

RAPID BIOLOGICAL and SOCIAL INVENTORIES A FIELD MUSEUM PUBLICATION

Colombia: Bajo Caguán-Caquetá



rapid biological and social inventories

INFORME/REPORT NO. 30

Colombia: Bajo Caguán-Caquetá

Nigel Pitman, Alejandra Salazar Molano, Felipe Samper Samper, Corine Vriesendorp, Adriana Vásquez Cerón, Álvaro del Campo, Theresa L. Miller, Elio Antonio Matapi Yucuna, Michelle E. Thompson, Lesley de Souza, Diana Alvira Reyes, Ana Lemos, Douglas F. Stotz, Nicholas Kotlinski, Tatzyana Wachter, Ellen Woodward y/and Rodrigo Botero García editores/editors

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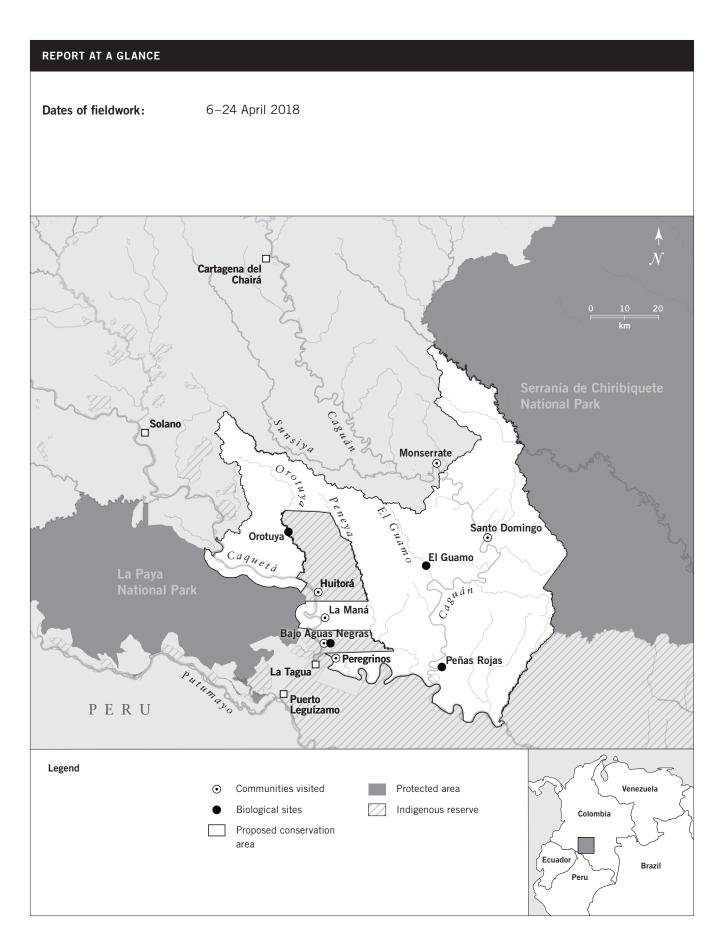
Fotos e ilustraciones/Photos and illustrations

Carátula/Cover: Esta tradicional casa de reuniones, localmente conocida como maloca, sirvió como campamento base para los equipos biológico y social del inventario rápido en el Resguardo Indígena Bajo Aguas Negras, Caquetá, Colombia. Foto de Jorge Enrique García Melo./This traditional meeting house, or *maloca*, was the home base for the rapid inventory biological and social teams in the Bajo Aguas Negras Indigenous Reserve, Caquetá, Colombia. Photo by Jorge Enrique García Melo.

Carátula interior/Inner cover: La región del Bajo Caguán-Caquetá de Colombia es una candidata ideal para ser un área de conservación de índole comunal y regional, gracias a sus saludables bosques, lagos y ríos que durante décadas han sido protegidos por residentes indígenas y campesinos. Foto de Álvaro del Campo./ Protected for decades by indigenous and *campesino* residents, the healthy forests, lakes, and rivers of the Bajo Caguán-Caquetá region of Colombia make it an ideal candidate for a community-based regional conservation area. Photo by Álvaro del Campo.

