
Common Name: Hoary bat *SGCN*
Scientific Name: *Lasiurus cinereus*
Taxon: Mammals

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G5
New York: S4B
Tracked: No

Synopsis:

The taxonomy of the hoary bat is generally stable. Three subspecies are recognized, with only *L. c. cinereus* found in continental North America (Shump and Shump 1982).

Hoary bats are the most widespread of bat species in North America. They are generally understood as a long-distance migrant, although wintering sites are not well documented (Barbour and Davis 1969, Cryan 2003) and some reports of hibernation in northern areas exist (Whitaker 1967, Whitaker and Mumford 1972). The species is an uncommon summer resident in the eastern United States. It is found throughout New York.

The hoary bat is a solitary tree-roosting bat found in many forest types (Shump and Shump 1982). Habitat requirements are not well studied and population trends are unknown.

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

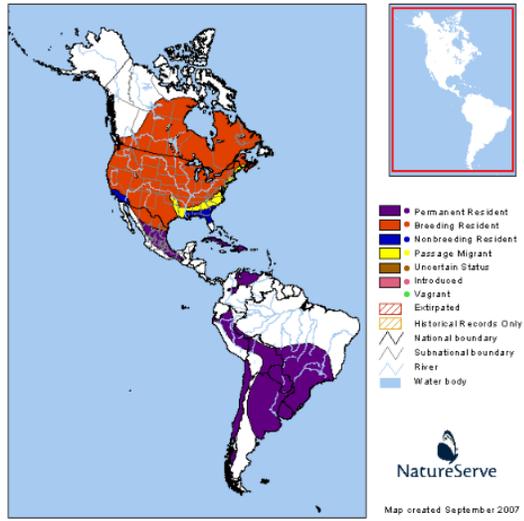
Habitat Discussion:

Habitat requirements for the species are not well understood.

Primary Habitat Type
Forest and Woodland; Northeast Upland Forest
Forest and Woodland; Northeast Wetland Forest

Distribution:

Carcasses are commonly encountered at all large wind turbine facilities in NY during the late-summer migration period. Acoustic surveys commonly detect the species, normally in low numbers (Carl Herzog, pers. comm.).



750 0 750 Kilometers
 NatureServe (2012)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Energy Production & Mining	Renewable Energy (wind turbines)	W	M	M
2. Pollution	Industrial & Military Effluents (environmental contaminants including flame retardants, mercury, etc...)	P	L	H

References Cited:

Barbour, R. W., & Davis, W. H. (1969). *Bats of America* (Vol. 7). Lexington: University Press of Kentucky.

Cryan, P. M. 2003. Seasonal distribution of migratory tree bats (*Lasiurus* and *Lasionycteris*) in North America. *Journal of Mammalogy* 84(2): 579-593.

Herzog, C. Personal communication. NYS Department of Environmental Conservation.

Shump, K.A., Jr., and A.U. Shump. 1982. *Lasiurus cinereus*. *American Society of Mammalogists. Mammalian Species* 185:1-5.

Whitaker, J. O. 1967. Hoary bat apparently hibernating in Indiana. *Journal of Mammalogy* 48(4): 663-663.

Whitaker, J. O., Jr., and R.E. Mumford. 1972. Notes on occurrence and reproduction of bats in Indiana. *In Proc. Indiana Acad. Sci* (Vol. 81, pp. 376-383).

Common Name:	Moose	<i>SGCN</i>
Scientific Name:	<i>Alces americanus</i>	
Taxon:	Mammals	

Federal Status:	Not Listed	Natural Heritage Program Rank:
New York Status:	Not Listed	Global: G5
		New York: S3S4
		Tracked: Watch List

Synopsis:

The largest member of the deer family and second largest land mammal in North America, the moose, has returned to New York State after more than a century of absence. As a circumpolar species, moose occur in boreal forests throughout the northern hemisphere, from Alaska eastward to the Atlantic Ocean, southward into the Rocky Mountains, northern Great Lakes, and New England. In New York, most moose are located in the northeastern part of the state in the Adirondack Mountains and the Taconic Highlands along the Massachusetts and Vermont borders (NYSDEC 2014). There is still some debate about whether moose is a true species or subspecies, but Wilson and Reeder (2005) recognize Eurasian Elk (*Alces alces*) and moose (*Alces americanus*) as distinct species due to differences of karyotype, body dimensions and proportions, coloration, and structure and dimensions of antlers (Geist 2008). Moose began entering the state on a continuous basis in the 1980s and the current population is estimated at about 900 individuals as of 2010, although it seems as if the population is not growing very quickly if at all over the past five to ten years (NYSDEC 2014, Ed Reed personal communication).

