

Amphibian Voice

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Turtles and Roads

The Story of Bling

By: Charlotte Cox, Emma Goldhawk, and Elizabeth Vincer (Ecoplans limited)

On a recent trip to Parry Sound, the negative effects of roads on wildlife were clearly demonstrated. We were heading to Parry Sound when we spotted the characteristic high-domed shell of a Blanding's Turtle on the side of the highway. From far away it appeared as if the turtle was steps away from attempting to cross the road; when we got closer however, we realized that the turtle had in fact already

made his attempt, and had been hit by a car in the process. Although the turtle was seriously injured, somehow he was still alive. His shell was completely crushed at the back end, exposing his lungs and viscera, but his plastron was intact and his limbs and tail seemed unaffected. Without much deliberation, we decided to bring the turtle with us to try to find a local vet who might be able to save him. We GPS'd the location where we found the turtle, not only in the hopes that he would one day be returned to his home, but also because Blanding's Turtles are designated as Threatened provincially and federally, and sightings of these personable

turtles are becoming increasingly rare. As a result of hasty typing, the Blanding's Turtle was

recorded as Bling on our GPS unit. Somehow the name seemed fitting, and from that error we decided to christen the turtle "Bling".



We transported Bling to the Parry Sound Animal Hospital, and were extremely lucky in arriving at the clinic just as they were about to close. Although the vet on duty admitted that the clinic

had never treated a turtle, they were sympathetic, caring, and willing to read up on it, and agreed to take Bling in to see what they could do for him.

The following evening we returned to the animal hospital to check up on Bling, not knowing what to expect. We were overjoyed to discover that our rescued turtle had

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made it through the night! The staff at the animal hospital set to repairing Bling's shell. Over the next couple of days they tried unsuccessfully to piece Bling's shell back together using epoxy, glue, adhesive tape, and even duct tape. On the 3rd day they managed to wire the pieces of his shell together, and after consulting a local horse farmer, coated Bling's wired shell with a glue used to repair horse hooves. On our final day in Parry Sound, we stopped by the animal hospital for one last visit and were delighted to see the new, repaired Bling.

Our last day in Parry Sound coincided with Bling's last day at the animal hospital; that afternoon staff from the Aspen Valley Wildlife Sanctuary in Rosseau (a non-profit, non-government funded rehabilitation centre for injured wildlife) drove up to Parry Sound and brought him to the sanctuary to 'convalesce'.

We're happy to report that a mere 2 ½ weeks after his accident, Bling was brought back to his wetland on Friday, May 31st, where he will hopefully spend many more years basking in the sun, catching frogs and hanging out with the ladies... In time and as he grows, the glue on his shell should fall off and his broken shell should fuse. In the meantime, if you happen to see a Blanding's Turtle carrying a big clump of glue on his back, be sure to send Bling our regards and tell him to stay away from the highway!

Bling is just one of many animals who have been directly or indirectly affected by roads. The major effects of roads on wildlife include injury or mortality, degradation and/or

fragmentation of habitat, population isolation, and reduced access to food, mating opportunities and hibernation sites. The cumulative effects can lead to the extirpation of local populations.

In recent years, the implementation of dedicated wildlife crossing structures beneath roads, termed "ecopassages", has become critical in the mitigation of wildlife road mortality. Ecopassages provide animals with an alternative to accessing otherwise fragmented habitat without having to cross the road. To be successful, the design of an ecopassage should consider the biological constraints and requirements of a targeted species, including light, air flow and moisture. Some wildlife species have been shown to exhibit individual preference over ecopassage shape and size. The inclusion of a wall to funnel wildlife to culverts is even more effective than culverts alone in reducing wildlife road mortality rates.

By raising awareness about the threats of roads on wildlife, hopefully we can reverse this trend and again start seeing wildlife where they should be — in their natural habitats and not dead or injured on the side of the road.

