



The Quinte Naturalist

The Quinte Field Naturalists Association is affiliated with Ontario Nature, a non-profit organization sponsoring nature education, conservation and research.

March 2016 Issue

Ephemeral Life



Of course all life is ephemeral. I'm referring specifically to life in an ephemeral pool in this article. Ephemeral or temporary pools occur in many parts of the world but in the Quinte area we usually call them vernal pools because they consist of spring meltwater. We usually find them in woodlands.

Vernal pools provide both an important water management function and a unique habitat. They are shallow, holding water on soils

which are fairly impervious. Individually, because of their size they are relatively insignificant but if there is an abundance of pools in the headwaters of a watershed they buffer and regulate downstream flows. This helps both to reduce flooding and to alleviate any problem of low water flow in late summer.

Much of the life in ephemeral ponds is invisible, ranging from the bacteria and fungi existing on the organic detritus on the bottom of the pool to the insect larva and other tiny invertebrates preying on them. Look closely. You may be able to see tiny 2 centimetre crustaceans, fairy shrimp. Like their larger cousins they are very edible. In fact, that is their problem. Fairy shrimp cannot exist in any habitat containing fish but they must also lay their eggs in water.

The ephemeral nature of the water does create a problem for the shrimp. What does it do when the water dries up? The answer is to reproduce quickly. They hatch so early in the spring that there may still be some ice on the water. Females produce two types of eggs, one type hatches almost immediately. The other type simply falls to the bottom of the pool. These eggs have hard shells and remain on the bottom through the dry period and winter freezing. The life cycle of fairy shrimp from hatching through several molts to their reproductive adulthood can be as short as two and one-half weeks.

Many larger creatures do use the pools as places convenient for breeding, foraging for food or finding shelter. Amphibians in particular rely on vernal pools.



Fairy shrimp swim on their backs using the "arms" you can see in the picture to propel themselves through the water

Some of our most common amphibians such as red-spotted salamanders, spring peepers and American toads all breed there although that is not the only water where they can be found.

There are two local species of amphibians which must have vernal pools, the yellow-spotted salamander and the wood frog. Species like the fairy shrimp and these two amphibians which require vernal pools to reproduce are known as obligate or indicator species. Their presence indicates that a small body of water is a vernal pool and not just a section of a nearby permanent waterbody which has been separated from it during a drought or a puddle which will soon drain away.



Photo by Tony deGroot (<http://tonydegroot.com>)

Blue-spotted salamanders are not easy to find. They belong to a family known as mole salamanders because they spend most of their lives in underground burrows or under damp leaves or logs. In the spring they emerge with the first warm rains. The males proceed to the pools to await the females. After the females arrive they lay 100 or more fertilized eggs in jelly-like clumps. The eggs hatch in a month or so and the larvae proceed to devour insect larvae and other small

creatures, including each other. By the time the pool dries up in late summer larvae have become small salamanders which go into hiding, emerging only in the rain to feed.

Wood frogs also must breed as early as possible in the spring so that their tadpoles in the vernal pools become frogs before the pond dries up. There may still be ice on some water when you first hear their duck-like calls. Watch for them as you walk in the woods later in the season. Their black mask and lack of “warts” distinguishes them from the American toads you might also encounter. They may have travelled several hundred metres from the water but like all amphibians they must spend at least part of their life cycle in the water.



Ephemeral pools are a vital part of our complex ecosystem.

A RUGGED SENTINEL

By George Thomson and Elizabeth Churcher

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As we drive around the Tweed countryside, across southern Hastings and into Prince Edward County, we sometimes pass fields that are returning to Nature --- fields that were once cultivated but now are transforming their appearance, clothing themselves in the dress of bygone days. A habitat change is occurring as shrubs and sapling trees are beginning to appear. Seeds have been dropped by birds flying over or have escaped the cheek pouches of squirrels. In some cases, Red and Gray Squirrels have dug little pits and buried the seeds. The “planting” of acorns by squirrels is well known --- the furry gardeners return to feast on many of them, but forget some. Thus, birds and mammals like squirrels serve a vital ecological role as foresters, distributing seeds and helping plants to move into new habitats.

Prominent among the tree and shrub pioneers in abandoned fields are our three species of the genus *Juniperus*, all members of the Cypress or Juniper family. One, the Eastern Red Cedar, *Juniperus virginiana*, matures into a small tree. The other two, *Juniperus communis*, or Ground Juniper and *Juniperus horizontalis*, or Creeping Juniper, are saucer-shaped or sprawling shrubs. *Juniperus* is Latin for juniper: *virginiana* means “of Virginia”, *communis* denotes “common” and “*horizontalis*”, not surprisingly, signifies

“horizontal” referring to their growth form. All three have both male and female plants, each bearing the type of cone that is specific to the sex of the tree or shrub. The male or pollen cones are small and woody while the female or seed cones are berry-like. By this time, you may be accusing us of ignoring our Eastern White Cedar. Yes, it is a member of the Juniper family but resides in a different genus so we can think of it as a distant cousin.

