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Building Forest Fire Capability



The dryness of the forest and human activity has created the conditions for high incidences of forest fires. In 2020 the impacts caused by forest fires were dramatic. This year there was more loss of the forest cover, particularly in the Vaca Forest Reserve. In the Chiquibul, the incidences were less; however, we know for certain that annually, the probabilities of forest loss due to agricultural production or

cattle ranching are always high. In preparation to this most recent environmental threat, FCD has been building its capabilities.

Douglas Monroy is the Chief Ranger in the Vaca Forest Reserve. In 2020, he was caught off guard, trying to combat fires in the area. Ill-equipped and with no experience FCD worked together with the Forest Department in setting fire lines and combatting the fires. In the end, the rains alleviated the situation.

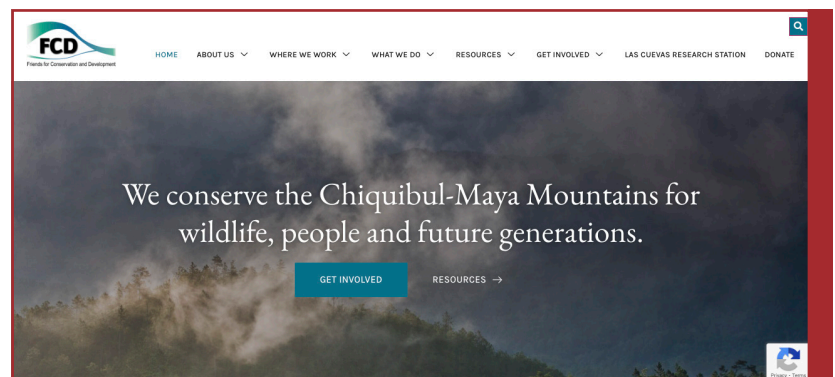
This time with the support of the US Forest Service International Program, with an office based in Guatemala, FCD has sent Monroy to undergo training with the aim of certifying him under the standards of the National Wildfire Coordinating Group of the United States of America. The trainings undertaken so far have included Introduction to Fire Behaviour, Incident Command System Level, Preparedness and Response to Urban Interface Fire, and Human Factors in the Response to Wildland Fires. The training is to conclude in December.

New FCD Website Launched

After ten years, a new website has been launched by FCD which is more representative of the work the organization does.

In 2007, with the signing of a co-management agreement with the Forest Department, FCD initiated a more robust program of ecosystem protection. Our work since then was centered on the Chiquibul National Park. Over the years, however, FCD has expanded its conservation efforts to cover other adjacent areas located in the Chiquibul-Maya Mountains. The expansion of this work was recommended on the Strategic Plan (2016-2020), with the focus of a landscape approach.

The new website provides an improved semblance of the various areas where FCD operates and the various programs it runs on a daily basis ranging from monitoring



and enforcement to education and eco-guarding. FCD's Landscape Communication Technician and Paul Haines of Web Graphics from Miami worked diligently to upgrade the website. The Nature Trust of the Americas financed the development and launching of the site. We invite you to visit our site at www.fcdbelize.org

Bull Run Partners with FCD



Bull Run Overseas Limited located in the Mountain Pine Ridge (MPR) has had a long history of forest Management and protection. Recently the acquisition of this property in 2018 by the Wolf Creek Operating Foundation (WCOF), have made the preservation of orange breasted falcon their priority, with a captive breeding and release program. These birds are rare and known to nest in the cliffs by the 1,000 Foot Falls Natural Monument and on other rugged Limestone cliffs in the region. The WCOF

property is designated a core conservation area in order to protect wildlife habitat and part of the critical Macal River headwater, that start on the property.

One year ago, as FCD started operating at the Bald Hills in the MPR it was important to engage and collaborate with Bull Run. The local Manager, Jim Bevis has been a long-standing supporter of FCD, and graciously welcomed our team. The joint effort has enabled FCD to respond easier to emergencies, maintain monitoring activities with greater confidence and document human footprint more efficiently.

As the 2-person Ranger team sets in place a more strategic effort to address poaching, wildlife trade, and unregulated visitation, FCD reached out to Bull Run to assist in the refurbishment of an abandoned building located at Cooma Cairn in the Mountain Pine Ridge Forest Reserve. Endorsement for use of the building was made by the Forest Department and approval for funding has been obtained from Bull Run. By July the building is expected to be operational.

Goal:

FCD aims to conserve the natural and cultural resources of the western Chiquibul-Maya Mountains for the sustainable development of Belize.

Mission:

FCD pioneers adaptive management of the Chiquibul Forest to improve the ecological and cultural integrity of the western Chiquibul-Maya Mountains.

