



Crocodile Research Coalition's Research, Rehabilitation and Environmental Science Center

**Prepared By:
Dr. Marisa Tellez, Crocodile Research Coalition**

15 July 2024

1217 Amik Kil' Ha
Maya Beach, Placencia Peninsula
Stann Creek District
Belize, Central America
marisa.tellez@crcbelize.org
011-501-670-5852



The Crocodile Research Coalition (CRC) is a Belize-based nonprofit, established in January 2016, that seeks to preserve crocodiles and their environments throughout Central America and the Caribbean. We believe the success of our conservation efforts parallels the involvement and support from local communities. Thus we continuously work alongside local communities and partner organizations to empower people with the knowledge of co-existence and sustainable practices to ensure the survival of crocodiles and mutual well-being of the communities that live beside them. Our outreach also incorporates working with government agencies, utilizing our research to better inform policy decisions regarding wildlife and their habitat (= translational ecology).

Crocodiles, however, are our flagship species in pursuing regional conservation efforts. The CRC recognizes that the conservation success of crocodiles is not only dependent on direct conservation efforts of the focal species, but also understanding how crocodiles interact with their environment and other wildlife as long-lasting conservation management is dependent on preserving the integrity of ecological interactions.



Executive Summary

The Crocodile Research Coalition (CRC) is currently the only wildlife-focused organization in the Stann Creek District of Belize, taking the role as a scientific authority and wildlife rescue response team not only for crocodiles, but other adjacent wildlife occurring in crocodile habitat, such as birds, iguanas, and manatees. The research and rehabilitation of crocodiles and other wildlife, and the education about preserving (crocodile) wetland habitat concurs with the mission of the CRC. **To further our mission and work, the CRC seeks to enhance local and international support for the preservation of crocodiles and their habitat through the establishment of the CRC Research, Rehabilitation and Environmental Science Center around Placencia Lagoon in southern Belize.** We propose to ensure a percentage of acquired land of over 60% is left undeveloped to be a model of sustainable development for the area and to also ensure a biological corridor for lagoon wildlife.

The CRC anticipates that with an established facility we can assist in the conservation of the Placencia Lagoon, furthering tentative plans by the government of Belize (GoB) to establish it as a wildlife sanctuary in conjunction with increased enforcement in the area. Additionally, CRC intends that the Center will serve as an eco-tourism destination for local and international visitors alike, providing guests an unique opportunity to enjoy and learn through a guided tour of our facility and nature trails. The Center will also provide an educational outlet to local students who may not otherwise have access or opportunities to learn about Belize's wildlife and habitat, while simultaneously providing them with hands-on exposure to a relatively unexplored career avenue in science and conservation.

The vision for the the Center first includes the acquisition of land. Depending on acreage as well as what vegetation is part of the landscape, the tentative infrastructure can be implemented:

1) boat dock, 2) nature trails, 3) captive and rehab crocodile enclosures, 4) research laboratory and veterinary wildlife clinic, administration office and lounge, 5) intern housing, 6) commune/kitchen area, 7) housing for caretaker(s), 8) environmental science center, and 10) bird tower. Income to support the CRC facility will be generated through ecotourism (day and night tours), guests to the environmental center, internships, patrons and donors. The full vision for the Center will also establish the first science museum in Belize, and the most modern scientific lab for ecological and conservation studies in-country, furthering progression of conservation and management efforts here in Belize. Ultimately, this facility will establish the CRC and Belize as a conservation stronghold for crocodilians and their habitat throughout this region.



Project Details

The CRC is now ready to further our mission of wildlife conservation through the establishment of the CRC Research, Rehabilitation and Environmental Science Center around Placencia Lagoon.. Through this establishment, we intend to provide a location that can create or further people's interest in wildlife conservation in Belize, in addition to inspiring the next generation of scientists and conservation leaders. This Center will provide local communities and tourists an opportunity to learn about the various wildlife and ecosystems in Belize via a hands-on environmental science center; observe some of Belize's native flora and fauna through day and night hikes on the CRC managed land; meet CRC Crocodile Ambassadors through crocodile educational shows; and experience a day in the life of a field researcher through viewing decks of the CRC research laboratory and veterinary clinic. Locals and tourists can further their wildlife experience outside of the CRC grounds through one of our ecotours, which include nocturnal eyeshine surveys, and morning and afternoon kayak bird tours around the Placencia Lagoon..

