

Species Status Assessment

Common Name: Rambur's forktail **Date Updated:** January 10, 2024

Scientific Name: *Ischnura ramburii* **Updated By:** Erin L. White

Class: Insecta

Family: Coenagrionidae

Species Synopsis (a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):

From White et al. 2010: “[Rambur’s forktail] (*Ischnura ramburii*) has [a wide global range stretching] from northern South America northward through Central America and the Islands of the Caribbean, the Hawaiian Islands, and the southern United States eastward to the U.S. Atlantic Coast and north to Maine (Donnelly 2004, Abbott 2010). In New York, the northern extent of its range, *I. ramburii* has been confirmed from Staten Island, Brooklyn, Queens, Nassau, and Suffolk counties since the 1990s (New York Natural Heritage Program 2010). Records prior to the 1990s were from Staten Island and Suffolk County (Donnelly 1999). Survey efforts from the New York State Dragonfly and Damselfly Survey (NYDDS) uncovered at least 8 additional locations.” Recent survey efforts (post-NYDDS) have expanded the known range of this species into eight counties in southern NY and Long Island and the trend is likely increasing in NY since 2005. The number of records since 2005 could be partially indicative of increased survey efforts and increased use of iNaturalist (iNaturalist 2024, White et al. 2010).

Typical habitat for *I. ramburii* in the Northeast includes coastal plain ponds, lakes, marshes, and slow-flowing rivers or streams. Brackish water is particularly favorable (Nikula et al. 2003, Lam 2004). This pattern is consistent in New York. There is one additional site in New York which deviates from the habitat profile, where *I. ramburii* are found at an ephemeral pool on Long Island (New York Natural Heritage Program 2024a).

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** Not Listed

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2S3 **Tracked by NYNHP?:** Yes

Other Ranks:

-NYS 2025 SGCN Status: Species of Greatest Conservation Need

-IUCN Red List: Least Concern

-Northeast Regional Rank (White et al.2015): R4 Vulnerability; Shared Responsibility

Status Discussion:

White *et al.* (2010) calculated a revised draft S-rank of S2S3 from S2. Depending on confirmation of iNaturalist records and locations of those (how many current EOs), the rank may either remain an S2 or change to an S3. Until status can be sorted out and based, this species should remain an SGCN.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown	Last assessment 1988		-
Northeastern US	Yes	Unknown	Increasing	Pre and post 2000	R4	No
New York	Yes	Unknown	Increasing	Pre and post 2005	S2S3; SGCN	Yes
Connecticut	Yes	Unknown	Unknown		S3	No
Massachusetts	Yes	Unknown	Unknown		S1	No
New Jersey	Yes	Unknown	Unknown		S4	No
Pennsylvania	Yes	Unknown	Unknown		S1S2	Yes
Vermont	No	-	-			-
Ontario	No	-	-			-
Quebec	No	-	-			-

Column options

Present?: Yes; No; Unknown; No data; (blank) or Choose an Item

Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item

SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York (*specify any monitoring activities or regular surveys that are conducted in New York*):

The New York Dragonfly and Damselfly Survey covered the period 2005-2009 and while some volunteers from that project continue to do some surveys, there are no regular monitoring efforts ongoing for this species or other odonates in New York.

Trends Discussion (*insert map of North American/regional distribution and status*):

Recent survey efforts have expanded the known range of this species into eight counties in southern NY and Long Island and the trend is likely increasing in NY since 2005. The number of records since 2005 could be partially indicative of increased survey efforts and increased use of iNaturalist (iNaturalist 2024, White *et al.* 2010).

