Newsletter of the Adopt-A-Pond Wetland Conservation Programme, Sponsored by Banrock Station Wetlands Foundation Canada

www.torontozoo.com/adoptapond

Amphibian Voice

Vol.14 No.3 ISSN 1705-8228 Fall 2004

TURTLES IN TROUBLE

Wood Turtle TLC at Kawartha Turtle Trauma Centre

By: Dr. Kristy Hiltz, Executive Director, Kawartha Turtle Trauma Centre

When Chelsea set out across the highway after depositing her eggs, she had no idea she was embarking on a journey that would take her halfway across the country.

Chelsea is a wood turtle, one of the several turtle species at risk in Canada. As she crossed the road in New Brunswick, she was struck and badly injured by a motor vehicle. Chelsea was rescued by Tara Jenkins and was taken to a local veterinarian for treatment. Unfortunately Chelsea developed complications, and when it became apparent that she was going to need intensive and long term treatment, Tara called the Kawartha Turtle Trauma Centre (KTTC) in Peterborough, Ontario. Government officials from both provinces scrambled to prepare all the permits needed to transport a species at risk, and days later, Chelsea hitched a ride with a woman returning from a vacation in New Brunswick.

Chelsea the wood turtle recovering at the Kawartha Turtle Trauma Centre. Photo by: Kristy Hiltz

When Chelsea was admitted to the KTTC, the back of her carapace had been badly damaged. Two large shell fragments were necrotic (dead) and had to be removed. Chelsea was not walking well and it was initially feared she had suffered from nerve damage. But with her treatment, Chelsea improved every day. She is now walking and swimming actively, especially when she is fed an earthworm, her favorite treat. Wood turtles are known to stamp on their ground with their feet to mimic raindrops, so that earthworms will come to the surface and become their next meal.

Chelsea has become a favorite with the volunteers at the KTTC. With her beautifully patterned and scalloped shell, brilliant orange colouring, and gentle nature, it is easy to understand why these turtles are so popular in the pet trade. Unfortunately, indiscriminate collection of wood turtles for the pet trade has led to catastrophic population declines in many areas. With the added pressures of habitat loss and fragmentation, road mortality and predation, there is a great concern about the survival of this species in Canada and many American states.

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Researchers are also very concerned about the impact of "off-road" vehicles in Ontario's natural spaces. ATV's, SUV's and other vehicles are an enormous threat to slow moving reptiles and other animals. One graduate student reported a very distressing incident where she watched helplessly as an off-road vehicle drove back and forth in a stream where she was tracking one of her turtles, which had a radio transmitter attached to its carapace. The transmitter was found later lying on the stream bottom. The turtle was never found.

In Ontario, only three populations of wood turtles remain, and one of these populations will be extinct within the next 50 years unless drastic measures are taken. Last year the Ministry of Natural Resources, in collaboration with the Wood Turtle Recovery Team, decided to try artificially incubating eggs and then raising the hatchlings until they were large enough to survive in the wild (headstarting). The wood turtle juveniles are being raised at the KTTC, and another

A wood turtle juvenile from last year's headstart batch seen beside a wood turtle from this year's group. Photo: Kristy Hiltz

group of hatchlings is expected to arrive shortly.

Biologists are doing their part to help this and other species at risk, but you can help too! Simply by respecting these creatures and their habitat, you can help protect turtles so that future generations can appreciate a species that has been around for 200 million years.

Editor's Note – The Kawartha Turtle Trauma Centre is a registered Canadian charity that treats injured native turtles, and promotes turtle conservation in Ontario. For more information on the Kawartha Turtle Trauma Centre, and how you can help, check out their website at www.kawarthaturtle.org**.**

TURTLE S.H.E.L.L TORTUE: 2004 Update

By: Bill Bower, Turtle S.H.E.L.L. Tortue

Turtle S.H.E.L.L. Tortue is now well into its fourth year of operation, and the turtle center continues to take in injured turtles. In 2003/2004 52 turtles were brought in to the centre located in Rockland, Ontario. These turtles were delivered in weakened or dehydrated conditions or because they were injured through encounters with motor vehicles or bicycles. All 52 patients recovered to the point where they were safely released back into the wild. The species turned in, treated and subsequently released included painted, snapping and map turtles.

