

Conserving Carolinian Reptiles



AN EVALUATION OF CONSERVATION PROJECT OUTCOMES

This summary report highlights the findings of an evaluation of the Conserving Carolinian Reptiles project, a multi-year initiative of Long Point Basin Land Trust (LPBLT) in the Carolinian Region of Ontario. The purpose of the evaluation was to assess the project's conservation value to the recovery and conservation of reptile species at risk by examining project outcomes during the project's first five years, from 2009 to 2014. Another aim was to identify any lessons learned or needed improvements to project operations.

The evaluation was conducted for project staff, conservation practitioners, volunteers, project partners, funders and the

general public. An outside evaluator led the evaluation, while project staff participated in the design, data gathering and overall assessment. The evaluation took place between October 2013 and March 2014.

The Long Point Basin is a high-priority area for conservation and recovery of species at risk. Twelve of the 19 species of reptiles which occur within the Long Point Basin are designated at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Committee on the Status of Species at Risk in Ontario (COSSARO). Six of the seven native turtle species are currently at risk.

Project strategies address high priority threats to reptiles in the Long Point Basin:

- human activities, e.g., vehicle and machinery strikes
- lack of safe and suitable nesting and wintering habitats for turtles and snakes
- knowledge gaps about species' ranges and populations
- negative attitudes and deliberate harmful actions

GOALS

1. **Recovery** and conservation of reptile species at risk and their habitats within the Long Point Basin;

and

2. **Development** of an informed, concerned citizenry which participates actively in recovery and conservation efforts.

OUTCOMES 2009 to 2013

Conservation

- 427 instances of reptiles protected from vehicle strikes, including 237 involving species at risk
- 82% drop in number of reptiles killed by vehicles, following installation of seasonal barrier fencing at Long Point Provincial Park (autumn monitoring program)
- installation of 60 reptile habitat enhancement structures
- confirmed use of constructed hibernacula by snakes
- numerous observations of reptiles at and near constructed nest structures

- 343 participants provided 4,411 reptile sightings, including 2,078 species at risk

Citizen Engagement

Results of a telephone survey of 20 project participants:

- 100% gained increased knowledge of species and habitats at risk
- 70% increased their willingness to help reptiles
- 75% increased their personal actions that benefit reptiles
- 75% increased their actions to benefit other species at risk and biodiversity in general

The Conserving Carolinian Reptiles project has made substantial progress towards its goals and has successfully achieved its intended outcomes for the first five years.



Eastern Foxsnake



Conserving Carolinian Reptiles

Project Objectives

1. reduce human-induced mortality of reptiles in the Long Point Basin
2. create and monitor on-the-ground habitat enhancement projects
3. raise awareness about reptiles, their population status, trends and recovery efforts
4. implement and expand region-wide surveys of reptiles with multiple partners
5. engage landowners in site-specific recovery efforts and documentation of current and historic records.

Strategies for Achieving Project Objectives

- human impact mitigation
- habitat enhancement
- outreach, awareness and education
- surveys and monitoring
- major project activities

Evaluation Approach

The evaluation examined the outcomes of each strategy and relied upon indicators to measure progress and achievement. For each strategy, the evaluation asked a question. (Note: "Outcomes" are the changes or benefits that result from program activities.)



Photos: constructing a snake hibernaculum (i.e. over-wintering habitat); monitoring road mortality; and, Northern Map Turtle protected by wildlife barrier

Conserving Carolinian Reptiles Questions

Question #1: Has the project resulted in less harm caused by human activities to listed species of reptiles in the region?

Indicators: less mortality by vehicle strikes; fewer reptiles documented in high risk areas of roads

Project Activities: removing reptiles from direct or imminent harm, e.g., helping snakes and turtles across the roads and rescuing them from entrapments

Outcomes: The project successfully protected hundreds of reptiles each year, as estimated from reports by participants who removed reptiles from harm. In more than 400 instances between 2009 and 2013, reptiles were protected from possible harm due to vehicle strikes on roadways. Moreover, more than one-half of all rescues involved species at risk, as shown in Table 1. In 2011, project staff and staff of Long Point Provincial Park erected a reptile barrier along a 750-metre stretch of roadway inside Long Point Provincial Park that had been documented as a major, seasonal problem area for snakes. The barrier resulted in an 82% reduction in reptile mortality, as measured each year since 2010.

