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<b>Common Name:</b>	Tiger spiketail	<b>SGCN – High Priority</b>
<b>Scientific Name:</b>	<i>Cordulegaster erronea</i>	
<b>Taxon:</b>	Dragonflies and Damselflies	

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<b>Federal Status:</b>	Not Listed	<b>Natural Heritage Program Rank:</b>
<b>New York Status:</b>	Not Listed	Global: G4
		New York: S1
		Tracked: Yes

### Synopsis:

The distributional center of the tiger spiketail (*Cordulegaster erronea*) is in northeastern Kentucky in the mixed mesophytic forest ecoregion, and extends southward to Louisiana and northward to western Michigan and northern New York. New York forms the northeastern range extent and an older, pre-1926 record from Keene Valley in Essex County is the northernmost known record for this species. Southeastern New York is the stronghold for this species within the lower Hudson River watershed in Orange, Rockland, Putnam and Westchester counties and is contiguous with New Jersey populations (Barlow 1995, Bangma and Barlow 2010). These populations were not discovered until the early 1990s and some have remained extant, while additional sites were added during the New York State Dragonfly and Damselfly Survey (NYSDDS). A second occupied area in the Finger Lakes region of central New York has been known since the 1920s and was rediscovered at Excelsior Glen in Schuyler County in the late 1990s. During the NYDDS, a second Schuyler County record was reported in 2005 as well as one along a small tributary stream of Otisco Lake in southwestern Onondaga County in 2008 (White et al. 2010). The habitat in the Finger Lakes varies slightly from that in southeastern New York and lies more in accordance with habitat in Michigan (O'Brien 1998) and Ohio (Glotzhober and Riggs 1996, Glotzhober 2006)—exposed, silty streams flowing from deep wooded ravines into large lakes (White et al. 2010). The rarity of the species in this portion of the state is highlighted by the low rate of detections from over 16 surveys in 2004 and 2005 in suitable habitats by experienced observers during the first season who failed to find any additional sites. Nevertheless, Glotzhober (2006) reported that the acquisition of a positive search image and increased survey effort greatly expanded the number of known sites and overall range in Ohio. A single enigmatic record from Erie County was reported by Donnelly (2004).

Across the range, *C. erronea* is a habitat specialist inhabiting tiny, forested, spring-fed coldwater streams, small spring trickles, or seeps in partial shade that are too small for fish but where there is a constant, slight water flow and a sandy or gravelly substrate (Barlow 1995, Donnelly 1999, Dunkle 2000). In northern New Jersey, the species is restricted to perennial low-to-medium-gradient forested cold water springs and trickles with a fine sand substrate that is relatively free of organic matter with a mix of skunk cabbage, jewelweed, sedges, and ferns (Barlow 1995). In Ohio, *C. erronea* use small headwater streamlets with persistent flow and good forest cover in steep ravines and adults spend significant time in the forest canopy and flying the stream during the day (Glotzhober 2006). An informative distribution model found that environmental variables with topographic position (slope, topographic index) and surficial geography were the most important parameters for defining suitable habitats for this species (New York Natural Heritage Program 2011). It has also been noted that geological areas conducive to the formation and maintenance of numerous permanent spring-fed seeps draining into deep, wooded glacial valleys were ideal locations.

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%		Abundant		[Text here]	[Text here]
6% to 10%		Common			
11% to 25%		Fairly common			
26% to 50%		Uncommon			
> 50%		Rare			

**Habitat Discussion:**

*C. erronea* inhabits 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, NYSDEC 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.

Primary Habitat Type
Headwater/Creek; Low Gradient; Moderately Buffered, Neutral; Transitional Cool
Headwater/Creek; Low-Moderate Gradient; Moderately Buffered, Neutral; Transitional Cool

**Distribution:**

Number of occurrences obtained from the map by White et al. (2010) using data collected during The New York Dragonfly and Damselfly Survey 2005-2009 and information in Donnelly (1999) and the New York Natural Heritage Database (2013).

Erie County- No date (Donnelly 2004)

This is the same historical as below Putnam County — Highlands (2007)

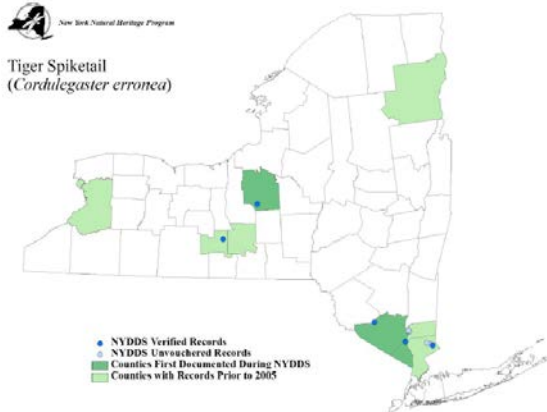
Rockland County — Doodletown (2006)

Schuyler County — 2 locations: 1999 (Excelsior Glen), 2005 (Hector)

Westchester County — 2 locations: 1993 (Bedford), 1995 and 2006 (Ward Pound Ridge) Orange County – Prosperous Valley Road (2009)

Onondaga County – Otisco Lake (2008)

Saratoga County – Great Sacandaga Lake (2010)



White et al. (2010)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Natural System Modifications	Dams & Water Management/Use (change in natural hydrology)	N	L	H
2. Biological Resource Use	Logging & Wood Harvesting (siltation of streams)	N	H	L
3. Climate Change & Severe Weather	Droughts	N	M	H
4. Climate Change & Severe Weather	Storms & Flooding	N	L	H
5. Energy Production & Mining	Oil & Gas Drilling (hydraulic fracturing issues)	N	M	H
6. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (hemlock woolly adelgid)	R	L	H

#### References Cited:

Bangma J. and A. Barlow. 2010. NJODES; The dragonflies and damselflies of New Jersey [web application] <<http://www.njodes.com/Speciesaccts/species.asp>>. Accessed 10 August 2012.

Barlow, Allen E. 1995. On the status of *Cordulegaster erronea* [Hagen in Selys, 1878] in the state of New Jersey. *Argia* 7:4 (6-9).

Donnelly, T. W. 1999. The dragonflies and damselflies of New York. Prepared for the 1999 International Congress of Odonatology and 1st Symposium of the Worldwide Dragonfly Association. Colgate University, Hamilton, NY.

- Donnelly, T. W. 2004. Distribution of North American Odonata. Part I: Aeshnidae, Petaluridae, Gomphidae, Cordulegastridae. *Bulletin of American Odonatology* 7:61-90.
- Dunkle, S. W. 2000. *Dragonflies through binoculars. A field guide to the dragonflies of North America.* Oxford University Press, New York, New York, USA.
- Glotzhober, B. and D. Riggs. 1996. *Cordulegaster erronea* finds in Ohio. *ARGIA* 8:4-5.
- Glotzhober, B. 2006. Life history studies of *Cordulegaster erronea* Hagen (Odonata: Cordulegastridae) in the laboratory and the field. *Bulletin of American Odonatology* 10:1-18.
- New York Natural Heritage Program. 2013. Biotics database. New York Natural Heritage Program. New York State Department of Environmental Conservation. Albany, NY.
- New York Natural Heritage Program. 2011. Online Conservation Guide for *Cordulegaster erronea*. <<http://www.acris.nynhp.org/>>. Accessed 10 August 2012.
- Nikula, B., J. L. Loose, and M. R. Burne. 2003. *A field guide to the dragonflies and damselflies of Massachusetts.* Massachusetts NHESP, Westborough, Massachusetts, USA.
- White, E. L., J. D. Corser, and M. D. Schlesinger. 2010. *The New York dragonfly and damselfly survey 2005-2009: Distribution and status of the odonates of New York.* New York Natural Heritage Program, Albany, New York, USA.

