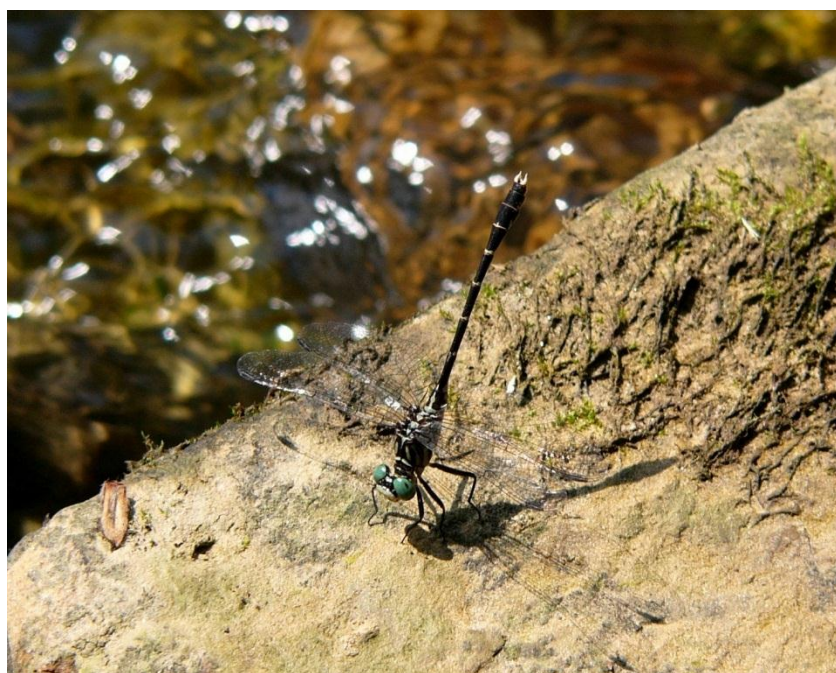


Habitat Tips - What makes **GREAT** dragonfly habitat?

What are dragonflies looking for, and what do they need? Dragonfly habitat needs to include three basic elements: sunlight, perches, water. These three elements will provide the food, shelter and breeding space that every dragonfly looks for.



Sunlight - Some dragonflies are more tolerant of shade than others, and a very few actually prefer it, but most dragonflies could be described as flying solar panels – without direct sunlight they cease to fully function.

So, look for perches and water with lots of direct sunlight.

This means:

- Not just water with small patches of sun, but water with large, un-shaded areas. Shady swamps and narrow woodland streams have very few dragonflies (with the exception of a few species like Spiketails, Fawn Darners and Mocha Emeralds). Sunny ponds and marshes are great. Also streams, creeks and rivers *wide* enough to provide big sunny stretches (Goose Creek, Bull Run, Potomac River, etc.).
- Explore the sunny banks of these wetlands – small patches of sunlight won't attract very many dragonflies – they look for large, sustained stretches of hot, direct sunlight.
- Open meadows, wide, sunny pathways, sunny old roads, athletic fields, and even sunlit parking lots – all these habitats, even *without* water, attract hunting dragonflies looking for flying insect prey.

Perching structure - this is needed in and out of water, for both aquatic larvae and winged adults. Depending on the species, aquatic larva may need submerged plants or debris (sticks, leaves, etc.) or submerged rocks, while the winged adult may perch on forest trees, shoreline shrubs, exposed rocks and logs, or tall meadow grasses. To seek shelter from wind, rain and night-time predators most adults utilize densely-branched trees and shrubs, thick meadow vegetation, evergreens or the occasional tree cavity.

So, look for sun and water with lots of perches.

This means:

- Ponds and creeks with fallen branches, even whole trees that stick in and/or out of the water are *magnets* for perching adults, as well as aquatic larva. Look for water with lots of woody debris.
- Aquatic habitats with healthy wooded buffers, especially lots of thick native shrubs, provide excellent perching for hunting and sunbathing adults. Look for ponds, creeks and riverbanks with sunlit branches that stick out over the water. You're almost guaranteed to see perched dragonflies.
- Aquatic vegetation is another dragonfly perching magnet – again, for both larva and adults. Sedges, rushes, aquatic grasses, willows, buttonbush and submerged vegetation are the best. Dense cattails stands, water lilies, and algae blooms are less productive as they often overcrowd wetlands and reduce dragonfly biodiversity. Water lily stands especially seem to reduce species diversity, leaving little else besides Blue Dashers.
- Dragonflies love tall grass meadows – they possess lots of sun, perching structure and insect prey. Look for large meadows near the water. Dragonflies often spend cloudy days perched in the grass – walk thru a tall meadow on such a day and you may flush up some exciting and seldom-seen species.



Water – all dragonfly larvae have gills and live in water. This means that all adults spend at least a few weeks around water where they mate and lay eggs. Shallow water is preferred, as it has less fish (which love to eat dragonfly larva) and more vegetation and debris (perching and shelter).

So, look for sun and perches near shallow water.

This means:

- Shallow ponds are generally better than deep lakes, unless it's a lake with large, marshy shallow areas.
- Marshes, flooded meadows and bogs are often the best – perfect combo of sun, vegetation and very shallow water (low fish populations).
- Even sunny, grassy puddles and vegetated ditches can attract dragonflies – again, a great combo of low to absent fish populations, shallow water and vegetation
- Wide (more sun), shallow creeks and rivers are better than deep creeks and rivers – I find wide sunny creeks like Bull Run and Goose Creek to generally be better than big rivers like the Potomac. Smaller, shallow stretches of the Potomac can also be excellent.
- Shallow creeks and rivers with sections of aquatic vegetation and plenty of in-stream fallen trees are ideal
- Some species travel great distances from their larval habitat once they emerge from the water as adults. Even species that stay in the same general area wander away from their aquatic nurseries into the surrounding fields, forests and human landscapes. Adults may spend most of their short lives hunting high in the forest canopy, over dry sunny fields or even over parking lots and ball fields, far from any wetlands. So even far from water you can, and will, see quite a few dragonflies, as they hunt, hide and look for sunlight.



How about Water Quality?

In general, pond and marsh dragonflies are somewhat more tolerant of low water quality than stream and river species. For example, some members of the skimmer family have aquatic larva that tolerate the low water quality found in a typical suburban stormwater detention pond. The rare pond and marsh *without* suburban run-off (fertilizer, pet droppings, lawn chemicals, petroleum products) has noticeably increased levels of dragonfly diversity. **Stream and river** species appear to be even more sensitive to low water quality. Most of our stream species cannot tolerate the highly-eroded, silt-covered, nutrient-heavy streams of Northern VA's urban and suburban landscapes. All that silt covers their eggs, while eroded banks destroy habitat and dump more silt. Chemical pollutants and excess nutrients (pet droppings and fertilizer) can result in lower dissolved oxygen levels and water too toxic for most stream dragonfly larva.

All dragonfly larvae do best in aquatic environments with plenty of buffer between suburban run-off and the water they live in. Ponds and marshes with thick vegetated buffers are better than those without, and ponds fed by natural flow, rather than a concrete ditch or stormwater pipe can have twice the species diversity. Streams and rivers with stable banks, large wooded buffers, and protection from urban run-off will support more species than those without. And again, whenever you see a pipe or concrete ditch ending at a stream you can expect less dragonfly larva.



The shed exoskeleton, or exuvia, left behind by the aquatic larvae of a Dragonhunter, the largest member of the clubtail family.

