FALL 2019

Wildlife Preservation Canada

RECOVERY ▪ CONSERVATION ▪ KNOWLEDGE

ON THE EDGE

Western painted turtle
Chrysemys picta bellii
Endangered on the Pacific Coast of Canada
Photo: Rob Hamm

In This Issue:

Updates from the field

Letter from Lance

Expanding our impact across Canada

Fall ends the field season for our endangered species recovery programs, and the examination of the year's achievements and planning for 2020 begins. While it is a bit of a challenge to single out the successes we have had in 2019, there have been many highlights.

- Oregon spotted frogs and western painted turtles were released in near-record numbers to bolster their wild populations in British Columbia's Fraser Valley.
- The Taylor's checkerspot butterfly breeding program was re-established, and a new population discovered on Vancouver Island gives hope for this butterfly's survival.
- A pair of eastern loggerhead shrikes nested in Quebec this year, which is the first we have seen since 2010. One of the birds in this pair was released by our program in Ontario, evidence the program is having an impact across provinces.
- The protection of the eastern massasauga rattlesnake in Ojibway focused on developing reintroduction methods that can be used for this and other at-risk species in Canada.
- Intensive bumble bee monitoring work in Ontario and Alberta turned up new records for threatened species, adding to what is already one of Canada's most extensive monitoring programs for this group of pollinators.

One of our greatest strengths is building on successes like these. Although threats to wildlife in Canada continue to increase, we are responding. Thanks to the generosity of our donors we have been able to invest in our existing programs to allow us to accomplish even more this year and next.

Jane Hudecki has joined the loggerhead shrike team to increase our capacity in the conservation breeding program. With Jane's expertise we will be able to add conservation breeding partners to increase the number of young shrikes we are able to release each year to recover the eastern loggerhead shrike in Canada.

Reptiles and amphibians are one of the most threatened groups of animals. We have a long history working with threatened turtles, snakes and frogs, but we need to do more. Hannah McCurdy-Adams joined us to develop a comprehensive plan to expand our programs and ensure we are working with the species in greatest need that will most benefit from our experience.

Native pollinators like bumble bees and butterflies are critical components of our environment. Our native pollinator program is meeting that challenge as Tiffani Harrison joins our team, coordinating our growing bumble bee citizen science and research programs in Alberta.

The capacity added this year provides the groundwork to widen the scope of our conservation work in 2020. We will help more species and we have new conservation partnerships and projects planned for next year. Thank you to everyone within the Wildlife Preservation Canada team - dedicated staff and volunteers, generous donors, and valued partners - for making this possible.

Lance Woolaver Jr.

Dr. Lance Woolaver Jr.
Executive Director

Canada's New Noah

Noah turns the big 3-0!

By Eric Jolin

Each year Wildlife Preservation Canada selects a graduate student to embark on a 9-month training scholarship and I am lucky number 30! Designed to fill an educational gap, the program provides six months of training and field experience in conserving endangered species on the island of Mauritius, with support from the Mauritian Wildlife Foundation (MWF), National Parks and Conservation Services, and Durrell Wildlife Conservation Trust. This is followed by a trip to the somewhat chillier island of Jersey, Channel Islands, where I will participate in the Durrell Endangered Species Management course for another three months.

As I write, I am sitting on the veranda of our field station on Round Island, surrounded by about half a dozen Telfair's skinks, a cheeky endemic lizard that can easily grow over 30 centimetres long. Most are looking up at me expectantly, hoping I'll drop some of my snacks, while another is inching towards my toes with the same look in its eyes. A clothesline hung with sweat-stained field gear moves gently in the sea breeze next to me.

Below the veranda, a giant Aldabra tortoise has bulldozed his way under one of the Latania palms, avoiding the heat of a Mauritian winter. Soft cooing noises are starting to come from the wedge-tailed shearwaters nesting in burrows surrounding the field station, a sure sign that evening is on its way, while other seabirds wheel through the sky, returning from the ocean with stomachs full of tasty squid to regurgitate for their eager chicks. Looking out across the ocean, past the humpback whale breaching just off shore, the rugged mountain landscape of mainland Mauritius can be seen 22 kilometres to the southwest. Although a day of surveying up and down an inactive volcanic cone has left me bruised, covered in seeds, and utterly exhausted, I really could not ask for a better office.

