

Common Name: Banded physa *SPCN*
Scientific Name: *Physella vinosa*
Taxon: Freshwater Mollusks

Federal Status: Not Listed
New York Status: Not Listed
Natural Heritage Program Rank:
 Global: G5Q
 New York: S1
 Tracked: Yes

Synopsis:

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.

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	X		
11% to 25%		Fairly common			
26% to 50%		Uncommon			
> 50%		Rare			

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).

Primary Habitat Type
Medium River

Distribution:

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.

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail)	U	U	U
4. Pollution	Industrial & Military Effluents (metals)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
6. Pollution	Household Sewage & Urban Wastewater (untreated sewage)	U	U	U
7. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Callil, T. C. and W. J. Junk. 2001. Aquatic gastropods as mercury indicators in the Pantanal of Pocone region (Mato Grosso, Brasil). *Water, Air and Soil Pollution*. 319:319-330.

Mackie, G.L., D.S. White, and T.W. Zdeba. 1980. A guide to freshwater mollusks of the Laurentian Great Lakes with special emphasis on the genus *Pisidium*. US EPA, Environmental Research Laboratory, Duluth, Minnesota. EPA-600/3-80-068. 152p.

NatureServe. 2013. NatureServe explorer: an online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available: <http://www.natureserve.org/explorer>. Accessed: 17 June, 2013.

Salanki, J., A. Farkas, T. Kamardina, and K. S. Rozsa 2003. Molluscs in biological monitoring of water quality. *Toxicology Letters* 140-141: 403-410.

Common Name: Buffalo pebblesnail *SPCN*
Scientific Name: *Gillia altilis*
Taxon: Freshwater Mollusks

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G5
New York: S1
Tracked: Yes

Synopsis:

The buffalo pebblesnail is native to the Atlantic coastal drainage of North America, occurring from New York and Vermont southward to South Carolina. Hydrobiidae is one of the most common and diverse gastropod families, with 185 species in 14 genera typically found in springs, creeks and small to medium rivers in temperate, subtropical and tropical regions of the world. The first record of the buffalo pebblesnail in the Great Lakes drainage was from Oneida Lake, New York around 1915–1918, however, in subsequent years it was likely extirpated from this water body and later recorded from Niagara-on-the-Lake, Lake Ontario, Lake Erie, and multiple locations in the Erie Canal. The buffalo pebblesnail was able to colonize Lake Ontario through the Erie Canal, extending its range westward, and is now considered established in the Lake Ontario drainage (Thompson 1984). It is usually found in freshwater stream environments and has adapted to inhabiting both stagnant waters in lakes and streams as well as rapidly moving waters.

The buffalo pebblesnail is rare due to low abundance in New York and also appears to be quite rare in the southern end of its range. Very few populations have been found in recent years and it is not clear whether reduced sightings are due to a decline in global abundance or to lack of extensive surveys for snails.

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

Habitat Discussion:

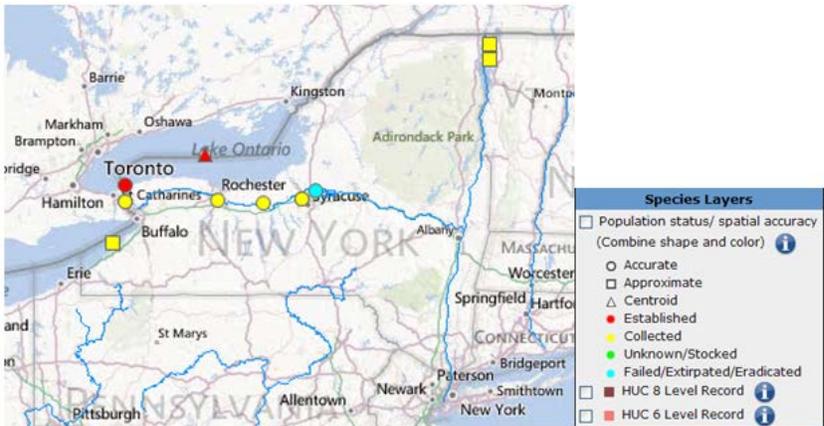
Presence of the buffalo pebblesnail in the great lakes indicates it can be found in cold, clear lakes; however, it is usually found in freshwater streams, canals and rivers. Its globose shell is adapted for inhabiting high-velocity lotic environments and it has a large muscular foot used to suction to rocks (Kipp et al. 2013). It is well also well adapted to living on silty substrates as the foot prevents it from sinking, and it has been found to inhabit both stagnant waters in lakes and streams as well as rapidly moving waters (Thompson 1984). In the Hudson River, this species occurred on mud and aquatic plants in shallow water (Townes 1936).

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).

Primary Habitat Type
Lake; Large Lake
Small River

Distribution:

No populations were located during Jokinen’s survey in 1978–1991 or Strayer’s 1987 survey, but the USGS reports records from multiple locations in the past 20 years: Erie Canal at Clyde, Syracuse, and Brighton in 1993, Niagara River in Niagara Falls 1993, Erie Canal at Syracuse in 1994, and Lake Erie and Lake Ontario in 2005 (Kipp et al. 2013). Thompson (1984) sites the following localities from museum lots: Hudson River, Albany, Dutchess, and Ulster counties; Erie Canal, Herkimer and Onondaga counties; Champlain Canal, Rensselaer County; Niagara Falls, Niagara County; Monroe County; and Wayne County. The New York State Museum has numerous specimens from the Hudson River, Albany County.



