

The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

| Grant Recipient Details | |
|-------------------------|---|
| Your name | Cherie Chenot-Rose |
| Project title | American crocodile, <i>Crocodylus acutus</i> , Population and Habitat Viability Assessment and Conservation in Ambergris Caye, Belize |
| RSG reference | 9102-1 |
| Reporting period | 2010-2011 |
| Amount of grant | £5394 |
| Your email address | acesnpo@hughes.net |
| Date of this report | December 13, 2011 |

1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

| Objective | Not achieved | Partially achieved | Fully achieved | Comments |
|---|--------------|--------------------|----------------|---|
| To confirm the American crocodile population in Ambergris Caye south of the Boca Del Rio Bridge | | | | The survey area was extended by approx. 8.5 sq. miles, north of the Boca Del Rio Bridge. Additionally, surveying continued past the proposed July 2011. Currently, data are still being collected but for the purpose of this grant's statistical analyses data collection ceased December 1, 2011. Achieved even more than anticipated |
| Asses the health of the crocodile population | | | | I am in the process of apply for funding to obtain CITES and USFW permits for the export of collected scute samples to the University of Florida for toxicity studies in collaboration with Dr. Frank Mazzotti. Fully achieved for the extent of this grant |
| Size Distribution | | | | I am currently analysing data in order to present the findings in a publishable scientific article by the end of Jan. 2012. Collected data needed |
| Crocodile Habitat Viability in Ambergris Caye | | | | Salinity sampling was completed and two aerial fly-overs were conducted; however, due to funding needed for numerous crocodile rescues, a colorimeter was never purchased. Other grants are pending for the purchase of this equipment. |
| Increase public awareness through education | | | | Numerous articles on my research and how to live safely with crocodiles ran country wide in Belize newspapers. I also received radio and TV coverage as well as provided online information and school presentations. Education is ongoing. Fully achieved and ongoing |
| Boat rental for surveying | | | | I was able to purchase a 12 ft. aluminium boat for the continuance of crocodile population and crocodile habitat surveying. (ACES donated a 15hp engine.) Surpassed |
| Equipment purchases Garmin GPS, Refractometer and Colorimeter | | | | All equipment was obtained and utilized except the colorimeter. |
| Protection of Crocodile nests via relocation | | | | No nests were found in development areas; thus, no nests were relocated. There was a low hatchling count due to loss of nests through predation and the late onset of |

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| | | | | rainy season this year. One nest that was observed being raided by a raccoon was recovered. Unfortunately, it had already been exposed to the sun and thus did not hatch. |
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

On September 5th 2010, ACES/ American Crocodile Education Sanctuary and my home were burned to the ground. I was on Ambergris Caye at the time rescuing crocodiles. I remained on Ambergris Caye and continued to rescue ill, injured and problematic crocodiles, to collect crocodilian data for research, and to educate the populace about crocodilians, their importance in Belize's ecosystems, and how to safely co-exist with them, thanks to the RSGF.

My husband and I have established a new crocodile sanctuary in Ladyville, Belize, and continue to raise funds for natural containment facilities for ill/injured and problematic crocodiles.

Residing on Ambergris Caye enabled me to utilize food, lodging, and some transportation expenses in the budget for more crocodile rescues, research, and education. Instead of 45 days/nights of surveying, I was able to accomplish over 90 days/nights of surveying, rescue and relocate or contain 77 crocodilians, collect 35 scute samples from various sized wild American crocodiles in varying health conditions and from numerous different locations and tag 44 new crocodiles in the wild and 26 of the new captive crocodilians that would otherwise have been euthanized or died an untimely death due to inhuman conditions.

Funds requested for lodging and food were reallocated to crocodile education and to necessary crocodile rescues, to save the lives of crocs and to take people out of immediate danger from large crocodiles.

3. Briefly describe the three most important outcomes of your project.

First, to me the most important outcome of my project was the ability to rescue crocodiles that were ill, injured, or problematic. Rehabilitation and re-release when able is the primary goal for rescued crocodiles. Otherwise, we were able to provide these crocodiles with care and a secure habitat in an educational crocodile sanctuary. While this was not a primary objective in the proposal, to me it was the most positive and rewarding outcome.