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

Habitat Discussion:

Moose utilize different habitats from summer to winter; they are excellent swimmers and feed heavily on aquatic plants of ponds and wetlands in the summer. Because moose can suffer from overheating during the summer months, they must have access to dense shade and cooling waters. Lowland softwood forests are important for this reason, and beaver ponds or other shallow bodies of water are favorite spring and summer habitats for moose (VTF&W). Clearcuts are used throughout the year with individuals moving to hardwoods located near softwood cover in the fall because these forest types usually provide more winter food. Moose will seek softwood shelter when snow depths reach approximately 35 inches, the snow gets a heavy crust, or during extreme cold of windy situations (VTF&W). Garner and Porter (2000) reported 36 km² for summer and 8 km² for winter home ranges of males in the Adirondack Mountains.

Primary Habitat Type
Forest and Woodland; Boreal Upland Forest
Forest and Woodland; Boreal Wetland Forest

Distribution:

In New York, most individuals are located in the northeastern part of the state in the Adirondack Mountains and the Taconic Highlands along the Massachusetts and Vermont borders.

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
1. Climate Change & Severe Weather	Habitat Shifting & Alteration	P	L	H
2. Climate Change & Severe Weather	Temperature Extremes	P	L	H
3. Invasive & Other Problematic Species & Genes	Problematic Native Species (Parasites, brainworm)	P	L	V

References Cited:

Garner, D.L. and W.F. Porter. 1990. Movement and seasonal home ranges of bull moose in a pioneering Adirondack population. *Alces* 26: 80-85.

Geist, V., M. Ferguson, and J. Rachlow. 2008. *Alces americanus*. In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. <iucnredlist.org> Accessed 27 February 2014.

New York State Department of Environmental Conservation (NYSDEC). 2014. Moose fact sheet. <<http://www.dec.ny.gov/animals/6964.html>>. Accessed 27 February 2014.

Vermont Fish & Wildlife Department. (n.d.). Moose fact sheet. Available: <www.vtfishandwildlife.com> Accessed: 13 May, 2014.

Wilson, D.E., and D.M. Reeder (eds). 2005. Mammal species of the world: a taxonomic and geographic reference. Third edition. The Johns Hopkins University Press, Baltimore. Two volumes. 2,142p. <<http://bucknell.edu/msw3/>> Accessed: 27 February 2014.

Common Name: Small-footed myotis *SGCN*
Scientific Name: *Myotis leibii*
Taxon: Mammals

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Special Concern Global: G3
New York: S2
Tracked: Yes

Synopsis:

The abundance of small-footed myotis is extremely hard to measure. It is considered to be rare or imperiled throughout its range. As of 2006, this bat has been documented in 125 hibernacula (Amelon and Burhans 2006), most of which occur in New York, Pennsylvania, West Virginia and Virginia. A rough count of 3,000 individuals has been derived from surveys in known hibernacula; 60% of this number can be found in two hibernacula in New York (Amelon and Burhans 2006). New York State has one of the highest documented hibernating populations of small-footed myotis in the country. Two hibernacula were estimated to contain about 60% of the total population of hibernating small-footed bats (Amelon and Burhans 2006). Small-footed myotis have been found on at least one survey in just over 150 hibernacula throughout their range, and 54 of those hibernacula are in New York.

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

Habitat Discussion:

Small-footed myotis use rock features as day-roosts during the summer season (Johnson and Gates 2008, Divoll 2010, Divoll 2012, Johnson et al. 2011). Hibernacula include natural caves, mines and, in at least one instance, an old railroad tunnel (Johnson and Gates 2008).