Above: Cup o' tea anyone? An adult Telfair's skink investigating the field lunch. **Right:** A perfect way to end a tough day in the field. I'm looking forward to plenty more sunsets from Round Island.

A fully equipped field biologist, reporting for survey duty!

Since my arrival in Mauritius almost two months ago, my work with MWF's Island Restoration Project has swept me far outside of my Canadian herpetology comfort zone. Working as part of a small team on a remote island in the Indian Ocean, I have had to become a jack-of-all-trades conservationist. Sure, I've been able to sneak in some herp surveys, including a few for Round Island keel-scaled boas, but I've also been busy banding petrels and caring for some of the world's most endangered plant species.

That is what is so special about the Canada's New Noah program; it equips young biologists with the skills required to go out into the field and tackle any problem that might be thrown their way. I intend to bring these skills back home to Canada.

Since 1990, the Canada's New Noah program has given young biologists in Canada the opportunity of a lifetime. Each year, Wildlife Preservation Canada selects a graduate student from dozens of applicants across Canada for the single, coveted position on the tropical island of Mauritius in the western Indian Ocean. The program provides practical training and field experience in managing wildlife conservation programs and conserving endangered species. Eric Jolin was selected to be the 30th Canada's New Noah.

Fraser Valley Wetlands

School's out for the summer!

By Maja Hampson

Wait, what? Well, for the Oregon spotted frogs and western painted turtles that is. The recovery strategy for both these endangered species calls for conservation breeding and/or headstarting, each of which have their own milestones just like schooling.

Conservation breeding is pretty self explanatory. We take two frogs and make more frogs in a safe, controlled environment. But what does headstarting mean? When we do school presentations to very enthusiastic elementary school children (who love to yell their – often hilarious – answers and ask "questions" in the form of stories of that one time their brother saw a turtle) we explain that headstarting is a bit like putting the frogs and turtles through school.

What do frogs and turtles do in school, exactly?

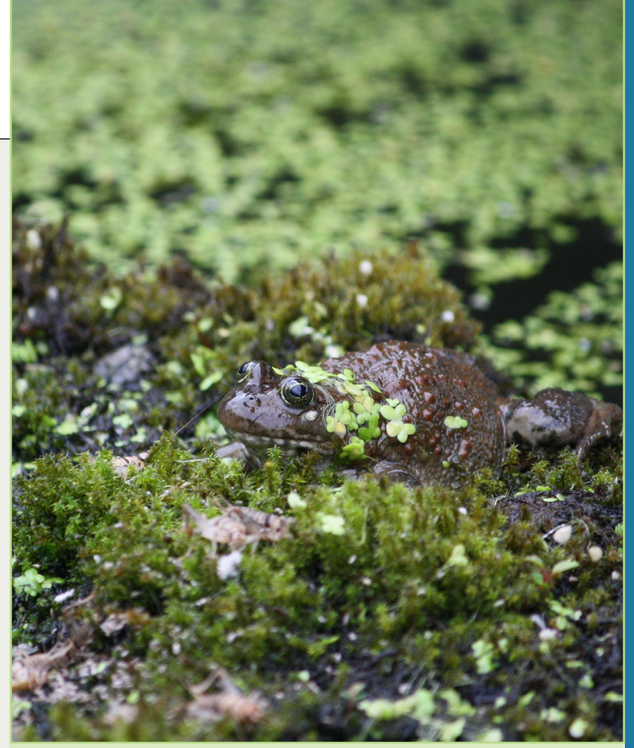
It depends on which second grader you ask, but the most common (and correct) answers I get are: swimming, jumping (in the case of frogs) and hunting. Oregon spotted frogs get about five months in frog school to grow to just four grams or bigger before release while turtles get one to two years to grow to 30 grams before being released. We keep any frogs and turtles too small to be released by the end of September for the winter. They need a bit longer in school to grow before they go back to the wild.