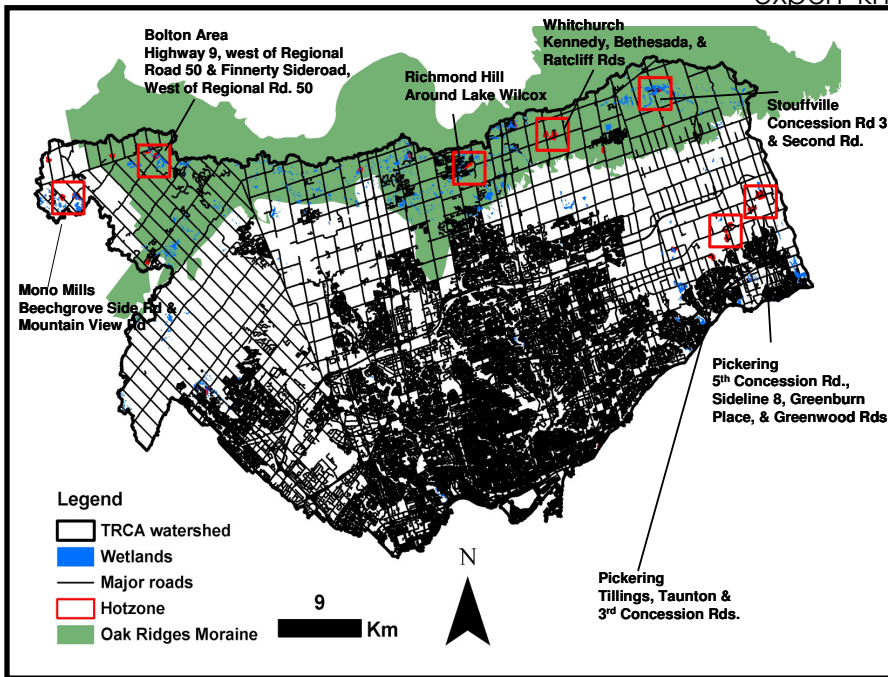
We would like to express our sincerest thanks to the staff at both the Parry Sound Animal Hospital and the Aspen Valley Wildlife Sanctuary. These individuals worked very hard and were very determined to give Bling a second chance, and at no point was the cost of treatment or care ever raised. Without them Bling wouldn't be back in his wetland, where he probably is right now, basking on his favourite log as you read this.

Road Mortality Hotspots and Connectivity for Herpetofauna in Southern Ontario

By: Kari Gunson

reports with our GIS model and found that we had correctly predicted these road segments as probable hotspots for wildlife mortality.

Currently, our model is being validated from a wide variety of sources; 1) visual records from citizens in Ontario that see and report animals alive or dead on roads (e.g. Turtle Tally), 2) expert knowledge from scientists and interested individuals (e.g. workshop and outreach events), and 3) systematic data records from wildlife road-kill or presence/absence data collections. We will use our connectivity and mortality hotspot maps as stewardship tools to educate, and bring awareness to local citizens about the negative impacts of roads on wildlife populations. In addition, we will prioritize areas for local non-profit, and conservation authorities to focus their field data collection to help improve the validity of our model. Lastly, we hope to incorporate ecological connectivity (e.g. no roads, road realignment, or usage of ecopassages) within all stages of road planning adopted by transportation agencies in Ontario.



© Kari Gunson, GTA road mortality hotspots

The Road Ecology Group at the Toronto Zoo hosted a road ecology symposium and workshop in April 2008. This event showcased a dynamic GIS model which predicts the likely locations of road mortality hotspots for turtles, frogs, salamanders and toads that require wetland-forest complexes as habitat in southern Ontario. We combined this model with natural heritage system models (e.g. Greenbelt, Oak Ridges Moraine, and Toronto Region Conservation Authority), which depict natural areas required for connectivity, in order to maintain healthy functioning ecosystems in the landscape. We used the final output to determine where roads will most likely behave as mortality sinks and or barriers for amphibians and reptiles moving through the landscape, contributing to further population declines of these animals.

The Road Ecology Group has already crosschecked multiple wildlife road mortality



© Don Scallen, Blanding's road mortality at predicted hotspot

If you see an animal alive or dead on a road please visit our wildlife and roads database: <http://www.torontozoo.com/conservation/RoadEcologyGroup.asp>

Moments from Ontario Turtle Tally 2008...



Blanding's, Brantford (c) Don Scallen



Painted, Trenton (c) Barbara Pratt



Snapping, Marlbank (c) Jaye Borden



Painted, (c) Nancy Westaway



Spiny softshell, Burlington (c) Jamie Richards



Spotted, Bruce Peninsula (c) Joe Crowley



Map and water snake, Kingston (c) Dugald Carmichael



Spiny softshell, London (c) Don Scallen



Painted, Scarborough (c) Nicole Richards



Map, Trenton (c) Lee Thomas



Snapping, Baysville (c) Casey Cook



Snapping, Woodstock (c) Chris Hampson



Snapping, Stouffville (c) Sarah Burrows



Painted, Carlisle (c) Cindy Sawchuk



Map, Maberly (c) Pat Grace

Mohawk and Ojibway FrogCall CD's Available

Ohen:ton Karihwatehkwen Mohawk Thanksgiving Address

We turn our minds to all Aquatic life in the water. The frog is vital to maintaining balance in the ecosystem and therefore important to Onkwehonkwe life. The frog informs us of changes in environment and teaches us about the medicines with his penchant for knowledge and healing. We are grateful for these qualities and give thanks. Now our minds are one.



