



Scales Nature Park

The Best Canadian Reptile Experience!

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Georgian Bay Reptile Conservation Program Year End Report 2020 for the Eastern Georgian Bay Initiative

The Georgian Bay Reptile Conservation Program, funded by the Eastern Georgian Bay Initiative (EGBI), is a broad, landscape level multi-species conservation effort composed of three synergistic parts- the new Georgian Bay Conservation Action, Research, and Education about Snakes (CARES) Project, the pre-existing Saving Turtles at Risk Today (START) Project, and an outreach education component across the watershed. The program is focused on all six reptile target species of the EGBI, and also directly benefits five other federal species at risk reptiles. This report is a summary of activities largely specific to the EGBI funding. A more expansive and detailed report on our activities, including methodologies, is still in preparation.

The Georgian Bay Reptile Conservation Program is a collaborative led by Scales Nature Park, with partners including the Georgian Bay Turtle Hospital, the Canadian Wildlife Federation and Laurentian University. Additional partners in our work in the region this year included The Land Between, Wildlife Preservation Canada, Toronto Zoo, McMaster University, Johnston's Cranberry Marsh, the Gravenhurst Rifle and Revolver Club, Magnetawan First Nation, Shawanaga First Nation, and the Georgian Bay Biosphere. Our field work also directly supported other efforts by some of these partners to achieve their goals. The project was well received and we expect additional academic and community partners to join in the future.

The Covid-19 pandemic, however, caused various challenges across project activities. Due to the health implications, legal restrictions and related concerns, we implemented a strict voluntary quarantine in March across all of our facilities to preserve our functionality for whatever work could be undertaken. We focused our efforts on snake and turtle field work activities from April to September, with considerable success related to confirming massasauga hibernation and gestation sites, amongst other things such as trying to better delineate the eastern and southern distribution for this species and surveying historic sites. Some aspects of field work were limited by delays in obtaining required provincial permitting, which was not issued until June 11th and that was only as a result of significant pressure we applied to the two regulating ministries. Access to some provincial or private lands was also restricted in the spring. Other

aspects of the project were hampered by quarantine protocols and restrictions, or were completely impossible such as school outreach programs. Some project milestones have been deferred into the new year, including all outreach programs and landowner interviews. The table below shows the status of all specific milestones related to the EGBI funding.

Milestone	Status
120 educational presentations and 15 advanced workshops delivered	Delayed due to Covid-19
30 landowner interviews conducted	Delayed due to Covid-19
10 advanced community training workshops delivered, 75 volunteers recruited	Partially completed, 4 workshops delivered, 28 volunteers trained
1000 hotline reports received from the public	Partially completed, 818 reports received
600 observations of target reptile species recorded	Completed, 1360 observations recorded
Project results presented at regional or national conference	Delayed due to Covid-19, conference was cancelled
20 spotted turtles will have transmitters affixed between 2 sites	Delayed due to Covid-19
A standard protocol for nest caging, nest excavation and egg incubation will be complete and available	Completed in draft form. External reviews completed and revisions are underway. The document should be ready for distribution in January 2021.

Outreach education and landowner interview activities were completely shut down due to Covid-19 in the spring, so we decided to take a wait and see approach while putting these activities on hold. Eventually, it became apparent that conducting this activity in the summer would also not be feasible. We decided to transition to online educational programming and began this process in the fall, shifting funds from outreach mileage into equipment to develop a

video broadcast/recording studio for online programming. This process had many challenges but has proceeded successfully. One education staff was hired and has been involved in the process of developing the facility and liaising with school boards and other venues to ensure software compatibility, etc. and the relevance of our plans. Additional staff positions have been delayed and we plan to defer these funds until 2021. A video regarding the new CARES project was completed using some of this equipment, and was recently uploaded to our youtube channel. It can be viewed at <https://www.youtube.com/watch?v=6eKVEmfMQGU&feature=youtu.be>. This video will be incorporated into our website. Additional videos are planned. We have also recently been approved for \$4000 in additional funding in 2021 from the Orillia Community Development Corporation to use the new studio to assist other conservation groups in the region with online programming and volunteer training. The Couchiching Conservancy and Speaking of Wildlife will be immediate beneficiaries of this funding, however we plan to make our resources available to other organizations to assist their conservation efforts.