Distribution of buffalo pebblesnail depicting population status of collections (Kipp et al. 2013)



Distribution of buffalo pebblesnail depicting number of specimen records at each location (Kipp et al. 2013)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail)	U	U	U
4. Pollution	Industrial & Military Effluents (metals)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
6. Pollution	Household Sewage & Urban Wastewater (untreated sewage)	U	U	U
7. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Callil, T. C. and W. J. Junk. 2001. Aquatic gastropods as mercury indicators in the Pantanal of Pocone region (Mato Grosso, Brasil). *Water, Air and Soil Pollution*. 319:319-330.

Jokinen, E.H. 1992. The freshwater snails (Mollusca: Gastropoda) of New York State. *New York State Museum Bulletin* 482: 1-112.

Kipp, R.M., A.J. Benson, J. Larson, and A. Fusaro. 2013. *Gillia altilis*. USGS Nonindigenous Aquatic Species Database, Gainesville, FO. Available: <http://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=1007>. Revision Date: 7 June, 2012.

Thompson, F.G. 1984. North American freshwater snail genera of the hydrobiid subfamily Lithoglyphinae. *Malacologia* 25(1):109-141.

Common Name: Campeloma spire snail *SPCN*
Scientific Name: *Cincinnatia cincinnatiensis*
Taxon: Freshwater Mollusks

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G5
New York: S1
Tracked: Yes

Synopsis:

The Campeloma spire snail, also referred to as the midland snail, is a midwestern species that probably entered the Hudson basin through the Erie Canal. Its distribution ranges from New York and Pennsylvania westward to southern Manitoba, southern Saskatchewan, North Dakota and Utah, and south to Texas, Kansas, and Kentucky. There has been a long term decline in New York since the 1900s but three new locations were discovered at Cayuga Lake in 2013 (SGCN Expert Meeting).

Authors have determined that *Paludina integra* (Say 1821) is actually *Cincinnatia cincinnatiensis*, and most consider *Cincinnatia integra* (Say 1821) a synonym of *Cincinnatia cincinnatiensis* (Jokinen 1992, NatureServe 2013).

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	X		
> 50%		Rare			

Habitat Discussion:

The Campeloma spire snail lives on muddy ooze or sand in slow creeks and lakes with little aquatic vegetation. In North Dakota, populations are commonly associated with *Ammicola limosa*, and they inhabit large and small streams and permanent lakes and ponds. It has been noted in mesotrophic lakes as well as a deep littoral resident of large lakes with silt and detritus substrates. Reported habitat pH is 7.9-8.4, and it may be limited to high calcium habitats, but more information is needed to sustain this possibility (Jokinsen 1992).

Primary Habitat Type
Lake; Medium Lake; Mesotrophic
Small River; Low Gradient; Moderately Buffered, Neutral; Warm

Distribution:

No populations were found during Jokinen’s surveys in 1978–1991 or Strayer’s 1985 survey. In September of 2013 Alexander Karatayev and Lyubov Burlakova found 7 individuals in 3 locations in Cayuga Lake (Y. Karatayev, personal communication).

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail)	U	U	U
4. Pollution	Industrial & Military Effluents (metals)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
6. Pollution	Household Sewage & Urban Wastewater (untreated sewage)	U	U	U
7. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Jokinen, E.H. 1992. The freshwater snails (Mollusca: Gastropoda) of New York State. New York State Museum Bulletin 482.

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available: <http://www.natureserve.org/explorer>. Accessed: 17 June 2013.

Say, T. 1821. Descriptions of univalve shells of the United States. Journal of the Academy of Natural Sciences of Philadelphia 2:149–179.

Common Name: Canadian duskysnail *SPCN*
Scientific Name: *Lyogyrus walkeri*
Taxon: Freshwater Mollusks

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G3G4
New York: SNR
Tracked: Yes

Synopsis:

The distribution of the Canadian duskysnail ranges across the St. Lawrence River and Great Lakes drainages, upper Mississippi drainage, through the Canadian interior basin in the Albany and Winnipeg River systems, and in Lake Winnipeg. In the United States, it occurs from central New York west to Wisconsin and south to the upper Mississippi River Basin, with an extant population in Lake St. Catherine, Vermont. In 1991 the Canadian duskysnail was elevated from the status of a subgenus of *Amnicola* to full generic rank, and is now placed in the genus *Lyogyrus* (NatureServe 2013). Old records show its presence in scattered areas of the state, with the earliest populations recorded in 1843 from Cayuga Lake, Cayuga, Seneca and Tomkins counties, and from streams entering Lake Champlain, Clinton County. No living snails were found in Jokinen’s 1978–1991 surveys and the last record was from 1971. There is insufficient information to determine trends in distribution and abundance.

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

Habitat Discussion:

This species lives in sluggish streams and quite ponds where dead aquatic plants have accumulated. Populations occur in a range of lentic habitats, including oligotrophic lakes and marl ponds. Mackie et al. (1980) reported that this species is most common in dense masses of aquatic macrophytes and also is present in open areas protected from strong wave action and currents.

Primary Habitat Type
Lake; Medium Lake; Oligotrophic
Lake; Pond

Distribution:

Harman and Berg (1971) found three populations: two from the western Otsego drainage and one from the Genesee River watershed. No living snails were found in Jokinen’s surveys during 1978, 1981, and 1984-1991 of 346 aquatic habitats in New York State and parts of Lake Champlain in Vermont.