So why do we let school out in September?

Winter is on its way and we want to give our new graduates enough time to find suitable spots to hibernate. Frogs and turtles both need time to cool down with their environment as temperatures drop. During the winter, frogs and turtles can stay under water for months without having to come up for air. Then they wake up in the spring to truly begin their life in nature. We wish all our recent graduates the best of luck in the wild!

Some quick facts.

Since the programs began, 2,700 Oregon spotted frogs and 750 western painted turtles have "graduated". However some take longer than others. This year we kept 170 turtles and 135 frogs for the winter because they weren't quite big enough.



Above: This Oregon spotted frog is enjoying a cozy home during its five months at the Greater Vancouver Zoo. It will be released when it has grown large enough to survive in the wild.

Below: The turtle eggs that are incubated in the headstarting program are collected from the wild when mothers lay their eggs in dangerous locations. **Photo:** Stephanie Winton.

Left: The California condor only exists in the wild today because of a collaborative breeding effort in the 1980s. **Photo**: PJ Sells

Right: The black and white lemur is critically endangered due to habitat loss. Many zoos around the world are part of the Species Survival Plan for this lemur. **Photo:** Fredrik Stenström/Alamy

Species Recovery

Species survival needs all hands on deck

By Jessica Steiner

You make not think it, but some species exist only because of the efforts of aquariums and zoos.

To save it from extinction, the last remaining 27 California condors were taken into breeding facilities in the mid 1980s. It is only through this gallant effort that condors exist in the wild today. Other at-risk species, such as the Guam kingfisher, are still on the waiting list for their chance at reintroduction.

With the fate of a species at stake, coordination is vital between aquariums, zoos, and NGOs like Wildlife Preservation Canada. To ensure that all organizations caring for the same endangered species are working together, cooperative breeding programs called Species Survival Plans (SSP) are put in place. Worldwide there are currently 500+ Species Survival Programs. However, not all are for endangered species.

While it may seem easier to keep your entire breeding population at one location, it is better practice to spread breeding individuals across several facilities. Space limitations are one reason for this but prudent management is another – it is not wise to have "all your eggs in one basket" when you are working with all that may be left of a population.

Although each institution may have only a few individuals, the population is managed as a whole to maximize its genetic diversity. Comprehensive studbooks maintain detailed information on the lineages and reproductive history of every individual in the population. The studbooks are used to make breeding recommendations, even if it means shipping an animal across the country to find an appropriate mate. This type of cooperative management is critical to the health and sustainability of often very small populations.

In addition to overseeing population management within partner institutions, the SSP cooperatives also work to enhance conservation in the wild. Members participate in a variety of species conservation, research, husbandry and educational initiatives to promote and support field projects. Zoos bring expertise in husbandry, nutrition, behaviour, genetics, wildlife veterinary care and reproductive technologies which can greatly enhance recovery projects for other threatened and endangered species.

Wildlife Preservation Canada's Loggerhead Shrike Recovery program operates much like an SSP, but without the formal title.

With the value of zoos under constant public scrutiny, it may be time to re-examine which species are given precious space and attention. The hope is that we can find ways to increase capacity in zoos for species facing extinction in the wild, and use the strengths of SSPs to ensure that species like the Guam kingfisher aren't in the waiting line for too long.

The shrike team practicing their spotting skills at the Napanee alvar.

Eastern Loggerhead Shrike

Initiation to shrike season

By Jane Hudecki

This spring I joined Wildlife Preservation Canada's Eastern Loggerhead Shrike Recovery Program as Shrike Conservation Breeding Coordinator. Having worked at a wildlife rehabilitation centre for a few years, I was familiar with bird handling and husbandry, but had worked with precious few of these endangered songbirds and wasn't at all aware of what I was getting myself into.