Láminas a color/Color plates: Figs. 10C, 11A, 11C, 11E, 11M, 11Q, D. Alvira Reyes; Figs. 3A–B, 3E–H, J. Ángel Amaya; Figs. 2A–D, 3D, J. Ángel/H. Serrano/N. Kotlinski; Figs. 9E–F, 9H, 9W–Y, W. Bonell Rojas; Figs. 4B-D, 5B-C, 5E, 5G-Q, 9C-D, J.L. Contreras-Herrera; Figs. 8A, 8C, 8H-J, 8K-L, B. Coral Jaramillo; Figs. 4A, 6T, 10B, 10F-G, 12A, 13A-G, Á. del Campo; Figs. 1A, 3C, 6A-S, 6U, 11H, J.E. García Melo; Figs. 10D, 11K, 11P, 12C, N. Kotlinski; Figs. 8E, 9J-P, D.J. Lizcano; Figs. 7A-M, 7P-S, 7W-Y, G. Medina Rangel; Figs. 9E, 9G, 9Z, A. Niño Reyes; Figs. 8G, 9A-B, 9Q-V, J.P. Parra Herrera; Figs. 8B, 8D, 8F, 8K, F. Peña Alzate; Figs. 5A, 5D, 5F, M. Ríos; Fig. 12B, C. Robledo Iriarte; Fig. 7Z, D.H. Ruiz Valderrama; Figs. 10A, 10E, 10H-J, 10H-L, 11B, 11D, 11F-G, 11J, 11L, 11N, A. Salazar Molano; Figs. 7N, 7T-V, M.E. Thompson. Las siguientes fotografías fueron tomadas en los resguardos indígenas Bajo Aguas Negras (RIBAN) y Huitorá (RIH): 1A, 5A, 5D-F, 7B, 7T-V, 7Z, 8C-D, 9N, 9V, 10C, 10F, 10L, 11F, 11K, 11M, 11Q, RIBAN; 5K, 6L, 6U, 7C, 7J, 7N, 7W, 9E-F, 9H, 9P, 9S-U, 9W-Y, 10B, 11G, 11J, RIH

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Región	In Colombia's Amazonian department of Caqueta vast lowland forest plain nestled between the An uplift to the east. One is the largest river in the C the other one of its primary tributaries, the Cagu of the country, the region between these rivers s forest cover, as well as important aquatic habitat rivers, and lakes forms a biological corridor of 90 the Colombian Amazon: La Paya to the west and	Ides to the west and the Chiribiquete Colombian Amazon, the Caquetá, and án. Unreachable by road from the rest till maintains more than 90% of its ts. This unbroken expanse of forests, D km between two national parks in
	The Bajo Caguán-Caquetá region is sparsely pop cultural diversity. The 16 rural communities (<i>ver</i> <i>campesino</i> farmers who first began settling in th away on the upper Caquetá are two large indigen of the Murui Muina people, as well as five <i>campe</i> peace accords offer an opportunity to construct also accelerated the pace of the deforestation fro lower Caguán basin.	edas) on the lower Caguán are home to e watershed in 1950. A short distance hous reserves (<i>resguardos indígenas</i>) <i>esino</i> communities. Although the 2016 a new vision for the region, they have
Sites visited	Campsites visited by the biological team:	
	Caguán watershed	
	El Guamo	6–10 April 2018
	Peñas Rojas	11–15 April 2018
	Caquetá watershed	
	Orotuya	16–19 April 2018
	Bajo Aguas Negras	20–23 April 2018
	Sites visited by the social team: Caguán watershed (Municipality of Cartagena del Chairá) Vereda Monserrate Vereda Santo Domingo	8–9 April 2018 10–11 April 2018
		10-11 Apin 2010
	Caquetá watershed (Municipality of Solano)	
	Bajo Aguas Negras Indigenous Reserve	6–7 and 12–13 April 2018
	Vereda La Maná	14–15 April 2018
	Huitorá Indigenous Reserve	16–17 April 2018

