



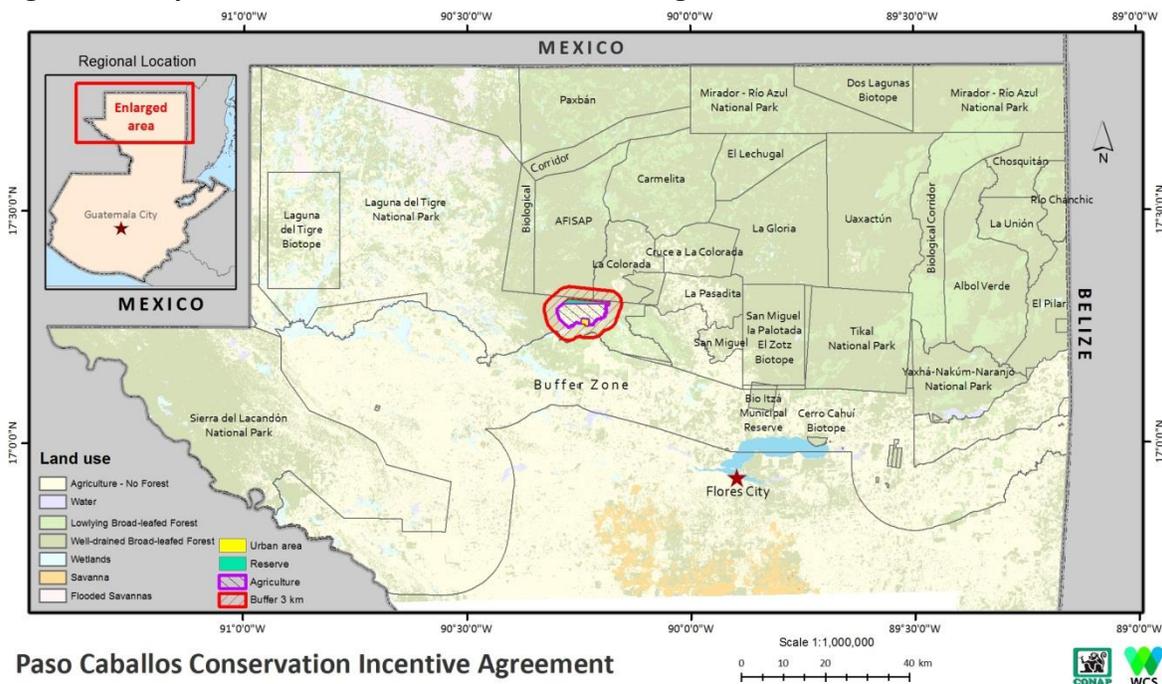
CONSERVATION AGREEMENT CASE STUDY No. 3

Paso Caballos Conservation Agreement

Elimination of Cattle Ranching, Fire Prevention and Control, Reduction of Immigration, and Improved Education

In 2010 the Q'eqch'í Maya community of Paso Caballos signed its first two-year Conservation Agreement. The agreement was developed with the participation of community members and Guatemala's National Council of Protected Areas (CONAP), as well as technical and financial support from the Wildlife Conservation Society (WCS) and Conservation International. The Paso Caballos agreement spans a total area of 9,000 hectares (**Figure 1**), and was the second of its type to be signed in the Maya Biosphere Reserve (MBR).

Figure 1: Map of the Paso Caballos Conservation Agreement Area



Paso Caballos Conservation Incentive Agreement

Signatories of the agreement included the Paso Caballos Community Development Council (COCODE), CONAP as the national protected areas management institution, WCS as the “accompanying NGO”; Asociación Balam and the Integrated Forestry Association of San Andrés, Petén (AFISAP) also signed as “witness of honor” institutions. A second phase of the agreement was subsequently signed in 2013, including the addition of the municipality of San Andrés as an additional signatory.

The Paso Caballos Conservation Agreement was based upon an “Agreement of Intentions” (*Acuerdo de Intención*) signed in 1997 between CONAP and Paso Caballos shortly after the historic 1996 Peace Agreements. This initial accord provided Paso Caballos with access to a 5,236 hectare polygon within Laguna del Tigre National Park, predicated on compliance with specific conditions outlined by CONAP. The subsequent 2010 Conservation Agreement was designed to reinforce the original agreement through two components: conservation actions, including the prevention and control of forest fires and patrolling of the community polygon; and social benefits, including support for the COCODE, and investments in health, education, and improved agricultural practices.