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail)	U	U	U
4. Pollution	Industrial & Military Effluents (metals)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
6. Pollution	Household Sewage & Urban Wastewater (untreated sewage)	U	U	U
7. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Harmon, W. N. and C. O. Berg. 1971. The freshwater snails of central New York with illustrated keys to the genera and species. Search (1)4 68pp.

Mackie, G.L., D.S. White, and T.W. Zdeba. 1980. A guide to the freshwater mollusks of the Laurentian Great Lakes with special emphasis on the genus *Pisidium*. U.S. Environmental Protection Agency, Environmental Research Laboratory, Duluth, MN. EPA-600/3-80-068. 152p.

NatureServe. 2013. NatureServe explorer: an online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available: <http://www.natureserve.org/explorer>. Accessed: 18 June, 2013.

Common Name: Coldwater pond snail *SPCN*
Scientific Name: *Stagnicola woodruffi*
Taxon: Freshwater Mollusks

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G2G3
New York: SNR
Tracked: Yes

Synopsis:

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 coldwater pond snail is known only from five states (IL, IN, MI, WI, NY) and one province (ON) (NatureServe 2012). This Lymnaeid is one of the most abundant species in Lake Michigan, the shore from Michigan to Illinois sometimes strewn with its bleached shells. There is little variation from the typical form and it appears to be one of the most distinct species of the genus. The few specimens found in Pleistocene deposits have shown a longer spire and somewhat resemble some forms of *catascopium*. It is possible that *woodruffi* is a descendant of *catascopium* but the latter species has not yet been found in fossil deposits in Illinois nor does it occur living in the rivers of the state (Baker 1930). There are no records of the coldwater pond snail in New York and it may be the same as *S. catascopium* (a common, widely distributed species) (SGCN Expert Meeting).

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:

Primary Habitat Type
Lake; Large Lake; Pond
Small River; Large River
Stream; Headwater Creek
Freshwater Wetlands
Vernal Pool

Distribution:

There are no current records of this species in New York.

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail)	U	U	U
4. Pollution	Industrial & Military Effluents (metals)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
6. Pollution	Household Sewage & Urban Wastewater (untreated sewage)	U	U	U
7. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Baker, F. C. 1930. The molluscan fauna of the southern part of Lake Michigan and its relationship to old Glacial Lake Chicago. Transactions Illinois State Academy of Sciences 22. Pages 193-193 in Collected Papers. F. C. Baker.

Johnson, P.D., A.E. Bogan, K.M. Brown, N.M. Burkhead, J.R. Cordeiro, J.T. Garner, P.D. Hartfield, D.A.W. Lepitzki, G.L. Mackie, E. Pip, T.A. Tarpley, J. S. Tiemann, N.V. Whelan, and E.E. Strong. 2013. Conservation status of freshwater gastropods of Canada and the United States. American Fisheries Society Bulletin 38(6): 37p.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 17 June 2013.

Common Name: File rams-horn *SPCN*
Scientific Name: *Planorbella pilsbryi*
Taxon: Freshwater Mollusks

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G4G5
New York: SH
Tracked: Yes

Synopsis:

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).

The file rams-horn is known from six states (MA, MN, MT, PA, WI, NY) and five provinces (MB, NB, ON, QC, SK). It is thought to be extirpated in New York (NatureServe 2012). This species is also taxonomically questionable and may not be recognized in surveys; most consider this species to be *P. trivolvis* (a common species) (SGCN Expert Meeting).

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:

Planorbids tend to occur in bodies of water with a firm mud bottom and high levels of decaying organic matter. Most species seem to prefer lentic habitats (lakes, wetland or ponds). With the exception of *Helisoma anceps*, which occurs more often in river pools, they prefer minimal current. Planorbid snails are scrapers of benthic surfaces and have been shown to eat bacterial films and algae (Montana Natural Heritage Program 2013).

Primary Habitat Type
Lake; Large Lake; Pond
Small River; Large River
Stream; Headwater Creek
Freshwater Wetlands
Vernal Pool

Distribution:

There are no current records of this species in New York.

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (channelization)	U	U	U
3. Pollution	Industrial & Military Effluents (metals)	U	U	U
4. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
5. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Johnson, P.D., A.E. Bogan, K.M. Brown, N.M. Burkhead, J.R. Cordeiro, J.T. Garner, P.D. Hartfield, D.A.W. Lepitzki, G.L. Mackie, E. Pip, T.A. Tarpley, J. S. Tiemann, N.V. Whelan, and E.E. Strong. 2013. Conservation status of freshwater gastropods of Canada and the United States. *American Fisheries Society Bulletin* 38(6): 37p.

Montana Natural Heritage Program. 2013. File Rams-horn — *Planorbella pilsbryi*. Montana Field Guide. <http://FieldGuide.mt.gov/detail_IMGASN0130.aspx>. Accessed 18 June 2013.

Common Name:	Fringed valvata	<i>SPCN</i>
Scientific Name:	<i>Valvata lewisi</i>	
Taxon:	Freshwater Mollusks	

Federal Status:	Not Listed	Natural Heritage Program Rank:
New York Status:	Special Concern	Global: G5
		New York: S1
		Tracked: Yes

Synopsis:

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).

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:

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).

Primary Habitat Type
Lake; Large Lake; Pond
Small River; Large River
Stream; Headwater Creek
Freshwater Wetlands
Vernal Pool

Distribution:

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.

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail)	U	U	U
4. Pollution	Industrial & Military Effluents (metals)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
6. Pollution	Household Sewage & Urban Wastewater (untreated sewage)	U	U	U
7. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Burch, J. B. Freshwater snails (Mollusca: Gastropoda) of North America. Environmental Monitoring and Support Laboratory, Office of Research and Development, United States Environmental Protection Agency, Cincinnati, Ohio. EPA-600/3-82-026: 1-294.