Sites visited (continued)	Ismuina Indigenous Reserve in Solan	o to strengthen ties and dis	cuss their shared visio
	for protecting this landscape and imp indigenous leaders presented that sh	proving quality of life. On 24	April <i>campesino</i> and
	On 24 April the social and biological inventory to a crowd of 150 in Solan analyze the threats, assets, opportun for improved quality of life.	o. On 25-26 April the tea	ms met in Florencia te
Biological and geological nventory focus	Geomorphology, stratigraphy, hydrolo amphibians and reptiles; birds; large		-
Social inventory focus	Social and cultural assets; history; governance, demography, economy, and natural resource management systems		
Main biological results	This is the first study to focus on the helps fill a long-standing information megadiverse Amazonian landscape	gap in the Colombian Ama	azon. We found a
	populations, and where an unbroken still serve as a functioning biological Chiribiquete national parks. During the inventory we recorded 79 vertebrates. We estimate that the rea more than 1,125 species of vertebrate	forest canopy and healthy corridor between the La P O species of plants and 70 gion harbors 2,000 species	aquatic ecosystems aya and Serranía de 06 species of
	populations, and where an unbroken still serve as a functioning biological Chiribiquete national parks. During the inventory we recorded 79 vertebrates. We estimate that the res	forest canopy and healthy corridor between the La P 0 species of plants and 70 gion harbors 2,000 species tes. Species recorded	aquatic ecosystems aya and Serranía de 06 species of
	populations, and where an unbroken still serve as a functioning biological Chiribiquete national parks. During the inventory we recorded 79 vertebrates. We estimate that the res	forest canopy and healthy corridor between the La P O species of plants and 70 gion harbors 2,000 species tes.	aquatic ecosystems aya and Serranía de D6 species of s of vascular plants an Species estimated
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	populations, and where an unbroken still serve as a functioning biological Chiribiquete national parks. During the inventory we recorded 79 vertebrates. We estimate that the reg more than 1,125 species of vertebra	forest canopy and healthy corridor between the La P 0 species of plants and 70 gion harbors 2,000 species tes. Species recorded during the inventory 790	aquatic ecosystems aya and Serranía de D6 species of s of vascular plants an Species estimated for the region 2,000
	populations, and where an unbroken still serve as a functioning biological Chiribiquete national parks. During the inventory we recorded 79 vertebrates. We estimate that the rea more than 1,125 species of vertebra	forest canopy and healthy corridor between the La P 0 species of plants and 70 gion harbors 2,000 species tes. Species recorded during the inventory 790 139	aquatic ecosystems aya and Serranía de 06 species of s of vascular plants an Species estimated for the region 2,000 250
	populations, and where an unbroken still serve as a functioning biological Chiribiquete national parks. During the inventory we recorded 79 vertebrates. We estimate that the reg more than 1,125 species of vertebra Vascular plants Fishes Amphibians	forest canopy and healthy corridor between the La P 0 species of plants and 70 gion harbors 2,000 species tes. Species recorded during the inventory 790 139 55	aquatic ecosystems aya and Serranía de D6 species of s of vascular plants an Species estimated for the region 2,000 250 105–145
	populations, and where an unbroken still serve as a functioning biological Chiribiquete national parks. During the inventory we recorded 79 vertebrates. We estimate that the re- more than 1,125 species of vertebra Vascular plants Fishes Amphibians Reptiles	forest canopy and healthy corridor between the La P 0 species of plants and 70 gion harbors 2,000 species tes. Species recorded during the inventory 790 139 55 42	aquatic ecosystems aya and Serranía de D6 species of s of vascular plants an Species estimated for the region 2,000 250 105–145 85–115
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complemented by lab analyses of the soil and water samples we collected, and by a review of existing data for the region (maps, satellite and radar images, reports, etc.).

Three primary geological formations were observed in the field. The Pebas Formation (mudstones, coal layers, concretions with pyrite, carbonate mudstones, and limestones with bivalves) occupies more than half of the Bajo Caguán-Caquetá region, dominating the uplands in the east and northeast. The Caimán Formation (poorly consolidated conglomerates and sandstones with a ferruginous matrix) occupies roughly a third of the landscape, also mainly in the uplands. The remainder of the landscape, along rivers and creeks, consists of recent floodplain deposits (sands and clays); this formation occupies 22% of the area.