In 2007-2008, Paso Caballos experienced a challenging period in which the village’s relationship with CONAP became strained as a result of an effort by external colonists and some village members to illegally colonize a section of Laguna del Tigre National Park adjacent to the community polygon. Two years later, Conservation Agreement activities were implemented to help restore that relationship by improving the village’s capacity to comply with the 1997 agreement, and by extension the requirements for maintaining standing within the park. These include the prohibition of cattle ranching, the sale or rental of agricultural land to outsiders, and external colonization by outside families, among others.

After five years of implementation, the agreement has led to a vast improvement in Paso Caballos’ collaboration with CONAP and yielded significant social and environmental benefits alike. In the following pages, we detail four examples of notable outcomes from the Paso Caballos agreement.

ELIMINATION OF CATTLE RANCHING

Cattle ranching is illegal in all Maya Biosphere Reserve national park and “core” areas; it is also undeniably the most destructive land use across the reserve. In August 2010, President Alvaro Colom of Guatemala announced plans to improve protection of the Maya Biosphere Reserve to reduce illegal, depredatory activities, including an intention to remove cattle from Laguna del Tigre National Park. That same year, Paso Caballos initiated implementation of the first phase of the Conservation Agreement. The agreement included a commitment to remove all cattle within the community’s 5,236 hectare agricultural



Cattle removed from Paso Caballos / Photo: WCS

polygon. As in the case of the Carmelita agreement, a modest incentive was provided to cattle owners to facilitate the transportation of cattle for sale in areas outside the reserve (where ranching is legal), thereby providing the owners with access to improved prices for the sale of their stock. The entire village stock, numbering 19 head of cattle, was subsequently removed in coordination with CONAP and community leaders. As of 2016, cattle remain absent from the community polygon.

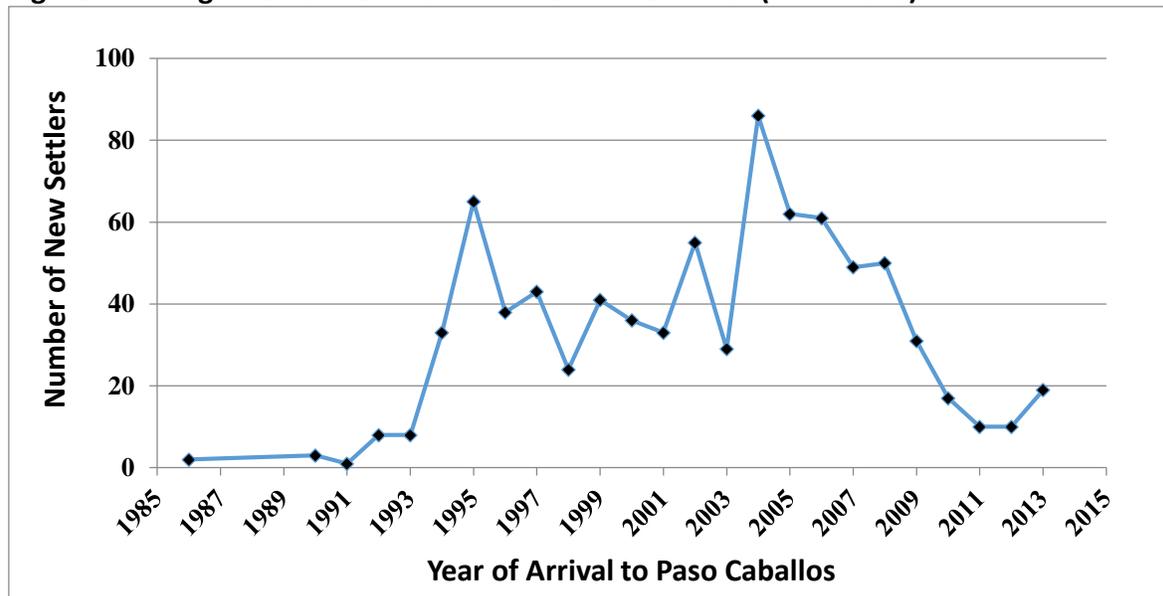
In 2011, shortly after purging the cattle, one family brought 3 head of cattle into the community polygon. After community leaders reported the violation to CONAP, the cattle were subsequently removed under CONAP's supervision, and the family received a written sanction from the village COCODE. Since that point, no new attempts to enter cattle into the Paso Caballos area have been registered.

