

Amphibian Voice



Vol. 11 No. 2

Spring 2001

A Case of Mistaken Identity: The Frenzied Toads of Spring

By: Sarah Ingwersen

The small, seemingly unassuming, American Toad (*Bufo americanus*), is one of Ontario's most fascinating amphibians. So, every spring Toronto Zoo's Adopt-A-Pond Programme hosts the Spring Toad Festival to celebrate the American Toad and the arrival of spring. But why would we single out the American Toad? There are any number of species that could represent spring. For instance in my family, the first sighting of the red-breasted robin marked the arrival of spring.

Spring signifies new life and new beginnings. There is a sense of excitement in the air as humans, again, take to the streets, rollerblading, walking, jogging, cruising in their cars with the top down. Trees burst with green, birds call frantically, days are longer and sunshine coaxes the trilliums to bloom. Also, Wood Frogs, Spring Peepers, Chorus Frogs and American Toads break the silence of winter and announce their presence with great urgency. But, then there is the matter of the American Toad...

I have seen American Toads breeding before with a male clenched tightly to the back of a larger female (a position known as amplexus). The eggs twisting and winding themselves in and around the submerged vegetation like long strings of black beads. I have heard the characteristic trill of the American Toad with their air-filled vocal pouches extended larger than you would think possible. I have sat and watched their spring ritual with wonder and amazement.



However, at this year's Spring Toad Festival there was an absence of our honoured guests (the Festival is held the last weekend in April and the first weekend in May in response to 15 years of data supporting this period as the American Toad's peak of breeding activity). The weekend was sunny but very cool. Festival-goers experienced the radio telemetry equipment that we use to track toads, they saw an abundance of Leopard

Continued on page 2

Table of Contents

Lily Pads & Cattails.....	2
Pond Guardians.....	3
Fab Frogwatchers.....	3
Kid's Corner.....	4
Amphibian Myths.....	5
A Full Palette.....	6
Call'um of the Wild.....	7
Ribbet's Review.....	8

Continued from page 1

Frogs and Green Frogs, they learned about Frogwatch- Ontario, they learned about some fascinating wetland invertebrates, but the American Toads remained elusive. The only sign was a single string of toad eggs wrapped around some winter-killed, submerged vegetation.

Two days later, on a hot, sunny Tuesday afternoon I passed by the area where the Spring Toad Festival had been held, although, now, all was not quiet. The resounding chorus of American Toads drew me to the water's edge. They were everywhere. Six or seven breeding pairs were visible, while the other "unattached" males, perched on floating vegetation, called wildly with their enlarged vocal pouches. As I was pointing out yet another toad to my colleague, a male toad pounced on my hand. My index and middle fingers were grasped tightly by the forearms of the frenzied toad. He shut his eyes and pressed his head into the valley between my knuckles. I was shocked. I have read that American Toads are opportunistic and that they will embrace anything that is the approximate size of a female—but to actually



experience it! My colleague and I laughed and laughed like schoolgirls. When I tried to separate myself from this very determined toad I was met with his chirp-like release call. This toad was suffering from a case of mistaken identity.

American Toads have been known to clasp other males, vegetation and even other frogs in their frenzy to breed! The next day we

witnessed a male toad clenched tightly to a confused Green Frog! Once again, we erupted in laughter. Two days later all of the American Toads had retreated, there was silence and the only signs left were strings of black eggs and a few toad tadpoles swimming about the pond. Although the toads were gone, new life had been left and the cycle had begun again!

Later, I realised that the American Toad embodies all of the frenzied excitement and new life that springtime brings. It is for this reason that American Toads are celebrated at the Toronto Zoo's Spring Toad Festival.

"I mention the spawning of toads because it is one of the phenomena of spring which most deeply appeal to me, and because the toad, unlike the sky-lark and the primrose, has never had much of a boost from the poets."