Soils derived from the Pebas Formation tend to be clayey, with a low to moderate nutrient content. These are heavy, acidic, reddish to grayish soils with concretions of iron and manganese oxides measuring 2–5 mm. Soils on terraces and slopes have been weathered or correspond to the upper Pebas. At deeper cuts we found soils with basic pH and high-conductivity waters that function as salt licks. Soils derived from the Caimán Formation are reddish, nutrient-poor, and similar to those derived from the Pebas. They are distinguished from Pebas soils by containing gravel-sized quartz fragments, and are generally loamier. Floodplain soils are shallow (<20 cm). Erosion outpaces sedimentation on this landscape, which means that soils here are highly susceptible to large-scale erosion and removal.

The region's red, easily erodible, and relatively nutrient-poor soils, especially those located higher on the landscape, are not easily managed. In general, this is a landscape that is easily disturbed and degraded. Consequently, we recommend a shift from current land use (logging, large-scale cattle ranching) to more soil-friendly systems, such as agroforestry or combinations of farming, forestry, and ranching.

The water that drains the landscape is light-colored and translucent, and occasionally muddy in some creeks. Conductivity is very low (4–28 μ S/cm), marking these waters as very pure, with a low dissolved salt load. This makes it easy to identify salt licks and other areas with a high concentration of dissolved salts, where conductivity can be 20 times higher (572 μ S/cm). Field measurements show streams and rivers to be slightly acidic (pH 5–6), with an acidity comparable to that of rainwater (5.5); the water around saltlicks is neutral to slightly alkaline (pH 7–8) due to its higher content of dissolved salts from Pebas Formation rocks.

Vegetation

The region's vegetation falls into two broad types: upland forests and floodplain forests. Upland forests occupy more than 80% of the study area, on the Pebas and Caimán formations, where dominant tree species include *Oenocarpus bataua*, *Clathrotropis macrocarpa*, *Pseudolmedia laevis*, *Dialium guianense*, and *Hevea guianensis*. The treelet *Leonia cymosa* was common in the understory at all four campsites. Most of the

Vegetation (continued)	dominant species we observed in the uplands are typical of poor-soil forests in western Amazonia, such as those in the Putumayo watershed to the south.
	Seasonally flooded forests occur in strips along rivers, lakes, and creeks. Some are dominated by the palms <i>Bactris riparia</i> or <i>Euterpe precatoria</i> . Others are riparian forests associated with permanent or seasonal water bodies. These formations are similar to floodplain forests farther down the Caquetá, in the municipality of Solano and in the Puerto Sábalo-Los Monos indigenous reserve, and similar to floodplain forests in Peru's Loreto region. There are relatively small patches of forest associated with oxbow lakes, as well as small, always-wet <i>cananguchal</i> swamps dominated by the palm <i>Mauritia flexuosa</i> . The continuous corridor of forest between La Paya and Serranía de Chiribiquete national parks remains intact, though its conservation condition varies from place to place. Every campsite we visited had man-made clearings from selective logging or abandoned croplands. The best-preserved forest was at El Guamo, where we saw immense individuals of valuable timber species such as <i>Cedrelinga cateniformis, Cedrela odorata</i> , and <i>Hymenaea oblongifolia</i> .
Flora	Via field observations and collections, we recorded 790 species of vascular plants during the inventory. In total we collected 724 botanical specimens and took more than 1,000 field photos. We estimate the regional flora at approximately 2,000 species. This is impressive plant diversity, although perhaps lower than that documented farther south in floristically similar forests (Putumayo, Loreto). For example, we observed few representatives of the families Myristicaceae, Chrysobalanaceae, and Lauraceae, which are hyperdiverse elements in forests farther south.
	We recorded at least 10 plant species that deserve special conservation attention, including 9 that are globally or nationally threatened. Thirty-one species recorded during the rapid inventory are potentially new records for Colombia, and several more are potentially new records for Caquetá. One tree species (<i>Crepidospermum</i> sp.) may be new to science.
	Despite our best efforts during the inventory, the flora of this area of Colombia remains poorly known. Botanical research in Caquetá has focused on the lower and upper Caquetá basin, leaving the Bajo Caguán-Caquetá region a floristic information gap. It is an especially high priority to study the forests of the Huitoto and Peneya watersheds, which are geologically and topographically different from the areas we visited.
Fishes	We sampled fish communities at 25 stations in the 4 campsites. The primary habitats were upland and floodplain streams; we also sampled large oxbow lakes, the main river channels of El Guamo Creek and the Orotuya River, and the sandy beach along the lower Caguán. All of the water bodies we saw during the inventory had white water, with the exception of one clearwater stream; our understanding is that there are no black waters in the study area.

