

IMPACT REPORT

2023 - 2025



Program for Crocodile Conservation in Cuba



Background

This program began in 2018, and is currently led by Institute for Conservation Medicine (ICM) technician Jamie Palmer. We are taking a One Health approach to the conservation of crocodiles in Cuba, including the Cuban crocodile (*Crocodylus rhombifer*) and the American crocodile (*Crocodylus acutus*). One Health is a collaborative approach to research recognizing the interconnection between animal, human, plant and ecosystem health. Due to human modification of the swamp landscape, the two crocodile species now share some of the same habitats which has resulted in an increase in hybridization. Our current focus is on the Cuban crocodile, though our long-term goal is on the health of both species and their role in maintaining the health of the ecosystem as a whole.

The Cuban crocodile is only found in the Zapata Swamp on the Bay of Pigs in southern Cuba. The population is estimated between 2,000 - 3,000 in the wild, although a proper survey has not been performed since 2014. The American crocodile in Cuba has a much larger distribution along the coast. Both are farmed, although American crocodiles are farmed in much larger numbers. Cuba is in the middle of an unprecedented economic crisis; worse even than in the “special period” in the 1990s after the collapse of the Soviet Union. Given the economic hardships, the threats to local crocodile survival are at an all-time high, due to lack of resources for food in

the crocodile farming industry and increased poaching of the free-living populations. We partner with the Zapata Crocodile Farm in Matanzas, Cuba. Our overall goal is to study the health of both free-living crocodiles and those under human care. Our team is the first to investigate disease dynamics and general baseline health parameters in these species in Cuba.

Center Impact

Our initial trips to Cuba to collect health samples from farmed Cuban crocodiles took place in 2018 to 2019, but COVID limited our ability to work in Cuba from 2020 to 2022.

In 2024, after years of trying, both Gustavo Sosa Rodriguez and Etiam Perez Fleitas, Zapata Crocodile Farm lead scientists, obtained their U.S. visas. These were necessary in order to import the samples collected from Cuba to the U.S. This process was difficult, at best, and included multiple trips to Cuba for meetings along with attempts to export samples from Cuba. In October 2024, Etiam traveled to St. Louis with the samples we collected together in 2018-2019. This was a very proud moment for our partnership and the research that had been on hold until samples were exported. Since samples arrived in the U.S., we have been testing for a suite of pathogens of conservation concern. All these agents may cause disease in both animals under human care and in free-living crocodiles. A big concern is the release of



captive raised crocodiles into the Zapata swamp without proper knowledge of disease prevalence.

Beginning in 2022, the Zapata Crocodile Farm and other crocodile farms in Cuba were unable to acquire enough food for the population of animals under their care. The economic hardships due to the increased embargo from the United States had a strong effect on not only the health of the people of Cuba, but also the animals there. There were a number of small die-offs at crocodile farms across the island due to lack of food and possibly infectious disease.

We joined the AZA SAFE Cuban Crocodile steering committee in 2024. One of the committee goals was to determine the feasibility of providing supplemental food to the Zapata farm. Taking the lead on this project, the ICM worked closely with Mazuri animal nutrition to identify if shipping Crocodile biscuit to the Zapata farm was feasible.



After some discussion Mazuri graciously donated 80 bags of biscuit to to the Zapata Crocodile Farm. It has been a long process, but the first shipment of biscuit arrived in Cuba in August of 2025.

Stories from the field

In 2023, Jamie, Ainoa Nieto Claudin (ICM) and Kelvin Alvarez (WCS - Bronx Zoo) traveled to the Zapata Crocodile Farm to meet with the Cuban team and make plans for next steps. This was our first trip back to Cuba post-Covid pandemic and is when we first learned about the food shortage at the farm. The farm received a donation of two GPS tags to place on two farm-raised crocodiles and release them into the swamp. We assisted with the tag deployment and while in the Zapata swamp for the release, we saw three small, free-living Cuban crocodiles as they were swimming by the boat. We learned quickly that the Zapata Swamp is a beautiful and incredibly challenging place to work.

Unfortunately, the two released crocodile tags only gave movement data for a few weeks. The team thinks the tagged animals were poached and the tags thrown out





into the swamp or damaged to make them stop working. This was a first step, but a crowd sourcing campaign is on-going to raise money to get more tags out into the swamp.

Plans for the Future

We will continue with the disease diagnostics for the crocodile samples we currently have at the Zoo. Next steps will be a comparison study of infectious diseases between farmed and free-living Cuban crocodiles and compared to farmed and free-living American crocodiles in Cuba. Cuban scientists are opportunistically collecting mouth, cloaca and eye swabs from all free-living Cuban, American and hybrid crocodiles during



their field expeditions. They will collect the same swabs as well as blood for serum banking from animals held at American crocodile farms. Serum will not be collected from free-living animals due to the inability to maintain cold chain after sample collection. Our goal is to identify the presence or absence of diseases of conservation concern.

This is important since both species have been farmed for decades and both are being released into their native habitats to increase population sizes. There are many diseases that can cause mortality in farmed settings. This data will help determine if infectious disease is a cause of mortality. Knowing what diseases are shared or differ between groups will assist with management decisions.

Publications

Palmer, J.L., Nieto-Claudín, A., Sosa Rodriguez, G., Perez Fleitas, E., Augustine, L., Deem, S.L. 2023. Hematology and blood chemistry values in Cuban Crocodiles (*Crocodylus rhombifer*) housed at the Zapata Swamp Crocodile Farm, Cuba. *Journal of Zoo and Wildlife Medicine* 54(2): 301-309.

Partners