George Orwell (1946) from "Thoughts on the Common Toad"

Lily Pads and Cattails

Adopt-A-Pond Programme updates

In February, the Adopt-A-Pond Programme bid Diana Teal, AAP's former Programme Coordinator, bon voyage as she set out on an adventure-of-a-lifetime to explore South America. Diana's contributions to the programme included the introduction of the Spring Toad Festival, the Amphibian Identification Exhibit in Toronto Zoo's Americas Pavilion, the on-going development of Frogwatch-Ontario as well as numerous other contributions. We wish her success in her future endeavors!

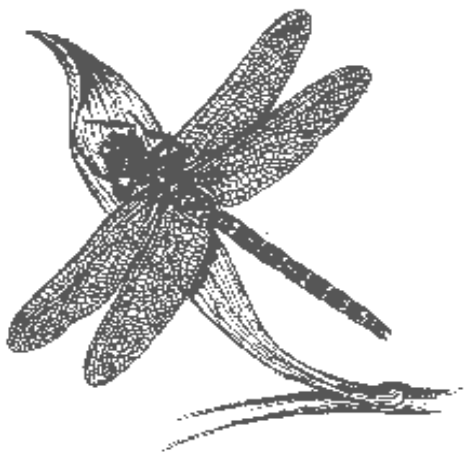
Sarah Ingwersen has taken over from Diana Teal as Adopt-A-Pond's new Programme Coordinator. Sarah, originally from North Bay, comes to this position after completing her Master's degree in Forest Conservation. Sarah is at work developing material on turtle conservation, vernal pools and salamanders, and Pond Guardians, a new direction for the Adopt-A-Pond Programme that includes a Canada-wide pond registry.

Damselfs, Dragons ... and Frogs?

By: Shari Bowker, Entomological Technician & Diana Teal, Adopt-A-Pond Coordinator

Editors Note:

In the summer of 1999 and 2000, Shari Bowker, the Toronto Zoo's Entomological Technician Intern, was responsible for conducting a biodiversity study on dragonflies and damselflies in the wetlands of the Rouge Valley. Shari has identified 30 different species in the Rouge Valley to date. Several species were recorded in the Toronto Zoo's many wetlands habitats!



Dragonflies and damselflies have been on earth for about 300 million years. This means that they have been here longer than dinosaurs, who began to roam the earth about 225 million years ago! Dragonfly fossils indicate that they used to have wingspans of about two feet, with larva approximately 1 foot in length! Today, the largest dragonflies have wingspans of only about 10 cm, but are otherwise identical to their ancient ancestors.

The way to tell the difference between a dragonfly and a damselfly is to observe **a)** their size **b)** the position of their wings while at rest and **c)** the size of their wings. Dragonflies are much larger than damselflies, and hold their wings open (flat on their back) while at rest. The hind wing of a dragonfly is shorter than the forewings, while damselfly wings are the same length. Damselflies are very slender in comparison to dragonflies, and fold their wings together above their back while resting.

Dragonflies and damselflies are most remarkable wetland creatures! Both belong to the order "Odonata", meaning "toothed jaw" - which they definitely have! Their powerful biting mouthparts are no threat to us but are useful for crushing

mosquitoes, gnats and other flying insects. Dragonflies are known to eat while in flight, holding their legs forward like a net to catch insects and then using the hairs on their legs to hold onto their prey.

Dragonflies are incredible flyers! Their wings beat 20 times per second and they can fly up to speeds of 54 kilometres per hour! Dragonflies can hover, dart backward, and come to instant stops - making them incredible predators.

The enormous compound eyes of dragonflies help them catch their insect prey, and also help them to protect themselves from potential predators. Each compound eye has up to 30,000 separate lenses, enabling them to detect moving objects from over 20 feet away!

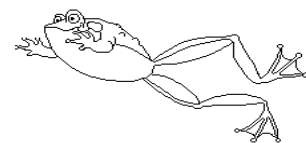
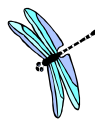
The Dragon and the Frog?