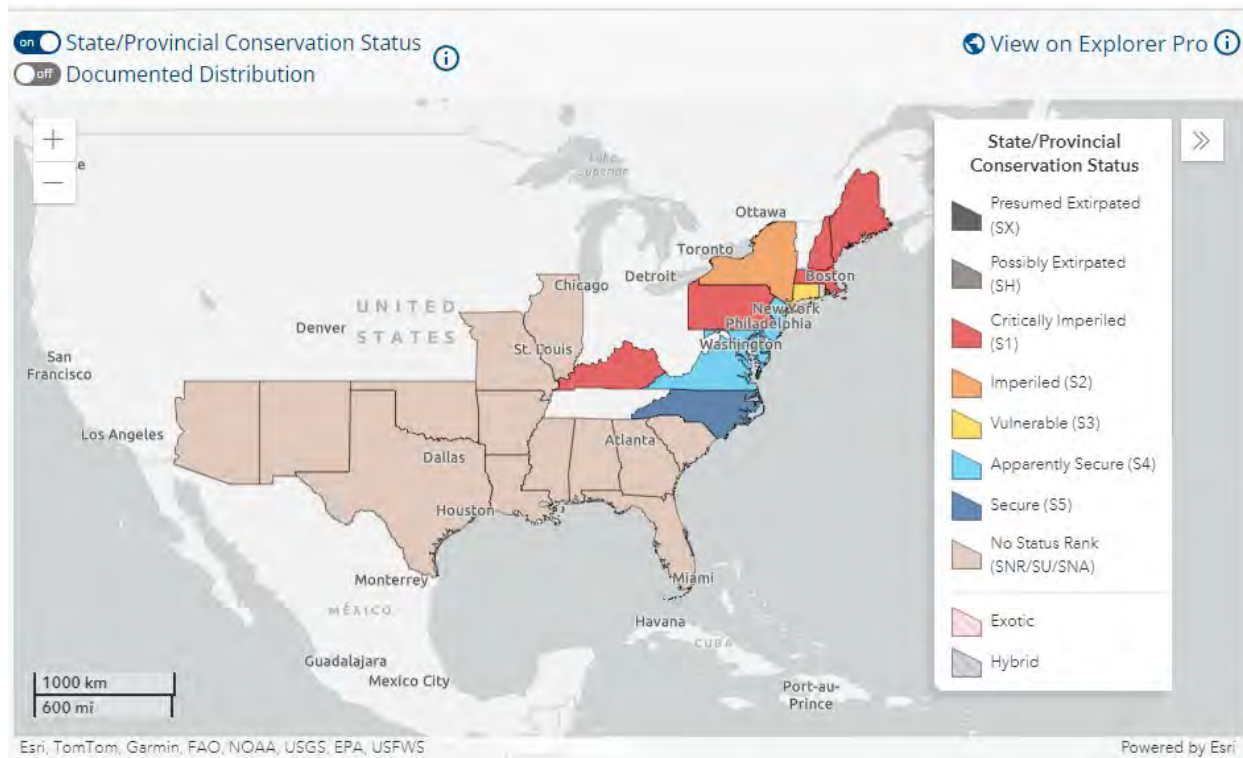


Figure 1. Conservation status of the Rambur's forktail in North America (NatureServe 2024).