There is the distinct possibility that small-footed myotis exhibit differences in habitat selection behavior throughout their range. Two published radio-tracking studies that looked at day-roosting behavior emphasized the importance of rock features with high solar exposure for day-roosts (Johnson and Gates 2008, Johnson et al. 2011). Typical patterns of selection are large, open talus fields and rock areas with high solar exposure, but many other day-roosts were in smaller, more overgrown rock features (Chenger, Unpublished). Whether these differences are true geographic variation or a product of the lack of studies on this species is unknown.

The bats have been observed in a variety of locations, including abandoned buildings, bridge expansion joints, along cliff faces, and in rock crevices at ground level (Hitchcock 1955, Johnson et al. 2011, Johnson and Gates 2008, MacGregor and Kiser 1998, O’Keefe and LaVoie 2010, Roble 2004).

There is strong evidence that upland and ephemeral water sources are important, as 80% of the captures occurred over ridge top ponds and flooded road ruts. In contrast, only 44% of the capture effort included these features (Johnson et al. 2011). However, female roosts were found significantly closer to upland ephemeral water sources than the roosts of males (Johnson et al. 2011). Stihler (unpublished) found that radio-tagged small-footed myotis foraged mostly in oak dominated forests with scattered pines.

Primary Habitat Type
Caves and Tunnels
Cliff and Talus
Forest and Woodland; Northeast Upland Forest
Forest and Woodland; Northeast Wetland Forest

Distribution:

The small-footed myotis is believed to have a patchy distribution throughout its range (Erdle and Hobson 2001), which stretches across eastern North America. The species can be found from Ontario and Quebec through New England and south to Alabama and Georgia. The range extends west to Oklahoma, Arkansas and Missouri (Jennings 1997, Amelon and Burhans 2006).



Bat Conservation International (2012)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
Human Intrusions & Disturbance	Recreational Activities (recreational spelunking)	R	L	L
Energy Production & Mining	Renewable Energy (wind turbines)	N	L	M
Human Intrusions & Disturbance	Recreational Activities (rock climbing)	N	L	L

Energy Production & Mining	Renewable Energy (pumped storage hydroelectric project near Barton Mine)	W	L	V
Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (disease: white nose syndrome)	P	L	V
Pollution	Industrial & Military Effluents (environmental contaminants)	P	L	H
Human Intrusions & Disturbance	Work & Other Activities (disturbance from research in hibernacula)	W	L	L

References Cited:

Amelon, S. and D. Burhans. 2006. Conservation assessment: *Myotis leibii* (Eastern small-footed myotis) in the eastern United States. In USDA Forest Service General Technical Report NC-260: Conservation Assessments for Five Forest Bat Species in the Eastern United States.

Chenger, J. 2012. Very quick Myolei roosts. Unpublished presentation at the Northeast Bat Working Group 2012 annual meeting, 11-13 Jan. 2012, Carlisle, PA.

Hitchcock, H. B., R. Keen, and A. Kurta. 1984. Survival rates of *Myotis leibii* and *Eptesicus fuscus* in southeastern Ontario. *Journal of Mammalogy* 65(1): 126-130.

Johnson, J. B. and J. E. Gates. 2007. Food habits of *Myotis leibii* during fall swarming in West Virginia. *Northeastern Naturalist* 14(3): 317-322.

Johnson, J. B. and J. E. Gates. 2008. Spring migration and roost selection of female *Myotis leibii* in Maryland. *Northeastern Naturalist* 15(3): 453-460.

Johnson, J. S., J. D. Kiser, K. S. Watrous, and T. S. Peterson. 2011. Day-roosts of *Myotis leibii* in the Appalachian Ridge and valley of West Virginia. *Northeastern Naturalist* 18(1): 95-106.

MacGregor, J. and J. Kiser. 1998. Recent reproductive records of eastern small-footed bat, *Myotis leibii* in Kentucky with notes on a maternity colony located in a concrete bridge. *Bat Research News*, Abstract.

O'Keefe, J. M. and M. LaVoie. 2010. Maternity colony of eastern small-footed Myotis (*Myotis leibii*) in a historic building. *Southeastern Naturalist* 10(2): 381-383.

