

# Species Status Assessment

**Common Name:** Fringed valvata

**Date Updated:** February 2025

**Scientific Name:** *Valvata lewisi* **Minor Edits By:** DEC Wildlife Diversity Section

**Class:** Gastropoda

**Family:** Valvatidae

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

Freshwater gastropods (snails) are an important and diverse component of aquatic ecosystems worldwide. They have diversified into every available aquatic habitat, including springs, small streams, large rivers, ponds, lakes, and ephemeral to permanent wetlands. Most graze on algae, aquatic plants and biofilms, though some are suspension or deposit feeders, and they can play a vital role in the processing of detritus and decaying organic matter. Freshwater snails are not predatory, unlike some of their terrestrial or marine counterparts and they often dominate benthic stream communities, regularly exceeding 50% of the invertebrate biomass (Johnson et al 2013).

Gastropods are important dietary components of many North American fishes, and also are consumed by a variety of aquatic associated birds and mammals such as the snail kite and the muskrat (Johnson et al. 2013). The fringed valvata occurs in southern Canada from Quebec to British Columbia and in the United States from New York west to Minnesota (Goodrich 1932, Burch 1982).

DEC is not aware of any additional data or new information on population trends or threats to this species since the last SWAP revision in 2015. This species was listed as SPCN in 2015, but with the removal of this status in the 2025 revision it has been changed to SGCN.

## I. Status

### a. Current legal protected Status

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

ii. **New York:** Special Concern; SGCN

### b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S1 **Tracked by NYNHP?:** Yes

### Other Ranks:

-New York 2025 SGCN status: Species of Greatest Conservation Need

-IUCN Red List: Least Concern

-Northeast Regional SGCN: not listed

-American Fisheries Society: CS – Currently Stable

### Status Discussion:

The fringed valvata is ranked secure globally and critically imperiled in New York. Little is known about its status within the state or throughout its range.

## II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Stable	Stable			-
Northeastern US	Yes	Unknown	Unknown			-
New York	Yes	Unknown	Unknown			Yes
Connecticut	No	-	-			-
Massachusetts	No data	Unknown	Unknown		Not listed	No
New Jersey	No	-	-			-
Pennsylvania	Yes	Unknown	Unknown		Not listed	No
Vermont	No	-	-			-
Ontario	Yes	Unknown	Unknown		Not listed	-
Quebec	Yes	Unknown	Unknown		Not listed	-

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):

None.

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



Figure 1. Conservation status of the fringed valvata in North America (NatureServe 2025).

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

**Details of historic and current occurrence:**

Harman and Berg (1971) documented a population in Oneida Lake, where it was relatively scarce, living on sand down to the depths of 7 m (Harman and Berg 1971). Other substrata include mud and aquatic vegetation (Baker 1928a).

One population was located during a survey of the freshwater snails of New York, in a ditch at Oneida Shores Country Park, Onondaga County, within the St. Lawrence River watershed (Jokinen 1992). In June of 2012 Alexander Karatayev, Vadim Karatayev, and Lyubov Burlakova found 4 individuals in 3 locations in Oneida Lake (A. Karatayev, personal communication). It is also known to occur in Lake Erie and in the Hudson River. Rarity in New York State is unknown due to lack of records.

**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	

*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*):

- a. Winter-stratified Monomictic Lake
- b. Ditch/Intermittent Stream
- c. Summer-stratified Monomictic Lake
- d. Large/Great River

**Habitat or Community Type Trend in New York**

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

**Habitat Discussion:**

The fringed valvata is most commonly found in lakes, often at considerable depths, as well as on mud among submerged vegetation (Clarke 1981). Sites where it has been found spanned a relatively narrow range of pH (7.7 to 8.6) and conductivity (0.31 to 0.57 mS) (Prescott and Curteanu 2004).

**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):

Very little is known regarding the life history of this species.

Most Gastropods belong to the clade Caenogastropoda, in which individuals mature slowly (requiring at least a year), are long-lived dioecious species with internal fertilization, and females generally attach eggs to firm substrates in late spring and early summer. Many species are narrow endemics associated with lotic habitats, often isolated in a single spring, river reach, or geographically restricted river basin (Johnson et al. 2013). In contrast, members of the clade Heterobranchia are hermaphroditic, mature quickly, and generally have shorter generation times (Johnson et al. 2013).

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

Insufficient information to assess threats. High imperilment rates among freshwater gastropods have been linked to alteration, fragmentation and destruction of habitat and introduction of non-indigenous species. Causes of habitat degradation and gastropod species loss include dams, impounded reaches, development of riparian areas, channelization, erosion, excess sedimentation, groundwater withdrawal and associated impacts on surface streams (flows, temperature, dissolved oxygen), multiple forms of pollution (salt, metals such as Cu, Hg, Zn, untreated sewage, agricultural runoff, pesticides/fertilizers), changes in aquatic vegetation, and invasion of exotic species (Johnson et al. 2013). Most gastropod species live in the shallows (depths less than 3 m), where food abundance is greatest. As a result, drastic water fluctuations, such as draw-downs, may cause declines in snail populations (Hunt and Jones 1972).

Strayer (1987) concluded that human activities had destroyed much of the original mollusk fauna in some parts of the Hudson basin, but not in others. Channelization of farmed mucklands and industrial pollution from Beacon were noted as causes for the notably reduced biodiversity of mollusks in the Walkkill River of Orange County and the Fishkill Creek of Dutchess County, respectively.

The New Zealand mud snail (*Potamopyrgus antipodarum*) is a highly invasive species that was introduced in Idaho in the 1980s. It can have devastating consequences to aquatic ecosystems, reducing or eliminating native snail species (Benson et al. 2013). This snail was found established in Lake Ontario in 1991 (Zaranko et al. 1997) and in Lake Erie in 2005 (Levri et al. 2007).

<b>Threat Level 1</b>	<b>Threat Level 2</b>	<b>Threat Level 3</b>	<b>Spatial Extent</b>	<b>Severity</b>	<b>Immediacy</b>	<b>Trend</b>	<b>Certainty</b>
1. Residential and Commercial	1.1 Housing & Urban Areas	(habitat loss/degradation)	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	7.2.1 Water level management using dams (channelization)	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	8.1.3 Aquatic animals (New Zealand mud snail)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.1 Domestic & Urban Wastewater	9.1.1 Domestic wastewater (untreated sewage)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.2 Industrial & Military Effluents	(metals)	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 1.** Threats to Fringed valvata.

**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 Protection of Waters Program provides protection for rivers, streams, lakes, and ponds under Article 15 of the NYS Environmental Conservation Law, however this may not be sufficient enough to protect this species.

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

Basic biological information is lacking for most taxa of freshwater gastropods and there is a strong need for surveys and biological studies given the strong evidence of decline and extinction.

Although not specific to the coldwater pond snail, the NYS Comprehensive Wildlife Conservation Strategy (CWCS) recommends the following actions for the freshwater gastropods (NYSDEC 2005):

- Develop fact sheets for paper distribution and the DEC website
- Determine habitat requirements for all life stages
- Determine threats specific to species
- Determine habitat management techniques
- Determine life history and population dynamics
- Determine distribution

Action Category	Action	Description
B.3 Outreach	B.3.1.4.3 Fliers and Brochures	
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation Planning	
C.8 Research and Monitoring	C.8.1.5.0 Literature Search and Analysis	
C.8 Research and Monitoring	C.8.1.5.1 Species Monitoring	
C.8 Research and Monitoring	C.8.1.5.3 Analyzing Threats or their impacts	

**Table 2.** Recommended conservation actions for fringed valvata.

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