We are especially proud of MINI the map turtle who, after receiving extensive surgery, was released back into her habitat.

Mini the map turtle receiving much needed medical attention. Photos: Michele St. Cyr

Interest in installing bilingual turtle crossing signs has continued to grow, and the total number in place along or roadways now stands at 250. Many of the sign posts now have a second sign (a tab) just below the turtle crossing sign, which indicates to drivers the distance ahead where turtles could be crossing.

Bill Bower releasing Mini back into her natural habitat.

Turtle S.H.E.L.L. Tortue encourages the inclusion of tabs where feasible. Recent installations sponsored by our organization include 10 in Cornwall, 10 in Tay Valley, 4 in Lennox Addington, 20 in Renfew and 2 more in Prescott-Russell.

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In addition, those readers who may be visiting either Rondeau or Bon Echo Provincial Parks will see the yellow and black crossing signs on park roads.

Anyone wishing to have a 6" by 6" (15cm by 15cm) plastic replica of the road sign can contact Turtle S.H.E.L.L. Tortue for more information.

In an effort to assist other clubs with turtle crossing sign installation initiatives, Turtle S.H.E.L.L has updated the standard crossing sign guidelines and has provided, along with the documents, samples of possible presentations to those interested. This information helps clubs obtain the necessary permission from the appropriate authorities and aids in the proper sign installation process.

Using grant monies received from the Ontario Trillium Foundation, we placed a great deal of emphasis on education programs in 2004. The latest version of the bilingual education booklet has now been delivered to 175 schools in Ottawa. Turtle S.H.E.L.L. has also produced 250 mini CDs in both official languages. Each CD includes the latest version of the education booklet "Let's Talk Turtles", educational games for children, as well as other information of interest.

On March 26, 2004, a one-day workshop on *the Conservation of Turtles in Eastern Ontario* was held at Sam Jakes Inn in Merrickville, Ontario. This workshop was organized by the Eastern Ontario Biodiversity Museum in partnership with Seburn Ecological Services. Many topics were discussed, with emphasis being placed on conservation needs for turtles in this region. Representatives from Turtle S.H.E.L.L. Tortue were present and addressed those gathered to inform them of our various accomplishments to date and plans for the future.

The 4th Annual Turtle Day was held at Petrie Island on June 20th, and both young and old alike had the opportunity to view turtles up close. This event is held each year in conjuction with the Friends of Petrie Island. The weather cooperated and several hundred people dropped by to view exhibits and to learn more about the turtles of Ontario. Herptologists from Turtle S.H.E.L.L. were on hand to answer the many questions posed by visitors.

Turtle S.H.E.L.L. Tortue appreciates all the help received by the public and especially from those who have taken the time to call with their observations of turtles crossing roads and for arranging to bring injured turtles to the rehabilitation centre. Although most turtles cross the road in the spring, during nesting season, turtles on roads is also a problem in the fall as the turtles travel to their hibernation sites.

Editor's Note – for more information on Turtle S.H.E.L.L. Tortue please visit their website at www.turtleshelltortue.org ***or phone 1-613-446-9927.***

Eastern Spiny Softshell 101

By: Scott Gillingwater, Species at Risk Biologist, Upper Thames River Conservation Authority

If you were asked to describe a turtle, what would you say? Would you describe it as very fast on land, with a soft, leathery shell and a long slender nose? In most cases no, but in the case of Canada's spiny softshell turtle it makes perfect sense.

