

ANNUAL REPORT 2023





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CHIQUIBUL NATIONAL PARK A QCC Site



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MESSAGE FROM THE EXECUTIVE DIRECTOR

It is dark as the group of students from the University of South Wales depart from Las Cuevas Research Station (LCRS) with Rafael Mesh, Caretaker of LCRS. The aim is to reach the tower lookout, just in time to observe sunrise over the Chiquibul-Maya Mountains.

The early hike takes out the first sweat on everyone in the group, but it is all worth it. From the tower, the landscape view is impressive!! Mesh explains that the landscape observed is that of the largest terrestrial protected area in Belize. Foggy clouds appear, far and near due to the first rays of sunlight hitting the forest and the hidden understory streams. The diverse shades of green of the forest comes into light. As far as the eye can see – it is forest and more forest. But as large as the Chiquibul National Park is, with over 285,000 acres this area cannot survive on its own.

In August of 2021, the Government through the Ministry of Sustainable Development, Climate Change and Disaster Risk Management aimed to streamline FCD's activities in the Western Maya Mountains more specifically in six locations including the Chiquibul National Park, Vaca Forest Reserve, Bald Hills in the Mountain Pine Ridge Forest Reserve and LCRS in the Chiquibul Forest Reserve. Although several program activities are still pending, it is clear to us that a landscape approach is critical and imperative. This year a Landscape Communication Strategy was developed, and a Landscape Manager joined the team. Identifying connectivity and synergism between the various programs such as enforcement and research is key so that improvements in management effectiveness occur in the areas where we work. This has been the steady task at hand for the Landscape Technician. The Landscape Communication Strategy on the other hand, identifies the different tier stakeholders and it is breath taking to learn of the multiple individuals and institutions that we will need to communicate with externally. Internally, good communication among the different program Units has also been identified as a limiting factor and steps to improve are underway.

As FCD extends full steam unto a landscape approach we realize that new avenues for fundraising will also need to be identified. The budget expansion of \$200,000.00 annually forces us to investigate various options. In that regard, this year the Board endorsed for us to promote Las Cuevas Research Station as a tourism hub and to investigate the creation of a 501C3 *Friends of Chiquibul*. Eco-Quest Expeditions, a tour company opened years ago has never taken flight, but this time around the expectation is to have it properly certified as the business arm of FCD.

As we immerse ourselves into a landscape approach, I want to thank principally the Ministry of Sustainable Development for the confidence as well as to the Protected Areas Conservation Trust and the US Department of the Interior – International Technical Assistance Program for the finance which has enabled for us to institute the landscape vision. To the Board and FCD staff, thanks for embracing this new promising concept.

Rafael Manzanero

Executive Director Friends for Conservation and Development



Environmental Protection

RANGER EFFORTS CONTRIBUTED TO:

- The reduction of human footprint in three landscape ecosystems.
- The protection of emblematic species, such as the scarlet macaw and jaguar.
- Environmental stewardship promoted among stakeholders in two forest reserves.



The training for selection of Park Rangers is rigorous and certainly not everyone passes the test. The Park Manager and Chief Ranger Diaz; however, are convinced that the training for selection of Rangers must be tough since once on the job they will be required to operate under harsh conditions, testing their physicals and mental attributes. This year two Pre-chest trainings were held which led to the hiring of 7 Park Rangers.

Chiquibul Park Rangers maintained their efforts at the Conservation Posts (CPs), along with the Belize Defence Force aimed at reducing the impacts from cattle ranching and agricultural production by Guatemalans. These CPs are dotted along the western flank of the park and include Rio Blanco, Cebada, Valentin and Caballo. Two other CPs are found away from the western flank which includes Tapir Camp and Ceibo Chico. In addition, FCD independently manned the Vaca and Cooma Cairn Ranger Outposts.

The total number of patrols launched from the CPs in the Chiquibul Forest summed 203 patrols, representing 2,065 km. patrolled on foot and 2,871.4 km. patrolled on vehicle. This resulted in 1,419.6 hours of active patrolling and monitoring within the CF, including Tapir CP especially for the months of February, May and June which amounted a total of 102 patrols, equivalent to 50% of all CP patrols.