	One hundred and thirty-nine fish species were recorded during the inventory. The order Characiformes was the most important, followed by Siluriformes, Cichliformes, and Gymnotiformes. We estimate the total fish fauna in the region at ~250 species — which is 35% of the fish species currently known from the Colombian Amazon and 49% of the species recorded for the Caquetá-Japurá watershed. Eight of the species we recorded may be new to science. Approximately 60% of the species recorded during the inventory have also been recorded on prior rapid inventories in the Peruvian Putumayo basin. The list also includes some species associated with the Guaviare River basin, such as those in the genera <i>Ituglanis</i> and <i>Schultzites</i> .
	Some of the species recorded are locally important food fish, like <i>Prochilodus nigricans</i> , <i>Brycon cephalus</i> and <i>B. whitei</i> , <i>Pygocentrus</i> , <i>Serrasalmus</i> , <i>Pseudoplatystoma tigrinum</i> , <i>Myloplus</i> , <i>Metynnis</i> , <i>Crenicichla</i> , and <i>Pterygoplichthys</i> . On the lower Caguán River we noted some small-scale harvesting of ornamental fishes. Similar harvests are occurring in the town of Peregrino, on the Caquetá, where they focus on armored catfish in the genus <i>Panaque</i> . While the ornamental fish trade is a potential economic alternative for the region, management plans are needed to avoid exhausting the resource.
	Based on field observations and conversations with local inhabitants, we recommend special care for the region's oxbow lakes. These harbor healthy populations of a number of fish species that are an important source of food for both communities and wildlife. Lakes are also important site for fish reproduction. Because the inventory fell at the start of the rainy season, we collected a large number of species with females in advanced stages of gonadal maturity. This indicates that we were close to spawning season, which local people told us falls in May-June.
Amphibians and reptiles	We recorded 97 species of herpetofauna: 55 amphibians and 42 reptiles. Amphibia was represented by frogs and toads (the order Anura). Cecilians (Gymnophiona) and salamanders (Caudata) were not recorded, but three species are expected in the region. The inventory documented all of the reptile orders: 19 snakes, 15 lizards, 6 turtles, and 2 crocodiles. Amphibians and reptiles were best represented in flooded forests, where they were associated with lentic habitats, and least diverse in upland forests. We estimate a regional herpetofauna of 105–145 amphibian species and 85–115 reptiles.
	There was an especially high diversity of arboreal amphibians at the start of the breeding season. Especially interesting records include the frogs <i>Boana alfaroi</i> , <i>Dendropsophus shiwiarum</i> , and <i>Hyalinobatrachium cappellei</i> , new records for Colombia, three new frog species for the department of Caquetá (<i>Pristimantis variabilis, Scinax funereus, and Scinax ictericus</i>), and multiple specimens of <i>Platemys platycephala</i> , a rarely seen turtle that had not been previously recorded in the study area. We were surprised by the low abundance of species in the genera <i>Pristimantis</i> and <i>Anolis</i> , which are typically important in western Amazonia. It may be that the rainy weather throughout the inventory reduced the number of sightings in these groups.