The spiny softshell is the exception to the rule when it comes to Canada's freshwater turtles. With a flexible, leathery shell and large webbed feet this turtle can move rapidly across a nesting beach or effortlessly through its aquatic environment. When on land, the fleshy feet resemble more of a flipper than a foot, but quickly expand against the force of water to reveal large paddle-like feet.

Males attain a shell length of approximately 20 cm, but are less than half the size of females. Male spiny softshells retain their juvenile pattern of black-bordered circles over a dark green to olive background, whereas females develop a "camouflage" pattern of greens and browns. Upon hatching, both sexes exhibit a somewhat similar shell pattern but as the female grows, difference in size, pattern and coloration become very apparent.

Softshells have a very long neck, approximately ¾ the length of their upper shell. With its neck extended, the softshell can remain hidden in shallow water and sand, with only its long, tubular snout visible above the surface of the water. Fleshy lips surround the sharp bony plate of the mouth, which is used to grip and crush prey in order to deter predators with a powerful bite.

The spiny softshell turtle gets its name from both its flexible shell as well as the row of spines along the front edge of the shell. These spines are small, pointed, rubbery tubercles, most obvious on adult females.

Softshells spend the majority of their life in water, coming out only to bask, and in the case of females, to deposit eggs on land. Softshell turtles eat a wide variety of food including crayfish, fish, amphibians, invertebrates, snails, carrion and small amounts of aquatic vegetation. Although not commonly

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observed, this species will scavenge dead fish alongside snapping and painted turtles.

Like all reptiles, turtles regulate their body temperature by using the surrounding environment. Turtles depend on the air and water temperatures to aid in temperature control. To properly conduct everyday activities and bodily functions during the active season, the turtle's body temperature must increase to an acceptable level. Turtles can alter, or maintain, body temperature by varying exposure to the sun, shade and/or water. The turtle may bask out of water, at the surface, or buried in the sand in shallow water.

Despite the limited protection of the shell, softshells remain well guarded. Softshells can be aggressive when out of water and may bite in self-defense. Within minutes of hatching, some young may already attempt to bite. To avoid dangerous situations, softshells rely on a keen sense of sight and smell, as well as short bursts of speed. Once in the water, this species will either swim rapidly away from danger, resurfacing many meters away, or will bury into the substrate below the water to avoid detection.

As with all reptiles in cooler temperatures, the softshell must hibernate in order to survive the winter months. Softshells rely on environmental cues to prepare for hibernation, including shorter days, and a decrease in water and air temperatures. Cold temperatures prevent reptiles from conducting regular activity, feeding and digestion of food. During this period of inactivity the animal must depend on fat stores, accumulated during the active season, for survival. Softshells hibernate in water, usually in relatively deep pools in rivers or lakes. As both the water and air temperatures begin to rise in April, softshells become more alert, their heart rate increases and oxygen intake slowly returns back to normal.

From the top: A spiny softshell turtle with a transmitter for tracking, a softshell travelling in the sand and a parent with its juvenile turtle.
Photos: Scott Gillingwater

The spiny softshell is found mainly in river and lake habitats in Canada, but may also be found in lake and marsh areas, streams and oxbows. Areas with mudflats, sandbars, soft substrates, aquatic vegetation and basking areas are preferred. Nesting habitat consists of sand beaches and gravel bars.

In Canada, the softshell turtle exists only in southern Ontario and southern Quebec. Of these two areas, Ontario maintains the majority of the population. Although the softshell turtle still exists in these locations, the populations are generally very small and isolated, with many locations being represented by only a few remaining turtles.

As with many turtle species worldwide, populations of the spiny softshell turtle are under considerable stress. Here in Canada, the main threats to the spiny softshell are those that affect the turtle's habitat and reproductive success. Unfortunately for the softshell, suitable habitat is vanishing quickly. Human disturbance, habitat destruction and fragmentation, pollution, increase rates of depredation (being eaten by other animals) and capture or killings by humans have all contributed to their decline. Turtles are long-lived animals with a late age of maturity and a low juvenile recruitment rate - an evolutionary adaptation that has been successful for millions of years. Unfortunately turtles have been unable to adapt quickly enough to the increasing human-influenced threats.