Dragonflies have an interesting relationship with frogs. Both frogs and dragonflies spend the first stages of their lives in the water - frogs as tadpoles and dragonflies as naiads. Dragonfly naiads are able to capture frog tadpoles by thrusting out their labium ("claspers" located below the lower jaw) at lightening speed, using a combination of muscular action and hydraulic pressure.

After leaving the pond as an adult frog, the tables turn! Frogs wait for naiads to emerge out of the water in their final stage of molting. While the dragonfly waits for its wings to dry, hungry frogs snap them up with their long, sticky tongues.

Odonata of the Rouge Valley

Ebony Jewelwing	Common Green Darner
American Rubyspot	Lance-tipped Darner
Spotted Spreadwing	Shadow Darner
Common Spreadwing	Brush-tipped Emerald
Emerald Spreadwing	Eastern Pondhawk
Frosted Whiteface	Slender Spreadwing
Dot-tailed Whiteface	Lyre-tipped Spreadwing
Widow Skimmer	Variable Dancer
Common Whitetail	Powdered Dancer
Familiar Bluet	Four-spotted Skimmer
Marsh Bluet	Cherry-faced Meadowhawk
Stream Bluet	White-faced Meadowhawk
Hagen's Bluet	Black Saddlebags
Eastern Forktail	Sedge Spite
Amber-winged Spreadwing	Twelve-spotted Skimmer



Kid's Corner

Editor's Note:

I received this letter from Lindsay Tegler in April requesting information on Mink Frogs...

2001-04-24

Dear Frogwatch Ontario,

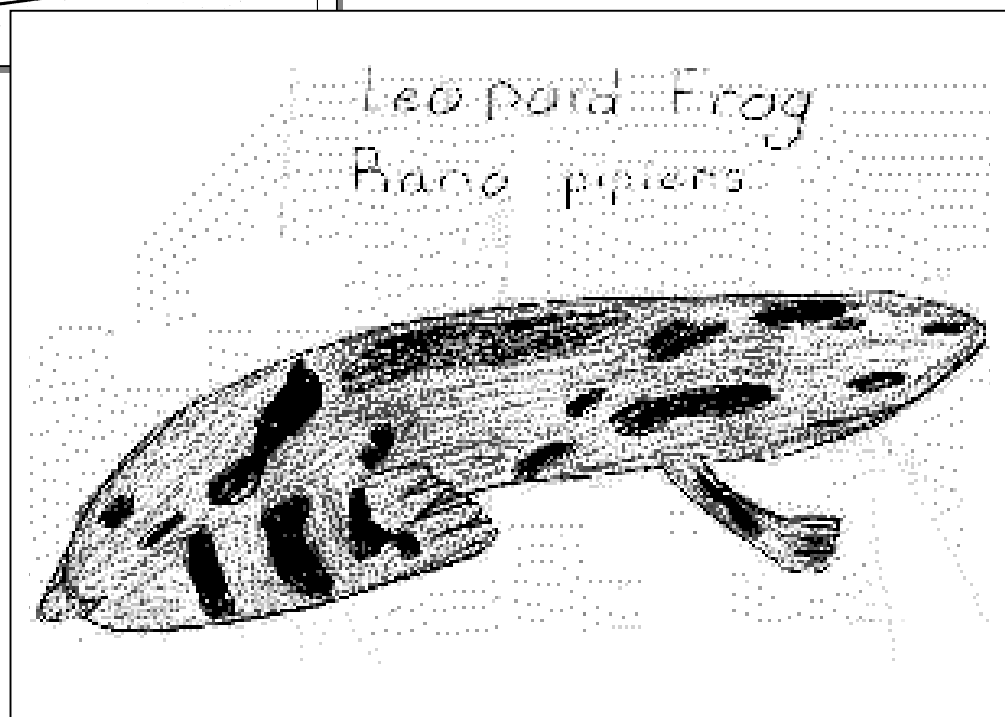
I like your newsletters alot, they give me a good amount of information. I'm writting to you because I've had a question that I've been itching to ask. I think and I'm quite sure that I saw a mink frog on April 21 at around 9:30 pm. The problem I want to ask about is, Isn't it too early to see a mink frog? I mean ~~but~~ the mink frog the 9th frog out hibernation or is it just the 9th frog to start it's calls? Please write back if you have time.

from,

Lindsay Tegler

Lindsay Tegler, 9, is a dedicated Frogwatch Observer involved with Frogwatch-Ontario. Thank you, Lindsay, for your participation!