Roble, S. M. 2004. Notes on an autumn roost of an eastern small-footed bat (*Myotis leibii*). *Banisteria* 23: 42-44.

Common Name: Eastern red bat *SGCN*
Scientific Name: *Lasiurus borealis*
Taxon: Mammals

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G5
New York: S5B
Tracked: No

Synopsis:

Taxonomy is somewhat confused, primarily at the geographic extremes of distribution, with several forms variously treated as either distinct species or subspecies (Baker et al. 1988, Jones et al. 1992, Morales and Bickham 1995, Koopman and McCracken 1998). Wilson and Reeder (2005) provides perhaps the most recent authoritative assessment.

Generally understood as a year-round resident through the southern portion of its range, the paucity of records in winter suggests that the species migrates southward from New York (Cryan 2003). Eastern red bats are found throughout the central and eastern United States, including all of New York. It is a solitary, tree- or shrub-roosting bat found in edge habitats (Constantine 1958, 1959, 1966, Kunz 1973, Mumford 1973). Population trends are unknown.

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

Habitat Discussion:

Roosting in trees and shrubs, feeding in wooded areas, over water bodies, along edges, and sometimes in urban areas (Shump and Shump 1982, Constantine 1958, 1959, 1966, Kunz 1973, Mumford 1973).

Primary Habitat Type
Forest and Woodland; Northeast Upland Forest
Forest and Woodland; Northeast Wetland Forest

Distribution:

Acoustic surveys detect the species throughout the state during the maternity period, suggesting the species is widespread.



USGS (2013)

Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
Energy Production & Mining	Renewable Energy (wind turbines)	W	M	M
Pollution	Industrial & Military Effluents (environmental contaminants including flame retardants, mercury, etc...)	P	L	H

References Cited:

Constantine, D. G. (1958). Ecological observations on lasiurine bats in Georgia. *Journal of Mammalogy*, 39(1), 64-70

Constantine, D. G. (1959). Ecological observations on lasiurine bats in the North Bay area of California. *Journal of Mammalogy*, 40(1), 13-15.

Constantine, D. G. (1966). Ecological observations on lasiurine bats in Iowa. *Journal of Mammalogy*, 34-41.

Cryan, P. M. 2003. Seasonal distribution of migratory tree bats (*Lasiurus* and *Lasionycteris*) in North America. *Journal of Mammalogy* 84(2), 579-593.

Baker, R. J., J. C. Patton, H. H. Genoways, and J. W. Bickham. 1988. Genic studies of *Lasiurus* (Chiroptera: Vespertilionidae). *Occas. Pap. Mus. Texas Tech. Univ.* 117:1-15.

Jones, J. K., Jr., R. S. Hoffman, D. W. Rice, C. Jones, R. J. Baker, and M. D. Engstrom. 1992. Revise checklist of North American mammals north of Mexico, 1991. *Occasional Papers, The Museum, Texas Tech University*, 146:1-23

Koopman, K. F., and G. F. McCracken. 1998. The taxonomic status of *LASIURUS* (Chiroptera: Vespertilionidae) in the Galapagos Islands. *American Museum Novitates* 3243:1-6.

Kunz, T. H. 1973. Resource utilization: temporal and spatial components of bat activity in central Iowa. *Journal of Mammalogy*, 14-32.

Morales, J. C., and J. W. Bickham. 1995. Molecular systematics of the genus LASIURUS (Chiroptera: Vespertilionidae) based on restriction-site maps of the mitochondrial ribosomal genes. *Journal of Mammalogy* 76:730-749.

Mumford, R. E. (1973). Natural history of the red bat (*Lasiurus borealis*) in Indiana. *Periodicum Biologorum*, 75, 155-158.

Shump, K. A., & Shump, A. U. 1982. *Lasiurus borealis*. *Mammalian species*, (183), 1-6.

Wilson, D. E., and D. M. Reeder (editors). 2005. *Mammal species of the world: a taxonomic and geographic reference*. Third edition. The Johns Hopkins University Press, Baltimore. Two volumes. 2,142 pp. <<http://www.bucknell.edu/msw3/>>.