The field season was upon me before I knew it, and all of a sudden my cozy desk work turned into a blur of banding, medicating, radio-tagging, and generally putting out fires— a routine and expected part of fieldwork. Under the mentorship of Hazel Wheeler, the lead biologist for the program, my on-the-job training was extensive and all-encompassing.

The month of June was spent banding all the new (and indignant) fledglings at our Ontario partner breeding facilities at African Lion Safari, Mountsberg Raptor Centre, and the Toronto Zoo, making plans for their transfer to one of our release sites, from which they would eventually be set free to increase the wild population.

It was a thrilling experience to handle and band my first shrike - even when young, their bites pack a punch! Each released fledgling holds the promise of eventually raising young themselves, a step towards the recovery of this species in Canada. Keeping that in mind made me lovingly appreciate every single nick on the hand!

July and August passed in an exhausting but exhilarating blur while we transferred, processed and eventually released the fledglings at our two Ontario field sites. During the flurry of activity it was difficult to appreciate the magic of what the recovery team was accomplishing. It was only after witnessing my first release in late August that the gravity of what we were doing hit me.

Release mornings follow a fairly standard protocol. The team will open field enclosure release doors in the early morning, then spend up to an hour quietly and carefully observing the birds' first hesitant hops outside.

It was about fifteen minutes into one of our last August releases that the first young loggerhead shrike of the group left the enclosure. He hopped onto a nearby branch, stayed there for a minute or two, then quickly and decisively took flight.

Seeing a bird take to the sky for the first time— without a wire enclosure over his head— was strangely saddening and overwhelmingly hopeful at the same time. Though that young shrike has to face the same harsh threats as its wild counterparts, he's been given a chance to taste freedom, to explore the open alvar grasslands, and with any luck, to help bring his species back from the brink in Ontario.

Some quick facts.

This year we released 64 juveniles from our 5 breeding facilities in Ontario and the United States. To date, we have released over 1,300 captive-bred shrikes into the wild.

Jane holds a captive-bred shrike to take body measurements before release. It takes training and a high pain threshold to work with these feisty birds.

A Matter of Fact

Put a ring on it

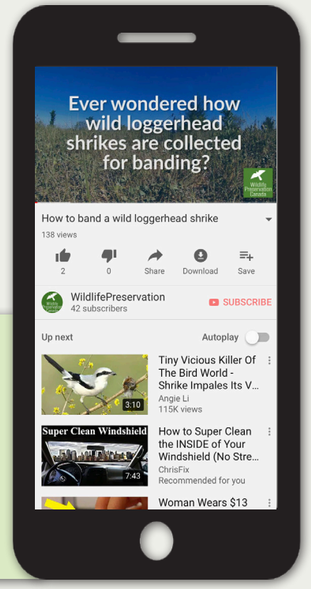
Everything about shrike banding is finicky.

They can crush aluminum leg bands with their strong beaks, so instead they receive strong and sturdy bands made out of stainless steel, which are much more challenging to close. Suffice it to say that by the end of the season, our forearms and grip strength are much improved.

Shrike leg widths also vary depending on the individual, so a lot of time is spent carefully gaging leg widths to the nearest fraction of a millimetre to ensure that we apply the right sized stainless steel bands. An improperly sized band risks injury to the bird, so we take the utmost care to ensure that we would do no harm to these precious young shrikes.

In addition to carefully assessing leg widths, we take the time to measure many other things, like each young bird's tail length, wing cord (length of a bird's wrist to wing tip), fat and muscle scores. We take each measurement quickly, accurately, carefully, and quite often while the bird is trying to take a chunk out of our fingers.

Thankfully, a wily bird is a strong bird, so the noise and bites are a welcome indicator that our young are ready to face the challenges of life in the wild.



Watch the shrike team in action as they measure, band, and release these endangered songbirds.

Visit the *Wildlife Preservation Canada* YouTube channel.

Native Pollinator Initiative

Cogs of the colony

By Tiffani Harrison

We see bumble bees from early spring to fall, from public greenspaces to our own backyards, but do we really know our bumbles?

Native bumble bees are distinct from managed honey bees, which were introduced to North America in the 1600s. There are roughly 45 native bumble bee species in Canada, many of which are rapidly declining. Some have disappeared completely.