Amphibians and reptiles (continued)	Two of the species recorded during the inventory are classified as globally Vulnerable (<i>Chelonoidis denticulatus</i> and <i>Podocnemis expansa</i>), and several others are listed in CITES appendices (dendrobatids, boids, caimans, and turtles). At least seven species of amphibians and reptiles are eaten by local communities (<i>Dendropsophus</i> spp., <i>Leptodactylus pentadactylus, Osteocephalus</i> spp., <i>Caiman crocodilus, Paleosuchus</i> spp., <i>Chelonoidis denticulatus</i> , and <i>Podocnemis</i> spp.), and some are used in traditional medicine (<i>L. pentadactylus</i> and <i>Rhinella marina</i>).
Birds	We found an avifauna typical of northwestern Amazonia, featuring species that specialize on poor-soil forests and healthy populations of game birds. At the 4 campsites we recorded 388 of the 525 species that we estimate for the region of Bajo Caguán- Caquetá. Additionally, we found 12 species during river travel between the campsites and 8 species during the construction of the campsites, for a total of 408 species.
	The number of species recorded is high, in large part due to the high diversity of habitat types. While we did not visit areas of <i>tierra firme</i> forest with high hills, we did visit a large range of forest types, open areas, and aquatic habitats. Forests at three of the campsites showed signs of significant disturbance. The clearings at these sites yielded a lower diversity and abundance of understory birds, but a higher diversity and abundance of canopy birds. The current level of disturbance does not seem severe enough to have diminished total bird diversity in the region.
	We recorded approximately 20 range extensions. One was <i>Thamnophilus praecox</i> , an antbird restricted to oxbow lakes and <i>várzea</i> floodplain forests in northeastern Ecuador and southeastern Colombia. Previously this species was only known in Colombia near the Putumayo River, in the municipality of Puerto Leguízamo. We found a number of other species typical of <i>várzea</i> floodplain forest outside of their known distribution ranges, such as <i>Hylopezus macularius</i> , <i>Tolmomyias traylori</i> , <i>Turdus sanchezorum</i> , and <i>Cacicus sclateri</i> , as well as <i>tierra firme</i> species formerly only known from southwestern Colombia.
	While we did not record any threatened bird species, we did observe some guilds with reduced populations due to human activity. These include game birds like Salvin's Curassow (<i>Mitu salvini</i>) and Blue-throated Piping Guan (<i>Pipile cumanensis</i>). Macaw populations (<i>Ara</i> spp.) were not large. It is not clear if this is due to anthropogenic activities or a lack of favorable habitat in the region.
Mammals	We walked daily and nightly transects along all the trails at the four campsites, with two or three repetitions each, to sample most vegetation types and other habitats for mammals. In each transect we recorded sightings, vocalizations, tracks, and burrows. We installed 2–25 camera traps in each camp to record terrestrial mammals, and monitored 2 mist nets for 2 nights at each camp to capture bats.

We recorded 62 species—41 large and medium-sized mammals and 21 small mammals (marsupials, small rodents, and bats)—out of a total of 110 estimated species (44 large and medium and 66 small). The most diverse order was Carnivora (13 species), followed by Primates (10) and Chiroptera (16). Of the recorded species, four species showed range extensions within the department of Caquetá: porcupine (*Coendou* sp.), greater long-nosed armadillo (*Dasypus kappleri*), eastern lowland olingo (*Bassaricyon alleni*), and giant anteater (*Myrmecophaga tridactyla*).

The primary threats to mammal populations in the region are habitat loss due to extensive cattle ranching and illegal crop cultivation, hunting, landscape fragmentation, and the bushmeat trade. Despite these threats, the diversity found in this inventory was high compared with other regions of Amazonia. At three of the four campsites, we found a high abundance of white-bellied spider monkeys (*Ateles belzebuth*), woolly monkeys (*Lagothrix lagotricha*), tufted capuchins (*Cebus apella*), and black-mantled tamarins (*Saguinus nigricollis*), as well as collared peccaries (*Pecari tajacu*) and white-lipped peccaries (*Tayassu pecari*). The presence of these species, together with ocelot (*Leopardus pardalis*), jaguar (*Panthera onca*), puma (*Puma concolor*), giant river otter (*Pteronura brasiliensis*), tapir (*Tapirus terrestris*), and especially bush dog (*Speothus venaticus*) and short-eared dog (*Atelocynus microtis*), suggests that the forest offers enough food to maintain a rich ensemble of primates, carnivores, herbivores, and generalists. Likewise, we recorded bats in all of the feeding guilds (insectivores, frugivores, nectarivores, and vampires). However, the abundance of the genus *Carollia* in one of the sites shows some level of disturbance.

Ten of the species we recorded are considered to be threatened in Colombia and 12 are threatened globally. Threatened species include giant river otter, Endangered at the national and international levels; giant armadillo (*Priodontes maximus*) and white-bellied spider monkey, Endangered in Colombia; and giant anteater, considered Vulnerable at the national and international levels. Populations of these mammals in the Bajo Caguán-Caquetá region are large and healthy, making them key conservation targets.