Clarke, A. H. 1981. The freshwater molluscs of Canada. National Museum of Natural Sciences, National Museum of Canada, Ottawa.

Goodrich, C. 1932. The mollusca of Michigan. Michigan handbook series no. 3. University of Museums, University of Michigan, Ann Arbor.

Johnson, P.D., A.E. Bogan, K.M. Brown, N.M. Burkhead, J.R. Cordeiro, J.T. Garner, P.D. Hartfield, D.A.W. Lepitzki, G.L. Mackie, E. Pip, T.A. Tarpley, J. S. Tiemann, N.V. Whelan, and E.E. Strong. 2013.

Conservation status of freshwater gastropods of Canada and the United States. *American Fisheries Society Bulletin* 38(6): 37p.

Jokinen, E. H. 1992. The freshwater snails (Mollusca: Gastropoda) of New York State. *New York State Museum Bulletin* 482.

Prescott, D. R. C. and M. M. Curteanu. 2004. Survey of Aquatic Gastropods in the Central Parkland Subregion of Alberta. Alberta Sustainable Resource Development, Fish and Wildlife Division, Alberta Species at Risk Report No. 92, Edmonton, AB. 50 pp.

Common Name:	Globe siltsnail	<i>SPCN</i>
Scientific Name:	<i>Birgella subglobosus</i>	
Taxon:	Freshwater Mollusks	

Federal Status:	Not Listed	Natural Heritage Program Rank:
New York Status:	Not Listed	Global: G4
		New York: S3
		Tracked: Watch List

Synopsis:

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).

Although more commonly accepted as *Birgella*, some authors have placed the globe siltsnail in the genus *Somatogyrus*. The distribution of the species in New York extends from Lake Champlain and its outlet, the Richelieu River, in New York, Vermont, and Quebec, west to Minnesota and southward to Arkansas, Alabama, and Georgia (Baker 1928, Berry 1942, Clark 1981, Thompson 1984, Brandon et al. 1987).

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	X		
> 50%		Rare			

Habitat Discussion:

In some areas, this species is a deep water inhabitant of large lakes and rivers (Berry 1943, Clark 1981). However, in Lake Champlain, it was found on a submerged tree trunk in shallow water. In the Hudson River, the globe siltsnail was found in mud and among aquatic plants in shallow water (Townes 1936) and on a soft silt substratum (Thompson 1984).

Primary Habitat Type
Lake; Large Lake
Lake; Pond
Large/Great River
Small River

Distribution:

The only population found during the Jokinen (1992) survey of the freshwater snails of New York was in Lake Champlain in the St. Lawrence River watershed. Strayer (1987) did not find this species during a survey of the Hudson River drainage system. Buckley (1977) located one colony in the Black River, Jefferson County. In June of 2012 Alexander Karatayev, Vadim Karatayev, and Lyubov Burlakova found one dead individual in Oneida Lake and 15 in Lake Erie but not NYS waters (A. Karatayev, personal communication).

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail)	U	U	U
4. Pollution	Industrial & Military Effluents (metals)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
6. Pollution	Household Sewage & Urban Wastewater (untreated sewage)	U	U	U
7. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Baker, F. C. 1928. The fresh water Mollusca of Wisconsin. Part I: Gastropoda. Wisconsin Geological and Natural History Survey Bulletin 70: 1-494.

Berry, E. G. 1943. The Amnicolidae of Michigan: Distribution, ecology, and taxonomy. Miscellaneous Publications of the Museum of Zoology (University of Michigan) 57: 1-68.

Brandon, B. A., D. Batch, and S. Call. 1987. Distribution of aquatic snails (Mollusca: Gastropoda) in Kentucky with notes on fingernail clams (Mollusca: Sphaeriidae: Corbiculidae). Transactions of the Kentucky Academy of Science 48: 62-70.

Buckley, D. A. 1977. The distribution and ecology of the aquatic molluscan fauna of the Black River drainage basin in northern New York. State University of New York College at Oneonta Biological Field Station (Cooperstown) Occasional Paper 6: 1-276.

Clarke, A. H. 1981. The freshwater molluscs of Canada. National Museum of Natural Sciences, National Museum of Canada, Ottawa.

Johnson, P.D., A.E. Bogan, K.M. Brown, N.M. Burkhead, J.R. Cordeiro, J.T. Garner, P.D. Hartfield, D.A.W. Lepitzki, G.L. Mackie, E. Pip, T.A. Tarpley, J. S. Tiemann, N.V. Whelan, and E.E. Strong. 2013. Conservation status of freshwater gastropods of Canada and the United States. American Fisheries Society Bulletin 38(6): 37p.

Jokinen, E. H. 1992. The freshwater snails (Mollusca: Gastropoda) of New York State. New York State Museum Bulletin 482.

Strayer, D. 1987. Ecology and zoogeography of the freshwater mollusks of the Hudson River basin. Malacological Review 20: 1-68.

Thompson, F. G. 1984. North American freshwater snail genera of the hydrobiid subfamily Lithoglyphinae. Malacologia 25: 109-141.

Townes, Jr., H. K. 1936. Studies of the food organisms of fish. Pages 217-230 in A biological survey of the Allegheny and Chemung watersheds. State of New York Conservation Annual Report 27 Supplement.