It is intended to develop 40% (or less) for the whole facility infrastructure (if possible), leaving the rest untouched as a private wildlife sanctuary, and ensuring we continue to provide habitat for the lagoon wildlife.. This will extend and ensure a biological corridor around the western side of the Placencia Lagoon given the land set aside and undeveloped among the 4 operating shrimps farms on the western side of the lagoon.

Our biodiversity surveys demonstrate that the Placencia Lagoon is inhabited by crocodiles, sharks (likely an important pupping ground) and manatees, as well as various fish species. The land west of the lagoon is also home to jaguars, tapirs, armadillos, and a variety of birds and snakes. The Placencia Lagoon used to be a key nesting site for crocodiles in the 1960s-1970s, however the development of Placencia peninsula and aquaculture facilities in this area disrupted nesting habitat.

The CRC intends to restore nesting habitat for crocodiles to further assist in the recovering population (the population of crocs in southern Belize is still in recovery from past exploitation) by creating nesting habitat on the acquired land. Furthermore, by employing reforestation efforts, we can augment the natural habitat regeneration already noted to be occurring in the area, and extend a corridor for other wildlife that inhabit broadleaf forest from the surrounding area. We also plan to work with national and international avian experts to determine good nesting habitat for parrots, such as the Critically Endangered Yellow-headed Parrot.

Funding for our current operating cost is accrued from internship fees, grants and donations. The CRC offers 2-week mentor internships (\$1900US) as well as month internships (\$3300US), in addition to virtual and hybrid internships. Our internship is steadily growing since Covid, and we hope with a facility we will attract larger academic and volunteer groups, further supplementing income.

Belize is known as the Jewel of the Caribbean, still very much untouched from the modern world, attracting tourists from all over the world to see some of the luscious forests, wildlife (such as jaguar, manatee, and crocodiles) and experience the 2nd largest barrier reef in the world. As some of the key conservationists conducting research in this area, the CRC has learned some of the hotspots of wildlife around the Placencia Lagoon- where the manatee like to rest, where Charlie the 14ft American crocodile likes to feed, where the Critically Endangered Yellow-headed parrots like to roost, and where osprey love to fish. Sharing and furthering people's interest (locals and tourists alike) in the Placencia Lagoon will increase community stewardship towards its protection, thus the interest of the CRC to enter the realm of eco-tourism.

Eco-tourism is the main source of income for Belize, and we anticipate conducting tours around the Placencia Lagoon will assist in obtaining finances for facility

development. The CRC is currently initiating eco-tourism partnerships with resorts, and since Sept 2023 have established Croc Tours via D-Tourz, established by board member Doyle Gardiner. Doyle grew up in Placencia, establishing himself as a well-respected tour guide under his business D-Tourz, receiving various national awards for his tours. With his reputation and knowledge, we anticipate tours led by his company will help generate initial income for the Center. Tours for the Center will include afternoon birding, sunset view, and nocturnal eyeshine for crocs. As the nature trails are in-place, we can began guiding guests through the savannah and pinewood forests, getting close views of the various species of parrots and other birds that inhabit this area, as well as some of the other reptile and mammals that transverse our land (such as jaguar and armadillo).

Development of the CRC Research, Rehab and Environmental Science Center

The development of the full facility could be completed in 3 phases over multiple years. The vision of the CRC Center is as follows:

Phase I: Initiation of Site

- 1) Nature Trails: development of principal nature trail (side trail loops could be established later on). Signs to assist with direction will be placed along the trail. Nature trails will be created through the assistance of local and international volunteers. During this time, biodiversity surveys can be conducted so that a Wildlife Brochure Guide specific to the land can be provided for visitors.

Cost: \$3000US for trail signs and brochure guide

- 2) Boat dock and temporary welcome center/shelter: the boat dock will allow easy access for visitors onto the land via lagoon transportation. A simple palapa hut, with local wooden benches will serve as shelter. Basic

information, such as who the CRC is, history of the surrounding land, and a map of the trail can be displayed here.

Cost: \$3,500US

3) Guard/Caretaker House: solar power will need to be implemented, or water and electricity will need to be connected via the closest road. A small Mennonite house for a 24/7 caretaker(s) will be needed. No captive wildlife or rehab wildlife will be allowed on property until there is a permanent guard or caretaker. Will need to get basic furniture (bunk beds, silverware, etc).