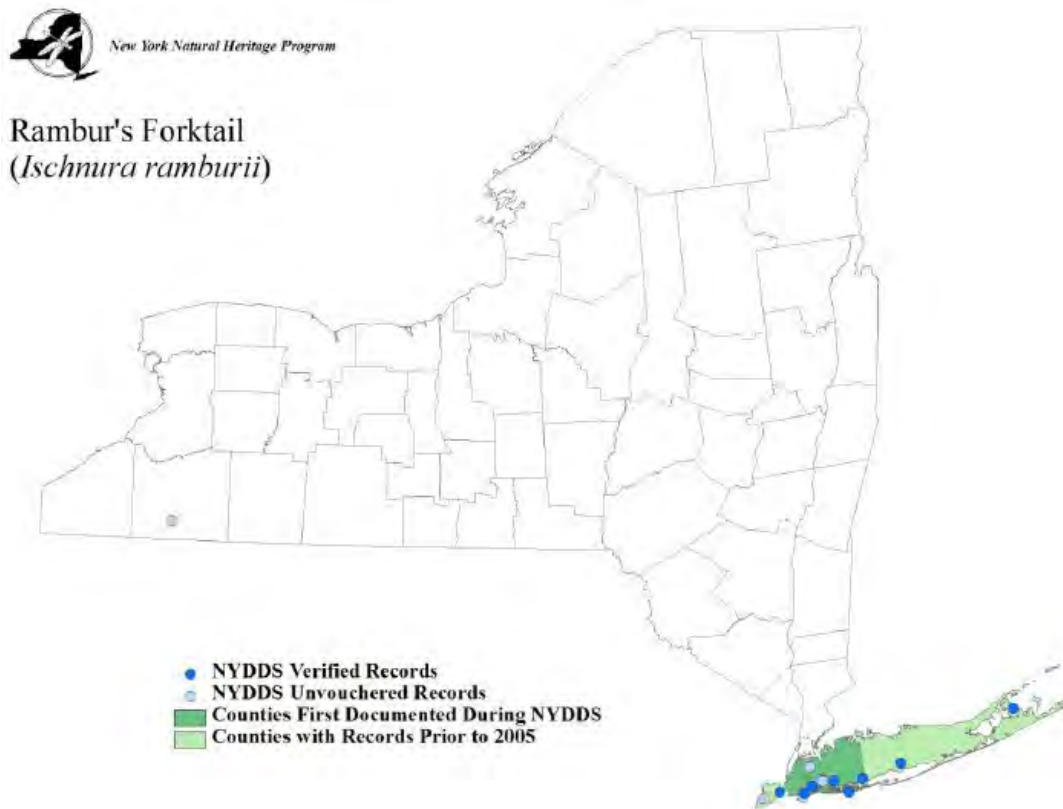


Figure 2. Occurrence record of the Rambur's forktail in New York during the NYDDS (White *et al.* 2010).

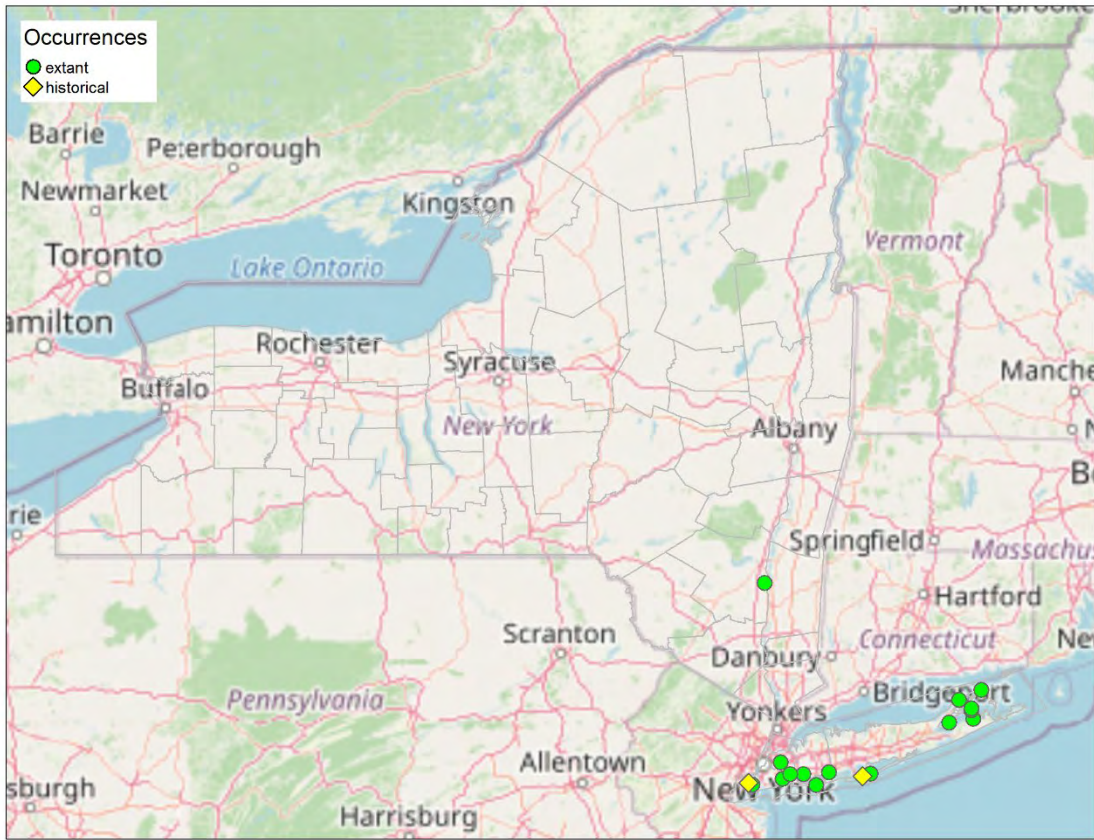


Figure 3. NYNHP element occurrence records for the Rambur's forktail in NY (NYNHP 2024).