Common Name: Gravel pyrg *SPCN*
Scientific Name: *Marstonia letsoni*
Taxon: Freshwater Mollusks

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G5
New York: SH
Tracked: Yes

Synopsis:

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 gravel pyrg is known from Michigan, Ohio, Ontario and the Great Lakes region (Hershler 1994). In New York, most records are from fossil specimens; there is one live record from the 1920s. This species is possibly extirpated from New York. There is insufficient information to assess trends or threats.

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:

This is a freshwater species.

Primary Habitat Type
Lake; Large Lake; Pond
Small River; Large River
Stream; Headwater Creek
Freshwater Wetlands
Vernal Pool

Distribution:

There are no current records for this species in New York.

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail)	U	U	U
4. Pollution	Industrial & Military Effluents (metals)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
6. Pollution	Household Sewage & Urban Wastewater (untreated sewage)	U	U	U
7. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Hershler, R. 1994. A review of the North American freshwater snail genus *Pyrgulopsis* (Hydrobiidae). *Smithsonian Contributions to Zoology*, 554: 1-115.

Johnson, P.D., A.E. Bogan, K.M. Brown, N.M. Burkhead, J.R. Cordeiro, J.T. Garner, P.D. Hartfield, D.A.W. Lepitzki, G.L. Mackie, E. Pip, T.A. Tarpley, J. S. Tiemann, N.V. Whelan, and E.E. Strong. 2013. Conservation status of freshwater gastropods of Canada and the United States. *American Fisheries Society Bulletin* 38(6): 37p.

Common Name:	Hickorynut	<i>SPCN</i>
Scientific Name:	<i>Obovaria olivaria</i>	
Taxon:	Freshwater Mollusks	

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

Synopsis:

Obovaria olivaria is thought to be extirpated in New York but experts believe it could still be found in deepwater locations. Historically, it was found in the Niagara River and the St. Lawrence River (Strayer and Jirka 1997).

O. olivaria belongs to the subfamily Ambleminae and the tribe Lampsilini, which includes 17 extant and 6 likely extirpated New York species of the genera Actinonaias, Epioblasma, Lampsilis, Leptodea, Ligumia, Obovaria, Potamilus, Ptychobranchus, Toxolasma, Truncilla, and Villosa (Graf and Cummings 2011, Haag 2012).

O. olivaria is a deepwater, large river unionid that can be abundant in the Mississippi basin (Parmalee and Bogan 1998, Williams et al. 2008) and rare in the St. Lawrence River and Great Lakes watershed (NatureServe 2013). This species is generally considered to be stable, yet the sporadic distribution throughout its range is a cause for concern (NatureServe 2013). This species is ranked by the New York Natural Heritage Program as critically imperiled in New York and apparently secure throughout its range.

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:

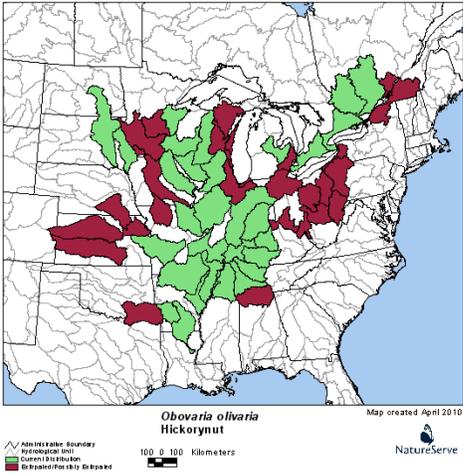
This species is typically found on muddy sand or gravel substrate in deep water, depths usually exceeding six to eight feet, with good current. In large rivers it is often found in large mussel beds, midriver, in gravel bars (Cummings and Mayer 1992, Parmalee and Bogan 1998, Metcalfe-Smith et al. 2005, Watters et al. 2009, McMurray et al. 2012).

Primary Habitat Type
Large/Great River, Coldwater

Distribution:

Historically, *O. olivaria* was found only in the Niagara River and the St. Lawrence River. Museums contain multiple specimens from the Niagara River, suggesting that this species was abundant there (Strayer and Jirka 1997). *O. olivaria* has not recently been found in New York (Strayer and Jirka 1997,

The Nature Conservancy 2009, Harman and Lord 2010, White et al. 2011, NatureServe 2013, Mahar and Landry 2013, NY Natural Heritage Program 2013).



NatureServe (2013)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Human Intrusions & Disturbance	Work & Other Activities (bridge projects and other instream work)	U	U	U
2. Natural System Modifications	Other Ecosystem Modifications (dredging, impassable culverts)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (zebra and quagga mussels, Asian clams)	U	U	U
4. Pollution	Household Sewage & Urban Waste Water (road runoff of salts and metals, waste water treatment effluent, other regulated discharges, combined sewer overflows)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers, sediment)	U	U	U
6. Climate Change & Severe Weather	Habitat Shifting & Alteration (warmer water temperatures)	U	U	U

References Cited:

Graf, D. and K. Cummings. 2011. MUSSEL Evolution: North American Freshwater Mussels. The MUSSEL Project. The University of Wisconsin. http://mussel-project.uwsp.edu/evol/intro/north_america.html

Haag, W. R. 2012. North American freshwater mussels: natural history, ecology, and conservation. Cambridge University Press.

Metcalf-Smith, J., A. MacKenzie, I. Carmichael, and D. McGoldrick. 2005. Photo Field Guide to the Freshwater Mussels of Ontario. St. Thomas Field Naturalist Club. St. Thomas, ON, 60pp.

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: February 12, 2013).

Parmalee, P.W. & A.E. Bogan. 1998. The Freshwater Mussels of Tennessee. University of Tennessee Press: Knoxville, Tennessee. 328 pp.