At the Bald Hills in the Mountain Pine Ridge Forest Reserve the two-person team continued monitoring for forest fires, bark beetles, and headwater protection. Rangers conducted a total of 200 combined (motorcycle and foot) patrols, which amounted to a total of 5,200 km. of patrol coverage and a total of 533 hours of active patrolling.

In the Vaca Forest Reserve, the two forest rangers had the aim of monitoring hotspot areas and wildlife populations. They also assisted in Extension Services, visiting farmers and sensitizing them on the prevention of forest fires. Rangers conducted a total of 133 patrols, which amounted to a total of 2,375 km. within a combined patrol (foot and motorcycle) system and a total of 630 hours of active patrolling within the VFR.



Research and Monitoring

RESEARCH TEAM EFFORTS CONTRIBUTED TO:

- Successfully fledgling of 21 scarlet macaws
- Assessment of water quality parameters of the Macal and Chiquibul Rivers and streams
- Collection of data for analysis of jaguar, prey and game communities



FCD's Research Unit plays the critical role of assessing and evaluating the conditions of conservation targets outlined in the Management Plan for the Chiquibul National Park, using scientific methods. The Biodiversity Research, Inventory and Monitoring (BRIM) framework describes the conceptual model and the applicable methods. With a new management plan for the period 2023 to 2028, a new cycle has been established. The seven conservation targets include: Tropical Broadleaved Forest, Aquatic Systems, Scarlet Macaw, White-Lipped Peccary, Jaguar, Upper Elevation Amphibians and Karst Systems.

Technically, three program efforts were put into effect successfully this year, through the four-person team, guided by the BRIM Technician. Wildlife camera trapping and water quality testing took the first part of the year, thereafter from March to September the team centered their efforts on scarlet macaw biological monitoring at the Chalillo Lake.

For the 2023 Scarlet Macaw nesting season, a total of 21 active nests were systematically monitored. A total of 50 eggs were laid. Of the 27 eggs that hatched, only a total of 16 chicks fledged from natural cavities along the Raspaculo and Macal Rivers which is equivalent to 59.3% fledging rate. A total of 5 chicks fledged from the In-Situ laboratory. Rangers on the other hand detected human activity across the Chiquibul landscape but did not detain any, therefore it is uncertain the number of chicks lost to illegal wildlife trafficking.

The results of measured water quality physiochemical parameters of the headwaters in the Chiquibul Forest in 2023, showed a consistency with a healthy aquatic system except for nitrate. The Macal and the Raspaculo Rivers, both of which are affected by the Chalillo Dam, are representative of values, that while still within acceptable ranges, are consistent with stagnant waters that lead to increased temperature, reduced dissolved oxygen, and increased total dissolved solids.



Community Development

COMMUNITY DEVELOPMENT EFFORTS CONTRIBUTED TO:

- Reduction of incidences of forest fires through public participation
- Promotion of best practices among 7 farmers in the Vaca plateau
- Improved community resilience on tackling climate change



In the Vaca Forest Reserve, located immediately north of the Chiquibul National Park, FCD's Ranger Unit and Extension Technician centered their work in assisting the Forest Department to monitor hotspot areas, human footprint primarily from farmers inside or nearby the reserve and wildlife monitoring.

Due to the presence of farmers inside the reserve, this year FCD with support from the Forest Department, sensitized farmers on methods to prevent and combat forest fires. Several farmers abided with getting their respective permits to burn and open fire lines. Despite the dry weather and high temperatures, several fires were averted which led to a reduction of forest cover loss. The western fringe of the reserve, however, still registered several forest fires, some of which originated from Guatemala.

A stronger governance is required in the Vaca Forest Reserve, but without a full comanagement system in place, FCD mainly relies on the Forest Department to follow up on field reports. This year, FCD documented hunting, illegal logging and drug cultivation in the reserve. Cattle ranching by Guatemalans along the western flank of the reserve has also been observed via aerial recces. The Vaca Forest Reserve Working Group conducted two meetings to inform members of the conditions prevailing in the reserve.