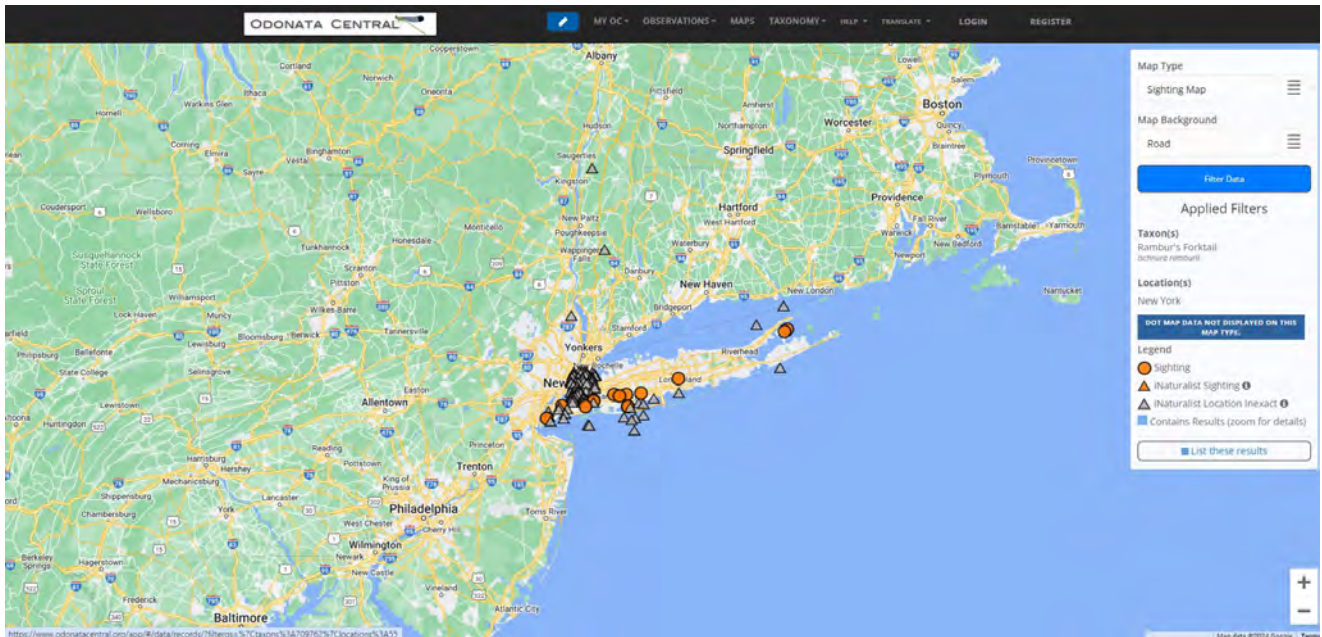


Figure 4. Distribution of the Rambur's forktail in NY (Abbott 2024).

III. New York Rarity (provide map, numbers, and percent of state occupied)

Recent survey efforts have expanded the known range of this species into eight counties in southern NY and Long Island and the trend is likely increasing in NY since 2005. The number of records since 2005 could be partially indicative of increased survey efforts and increased use of iNaturalist (iNaturalist 2024, White *et al.* 2010). The known range in NY is restricted to the lower Hudson Valley and Long Island and it can occur coastally in a variety of habitats of varying water quality (NYNHP 2024a).

Years	# of Records	# of Counties	% of State
Pre-2005	6	2	<1-3%
2005-2009	9	5	~8%
2010-2023	20-145	8	~13%

Table 1. Records of Rambur’s forktail in New York.

Details of historic and current occurrence:

Pre-2005, Rambur’s Forktail were known from two counties, Richmond and Suffolk County (Donnelly 2004). During the NYDDS, records were confirmed in five counties including Kings, Queens, Nassau, Richmond, Suffolk (Abbott 2024, iNaturalist 2024, White *et al.* 2010). Since 2010, there are confirmed observations from 8 counties in NY, with the addition of Ulster, New York, and Rockland Counties to those five (Abbott 2024, iNaturalist 2024). As there were 145 research grade records on iNaturalist, I assumed these were valid records if they were labeled research grade, as I did not look at photos. Any number of these may not be confirmed records, though I know several of the observers and many are likely valid, especially from previously known counties. I did confirm the Rockland County photo voucher. As many exact locations are obscured to me on iNaturalist, I am unable to determine if multiple records from a county will be the same EO (or if these are breeding locations), so left a large range of possible EOs in # of records above (Abbott 2024, iNaturalist 2024, NYNHP 2024).