Bumble bees are social bees and live together in a colony, taking on different roles. From queen to workers to males and new generation queens, they are all important cogs in the operation of a successful colony.

Queens

Let's start with the leading lady! Bumble bee queens emerge from hibernation in early spring and begin to forage, searching for a safe place to build a nest. Queens exhibit a zig-zag flight pattern, typically closer to the ground and avoiding flowers. Once she finds her special spot, she'll begin collecting pollen to later feed her developing brood. (Note: If you follow her back to her nest, you can report a sighting on Bumble Bee Watch!)

Having mated the summer prior, her first brood will be female workers. Once this brood reaches maturity in 4-5 weeks, capable of taking on colony responsibilities, the queen will no longer leave the nest and focus instead on continuing to reproduce.

A comparison of a tri-coloured bumble bee queen (left) and male (right). The size difference is quite easy to see even when they are buzzing around in the field.

Workers

Workers are integral to the success of a colony and take on a variety of roles. Throughout the summer, you'll see flowers flooded with smaller bumble bees taking over most of the daily tasks previously done by the queen - foraging, nest "housekeeping" and egg incubation. A worker or two may act as guard bees and there are records of "fan" workers, acting as an AC unit to keep the nest cool! Talk about busy bees!

Males

In the late summer, the queen lays unfertilized eggs, which become our male bumble bees whose main goal is to mate with the new generation queens of the same species from other colonies. Males are extremely fuzzy and without stingers, often seen lazing on flowers or flying around searching for queens. You may also find them in the early morning underneath flowers or leaves or clinging to stems.

New generation queens (gynes)

The last job of the queen is to produce her successors, who will be responsible for the next generation. Gynes may remain in the nest after maturity and will outlive the colony, including the original queen. Although this will be the end of her colony, it's just the beginning for her! A gyne will find a safe place to overwinter, typically right in the ground. In the spring, she will re-emerge and start the cycle all over again.

There you have it, the cogs of the colony, each with their own role and adaptations to help them be a part of the team.

Left: A newly emerged yellow-banded bumble bee queen is enjoying the first willow blooms of spring.

Right: A yellow bumble bee worker feeding on aster. Note how the worker has a slimmer body than the queen.

H. Alec B. Monro Award

Celebrating excellence in conservation

This year we celebrate the launch of the H. Alec B. Monro Award for Conservation Excellence. The award will be given annually to a Canadian in the conservation community who demonstrates a passion for and commitment to saving endangered animals in Canada.

Wildlife Preservation Canada is pleased to announce Karsten Heuer as the 2019 recipient. Karsten, an alumni of the University of Calgary, first got his taste for the outdoors during seasonal work as a wildlife biologist with Parks Canada, and he's never looked back.