Cost: \$14,000US

4) Captive and rehab crocodile enclosures: we will start off with four captive croc and two rehab enclosures. Space will be left available for future enclosures.

Cost: \$10,000US

5) Environmental Science Center: this center is inspired by many of the children science museums that are established in the United States and in Europe. This environmental center will have hands-on scientific displays that will teach children and adults about the various ecosystems and wildlife in Belize (e.g., an interactive display that illustrates the importance of mangroves, especially in regards to storm surge). Various Belizean non-governmental organizations (NGOs) and scientists will be involved to provide input and ideas in their realm of expertise. Additionally, we will ask local Maya groups to contribute a section about the history of wildlife relationships and interaction within Maya culture, in addition to selling authentic Maya arts and crafts. Discussion is currently occurring between

CRC and local Maya dance troops about performing on weekends and for special events at the CRC facility.

The Environmental Center will also act as a Welcome Center for the CRC Facility. At the Welcome desk, visitors can learn more about the CRC, how they can support it, and the tours the CRC offers (via at the facility or Next Gen Croc Tours). **This environmental science center is already approved and supported by the Belize Forest Department.**

The full vision of the Environmental Science Center will likely take 5-10 years for completion, thus will be built upon and grow in phases.

Cost: \$340,000US

6) Research Laboratory, Wildlife Veterinary Clinic, Office: the CRC intends to create a two-story building in which the 1st Floor would be a fully operational wildlife veterinary clinic, with a research laboratory on the 2nd Floor. It is intended that the research lab will have the basic functionality as a Research Tier I University in the United States (lab and office space, work station, PCR, sample freezer and fridge, etc). An office to accommodate CRC staff, interns, and students will also be on the 2nd floor, in a separate room from the laboratory.

The space of the wildlife clinic will be split into 3: office/waiting room, surgery room, and x-ray room. Discussions with various donors and universities have begun in regards to equipment donation and functionality. Additionally, the primary veterinarian on site will also be the only certified marine veterinarian in-country. The Program Coordinator and the principal vet will share the space of the office/waiting room. Air conditioning will be

needed throughout the building to preserve the integrity of equipment and medical supplies.

The Wildlife Veterinary Clinic and Rehabilitation portion will also act as a secondary rehabilitation location for our partners who may not have the space of their primary species of concern (i.e., manatee, parrots, etc). Additionally, we can also provide space for wildlife ready for release back into the wild.

Cost: \$200,000US

7) Palapa: This will be a large palapa in which visitors can rest or eat. The palapa will have some space for tables and chairs, in addition to space for those that want to picnic on the floor.

Cost: \$5,000US

8) Bird Tower: through the CRC biodiversity surveys of Flower Camp various bird life has been noted including osprey, warblers, rosette spoonbill, egrets and migratory warblers to name a few. A bird tower will attract various birders that can be highlighted as a tour. This tower will also act as a guard tower at night to ensure there is no illegal activity occurring on the CRC land. The bird tower will be connected to the Environmental Science Center (cost saving)

Cost: \$2,000US

Total Cost: \$577,500US

(Cost is based on estimates received from contractors as of July 2024).



Conclusion

The CRC Research, Rehabilitation and Environmental Science Center will be the first facility of its kind in Belize, while establishing the first science museum in Belize. The CRC will not only provide opportunities to experience wildlife, but will be pivotal in training the next local and international generation of conservation biologists and scientists. It is difficult to find



jobs in conservation in Belize and in the region, thus this facility will provide a wide-range of job opportunities for Belizeans in addition to building in-country capacity in wildlife conservation.

Our stewardship of of savanna, broad-leaf and lagoon habitat provides CRC with a crucial role in landscape management in southern Belize. This role will enable locals and visitors with dynamic opportunities to experience the habitats and wildlife around the Placencia Lagoon. For many cruise ship or short-term visitors to the Placencia Lagoon area, there are no options for a quick eco-adventure tour; our facility will provide a solution. Additionally, the Environmental Science Center will provide an option for excursion during rainy days, and at night. Furthermore, the Center will enhance and promote the protection of the Placencia Lagoon and advocate for its declaration as a Wildlife Sanctuary. Thus, the CRC Research, Rehabilitation and Environmental Science Center will not only have significant value for the organization, but will have a positive impact on the wildlife and affiliated communities of the Placencia Lagoon, especially for the critically endangered American crocodile.