REDUCTION OF IMMIGRATION INTO PASO CABALLOS

With a human population hovering around 1,800 individuals, Paso Caballos is one of the largest communities in the MBR. For a number of years the village's population growth rate reached annual increases of 8% or higher, spurring a three-fold increase in the population since its establishment as a small colony in the early-1990s. This dramatic growth was facilitated by the perception of available land in the area, the largely agricultural vocation of village inhabitants, and the scarcity of social services. Two main mechanisms drove the growth: immigration of new families into the area, and an average fecundity rate exceeding five children per family.

Regulation improved considerably following the implementation of the Conservation Agreement in 2010 (**Figure 2**), however a slight uptick in the number of individuals entering the community was detected in 2013-2014, leading to a renewed focus on this specific commitment by CONAP and the village COCODE.

Figure 2: Immigration of New Settlers into Paso Caballos (1986-2013)



In December 2015, WCS identified additional resources to implement a “Reproductive Health Component” as part of an integrated strategy to address the challenge of explosive human population growth in the village. This new agreement component was implemented in collaboration with the Ministry of Public Health, hiring an experienced community nurse to provide woman-to-woman health services in the community. During the first two months of implementation, 61 women benefited from access to safe family planning methods, representing a significant step forward for the community.

STRENGTHENING COMMUNITY FIRE PREVENTION AND CONTROL

Paso Caballos is primarily a farming community, whose local economy is based on cultivation of maize, pumpkin seeds and beans using traditional agricultural practices including clearing and burning vegetation in areas used in cyclical rotations. Prior to the initiation of the agreement, agricultural fires sometimes unintentionally leaped out of control, deteriorating adjacent, intact areas of Laguna del Tigre National Park.

The Conservation Agreement strengthened the community fire management system by providing equipment (9 leaf blowers and 2 chainsaws), oil, and fuel, to all community farmers to assist with agricultural burns and to ensure that adequate fire breaks (“*rondas*”) were installed prior to burning. Support was also provided to clear 18.7 km as a fire break between the Las Guacamayas Biological Station and the Community Forest Reserve to reduce the risk of fire spreading into intact forest areas.

Prior to burning, farmers organize themselves into four sectors, establish support teams, and provide notice to the community fire official and the COCODE so that a dedicated fire control team can assist the burn.

An Agricultural Plot in Paso Caballos after Burning in 2015; Note the Fire Break (“Ronda”) and Intact Fallow Areas around the Burned Plot / Photo: WCS - LightHawk