Second in importance to me is the tangible data collected on the number of crocodiles in the area, their health status, and their size and sex distribution? While data are still yet being analysed, it is most apparent that the number of wild American crocodiles in Ambergris Caye is lower than anticipated and that their population distribution falls primarily in extremely close proximity to residential areas due to direct and indirect feeding of these apex predators.

The third most important, but definitely not the last, outcome is the support from the local community and the realization that locals are beginning to understand the importance of crocodiles in their environment. Education is the key to beneficial changes.

Finally, please don't overlook the importance of the habitat assessment portion of this project. While the colorimeter will not be available until January 2012, important data as to habitat

availability, salinity, and visible pollutants have been documented and will also be presented in my final findings and publishable article. I expect completion and submission of my article by January 31st 2012.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

The local populace is increasingly open to helping with my research via providing me with sighting information and reporting wildlife violations to me. While of course habitat destruction and fragmentation due to development play tremendous roles in reduction of the species through lower hatching survival rates and incidental killings, it is the feeding and poaching of these magnificent reptiles that decreases their numbers rapidly. Throughout this research year, I have documented a substantial increase in the number of residents that actually call us to report problematic crocodiles rather than taking matters into their own hands and indiscriminately kill the crocodiles as they have in the past. People fear what they do not understand. My research project and educational outreach in Ambergris Caye has helped raise awareness and a better understanding of crocodiles and the important role of these modern day dinosaurs in Belize's ecosystems. Not a day goes by that someone on the street doesn't report a sighting of or concern about a crocodile.

<http://www.ambergristoday.com/content/stories/2011/april/06/crocodile-gets-library-card>

<http://www.ambergristoday.com/content/stories/2011/april/13/island-academy-hosts-aces-and-croc>

<http://sanpedrosun.blogspot.com/2011/05/aces-at-ista-bonita.html>

<http://www.sanpedrosun.com/environment/2011/07/24/crocodile-chronicles-part-iv/>

<http://sanpedrosun.blogspot.com/2011/01/crocodile-confiscated.html>

5. Are there any plans to continue this work?

My research has not stopped and will continue. I am currently analysing the data and will write a publishable scientific research article on the American Crocodile population and habitat viability of the said region. The information will then be presented to the Belize Forest Department and the Crocodile Specialist Group in order to collaborate on developing an effective crocodile management plan for a self-sustainable wild population. Ongoing research and monitoring of the wild population of American crocodiles is necessary for successful conservation. I do intend to apply for a second Rufford Small Grant.

Additionally, recommendations will be made to the Belize Land Utilization Board, Ministry of Natural Resources and the Environment, Belmopan, for deeming identified critical Red mangrove wetland habitat as protected and/or limited development areas.

6. How do you plan to share the results of your work with others?

Once my data are completely compiled and analysed statistically I will write the results in a scientific format to be published in a scientific journal and/ or the Crocodile Specialist Group Newsletter. Additionally, I will submit a press release in layman's terms to all the media houses in Belize and make it available on my website. I will contact Reef TV to appear once again on their 'Morning Show' to share my final conclusions publically. During this research year, I have gained an extensive network of followers through online social media. I will share the information there as well to be in turn shared by and with others. Most importantly, I will utilize the data to construct a crocodile conservation plan for Belize.

7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?

RSGF funding was used from December 14th 2010, through September 30th 2011. We continue to collect data to this day. The final article to be presented for publication will include data collected up to December 1st 2011. Originally the project was to conclude after hatchling season; however, due to the fact that I relocated to Ambergris Caye, I was able to continue my research with the aid of private donations.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.