Strayer, D.L. and K.J. Jirka. 1997. The Pearly Mussels of New York State. New York State Museum Memoir (26): 113 pp., 27 pls.

Watters, G. T., Hoggarth, M. A., D. H. Stansbery. 2009. The freshwater mussels of Ohio. Columbus: Ohio State University Press.

Common Name: Lance aplexa *SPCN*
Scientific Name: *Aplexa elongata*
Taxon: Freshwater Mollusks

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G5
New York: S2
Tracked: Yes

Synopsis:

The lance aplexa occurs in a wide distribution from the District of Columbia northward to James Bay and arctic Alaska, and southward to Idaho (Jokinen 1992). This snail is found in temporary pools, ditches, ponds, and swampy meadows as well as in intermittent streams; it prefers hard water (Jokinen 1992). Historic records exist for 16 counties across New York from 1856 to 1977, but this snail is now known from only two locations: the St. Lawrence drainage and the Hudson River drainage (Jokinen 1992). It was not detected in the Hudson Valley during surveys by Strayer (1987).

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

Habitat Discussion:

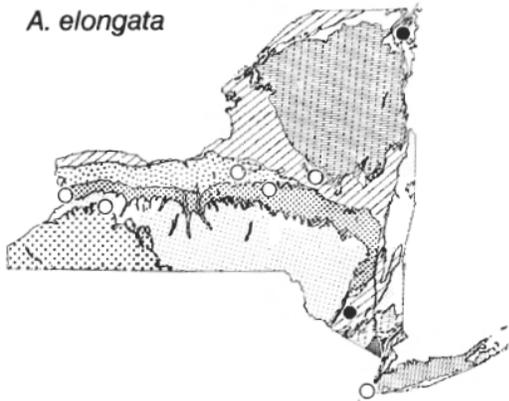
Lance aplexa are most successful in shallow, temporary pools with no predators (Turner and Montgomery 2009). They are found under in dried ponds, under moist leaves, in ditches, swampy meadows, swales, intermittent streams, and less frequently, lakes and ponds. Sediments range from mud to sand but usually include decaying vegetation (see Jokinen 1992). The lance aplexa is a detritivore (Brown 1982). It typically occurs in hard water (Jokinen 1992). At 17 sites in central New York, pH values at sites occupied by lance aplexa measured 6.8 to 8.1 (Harman and Berg 1971).

Primary Habitat Type
Freshwater Marsh
Lake and River Beach

Distribution:

Lance aplexa is thought to have been extirpated from the following nine basins: Lake Champlain, Lake Erie, Lower Hudson – Long Island bays, NE Lake Ontario – St. Lawrence, SE Lake Ontario, Susquehanna, Upper Hudson River, and Allegheny (NYSDEC 2005). During four survey periods ranging from 1978 to 1991, Jokinen (1992) found lance aplexa in two locations: Dead Creek in the St. Lawrence drainage in Plattsburgh, and an unnamed stream and vernal pool in Wallkill, Hudson River drainage. It is thought to still occur in those two locations, but no surveys have since been conducted.

A. elongata



Closed circles indicate records from Jokinen (1992) surveys, open circles indicate records from museum specimens (Jokinen 1992)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	W	L	H
2. Pollution	Industrial & Military Effluents (atmospheric deposition-mercury, acid)	R	L	H
3. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	W	L	M
4. Biological Resource Use	Logging & Wood Harvesting	W	L	L

References Cited:

Harmon, W. N. and C. O. Berg. 1971. The freshwater snails of central New York with illustrated keys to the genera and species. Search (1)4 68pp.

Jokinen, E.H. 1992. The freshwater snails (Mollusca: Gastropoda) of New York State. New York State Museum Bulletin 482: 1-112.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>

Strayer, D. 1987. Ecology and zoogeography of the freshwater mollusks of the Hudson River basin. Malacological Review 20: 1-68.

Turner, A.M. and S.L. Montgomery. 2009. Hydroperiod, predators and the distribution of physid snails across the freshwater habitat gradient. *Freshwater Biology* 54:1189-1201.

Common Name: Mossy valvata *SPCN*
Scientific Name: *Valvata sincera*
Taxon: Freshwater Mollusks

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Special Concern Global: G5
New York: S1
Tracked: Yes

Synopsis:

The mossy valvata, also known as the boreal turret snail, is a northern species. It is found from the Arctic Circle southward to Connecticut and westward to Minnesota (see Jokinen 1992); New York is at the southern extent of its range. The mossy valvata lives in cold water and is limited to lakes and large streams, in which it can live at considerable depths; it is associated with submerged aquatic vegetation (Clarke 1981). Mossy valvata occurs at four known locations in the St. Lawrence River watershed (Jokinen 1992); new locations were documented in 2012 and 2013 in Oneida Lake and Cayuga Lake.

Cordeiro and Perez (2011) call the North American distribution of mossy valvata “widespread and abundant.” This snail’s current presence in southern New England and New York is likely a relict of a broader Holocene distribution (Smith 1987, Strayer 1987). Mossy valvata is common within its distribution in Oneida, Erie and Cayuga Lakes (SGCN Expert Meeting). It is listed as a SGCN in Vermont. Kart et al. (2005) note that the freshwater snails group in the Vermont State Wildlife Action Plan, which includes mossy valvata, range from extirpated to declining to rare. There are three records in Vermont, all in the Lake Champlain Valley (Kart et al. 2005).