Common Name: Silver-haired bat *SGCN*
Scientific Name: *Lasionycteris noctivagans*
Taxon: Mammals

Federal Status: Not Listed **Natural Heritage Program Rank:**
New York Status: Not Listed Global: G5
New York: S4B
Tracked: No

Synopsis:

The silver-haired bat is found throughout the continental United States and southern Canada. Its distribution in New York is not well known, as only a few recent records of resident animals exist. A complete lack of records for winter months (Izor 1979, Cryan 2003) suggest the species is not resident here at that time.

This species is commonly regarded as a solitary tree-roosting bat (Griffin 1940, Barbour and Davis 1969) but there are records of summer roosting in rock crevices (Frum 1953), buildings (Bartsch 1956) and a few winter records from caves and mines (Layne 1958, Beer 1956, Turner 1974). Population trends are unknown.

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%	X	Rare	X		

Habitat Discussion:

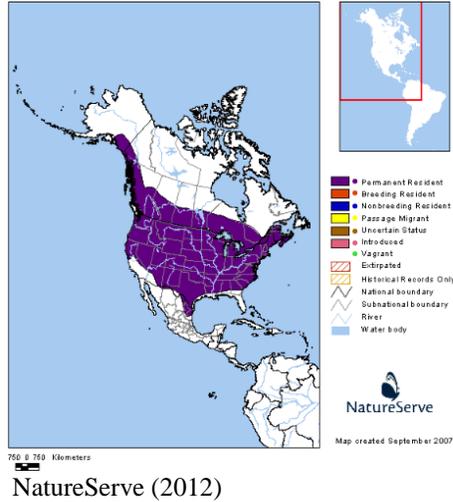
In general, silver-haired bats prefer temperate, northern hardwoods with ponds or streams nearby. The typical day roost for the bat is behind loose tree bark. Silver-haired bats appear to be particularly fond of willow, maple and ash trees (most likely due to the deeply fissured bark). Hollow snags and bird nests also provide daytime roosting areas for silver-haired bats. Less common daytime roosts include buildings, such as open sheds and garages; however, due to their solitary nature and adaptation to woodland roosts, these bats rarely invade buildings in large enough numbers to cause alarm. During the winter months, silver-haired bats that hibernate find shelter in northern areas inside trees, buildings, rock crevices, and similar protected structures (Naumann 1999).

Primary Habitat Type
Forest and Woodland; Northeast Upland Forest
Forest and Woodland; Northeast Wetland Forest

Distribution:

No reliable recent data are available for resident animals in New York. Carcasses are commonly encountered at all large wind turbine facilities in NY during the late-summer migration period. Records

outside of the migration period are extremely infrequent suggesting that the number of resident animals is very low.



Threats to NY Populations				
Threat Category	Threat	Scope	Severity	Irreversibility
Energy Production & Mining	Renewable Energy (wind turbines)	W	M	M
Pollution	Industrial & Military Effluents (environmental contaminants including flame retardants, mercury, etc...)	P	L	H
Biological Resource Use	Logging & Wood Harvesting (direct mortality of maternity colonies from silviculture)	N	L	L

References Cited:

Barbour, R. W., & Davis, W. H. (1969). *Bats of America* (Vol. 7). Lexington: University Press of Kentucky.

Bartsch, P. 1956. An interesting catch. *Journal of Mammalogy* 37(1): 111-111.

Beer, J. R. 1956. A record of a silver-haired bat in a cave. *Journal of Mammalogy*, 37(2), 281-282.

Cryan, P. M. 2003. Seasonal distribution of migratory tree bats (*Lasiurus* and *Lasionycteris*) in North America. *Journal of Mammalogy* 84(2): 579-593.

Frum, W. G. 1953. Silver-haired bat, *Lasionycteris noctivagans*. West Virginia. *Journal of Mammalogy* 34: 499-500.

Griffin, D. R. 1940. Migrations of New England bats. The Museum.

Izor, R. J. 1979. Winter range of the silver-haired bat. *Journal of Mammalogy* 60(3): 641-643.

Layne, J. N. 1958. Notes on mammals of southern Illinois. *American Midland Naturalist*, 60(1):219-254.

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