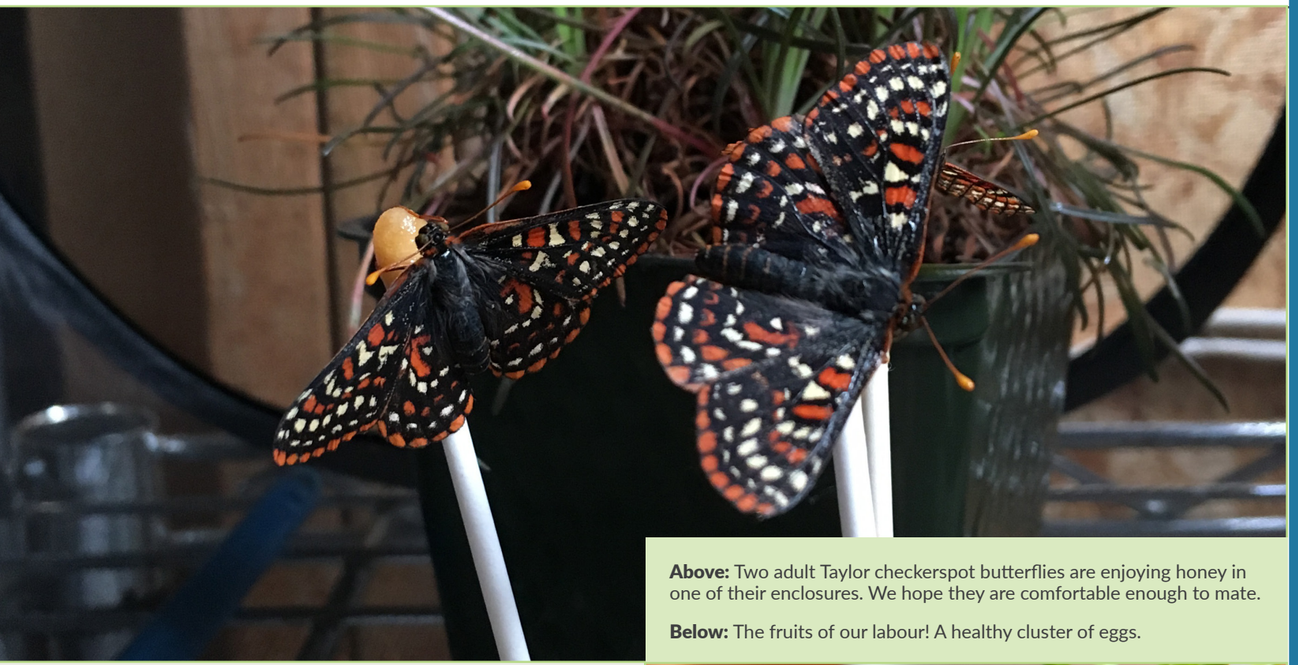
A talented author, teacher, and research scientist, Karsten became a well-known name in 2005, when he and his wife Leanne Allison produced the film 'Being Caribou'. This film documented their five-month journey following the migration of the Porcupine caribou herd in the Yukon. The purpose of their 1,500km trek on foot was to raise awareness of the threats to the caribou's survival. 'Being Caribou' has won over 20 awards and continues to inform the public of the challenges faced by migrating species.

Karsten's journey with 120,000 caribou wasn't his first time making a long distance trek. In 1998, Karsten hiked, skied, and canoed 3,400km from Yellowstone National Park to Watson Lake in the Yukon to raise awareness for cross-border threats to wildlife. This Y2Y trek, as it's called, is no small feat, and Karsten later became the President of the Y2Y Conservation Initiative.

Karsten is currently leading the Bison Reintroduction Program for Parks Canada in Banff National Park.

Twenty-five years after first becoming a park warden, Karsten continues to wear many hats, one of which is the Bison Reintroduction Project Manager at Banff National Park. The plains bison is threatened in Canada and populations are fragmented and declining. One year after the release of bison in Banff, the herd appears to be thriving. Bison were extirpated from Banff for over 140 years and the work by Karsten and his colleagues ensures that Canada's wildlife and species, whether big or small, remain part of the landscape for generations to come.

The award fund was established by Wildlife Preservation Canada to honour Past President Alec Monro. "I am happy to be part of an initiative to recognize experienced wildlife preservers, who represent the next important stage after our long standing New Noah program"



Above: Two adult Taylor checkerspot butterflies are enjoying honey in one of their enclosures. We hope they are comfortable enough to mate.

Below: The fruits of our labour! A healthy cluster of eggs.

Native Pollinator Initiative

I go I know not whither, to fetch I know not what

By Maja Hampson

The title is that of a Russian fairytale that refers to a poorly defined or impossible task. It's been a common theme for me to wax poetic about Taylor's checkerspot butterflies this year – so why stop now! These endangered butterflies have been a source of both intense stress and elation for the pollinator team in British Columbia.

Our mission was to breed Taylor's checkerspot butterflies in the lab at the Greater Vancouver Zoo, to add to the disappearing wild population. After a disappointing 2018 breeding season, our Endangered Species Technician, Michelle, was deployed out to the field this spring to collect eggs from wild females from the new population of butterflies discovered on Vancouver Island last year.

