

Species Status Assessment

Common Name: Eastern Water Shrew

Date Updated: 3/13/2025

Scientific Name: *Sorex albibarb* [formerly *Sorex palustris*]

Class: Mammalia

Family: Soricidae

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

Eastern Water Shrews are a large brown to grayish shrew with a bicolored tail and distinct fringed feet and toes (elongated hairs) that provide support for swimming. As their name might suggest, water shrews are rarely found far from water, including marshes, streams, and springs (Beneski and Stinson 1987). The Eastern Water Shrew (*Sorex abibarbis*) was formerly considered a subspecies of the American Water Shrew (*Sorex palustris albibarb*), but taxonomic revision following extensive genetic analysis supports the elevation of the eastern group (of *Sorex palustris*, which contains *Sorex palustris albibarb*) to species status (Mycroft et al, 2011, Hope et al. 2014). As such, most information on the natural history of *S. albibarb* is assumed from studies of *S. palustris* before the split. Eastern Water Shrews range from the southern Appalachians through northeastern Canada, while the range of the former *Sorex palustris* also included most of Canada and the Western United States. Typically assumed to occur in lower densities than smaller, sympatric shrew species, Eastern Water Shrews have only rarely been reported in New York in recent decades. It is unclear whether this is due to true biological declines, low detection probability, and/or a lack of search effort (although extensive sampling during the 2019-2024 NYS Mammal Survey revealed only 2 detections of this species).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed _____ **Candidate:** _____

ii. **New York:** Not listed _____

b. Natural Heritage Program

i. **Global:** G4 _____

ii. **New York:** S4 (to be re-ranked in 2025) **Tracked by NYNHP?:** No _____

Other Ranks:

- NYS 2025 SGCN Status: Species of Greatest Conservation Need
- COSEWIC: Not listed in Canada
- IUCN Red List: Least Concern
- Northeast Regional SGCN: Not listed

Status Discussion:

From NatureServe (*Sorex palustris*): “Generally common, especially in the northern portion of the range (Christian, pers. comm., 1994), though some (e.g., Kirkland, pers. comm., 1994) have described abundance as uncommon to rare throughout the entire range. Certain subspecies are rare.”

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S-Rank	SGCN?
North America	Yes	Unknown	Unknown	Unknown		
Northeastern US	Yes	Unknown	Unknown	Unknown		
New York	Yes	Unknown	Unknown	Unknown	S4 (to be re-ranked in 2025)	
Connecticut	No	-	-	-	S3S4	
Massachusetts	yes	Unknown	Unknown	Unknown	S3	
New Jersey	yes	Unknown	Unknown	Unknown	SU	
Pennsylvania	yes	Unknown	Unknown	Unknown	SNR	
Vermont	yes	Unknown	Unknown	Unknown	S3	
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):

No regular monitoring activity. As of 2024, there were 2 detections of this species during the NYS Mammal Survey (2019-2024), although some camera trap images and environmental DNA is still to be processed.

Trends Discussion

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

No regular monitoring so trends cannot be determined.

