

## COLUMNISTS

# Dragonflies: Meet the masters of flight in your backyard

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I have a pond stocked with inexpensive goldfish and mosquitofish. My plan was to surround the pond with plants hung from metal poles, but I never got around to buying the plants. Nevertheless, the poles were put to effective use as favorite resting spots for dragonflies.

I had never paid much attention to these insects, but once I started watching them closely, I became fascinated. They are acrobatic flyers. They can fly straight up and down, hover like a helicopter, and even fly backwards! Their flight is so unique and efficient they have inspired engineers, who dream of building drones and planes that mimic these “masters of flight.”

Despite their acrobatics, they are not as fast as many other insects. They flap their wings at only 30 beats per second, while bees move their wings at over 300 beats per second. This is the reason we seldom hear their approach. Consequently, they are like stealth fighter jets to their prey and other dragonflies that invade their territory.

Dragonflies have excellent vision. A 360-degree view of their world is the result of two large eyes which cover most of their head. Our vision is a bit sharper, but dragonflies can see things we cannot.

Their 30,000 lenses are especially adept at detecting motion. One experiment demonstrated that a dragonfly could see an arrow fired from a crossbow – which flew too fast to be seen by humans.

The reason my pond attracted dragonflies is because they need water throughout their life cycle. Females lay their eggs in water, and the larvae or nymphs will spend two to five years living in an aquatic environment before they emerge as flying adults.

The last three to four months of their lives are focused on eating and mating. Some species mate in flight! Variegated Meadowlark Dragonfly males will maintain a firm grip on a

female's head until she lays her eggs. This ensures no other rival male can mate with her until the eggs are laid.

The logo of the Texas Master Naturalist program is the Cyrano Darner, a dragonfly that is 2.7 inches long, has a classic dragonfly shape and is widely distributed. To create the image for the logo, a dragonfly was collected, refrigerated to make it dormant and scanned using a flatbed scanner with the specimen laid on a mousepad so it would not be crushed. The scan warmed the dragonfly, and it was then released unharmed.

The result was an image that was absolutely accurate with no loss of color or detail. As master naturalists, we are always looking for ways to explore and observe our natural environment without doing any harm.

See the logo at the Texas Master Naturalist website at [txmn.tamu.edu](http://txmn.tamu.edu).

Dragonflies are good to have around because they are so effective in controlling mosquitos. Aquatic nymphs feed on the larvae, and the adults eat hundreds of flying mosquitos each day.

Some enthusiasts build dragonfly ponds instead of fishponds. A dragonfly pond needs to have a surface area of at least 40 square feet with a variety of depths and lots of aquatic plants and large rocks. It is important to not have any fish since they will eat the eggs and larvae. The maximum depth of the pond should be 2 feet with no filtration.

You can periodically use mosquito dunks to control mosquitoes until the dragonfly nymphs are established. Dunks that contain *Bt israeliensis* release a bacterium that will kill the mosquito larvae but will not harm the young dragonfly nymphs.

Having an established dragonfly pond in your backyard will allow you to sit outside on warm summer evenings "mosquito free" watching these fascinating acrobatic fliers as they feed, breed and defend their territories. You will discover as I did that these insects are truly "masters of flight!"

For more about dragonflies, a Texas Master Naturalist webinar with Texas Parks and Wildlife urban biologist Sam Kieschnick is available at [txmn.tamu.edu/tmntuesdays/#june](http://txmn.tamu.edu/tmntuesdays/#june).

*Randy Deming is a member of the Big Country Master Naturalists. All master naturalists are interested in the great Texas outdoors across the state, especially in our backyards. We are learning, sharing, volunteering, teaching and protecting our natural areas and resources. To learn more, go to the state website [txmn.tamu.edu](http://txmn.tamu.edu) or the local Facebook page @BCTXMN.*