Southern Ontario contains the largest diversity and highest concentrations of turtles in Canada. Unfortunately, this region also contains the highest concentration of people and a significant amount of agriculture. Today roads bisect almost every

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remaining large natural area in southwestern Ontario, as well as many sites further north. Shoreline development and agriculture along rivers and lakes has limited basking and nesting opportunities for turtles.

Since 1994, a small team of researchers has brought the plight of these turtles to the public's attention through research, education and awareness. Many adult softshells have been marked, hundreds of nests have been protected, and thousands of hatchlings have been released into the wild. Through public support and stewardship, along with continued research and protection, the potential for recovery can be realized. When compared to many bird and mammal species, research and funding opportunities have been very limited for reptiles. Public perception and acceptance greatly influences the funding potential for reptile research. This trend continues to pose a constant struggle for biologists and recovery teams dedicated to the preservation of reptiles in Canada.

The Ministry of Natural Resources operates Ontario's Natural Heritage Information Centre, a centre responsible for the assembly and maintenance of information on species at risk. You can submit softshell sightings to the NHIC website at: http://www.mnr.gov.on.ca/MNR/nhic/nhic.html or Toronto Zoo's Turtle Tally at: www.torontozoo.com/adoptapond/TurtleTally.asp

If you would like to learn more, please contact:
Scott Gillingwater, Species at Risk Biologist
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Editor's Note – Scott is also the chair of the Eastern Spiny Softshell Recovery Team

Leatherback Sea Turtles: The Largest Living Reptile?

By: Kathleen Martin, Director of the Nova Scotia Leatherback Turtle Working Group

The first time I saw a live leatherback sea turtle was shortly after midnight on a beach in Trinidad. Beyond the sand was easily 50 meters of dense, roiling white surf. We walked intently scanning the edge of the beach. Suddenly, as the waves took a breath and receded, there was a hulking dark mass slowly pulling its way up the sand. I had the feeling, as I watched the leather back inch along the beach toward the place where her instinct said she should nest, that I was watching something primeval.

The leatherback turtle is a species that has remained virtually unchanged since it first began swimming in the world's oceans more than 90 million (some scientists argue more than 150 million) years ago. Today this turtle, which is so different from the six other marine turtle species that it is in a taxonomic family all its own, is critically endangered worldwide.

The leatherback turtle is the only sea turtle without a hard shell. Instead its body is covered with the thin, leathery skin that gives the turtle its name. Underneath the skin is a thick layer of oil-saturated fat, connective tissue and a mosaic of tiny bony plates. Although they sometimes appear brown when swimming, leatherbacks are actually an inky bluish-black colour with white splotches. Each turtle has a pink spot on the top of its head. Scientists aren't quite sure what the function of the pink spot is, though some think it may help the turtle sense light or determine its location in the ocean.

An up-close look at the leatherback turtle. Photo submitted by: Laura Bennett (NSLTWG)

The most striking thing about the leatherback sea turtle is its size. It is arguably the world's largest living reptile (though saltwater crocodile experts also claim the title for that species). Its carapace (top shell) can grow to two meters in length and the leatherbacks that we see in Canadian waters routinely weigh more than 450 kilograms. The heaviest recorded leatherback weight is more than 900 kilograms. Leatherbacks also have large, powerful front flippers that are usually at least half as long as their carapace.