Neither Michelle nor I had seen checkerspot butterfly eggs laid in the wild, but I reassured her, "You'll know it's happening when you see it." Thus the 2019 Taylor's checkerspot breeding began!

And we were successful! We obtained several hundred eggs from the wild and from our captive breeding stock. We may have been uneasy before we saw the first checkerspot eggs, but sure feel confident about them now.

Along with the precious eggs, we have acquired an abundance of information on the new population, refined breeding techniques and a developed a better understanding of checkerspot eggs and pre-diapause larvae that are active briefly before winter.

Maybe it goes to show that impossible tasks can be possible. Does that make Michelle and I fairy tale heroes? Probably not, but knowing that we are doing everything we can to ensure this butterfly does not disappear makes me feel like one.

Some quick facts.

We have 911 caterpillars safely tucked away, hibernating until next February.

Ojibway Prairie Reptile Recovery

Release sites under scrutiny!

By Jennifer Barden and Jonathan Choquette

The primary goal of the Ojibway Prairie Reptile Recovery (OPRREC) program is to recover the Ojibway Prairie population of eastern massasauga rattlesnakes – a genetically, ecologically and geographically distinct Canadian population of this endangered species. Our long-term goal involves many components including the use of translocations with conservation-bred animals. These types of translocations have been attempted with massasaugas, however, successful techniques are lacking. Also, high overwinter mortality has limited the success of previous translocations.

To increase our chances of success, careful planning and study must be employed to identify and select release sites which include suitable overwintering habitat. Our four-year-long hibernation habitat study has provided us with the data to do just that, and we are now moving on to the next phase of the project: release site evaluation.

Rattlesnakes at the Ojibway Prairie hibernate in small mammal or crayfish burrows, which can be composed of multiple subterranean tubes and chambers. Suitable burrows allow snakes to descend deep enough to escape freezing temperatures and access moist soils near the water table. Our hibernation habitat study provided the groundwater and frost depth data needed to identify suitable release sites for massasaugas. To increase confidence in our results, however, we must demonstrate that snakes can in fact survive hibernation at these sites. To do so in a controlled manner, we developed and installed artificial hibernacula, following proven designs tested by other researchers. These are basically simplified plastic versions of the crayfish burrows that snakes naturally use to hibernate, except that they are capped to prevent snake escape and predator entry. The long tubes with multiple chambers are inserted into the ground at our release sites and can be removed as required. This will allow us to "intentionally" hibernate snakes at our release sites over winter. Though we are very excited to eventually release massasaugas back to the prairie, we must first evaluate our release sites using a non-endangered species: the eastern gartersnake.

This fall the OPRREC team has been searching for eastern gartersnakes, a common species locally and across Ontario. This has been a race against time, because snakes have already started to travel to their natural hibernation sites and our snake encounter rates have been declining. We are aiming to gather thirty-six gartersnakes to provide a large enough sample size to evaluate our release sites, which has involved frantic flipping of every cover object we have access to within our survey areas.

Eastern gartersnakes were chosen as the non-endangered surrogate species because many studies have shown they hibernate communally with massasaugas, and therefore we presume they share similar hibernation requirements. Following our permits and animal utilization protocols, the captured gartersnakes will be temporarily housed in a "snake hotel" at our partner facility, and will be well taken care of prior to hibernation.

The team is quite excited to be embarking on this important next step toward recovering Ojibway Prairie massasaugas. Stay tuned for future progress updates and thank you for all your support!

Left: Three young eastern gartersnakes coiled together in their temporary home away from home.
Right: One of our "Snake Hotels", which temporarily houses eastern gartersnakes prior to hibernation at our release sites.

I hope that, in a small way, I am interesting people in animal life and in conservation. If I accomplish this I will consider that I have achieved something worth while.

~Gerald Durrell

Established in 1985, Wildlife Preservation Canada is a non-profit charitable organization dedicated to saving critically endangered wildlife species from extinction.

Wildlife Preservation Canada
RECOVERY ▪ CONSERVATION ▪ KNOWLEDGE

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