A couple days ago, we ventured out to our back field, the one that is slowly changing back into a forest. Dotted throughout the array of trees are a number of Eastern Red Cedars which commanded our attention. Elizabeth quickly admitted that she had never learned a great deal about this species as it was not a resident of the Bancroft surroundings where she had developed an intimate knowledge of the trees in her childhood. Now it is time to probe further. As already noted, the Red Cedar is a small tree, growing up to ten metres high and sports a narrow, cone-shaped crown. Its evergreen leaves are arranged in four rows and washed in bluish-green. Scale-like leaves are found on the older branches and are 1-3 mm long: young branches have needle-like leaves 5-7 mm long. As we stood observing its features, we ran our fingers down the reddish-brown bark that seems to shred into long narrow strips. Although no cones were evident on our trees, a little research informed us that the pollen cones of the male plant are 2-3 mm long and yellowish while the seed cones of the female plant, which contain only 1-2 seeds, are berry-like and bluish black.

The Eastern Red Cedar is slow-growing and long-lived, with a lifespan of 200-300 years but is intolerant of shade. Most cannot survive incoming forest growth; however, in our area, this rugged sentinel seems often to be the final stage of succession, anchored in thin layers of soil that conceal limestone bedrock.

Like all species in nature, the Eastern Red Cedar plays an important role in contributing to the web of life. It serves, for example, as the larval host plant for the Juniper Hairstreak Butterfly. In addition, its berry-like, female cones are a welcome dinner for many birds such as Starlings, Cedar Waxwings, Yellow-rumped Warblers, Eastern Bluebirds, Purple Finches and Evening & Pine Grosbeaks, among many others. As well as ingesting a nutritious meal, they broadcast the seeds to many new locations. For our American Robins, the berry-like cones are considered an essential fueling ingredient during their autumn migration and for the Robins, Bluebirds, and Yellow-rumped Warblers who decide to stay with us during the winter, these cones are a rich nutrient source.

While the berries are a tasty treat for birds, the Red Cedars' leaves are not nearly so inviting. Chemicals in them such as terpenes, resins and volatile oils make the leaves

unpalatable to most browsers. Hunger-stressed White-tailed Deer occasionally eat them but avoid this harsh meal when other browse is available.

Long ago, humans discovered the benefits of Eastern Red Cedar and began to integrate it into their way of life. Nutritionally, its female cones rank high in crude fat, fibre and carbohydrates and reasonably high in calcium. The Red Cedar was introduced into Europe in the 1600's and the "juniper berries" have been used to flavour gin since the 1650's. In the medical field, one of the tree's chemicals, podophyllotoxin, is an anti-tumour compound. Because of toxic overtones, its use in herbal medicine has to be monitored cautiously.

Our native North American people, too, had many medicinal uses for the Eastern Red Cedar. In 1755, when the British deported the French-Canadian Acadians from Nova Scotia to Louisiana, the Acadians or Cajuns, were delighted to find Red Cedars growing in the surroundings of their new home. They celebrated the presence of this familiar and greatly loved tree by naming the capital city of Louisiana, Baton Rouge, which translated is "red stick" or "red cedar".

As we travel or hike through our beautiful, rural surroundings, we are fortunate to see the rugged little Tree, *Juniperus virginiana*, along with its shrub-like relatives, standing as a sentinel in old fields. It has a central place in Nature's web and in our human world.



BIRDS IN THE ENTERTAINMENT MEDIA



Recently I saw an ad on television featuring a little bird which they called Hugo, their seed expert. Hugo looked vaguely like a chickadee but obviously was not the usual black-capped chickadee. In fact he was a member of a Eurasian species, great tits, which are related to chickadees.



I was reminded of an unfunny commercial of a few years ago. It featured two birds talking about how they hated Windex because it made clean windows invisible and birds crashed into them. They looked vaguely like magpies found in western Canada but obviously were not. They were an African species, the pied crow.

If you go to many movies you'll see that directors also use non-native species. Why do we not see native species when the setting is North America? It's the law. The Migratory Bird Act prohibits the possession of migratory birds for commercial purposes. The act dates from the early 1900s when the demand for snowy egret feathers for hats almost drove them to extinction.

SKY DANCERS

American naturalist and ecologist Aldo Leopold called them sky dancers. That's certainly more poetic than timberdoodle or bogsucker, two other common names for the American woodcock. There's no denying it is a comical little bird and unique in several ways.



Photo by Peter Sporning, submitted by Terry Sprague

To begin with they are shorebirds but they live in the woods. They are also, with the related Eurasian woodcock, reputed to be the slowest flying bird in the world. They have been clocked at 8 kilometres an hour during courtship without stalling and falling to earth. Some ornithologists believe that they fly only about 15 to 20 metres high when migrating. The fact that they are among the 25 species of birds most often striking windows in major cities gives some credence to this belief.