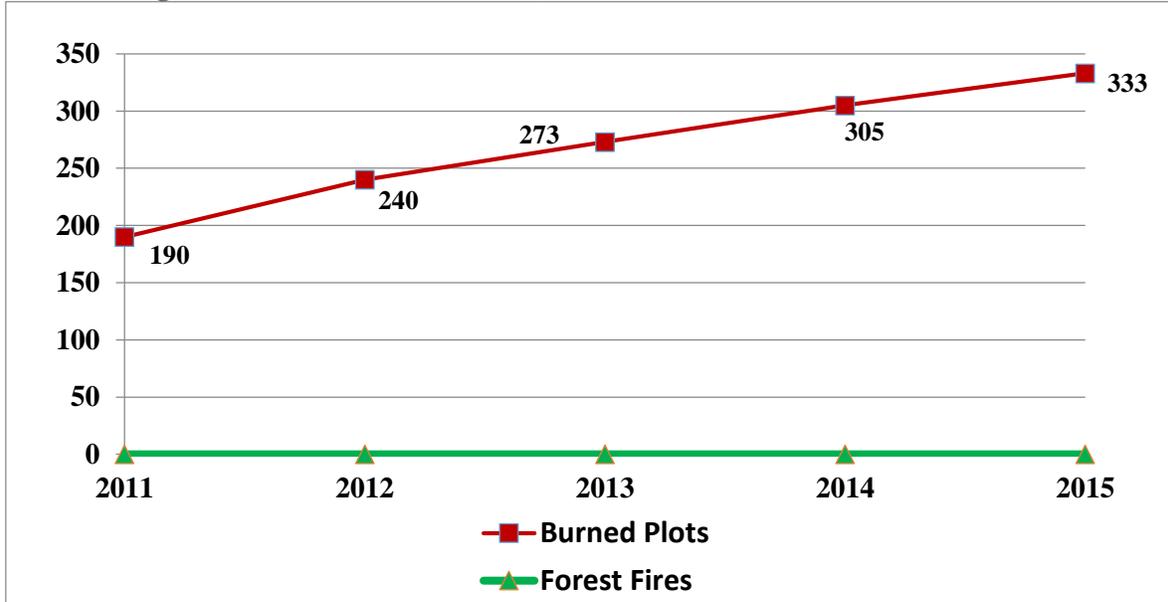
Between 2011 and 2015, the number of agricultural plots burned increased from 190 to 333 burning events/year (**Figure 3**). During this period no forest fires occurred¹. This demonstrates the efficacy of the fire prevention system currently in place, and reinforces one of the secondary objectives of the Paso Caballos agreement: the protection of intact habitat for the threatened wildlife populations of Laguna del Tigre National Park (i.e. scarlet macaw, jaguar, white-lipped peccary, and Central American river turtle).

The Forest Fire Early Warning System² (*Sistema de Alerta Temprana de Incendios Forestales* - SATIF) was implemented annually by the community, with over 95% of farmers providing due notification of burns and observing the warning flag system designed to avoid the use of fire in unsuitable conditions. For example, in 2013 and 2015 the red flag (used to indicate high-risk drought conditions) was used for an average of three days during the agricultural burn season and no burns took place during these periods, nor were there any disagreements between farmers and the Community Forest Fire Commission (*CIF Comunitaria*).

¹ One forest fire affecting 25 hectares did occur in late April, 2016 as the report was being concluded.

² The SATIF is a system of flags used to denote the degree of local risk of fire spreading out of control. A green flag indicates low risk, and permission to burn. A yellow flag indicates moderate risk and permission to burn only with accompaniment by fire brigades assigned to assist farmers. A red flag indicates the use of fire is prohibited. The flag is managed by the village Mayor, in coordination with CONAP and the WCS technical support personnel, who receive daily updates during the fire season from CONAP's Center for Monitoring and Evaluation regarding the risk of fire, and the number of hot points detected in SERVIR AQUA and TERRA satellites.

Figure 3: Number of Agricultural Plots Burned and Forest Fires Reported in the Paso Caballos Agricultural Zone (2011-2015)



Among all Conservation Agreements, “hot points” (i.e. active fires) detected by SERVIR/NASA satellites provide the principal indicator for the degree of success in controlling fire in forest areas. In the Paso Caballos agreement area of influence (9,000 hectares), despite a 75% increase in the number of plots burned, when compared to the 10-year annual average prior to agreement initiation hot points decreased by 39.2% during the agreement’s implementation, indicating once again that fire control methods practiced by farmers were extremely effective.

IMPROVING BASIC EDUCATION

Another social benefit provided as part of the Paso Caballos Conservation Agreement consisted of diverse investments in the education system, including improvements to school buildings, support for the management of the COCODE’s nursery school (*pre-primaria*), elementary (*primaria*) and secondary (*básica*) education committees, and the establishment of a computer academy. All activities were undertaken in collaboration with the Ministry of Education, providing an annual average benefit to approximately 500 students.

In 2011 there were two school campuses in Paso Caballos: one for elementary level students, and the other for nursery school students in the morning session and secondary level students in the afternoon session. The agreements financed the installment of a fence around the grounds of the nursery school area, and subsequently cement floors in three classrooms and a corridor to replace bare earth floors. This improved the learning conditions for 169 students. The following year, similar improvements were made in the elementary campus, with additional fencing and the installment of cement floors in nine

classrooms, benefiting 343 students. The community supported much of this work by donating manual labor at no cost.

