



## Nature Guides

### Dragonflies, Fireflies and Butterflies: Mystical Beauties of the Insect World

*Late June*

#### Featured Species: Dragons and Damsels!

Late-June is a great time to visit water bodies, in part due to the activities of [dragonflies and damselflies](#), the needle-like insects patrolling the water. A captivating 30 minutes can be spent watching an adult [emerge](#), and if your timing is right you may be lucky enough to be amidst a mating swarm.

Dragonflies and damselflies have [ancient ancestors](#) that existed at least 300 million years ago (they rubbed elbows with dinosaurs and the creatures that came before). Dragonflies and damselflies can be told apart by their general shape, and the way the wings are held at rest. Dragonflies are larger and hold their [wings open](#), whereas damselflies are daintier looking and hold their [wings together](#) or [slightly spread](#). As larvae (called nymphs) [dragonflies](#) are larger, while [damselflies](#) are slender and have leaf-like gill appendages at the end of their [abdomen](#). In Ontario there are six [dragonfly families](#) (Darners, Clubtails, Spiketails, Cruisers, Emeralds, and Skimmers), and three [damselfly families](#) (Broad-winged Damsels, Spreadwings, and Pond Damsels). Dragonflies and damselflies easily capture the imagination, and names like 'boghaunter', 'dragonhunter', 'jewelwings', 'shadowdragon', and 'sprites' help. Dragonflies and damselflies become common sights in late spring and remain so all summer. Different species emerge at different times. Here are some species emerging in late June:

Dragonflies:

Family	Species
Darners	<a href="#">Common Green Darner</a>
Clubtails	<a href="#">Lancet Clubtail</a>
Emeralds	<a href="#">Racket-tailed Emerald</a> , <a href="#">Beaverpond Baskettail</a>
Skimmers	<a href="#">Chalk-fronted Skimmer</a> , <a href="#">Four-spotted Skimmer</a> , <a href="#">Twelve-spotted Skimmer</a> , <a href="#">Calico Pennant</a> , <a href="#">Dot-tailed Whiteface</a> , <a href="#">Common Whitetail</a>

Damselflies:

#### Top R4R Picks

Resources for extending the learning

##### [Saving the Monarch](#)

Elementary

##### [Butterfly Life Cycle](#)

Elementary

##### [Feathers & Fur, Scales & Skin](#)

Elementary

see [How the Butterflies Came to Be](#)

##### [Moth, the Fire Dancer](#)

Elementary

see [Cricket Cacophony](#) and [Firefly](#)

[Flashers](#)

Species	Family
Broad-winged Damselflies	<a href="#">Ebony Jewelwing</a>
Pond Damselflies	<a href="#">Hagen's Bluet</a> , <a href="#">Marsh Bluet</a> , <a href="#">Eastern Forktail</a>

Dragonflies and damselflies are of two worlds – nymphs are freshwater aquatic (and quite [predaceous!](#)), and the adults are terrestrial (and thankfully [eat lots of mosquitoes!](#)). Their [lifecycles](#) are described as an [incomplete metamorphosis](#) since there are shape changes but they do not undergo an inactive pupae stage.

At this time of year mature nymphs make their way to water's edge and onto vegetation, rocks, and logs. Then [out of the back of the larvae's skin emerges the adult](#) (this is better than science fiction!). Next, over about 30 vulnerable minutes, the adult's wings unfold as their insect blood ([haemolymph](#)) flows into the fine veins. Then they fly to protective cover to harden and sexually mature. The nymph skin ([exuviae](#)) remains clasped to the vegetation, rock or log, as evidence of what occurred and where. Once hardened and matured, adults disperse to water to feed and mate. Sometimes thousands of a single species will emerge on the same day, which is thought to maximize the chance of finding a mate.

Mating is another mind-bender. First the male transfers sperm from his sexual organs at the end of his abdomen, to other sexual organs located closer to the wings. Then using claspers at the tip of his abdomen the male locks onto the female behind her neck – this is the ['tandem position'](#). Should the female like the guy, she brings her sexual organs up to where the sperm is – this is the ['wheel position'](#). In some species the male is [adapted to remove](#) any sperm already within the female before depositing his own. The pair separate, and the female lays her [eggs](#). In some species, the male continues to hold on or stays close to make sure another male doesn't mate with her. Most eggs are [laid in water](#), but some species inject eggs into [aquatic plants](#). When eggs hatch the nymphs feed and over-winter underwater.