There are several physical characteristics of the woodcock which strike us as odd. Because of the placement of its eyes it has the largest field of vision of any creature, a full 360 degrees, and even over the top of its head. Its eyes are set so far back in its head that they are behind its ears. Of course this allows it to watch for predators even when probing the wet soil with its long bill. The tip of this bill is flexible as an adaptation to help it catch earthworms underground. The placement of its nostrils high on the bill is a further adaptation for probing the soil. The timberdoodle walks rather than hops and as it proceeds it rocks back and forth.

It's a chubby, short-legged bird waddling through the woods looking for earthworms. On the ground in the spring it utters a note usually described as "peent," sounding not unlike the cartoon roadrunner which constantly evades Wile E. Coyote. Why would Aldo Leopold call it a sky-dancer? Its courtship is entrancing. Leopold describes it this way:

Up and up he goes, the spirals steeper and smaller, the twittering louder and louder, until the performer is only a speck in the sky. Then, without warning, he tumbles like a crippled plane, giving voice in a soft liquid warble that a March bluebird might envy. At a few feet from the ground he levels off and returns to his peenting ground, usually to the exact spot where the performance began, and there resumes his peenting.

The woodcock is so appealing that people make special trips just to hear it. In fact it's something we will look for on our outing. See page 8.

THE WILL-A-THE-WISP OF THE MARSHES

On the wings of the south wind comes the first wisp of snipe, the will-a-the-wisp of the marshes, here to-day and gone tomorrow, coming and going under the cover of darkness. All through the spring migration and all through the nesting season we may hear the weird winnowing sound of the snipe's courtship flight, a tremulous humming sound, loud and penetrating, audible at a long distance.



Photo by Ian Dickinson, submitted by Terry Sprague

Many years ago Arthur Cleveland Bent described the sound of Wilson's snipe in this manner. While the sound it makes is quite different as you can see in the picture it does have many similarities with the American woodcock. It too is a shorebird found away from the shore, usually in wet fields or the edges of marshes.

While the woodcock quietly goes about its business when on the ground the snipe is more likely to be perched like a sentinel on a post or some other lookout. The snipe does

also walk rather than hop but it lacks the woodcock's characteristic bobbing motion.

It does not have the warm russet colours below worn by the woodcock. As you are most likely to see either species flying away from you concentrate on the bird's head. The stripes on the snipe's head go lengthwise. On the woodcock's head they run from side-to-side.



TRIBUTE TO KATHARINE



Earlier this month Katharine Mills who had been a member of QFN since 1954 passed away. That's a long time to maintain loyalty to an organization. Those of us who knew Katharine before her illness remember an engaging woman who loved to talk about all aspects of life in Quinte, her lifelong home. If there was an outing Katharine was there, adding her cheerful voice to even the dreariest day. Never one to draw attention to herself Katharine was still sure to notice newcomers at a meeting and make them feel at home.

Thank you, Katharine, for the time you spent with us.

AN OUTING TO HEAR NIGHT SOUNDS

The night seems to come alive in April. As the twilight gradually deepens into darkness robins sing their goodnights. Overhead there may be an American woodcock or a Wilson's snipe. . Perhaps a great horned owl calls. Chorus frogs, spring peepers and wood frogs become the dominant voices. Join us to hear nature's concert.

Sunday, April 17 – Meet in the parking lot of the Quinte Conservation office at 7:30. We'll be listening, walking and driving so wear boots and bring a light.

MEETINGS

Monday, March 28. 7:00 p.m. Sills Auditorium, Bridge Street United Church

Speaker: Allie Anderson – American Kestrel: Our Smallest Falcon

Once North America's most abundant bird of prey, American Kestrel populations are in decline. Avian biologist, Allie Anderson, will explain the Kestrel's life history, the possible reasons current research is suggesting for their decline and how we can help.

Monday, April 25. Annual Dinner. Note different time and location

6:00 p.m. St. Marks United Church, Cannifton Rd. N., Cannifton

Speaker: Steve Burrows, author of the Birder Mystery Series.

You must buy a ticket ahead of time. Tickets will not be sold at the door. See the attached poster for details.

The Quinte Field Naturalists Association, an affiliate of Ontario Nature, is a non-profit organization sponsoring nature education, conservation and research. It was founded in 1949 and incorporated in 1990, and encompasses the counties of Hastings and Prince Edward. The Quinte Field Naturalists Association is legally entitled to hold real estate and accept benefits.

Quinte Field Naturalists meet on the fourth Monday of every month from September to March (except December), 7:00, Sills Auditorium, Bridge Street United Church, 60 Bridge Street East, Belleville. In April we hold our annual dinner at an alternate time and location. New members and guests are always welcome. Bring a friend.

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Next Newsletter Deadline – April 10, 2016

Please send submissions to sharronjohnblaney@gmail.com