>th</sup> (Saturday)	Initial visit to León de Judá community.	2:00 pm	5:30 pm
March 10 <sup>th</sup> (Monday)	Meeting between community and commission.	1:00 pm	5:00 pm
March 11 <sup>th</sup> (Tuesday)	Visit to the cultivated area.	8:00 am	1:00 pm
March 11 <sup>th</sup> (Tuesday)	Final meeting to program future activities.	2:00 pm	5:30 pm

The León de Judá community has a strong, highly organized Community Association that is united by their religious beliefs. They are part of a registered religious entity<sup>8</sup>.

The community has respected the agreements signed with CORPOAMAZONIA; no more families have arrived<sup>9</sup> and no new forest clearings were observed in the area. The León de Judá community has presented a written proposal "Fronteras Vivas" (Living Frontiers) to CORPOAMAZONIA concerning the use of the land, as a response to the third acquired agreement (see p. 5)

The León de Judá community is interested in learning about the adequate management of crops and the special soil conditions in the Amazon region. Particular support is required in the management of native crops that are compatible with established sour sop, noni and "hot" pepper crops. Some limitations include lack of training, lack of adequate equipment for the processing of products and low product demand in Leticia.

<sup>8</sup> Ministerio del Interior y de Justicia, Bogotá. Resolution number 1437, August 29th, 2003, which certifies the Iglesia Evangélica de la Misión Israelita del Nuevo Pacto Universal (IEMINPU) as a legal religious entity.

<sup>9</sup> More than 30 persons have moved away from the community. In the year 2005 there was a population of 132 inhabitants, today the total number of people is 96 (32 families).

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Hunting is an important practice on which the 32 families of the community depend. Common prey include large rodents like the *guara* (black agouti) (*Dasyprocta fuliginosa*) and *borugo* (paca) (*Agouti paca*), as well as red brocket deer (*Mazama americana*) and the increasingly endangered *danta* (tapir) (*Tapirus terrestris*). Research and environmental education programs for the local protection of this species are fundamental<sup>10</sup>.



Israelitas community: meeting after a religious ceremony

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<sup>10</sup> Eladio Gutiérrez, one of the best hunters in the León de Judá community is very interested in “shooting” the animals with a camera. This is a good opportunity to support this idea as an environmental education activity.

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**AMACAYACU NATIONAL PARK BUFFER ZONE SURVEY**

**ACTIVITY:** Survey of the flora and fauna in the south-western buffer zone of **ANP**.

**Objective:** Preliminary approach and basic assessment of the flora and fauna found in the south-western buffer zone of **ANP**, between the Calderón River watershed and Mata Matá Creek.

The initial survey of the south-western buffer zone of **ANP** was scheduled as follows:

DATE	SURVEY
March 12 <sup>th</sup> (Wednesday) DAY 1	Colono school to Calderón River head (Camp1) <b>NFR</b>
March 13 <sup>th</sup> Thursday) DAY 2	Calderón River head to Guacarí Creek (Camp2) <b>BUFFER ZONE</b>
March 14 <sup>th</sup> (Friday) DAY 3	Guacarí Creek to Mata Matá Creek(Camp3) <b>BUFFER ZONE</b>
March 15 <sup>th</sup> (Saturday) DAY 4	Camp3 – Plataforma Mata Matá <b>AMACAYACU NATIONAL PARK</b>

The following are some important elements to bear in mind:

CORPOAMAZONIA and AMACAYACU NATIONAL PARK are the two legal authorities in charge of establishing the area occupied by the buffer zone and its management policies. One important activity to control which already seems to occur in the Calderón River area is tourism, although it is unconfirmed if this activity is permitted. Old camp sites and litter were observed on DAY 1.

There is a gradual change from sandy (poor) to black soil (nutrient-rich) that was evidenced through the observation of palm tree species<sup>11</sup> during the survey. The flora in this area is a blend of different forest types depending on the soil conditions.