**Common Name:** Little bluet  
**Scientific Name:** *Enallagma minusculum*  
**Taxon:** Dragonflies and Damselflies

**SGCN – High Priority**

**Federal Status:** Not Listed  
**New York Status:** Threatened

**Natural Heritage Program Rank:**  
 Global: G4  
 New York: S1  
 Tracked: Yes

**Synopsis:**

The distribution of the little bluet (*Enallagma minusculum*) encompasses North Carolina, the northeastern United States, and southeastern Canada (Nikula et al. 2003). More specifically, the species is found in North Carolina, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, Maine, New Brunswick, Nova Scotia, and Prince Edward Island (NatureServe 2011, Abbott 2007). In New York, *E. minusculum* is now known to occur at three locations, two in Suffolk County and one in Queens County (New York Natural Heritage Program 2010). A number of sites with suitable habitat were searched during the New York Dragonfly and Damselfly Survey (2005-2009), but even with increased effort looking for the species in recent years, only three locations are known in the state (White et al. 2010) and at least one of these may no longer be occupied.

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%	X	Abundant		Moderate Decline	Unknown
6% to 10%		Common			
11% to 25%		Fairly common	X		
26% to 50%		Uncommon			
> 50%		Rare			

**Habitat Discussion:**

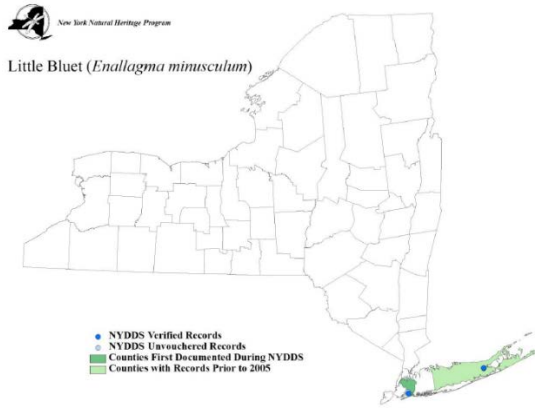
*E. minusculum* inhabit ponds and lakes with sandy substrate, mainly in coastal plain areas with emergent vegetation along the shoreline (Carpenter 1991, Lam 2004), although the recently completed New Hampshire Dragonfly Survey (Hunt 2012) found them occurring far north of the coastal plain in New Hampshire. The largest Long Island population is known from a coastal plain pond which contains the following emergent plants: three-square bulrush (*Schoenoplectus pungens*), jointed rush (*Juncus articulatus*), many-flowered pennywort (*Hydrocotyle umbellata*), seven-angle pipewort (*Eriocaulon aquaticum*), and golden hedge-hyssop (*Gratiola aurea*). The pond is surrounded by a wooded upland as well as residences (New York Natural Heritage Program 2010).

<b>Primary Habitat Type</b>
Coastal Plain Pond

**Distribution:**

Number of occurrences obtained from the map by White et al. (2010) using data collected during The New York Dragonfly and Damselfly Survey 2005-2009.

1993 Lake Panamoka (but not found in 2007 or 2009)  
 2008 Big Johns Pond  
 2009 Wildwood Lake Riverhead: 868 individuals observed



White et al. (2010)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss from lakeside development)	W	L	H
2. Natural System Modifications	Dams & Water Management/Use (alteration of natural hydrology)	R	L	H
3. Pollution	Household Sewage & Urban Waste Water (lawn care)	P	L	H
4. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (grass carp)	W	L	M
5. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (Phragmites)	W	L	M

**References Cited:**

Abbott, J.C. 2007. OdonataCentral: An online resource for the distribution and identification of Odonata. Texas Natural Science Center, The University of Texas at Austin. <<http://www.odonatacentral.org>>. Accessed 10 October 2012.

Carpenter, V. 1991. Dragonflies and damselflies of Cape Cod. The Cape Cod Museum of Natural History, Brewster, Massachusetts.

Hunt, P. 2012. The New Hampshire Dragonfly Survey: A Final Report. Report to the NH Fish and Game Department. Audubon Society of NH, Concord.

Lam, E. 2004. Damselflies of the northeast. A guide to the species of eastern Canada and the northeastern United States. Biodiversity books, Forest Hills, New York.

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 10 October 2012.

New York Natural Heritage Program. 2010. Element Occurrence Database. Albany, NY.

Nikula, B., J. L. Loose, and M. R. Burne. 2003. A field guide to the dragonflies and damselflies of Massachusetts. Massachusetts NHESP, Westborough, MA.

White, E. L., J. D. Corser, and M. D. Schlesinger. 2010. The New York dragonfly and damselfly survey 2005-2009: Distribution and status of the odonates of New York. New York Natural Heritage Program, Albany, New York.

<b>Common Name:</b>	Scarlet bluet	<i>SGCN – High Priority</i>
<b>Scientific Name:</b>	<i>Enallagma pictum</i>	
<b>Taxon:</b>	Dragonflies and Damselflies	

<b>Federal Status:</b>	Not Listed	<b>Natural Heritage Program Rank:</b>
<b>New York Status:</b>	Threatened	Global: G3
		New York: S2
		Tracked: Yes

**Synopsis:**

The scarlet bluet (*Enallagma pictum*) has a small range which extends only from New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, and southern Maine. In New York, there are 10 known locations in Suffolk County (New York Natural Heritage Program 2010). These locations were investigated as part of a special NYSDDS effort but due to the species' Threatened status in the state, the locations were not listed in the final report (New York Natural Heritage Program 2010).

*E. pictum* is found at acidic, sandy, coastal plain ponds with water lillies (Nikula et al. 2003, Lam 2004). Preferred habitat also typically has bayonet rush (*Juncus militarus*) along the shoreline (Gibbons et al. 2002, New York Natural Heritage Program 2010). In Cape Cod, Gibbons et al. (2002) found that *E. pictum* occurs mainly in habitats with white water lily (*Nymphaea odorata*). Most known habitats in New York include water lillies, pickerelweed, shorelines of emergent grasses, rushes, or sedges, or boggy margins (New York Natural Heritage Program 2010).

In New York, *E. pictum* has been confirmed in ten locations in Suffolk County (New York Natural Heritage Program 2011). In addition to a restricted range, there are a number of threats to these locations. New locations in recent years are likely due to increased survey effort rather than a population increase or expansion.

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%	X	Abundant		Stable	Unknown
6% to 10%		Common			
11% to 25%		Fairly common	X		
26% to 50%		Uncommon			
> 50%		Rare			

**Habitat Discussion:**

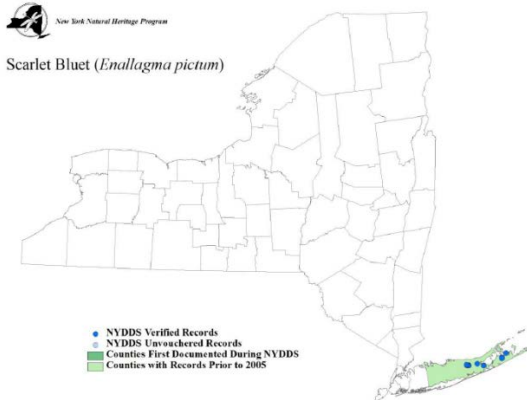
*E. pictum* is found at acidic, sandy, coastal plain ponds with water lillies (Nikula et al. 2003, Lam 2004). Preferred habitat also typically has bayonet rush (*Juncus militarus*) along the shoreline (Gibbons et al. 2002, New York Natural Heritage Program 2010). In Cape Cod, Gibbons et al. (2002) found that *E. pictum* occurs mainly in habitats with white water lily (*Nymphaea odorata*). Most known habitats in New York include water lillies, pickerelweed, shorelines of emergent grasses, rushes, or sedges, or boggy margins (New York Natural Heritage Program 2010).

<b>Primary Habitat Type</b>
Coastal Plain Pond



**Distribution:**

This species only occurs at ten locations in Suffolk County.