Pro-active advocacy and building community stewardship whilst promoting systems that reduce land, water and soil degradation has been a continuous task of the Extension Technician. This year inga alley cropping, solar powered fences and efficient irrigation systems were promoted and supported among seven farmers with the financial support from the GIZ Selva Maya project. In addition, demonstration plots in the form of a nursery, live fencing, cover crops and restoration of Cacao Creek was established on the 25-acre plot provided by the Forest Department. This area, located at an entrance point of the Reserve has also been identified for construction of the Vaca Forest Reserve Ranger Outpost in 2024 with PACT's financial support.











Education and Public Outreach

EDUCATION EFFORTS CONTRIBUTED TO:

- Sensitizing local people from 15 communities about One Health concepts
- Promotion of fire prevention practices among 24 farmers
- Sensitizing over 3,000 children about the beauty of Chiquibul



Annually FCD's Environmental Educator has the purpose of instilling knowledge and promoting a behavior conducive towards the sustainable use of natural resources. The target area of this effort is primarily the Cayo District; however, this year through a partnership agreement with the Ministry of Sustainable Development, a public outreach campaign was launched among 13 communities in the Belize River Valley which extends as far as the Belize District.

With GIZ Selva Maya funding, the 2023 programming started with a One Health campaign aimed at sensitizing 15 communities about practices that can help reduce the incidences of zoonotic diseases. 16 primary schools with a total of 1,403 primary students (761 boys & 642 girls) learnt about the One Health concept, while 24 farmers learnt of forest fire preventative methods and One Health methods to reduce zoonotic diseases. Following FCD's strategic plan, which advocates for headwater protection and river conservation, the Environmental Educator sensitized over 300 children on the importance of the water resource through an educational bi-national expo and reached out to over 1,200 adults on water conservation in the Cayo District. Additionally, over 2,000 youths increased their knowledge on river conservation in the Cayo District and more than 3,000 children in the Cayo District were sensitized about the beauty of the Chiquibul Forest.

The latter part of the year was spent visiting 13 community leaders dotted along the Belize River starting from Esperanza Village to Double Head Cabbage, with the purpose of informing them of the UNDP GEF funded project titled, "Integrated Management of Production Landscapes to deliver Multiple Global Environmental Benefits" and running a pre-questionnaire survey whose aim is to improve the management and conservation of the water resources through reforestation and integrated watershed systems. The 5-year project has several implementing Governmental agencies including the Forest Department and Agriculture Department with FCD leading the community outreach program.



Transboundary Cooperation

TRANSBOUNDARY EFFORTS CONTRIBUTED TO:

- Strengthening collaborations with three institutions
- Tackling bi-nationally illegal wildlife trade and forest fires
- Building confidence between park administrators and Guatemalan communities



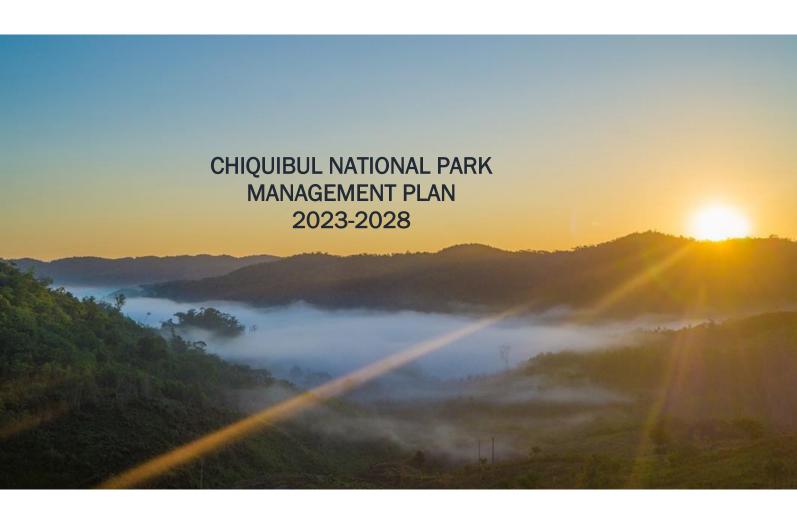
At times tensions have been high at the western border. But what does this have to do with FCD? The reality is that the Chiquibul Forest shares some 43 kilometers alongside Guatemala. The primary hotspots of incursions over the years have been documented along this line with over 11 Guatemalan communities lying dangerously so close to the boundary line of the Chiquibul National Park. As a result, FCD has always maintained a binational component aimed at containing and reducing the environmental degradation by Guatemalans and as a result also reduce tensions between the two countries.