| Item | Budgeted Amount | Actual Amount | Difference | Comments |
|---|-----------------|-------------------------|------------|---|
| Boat Rental | 1000 | 960 | + 40 | Instead of renting a boat for surveys, I purchased and licensed a boat, <i>Sea acutus</i> . |
| Boat Fuel & Oil & Maintenance | 590 | 985 | - 395 | Due to the purchase of the boat, I was able to complete more water surveys by boat and increase the accuracy of my data and expand my survey range. |
| Misc. Equipment (tape, rope, batteries, bait, etc.) | 190 | 488 | - 298 | The increase in the actual amount spent was due to the increase in the number of surveys and the survey range. Also, crocodile rescues utilized more equipment. |
| Transportation to & from Ambergris Caye to PG to care for crocs remaining at ACES after the arson | 305 | 512 | - 207 | Funds not used for food were reallocated for caring for captive crocs that remained at ACES after the arson of the crocodile sanctuary and other crocodile rescues. |
| Food | 1420 | 0 | + 1420 | No monies were used for human food. ACES incurred those costs. |
| Lodging | 660 | 0 | + 660 | No monies were used for lodging as proposed but reallocated for croc education and rescues. |
| Golf-Cart Rental | 1123 | 0 | + 1123 | We bought a golf-cart, so cart rental funds were put towards cart and boat fuel. |
| Golf-Cart Fuel | 106 | 529 | - 423 | More surveys were conducted and thus more fuel was used. |
| Crocodile Education and Rescues | 0 | 1846 | - 1846 | A total of £1937 was spent on croc rescues alone to date. |
| Records, supplies and mail | 0 | 74 | - 74 | Unanticipated expenditures and wiring fees. |
| Total | 5394 | 5394 | | |
| Additional Funding | | | | Assumed Exchange Rate: \$1 Belize Dollar = 0.31455 British pound sterling |
| Garmin, Refractometer & Colorimeter | 1166 | 1166 + 51 = 1217 | | A Garmin and refractometer were received as in-kind donations from Lamanai Field Station. The Refractometer broke and another was purchase by |

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|---------------------|---|-------------|---|
| | | | ACES. Today I received confirmation that a Colorimeter will be donated and received by January 26th 2012. (to replace broken refractometer) |
| Boat Engine (15 hp) | 0 | 2880 | In-kind donation from ACES/ American Crocodile Education Sanctuary. |
| Microchips | 0 | 515 | In-kind donation from two private donors of a microchip reader and 100 microchips. Microchips, and some scute-clipping, were used instead of toe-tags for identification. |

9. Looking ahead, what do you feel are the important next steps?

After analysing data, writing a research article and completing an American crocodile management plan for the Belize Forest Department, I feel it is important to continue to collect data on the wild population, including training Rangers in the Bacalar Chico area of North Ambergris Caye on kind crocodile tagging and scientific data collection. I also intend to follow up with obtaining funding for the exportation of collected scute samples, and for testing the samples for levels of organochlorines and heavy metals, including mercury.

Additionally, data collected has shown a larger range than anticipated of some of the adult crocodiles and I intend to secure funding for a future project that includes the placement of transmitters on a number of adult crocodiles, 10 ft and over, to explore their range and the plausible, anticipated, migration between nearby cayes during mating and nesting seasons.

10. Did you use the RSGF logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

To date the RSGF logo has only been placed on the ACES/American Crocodile Education Sanctuary website. No printables resulted from this project. My research Update was published in the Crocodile Specialist Group Newsletter found on ACES website document pages 16 and 17 at the link: <http://americancrocodilesanctuary.org/apps/documents/>

Links to news articles mentioning RSGF:

<http://sanpedrosun.blogspot.com/2011/01/first-ever-crocodile-rescue-on-caye.html>

<http://crocodilian.blogspot.com/2011/03/croclog-podcast-episode-4.html>

<http://sanpedrosun.blogspot.com/2011/03/aces-croc-chronicles-4.html>

ACES also appeared on Belize's Reef TV on the 'Morning Show' to talk about this project on February 8, 2011, and then more recently on November 21, 2011.

11. Any other comments?

Despite my situation at the time of my grant request, RSGF had faith in me and gave me the chance to conduct my research. The number of crocodiles rescued and the data collected are not only astounding but has made a difference in many people's lives and views of crocodilians. All I can say is THANK YOU! I do hope that I have represented RSGF in a way pleasing to all its members, and thank you in advance for consideration of my second application, sure to follow.