FCD Gets Permit to Reside in Vaca

For the last 8 years FCD has been relocating its field farm school from one area to the next in the Vaca plateau. This farm school provides for hands on teaching of best practices for farmers in the area. It also serves as the main quarters for the Rangers and Extension Technician who operate in the area.

With a permit to reside and camp received from the Forest Department, FCD has now obtained 7 hectares of land inside the Vaca Forest Reserve where a permanent field farm school and Ranger Outpost will be built, aimed at improving governance. This land is situated at the entrance of the reserve and nearby the farmlands used by local farmers. The field farm school will include demonstration plots to promote best practices such as contour farming, organic farming and integrated systems.

A recent governance framework developed for the Vaca Forest Reserve notes that, the Vaca is a unique protected



area, qualifying as IUCN (International Union for the Conservation of Nature) Category VI like other Forest Reserves, but unlike other Forest Reserves, it supports non-industrial agriculture on an almost industrial scale, while supporting tourism, hydroelectric production, industrial timber production, and biodiversity conservation, all on the same piece of un-zoned land.

Wildlife Research Started on Macal River



The last integrated wildlife research to understand the conditions of wildlife as a result of the dam construction took place in 2017. The overall result of that study indicated that biodiversity was well represented at the study sites. Bird and mammal assemblages are indicative of ecosystems within the landscape and no evidence pointed directly, that there had been a negative shift in abundance and richness of the target taxons.

As part of the Macal River Upstream Storage Facility Environmental Compliance Plan approved by the Government of Belize, Fortis Belize needs to accomplish further surveys of wildlife in future impacted habitat areas. This is required in order to examine and evaluate any change over time in present wildlife populations and to document the alteration and adjustment of existing habitats and ecosystems.

FCD's team have now started the wildlife research that will include all three dams and associated reservoirs. Transects are located upstream of reservoirs, within impoundment area and downstream of the dams. Wildlife surveys will be conducted during the dry and rainy season to account for population variability during seasons. Targeted wildlife populations include birds, mammals, amphibians, fish and morelet's crocodile with special emphasis on target species as identified in the environmental compliance plan. Results of this study will be submitted to Fortis Belize, Department of the Environment and the Forest Department.

Indigenous Communities Visited



FCD has a partnership with the Maya Leaders Alliance (MLA)/Julian Cho Society (JCS) since 2020 aimed at supporting, promoting and joining efforts in the conservation of forested areas and its biodiversity especially in the ancestral lands used, occupied and enjoyed by the Maya people.

As a result of this partnership FCD has been active in seeking financial support to meet this goal. Through the

US Fish and Wildlife Service and US Department of the Interior support, an initial phase of public outreach and community promoters has been started among 3 Mayan communities. During the month of May, FCD conducted a site visit to various communities where MLA/JCS works. The communities included San Vicente, Pueblo Viejo, Na Luum Ca and San Jose. In each community, the alcaldes led the sessions, describing their environmental concerns. Community leaders had concerns regarding the state of their rivers and appealed for help in designing programs that help better protect their resources. In Na Luum Ca, training and capacity building on how best to protect their forest stocks was highlighted and sensitizing villagers on maya customary use was also noted.

In San Vicente, leaders proudly guided us to an area where a reforestation program has been conducted with community participation. The initiative clearly demonstrates the positive impact generated at a community level and one that can be replicated and upscaled in Mayan communities where riverine protection is becoming more critical.

Vision:

FCD envisions healthy terrestrial ecosystems that are sustainably managed for Belize and the region.

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Belize River Valley Project Begins

The GEF 6 project titled, "Integrated management of production landscapes to deliver multiple global environmental benefits", was finally launched in May. The process was begun over 5 years ago with the participation of Governmental agencies including the Hydrology Unit, Agriculture Department and the Forest Department. FCD is the only participating NGO that will implement the project whose objective is to mainstream biodiversity conservation and sustainable land/water management into production landscapes in Belize.

The five-year project will contribute to reducing the loss of biodiversity of global and local importance and the degradation of land in Belize, resulting in the establishment of 4,500 hectares (ha) of landscape management tools that promote connectivity between key biodiversity areas (KBAs) and forest remnants in production landscapes; 30,500 ha of landscapes under sustainable agriculture with biodiversity benefits; 15,000 ha of landscapes under sustainable land management in production systems; 750 ha of riparian forests and 300 ha of groundwater recharge



areas restored in key areas of the Belize River Watershed; and the stable presence of key indicator species (e.g., jaguar, howler monkeys, white-lipped peccary, and tapir) in forest patches/corridors of the production lands and KBAs.