Human communities

In addition to its biological diversity, this region is also of high socio-cultural importance. Although this is the ancestral territory of the Carijona and Coreguaje indigenous peoples, much of the region's current population arrived from elsewhere in Colombia over the past 120 years. During the rubber boom in the late nineteenth century, some Uitoto communities in the Peru-Colombia border region were displaced from their ancestral territories and settled along the Caquetá River. A few decades later, some Colombian soldiers who fought in the Colombia-Peru war of 1932–1933 settled there afterwards, together with some rubber tappers. At the end of the 1940s, *campesinos* fleeing the violence in the central region of the country (known as *La Violencia*) came to the department of Caquetá in search of land.

During the 1960s and 1970s, the Colombian government promoted colonization of the Caquetá piedmont and a colonization project in La Tagua, through which some of

REPORT AT A GLANCE

Human communities (continued)

today's *vereda* settlements were established. In the 1980s, the coca boom accelerated migration from central Colombia toward the Bajo Caguán. By the 1990s, a decade of *de facto* control by FARC guerrillas led to open war in the region, made worse by the government's fight against narco-traffickers. This created a tense environment marked by frequent human rights violations of the *campesino* and indigenous populations. Today, the peace process is a symbol of hope for the region's inhabitants—one that allows them to build a shared vision of the future based on the persistence and well-being of people, cultures, and the landscape.

The region is currently divided into four land use designations: two indigenous reserves (*Resguardos Indígenas*), a Forest Reserve, an area formerly within the Forest Reserve but subsequently withdrawn from it, and two national parks. Settlements are only permitted in the indigenous reserves and in the former Forest Reserve area. To analyze the social landscape, we divided it into three sub-regions:

Campesino communities of the Bajo Caguán

The 16 campesino *veredas* of Núcleo 1, located in the former Forest Reserve area, have a population of 1,432. They are organized through communal action councils (*Juntas de Acción Comunal* or JACs), which are their formal liaisons with higher levels of government and which establish agreements (*acuerdos de conviviencia*) to administer territory and resolve conflicts. In 2016 Núcleo 1 established the Campesino Association of the Bajo Caguán (ACAICONUCACHA), through which the communities have constructed a participatory plan of rural community development. The plan is an important instrument by which communities identify their principal assets and express their thoughts and desires surrounding their well-being.

Economic activities in these *veredas* are based on traditional agricultural production to meet basic subsistence needs and extensive cattle ranching. This latter activity has become the fundamental pillar of the economy, as it has a great deal of institutional support in the department. Coca cultivation and the production of a key ingredient of cocaine (*pasta base*) have continued since the 1980s, although on a smaller scale. The current vision of these communities is to develop a model of sustainable farming that incorporates cultivars that guarantee food sovereignty, and to convert extensive cattle ranching to a more sustainable model that helps restore and conserve the land. For this vision to be achieved, it is important that the Colombian government support processes to formalize land ownership. Although the majority of Núcleo 1 is located in the former Forest Reserve, where human occupation is permitted, few residents have title to their farms.

Murui Muina indigenous communities on the Caquetá River

The Huitorá Indigenous Reserve was established in 1981, with an area of 67,320 ha, and it currently has a population of 170. The Bajo Aguas Negras Indigenous Reserve was established in 1995 with an area of 17,000 ha and has a population of 85. Both

communities practice traditional land management, based on knowledge passed down for generations and rooted deep in their culture. These traditional practices see natural resources in these forests, rivers, and lakes as a source of food sovereignty and as the foundation of communities' subsistence economies. Traditional knowledge and land management have not only allowed these indigenous peoples to persist and thrive, but have also helped maintain healthy natural resource stocks.

Campesino communities along the Caquetá River

Approximately 100 families live in these 5 *veredas*, 4 of which are located in the Forest Reserve and one of which is in the former Forest Reserve. The first settlers arrived with aspirations for commercial-scale logging, hunting, and fishing. Today the communities depend on subsistence agriculture, commercial maize farming, and cattle ranching. These communities are extremely interested in legalizing their territorial claims so that they can access government programs and social services.