Through three formalized agreements, FCD was able to partner directly with Asociacion Balam, El Grupo Integral de Cuencas para la Conservacion de Rios Chiquibul y Mopan and the Commonwealth of Municipalities of Southern Peten. The former two are NGOs whilst the third body is comprised of 5 municipal alcaldes who have jurisdiction of Guatemalan communities located near Belize's western border.

This year FCD implemented together with Asociacion Balam, complementary US Fish and Wildlife Service and US Department of the Interior funded projects in areas of community development and environmental monitoring. With GIZ Selva Maya finances, FCD also worked closely with Consejo Nacional de Areas Protegidas in public outreach, combined patrols and aerial recces.

Two taskforces were established this year with Guatemalan counterparts. The two subjects, namely, Illegal Wildlife Trafficking and Wildfire Management have binational dimensions therefore, the need to address them in collaboration with Guatemalans. Two community link ups were held with the communities of San Jose Las Flores and La Rejoya aimed at getting their support for prevention of forest fires. Funded by the Canadian Funds for Local Initiatives, the aim is also to train and equip local community leaders.







Public Use and Learning



LAS CUEVAS EFFORTS CONTRIBUTED TO:

- Research and field work for three institutions
- Instruction of tropical biology and conservation to 149 students
- Sensitizing over 115 guests about the Chiquibul biodiversity



In the heart of the Chiquibul Forest is located Las Cuevas Research Station. This has been administered by FCD for more than 9 years, primarily catering for researchers and students who conduct biological and ecological studies in the surrounding forest. With permission granted by the Ministry of Education, students have also started to arrive for day trips to the station. The tower lookout, the Maya temples under the forest and the entrance to the nearby cave are attractions, and so too are the wildlife observed in the area, including the scarlet macaws, peccaries and great curassows.

A few visitors have spent the night at the station too, but the station is not yet a tourism destination. That, however, may soon change. Discussions have been held internally with the Board who has supported for the station to cater for overnight guests. For most time of the year the station is not active, therefore, catering for tourism is a viable option. This year, FCD reached out to the Belize Tourism Board and hired a Destination Manager through the financial support from PACT. The aim is to identify and develop a financial generation mechanism that can help subsidize costs of management.

As the paved road to the Caracol Archaeological Reserve is progressing, the Chiquibul is becoming more accessible and rapidly it can become a region of much attention. FCD believes strongly that the magic of Chiquibul is the wilderness experience not for the light-hearted. A tourism management plan and a visitor impact monitoring framework developed over 5 years ago identified a particular niche of visitors and recommended Las Cuevas as a launch pad for further destinations such as the Highest Point, Caracol, Natural Arch and the Chiquibul Caverns.

For this year a total of 74 students from Universities visited Las Cuevas; 75 students from local schools, 94 persons attended training, 17 persons conducted research, 73 athletes joined the Chiquibul Marathon Challenge, while 115 visited for nature studies.

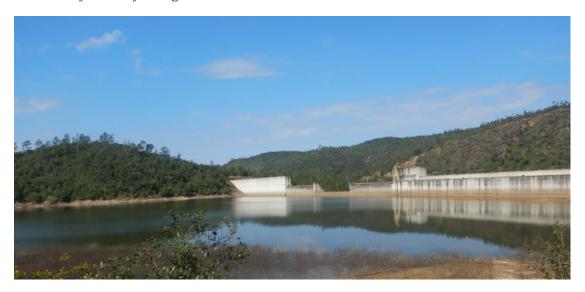




Private Buffer Protection

BUFFER PROTECTION EFFORTS CONTRIBUTED TO:

- Documentation of wildlife species in over 1,700 acres
- Monitoring of any human footprint
- Fulfillment of ECP guidelines



Through a partnership with Fortis Belize Limited, FCD has maintained an active monitoring system for more than five years in the buffer areas of the Chiquibul, Mountain Pine Ridge and Vaca where the hydro-facility is located. Having a presence on these areas helps FCD prevent any advancement of individuals into the Chiquibul.