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	X		
11% to 25%		Fairly common			
26% to 50%		Uncommon			
> 50%		Rare			

Habitat Discussion:

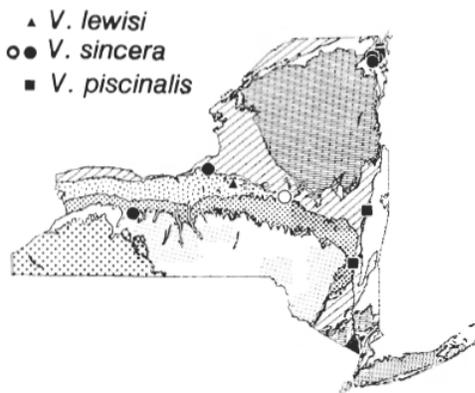
This is a northern, cold water species that is typically associated with submerged aquatic vegetation (Clarke 1981). In southern New England and New York, mossy valvata is limited primarily to large lakes and rivers, though in Canada it is also found in muskeg pools (Clarke 1981). Of the five known sites in New York, one is a river, three are lakes, and the last is a marshy creek that feeds into Lake Champlain (Jokinen 1992). Habitats are typically high calcium, and pH ranges from 6.9 to 7.4 in the five sites sampled by Jokinen (1992). Habitats in Connecticut and New York are eutrophic (Jokinen 1992) but this snail is generally limited to oligotrophic and mesotrophic situations (Kart et al. 2005).

Primary Habitat Type
Lake
Riparian

Distribution:

Jokinen (1992) provides details on historic records occurring in the following counties: Cayuga, Chautauqua, Clinton, Dutchess, Greene, Herkimer, Monroe, Onondaga, Otsego, Wayne.

During four survey periods ranging from 1978 to 1991, Jokinen (1992) recorded living mossy valvata at four locations, all within the St. Lawrence River watershed: two locations in Dead Creek, a tributary of Lake Champlain; Lake Champlain; and the Oswego River. Shells were found at one additional site—Conesus Lake in Livingston County—but no living individuals were located. In June of 2012 Alexander Karatayev, Vadim Karatayev, and Lyubov Burlakova found 105 individuals in 11 locations in Oneida Lake. In September 2013 Alexander Karatayev and Lyubov Burlakova found 2 individuals in 2 locations in Cayuga Lake (A. Karatayev, personal communication).



Records of *V. sincera* in New York. Closed circles indicate records from Jokinen (1992) surveys, open circles indicate records from museum specimens (Jokinen 1992)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (channelization)	U	U	U
3. Pollution	Industrial & Military Effluents (metals)	U	U	U
4. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
5. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Clarke, A. H. 1981. The freshwater mollusks of Canada. National Museum of Natural Sciences, National Museum of Canada, Ottawa. 446 pp.

Cordeiro, J. and Perez, K. 2011. *Valvata sincera*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. <www.iucnredlist.org>. Downloaded on 20 June 2013.

Jokinen, E. H. 1992. The freshwater snails (Mollusca: Gastropoda) of New York State. New York State Museum Bulletin 482. 112pp.

Kart, J., R. Regan, S. R. Darling, C. Alexander, K. Cox, M. Ferguson, S. Parren, K. Royar, and B. Popp, editors. 2005. Vermont's Wildlife Action Plan. Vermont Fish & Wildlife Department. Waterbury, Vermont. www.vermontfishandwildlife.com

Smith, D. G. 1987. Keys to the freshwater macroinvertebrates of Massachusetts (No. 2): mollusca mesogastropoda (operculate snails). Massachusetts Department of Environmental Quality Engineering, Division of Water Pollution Control (Westborough). 34 pp.

Strayer, D. 1987. Ecology and zoogeography of the freshwater mollusks of the Hudson River basin. Malacological Review 20:1-68.

Common Name: Purplecap valvata *SPCN*
Scientific Name: *Valvata perdepressa*
Taxon: Freshwater Mollusks

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G3
New York: SNA
Tracked: Yes

Synopsis:

The purplecap valvata has a limited range, occurring only in Ontario, Illinois, Indiana, Michigan, Wisconsin, Ohio, Pennsylvania, and New York. It is ranked as S1 in Ontario and listed as a high priority for assessment by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). In New York, this species occurred historically in the NE Lake Ontario-St. Lawrence watershed. It was thought to have been extirpated but a single, fresh shell was collected from Lake Ontario in 2001 (D. Strayer, personal communication).

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:

This species occurs in lakes.

Primary Habitat Type
Lake

Distribution:

Purplecap valvata was not detected in searches conducted during four survey periods from 1977 to 1985 by Jokinen (1992) or by Harmon and Berg (1971). It is thought to have been extirpated from the NE Lake Ontario-St. Lawrence watershed (NYSDEC 2005). A single, fresh shell complete with the operculum was found by Doug Carlson at Lake Ontario at Southwicks State Park in April 2001 (D. Strayer, personal communication).

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail)	U	U	U
4. Pollution	Industrial & Military Effluents (metals)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
6. Pollution	Household Sewage & Urban Wastewater (untreated sewage)	U	U	U
7. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

Harmon, W. N. and C. O. Berg. 1971. The freshwater snails of central New York with illustrated keys to the genera and species. Search (1)4 68pp.

Jokinen, E. H. 1992. The freshwater snails (Mollusca: Gastropoda) of New York State. New York State Museum Bulletin 482.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>

Strayer, David. Personal communication. Cary Institute of Ecosystem Studies, Millbrook, NY.