In spite of mounting deforestation pressure in the Bajo Caguán-Caquetá region, all three sub-regions still possess large areas of healthy forest that allow the communities living here to thrive. These forests are at risk from extractive economic activities like commercial logging and hunting, as well as development models, like large-scale cattle ranching, that are unsuitable for the region's poor and fragile soils.

During the inventory we observed that communities maintain strong relationships with their closest neighbors, but do not know or have contact with more distant communities. In addition, we repeatedly heard that the challenges faced by *campesino* communities are very different from those faced by indigenous communities. Our stakeholder workshop in the Ismuina *maloca* at Solano helped vanquish this misconception, as communities discovered a great deal of common ground. The region's forests and rivers, residents' determination to make a good life in this place, and the strength of their communities are shared assets that will help *campesino* and indigenous communities work together to build a sustainable future for the Bajo Caguán-Caguetá region.

Current status

In 2016 the Bajo Caguán-Caquetá region was designated a regional conservation priority by Corpoamazonia, the regional environmental authority in this area of Colombia. The region is also highlighted in a presidential initiative to create several million hectares' worth of new protected areas in Colombia. But in spite of the region's visibility in governmental agendas, and despite promises of support for longabandoned regions in the recently signed peace agreements, our field work revealed that government staff and services have yet to arrive in large areas of the Bajo Caguán-Caquetá region. Much land use in the region does not heed regulations, and a major deforestation front in the middle Caguán is advancing inexorably towards the lower Caguán. During the inventory, local communities showed a strong commitment to conserving this landscape. Conserving it via a regional conservation area will require a similarly strong, immediate, and long-term commitment on the part of the state.

REPORT AT A GLANCE		
Major conservation	01	Megadiverse forests covering more than 90% of the area
targets	02	A natural corridor that connects the plant, animal, and aquatic communities of two Amazonian parks: La Paya and Serranía de Chiribiquete
	03	<i>Campesino</i> and indigenous communities with a rich social and cultural diversity, a profound knowledge of the landscape, and a dedication to this place
	04	Poor, fragile soils that support rich biological communities but will not survive intensive agriculture or cattle ranching
	05	Healthy fish, bird, and mammal populations that provide bushmeat and food sovereignty for local populations
Principal assets for conservation	01	Well-organized <i>campesino</i> communities and indigenous reserves with local and regional leadership, where plans and management tools are being formulated and implemented based on a clear vision of conserving the landscape
	02	A diversity of economic activities with low environmental impact, and traditional practices that guarantee food sovereignty for <i>campesino</i> and indigenous communities
	03	The 2016 peace accords, which have made it easier for these communities to engage and coordinate with each other and other entities, as well as reducing violence
	04	The proximity of national parks and indigenous reserves, both of which can help strengthen conservation initiatives
Main threats	01	Rapidly advancing deforestation fronts, especially in the middle and lower Caguán, and around La Tagua
	02	Irregular land use and land rights, and confusion surrounding territorial boundaries
	03	A stark disconnect between stakeholders, policies, and plans at the national, regional, local, and community levels
	04	A lack of information about natural resource harvests in the region
	05	Uncertainty among the local population regarding the implementation of the peace accords and the possibility that the region might fall back into war, isolation, and abandonment by the state
Principal recommendations	01	Formalize and legalize land use in the region via a formal registry of rural lands (saneamiento predial, catastro rural multiproposito).
	02	Create a 779,857-ha regional protected area for conservation and management in the Bajo Caguán-Caquetá region, in close coordination with the local population.
	03	Develop a model that allows environmental authorities and the local population to co-manage the protected area, and strengthen the capacity of both to do so.
	04	Seek and secure long-term financing for the area.
	05	Implement the peace accords, making rural land reform a priority.

rapid biological and social inventories

Instituciones participantes/Participating Institutions Field Museum Fundación para la Conservación y Desarrollo Sostenible Gobernación de Caquetá Corporación para el Desarrollo Sostenible del Sur de la A (CORPOAMAZONIA) Amazon Conservation Team-Colombia Parques Nacionales Naturales de Colombia ACAICONUCACHA ASCAINCA The Nature Conservancy-Colombia Proyecto Corazón de la Amazonia (GEF) Universidad de la Amazonia Pontificia Universidad Javeriana Universidad Nacional de Colombia Wildlife Conservation Society World Wildlife Fund-Colombia

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