Although leatherback sea turtles hatch from eggs laid on beaches in the tropics, they spend their entire lives at sea, the females returning to land only to nest. Leatherbacks travel further than any other reptile, with single turtles migrating across entire ocean basins. Leatherbacks can be found in the Atlantic, Pacific and Indian Oceans and in the Mediterranean Sea. In 1965, Dr. Sherman Bleakney, a Nova Scotia scientist, suggested that leatherback turtles were regular visitors to Canadian waters. The scientific community at the time rejected the suggestion in favour of the commonly held belief that leatherbacks rarely visited Canadian waters, and those that did were here by mistake. It wasn't until 1998, when the Nova Scotia Leatherback Turtle Working Group (NSLTWG)

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began to investigate Bleakney's claim by working in collaboration with volunteer commercial fishers across Atlantic Canada that the importance of Canadian waters to this remarkable animal began to emerge. In the first summer of fieldwork the NSLTWG collected 246 geo-referenced sightings of leatherback turtles, proving Bleakney's hypothesis and putting the leatherback firmly on the Canadian map.

There are many threats facing the leatherback turtle, the majority of them occurring on or in the waters adjacent to their nesting beaches. Because leatherbacks move very slowly on land – and are basically gentle creatures – they are not able to defend themselves from humans on nesting beaches. Both the female turtles and their eggs are vulnerable to poachers (the eggs in particular fetch a good price on the black market). Conservation groups based in nesting beach regions have implemented programs where volunteers walk the beaches at night in an effort to protect the turtles and eggs.

At sea, the turtles can become tangled in different types of fishing gear when they are accidentally caught in lines. If the turtles are not safely disentangled in time, they can receive serious injuries or can even drown as a result. Turtles have also been known to ingest harmful marine pollution, particularly plastic bags or sheets, which then block their digestive tract leading to starvation.

Off Canada's East Coast, the NSLTWG and its volunteer fishers work to help conserve the leatherback turtle on its annual visit to our region. More than 500 fishers volunteer with the group, calling in turtle sightings, carefully disentangling them when they are accidentally caught in their fishing gear, and helping with our satellite tagging and flipper tagging programs. Teaming up with fishers has helped us contribute important information about the habits of the leatherback turtle to the global effort to conserve them. Not only has the NSLTWG established that leatherbacks visit Canadian waters regularly and in relatively large numbers to feed on their principal prey, jellyfish, but we have also begun to sketch out where their travel takes them through our tagging programs.

Satellite tags allow us to follow where leatherbacks go at sea – something that has largely remained a mystery to sea turtle scientists. It is a crucial mystery to solve because it is practically impossible to conserve an animal if you don't know when and where it is at risk. The turtles tagged by the NSLTWG (the first group to ever tag a leatherback at sea) wear a satellite tag attached to a special backpack. When the turtle is at the surface of the water, the tag sends a signal to a satellite. That data tells us the location of the turtle, and additional information like water temperature. The NSLTWG also marks leatherbacks using more conventional methods – flipper tags, which are metal tags applied to the leatherback's rear flippers, and microchips called Passive Integrated Transponders ("PITs") injected into the turtles shoulder muscle. Conservation groups on nesting beaches also apply these tags. We have learned that Canadian turtles nest in Trinidad, Suriname, French Guiana, Costa Rica and Panama.

In Canada, we have the chance to see what our colleagues on nesting beaches never do – how magnificent the leatherback turtle is as it plies the waters off our coast in search of jellyfish. I am always struck by a combination of excitement, marvel and trepidation when I see a free-swimming turtle. I never cease to be thrilled by the presence of a leatherback that I know has swum thousands of kilometers to Canada – and I never cease to worry for their safety on their continued journey.

Sometimes we hear so much about "endangered" species, that we become inured to the meaning of the term. We think immediately of comforting images of polar bears and pandas and don't think of those images as potentially historical. We forget of the animals' imminent danger. We forget that after "critically endangered" is "gone". 150 million years of evolution – gone. The urgency of the conservation work that needs to be done for the leatherback turtle – and for other endangered species in Canada – is real. The hope is the awe-inspiring trek of leatherback turtle and the unmistakable beauty of a world that is bigger than human beings – a world where an animal's claim to existence is as compelling as our own.

