

Tiger Spiketail



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Photo credits: Jesse W. Jaycox

Scientific Name *Cordulegaster erronea*
Hagen in Selys, 1878

Family Name Cordulegastridae
Spiketails

Did you know?

There are at least 35 known species of Spiketails worldwide, with four species known to occur in New York State (Nikula et al. 2003, New York Natural Heritage 2007).

Summary

Protection Unprotected in New York State, not listed federally.

This level of state protection means: the species may be taken at any time without limit; however a license to take may be required.

Rarity G4, S1

A global rarity rank of G4 means: Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

A state rarity rank of S1 means: Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology makes it especially vulnerable in New York State.

State Ranking Justification

The Tiger Spiketail is known to occur in seven counties in New York State, with no population estimates determined. Further survey efforts may result in the identification of additional populations or range expansions, and may enable population sizes to be estimated.

Conservation Issues

Threats

Any activity that might alter groundwater seepages could impact Tiger Spiketail populations, as seepage areas are key oviposition sites (Holst 2005). Such threats might include chemical contamination from agricultural run-off, changes in dissolved oxygen content, increases in sediment load, and the building of dams (Holst 2005).

Management Considerations

Any measures to reduce water contamination, agricultural run-off, siltation, and damming that would affect flow of springs and small stream seepage areas should be considered when managing for this species (Holst 2005).

Research Needs

Further research is needed to define the distribution and population size of the Tiger Spiketail. In addition, research is required to understand the habitat requirements and threats to this species, and to create appropriate management guidelines for its persistence in known locations (Holst 2005).

Short Term Trends

No estimate of population size for this species has been made based on observations from five New York counties made in the mid-1990s to present (New York Natural Heritage Program 2007). General reports of observations made in the early 1990s include locations in two additional counties (Donnelly 2004), and information prior to this time frame is limited. Therefore, any new location information on the Tiger Spiketail in New York may reflect heightened interest in surveying for this species rather than a population increase or a range expansion (Holst 2005).

Long Term Trends

Two observations of the Tiger Spiketail have been made prior to the mid-1990s in Essex and Tompkins counties and recent observations from the mid-1990s to present have been made in Putnam, Westchester, Rockland, Schuyler, and Erie counties (Donnelly 2004, New York Natural Heritage Program 2007). Since the full extent and size of the populations have not been determined, long-term trends are unclear.

Habitat

Tiger Spiketails inhabit coldwater streams, small spring trickles, or seeps in partial shade that are too small for fish where there is a constant, slight water flow and a non-silt substrate (Barlow 1995, Dunkle 2000, Nikula et al. 2003, Holst 2005). Larvae are aquatic and found in the water during this lifestage, whereas adults are terrestrial and are found in habitats surrounding streams, springs, and seeps.

Associated Ecological Communities

Other Probable Associated Communities

Spring

Associated Species

Seepage Dancer (*Argia bipunctulata*)
Arrowhead Spiketail (*Cordulegaster obliqua*)
Gray Petaltail (*Tachopteryx thoreyi*)

Range



The map shows the known locations for tiger spiketail (black dots) based on the New York Natural Heritage Program database . A general approximation of the potential range (blue shading) throughout the state is based on the U.S. Forest Service Ecological Units (Keys et al. 1995).

Data Sources

- New York Natural Heritage Program (Natural Heritage Element Occurrences)
- NYS GIS Data Sharing Cooperative, simplified by NYS Department of Environmental Conservation, Habitat Inventory Unit (County Boundary for New York State)
- U.S. Department of Agriculture, Forest Service (Subregions of the conterminous United States)

Best Places to See

Philipse Brook (Putnam County)

New York State Distribution

The Tiger Spiketail is confirmed from locations in seven counties across New York State (Donnelly 2004, New York Natural Heritage Program 2007). While the full extent of the population has not been determined, this species is known to occur in small coldwater streams, spring trickles, or seeps in the Great Lakes and Lower New England / Northern Piedmont Ecoregions (Barlow 1995, Dunkle 2000, Nikula et al. 2003, Holst 2005, New York Natural Heritage Program 2007).

Global Distribution

The Tiger Spiketail is an uncommon species distributed across the northeastern United States south to Tennessee and west to Missouri (Dunkle 2000). It has a total known range from New York, Connecticut, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Kentucky, Tennessee, Alabama, Louisiana, Georgia, Mississippi, Illinois, Michigan, and Ohio (Abbott 2007).

