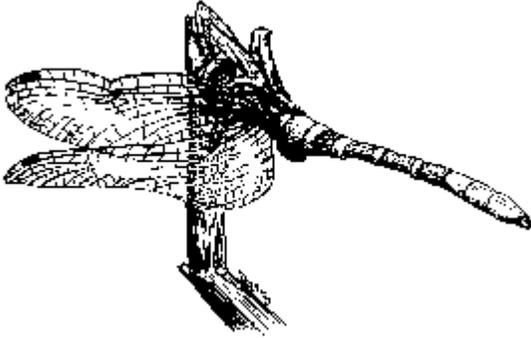


Natural Heritage Resources Factsheet

Rare Odonates Found in Virginia's Coastal Plain

What's An Odonate?



Dragonflies and damselflies together make up the insect order Odonata. The Greek word "odon" means tooth, and the name here refers to the toothed jaws of these predatory insects. Fortunately for us, dragonflies and damselflies use their formidable mandibles on mosquitoes, midges, and other pest insects. Many odonate species are common and well known, such as the Common Green Darner dragonfly and the Emerald Jewelwing damselfly. Odonates are characterized by

their long narrow abdomens, two pairs of large richly veined wings, and large compound eyes. They are often strikingly colored in bright green, blue, red, yellow, and violet. They are very good fliers, with dragonflies being much stronger on the wing than damselflies.

Dragonflies and damselflies are easily distinguished from one another. Dragonflies are generally larger, stouter, in addition to being stronger fliers. The eyes of dragonflies are so large they often touch. Damselfly eyes are proportionally smaller than those of dragonflies and never touch. Dragonflies spend a great deal of time in the air, hunting, defending territory, and patrolling for a mate. When they do perch, their wings are spread open. This is in contrast to damselflies which hold their wings together above the body when at rest, except in the damselfly group known as spreadwings. As the name implies, spreadwings do not fold their wings over the body, instead the wings rest slightly spread apart.

Rare Odonates in Virginia's Coastal Plain

Dragonflies and damselflies are richly varied in size and coloration. Coupled with their remarkable flying skills, these creatures are as exciting to observe as birds and butterflies. The following are a few of the state rare species that can be found in Virginia's coastal plain. The Long-legged Green Darner, a dragonfly also known as the Comet Darner, is a good example of how strikingly beautiful these animals can be. The Long-legged Green Darner ranges in length from 3-3 1/2 inches long. Its head and middle section, called the thorax, are an iridescent green. The long narrow "tail" or abdomen is a brilliant fiery red, and its long legs are evident when in flight. This species can be seen flying rapidly near coastal plain ponds from Massachusetts to Florida.

At the other end of the spectrum, in both color and size, is the Dwarf Skimmer. This pale blue dragonfly is the smallest dragonfly in North America, barely reaching an inch long. Females are yellow and brown. The Dwarf Skimmer had not been seen in Virginia since 1890 until DCR Division of Natural Heritage staff biologists discovered two populations in Caroline County in

1993. The Dwarf Skimmer inhabits bogs and boggy ponds and may be seen in flight from May to August. This species is extremely rare in Virginia.

The Southern Sprite is a damselfly of a dark metallic green, with touches of pale blue on the sides of the thorax and the tip of the abdomen. It is a very slender and delicate species that may be around an inch in length. It has a weak flight and is generally found on or near ground vegetation. The Southern Sprite lives near ponds, lakes, sloughs, and bogs.

A slightly larger damselfly, the Seepage Dancer, takes its name from its habitat, grassy yet boggy seepages. Male have a blue abdomen; females are brownish, with black rings. Seepage Dancers can be seen perching on stems of grasses or sedges.

For fuller descriptions of these and other odonate species, consult a field guide.

Habits and Habitats

In Virginia, dragonflies and damselflies may be observed from April through November. Dragonflies and damselflies are most often seen in flight on warm sunny days near a body of fresh water, although there are a few species adapted to brackish water. Dragonflies often patrol a well defended territory. They occasionally perch on a tall stem or similar vantage point. Damselflies follow much the same pattern, but spend more time perching. Odonates are found in marshes, swamps, fens, bogs, and near streams, rivers and lakes. Odonate nymphs are aquatic, living in the waters of these habitats.

Life History

Dragonflies and damselflies on the wing are actually at the adult stages of their life cycle. The adults are short-lived and spend most their time hunting, eating, and mating. The mating behavior of odonates is unusual. With special claspers at the end of his abdomen, the male grasps the female behind the head. The pair may fly in tandem for a while, as the male seeks to avoid competing males and to find a place to mate. Mating occurs when the female curls her abdomen forward beneath her and touches the upper abdomen of the male. Once she has received his sperm the pair will often seek a place to lay the eggs together, with the male continuing to drive off other males. Most dragonflies lay their eggs in the water, while damselflies and darner dragonflies inject their eggs into the stems of aquatic plants.

Odonates hatch from the eggs as an aquatic form known as a nymph. Most of the odonate life cycle is spent in the nymph stage, which may last from one month to three years. Nymphs differ in appearance from the adults in that the wings are absent or in a reduced form. Damselfly nymphs have three feathery gills at the tip of their abdomens. Odonate nymphs possess a unique extendable jaw which rapidly shoots forward to capture prey. Nymphs feed on mosquito larvae and other small aquatic invertebrates.

When the nymph is ready to mature into the flying adult form, it crawls from the water on the stem of an emergent plant or onto the shore. Its old skin splits open and the new adult emerges.

During this time just after molting its soft body makes it vulnerable to predation by birds or other odonates.

Conservation

The most significant threat to dragonflies and damselflies is loss or degradation of the aquatic habitat in which odonate eggs are laid and nymphs develop. The key to conservation of rare dragonflies and damselflies is protection of the bogs, ponds, seepages, streams, and rivers in which they lay their eggs and the nymphs spend most of their lives. Landowners should follow best management practices when performing any activity which would affect water levels or water quality of these habitats.