Editor's Note – For more information on leatherback turtles or the Nova Scotia Leatherback Turtle Working Group, visit www.seaturtle.ca ***For information on Sea Turtles in Canada's Pacific Coast visit:*** www.vanaqua.org

LILY PADS & CATTAILS

NEW ADDITION TO ROUGE PARK SNAPPING TURTLE STUDY

By: Christine Baptista, Conservation Assistant

One of the most rewarding and fun tasks of my summer job was going into the Rouge Valley and tracking four Snapping Turtles as part of Adopt-A-Pond's Rouge Park Snapping Turtle Study. From day one we were told that it is rare to see one of these

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pre-historic looking creatures, so we shouldn't get our hopes up. Because snapping turtles are almost completely aquatic, their shells become covered with mud and algae, camouflaging them with the river's bottom. Unless they are swimming or moving, or unless you look with a very keen eye, you can be completely oblivious to the presence of this beautiful animal. Also, snappers do most of their moving at dusk or dawn and tend to rest during the day, often under rocks or log piles.

On August 18, 2004, my colleague, Joscelyn, and I were doing our routine check of our four study turtles. Using radio telemetry, we tracked two of our turtles, Tinkerbell and Coco, to their favorite rock/log pile on the riverbank. We looked into a rock formation and guess what we found? We saw a large shell with a transmitter on its back—it was Coco! He spotted us and scurried further into his sanctuary. We were so shocked and excited that we almost missed it when a tiny little turtle with a transmitter on her back came waddling out of the shadows. It was Tinkerbell! As soon as we spotted Tinkerbell we leaned in for a closer look, and she to scurried back into the rock pile.

Next we drove to check on Franklin. We tracked him to a log pile he had been frequenting, and just for the heck of it we decided to search around the water. We had already seen two turtles, and we certainly didn't expect to see another. My colleague was looking around in the water under logs and rocks and I heard her exclaim, "look, look!" I looked over a fallen log and to my extreme surprise, I saw a tail and the rear half of a snapping turtle shell. Our first instinct was that it was Franklin, but we realized there was no transmitter on the shell. We were in shock, we had just found a new snapping turtle!

Our brand new turtle Abetzi right after we removed leeches from her legs.

We immediately radioed our supervisor, Bob Johnson, Curator of Reptiles and Amphibians, who came rushing down along with Andrew Lentini, Curatorial Keeper: Reptiles and Amphibians. Andrew jumped in the water and caught the turtle, and we finally got to see the full size of the creature we had been keeping such a keen eye on. She was a beautiful turtle. She came out of the water fighting, whipping her head around and scratching with her hind legs. Once on land, we weighed her and fitted her with a shiny new transmitter. We put her back in the water and watched her swim off into the afternoon sun.

Our newest addition to the Rouge Park Snapping Turtle Study has been named Abetzi. Abetzi is a Native American word meaning 'yellow leaf' a rather fitting name as there were some yellow leaves floating in the water nearby. You can find regular updates on Abetzi and our other turtles in the Turtle Movements Update section on our website.

Yes, being a Wetland Conservation Assistant is by far the greatest job in the world, but nothing, and I mean *nothing* tops finding a new turtle, naming her, and having a little bit of your best work go down in history, as they say.

Editor's Note – The lower part of a Snapping Turtles shell (the plastron) is reduced and offers little protection to the limbs and head. The turtles only protection when not in the water is to adopt a threatening position and try to frighten the attacker. In the water, these turtles simply swim away from danger.

TURTLE TALLY TIDBITS: HOW YOU CAN HELP TURTLES

By: Lisa Sealock, Adopt-A-Pond Coordinator

Turtles have an important place in human mythology, religion and art. While a turtle is an endearing animal, turtle populations are rapidly declining due to road mortalities, habitat fragmentation, predation and pollution. In fact, six of Ontario's eight turtle species are at risk of becoming extinct. These turtles are at risk of being lost forever, and we still have so much to learn about them!

