Species Status Assessment

Common Name: Banded physa **Date Updated: February 2025**

Scientific Name: *Physella vinosa* **Minor Edits By:** DEC Wildlife Diversity Section

Class: Gastropoda

Family: Physidae

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

The banded physa is a small sinistral, or left-coiled, freshwater snail in the family Physidae. The family Physidae is comprised of 47 species within 5 genera, occupying a holarctic distribution with extensions into Central and South America. The Physidae are the most abundant and widespread of the freshwater gastropods, occurring in a variety of freshwater habitats such as ditches, ponds, lakes, small streams, and rivers. The banded physa occurs in Ontario, Canada and the Great Lake states of the United States (Minnesota, Montana, Wisconsin, New York, and Michigan) and is most abundant on hard surfaces and aquatic vegetation (Mackie et al. 1980). The only records for New York are from museum lots for Mohawk, Herkimer County, likely the easternmost records for the species. No new information has been released since 2015.

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:** Not listed; SGCN

b. Natural Heritage Program

i. **Global:** G5Q

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

Other Ranks:

-New York 2025 SGCN status: Species of Greatest Conservation Need
-IUCN Red List: data deficient
-Northeast Regional SGCN: not listed
-American Fisheries Society: CS – Currently Stable

Status Discussion:

The banded physa is ranked secure globally and critically imperiled in New York. Little is known about its status within the state or throughout its whole range. Physella are currently undergoing taxonomic revision and this species may not be recognized in the future.

II. Abundance and Distribution Trends

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

None.

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

Trend information for this species is unknown.

Figure 1. Conservation status of the banded physa in North America (NatureServe 2025).

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

Details of historic and current occurrence:

There are two records for this species in New York from museum lots near Mohawk, Herkimer County (UMMZ 43096 and 119165).

There are no current occurrence records available for this species in New York. Rarity in New York is unknown due to lack of occurrence 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%	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):*

a. Lacustrine

b. Riverine

c. Freshwater

Habitat or Community Type Trend in New York

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

Species of this family are most often found in lentic environments, although some are restricted to rivers and springs. The banded physa was first identified from Lake Superior in 1847. Most freshwater gastropods are restricted to waters with calcium concentrations greater than 3 mg/liter and limiting factors and specific localities may include hardness, acidity, dissolved oxygen, salinity, high temperatures, and food availability associated with depth (NatureServe 2013).
Aquatic gastropods are frequently used as bioindicators because they are sensitive to water quality and habitat alteration (Callil and Junk 2001, Salanki et al. 2003).

V. Species Demographic, and Life History:

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

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. The banded physa is hermaphroditic and capable of self-fertilization. Members of the family Physidae generally lay large gelatinous egg masses during warmer months. Juveniles mature rapidly and multiple generations can be produced in a single year, but species from northern latitudes commonly live two years or more (Dillon et al. 2011).

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

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
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	(fertilizers)	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 Banded physa.

Threats not evaluated; experts agree too little is known. Threats to this specific species are not discussed in the literature. Known threats to freshwater gastropods include habitat loss and destruction and introduction of non-indigenous species. Causes of habitat destruction include dams, impounded reaches, development of riparian areas, channelization, erosion, excess sedimentation, groundwater withdrawal and associated impacts on surface streams (flows, temperature, dissolved oxygen levels), multiple forms of pollution (salt, metals, untreated sewage, agricultural runoff, pesticides/fertilizers), changes in aquatic vegetation and invasive species.

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).

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

Yes: x **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 and its required microhabitat conditions.

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.
Determine the current status of the banded physa through surveys including population trends, develop a specific management plan for this species or appropriate suite of freshwater gastropods that details status, threats, actions necessary to reverse declines or maintain stable populations, identify habitat requirements of all life stages of the banded physa and identify threats.

Action Category	Action	Description
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 banded physa.

VII. References

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