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DRAGONFLIES

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Common Kentucky Dragonflies:



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TAXONOMY

KINGDOM: Animalia | PHYLUM: Arthropoda | CLASS: Insecta | ORDER: Odonata
SUBORDER: Anisoptera (dragonflies)

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WHAT IS A DRAGONFLY?

Like all insects, dragonflies have 6 legs, 2 antennae, and 3 body parts. Adult dragonflies have 2 pairs of wings, chewing mouthparts, and large compound eyes. Dragonfly antennae are very short, and cannot be seen without close inspection.

Dragonflies look similar to [damselflies](#), but dragonflies are unable to fold their wings over their bodies, whereas most damselflies hold their wings over their bodies when they are not flying. Young dragonflies (called "nymphs" or "naiads") are fully aquatic. They resemble adults except that they are wingless.

SIZE: Adults can be more than 3" long; naiads 2".

LIFE CYCLE

Dragonflies have incomplete metamorphosis. After hatching

from eggs, dragonfly naiads live and grow underwater. When they are ready to become winged adults, naiads climb to the surface of the water, usually on a plant stem or an exposed rock, and shed their skins. Adults are active in the spring, summer, or fall, depending on the species. Dragonflies mate in mid-air. Most female dragonflies dip their abdomens into water to deposit eggs; others insert the eggs into the stems of underwater plants.



Dragonfly Naiad, family Libellulidae (B. Newton, 2004)



Shed skin of a dragonfly naiad, family Gomphidae (B. Newton, 2006)

ECOLOGY

Immature and adult dragonflies are important predators in pond and stream ecosystems. The aquatic naiads feed voraciously on minnows, tadpoles, aquatic insects, and other small, live prey. Dragonfly naiads are primarily ambush predators: they find a strategic spot on an underwater leaf or under a rock.

When a victim gets close, the naiad snags it with harpoon-like extendable jaws. In turn, dragonfly naiads are eaten by many fish species.



Jaws of a dragonfly naiad, family Libellulidae (B. Newton, 2004)

Adult dragonflies are also predators. They are fantastic fliers, able to swerve, dive, and quickly change directions to catch flying insects in mid-air.

Dragonfly naiads are a food source for fish, aquatic spiders, and other aquatic insects (including larger dragonfly naiads). Adult dragonflies are sometimes eaten by birds and web-building spiders.

PEST STATUS

Dragonflies are not considered pests. They are typically considered beneficial because they eat mosquitoes and other pests.

COMMON KENTUCKY DRAGONFLIES

We have many common dragonfly species in Kentucky. They all have similar behavior, but some are found near ponds, others are more common near streams and rivers, depending on the species. Some of the most common types are pictured below.

DARNERS

FAMILY: Aeshnidae

Pictured below is the **Green Darner**, *Anax junius*. Darners are some of the commonly encountered dragonflies in Kentucky, especially near ponds. They are also among our largest dragonflies, at over 3". Green darners have clear wings, a green thorax, and an abdomen that is often bright blue. A few other types of darners are also found in Kentucky. Most are similar in size and appearance.



Green Darner (B. Newton, 2002)

COMMON SKIMMERS

FAMILY: Libellulidae

Kentucky is home to several common species of **Common Skimmers**. Common skimmers are fast fliers, and they are usually seen zipping up and down the sides of streams and creeks. Skimmers often have bold white-and-black or blue-and-black patterns on their bodies and wings. Most common skimmers have bodies between 1 - 2 ½" long. The [nymph](#) of a common skimmer dragonfly is pictured above in the Life Cycle section.

Pictured below are the female (left) and male (right) **Common Whitetail Skimmer**, *Libellula lydia*. This species is very common in Kentucky.



Female Whitetail Skimmer (B. Newton, 2003)



Male Whitetail Skimmer (B. Newton, 2003)

Common skimmers in the genus *Celithemis* are usually called "Pennants." Pictured below is a female **Banded Pennant**, *Celithemis fasciata*. It was about 1.5" long.



GREEN-EYED SKIMMERS

FAMILY: Corduliidae

Green-Eyed Skimmers, also known as "emeralds," are often found near standing water (ponds and marshes). Pictured below is a green-eyed skimmer in the genus *Epitheca*.

Dragonflies in this genus are usually called "Baskettails." The one below was photographed near a small lake in Rowan County, KY, and it was about 2" long.



Baskettail, a type of Green-Eyed Skimmer (B. Newton, 2006)



ABOVE: Close-up of a Baskettail dragonfly wing. Dragonfly families and species are often distinguished by the pattern of veins in their wings. Green-Eyed Skimmers belong to the dragonfly superfamily Libelluloidea, which includes several families of Skimmers. All skimmers can be distinguished from other dragonflies by the shape of the "triangles" in the front and rear wings: the triangles on a skimmer will be of a dissimilar size and shape. To distinguish green-eyed skimmers (family Corduliidae) from other skimmers, look at the "anal loop" in the rear wing. In green-eyed skimmers, the anal loop will be peninsular in shape, but not boot-like (as with common skimmers). Roll mouse over image to see the "triangles" (in white) and the "anal loop" (in pink) which are characteristic of

the dragonfly family Corduliidae (B. Newton, 2006).

COLLECTING & PHOTOGRAPHY

Dragonfly naiads and adults are a challenge to collect. You must have an aerial insect net (and super-human patience) if you want any hope of catching a dragonfly on the wing.

Catching naiads usually requires an aquatic insect net. Try dipping in parts of ponds and streams where a lot of aquatic vegetation is growing.

Even if you just want a picture, it's difficult to get close to a dragonfly. Dragonflies are beautiful photography subjects, but their quickness makes it a challenge to snap a good picture.

Make sure to use a fast film speed in bright daylight. Also: try looking for dragonflies early on cool summer mornings - they may be found "warming up" on plants, and will not be so quick to fly away.

Dragonfly naiads are a fun addition to a freshwater aquarium (as long as you don't mind them eating your expensive tropical fish!). Read about insects in the home aquarium in our on-line [article](#).

DRAGONFLY FACTS

Dragonflies can beat their four wings at different speeds and hold them at different angles. This allows them to fly in any direction and also to hover in place like a helicopter.

While most aquatic insects have gills on the outside of their abdomens, dragonfly naiads have their gills on the inside.

They use abdominal muscles to move water into and out of their abdomens to breath. This same action can also be used to "jet propel" a dragonfly naiad away from danger.

Because fish like to eat dragonflies, fishermen have special lures that are designed to look and move like dragonfly naiads.

Fly fishermen use lures designed to fly through the air like adult dragonflies.

MYTHS - LEGENDS - FOLKLORE

People once believed that dragonflies were able to "sew up" a persons lips or ears. This may be the reason why some dragonflies are called "darners"; a "darner" is also a kind of knitting needle.

Kentuckian Earlane Cox has often heard dragonflies referred to as "snake feeders" or "snake doctors." Apparently, these nick names stem from the belief that dragonflies caught insects for snakes or otherwise helped care for snakes, including helping to raise baby snakes.

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Photos courtesy R. Bessin and B. Newton, University of Kentucky
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