Turtle Island Conservation

Toronto Zoo's Turtle Island Conservation programme is pleased to announce that the **Ontario Frog and Toad Calls** CD in Mohawk and Ojibway have been recorded and are ready to be sent to schools and communities. The Turtle Island Conservation team has had the opportunity to visit several First Nations communities; nearly 90 percent of those communities have language initiatives in which our translated curriculum resources will be used. To receive Turtle Island Conservation Resources please email us at: turtleisland@torontozoo.ca

An opportunity to learn about turtles!



The Adopt-A-Pond team at the Toronto Zoo is inviting local area schools and summer camps to take part in our free **Urban Turtle Education Program**. This is an opportunity for children of all ages to learn about the importance of wetlands, Ontario species-at-risk, water conservation, and about what they can do to help protect urban turtles.

**If you are a teacher or summer
camp organizer and think that our
program would benefit your
curriculum**

please contact us at

aap@torontozoo.ca / 416-392-5999

Reminder: Please submit all turtle sightings to Ontario Turtle Tally at

<http://www.torontozoo.com/adoptapond/TurtleTally.asp>

And keep listening for frogs to participate in FrogWatch Ontario at

<http://www.torontozoo.com/adoptapond/FrogwatchOntario.asp>

Reptile at Risk Program

By: Joe Crowley

Many of Ontario's reptile species have declined rapidly over the past century and as a result 17 of Ontario's 25 species are now listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Special Concern, Threatened, or Endangered. In addition to population declines, many of Ontario's reptiles have been wiped out of large expanses of their historic distribution. For example, the Massasauga rattlesnake was once found throughout much of southern Ontario but is now restricted to Georgian Bay, the tip of the Bruce Peninsula, and two small, unstable populations in southern Ontario.



© Joe Crowley, Eastern massasauga rattlesnake

Habitat loss and fragmentation have been identified as leading causes of reptile decline, both globally and provincially. Roads, which are never more than a kilometer or two from any point in southern Ontario, contribute to the decline of many species as they cause unsustainably high rates of mortality and fragment populations. Illegal collection for the pet trade and human persecution, largely resulting from a lack of information, also contributes to population declines. These threats are most serious in southern Ontario, where reptile diversity and human population density are both highest.

Such rapid and widespread decline indicates an urgent need to protect and monitor remaining populations. However, one of the major challenges in reptile conservation is identifying the location and status of

populations throughout Ontario. Many species of reptiles are very cryptic and are not commonly seen unless they are being actively surveyed for. Additionally, reptiles do not receive the same level of public attention as many other taxa and are rarely searched for or reported. Consequently, there is a large knowledge gap regarding the current distribution and local abundance of many species of reptiles throughout Ontario. The Natural Heritage Information Centre, part of the Biodiversity section of the Ministry of Natural Resources, tracks observations of rare species throughout Ontario. Even with this centralized database, a single historic observation from 20 to 30 years ago may be all the information that is available for many populations.

In response to this need to identify and monitor reptile populations, Ontario Nature (formerly the Federation of Ontario Naturalists) initiated a Reptiles-at-Risk program to document reptile populations and to map reptile habitat in and around their six Nature Reserves in Grey and Bruce counties. The data collected during this project will be used to manage the nature reserves for these species at risk and help to identify population occurrences and connectivity across the landscape. Furthermore, the information collected will tie into Ontario Nature's Greenway planning initiative in the Grey/Bruce region. The project also includes a stewardship and education component to encourage local individual participation in reptile conservation.