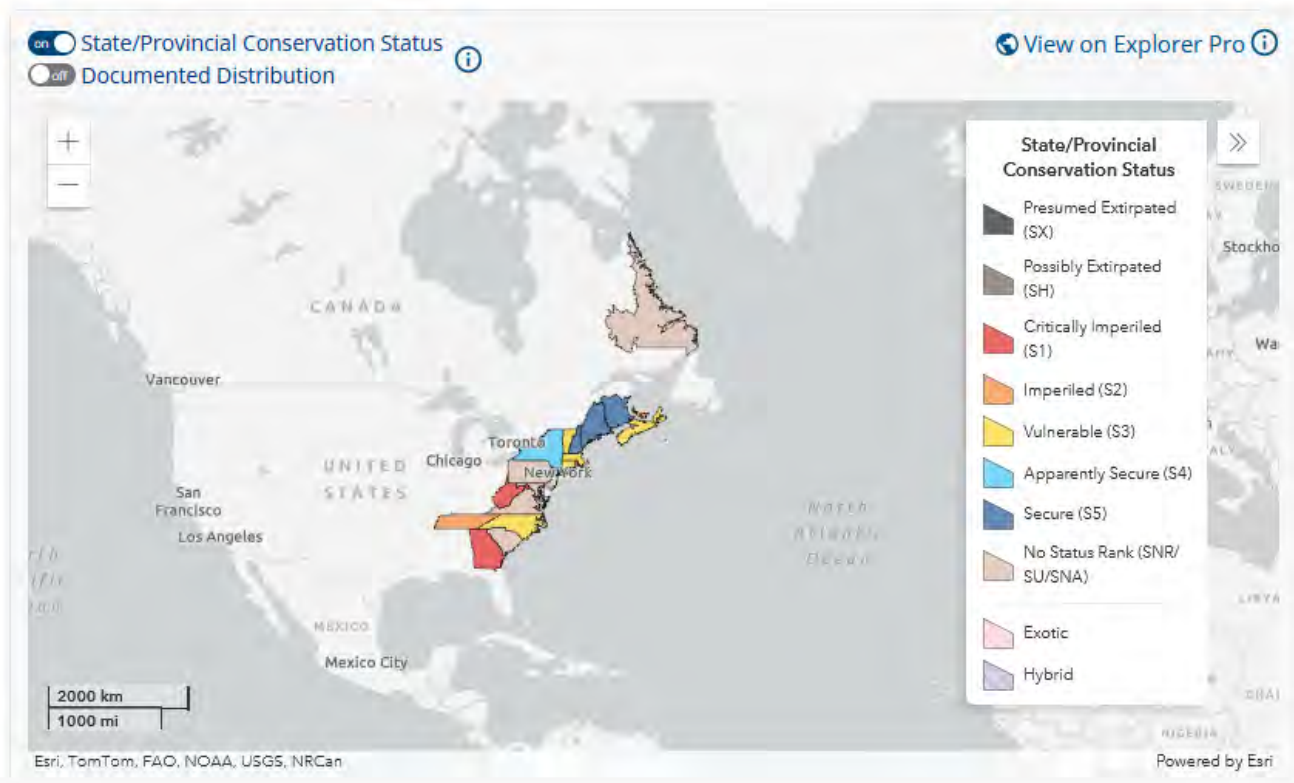


Figure 1. Distribution and ranking status of Eastern water shrew via NatureServe.

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

This species is known from just a few locations in New York. It will be re-ranked by the NYNHP after the completion of the NY Mammal Survey.

Occurrence Records by Town

Sorex albibarbis - Eastern Water Shrew

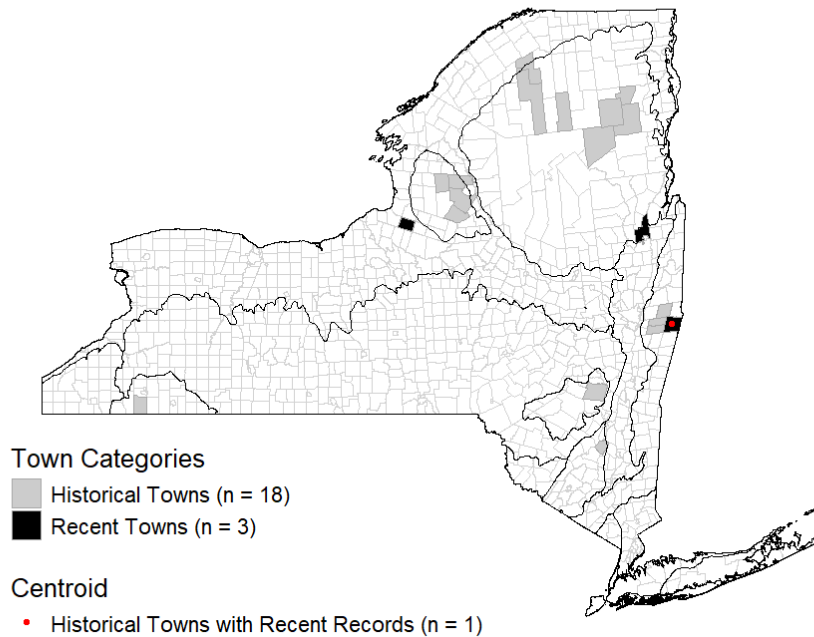


Figure 2. Map of historical (pre-2000) and current (post-2000) town records for Eastern water shrew in NY. This species was detected in 2 towns during the NYMS (2019-2024), and 2 towns incidentally during herpetofauna sampling by the NYNHP (2023-2024). Historical data based on records for *Sorex palustris*. Town boundaries shown in gray, Level IV EPA Ecoregion boundaries shown in black.