Due to the challenges presented by Covid-19 in the spring, we were unable to conduct in-person advanced community volunteer training workshops. As these were already scheduled and had a limited number of known participants, we quickly adapted to a virtual format and we were still able to deliver four virtual workshops to prepare our community volunteers for reporting target reptile species to the project during the active season. This is a two stage training process allowing community volunteers to become more actively involved in our work. For stage one we trained 28 local community members to learn how to identify, handle and assist turtles and snakes, and collect tissue samples from dead specimens. Training included the collection of accurate location data, road safety, usable digital images, and communications with the hotline dispatcher. A select group of 9 stage one community volunteers were invited to participate in the second stage of training. This stage consisted of more technical skills including turtle nest caging, egg excavation, and turtle transportation. Due to the addition of these community volunteers, we were able to respond to hotline calls in their areas more quickly, and these volunteers also generated many calls and observations.

The START Project hotline was rebranded as the “Reptile Hotline” and continued to gain traction this year, though not at the growth rate that we had projected. This is likely due to Covid-19 “stay at home” messaging and the resultant reduction in people traveling as many calls are about turtles along roads. The proportion of calls that we could respond to was reduced because of Covid-related delays in receiving our permits from provincial government agencies. A critical window in the spring to promote the hotline for snakes was also missed due to uncertainty about our ability to respond because of the permit delays. Members of the public were encouraged to call the hotline whenever they encountered a ‘rare, nesting, dead or injured reptile’ within the project area. Depending on the location, species and circumstances, a research team would be deployed to the reported location to process the reptile and cage or excavate the turtle nest. Despite all of the challenges, there were 818 calls/texts in 2020- a modest increase from 2019. Our busiest day occurred on June 11th with 67 calls in one day, significantly less

than in 2019. Notable calls provided observations of 104 Blanding’s turtles, 4 Eastern Hog-nosed snakes, along with other species at risk. We plan to continue the promotion and use of this hotline for the upcoming field season, including posting additional signage along roads that are hotspots for reptile interactions within the project area.

During the project, we record observations of reptile and amphibian species, particularly species at risk. Typically, every individual observation of a species at risk is recorded. Species that are not at risk may only be recorded to confirm presence in an area, calling dates, etc. In 2020, a total of 5898 individual observations of 49 different reptile and amphibian species were recorded. Of these 1360 observations were of the target reptile species for the project in 2020. A spreadsheet of these observations has been sent separately. The table below shows a breakdown of observations by species, which also details capture versus observation only, recaptures, and shows the cumulative totals since some of this work began in 2013. Note that the numbers do not total 1360 due to some overlap between current year and previous year recaptures. Some individuals may be represented in both columns.

Species	Captured and Processed* (2020)	Recaptured (from previous years) (2020)	Current Year Recapture (2020)	Observed Only (2020)	Processed Total (2013 - 2020)	Observed Only Total (2013 - 2020)
Eastern Foxsnake	0	0	0	0	0	8
Eastern Hog-nosed Snake	7	0	0	9	7	68
Massasauga Rattlesnake	195	0	20	264	195	428
Blanding’s Turtle	333	76	32	310	1412	1044
Musk Turtle	1	0	0	6	9	20
Spotted Turtle	118	45	27	12	348	46
Totals	654	144	79	601	1966	1614

*Processed = notched and measured turtles, or handled and measured snakes

One goal of generating these observations is the protection of habitat under the provincial

Endangered Species Act for Threatened and Endangered species. While not a specific milestone related to EGBI funding, the project added 1022 square kilometres of habitat protection in 2020, for a cumulative total of 3117 km² since 2013. This is a huge increase and is largely due to surveying new areas thanks to the EGBI and other new funding. Most significantly, 2767 km² of this area was not previously protected through conservation reserve or provincial park- 4 times the surface area of Lake Simcoe. By habitat type, 1208 km² of wetland habitat has been protected and 1908 km² of upland habitat.

GIS modeling of suitable habitat was conducted. As part of this exercise, we determined that suitable information regarding wetland habitats is largely lacking for central Ontario, therefore the maps were not very helpful. In response, we plan to engage in more detailed habitat ground truthing beginning in 2021, using a similar system as our project partners, and we continue to investigate alternatives such as remote sensing methods. This will allow more rigorous modelling in the future.