White et al. (2010)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss from lakeside development)	N	L	H
2. Natural System Modifications	Dams & Water Management/Use (alteration of natural hydrology)	R	M	H
3. Human Intrusions & Disturbance	Recreational Activities (off-road vehicle use)	N	L	M
4. Invasive & Other Problematic Species & Genes	Problematic Native Species (fish stocking)	W	L	H
5. Pollution	Household Sewage & Urban Waste Water (lawn care)	R	L	M
6. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (grass carp)	W	L	M
7. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (invasive plants)	R	L	M

**References Cited:**

Gibbons, L.K., J.M. Reed, and F.S. Chew. 2002. Habitat requirements and local persistence of three damselfly species (Odonata: Coenagrionidae). *Journal of Insect Conservation* 6:47-55.

Lam, E. 2004. *Damselflies of the northeast: A guide to the species of eastern Canada and the northeastern United States*. Biodiversity books, Forest Hills, New York, New York, USA.

New York Natural Heritage Program. 2010. Element Occurrence Database. New York State Department of Environmental Conservation. Albany, NY.

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Nikula, B., J. L. Loose, and M. R. Burne. 2003. *A field guide to the dragonflies and damselflies of Massachusetts*. Massachusetts NHESP, Westborough, MA.

White, Erin L., Jeffrey D. Corser, and Matthew D. Schlesinger. 2010. *The New York dragonfly and damselfly survey 2005-2009: Distribution and status of the odonates of New York*. New York Natural Heritage Program, Albany, New York.

<b>Common Name:</b>	Pine barrens bluet	<i>SGCN – High Priority</i>
<b>Scientific Name:</b>	<i>Enallagma recurvatum</i>	
<b>Taxon:</b>	Dragonflies and Damselflies	

<b>Federal Status:</b>	Not Listed	<b>Natural Heritage Program Rank:</b>
<b>New York Status:</b>	Threatened	Global: G3
		New York: S1
		Tracked: Yes

**Synopsis:**

The pine barrens bluet (*Enallagma recurvatum*) is a regional endemic species known only from New Jersey, New York, Rhode Island, Massachusetts, New Hampshire, and southern Maine (Abbott 2007, Massachusetts NHESP 2008). In New York it is found only in Suffolk County. *E. recurvatum* does not require, or even often occur in, very pristine natural habitats, but it has a narrow range of tolerances. It is found in coastal plain ponds.

Population estimates have been made in recent years as part of a special effort during the New York Dragonfly and Damselfly Survey (White et al. 2010). Of the eleven sites where *E. recurvatum* is known to currently occur, four sites are estimated to have excellent viability. Some sites are in close proximity to each other, and the eleven sites may be grouped into four pond complexes. In two of the complexes 100–999 individuals were estimated in at least four of the ponds since 2005. Recent information on the species prior to 2005 is very limited, with records going back to 1988 or 1990 at a few sites (New York Natural Heritage Program 2011). New locations in recent years are likely due to increased survey effort rather than a population increase or expansion and may serve as baseline information to look at future trends. Long-term trends are unclear at this time.

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%	X	Abundant		Stable	Unknown
6% to 10%		Common			
11% to 25%		Fairly common	X		
26% to 50%		Uncommon			
> 50%		Rare			

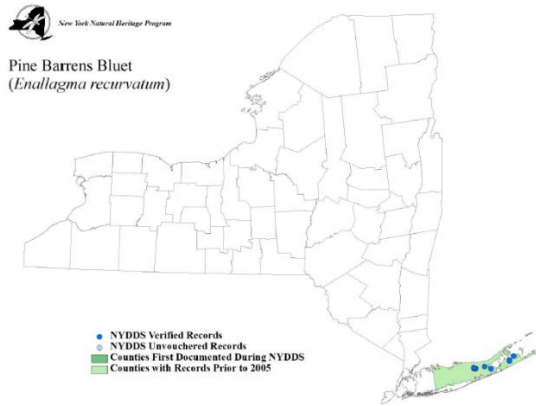
**Habitat Discussion:**

The species primarily inhabits acidic, coastal plain ponds with sandy substrate and emergent vegetation such as *Juncus militaris* (bayonet rush) along the shoreline (Massachusetts NHESP 2003, Nikula et al. 2003, Lam 2004). In addition to the landscape typical of their habitat, in New York, some sites have a floating bog mat or a boggy edge in at least one area of the pond (New York Natural Heritage Program 2010).

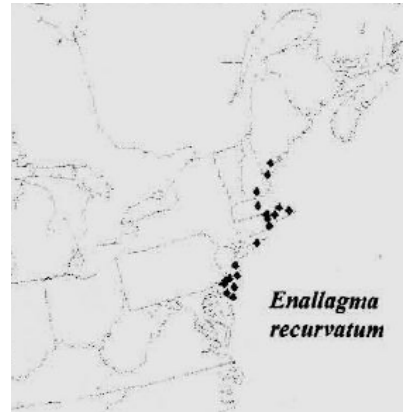
<b>Primary Habitat Type</b>
Boreal Forested peatland
Coastal Plain Pond

**Distribution:**

In New York, *E. recurvatum* is known from 11 coastal plain ponds in Suffolk County on Long Island (New York Natural Heritage Program 2010). Locations were investigated as part of a special New York State Dragonfly and Damselfly Survey (NYSDDS) effort. All but one site were visited during the NYSDDS years, and two ponds visited during this time lacked any observations since 1990 (New York Natural Heritage Program 2010).



White et al. (2010)



Donnelly (2004)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss from lakeside development)	N	L	H
2. Natural System Modifications	Dams & Water Management/Use (alteration of natural hydrology)	R	M	H
3. Human Intrusions & Disturbance	Recreational Activities (off-road vehicle use)	N	L	M
4. Invasive & Other Problematic Species & Genes	Problematic Native Species (fish stocking)	W	L	H
5. Pollution	Household Sewage & Urban Waste Water (lawn care)	R	L	M
6. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (grass carp)	W	L	M
7. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (invasive plants)	R	L	M

### References Cited:

Abbott, J. C. 2007. OdonataCentral: An online resource for the distribution and identification of Odonata. Texas Natural Science Center, The University of Texas at Austin. <<http://www.odonatacentral.org>>. Accessed 21 May 2012.

Donnelly, T. W. 2004. Distribution of North American Odonata. Part III: Calopterygidae, Lestidae, Ceonagrionidae, Protoneuridae, Plastystictidae. *Bulletin of American Odonatology* 8:33-99.

Lam, E. 2004. Damselflies of the northeast: A guide to the species of eastern Canada and the northeastern United States. Biodiversity books, Forest Hills, New York.

Massachusetts NHESP. 2008. Massachusetts rare species fact sheet. Massachusetts Division of Fisheries & Wildlife, Westborough, MA. <[http://www.mass.gov/dfwele/dfw/nhesp/species\\_info/ mesa\\_list/ mesa\\_list.htm](http://www.mass.gov/dfwele/dfw/nhesp/species_info/ mesa_list/ mesa_list.htm)>. Accessed 21 May 2012.

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White, E. L., J. D. Corser, and M. D. Schlesinger. 2010. The New York dragonfly and damselfly survey 2005-2009: Distribution and status of the odonates of New York. New York Natural Heritage Program, Albany, New York.