FCD Eco-Guards have the role to patrol the forested areas of Chalillo, Mollejon and Vaca which totals 1,714 acres. Forest fires are a threat to the lush forest that maintains the integrity of the hydro facility; therefore, Eco-Guards are more alert during the dry season. During this year, in these ecosystems found along the Macal River, FCD conducted integrated wildlife surveys and macroinvertebrate studies as part of Fortis' Environmental Compliance Plan. The research project's sphere of influence is bordered to the west by the Mountain Pine Ridge Forest Reserve (MPRFR) and the Don Elijio Panti National Park, while on the west by the Vaca Forest Reserve. The results of this research are to be presented by March 2024.

The last report conducted in 2017-2018 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. On the other hand, some of the target species such as Morelets' Crocodile and Baird's Tapir showed good indications of an increase in abundance and populations are thriving as represented by the recorded population demographics. The formation of the artificial lake has attracted many wading bird species, which also serve as food source for Morelet's Crocodiles.

FCD have also installed cameras in the Fortis' property to monitor any human activity and document wildlife species. These cameras are regularly monitored and maintained by the Research Unit staff and Vaca Rangers. Reports and trends observed are reported by FCD though the Public Participation Committee, which is chaired by the Department of the Environment.



Cultural Heritage Preservation

KARST EFFORTS CONTRIBUTED TO:

- Generation of raw data for the Institute of Archaeology regarding cultural heritage
- Monitoring patrols that reduce looting and destruction of cultural heritage
- Improved management effectiveness of the Chiquibul Cave System



The FCD Karst Management Unit (KMU) was instituted in 2015 to explore, inventory, monitor and document cultural features of the Chiquibul Cave System. With this effort, the Unit has also detected and recorded anthropogenic activities, particularly in delicate areas listed as "hot spots".

This year with the endorsement and support of the Institute of Archaeology (IA) the KMU continued their efforts in the Chiquibul National Park, Las Cuevas Research Station, the Chiquibul Cave System (CCS) and surrounding caves. Their efforts have provided valuable data of cultural features located across the Chiquibul Forest. Documentation of cultural features such as sinkholes, shafts, caves, rock-shelter, terraces, causeways, and archaeological sites are part of the inventory. The raw data generated was referred to the Institute of Archaeology. The IA also conducted a site visit to recover cultural artefacts from Howler Cave.

A review of the Chiquibul Cave System Management Plan with the IA resulted in the recommendation for the development of a revised management plan. The continuation of binational efforts, given that the CCS has a final exit in Guatemala, was also encouraged. The USDOI-International Technical Assistance Program has enabled for FCD to continue the inventorying effort and provided technical expertise in areas of cave management and cave tourism.

For this year the Karst Management Unit conducted a total of 72 targeted day monitoring patrols which included monitoring of Actun Uo, Edwardo Quiroz, Actun Kabal, Natural Arch and Cebada. In addition, a total of 57 days was undertaken for cultural inventory in areas along the Las Cuevas Research Station (LCRS) and Actun Kabal zone. A concentrated inventory effort has begun in areas located inside the Chiquibul National Park, with a total of 5 of 12 new blocks studied adjacent to the Actun Kabal zone using a new methodology system labeled as "X-methodology".









Partnerships

FCD is honored to have worked with more than 80 partner institutions from Belize and abroad. From the private sector and community-based organizations to government and international organizations, they have made our work more effective and impact oriented.

GOVERNMENTAL AGENCIES

Belize Defence Force
Belize Forest Department
Belize Police Department
Immigration Department
Institute of Archaeology
Agriculture Department
Belize Tourism Board
Ministry of Tourism and Diaspora
Department of the Environment
National Biodiversity Office

Ministry of Foreign Affairs
Ministry of Defence and Border Security

Ministry of SD, Climate Change and Disaster Risk Reduction

U.S Department of the Interior-ITAP

U.S Fish and Wildlife Service

US Forest Service International Program

DEFRA-UK

British High Commission of Belize

British Army Training Support Unit Belize

Consejo Nacional de Areas Protegidas (Guatemala)

Atlas Arqueologico

Organization of American States

Protected Areas Conservation Trust

Ministry of Education (Cayo District)

Commonwealth of Municipalities of Southern Peten



COMMUNITY BASED ORGANIZATIONS

Caretakers for Our Rivers & Environment Grupo Integral para Conservación de las Cuencas