Mink Frogs emerge from hibernation in the spring but they don't begin calling until June or July. Mink Frog are among the last callers, joining the Green Frog and the Bullfrog. It is very likely that you did, indeed, see a Mink Frog!



Amphibians: Symbols of Fertility, Abundance and Transformation

By Sarah Ingwersen and Candy Jones

Amphibians have played an important role in cultures throughout the world. Frogs and Toads can be symbols of fertility, abundance, rebirth and transformation. They have been symbols of good and symbols of evil. Regardless of what they symbolize, amphibians have mystified humans across cultures for thousands of years. Here is a synopsis of amphibian myths from around the world.

Africa

In ancient Egypt the frog symbolized fertility, water and renewal. The water goddess, Heket, often appeared as a woman with the head of a frog. Heqit, the mid-wife goddess, was also symbolized in the form of a frog. Heqit ruled conception and birth and women wore metal charms to enlist her good favour. The frog was also the symbol for hefnu which refers to "100 000" or "an immense number".

Many African cultures include carvings of frogs. Their use on granary doors, for example, demonstrates their recognition of the relationship between frogs, water (rain) and the planting of crops.

Australia

The Aborigines of Australia believe that frogs symbolise rain.

Asia

In several Chinese tales and legends the toad is characterised as a trickster or magician and the master of escapes and spells. Toads, however, were also keepers of the world's great mysteries such as the secret of immortality.

The ancient Chinese refer to the toad as a predominantly female force the negative "yin" opposite the positive "yang".

In Japan, frogs are a symbol of good fortune.

In some cultures in India, frogs were believed to represent thunder from the sky. The word "frog" also means "cloud" in Sanskrit!

Europe

In medieval Europe, toads and frogs symbolised evil. Toads were believed to be evil spirits and they were commonly associated with witches and were used as Inquisition propaganda. Frogs and toads in medieval Europe also symbolized romantic jealousy. References to this appear in English literature from Milton to Shakespeare.

Frogs and toads in Western cultures are symbols of transformation. The most famous manifestation of this is in the Fairytale of the "Frog Prince". This is a story about a young princess (and there are several versions of this story) who kisses a toad, this action transforms the toad into a handsome prince.

North America

The Olmec tribe, of what is now Mexico, produced images of a toad god of rebirth. The toad god symbolizes the cycle of life from birth to death.

Aztec tribes had Tlaltecuhiti, the earth mother goddess, she appears as a frog or in a semi-human form.

In Canada, in traditional Native teachings, frogs are sacred animals that are universal cleansers. Frogs are symbols for water, energy, rain, cleansing, renewal and transformation.

South America

In pre-Colombian tribes the goddess, Ceneotl, was worshipped. She symbolised fertility and birth and took the form of a frog or toad. In these tribes frogs and toads were considered to be the rain spirits, and they were used in rituals to bring rain.

In the Aymara tribe from Peru and Bolivia, frogs and toads symbolized the spirits of rain. Frog images were created and placed on hilltops to call down the rain.

The role that amphibians play in these cultures enables the myths to carry on into the present day. Learning about the myths, legends and stories about amphibians helps us to understand these historical cultures and also displays the significance of amphibians in history as well as in our lives today.



A Full Palette

By Candy Jones

As the colours of spring begin to emerge, they lift our spirits and beckon us outdoors to witness all the wonderful transformations that occur during this time of year. Part of this amazing springtime beauty is the return of amphibian life around us. When most of us think of the spring colours associated with amphibians, the colours green, grey and brown first come to mind. But, with a closer look at the diversity of amphibians, it becomes clear that they create a full palette in their display. Amphibians can be found not only as green, brown and grey but also in such colours as blue, red and yellow. These colours can also be displayed in wide variety of patterns such as stripes or spots. Amazingly the colours can change depending on the temperature or humidity! When it is warm and dry the colour tends to become pale and when it is cold and damp the colours can darken.