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**Common Name:** Sable clubtail *SGCN – High Priority*  
**Scientific Name:** *Gomphus rogersi*  
**Taxon:** Dragonflies and Damselflies

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**Federal Status:** Not Listed **Natural Heritage Program Rank:**  
**New York Status:** Not Listed Global: G4  
New York: S1  
Tracked: Yes

**Synopsis:**

The sable clubtail (*Gomphus rogersi*) is a member of the subgenus Gomphurus, one of three subdivisions of the large and diverse clubtail genus, *Gomphus*. The distributional center occurs along the southern West Virginia/Virginia border in the Appalachian Blue Ridge ecoregion. The range extends south to central Alabama and north to the New Jersey/New York border. Its northernmost locale occurs on Deep Hollow Brook at Harriman State Park where it was last observed in 2008, a location which is at nearly the same latitude as locations in western Pennsylvania (Donnelly 2004). However, these northwestern Pennsylvania records are over 35 years old and more recently, the species has only been found in southern Pennsylvania (Pennsylvania Natural Heritage Program 2010). It is possible that this central Appalachian species is temperature-limited at its northern range margin (Beatty and Beatty 1968) so a possible range contraction southward seems counter intuitive in a warming climate.

One of New York’s two populations appears to be stable; it has been extant for 15 years. However, despite some searches, it has not been re-confirmed at the other site (Little Cedar Pond outlet) since it was first found in 1989, at which time it was noted as “common.” The current status of the New Jersey sites adjacent to New York is unknown. It seems likely that this species occurs on additional favorable streams in Orange and Rockland Counties, especially in the heavily forested Harriman and Sterling Forest State Parks. An informative distribution model created by NY Natural Heritage also predicted potentially suitable habitat in central Ulster County, at the Ward Pond Ridge Reservation in Westchester County, and in the Hudson Highlands State Park on the Dutchess/Putnam County border (New York Natural Heritage Program 2007, White et al. 2010). Clearly, with the scant number of records for this species there is no basis for discerning population trend information.

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%	X	Abundant		Stable	Unknown
6% to 10%		Common			
11% to 25%		Fairly common			
26% to 50%		Uncommon			
> 50%		Rare	X		

**Habitat Discussion:**

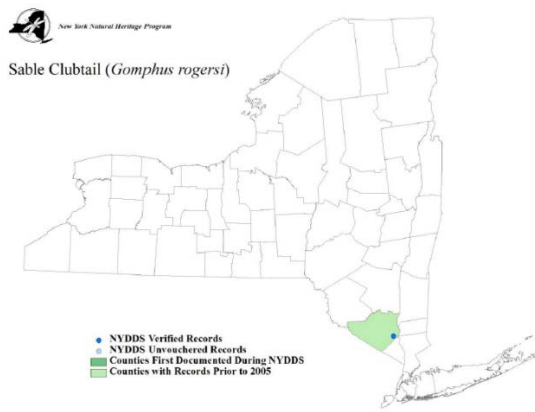
*G. rogersi* inhabits clear, moderately flowing small forest streams and brooks with sand, silt, or rocky substrate. Adults forage at forest edges, and perch on rocks, overhanging grass, and floating plants (Dunkle 2000). In New York, an extant site occupied since 1995 is a cold headwater brook that runs through a mixed hardwood forest with occasional sunny and marshy openings. The brook is alternately wide (approximately 8 feet) and deep, and narrow (1-3 feet), with shallow, rocky riffles. The bank is lined with ferns and nettles in sunny areas and boulders or moss-covered rocks line the stream in other places.

In some areas, the stream bank is elevated 1-5 feet above the stream surface. New York's other known site is also a heavily forested stream outlet of gentle gradient connecting a small pond to a larger lake (White et al. 2010).

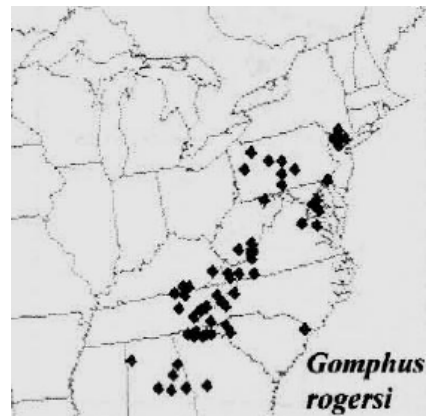
Primary Habitat Type
Headwater/Creek; Low Gradient
Headwater/Creek; Low-Moderate Gradient
Small River; Low Gradient
Small River; Low-Moderate Gradient

**Distribution:**

This species has been documented in Orange County in 1995 and in 2008.



White et al. (2010)



Donnelly (2004)



Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Natural Systems Modifications	Dams & Water Management/Use (change in natural hydrology)	N	L	H
2. Biological Resource Use	Logging & Wood Harvesting (siltation of streams)	N	H	L
3. Climate Change & Severe Weather	Droughts	N	M	H
4. Climate Change & Severe Weather	Storms & Flooding	N	L	H

**References Cited:**

Beatty, G. H. and A. F. Beatty. 1968. Origin and biogeographic affinities of Odonata fauna of Pennsylvania. *Proceedings of the Pennsylvania Academy of Science* 42:110-119.

Donnelly, T. W. 2004. Distribution of North American Odonata. Part I: Aeshnidae, Petaluridae, Gomphidae, Cordulegastridae. *Bulletin of American Odonatology* 7:61-90.

Dunkle, S. W. 2000. *Dragonflies through binoculars. A field guide to the dragonflies of North America.* Oxford University Press, New York, New York, USA.

New York Natural Heritage Program. 2007. Elemental distribution model for *Gomphus rogersi*. Albany, NY.

Pennsylvania Natural Heritage Program. Pennsylvania Natural Heritage Program fact sheets, Roger's clubtail (*Gomphus rogersi*). The Pennsylvania Department of Conservation and Natural Resources, the Western Pennsylvania Conservancy, the Pennsylvania Game Commission, and the Pennsylvania Fish and Boat Commission, Pennsylvania. <[www.naturalheritage.state.pa.us/factsheets/11997.pdf](http://www.naturalheritage.state.pa.us/factsheets/11997.pdf)>. Accessed 28 June 2012.

White, E.L., J. D. Corser, and M D. Schlesinger. 2010. The New York dragonfly and damselfly survey 2005-2009: Distribution and status of the odonates of New York. New York Natural Heritage Program, Albany, New York.

**Common Name:** Septima's clubtail  
**Scientific Name:** *Gomphus septima*  
**Taxon:** Dragonflies and Damselflies

**SGCN – High Priority**

**Federal Status:** Not Listed  
**New York Status:** Special Concern

**Natural Heritage Program Rank:**  
 Global: G2  
 New York: S1  
 Tracked: Yes

**Synopsis:**

Septima's clubtail (*Gomphus septima*) is divided into two subspecies, *G. septima septima* and *G. septima delawarensis*. *G. septima septima* is known only from Alabama, where it was recently rediscovered, and North and South Carolina. It was first discovered in the 1930s (Westfall Jr. 1956). The Delaware River endemic, *G. septima delawarensis*, was not discovered until 1993. It is endemic to only the Delaware River in New York, Pennsylvania, and New Jersey from Mercer County New Jersey (Bangma and Barlow 2010), northward to the Pepacton Reservoir on the East Branch of the Delaware River in Delaware County, a stretch of about 360 km (White et al. 2010). According to Donnelly and Carle (2000), *G. septima delawarensis* is different enough from its close relative, *G. septima*, that it could be described as an independent species, rather than a subspecies.

While there is consensus that *G. septima* is in need of protection and research, experts disagree on how to describe the abundance and distribution trends for this species in New York. Directed collection efforts in 1994 and 1995 removed as many as 80 adults, suggesting the species was abundant at that time. There have been no records in New York since 1995, however, despite a dozen or more surveys between 2005 and 2010, which is suggestive of a severe decline. Yet only about half of these surveys were conducted solidly within the flight window when adults can be found, and it is therefore possible that survey effort has been insufficient to detect the species, much less a reliable trend in the abundance or distribution. These trends have been categorized as Unknown, and more information on this rare and localized species is clearly needed.