Although the egg excavation and incubation aspect of the project was not directly funded by the EGBI, other funding allowed us to complete this work as proposed. The number of turtle eggs captively incubated was increased from 2019 to 16,632 and hatchling success remained consistent, with the project producing 13,924 hatchlings for release. Of these, 868 were Blanding's turtle eggs, with 790 hatchlings released. Blanding's turtles are the primary target species of this activity, though we do not ignore other species in the process. While others are more abundant, they also suffer from the same threats. Egg collection and incubation not only counters the threat of subsidized predation, which is greater in anthropogenically impacted landscapes, it also directly offsets losses due to road mortality. Using the findings of the long term snapping turtle project in Algonquin Park, it takes ~280 hatchlings to replace one adult turtle, albeit with a 20 year time lag. No long term data is available for Blanding's turtles, but their life history and threats are similar. We continue to prioritize and work towards reducing road mortality of adults, and our nesting surveys directly achieve this through patrolling known nesting roads and standing watch over nesting females, however, we will not soon eliminate road mortality across the landscape. We feel that egg collection and incubation is a beneficial component of a comprehensive program. All hatchlings were released at the nearest suitable habitat to the nest location, following complete absorption of the yolk sac by all clutchmates, except for one clutch of Blanding's turtle eggs from the southernmost part of the project area near Barrie. This clutch was retained for two years of headstarting. New for this year, excavated eggs were incubated in two locations. The majority of the eggs were incubated at the Georgian Bay Turtle Hospital building, and a smaller subset of the excavated eggs were incubated at one of our partner locations, The Land Between. Other partner organizations in the region also continued their own incubation programs, but with their own permits and funding so those eggs are not included in our numbers. We have completed a third year of rigorous data collection regarding egg collection and incubation using our existing methodology and will begin data analyses. Moving forward, we will be working once again with Dr. Jackie Litzgus at Laurentian

and post-doctoral fellow Dr. James Baxter-Gilbert for 2021-2023 to examine the impacts of modifications to the incubation methodologies that are widely used in Ontario on hatching success and hatchling fitness.

The national herpetology conference was cancelled due to Covid-19, therefore we did not present project results. There was a virtual conference held, however, there were very few speakers able to present their topics due to the limited time available.

We decided not to proceed with spotted turtle radio-telemetry due to uncertainty in the early spring about our ability to reliably conduct field work without interruption due to Covid-19 related government restrictions, permitting delays, or potential staff illness. Continuous data is critical to the success of this effort, so it was delayed and we expect to proceed in 2021. Funds associated will be deferred until 2021.

A beneficial management practices document for turtle nest caging, nest excavation and egg incubation was developed, led by Hannah McCurdy-Adams (at Wildlife Preservation Canada) and Kelsey Moxley. A completed draft has been circulated for external review, and revisions are now underway. This is attached as a separate document. We expect to make this document widely available in January 2021. As a result of broad collaboration with a large number of turtle conservation professionals at other organizations, the Working Group for Ontario Turtle Conservation was formed to continue the process with other activities such as headstarting.

While it was not part of our proposal and was not funded through the EGBI, as a response to the pandemic situation we launched a comprehensive reptile and amphibian conservation training program- the Herpetology Internship Program (HIP). The 14 participants in this program live within our quarantined facilities and take a range of core and elective courses, such as field methods, and participate in various practical activities including field work in the Georgian Bay region. This program has helped to maintain and increase our training and capacity building efforts during the pandemic. We hope to reserve up to 4 spaces within this program next year for youth from First Nations and/or the Georgian Bay region, and we look forward to working with our partners to recruit youth from these communities.

Significant funders of the Georgian Bay Reptile Conservation Program this year beyond the EGBI included the Rogers Foundation (\$173,000 via the Canadian Wildlife Federation) which has continued to fund our turtle work since 2014, The Land Between (~\$50,000) as part of their Highland Habitats project, and Ontario Power Generation's Biodiversity Strategy (\$46,000) which supported our efforts in the southern portion of the project area as well as our work in Essex County that included eastern foxsnakes and massasaugas, and Blanding's turtles. Major funding was also received from the federal government through various job creation programs, notably for youth and students. We typically access such programs every year, but saw an increase in support directly related to Covid-19. This allowed us to hire some youth to offset

reductions in full and part time volunteers due to the pandemic and our quarantine restrictions. The EGBI funding was critical in leveraging some of these additional funding sources. We will always strive to access other sources of funding and build upon our ability to conserve the reptiles of the Georgian Bay region.

Overall, we feel that the project was successful despite many roadblocks that resulted from the Covid-19 pandemic, and it has been a good start on a long term program for the region. We look forward to launching the education portion of the program in January, with schools already choosing their dates, though as we finalize this report the province has announced a new lockdown and school closures extending into the new year. We will continue to adapt as required. We also look forward to launching the spotted turtle telemetry in the spring. Thank you for the tremendous support provided to our efforts!

Sincerely yours,

A handwritten signature in black ink, reading "Jeff Hathaway", is centered on a light gray rectangular background.

Jeff Hathaway, Project Director