[Common Green Darners](#) exhibit both this typical life style of over-wintering as [aquatic nymphs](#), and also as migratory adults that spend our winter in the southern states. [Radio-tagging](#) research has showed that they may fly up to 140 km in a day. Migratory individuals arrive north as early as the beginning of April and mate and lay eggs right away. The nymphs develop quickly (for dragonflies) over the summer, and adults emerge ready to migrate in late August through October.

### Other Happenings:

- Summer officially begins! The combinations of the Earth's tilt (23.5°) and 365 day (actually 365.2422 day) orbit around the sun determines the duration and incidence of sun received. On June 21<sup>st</sup>, at 7:28 A.M. EDT, the [summer solstice](#), the northern hemisphere of Earth will be at its maximum tilt towards the sun. It will be our longest day of the year, and at around noon the sun will be highest in the sky, casting the shortest shadows of the year. Astronomers hypothesize that Earth got its tilt when a Mars-sized planet slammed into Earth, which also ejected matter that became the [moon](#). Click [here](#) to watch a breath-taking film about Earth called 'HOME'.
- Luminous love is in the air – upon darkness the slow Morse code of [firefly](#) light glows. Fireflies are beetles (not flies) that have a special organ that produces [light \(bioluminescence\)](#). The lights are used to attract a [mate](#), and some species have their own distinctive [lighting pattern](#). In most North American species the male does the flying about and the female perches on vegetation near the ground. There are also larger, predaceous species that mimic the light code to lure smaller species close enough to capture, as well as [non-luminous fireflies](#) that fly during the day, and are believed to use [pheromones](#) to attract a mate instead.
- Keen observers can also find [camel crickets](#), [flower fly larvae](#) (bee and wasp mimics), and [fungus-feeding beetles](#).
- Butterfly-watching is at its best with many different species flying. [White Admirals](#), [Canadian Tiger Swallowtails](#), and [European Skippers](#) are particularly noticeable. The [Virginia Ctenuchid](#) moth also flies during the day.
- Many birds are busy nesting. Each nest is a unique gem, and an architectural marvel. [Ruby-throated Hummingbird](#) nests are [tiny with lichen](#) on the outside. [Common Raven](#) nests are large stick structures [lined with fur](#). [Tree Swallows](#) nest within tree cavities and add [feathers](#). [Chimney Swifts](#) construct a fragile-looking [saucer](#) with salvia and twigs. [Sedge Wrens](#) raise young within a [sphere of sedge](#). [Baltimore Orioles](#) weave [hanging nests](#). [Northern Parulas](#) build beard lichen [pendants](#). [Brown Creepers](#) hide [behind loose bark](#). [Ovenbirds](#) build a [little oven](#). And [Whip-poor-wills](#) [don't build a nest](#) at all.
- [Yellow-bellied Sapsuckers](#) switch from feeding on [Sugar Maple](#) sap to [birch](#) sap, creating distinctive matrices of

shallow holes. They also feed on fruit and arthropods that are sometimes trapped in the sticky sap.

- [Northern Ringneck](#) and [Eastern Milk Snakes](#) lay their eggs in June and July.
- Trying to avoid the snakes are [Eastern Red-backed Salamanders](#) that are also laying their [eggs](#). Unlike most salamanders they are completely terrestrial. They lay their eggs in moist places under rocks and logs, and hatch from eggs as [miniature adults](#).
- Young [Spring Peepers](#) and [Wood Frogs](#) emerge from ponds.
- In southwestern and northwestern Ontario baby [American Badgers](#) venture on outings from their [dens](#). The American Badger is endangered provincially and nationally. Besides knowing few are left, little is known about this animal. [Reported sightings](#) are extremely important to researchers [trying to learn about badger ecology](#).
- Native [Spotted Coral-root](#), and [Common Milkweed](#), and non-native [Northern Catalpa](#), [Common Viper's Bugloss](#), [Climbing Nightshade](#), [Garden Bird's-foot Trefoil](#), [Chicory](#), and [Common St. John's Wort](#) bloom.
- [Serviceberries](#) are the first shrubs to boast [ripe fruit](#).
- The [Summer Triangle](#), in the northeast sky, is made up of Vega, Deneb, and Altair.