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%	X	Abundant		Unknown	Unknown
6% to 10%		Common			
11% to 25%		Fairly common			
26% to 50%		Uncommon			
> 50%		Rare	X		

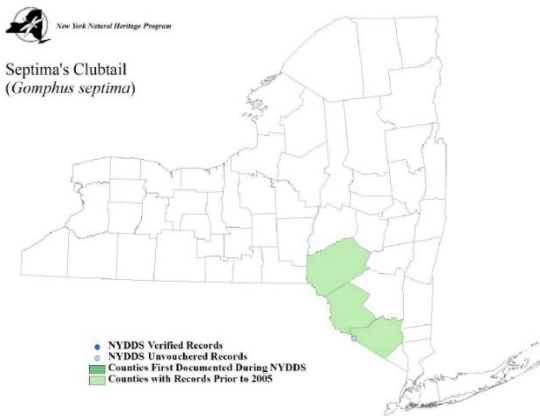
**Habitat Discussion:**

*G. septima* occupies moderate to large wooded rivers with some current, usually rocky but with fine sand and silt for larval habitat (Paulson 2011).

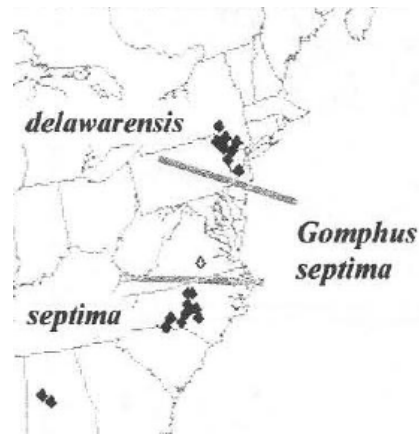
<b>Primary Habitat Type</b>
Riparian

**Distribution:**

Specific locations for *G. septima* in New York include Port Jervis, Barryville, Minisink Ford, Tusten, Narrowsburg, Skinner’s Falls, Cohecton, and Callicoon. Most specimens were found in 1994 and 1995 along a 50-km strip between Barryville and Callicoon, in Sullivan County when intensive collecting (~80 adults) was done for Donnelly and Carle’s (2000) subspecies description. At least 50 adults were taken over 20 days in 1994 (Bick 2003). The species was not seen along the upper Delaware in New York from 1996 to 2007. On 7 June 2008, a single adult female (probable *G. septima*) was photographed at Port Jervis along the Delaware River. The status of the species on the New Jersey side of the upper Delaware is unknown. There is a presumed uninhabited stretch of about 65 km between Callicoon, the northernmost known locale on the upper Delaware, to Downsville in Delaware County on the east branch, where a male and a female were collected in 1995 (Donnelly 1999, Donnelly and Carle 2000). The species was not detected in the vicinity of Long Eddy, nor between Hankins to Cohecton, or Port Jervis, in 1998 (White et al. 2010).



White et al. (2013)



Donnelly (2004)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Natural System Modifications	Dams & Water Management/Use (alteration of natural hydrology)	R	L	M
2. Residential & Commercial Development	Housing & Urban Areas (habitat loss)	N	L	M
3. Biological Resource Use	Logging & Wood Harvesting (siltation)	R	L	M
4. Pollution	Agricultural & Forestry Effluents (runoff, pesticides)	R	L	M
5. Pollution	Household Sewage & Urban Waste Water (salt runoff from roads)	R	L	M
6. Energy Production & Mining	Oil & Gas Drilling (hydraulic fracturing)	P	L	V

**References Cited:**

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Donnelly, T. W. 2004. Distribution of North American Odonata. Part I: Aeshnidae, Petaluridae, Gomphidae, Cordulegastridae. *Bulletin of American Odonatology* 7:61-90.

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Paulson, D. 2011. *Dragonflies and damselflies of the east*. Princetown University Press, Princetown, New Jersey, USA.

Westfall Jr., M.J. 1956. A new species of *Gomphus* from Alabama (Odonata). Journal of Florida Academy of Science. 19:251-258.

White, E.L., J. D. Corser, and M D. Schlesinger. 2010. The New York dragonfly and damselfly survey 2005-2009: Distribution and status of the odonates of New York. New York Natural Heritage Program, Albany, New York.

<b>Common Name:</b>	Skillet clubtail	<i>SGCN – High Priority</i>
<b>Scientific Name:</b>	<i>Gomphus ventricosus</i>	
<b>Taxon:</b>	Dragonflies and Damselflies	

<b>Federal Status:</b>	Not Listed	<b>Natural Heritage Program Rank:</b>
<b>New York Status:</b>	Not Listed	Global: G3
		New York: S1
		Tracked: Yes

**Synopsis:**

The distribution center of *G. ventricosus* lies along the Lake Erie shoreline in northeast Ohio in the southern Great Lakes forest ecoregion, extending northwest to northern Minnesota, east to Nova Scotia, and south to central Tennessee (Donnelly 2004). *G. ventricosus* is rare and spottily distributed throughout its range, particularly in the East (Walker 1958).

Although extensive searches during the New York State Dragonfly and Damselfly Survey (NYSDDS) failed to detect the species in eastern New York, recent records suggest that it should occur there. These records include occurrences from the Connecticut River in Massachusetts and Connecticut, as well as smaller rivers near the New York border, such as the Housatonic (Massachusetts NHESP 2003). In 1997 and 1998, this species was documented in northern New York.

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%	X	Abundant		Unknown	Unknown
6% to 10%		Common			
11% to 25%		Fairly common			
26% to 50%		Uncommon			
> 50%		Rare	X		

**Habitat Discussion:**

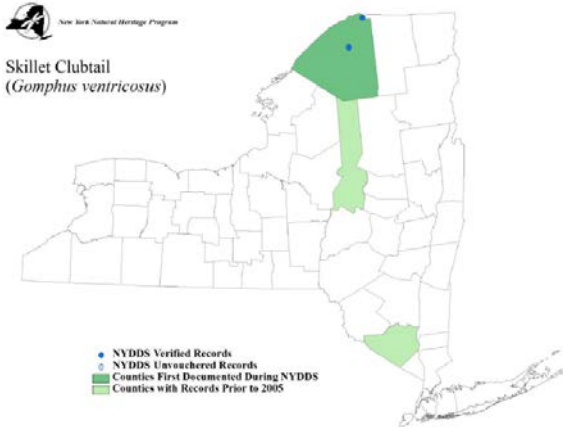
Throughout its range, *G. ventricosus* prefers small to large turbid rivers with partial mud bottoms, but good water quality. An older locale in Pine Island of Orange County, presumably along the upper Wallkill River, was a slow moving creek with a muddy/muck bottom and stained/turbid water. Grasses and woody shrubs grew along the banks. The newly discovered Raquette River population inhabits a rocky, deep river with clear water and a sand/gravel substrate (White et al. 2010).

<b>Primary Habitat Type</b>
Riparian

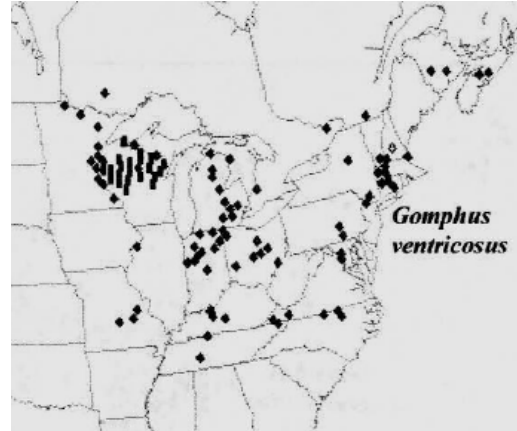
**Distribution:**

*G. ventricosus* was formerly known in New York from two pre-1926 records—one from Pine Island, probably the upper Wallkill River (where the species still occurs in New Jersey), and another from Old Forge (likely on the Moose River). A 2009 survey of the Moose River was not successful in locating any individuals. However, a new population was documented in New York along the Raquette River between

Potsdam and Massena on the northeast Lake Ontario/St. Lawrence Plain in both 1997 and 1998 (White et al. 2010).