Why do amphibians have so many different colours and designs?

There are many different reasons for these colourings and markings. Here are just a couple:

Camouflage

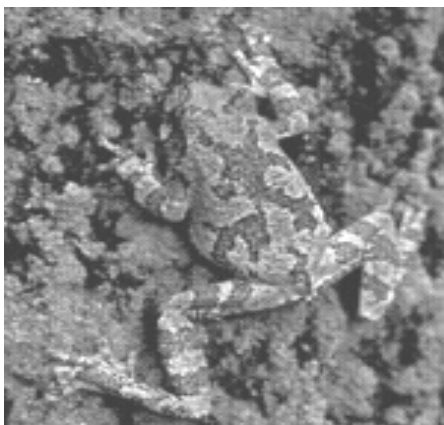
The first reason for this display is camouflage. Most amphibians need to hide themselves from others in order to survive. If they are seen they may become prey for predators. It is common for amphibians to have colours or patterns that are so similar to their surroundings that they are almost indistinguishable.

Warning

Most often when amphibians display bright colours such as red, yellow or blue it acts as a warning signal that they are poisonous. Many of these species are active during the day to better show their colours!

There are many reasons why amphibians have such dramatic differences in their appearance. Can you think of any other reasons? Next time you see an amphibian, take note of the different patterns and colours and don't forget to take time to appreciate how lucky we are to have such beautiful creatures in our lives.

Can you find the camouflaged frogs in these pictures?



Grey Treefrog



Wood Frog

Call 'um of the Wild

The Amazing American Toad

by Fabiola Iung Novaes

I encountered an amphibian this spring that I will not soon forget and his presence has left a webbed-footprint in my appreciation for animals. He is an American Toad and he lives in my front yard.

I am doing work for the Adopt-A-Pond Programme so I have come to learn the unique calls of Ontario's 13 frog and toad species. I was able to witness the frantic breeding behaviour at one of the wetlands at the Toronto Zoo, but I never would have thought I would find an American Toad in my very own front yard in the middle of Toronto!

One night, shortly after observing the American Toads at the zoo, I was home with my husband. It was 11:30 p.m. and my husband heard a strange noise coming from the small pond in our front yard. I went to the window and to my surprise the now-familiar call of American Toad met my ears. We ran downstairs and out to the pond. There it was sitting proudly by the edge of the pond, with its vocal pouch ballooned and its trilling call filling the night air. We sat and watched him for a long time and we videotaped the image and the call of our welcome visitor. It was marvelous. We didn't think that he would stay for very long, but the next night, sure enough, he was still there, in the same place. To make sure that he is still there, my husband and I imitate his call and promptly our toad answers us. At press time, he has remained a permanent resident of our pond.

Ponds are amazing places! If you are willing to learn you can find interesting things all around you. Now, my husband and I have fun sitting beside or pond, calling to our American Toad friend.

Editor's Note:

Fabiola Iung Novaes, originally from Brazil, is a co-op student working in association with the Adopt-A-Pond Programme.

If you would like to share an inspiring amphibian story or experience, write about it and send it to the Adopt-A-Pond Programme at the Toronto Zoo (see last page for contact information). Your story could be the next feature of the Call'um of the Wild section of our newsletter!

