SEPTHEMBIER 2020

# CRITTER CONNECTIONS



## **Dragonflies**







Cattails, in the family *Typhaceae*, are a plant commonly associated with aquatic ecosystems. They typically grow in clumps at the edge between water and land in freshwater habitats. The roots, known as rhizomes, grow in shallow water, and the rest of the plant emerges, or sticks, out of the water several feet tall depending on the species. You will recognize them by their long leaves and the brown sausage-shaped 'cattail' structure at the top of the stem.



The flowers are not bright and showy as you see in other flowering plants; this is because they do not need to attract pollinators.

Many tiny flowers grow on a cylinder-shaped stalk called a spike, which are pollinated by wind. After releasing pollen, the flowers fall off, leaving behind the recognizable brown cylindrical spike. Eventually the spike falls apart, releasing fluffy seeds which are also spread by wind.

Cattails have many benefits, both as food and shelter for wildlife, and they provide resources for human use. The roots are edible, as are the young shoots, and even the young flower spikes can be boiled and eaten like corn on the cob. The roots can also be smashed to make a jelly-like medicine to put on scrapes and burns. The feathery seeds have been used as padding for bedding and pillows, and wildlife will use them to line their nests. The leaves can be woven together and are used in Native American roofs, mats, sandals and more. Even the stems have a sticky property, which can be used as a glue.

Source and Photos: Ladybird Johnson Wildflower Center

Front cover photo: Gail Hampshire



Dragonflies go through changes in their life cycle called incomplete metamorphosis. Make a spinning chart revealing each stage of its life cycle: the egg, nymph and adult dragonfly.

Download the craft and follow the steps here: http://bit.ly/CC\_Dragonfly







### Did you know...



- ... that dragonflies are carnivores and eat other insects?
- ... that dragonflies spend most of their lives as a nymph?
- ... that dragonflies are not related to flies?
- ... that dragonflies can fly backwards?
- ... that dragonflies bask in the sun like reptiles?
- ... that dragonflies are a sign of a healthy aquatic ecosystem?
- ... that dragonflies can fly over 20 miles per hour?
- ... that dragonflies have compound eyes made up of over 20,000 individual eyes or ommatidia each?



Neon Skimmer

Photo source: Davefoc







by Elanor Dean

There are over 150 different species or types of dragonfly in Texas. Dragonflies are in the insect order, **Odonata**, which comes from a Greek word meaning tooth. Dragonflies are insects, which means they have six legs, and their body is split into three parts, the head, thorax and abdomen. They have a pair of compound eyes and a mouth with sharp teeth on their head. Their legs and four wings connect to the thorax and the long abdomen contains most of their organs. Dragonflies have a large pair of compound eyes, which take up most of their head. The compound eyes are made up of thousands of individual eyes called **ommatidia**.

Also in the order Odonata, is a group of insects that are similar to dragonflies, called damselflies. They have similar characteristics, like a toothed mouth, slender body and



four wings, and they live in the same habitats, which is why damselflies are sometimes confused with dragonflies. Here are some ways to tell them apart: First, dragonflies are much larger and have thicker bodies. The eyes of a dragonfly are much larger and closer together on their head, almost touching, where damselflies have smaller eyes that are spaced apart. They also hold their wings differently when resting, dragonflies hold all four of their wings out to the side of their bodies, but damselflies fold their wings together.

Dragonflies are found in aquatic, freshwater habitats with plants like ponds, streams and lakes. This is because they live underwater during the larval stage of their life cycle, and as an adult they perch on plants coming out of the water. They rely on the environment to control their body temperature, so they will lay out or bask on plants and rocks in the sun to stay warm and will seek shade to cool down. Dragonflies go through changes in their life cycle in a process called incomplete metamorphosis. Dragonflies lay their eggs on underwater plants or on stems emerging from the water. After several weeks, the eggs hatch into the larval form, known as a **nymph**. Dragonflies spend most of their lives



underwater in the nymph form, sometimes up to five years. Nymphs breathe using gills and are usually plain in color so they can camouflage or blend in with their environment. They are carnivores and feed on a number of underwater prey, which they catch with their mouth. They will eat or consume almost anything they can catch including worms, mosquito and other insect larvae, small fish, snails and more. Nymphs move by sucking water into their abdomen and shooting it out, which pushes them through the water. As the nymph grows, it will molt or shed its skin several times until it is almost the same size as an adult dragonfly. At this time, it will stick its head out of the water and adapt to breathing air instead of using gills. Once it can breathe air, it will crawl out of the water and molt for the final time. The final molting process takes about an hour and the dragonfly is defenseless during this time. The nymph tightly holds the stem of a plant with its legs and the skin on its back will split, allowing the





adult dragonfly to crawl out or emerge. Once its body is free, the dragonfly's exoskeleton begins to harden and it pumps a blood-like substance called **hemolymph** into its wings, allowing them to expand. Once its wings are dry, the dragonfly will fly away, leaving behind its old exoskeleton. If you investigate the plants in an aquatic habitat, you might find an old dragonfly exoskeleton.



Adult dragonflies are carnivores and will catch flying insects in the air, such as ants, butterflies, mosquitoes, flies and even other dragonflies. They are excellent fliers and can reach speeds over 20 miles per hour. They can also hover in place like a helicopter and fly backwards.

Dragonflies are **indicator species**, which means that their presence in a habitat tells you something about that habitat. In the case of dragonflies, they reveal that the habitat is clean and healthy. Dragonfly nymphs are very sensitive to changes in water from added chemicals and temperature changes caused by pollution. They will not survive in habitats with







polluted water, so if you see a dragonfly, you will know that the environment is healthy. Dragonflies rely on a clean and healthy aquatic ecosystem, which is why it is so important for us to conserve water and prevent pollution. You can also help by tracking dragonflies you see using an app called iNaturalist.



#### WORD BANK

**Odonata** – the Order or scientific group that includes dragonflies and damselflies

**Ommatidia** – the individual eyes that form the compound eye of an insect

**Nymph** – the larva or second stage in the life cycle of some insects, like dragonflies

**Hemolymph** – a blood like substance found in invertebrates like insects

**Indicator species** – a living thing that, when found in certain habitats, provides information about the health of the ecosystem

Source: Texas Parks and Wildlife, National Geographic, Texas A&M AgriLife Photos from Wikimedia Commons: Steve Berardi, Judy Gallagher, Insects Unlocked, Chuck Evans, Matt Reinbold, Gail Hampshire ragonfly-Scramble

#### Unscramble the words and fill in the blank.

D

Dragonflies have a pair of eyes.	DOUMNCOP
The larval stage of a dragonfly's life cycle is the	HYNPM
A dragonfly is a type of	CENTSI
Dragonflies can fly forwards and	CAWBAKRDS
Dragonflies are, so they eat meat like insects.	SCARVEINOR
Dragonflies live in habitats near	TWEAR
Dragonflies are sensitive to	OULLPTION Widow Skimmer
Dragonflies will or shed their skin as they grow.	TMOL
To stay warm, a dragonfly will lay out or in the sun.	BSKA
Dragonflies are related toflies.	DASLEM





Draw a dragonfly in its habitat:

What is something you learned about dragonflies?

Join our iNaturalist Project - Statewide Stewards, to record dragonfly observations.



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