FCD's Environmental Educator and Extension Technician will be responsible for community outreach in 13 communities located in the Belize River Valley, and restoration of the Belize River through public participation.

Experts Visit the Vaca Plateau



The GIZ-Selva Maya Program is financially supporting FCD on two projects. These 2 projects have the purpose of enhancing the conservation of the Maya Forest,

which includes the Chiquibul and Vaca forest ecosystems. The Program has been supporting both the Government and local organizations through several interventions across Belize, Guatemala and Mexico for many years. To continue the regional cooperation, a group of experts visited Belize to exchange information and perspectives.

On the 15th of May, the experts met with FCD staff to learn more on the regional cooperation, restoration and One Health concepts. Thereafter the experts travelled to the Vaca Forest Reserve to understand the challenges faced by farmers in the area. They were able to see the damaging effects of fires on the environment and the loss to local farmers. It is hoped that Phase II of the GIZ-Selva Maya investment will further provide for the protection of areas in the Chiquibul-Maya Mountains.

FCD Programs

Protection & Enforcement

Community Development

Bi-national Relations

Education & Public Awareness

Karst Management

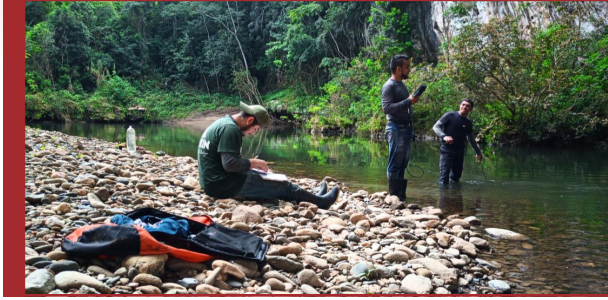
Research & Monitoring

Landscape Management

Monitoring & Evaluation

Financial Sustainability

Chiquibul Water Quality Completed



In 2021 a baseline assessment of the water quality in streams of the Chiquibul Forest (CF) was conducted with financing from the Belize Nature Conservation Foundation. This time, a comparative result was compiled for the 2022 water quality readings. The results generally, show the same trends as the 2021 season. Temperatures are generally higher in the Macal River than in the Southern Chiquibul River subbasin. The southern Chiquibul had the lowest temperatures which is consistent with more pristine and intact riparian forests. Nitrate levels were high as in 2021,

and further research is recommended to identify possible causes.

Water quality monitoring helps to understand the health dynamics of aquatic systems over space and time. The chemical and biological parameters of the water are the product of the interactions of water with soil, geology, vegetation, and animals. Water quality changes based on different land-uses. In the Chiquibul Forest point source pollution results from agriculture (milpa farming), logging, mining, and road infrastructure; all having varying degree of impact to the systems.

For FCD, understanding the water quality conditions of the head waters helps guide management and conservation of this vital resource. Water management and conservation are an integral part of the Chiquibul National Park and Cave System management plan and forms part of the Chiquibul Forest Biodiversity Research Monitoring and Inventory Framework. The CF water quality monitoring plan aligns with the national water quality monitoring initiative being spearheaded by the Belize Department of the Environment.

Chiquibul Caverns Inventory Finalized

The Karst Management Unit has completed inventory of the last remaining 1.5 blocks of the Nohoch Ch'en area. With this, a total of 51 blocks of the Chiquibul Cave System region were studied and documented over a surface area of 7,287 hectares. As a result of this inventory, a total of 267 natural and cultural features have been documented including caves, sink holes, rock shelters, maya mounds and maya sites.

The Karst Management Unit is comprised of three persons and a Cultural Heritage Coordinator. Using transect lines under the jungle they have been traversing the rugged and steep area for more than 3 years which has resulted in a better understanding of the cultural richness. Once documented, the data has been referred to the Institute of Archaeology in raw form.



Now that the inventory has concluded, the Karst Unit will have the laborious task of further investigating features of primary importance and broadening the cultural inventory across the greater Chiquibul National Park landscape.

Nazarene School Visits Las Cuevas



During the month of May we were pleased to welcome Howard Smith Nazarene Primary School Upper Division from Benque Viejo del Carmen at Las Cuevas Research Station. A total of 63 students, 2 teachers and 15 parents learnt about the Chiquibul Forest and about FCD's conservation efforts. Activities undertaken at LCRS included Nature Trail hike, Cave entrance observation, Bird Tower hike and tour of Rio Frio Cave in the Mountain Pine Ridge Forest Reserve.

The field trip was made memorable thanks to the guiding provided by the Station Manager, Mr. Rafael Mesh. FCD's Environmental Educator, Justin Pook made the trip delightful, with his rich and lively interpretation of the landscapes throughout the trip from San Ignacio to Chiquibul.

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