



**Common Name:** EDMUND'S SNAKETAIL

**Scientific Name:** *Ophiogomphus edmundo* Needham

**Other Commonly Used Names:** none

**Previously Used Scientific Names:** none

**Family:** Gomphidae

**Rarity Ranks:** G1G2/S1

**State Legal Status:** Endangered

**Federal Legal Status:** none

**Description:** Edmund's snaketail is a gorgeous green clubtail. Adults are typically 44 - 48 mm ( $1\frac{3}{4}$  -  $1\frac{7}{8}$  inches) in total length. The thorax is bright green, with split mid-dorsal, two shoulder, and two lateral brown stripes. The anterior lateral stripe is very thin, and sometimes broken; the posterior stripe is much thicker. The eyes are blue-green to green, and the face is green. The legs are mostly black, but often have a very small yellow or pale area near the base of the thigh. The abdomen is very dark brown, with yellow dorsal markings on all segments that shorten posteriorly and are usually only represented as a spot on segments 8 - 9. Lateral yellow markings of male are present on segments 1 - 3, absent on segments 4 - 6, small on segment 7, becoming large spots on the edge of segments 8 - 9, and most of segment 10. Female is similar but the abdomen is thicker, with yellow lateral markings on every segment, but smaller on segments 7 -

9 than on male. Club is virtually absent in female. More pictures are available at [Giff Beaton's website](#)

**Similar Species:** Neither of the other snaketails known to occur in north Georgia (Maine snaketail and Appalachian snaketail) have two lateral thoracic stripes. Individual Edmund's snaketails with a broken anterior lateral stripe may appear similar to these two species, which are further differentiated by having green eyes and all black legs (Maine snaketail) or yellow thighs (Appalachian snaketail). No other dragonfly has bright green coloration on the thorax except immatures (both sexes) and adult female eastern pondhawks (*Erythemis simplicicollis*), which are not clubbed, have different abdominal patterns and white cerci.

**Habitat:** Larvae are found in medium- to large-sized, clear streams and rivers with moderately fast currents. Adult males are found mostly on rocks in riffles or rapids while territorial, but appear to spend much of their lives in the treetops.

**Diet:** Adults eat almost any flying insect prey they can catch. Larvae eat a variety of aquatic invertebrates.

**Life History:** Adults are typically on the wing from the end of April until June. Known flight dates in Georgia are 24 April to 29 June. Known flight dates for the species across its entire range are 24 April to 29 June. Adults emerge by crawling out onto rocks or the stream bank and then move away from the larval habitat into nearby fields and other areas of open habitat. After maturing for a week or two, they return to the breeding habitat and set up territories. Adults are thought to spend most of their time in treetops, only coming down to the water to breed. When at the water, males perch conspicuously on rocks in large riffles. For unknown reasons, some males spend only a few minutes on a rock and then leave for good, but on other days spend many hours perching on rocks and patrolling. When perched, this species is often approachable, but is just as often very wary. Males are most likely to be on territory on only a few days of clear sunny weather. Patrols are fairly short and fast with no hovering. When females approach the water they are often quickly captured by males. Mating takes place while perched. Once fertilized, the female returns to the stream and oviposits by dipping the end of her abdomen into the water in a series of taps on the water's surface near the same riffles that males are guarding, and then flies back up to the treetops. Some females perch on rocks during ovipositing, raising their abdomens high with a cluster of extruded eggs, but the extent of this behavior is so far unknown.

**Survey Recommendations:** Surveying is best accomplished during the flight season in late April through June, but winter larval surveys could also be effective. This species is notoriously difficult to survey, requiring near perfect weather during the appropriate time of the short flight season when the adults move from the treetops to the breeding habitat. Typically this consists of clear sunny weather with a temperature above 24°C (75°F). Immature adults are more difficult to find as they are spread out away from the stream in open habitat. Larvae are also difficult to find in the large rivers this species usually inhabits.

**Range:** This species is restricted to the southern Blue Ridge of North Carolina, Tennessee, South Carolina, and Georgia, where it is known from only eight counties. Two of the adjacent county pairs (Murray in Georgia and Polk in Tennessee; and Rabun in Georgia and Oconee in South Carolina) really only represent single populations. This species was thought extinct in the 1970s and 1980s, but was rediscovered in North Carolina in 1994. Surveys during 2006-2008

documented healthy populations occurring within long stretches of both the upper Conasauga and upper Chattooga Rivers. However, Edmund's snaketail was not detected at the other known Georgia site, Smith Creek in White County (Chattahoochee River system) during this same survey effort. Research is ongoing to try to locate other watersheds with populations.

**Threats:** The primary threat to this species is habitat alteration associated with agricultural practices and commercial and residential development in the north Georgia mountains. Failure to follow agricultural best-management practices results in sedimentation and bank destabilization and potential degradation of water quality from pesticide and fertilizer runoff. One of the known streams in Georgia, Smith Creek, is in danger of being impacted by development occurring near the city of Helen.