Occurrence Records by County

Sorex albibarbis - Eastern Water Shrew

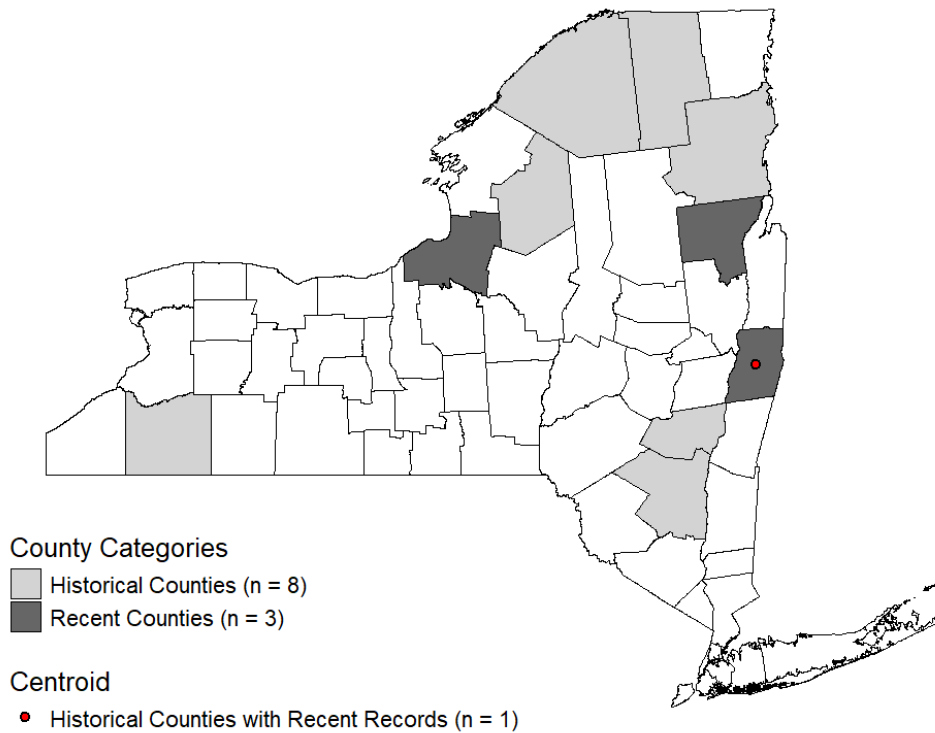


Figure 3. Map of historical (pre-2000) and current (post-2000) county records for Eastern water shrew in NY. This species was detected in 1 county during the NYMS (2019-2024), and 2 counties incidentally during herpetofauna sampling by the NYNHP (2023-2024). Historical data based on records for *Sorex palustris*.

Years	# of Records	# Towns	% of Towns	# Counties	% of Counties
Pre-1950	13	6	0.6%	4	6.5
1950-1974	44	12	1.2%	6	9.7
1974-1999	1	1	0.1%	1	1.6
2000-2024	4	3	0.3%	3	4.8
Other	2	2	0.2%	2	3.2

Table 1. Records of Eastern water shrew in New York.

Details of historic and current occurrence:

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

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):

NatureServe broad habitat types:

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/ Increase
unknown	Unknown	Unknown	Unknown

Column options

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

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

Habitat Discussion:

Higher elevations in NY, in Canadian and Canadian-Transition Zones. On Tug Hill was not restricted to any specific type of stream or woodland cover but were most numerous in heavily wooded, higher parts of the plateau.

From NatureServe (*Sorex palustris*): "Most abundant along small cold streams with thick overhanging riparian growth. Also around lakes, ponds, marshes, bogs, and other lentic habitats. Rarely far from water. Nest sites are near water in underground burrows, rafted logs, beaver lodges, and other areas providing shelter.

Van Zyll de Jong (1983) described the habitat in Canada: "Lakes, ponds, swift and sluggish small streams, all provide suitable habitat if adequate cover is available in the form of overhanging banks, boulders, tree roots, logs, etc. In the mountains, the species occurs along cold fast mountain streams. On the other extreme, it is also found in stagnant water of marshes or bogs, and a few have been caught in places with very little water. The water shrew appears to have some flexibility in adapting to habitats with little water or even to habitats where water is present only seasonally. However, the species appears to be most abundant along cold mountain streams with abundant cover."