Todos Por Un Mundo Verde
FCD Environmental Youth Group
Friends of Vaca Forest Reserve
Friends of Lower Dover
Itzamna Society
Maya Leaders Alliance
Julian Cho Society
Upper Macal Watershed Working Group

Exploring Solutions Past Bermudian Landing Community Sanctuary Mesa Integral de Tierra y Medio Ambiente Cooma Cairn Mennonite Community

NON-GOVERNMENTAL ORGANIZATIONS

Belize Nature Conservation Foundation Association of Protected Area Management Organizations Centre for Strategic Studies, Policy Analysis and Research



Asociación Balam
Programme for Belize
Belize Maya Forest Trust
Belize Audubon Society
Foro de Justicia Ambiental
Belize Wildlife and Referral Clinic
The Belize Zoo and TEC
Harvest Caye Conservation Foundation
Wildtracks
Belize Network of NGO's

INTERNATIONAL ORGANIZATIONS

United Nations Development Program The European Nature Trust Forecastle Foundation Sisters of Nazareth The Nature Trust of the Americas Snowy Owl Foundation Wildlife Conservation Society Panthera Belize GIZ-Selva Maya Wildlife Media Global Financial Integrity Media Institute of the Caribbean Canadian Fund for Local Initiatives Web Graphics GEF-Small Grants Programme World Wildlife Fund The Nature Conservancy



PRIVATE SECTOR

Belize Communication Services Limited Fortis Belize Limited Chaa Creek Inland Expeditions Belize Livestock Producers Association



Blancaneaux Lodge
John and Susana Vanzie
Bull Run Enterprise
Pacific Heights
Cayo Cargo
BRC Printing
San Ignacio Hotel and Resort
Hidden Valley Inn and Reserve
GAIA River Lodge
Channel 5 Belize
Channel 7 TV
Turtle Inn

Board and FCD Staff

STRATEGIC GOAL

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

BOARD OF DIRECTORS

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STAFF

Rafael Manzanero, Executive Director

Esther Sho, Programs Director Diana Garcia, Accounts Clerk Derric Chan, CNP Manager Eduardo Mendez, Extension Technician (From Jan) Yasmini Manzanero, Cultural Heritage Marco Diaz, Chief Ranger Level I Elroy Reyes, Chief Ranger Ellsworth Sutherland, MPR Chief Ranger

Rafael Mesh, Assistant Station Manager Darrio Bautista, Station Caretaker Reynaldo Sutherland, Chiquibul Ranger Josue Najera, Research Assistant Mariano Beckford, Chiquibul Ranger (Until Sept)

Santiago Cal, Chiquibul Ranger (From Aug)

Ricky Cunil, Comm Technician

Lawrence Lopez, Chiquibul Ranger (From Nov)

Jovanni Puc, Chiquibul Ranger (Until June)

Rafael Juarez, Chiquibul Ranger

Jason Lopez, Chiquibul Ranger (From Aug)

Yordi Esquivul, Chiquibul Ranger (From Aug)

Christian Mena, Research Assistant

Rocendo Chun, CCS Ranger Simon Lotiff, Eco-Guard

Daniel Cruz, Eco-Guard

Alberto Cruz, Eco Guard

Benjamin Cruz, Eco-Guard

Luceli Itza, Finance Manager Aron Canchan, Accounts Clerk (From Feb) Wilford Pook Jr., Enviro Educator Wilmer Guerra, Data Conservation Manager Salvador Mesh, Landscape Manager (From Aug) Frank Hachmann, Destination Manager (From Aug)

Kenny Pech, CNP Chief Ranger Erwin Chi, Vaca Ranger

Darwin Aldana, Chiquibul Ranger (From April)

Mainor Sibrian, Chiquibul Ranger (From April)

Jorge Pott, Data Analyst

Irvin Choc, CNP Ranger

Stephen Coc, CNP Ranger

Douglas Monroy, VFR Ranger

Richard Angel Harris, Research Assistant

Eric Antonio Max, Research Assistant

Ronnel Melendrez, CCS Ranger

Donicio Cal, CCS Ranger

Elton Cantun, Chief Eco-Guard (From April)

Axel Castellanos, Eco-Guard

Ken Smith, Eco Guard

Carrin Martinez, Janitor





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