Ribbet's Review

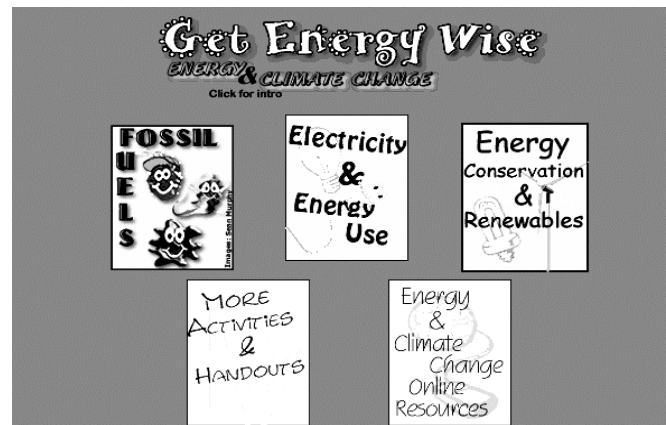
by Candy Jones

In future newsletters we will have this section to review books, articles, and websites about frogs and other amphibians. If you have seen any "frogstastic" amphibian resources please let us know! Include all of the information to access the resource, your name, contact information, and your comments as to why you think it was good or why you thought it was bad!

ECOKIDS

<http://www.ecokids.earthday.ca>

This website, created to promote Earth Day in Canada, is a wonderful website for children, teachers and parents interested in Environmental Topics. What's great about this site is the amount of informative mixed with fun interactive activities. The site provides kids with a fun place to visit, play games and learn at the same time. There were many links and activities for educators based on the different topics and units. The site provides activities that can be printed out and used in a classroom setting, or at home. The topic that was currently featured in the educator's section was Energy. Some of the links are seen below.



I came across some specific pages that caught my interest such as:

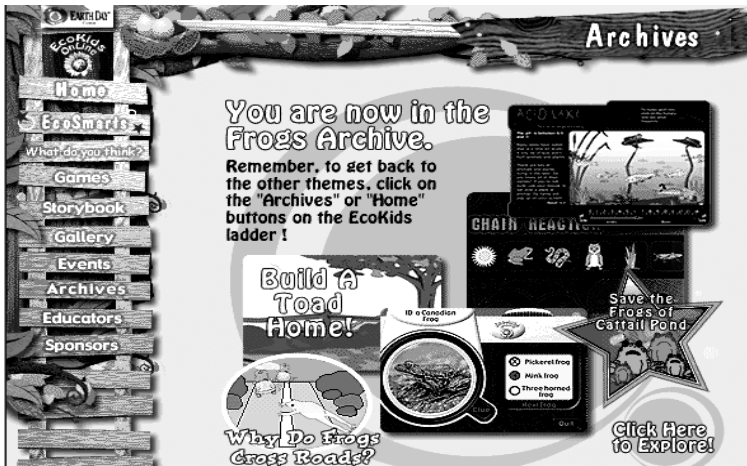
Educator's Area - This area included various activities and handouts for use in the classroom.

EcoSmarts - This page is dedicated to testing your knowledge on a wide range of ecological issues. It is a great place to go after browsing through the site a little. It also contains sections with games, stories, events and a gallery where they post children's artwork online.

Continued on page 8

This site contains many pages filled with different ecological issues all around the world, one that I found very interesting was an article on Solar Power and its use in South Africa.

You can also visit the archives to look for other environmental issues. While searching in the archives under the keyword frog I came across many more fun activities and valuable sources of information.



I think this site is a very valuable resource and along with the many other awards it has received, it also gets my vote. So, check it out!



REMEMBER IT'S YOUR NEWSLETTER!

Send your submissions to Adopt-A-Pond Programme
Attn' AMPHIBIAN VOICE NEWSLETTER

Submissions by September 20, 2001

Submit an article about someone that has inspired you to do something for the environment, or someone who has taught you about amphibians and wetlands and we will feature them in our next newsletter!

Also send drawings, poems, cute quotes from kids, fascinating amphibian photographs, community wetland issues, questions, articles, and stories pertaining to wetlands, wildlife and conservation.

Articles and submissions may be edited.

Volume 11, No. 2

Amphibian Voice is a student/teacher and community newsletter, distributed to schools and communities participating in the Adopt-A-Pond programme, to assist with their efforts to conserve amphibians and wetland habitats.

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

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Adopt-A-Pond is a non-profit wetlands 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 out to "Toronto Zoo" and send to the following address. Thank you!

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