In 2014, at the request of families living in the village's most remote neighborhood (*La Pista*), a third scholastic campus was constructed with four additional classrooms, one for nursery school students and three for elementary students). This investment benefitted 104 students who no longer needed to walk for a kilometer to get to school. Again, the infrastructure was built with labor donated by community members. The Ministry of Education later assigned additional teachers to Paso Caballos to take advantage of these new classrooms, increasing class room availability and helping to reduce class sizes in the nursery and primary levels.

Students in One of the New Classrooms in the La Pista Neighborhood / Photo: WCS



Finally, a computer academy specializing in information technology and communication was constructed with the support of COCODE and WCS in 2015, and has since taught courses for 38 secondary level students.

Lessons learned during the implementation of the Conservation Agreement in Paso Caballos include:

- Fire prevention strategies effective and replicable: Adaptations undertaken with Paso Caballos farmers to ensure that fire did not spread into forest areas were extremely effective, permitting families to obtain subsistence crops and income despite the large scale of fire use (i.e. over 300 registered burns in 2015). This approach, based on the use of the Early Warning System for Fire, local coordination led by the village mayor, the organization of farmers in sectors and fire brigades, the emission of fire use permits provided by the mayor, and the provision of supplies (gasoline, etc.) and equipment (i.e. leaf blowers to clear fire breaks of organic material) through the agreement provides a replicable model for local adaptation to a warming climate that can be replicated in

other well-organized, agrarian communities living in close contact with vulnerable natural areas.

- Increased land tenure: One consequential outcome of the agreement in Paso Caballos is the village's increased security of access to land in Laguna del Tigre National Park. This improvement has been obtained as the result of Paso Caballos' increased compliance with their obligations obtained under the original "Agreement of Intent" signed with CONAP, and their improved working relationship with CONAP.
- Investment in "demand-side" governance paid dividends for social development: With the support of agreement investments in the COCODE, Paso Caballos leaders were successful in obtaining notable investments from government agencies as the result of continuous requests upon Municipal and ministerial governments. One clear example of this was the assignment of new teachers to the school built with agreement resources, a commitment that required numerous trips to the departmental capital, but which yielded an important social investment on behalf of the village valued at \$18,810 annually. This new investment will ostensibly be perpetual. Additional investments were made by the municipal government in basic infrastructure, including repairing bridges, the improvement of roads in the center of the village, and the initiation of a formal health center. These governmental investments obtained by Paso Caballos totaled \$454,453, representing 46% of all the leveraged investments reported among the four agreements implemented in the Maya Biosphere Reserve.
- Institutional cooperation strengthened: As noted above, the improved relationship between Paso Caballos and CONAP increased the village's probability of long-term land-use rights in the area. This was in no small measure due to the village's improved compliance with the stipulations of the "Agreement of Intent", particularly as related to the control of impacts upon the surrounding sections of Laguna del Tigre National Park. During agreement implementation, lines of communication between CONAP and the village were first renewed, and then strengthened considerably. CONAP and Paso Caballos leaders met regularly to address challenges and to plan for future projects. Paso Caballos leaders also established working relationships with the community-based forest managers located adjacent to the community polygon (AFISAP). In another example of the dividends of cooperation, as of early 2016, CONAP and Paso Caballos leaders have begun plans to implement an agricultural pilot project with the assistance of the Ministry of Agriculture and Ranching (MAGA) and the German Government's International Development Agency (GIZ). In short, in stark contrast to 2008-2009 period when Paso Caballos was at loggerheads with CONAP and affiliated conservation partners, these new partnerships evidence the improved degree of inter-institutional cooperation underway, and portend improved opportunities for community members and nature alike.

Source:

McNab, R., Castillo, M., Zetina, J, Rodriguez, A., Ramos, V.H., Solis, N., Trujillo, D., Chacon, R., Obando, O., and A. Castellanos. (2016). *“Evaluating Conservation Agreements as a Tool for Conserving Nature and Improving Wellbeing of Rural Households in the Maya Biosphere Reserve, Guatemala”*. Wildlife Conservation Society Guatemala Program, Technical Paper No. 01.