**Georgia Conservation Status:** Most of the Chattooga River population occurs along the "Wild and Scenic" portion of the river, and is on U.S. Forest Service property. A portion of the Conasauga River population also occurs on U.S. Forest Service property, but this species also occupies reaches flowing through private property.

**Conservation and Management Recommendations:** Incentive programs to help farmers implement best-management practices could improve instream habitat by decreasing sedimentation and runoff and increasing riparian forest cover. Forestry operations should follow best-management practices for water quality. Conservation groups should work cooperatively with developers and local governments to minimize the impacts from new home construction and commercial development. Surveys carried out during 2006-2008 documented the spatial extent of the Conasauga River and Chattooga River populations, but there is a need for additional surveys to document new populations and for periodic monitoring of known populations.

### **Selected References:**

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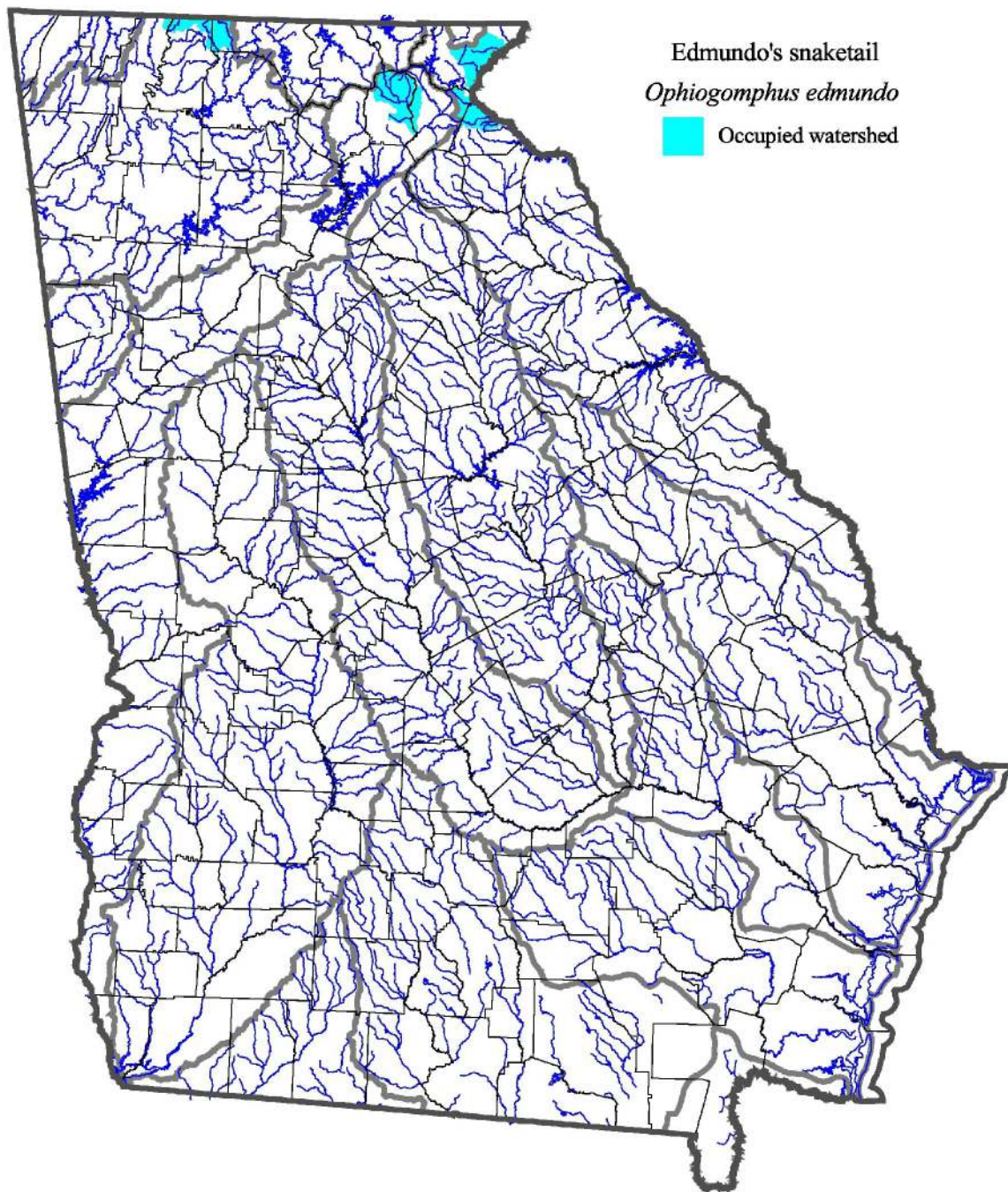
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Giff Beaton, June 2008: original account





Watersheds (Huc 10) with known occurrences. Streams, county lines, and major river basin boundaries are also shown. Map generated from GADNR (Nongame Conservation Section) data March 2009.