Identification Comments

Identifying Characteristics

Female dragonflies in the Spiketail family have an elongated ovipositor (a modified appendage used to pierce a substrate and lay eggs) that extends beyond the tip of their abdomen, giving them a spiked-tail appearance (Needham et al. 2000, Nikula et al. 2003). Tiger Spiketails are large (2.9 inches), blackish-brown dragonflies with yellow bands on their abdomens. They have short legs and their thorax has two wide, yellow lateral (side) stripes. They have pale, metallic green eyes and, like other spiketails, their eyes meet at one point on top of their heads. This species may be distinguished from other spiketails by its black coloration on the rear of the head behind the eyes. This area is mainly yellow on other species.

Behavior

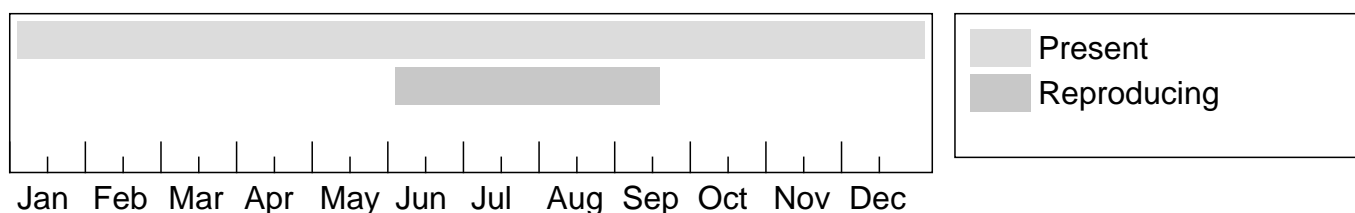
Spiketail larvae are aquatic and burrow tail first into the substrate of waters where they are found. They then cover themselves with muck and wait for prey to happen by (Mead 2003). Adults are terrestrial and perch at an oblique (about a 45 degree) angle on vegetation on the edges of their water habitats and hunt in fields and forest clearings (Nikula et al. 2003). Females oviposit (lay eggs) by hovering vertically over shallow water and plunging the tip of their abdomen into the mud in a sewing-machine like movement (Dunkle 2000, Nikula et al. 2003).

Diet

Tiger Spiketail larvae feed on smaller aquatic invertebrates and adults feed on insects which they capture in flight.

The Best Time to See

Adults are active from early June to early September range-wide (Dunkle 2000, Needham et al. 2000); however, have been observed active from mid-July through mid-August in NJ (Barlow, 1995). A similar activity period is expected in New York State. The best time of day to look for adult males is from late in the day until dusk, and their peak activity is around 6 P.M. Larvae may be found in appropriate aquatic habitats year-round.



The time of year you would expect to find Tiger Spiketail in New York.

Similar Species

Arrowhead Spiketail (*Cordulegaster obliqua*): The abdominal pattern on the Arrowhead Spiketail is distinct, with yellow dorsal (top) spots on segments 1-9 (those on segments 4-8 arrowhead-shaped) on a black abdomen (Nikula et al. 2003).

Twin-Spotted Spiketail (*Cordulegaster maculata*): The twin-spotted spiketail has distinctive rounded yellow abdominal markings on segments 3-8 (Nikula et al. 2003).

Delta-Spotted Spiketail (*Cordulegaster diastatops*): The abdominal pattern on the Delta-spotted Spiketail is distinct, with yellow lateral (side) spots on segments 1-9 (those on segments 3-8 dagger-shaped) on a black abdomen (Nikula et al. 2003).

Taxonomy

Kingdom Animalia

└ Phylum Mandibulates (Mandibulata)

└ Class Insects (Insecta)

└ Order Dragonflies and Damselflies (Odonata)

└ Family Cordulegastridae (Spiketails)

Additional Resources

Links

Google Images

<http://images.google.com/images?q=CORDULEGASTER+ERRONEA>

NatureServe Explorer

<http://natureserve.org/explorer/servlet/NatureServe?searchName=CORDULEGASTER+ERRONEA>

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This project is made possible with funding from:

- New York State Department of Environmental Conservation Hudson River Estuary Program
- Division of Lands & Forests, Department of Environmental Conservation
- New York State Office of Parks, Recreation and Historic Preservation

Information for this guide was last updated on Mar 13, 2009