Common Name: Spindle lymnaeae *SPCN*
Scientific Name: *Acella haldemani*
Taxon: Freshwater Mollusks

Federal Status: Not Listed
New York Status: Not Listed

Natural Heritage Program Rank:
Global: G3
New York: SNR
Tracked: Yes

Synopsis:

This slender-shelled mollusk occurs in the Great Lakes-St. Lawrence River drainage from southeastern Ontario, southern Quebec and northern Vermont westward to Minnesota and southward to Illinois (Jokinen 1992). It is rare in occurrence rangewide (Kart et al. 2005). The spindle lymnaea occurs in lakes, where it attaches to submerged vegetation, spire down and about 20cm from the bottom substrate (Goodrich 1932). It occurred historically in five counties in New York and was last documented in Oswego County in 1971 (Harman and Berg 1971). This snail is easily overlooked in surveys because individuals do not move far from where they were hatched, and thus populations may be clumped at just one location within a lake (Morrison 1932, Jokinen 1992). There is not enough information to assess threats or determine a trend in distribution or abundance.

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		

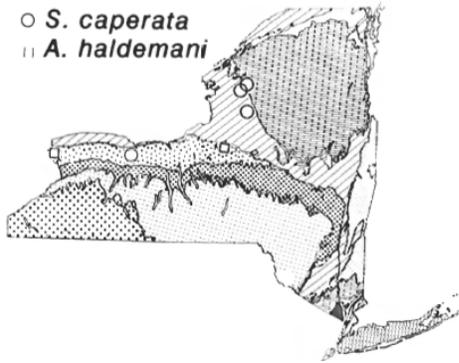
Habitat Discussion:

This snail is found in lakes with substrata that includes submerged logs, silt, sand, and mud in 0.3 to 2.0 meters of water (Jokinen 1992). Individuals attach to reeds and rushes about 20cm above the bottom (Goodrich 1932). Little is known about the chemical tolerance (Jokinen 1992) but Harman and Berg (1971) reported a pH of 8.1 in Oneida Lake where spindle lymnaea were found.

Primary Habitat Type
Lake

Distribution:

Jokinen (1992) called this mollusk rare in New York and did not detect it during surveys, nor did Strayer (1987). It is believed to have been extirpated from the Lake Champlain basin, the Lake Erie basin, the SE Lake Ontario basin, and the Susquehanna basin (NYSDEC 2005). The most recent record is from Oswego County in 1971 (Harman and Berg 1971). One dead shell was found near Lake Ontario during summer 2012 (SGCN Expert Meeting).



Records of *A. haldemani* in New York. Closed circles indicate records from current surveys, while open circles indicate records from museum specimens (Jokinen 1992)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	U	U	U
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	U	U	U
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail)	U	U	U
4. Pollution	Industrial & Military Effluents (metals)	U	U	U
5. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	U	U	U
6. Pollution	Household Sewage & Urban Wastewater (untreated sewage)	U	U	U
7. Climate Change & Severe Weather	Habitat Shifting & Alteration	U	U	U

References Cited:

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Common Name:	Watercress snail	<i>SPCN</i>
Scientific Name:	<i>Fontigens nickliniana</i>	
Taxon:	Freshwater Mollusks	

Federal Status:	Not Listed	Natural Heritage Program Rank:
New York Status:	Not Listed	Global: G5
		New York: S1S3
		Tracked: Yes

Synopsis:

The watercress snail was formerly considered member of the genus *Hydrobia* (Jokinen 1992). It is found in spring-fed streams above and below ground, most frequently in association with watercress (*Nasturtium officinale* or *Rorippa naturtium-aquaticum*). This tiny snail occurs in a patchy distribution from western New York through Wisconsin and southward through Virginia, with an extralimital population in Alabama (Jokinen 1992). Dillon et al. (2006) described watercress snail as the most widespread and common of the nine *Fontigens* species monographed by Hershler et al. (1990). If present in New York, watercress snail is likely limited to the westernmost portions of the state, though it was not documented during surveys by Jokinen (1992) or by Harman and Berg (1971).

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

Habitat Discussion:

Snails in this family are associated with springs and spring runs where watercress (*Nasturtium officinale* or *Rorippa naturtium-aquaticum*) grows in thick mats (Jokinen 1992), as well as streams and pools inside caves (Dillon et al. 2006). Watercress snails require relatively cool, alkaline streams (Biggs et al. 2011). Evans (2004) found watercress snails in calcareous springs in Pennsylvania and stated that it would likely be found in the rich limestone valleys of the Central Appalachian Forest Ecoregion.

Dillon et al. (2006) noted that population densities become rapidly attenuated downstream, suggesting that this snail is dependent on constant temperatures, or another unique aspect of the spring environment.

Primary Habitat Type
Headwater/Creek
Small River

Distribution:

The watercress snail is thought to have been extirpated from the Upper Hudson River basin and the Lake Erie basin. It occurred historically in the Allegheny basin, but there are no recent records (NYSDEC 2005). Watercress snail was not documented during surveys by Jokinen (1992) or by Harman and Berg (1971).

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss/degradation)	N	L	H
2. Natural System Modifications	Dams & Water Management/Use (dams, channelization)	N	L	M
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (New Zealand mud snail, Phragmites)	N	L	M
4. Pollution	Agricultural & Forestry Effluents (pesticides, fertilizers)	W	L	M
5. Natural System Modifications	Dams & Water Management/Use (groundwater withdrawal)	W	L	H
6. Energy Production & Mining	Mining & Quarrying (changes in hydrology due to gravel and limestone mining)	W	L	H

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