Table 1. Reptiles encountered live on roadways and protected from possible harm between 2009 and 2013.

| Species | Status* | Total |
|-------------------------------|-----------------|-------|
| Eastern Foxsnake | Endangered | 20 |
| Gray Ratsnake | Endangered | 3 |
| Spotted Turtle | Endangered | 10 |
| Blanding's Turtle | Threatened | 53 |
| Eastern Hog-nosed Snake | Threatened | 2 |
| Northern Map Turtle | Special Concern | 24 |
| Snapping Turtle | Special Concern | 125 |
| DeKays's Brownsnake | | 69 |
| Eastern Gartersnake | | 83 |
| Midland Painted Turtle | | 34 |
| Northern Watersnake | | 1 |
| Red-bellied Snake | | 3 |
| Total species at risk rescues | | 237 |
| Total all reptile rescues | | 427 |

* Status as determined by COSEWIC and COSSARO

Question #2: Have the habitat enhancement activities resulted in use by reptiles?

Indicators: evidence (confirmed and potential) of reptiles using constructed habitats

Activities: constructing reptile habitats, e.g. snake hibernacula, turtle and snake nesting habitats, and other turtle and snake habitat enhancements

Outcomes: Confirmed reports provide preliminary evidence that some constructed habitats are being used by turtles and snakes, including species at risk. Evidence varies by site and is dependent upon reliable means of confirming reptile presence without causing disturbance.



Question #3: As a result of the project, are participants more knowledgeable, more supportive and more active in the conservation and recovery of reptiles?

Indicators: increased number and quality of reports; number and retention of participants; and participant knowledge, willingness, and active engagement

Activities: targeted outreach to landowners, cottagers, campers, horticulturalists and conservation professionals; general public outreach through web sites, presentations, events, publications and videos

Outcomes: As a result of the project, the public in the Long Point Basin is more knowledgeable, more supportive of recovery and conservation actions for reptiles and more active in recovery and conservation. Results of a telephone survey of 20 participants included the following: 100% stated that their knowledge of species and habitats at risk had increased, including 85% percent with improved ability to identify reptiles. Seventy percent stated that their willingness to help reptiles had increased. Seventy-five percent increased their personal actions that benefit reptiles and 75% increased their actions to benefit other species at risk and biodiversity in general.

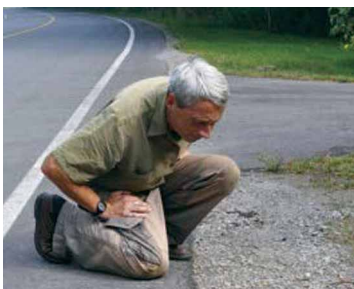
For three types of activities – reporting wildlife to monitoring programs, enhancing reptile habitat, and spreading the word about reptiles/conservation/species at risk – 18 or more out of 20 respondents initiated or increased their actions as a result of the project.

Question #4: Have the reptile monitoring and reporting methods improved the knowledge base for listed species of reptiles in the region?

Indicators: number of reptile reports by species; number of confirmed new species, known occurrences, or enlarged geographic distribution

Activities: public reporting of reptile observations, volunteer road surveys, and targeted professional surveys, as well as monitoring of road barriers, snake hibernacula and nesting boxes

Outcomes: The project is improving the knowledge base about the occurrence and distribution of reptiles in the Carolinian Region of Ontario. Over the project's first five years, 343 participants have submitted records of 4,411 reptiles, including 2,078 species at risk. The database includes records for 19 species of reptiles, of which 11 are species at risk. It is the largest known database assembled for reptiles in the Long Point Basin. Table 2 presents the total number of records for each species.