White et al. (2010)



Donnelly (2004)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss)	R	L	H
2. Natural System Modifications	Dams & Water Management/Use (dams, alteration of hydrology)	R	L	H
3. Biological Resource Use	Logging & Wood Harvesting (siltation)	N	L	L
4. Pollution	Agricultural & Forestry Effluents (runoff, pesticides)	N	L	L
5. Pollution	Household Sewage & Urban Waste Water (poor water quality)	R	L	L

**References Cited:**

Donnelly, T. W. 2004. Distribution of North American Odonata. Part I: Aeshnidae, Petaluridae, Gomphidae, Cordulegastridae. Bulletin of American Odonatology 7:61-90.

Massachusetts NHESP. 2008. Massachusetts rare species fact sheet. Massachusetts Division of Fisheries & Wildlife, Westborough, MA.

<[http://www.mass.gov/dfwele/dfw/nhesp/species\\_info/ mesa\\_list/ mesa\\_list.htm](http://www.mass.gov/dfwele/dfw/nhesp/species_info/ mesa_list/ mesa_list.htm)>. Accessed 21 May 2012.

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**Common Name:** Green-faced clubtail  
**Scientific Name:** *Gomphus viridifrons*  
**Taxon:** Dragonflies and Damselflies

**SGCN – High Priority**

**Federal Status:** Not Listed  
**New York Status:** Not Listed

**Natural Heritage Program Rank:**  
 Global: G3G4  
 New York: S1  
 Tracked: Yes

**Synopsis:**

The green-faced clubtail (*Gomphus viridifrons*) is rare throughout its range (Walker 1958). The center of its distribution lies in the southern Great Lakes forest ecoregion, along the northern Ohio/Indiana border, ranging north to northern Minnesota and south to central Alabama (Donnelly 2004, White et al. 2010). A cluster of three records from the Delaware River in New York (Sullivan, Orange Counties) and New Jersey (Sussex County) constitute the northeasternmost occurrence of this species (New York Natural Heritage Program 2011). Here, adults have not been observed since 1940 and just a single larva collected from Port Jervis was reared to emergence in May 1994, while only exuviae have been found in nearby New Jersey (Bangma and Barlow 2010). Population estimates have not been determined and it is unclear if the species is extremely localized or occurs between the two locations. Further survey efforts are needed to clarify the species status on the Delaware. (White et al. 2010).

This species inhabits clean medium-sized rocky forest streams and small rivers with gravel/sand substrates and lightly silted rocks (Dunkle 2000). In New York, a single larva was dredged from a sandy, pool-like backwater on the back side of an island in the Delaware River near Port Jervis. The main flow of the river is west of the island and the river is rapid, shallow, rocky and about 100 meters wide (White et al. 2010).

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%	X	Abundant		Unknown	Unknown
6% to 10%		Common			
11% to 25%		Fairly common			
26% to 50%		Uncommon			
> 50%		Rare	X		

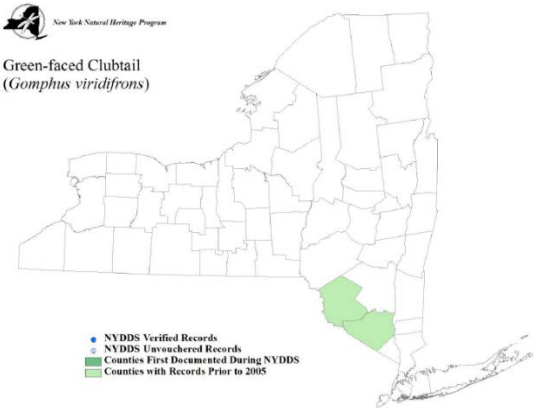
**Habitat Discussion:**

*G. viridifrons* inhabits clean medium-sized rocky forest streams and small rivers with gravel/sand substrates and lightly silted rocks (Dunkle 2000). Adults fly 1-3 meters above the water surface, about 3-10 meters out from the shore often hovering near the head of riffles and rapids, or perching on shoreline vegetation and exposed rocks (Evans 2002). In New York, a single larva was dredged from a sandy, pool-like backwater on the back side of an island in the Delaware River near Port Jervis. The main flow of the river is west of the island and the river is rapid, shallow, rocky and about 100 meters wide (White et al. 2010).

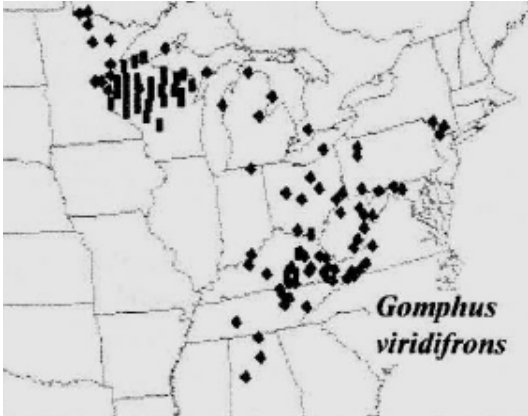
<b>Primary Habitat Type</b>
Riparian
Small River; Low-Moderate Gradient

**Distribution:**

While the species has not been relocated at Barryville, NJ (some, but not a great deal of effort expended there in recent years), it was found at a second location on the Delaware River, Port Jervis, in 1994 (Donnelly 1999). While some unsuccessful search effort has been made to duplicate the Port Jervis location, it is still considered an extant occurrence.



White et al. (2010)



Donnelly (2004)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Natural System Modifications	Dams & Water Management/Use (alteration of natural hydrology)	P	L	M
2. Residential & Commercial Development	Housing & Urban Areas (habitat loss)	P	L	M
3. Biological Resource Use	Logging & Wood Harvesting (siltation)	R	L	M
4. Pollution	Agricultural & Forestry Effluents (runoff, pesticides)	R	L	M
5. Pollution	Household Sewage & Urban Waste Water (salt runoff from roads)	R	L	M
6. Energy Production & Mining	Oil & Gas Drilling (fracking issues)	P	L	V

### References Cited:

Bangma J. and A. Barlow. 2010. NJODES; The dragonflies and damselflies of New Jersey, *Argia bipunctulata*, *Calopteryx dimidiata*, *Ischnura ramburii*, *Nehalennia integricollis*, *Enallagma laterale*, *E.pictum*, *Gomphus fraternus*, *G. rogersi*, *G. abbreviatus*, *Aeshna subarctica*, *G.viridifrons*, *G. septima*, *G. vastus*, *Gomphaeschna antilope*, *Stylurus spiniceps*, *Cordulegaster erronea*, *C. obliqua*, *Libellula flavida*, *L. needhami*, *Epithea semiaquea*, *Rhionaeschna mutata*, and *Somatochlora linearis*. <<http://www.njodes.com/Speciesaccts/species.asp>>. Accessed 3 October 2012.

Donnelly, T. W. 1999. The dragonflies and damselflies of New York. Prepared for the 1999 International Congress of Odonatology and 1st Symposium of the Worldwide Dragonfly Association, Colgate University, Hamilton, NY.

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Dunkle, S. W. 2000. Dragonflies through binoculars. A field guide to dragonflies of North America. Oxford University Press, New York, New York.

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Walker, E. M. 1958. The Odonata of Canada and Alaska. Vol. II. Anisoptera-four families. University of Toronto Press.

White, E.L., J. D. Corser, and M D. Schlesinger. 2010. The New York dragonfly and damselfly survey 2005-2009: Distribution and status of the odonates of New York. New York Natural Heritage Program, Albany, New York.