Pagels (1990, 1991) noted that in the southern Appalachians the water shrew is limited to prime habitat: "high elevation situations where moist, cool, shaded situations have prevailed throughout historic time...elevations ranging from about 762 m (2500 ft.) in Pennsylvania to 1158 m (3800 ft.) and above in North Carolina and Tennessee. In addition to close proximity to water, habitat features often include moss-covered rocks, crevices, fallen trees, and boulder-strewn and/or overhanging stream banks. Understory vegetation is generally dense with mountain laurel and rhododendron being the most abundant species."

In Montana, Conaway (1952) examined 101 capture sites and found typical habitat to be "along fast cold mountain streams having banks which offered favorable cover." All these shrews were trapped within 18 cm (7 inches) of water.

Though normally associated with water, water shrews "have been found more than 100 m (328 ft.) from streams in mature northern hardwood stands in northern New Hampshire" (DeGraaf and Rudis 1986). This and other captures far from water probably represent dispersing individuals."

V. Species Demographics and Life History

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/Catadromous?
Yes	Yes	No	Yes	Yes	No

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*):

From NatureServe (*Sorex palustris*): "Breeds February-August in Montana (Conaway 1952). Gestation lasts probably 3 weeks. Litter size is 3-10, average 6; 2-3 litters/year (Montana). Optimum conditions in captivity, or abundant food supply in nature, may increase the number of litters (Churchfield 1990, Godfrey 1978). Sexually mature in second calendar year. Maximum lifespan is about 18 months (Beneski and Stinson 1987).

There are almost no data on home range size. Home range was 0.2-0.3 ha for two live-trapped Manitoba individuals (Buckner 1966, Buckner and Ray 1968). Churchfield (1990) reported that "aquatic species such as *NEOMYS FODIENS* and *SOREX PALUSTRIS* also have linear home ranges based on the banks of streams and rivers. They occupy a length of riverbank plus the adjacent area of water and, often, a small area of hinterland. *N. FODIENS* typically has a home range length of 20-93 m (65-305 ft.) alongside a stream." After 14 months of observing *S. PALUSTRIS* in captivity under near-natural conditions, Sorenson (1962) concluded that "a dominance hierarchy and territoriality did not exist." He noted that even nests were not defended.

Information on population density likewise [sic] is scant. In Michigan, seven individuals were found along a 200-ft section of stream in one night with 30 Sherman traps (Master 1978). Population densities in the Appalachians appear to be quite low, though numbers are not available (Pagels 1990, 1991). In Canada, Banfield (1974) reported that this shrew is usually uncommon but sizeable populations sometimes occur in favorable locations. Generally numbers are highest in summer when young are born and drop off sharply in autumn, with very little decrease through winter. Population densities for shrews in general depend on species, season, habitat, and probably prey density (Churchfield 1990).

Common predators include fishes such as trout, bass, and pickerel, minks, otters, weasels, snakes, and, occasionally, hawks and owls (Merritt 1987, Godin 1977). Internal and external parasites commonly include nematodes, tapeworms, fleas, ticks, and mites (Conaway 1952, Webster 1987, Whitaker and Schmeltz 1973), but there is no evidence that they cause significant harm (Churchfield 1990)."

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

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
7. Natural System Modifications	7.2 Dams & Water Management/Use	7.2.5 Drainage in forest environments	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.2 Dams & Water Management/Use	7.3.1 Shoreline alteration	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
5. Biological Resource Use	5.3 Logging & Wood Harvesting	5.3.1 Complete removal of the forest cover	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	8.2.4 Insect pest epidemics	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.5 Air-Borne Pollutants	9.5.1 Acid rain	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.1 Habitat Shifting & Alteration		Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Sorex albibarbis*.

Action Category	Action	Description
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation planning	Site/Area Protection
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation planning	Resource/Habitat Protection
C.6 Design and Plan Conservation	C.6.5.1.3 Develop a conservation, management, or restoration plan for protected private lands	Habitat/Natural process restoration
C.7 Legislative and Regulatory Framework or Tools	C.7.1.3.0 Create, amend, or influence regulation	
C.7 Legislative and Regulatory Framework or Tools	C.7.2.1.0 Create or amend policies	
C.9 Education and Training	C.9.2.0.0 Training and individual skill development	Training

Table 3. Recommended conservation actions for *Sorex eastern water shrew*.

VII. References

This SSA drew heavily from these resources:

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