Photos (above): constructing a snake nesting structure; adult Eastern Foxsnake exploring a snake nesting structure; Eastern Gartersnake (upper) and DeKay's Brownsnake (lower) entering one of LPBLT's constructed hibernacula. Photo (left): a conscientious landowner keeps careful watch over a hatching Snapping Turtle nest.

Table 2. Number of reptile reports by species, for Long Point Basin, 2009-2013.

| Species | Total | Species | Total |
|-------------------------------------|--------------|--|--------------|
| Listed Species at Risk (SAR) | | Species not listed or assessed as Species at Risk | |
| Blanding's Turtle (TH) | 210 | DeKays's Brownsnake | 502 |
| Eastern Foxsnake (EN) | 209 | Eastern Gartersnake | 880 |
| Eastern Hog-nosed Snake (TH) | 122 | Midland Painted Turtle | 824 |
| Eastern Ribbonsnake (SC) | 22 | Northern Ring-necked Snake | 2 |
| Gray Ratsnake (EN) | 25 | Northern Watersnake | 29 |
| Milksnake (SC) | 88 | Red-bellied Snake | 73 |
| Northern Map Turtle (SC) | 865 | Smooth Greensnake | 21 |
| Snapping Turtle (SC) | 485 | Non-SAR Totals | 2,331 |
| Spiny Softshell (TH) | 14 | Non-Native | |
| Spotted Turtle (EN) | 33 | Red-eared Slider | 2 |
| Eastern Musk Turtle (TH) | 5 | # of reptile sighting contributors: | 343 |
| Species at Risk Totals | 2,078 | Reptile Report Totals: | 4,411 |

EN – Endangered; TH – Threatened; SC – Special Concern as listed by COSEWIC and COSSARO.

Recommendations

- Now that the project has gained momentum, reach out to new audience groups, such as large-scale farms and more diverse audiences.
- Investigate whether additional technological devices could be adapted for monitoring snake nesting boxes, hibernacula and turtle nests without the threat of disturbance.
- Explore ways to strengthen the likelihood of project sustainability, including volunteer capacity and staff recruitment.
- The project is meeting its objectives and benefitting a large number of reptile species and individuals. New and continuing partners and funders should give it their support.

Lessons Learned

1. On-site habitat enhancement empowers landowners to take positive actions on their own lands and it helps make the conservation initiative meaningful to them.
2. People react positively to conservation leaders who are knowledgeable and respectful of them, able to connect on their level, and to respond in a timely manner.
3. The public likes to engage in conservation and recovery projects that emphasize positive, nature-based messages and actions.



Midland Painted Turtle



Thank you! Long Point Basin Land Trust thanks the hundreds of volunteer reptile participants and dozens of participating landowners and partners who have worked with the Land Trust for over five years to help protect reptiles and restore species at risk habitat. This evaluation is a reflection of their dedication and support.

The project was undertaken with financial support from the following: The Government of Ontario (Ministry of Natural Resources' Species at Risk Stewardship Fund); The Government of Canada through the federal Department of Environment (Habitat Stewardship Program for Species at Risk); Fred Eaglesmith Annual

Charity Picnic; HIVA Environmental Fund; The John & Pat McCutcheon Charitable Foundation; The McLean Foundation; and, individual donors.

This summary is adapted from the following report: Blanchard, K.A. and G.G. Beck. 2014. *Conserving Carolinian Reptiles: An Evaluation of Conservation Project Outcomes (2009-2014)*. Long Point Basin Land Trust, Port Rowan, ON, 50 pp. For further information on the report, or on the Conserving Carolinian Reptiles Project, please contact Long Point Basin Land Trust:

Photos copyright (c) and courtesy of Joe Crowley (Eastern Foxsnake, p. 1), anonymous and Gregor Beck. Assistance for this project was provided by the Government of Ontario.



P.O. Box 468
Port Rowan, Ontario
N0E 1M0
Email: nature@longpointlandtrust.ca
Website: LongPointLandTrust.ca
Facebook: facebook.com/lpblt
Twitter: @lpblt