So how can you help? Have you ever seen a turtle crossing the road, basking on a log or swimming by? If so, we want to hear all about it! Turtle Tally is a fun and easy monitoring program for all ages. Participants receive a Turtles of Ontario Identifier guide and poster to help them learn their local species. Then it's as easy as logging onto our website: www.torontozoo.com/adoptapond/TurtleTally.asp or mailing a data sheet to report any sightings. Information you provide helps scientists to better understand turtle ranges, and to identify important wetland habitat.

The Turtle Tally database was launched this summer and to date we have reports of over 40 sightings. A Special thanks to the following Turtle Tally participants for contributing valuable information: Anders Holder, Dave Watkins, Judith Ingwersen and Brett MacKillop.

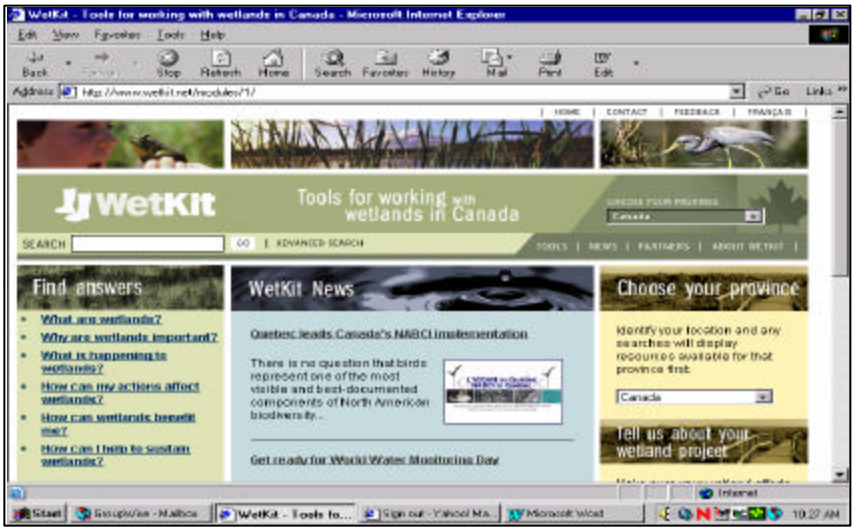
Ribbet's Review

By: Brianna Burley, Wetland Biodiversity and Conservation Coordinator

WetKit – Tools for Working with Wetlands in Canada

http://www.wetkit.net/modules/1/

Searching the net the other day for wetland resources, I came across an interesting web site. Surprised that I had never stumbled on it before, I thought this would be a great way to share this discovery. The site is called **WetKit** and it is a tools based site dedicated solely to helping us better access the resources needed to address our wetland questions, comments and concerns, as well as to keep us up to date on the latest wetland issues.



Created in partnership with Environment Canada, Ducks Unlimited and the North American Wetlands Conservation Council Canadian Division, this site is an incredibly well versed resource. The page has been divided up into 'tools' which allows you to access various types of information based on your provincial location.

Examples of 'tools' that can be found in **WetKit** include wetland gardening tips, environmental assessments, information regarding beaver issues, wetlands and fish, as well as treatment wetlands to name a few. The site is very user friendly with a special section dedicated to sharing your wetland projects with others.

WetKit is a great place to start when looking at the smaller and larger issues associated with wetlands today. I myself find it quite useful and will be sure to use it again in the future when questions and uncertainties should arise.

I hope that you all find this site as useful as I did. It's encouraging to see information like this being summarized in one area. It allows us all to band together and share our resources to help conserve and preserve precious wetland areas.

Volume 14, No.3

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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Support for the Adopt-A-Pond Programme:
Banrock Station Wetlands Foundation Canada
Toronto Zoo Foundation
Young Canada Works

Adopt-A-Pond is a non-profit wetland education programme. Costs to produce this newsletter, and other resources, are funded by grants and private donations.

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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