Everyone in Ontario has the opportunity to play a role in reptile conservation. You can manage your property to provide habitat for rare reptiles, encourage local conservation projects, share your knowledge and appreciation for reptiles to help to reduce unnecessary aggression toward these species, and report observations of rare reptiles in your area. Observations are best accompanied by a photograph and can be submitted to the Natural Heritage Information Centre at:

http://nhic.mnr.gov.on.ca/MNR/nhic/species/species_report.cfm

Turtle observations are submitted to the Ontario TurtleTally: <http://www.torontozoo.com/adoptapond/TurtleTally.asp>

Gravel, Gravel, Everywhere, nor any Place to Nest; Providing artificial nest habitat for urban turtles

By: Nicole Richards

The loss of important habitat, such as nesting beaches, is threatening turtle populations in the Toronto region and other urbanized spaces. Areas that are heavily traveled become compacted and unusable for turtles. Development creates erosion, and sediment can ultimately be washed downstream and deposited on beaches that would otherwise have been used by turtles to nest. In addition, with increasing development and the increase in paved and compacted surfaces, storms can cause greater flows that can wash beaches away. When females begin to nest in June they often have to travel great distances looking for appropriate habitat because their traditional nesting sites are no longer present or suitable. Unfortunately, the further they have to travel the greater the risk of injury as they may cross roads or be exposed to predators.



© Nicole Richards, nest excavation

Creating artificial nest-beaches could help to ensure that habitat is available for breeding turtles. However, this can't be done haphazardly. No one knows exactly what a female turtle is looking for when she chooses a

nest-site, but it is likely that it is based on factors such as soil temperature and moisture. That means that just putting some dirt on the ground may not be useful in attracting females to a site. In fact, getting the substrate wrong may even be dangerous. If an artificial beach is created that does attract females, but doesn't meet the needs of an incubating clutch, that nest-site may become a population sink.

This is why Toronto Zoo and York University have partnered to characterize nesting sites within Eastern Toronto. As part of my master's research I hope to determine what attributes are selected for by female turtles when they choose a nesting site. I'm examining characteristics such as sediment grain size, temperature, moisture, and slope of beaches.



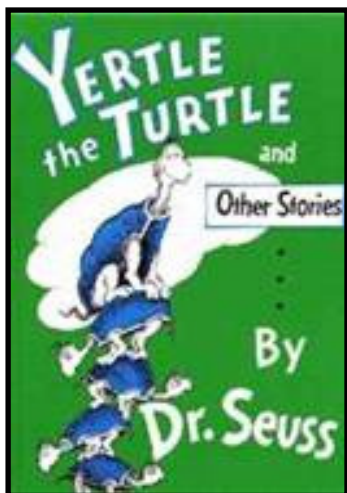
© Nicole Richards, nesting snapping turtle

We have also worked in collaboration with Niagara College where two nest-sites have already been constructed for snapping turtles. The Niagara College nest-sites are being monitored by students of the Environmental Technician Program and two nests were laid at this site in the first year after construction.

My research aim is to be able to determine what "defines" a successful turtle beach for our Toronto turtles. Once we have this information we should be better equipped to construct appropriate artificial nest-sites that will not only attract female turtles, but also ensure that their eggs have a good home in which to develop.

Ribbit's Review – Yertle the Turtle

Written by Dr. Seuss
Published by Random House Books
Reviewed by Mary Kate Whibbs



Yertle the Turtle is a story that rings true for children and adults alike. It is a cautionary tale against using others for one's personal gain.

Yertle, the king of the turtles, is unsatisfied with his throne overlooking the pond and seeks higher ground, "I am the ruler of all that I see. But I don't see enough, that's the problem with me." In order to achieve his lofty goals, Yertle commands his fellow turtles to create a tall stack from which he is able to see far and wide. It's not long before the turtles at the bottom of the pile become tired and unhappy. Ignoring the respectful complaints of a 'plain little turtle' named Mack, Yertle calls even more turtles to his tower, each one adding more weight to Mack's weary back. Finally, Mack could no longer take the pressure, "And that plain little Mack did a plain little thing. He burped! And his burp shook the throne of the king!" With that simple action, Yertle is tossed from his perch.

Many messages lie within the rhyming cadence of this story. Yertle sees Mack as, "Just a part of his throne" but it is this small character that leads to his ultimate undoing. It shows that even the smallest, seemingly insignificant action can have a resounding effect. And finally, the idea of not 'stepping' on others to get ahead in life is an important lesson at any age.

Published: April 12, 1958; **Published by:** Random House Books
ISBN: 9780394900872; **Cover Price:** \$22.99

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Amphibian Voice is distributed to schools and communities participating in the Adopt-A-Pond programme. The purpose of this newsletter is to provide information on amphibian, turtle and wetland conservation issues and efforts in Ontario.

Send in your stories, drawings and photographs to the address below and we will "hoppily" include them in future issues.

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We welcome support of our programme! Please make cheques payable to "Toronto Zoo" and send them to the following address. Thank you!

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