If it occurs in 8/62 counties, that is very roughly about 13% of the state, though the occupied area of those counties would be smaller.

New York’s Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	~700 miles

Column options

Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item

Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type (from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):

1. Estuarine, brackish marsh
2. Coastal plain pond
3. Brackish, low gradient headwater creek/small river
4. Freshwater Marsh (coastal)

- a. **Size/Waterbody Type:** Headwater and Creek
- b. **Geology:** Low buffered, acidic
- c. **Temperature:** Transitional Warm
- d. **Gradient:** Very low, low-moderate

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options

Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item

Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Coastal plain ponds are highly vulnerable in the Northeast, but since this species can be found in a variety of ponds and wetlands which have moderate vulnerability, overall stable (White et al. 2015).

Habitat Discussion:

In the Northeast, *I. ramburii* is found in coastal plain ponds, lakes, marshes, and slow-flowing rivers or streams, often with brackish water (Nikula et al. 2003, Lam 2004). In New York, known habitats also include these habitat types as well as one site on Long Island at an ephemeral pool (New York Natural Heritage Program 2024a).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/Catadromous?
Yes	-	-	Yes	Yes	-

Column options

First 5 fields: Yes; No; Unknown; (blank) or Choose an item

Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion (include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):

Little is published on the life history of *I. ramburii*. Both sexes spend most of their time at or near water. In areas where the species is common, they can be found waterside in large sleeping aggregations. In their preferred habitat, males and sometimes mating pairs are very commonly seen, and are often more out in the open than other forktails, at the edge of vegetation beds (Murtaugh 2012, Paulson 2011).

From Paulson 2011: Females appear in two color morphs, and are commonly seen in pairs. Orange immatures are less commonly sighted together. Copulation in this species is very long, averaging 200 minutes to almost 7 hours, and typically occurs in the afternoon. Characteristic of at least some forktails but unlike most pond damsels, females have a very flexible abdomen which allows them to grab substrate during copulation. Eggs are deposited in floating leaves, stems, and debris, with the tip of the abdomen sometimes submerged. Females may spend minutes perched in one spot, moving only the tip of the abdomen to deposit eggs. *I. ramburii*, especially females, are regular predators of other small damselflies, including their own species (Paulson 2011).

VI. Threats (from NY 2015 SWAP or newly described):

From NYNHP 2024b: “Any activity that might lead to water contamination or the alteration of natural hydrology could impact *I. ramburii* populations. Such threats might include roadway and agricultural run-off, ditching and filling, eutrophication, changes in dissolved oxygen content, and development near their habitats (NYS DEC 2005). Groundwater withdrawal is a potential threat in lentic habitats, as are invasive plant species replacing native plants required for oviposition (New York Natural Heritage Program 2024a).” In New Hampshire, this species does well in slightly degraded coastal habitats including ponds that receive road runoff (P. Hunt, personal communication), and it has been observed in NY in habitats of lower water quality (NYNHP 2024a).

According to Kalkman *et al.* (2008), both emergence rates and/or species ranges may shift for odonate species as a result of climate change. However, Rambur’s forktail was classified as “not vulnerable/presumed stable” (PS) to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program. Available evidence does not suggest that abundance and/or range extent within the geographical area assessed with change (increase/decrease) substantially by 2050. Actual range boundaries may change (Schlesinger *et al.* 2011).

Threats to NY Populations	
Threat Category	Threat
1. Natural System Modifications	Dams & Water Management/Use (ditching & filling in)
2. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (invasive plants Phragmites)
3. Pollution	Household Sewage & Urban Waste Water
4. Climate Change & Severe Weather	Habitat Shifting & Alteration (sea level rise)
5. Natural System Modifications	Dams & Water Management/Use (Water withdrawal for urban use)

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: No: Unknown:

If yes, describe mechanism and whether adequate to protect species/habitat:

The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law. The Tidal Wetlands Act protects all tidal wetland habitats and adjacent areas under Article 25 of the NYS Conservation Law.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

From NYNHP 2024b: “Any efforts to reduce roadway and agricultural run-off, eutrophication, development of upland borders and resulting increased groundwater withdrawal, and ditching and filling activities should be considered when managing for this species (NYS DEC 2005).