<b>Common Name:</b>	Boreal snaketail	<i>SGCN – High Priority</i>
<b>Scientific Name:</b>	<i>Ophiogomphus colubrinus</i>	
<b>Taxon:</b>	Dragonflies and Damselflies	

<b>Federal Status:</b>	Not Listed	<b>Natural Heritage Program Rank:</b>
<b>New York Status:</b>	Not Listed	Global: G5
		New York: S1
		Tracked: Yes

**Synopsis:**

As its name implies, the boreal snaketail (*Ophiogomphus colubrinus*) is a species of northern distribution, and it has the most northern range of any clubtail (Mead 2003). The range extends from the western provinces of British Columbia and Alberta, eastward across Canada, to Ontario, Quebec, and New Brunswick. In the United States, it occurs in Maine, New Hampshire, and New York, as well as in Michigan, Wisconsin, Minnesota, and Wyoming (Needham et al. 2000).

*O. colubrinus* was first documented in New York in 1995, with a number of subsequent records in 1996. All of these records are from the Ausable River in the central Adirondacks, including both the East and West Branch. Some of the recorded locations were documented only by the collection of exuviae. Although the original New York location, the Ausable River along Riverside Drive near Lake Placid, and nearby stretches of the Ausable were searched on several occasions, presence was not documented during the New York State Dragonfly and Damselfly Survey (NYDDS). There is no evidence that changes have occurred in the Ausable River in the vicinity of the previously documented records, so additional surveys would be desirable to confirm the continued presence of this species in New York (White et al. 2010).

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%	X	Abundant		Stable	Unknown
6% to 10%		Common			
11% to 25%		Fairly common			
26% to 50%		Uncommon			
> 50%		Rare	X		

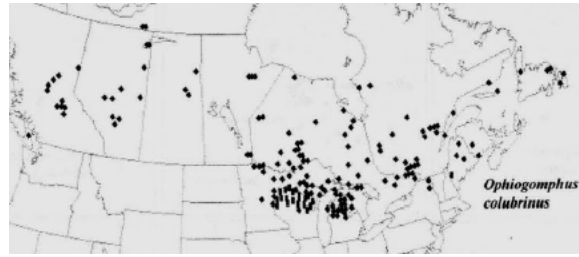
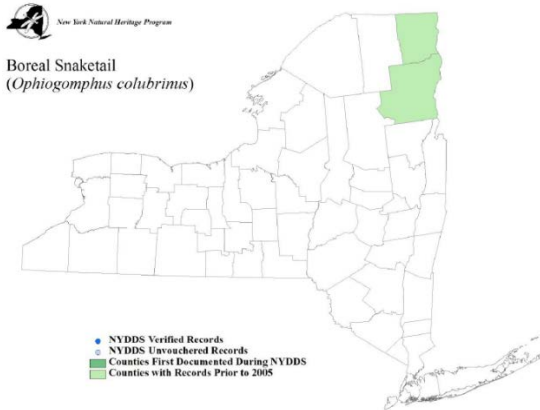
**Habitat Discussion:**

*O. colubrinus* inhabits clear, rapid, streams and rivers with gravel substrate (Dunkle 2000, Mead 2003), but has also been found on lakes with gravel or sand bottoms (Jones et al. 2008). Adults may be found patrolling areas of moving water or perched on rocks, logs, sandy beaches, or bushes (Harding et al. 1998, Mead 2003), whereas juveniles have been noted perching in tree canopies (Mead 2003). The previously recorded locations for *O. colubrinus* in New York are also on rivers, principally nearer to the headwaters where the rivers are rapid and shallow with sand, gravel, rock, and boulder substrate, and are primarily bordered by trees and shrubs (New York Natural Heritage Program 2010).

Primary Habitat Type
Headwater/Creek; Low-Moderate Gradient; Low Buffered, Acidic; Cold
Small River; Low-Moderate Gradient; Low Buffered, Acidic; Cold

**Distribution:**

This species occurs on the East Branch and West Branch of the Ausable River.



Donnelly (2004)

White et al. (2010)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Climate Change & Severe Weather	Storms & Flooding	P	M	V
2. Natural System Modifications	Other Ecosystem Modifications (stream channelization in response to severe weather)	P	M	V
3. Pollution	Household Sewage & Urban Waste Water (esp. salt runoff at Lake Placid ski slope)	P	L	M
4. Climate Change & Severe Weather	Temperature Extremes	P	V	V

**References Cited:**

Donnelly, T. W. 2004. Distribution of North American Odonata. Part I: Aeshnidae, Petaluridae, Gomphidae, Cordulegastridae. Bulletin of American Odonatology 7:61-90.

Dunkle, S. W. 2000. Dragonflies through binoculars. A field guide to dragonflies of North America. Oxford University Press, New York, New York.

Harding, J. S., E. F. Benfield, P. V. Bolstad, G. S. Helfman, and E. B. D. Jones. 1998. Stream biodiversity: The ghost of land use past. Proceedings of the National Academy of Sciences 95:14843-14847.

Mead, K. 2003. Dragonflies of the north woods. A comprehensive field reference to all 102 species of north woods dragonflies. Kollath+Stensaas Publishing, Duluth, MN. 203 pp.

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<b>Common Name:</b>	Pygmy snaketail	<b>SGCN – High Priority</b>
<b>Scientific Name:</b>	<i>Ophiogomphus howei</i>	
<b>Taxon:</b>	Dragonflies and Damselflies	

<b>Federal Status:</b>	Not Listed	<b>Natural Heritage Program Rank:</b>
<b>New York Status:</b>	Special Concern	Global: G3
		New York: S1
		Tracked: Yes

**Synopsis:**

The pygmy snaketail (*Ophiogomphus howei*) has a disjunct range that includes populations in both the eastern and north-central United States. The eastern range extends from Maine and Massachusetts into eastern New York, south in the Appalachians through eastern Pennsylvania into Tennessee, Virginia, and Kentucky. A smaller, western range includes northern Wisconsin, the western part of Michigan’s Upper Peninsula, and eastern Minnesota (Needham et al. 2000, Mead 2003). In New York, it occurs in Saratoga and Warren counties, where it was documented in 2007.

Habitat restrictions of *O. howei* appear to be more rigid than other snaketails, as *O. howei* has only been found in large, clear rivers with gravel or sandy substrates that are bordered by forested habitats. The section of the upper Hudson River where it occurs in its greatest New York abundance is particularly sandy in nature. The common sanddragon (*Progomphus obscurus*) as well as five other snaketail species, also occur here.

According to both Mead (2003) and Dunkle (2000), *O. howei* does not breed in sections of river immediately downstream of dams. However, exuviae in emergence posture/attachment were found in the upper Hudson River immediately downstream of the Spier Falls Dam at Corinth in 1999 (New York Natural Heritage Program 2010). This section of river is clear with sandy/gravel substrate and although possible that the larvae floated down from upstream and emerged there, it is also equally possible that individuals are ovipositing in this section of river below the dam.

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%	X	Abundant		Stable	Unknown
6% to 10%		Common			
11% to 25%		Fairly common			
26% to 50%		Uncommon			
> 50%		Rare	X		

**Habitat Discussion:**

*O. howei* is restricted to large, clear rivers with gravelly or sandy substrates and characterized by riffle run sections, bordered by mature forests (New York Natural Heritage Program 2011). This species appears to have more restrictive requirements than other snaketails.