More than 25 species of large vertebrates were recorded in the survey. Species including the neotropical river otter (*Lontra longicaudis*), woolly monkey (*Lagothrix lagothricha*) and harpy eagle (*Harpia harpyja*) were seen, and evidence of

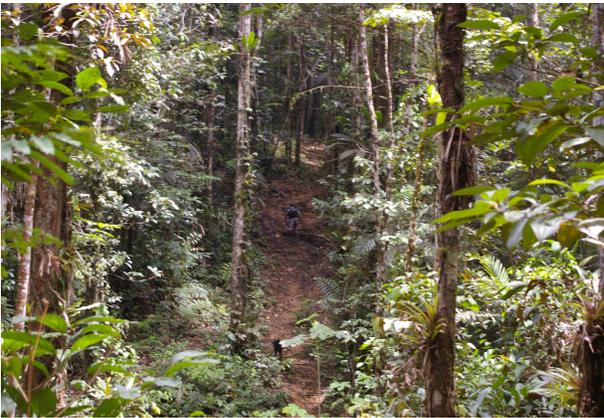
<sup>11</sup> Information about palm tree species distribution can be found in Vormisto *et.al.* 2004.

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species such as jaguar (*Panthera onca*), peccary (*Tayassu spp.*) and red brocket deer (*Mazama americana*) were observed. The surveyed area hosts robust populations of wild animals, as confirmed by Javier Sánchez, an experienced hunter from the Tikuna community.

One way of monitoring the natural resources in the area is through “participatory research” in the study of flora and large mammal census groups, with particular focus on vulnerable species like the otter, woolly monkey and tapir. Bird monitoring is also important, especially data on harpy eagle ecology.



Main access trail to the Calderon basin



Cultivation land cleared by Israelitas

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**ESTABLISHMENT OF STUDY SITES (November 8<sup>th</sup>- 12<sup>th</sup> 2008)**

**ACTIVITY:** A fieldtrip alongside CORPOAMAZONIA, Policia Nacional and Fundacion Entropika was carried out.

**Objective:** To define the study sites for the Calderon Project, as the geographic coordinates had to be included in the research permit<sup>12</sup>.

The two main study sites are located as follow: First site at the south-western buffer zone of **ANP** and Guacarí Creek. The selection of this site was based on its ecological importance based on the different soil gradients identified during the initial visit. This site is strategically located in order to monitor faunal and plant species. As there was not evidence of disturbance, large mammals' densities will be compared with the long-term data collected in the overlapping areas between **ANP**, Mocagua and San Martin Tikuna communities; this site will represent a suitable location as the un-hunted area for measuring the impact of subsistence hunting in overlapping areas. Finally, this site is crucial to monitor if the tourism activity still present in the area.

The second site was located at the north-west of the last cultivation land on the Israelitas community, in order to monitor further deforestation and to assess the levels of anthropogenic impact in the area (see map 2).



Map 2. Orange dots represent the two study sites located in the buffer zone of ANP and north of Israelitas community.

<sup>12</sup> The research permit for the Calderon Project will be granted during the third week of November 2008 by CORPOAMAZONIA.



## **CONCLUSIONS AND RECOMMENDATIONS**

Conservation of the Calderón River is essential because of its biological potential, strategic geographical position, special geological features and social dynamics. Fundación Entropika, through this report for the *Natural Resource Protection and Monitoring Committee of the Amazonas Department* considers the following recommendations important for the adequate management and conservation of this highly biodiverse area:

It is imperative to review the legal status of the Calderón River population, and update the population census. No more people should be allowed to establish themselves in the area.

The buffer zone should be established, along with policies for its management (CORPOAMAZONIA and **ANP**).

A Monitoring and Research Centre is a good way to establish local participatory activities related to the environment as a tool for education and the monitoring of natural resources in the area. Fundación Entropika is interested in supporting monitoring activities of natural resources and working with the local inhabitants of the Calderón River in research and environmental education activities. Local inhabitants are interested in promoting the proper management of crops and identifying potential economic alternatives for the special soil conditions found in this area of the Amazon region.

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**ACKNOWLEDGMENTS**

We would like to thank Rainforest Concern and Martin Stanley for funding the pilot phase of The Calderon Project as their continuous support has been essential in expanding our conservation efforts to the Calderon basin area. Thanks to the Whitley Award for funding the project implementation. We are immensely grateful to the Policia Ambiental Leticia, Amacayacu National Park, the San Martin de Amacayacu community (Arturo Naranjo and Javier Sanchez), Fundacion Cerca Viva, Reserva Tanimboca, Israelitas community and the colonos located in the area, for their invaluable support during the pilot project. We would like to thank the research team: Andres Barona, Eliana Martinez, Rodolfo Pinilla, Eduard Mejia, Raquel Tangoa and Angela Maldonado for their hard work during the design and implementation of this project. Finally we wish to thank Andres Barona for preparing the Spanish version of this report, Liz Tyson, Silvia Racca and Brian Milton for proof reading the English version.



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