Further research is needed to define the distribution and population size of the Rambur's forktail. 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 (NYS DEC 2005).”

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for odonates of brackish marshes, lakes, and ponds, and for Rambur’s forktail in particular:

Habitat monitoring:

_____ Support and encourage habitat monitoring efforts that would complete the baseline assessment of habitat quality and threats.

Habitat research:

_____ Support and encourage research projects that will help define preferred habitat in order to guide future monitoring, restoration and habitat protection efforts.

New regulation:

_____ Recommendations for official state endangered, threatened, and special concern listing are an anticipated result of the statewide inventory. It is expected that either one or both of these species could be recommended for listing and officially adding these species to the list would constitute a specific action.

Population monitoring:

_____ Conduct surveys to obtain repeatable, relative abundance estimates for these species at known sites and newly discovered sites where access permission to conduct surveys is obtained.

Conservation Actions	
Action Category	Action
1. Land/Water Protection	Resource and habitat protection
2. Land/Water Protection	Site/area protection
3. Land/water management	Site/area management
4. Land/water management	Habitat & natural process restoration
5. Land/water management	Invasives/problematic species control

3. Education and Awareness	Awareness & Communications
3. Education and Awareness	Training
4. Law and Policy	Policies and Regulations

Table 3. Recommended conservation actions for Rambur's forktail

VII. References

- Abbott, J.C. 2006-2024. OdonataCentral: An online resource for the distribution and identification of Odonata. Available at <https://www.odonatacentral.org/>. (Accessed: 1/10/2024).
- 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.
- Gawler, S.C. 2008. Northeastern Terrestrial Wildlife Habitat Classification. NatureServe, Boston, MA.
- iNaturalist. 2024. Available from <https://www.inaturalist.org>. Accessed January 10, 2024.
- IUCN 2024. IUCN Red List of Threatened Species. Version 2023.1. <www.iucnredlist.org>. Accessed 10 January 2024.
- Kalkman, V. J., V. Clausnitzer, K. B. Dijkstra, A. G. Orr, D. R. Paulson, and J. van Tol. 2008. Global diversity of dragonflies (Odonata) in freshwater. Hydrobiologia 595:351-363.
- 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. 96 pp.
- Murtaugh, J. 2012. NYSDEC SWAP 2015 Species Status Assessment for *Ischnura ramburii*. Prepared on June 1, 2012. Revised by Samantha Hoff on February 4, 2014.
- NatureServe. 2024. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed January 9, 2024.
- Nikula, B., J. L. Loose, and M. R. Burne. 2003. A field guide to the dragonflies and damselflies of Massachusetts. Massachusetts NHESP, Westborough, MA.
- New York Natural Heritage Program. 2011. Online Conservation Guide for *Ischnura ramburii*. <<http://www.acris.nynhp.org/>>. Accessed 30 April 2012.
- New York Natural Heritage Program. 2024a. Element Occurrence Database. State University of New York College of Environmental Science and Forestry, Albany, NY.
- New York Natural Heritage Program. 2024b. Online Conservation Guide for *Ischnura ramburii*. Available from: <https://guides.nynhp.org/ramburs-forktail/>. Accessed January 10, 2024.

New York State Department of Environmental Conservation. 2005. Comprehensive Wildlife Conservation Strategy Planning Database. New York State Department of Environmental Conservation. Albany, NY.

Northeast Fish and Wildlife Diversity. 2024. Regional Species of Greatest Conservation Need (2023). <https://northeastwildlifediversity.org/rsgcn>. Accessed January 9, 2024.

Olivero, A.P. and M.G. Anderson. 2008. Northeast Aquatic Habitat Classification. The Nature Conservancy Eastern Resource Office, Boston, MA.

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

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

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.

White, E.L., J.D. Corser, P.D. Hunt, P. DeMaynadier, and M.D. Schlesinger. 2015. Prioritizing Odonata for conservation action in the northeastern USA. *Freshwater Science* (34): 1079-1093.

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Date first prepared	June 1, 2012
First revision	February 4, 2014 (Samantha Hoff)
Latest revision	January 10, 2024 (Erin L. White)