<b>Primary Habitat Type</b>
Riparian

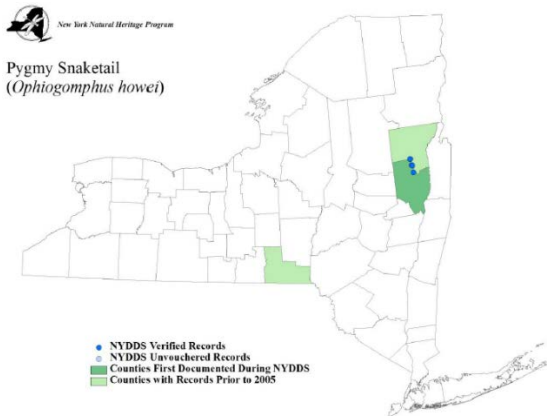


**Distribution:**

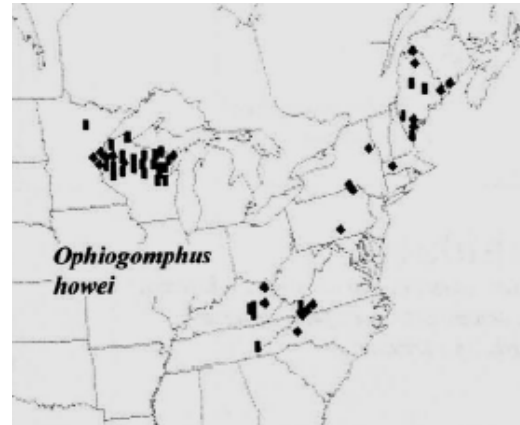
A number of surveys were conducted on the Susquehanna in 1996 but the species was not located in the New York side of the river (New York Natural Heritage Program 2010). It was rediscovered in New York in 1995 when exuviae were collected from two sites on the upper Hudson River just north of Warrensburg (White et al. 2010).

Subsequent surveys on the Hudson indicated *O. howei* occurs for a stretch of approximately 27 miles from Lake Luzerne north to The Glen (Novak 1998). In 1999, it was found on the upper Hudson south of Lake Luzerne, downstream of Spier Falls Dam, and on the Schroon River which flows into the Upper Hudson at Warrensburg. Results from the NYDDS re-confirm the presence of *O. howei* in the Lake Luzerne area and add a new location between the Lake Luzerne and Spier Falls at Corinth (White et al. 2010).

Limited surveys on the Schroon River failed to re-confirm the species there, and widespread survey efforts on other southern tier and Adirondack rivers did not produce any new locations. It is important to note, however, that not all of these surveys included the early summer collection of exuviae, yet all current records of this species are of exuviae (White et al. 2010).



White et al. (2010)



Donnelly (2004)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Natural System Modifications	Dams & Water Management/Use (alteration of natural hydrology)	W	L	M
2. Residential & Commercial Development	Housing & Urban Areas (habitat loss)	W	L	M
3. Biological Resource Use	Logging & Wood Harvesting (siltation)	R	L	M
4. Pollution	Agricultural & Forestry Effluents (runoff, pesticides)	R	L	M
5. Human Intrusions & Disturbance	Recreational Activities (canoeing)	P	M	M

#### References Cited:

Donnelly, T. W. 2004. Distribution of North American Odonata. Part I: Aeshnidae, Petaluridae, Gomphidae, Cordulegastridae. *Bulletin of American Odonatology* 7:61-90.

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Mead, K. 2003. *Dragonflies of the north woods. A comprehensive field reference to all 102 species of north woods dragonflies.* Kollath+Stensaas Publishing, Duluth, MN. 203 pp.

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New York Natural Heritage Program. 2011. Online Conservation Guide for *Ophiogomphus howei*. <<http://www.acris.nynhp.org/>>. Accessed 25 May 2012.

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<b>Common Name:</b>	Gray petaltail	<i>SGCN – High Priority</i>
<b>Scientific Name:</b>	<i>Tachopteryx thoreyi</i>	
<b>Taxon:</b>	Dragonflies and Damselflies	

<b>Federal Status:</b>	Not Listed	<b>Natural Heritage Program Rank:</b>
<b>New York Status:</b>	Special Concern	Global: G4
		New York: S2
		Tracked: Yes

**Synopsis:**

The gray petaltail (*Tachopteryx thoreyi*) is principally a southern species, with a range that extends from northern Florida westward to eastern Texas and Oklahoma, and northward to southern Illinois, southern Michigan, New York, and southern New England (Dunkle 2000, Glotzhober and McShaffrey 2002). Overall, the statewide range for this species is quite broad, with nearly all records coming from counties across the southern portion of the state including the lower Hudson Valley, the southern Finger Lakes, and the Lake Erie portion of the Great Lakes drainage. There is a reliable site record from one location on the Tug Hill in 1990 that may represent a disjunct portion of the species range in New York, as well as unvouchered records from St. Lawrence County in 2007 and 2008. Despite this broad distribution in New York, *T. thoreyi* has very specialized habitat requirements leading to an especially localized distribution. It is known from just over a dozen sites in New York, with apparent population clusters in the Finger Lakes region and in Letchworth State Park.

Distribution (% of NY where species occurs)		Abundance (within NY distribution)		NY Distribution Trend	NY Abundance Trend
0% to 5%	X	Abundant		Moderate Decline	Unknown
6% to 10%		Common			
11% to 25%		Fairly common			
26% to 50%		Uncommon			
> 50%		Rare	X		

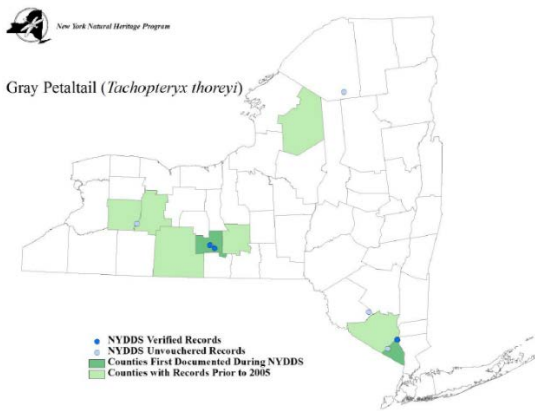
**Habitat Discussion:**

The general habitat of *T. thoreyi* is usually described as hillside seeps and fens located in areas of deciduous forest (Dunkle 2000, Nikula et al. 2003). In New York, all known populations are found at rocky gorges and glens, with groundwater-fed, hillside seepages feeding into small streams (White et al. 2010, New York Natural Heritage Program 2012). Larvae inhabit the seepage areas. The adults perch vertically on tree trunks, stumps, or exposed branches in sunny spots within the seepage areas and adjacent woods, defending territories and searching for mating opportunities. At most New York sites, petaltails are often observed as they fly up and down the streams to forage (New York Natural Heritage Program 2011).

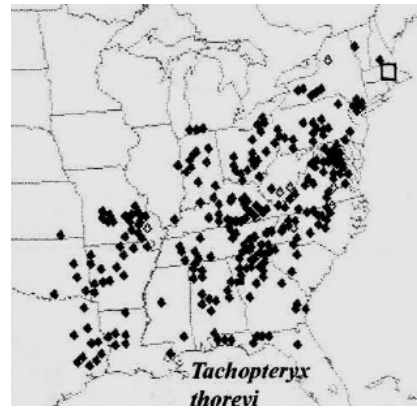
<b>Primary Habitat Type</b>
Headwater/Creek; Low Gradient
Headwater/Creek; Low-Moderate Gradient

**Distribution:**

The statewide range for this species is quite broad, with records coming from counties across the southern portion of the state including the Lower Hudson Valley, the southern portion of the Finger Lakes and the Lake Erie portion of the Great Lakes drainage. Letchworth State Park and the Ithaca are locations with multiple records some of which have been known since at least 1928. Overall there are as many as 11 well verified locations recorded since 1990 with two additional unverified site records from additional counties (St. Lawrence and Sullivan) reported during the NYDDS (White et al. 2010, New York Natural Heritage Program 2013) The fairly recent (1990) and reliable site record from one location on Tug Hill may represent a disjunct portion of the range for this primarily southern species (New York Natural Heritage Program 2013).



White et al. (2010)



Donnelly (2004)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Natural System Modifications	Dams & Water Management/Use (change in natural hydrology)	N	L	H
2. Biological Resource Use	Logging & Wood Harvesting (siltation of streams)	N	H	L
3. Climate Change & Severe Weather	Droughts	N	M	H
4. Climate Change & Severe Weather	Storms & Flooding	N	L	H
5. Energy Production & Mining	Oil & Gas Drilling (hydraulic fracturing issues)	N	M	H
6. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (hemlock woolly adelgid)	R	L	H

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