

### Little Brown Bat

Myotis lucifugus

**Priority 2** Species of Greatest Conservation Need (SGCN)

Class: Mammals (Mammalia)
Order: Bats (Chiroptera)

Family: Common Bats (Vespertilionidae)



#### **General comments:**

The Little Brown Bat is a 3-4 in long brown bat with a 9-11 in wingspan. It is one of five "cave" bat species that hibernate in Maine using caves, mines, and talus slopes. During the active period, they often forage along streams and ponds and roost in trees, snags, bat houses, and anthropogenic structures. Prior to the arrival of White Nose Syndrome, this species may have been Maine's most widespread and abundant bat. Unfortunately, White Nose Syndrome, caused by a fungal pathogen, led to a >90% population decline across much of its range, resulting in Little Brown Bat being listed as state Endangered. However, population monitoring data in Maine and elsewhere in the northeastern U.S. suggest that the species is still widespread and that populations are starting to rebound.

#### **Species Conservation Range Maps:**

Town Map: <u>Myotis lucifugus\_Towns.pdf</u>
Subwatershed Map: <u>Myotis lucifugus\_HUC12.pdf</u>

#### **SGCN Priority Ranking - Designation Criteria:**

Risk of Extirpation:	Maine Status: Endangered	Federal Status: None	IUCN Red List Status: None
Recent Significant Declines:	Little Brown Bat is currently undergoing steep population declines, which has already led to, or if unchecked is likely to lead to, local extinction and/or range contraction.  Notes:  95% decline in winter hibernating bats from pre-WNS counts in Maine		
High Regional Conservation Priority:	Northeast Regional Synthesis Responsibility: Low, Concern:		

#### **Professional Discretion:**

Current criteria ranked *Myotis lucifugus* as SGCN priority 1, however, species should be SGCN priority 2 based on professional discretion.

**Justification:** Has a nearly statewide distribution, high occupancy (0.80), and increasing population in Maine and elsewhere in the northeast. Still much to be learned about overwintering habitat

#### **Habitat Associations:**

Formation: Cliff & Rock

Macrogroup: Eastern North American Cliff & Rock Vegetation

**★ Primary Habitat Habitat System:** Laurentian-Acadian Acidic Cliff and Talus

Mammals Group SGCN Report | Page 1 of 5

# **Little Brown Bat** *Myotis lucifugus* **Priority 2 SGCN**

Threat Priority Level based on Severity and Actionability



Formation: Cliff & R	ock			
* Primary Habitat	Habitat System: Laurentia	n-Acadian Calcareous Cliff a	and Talus	
Formation: Develop	ed			
Macrogroup: Extra	ctive			
* Primary Habitat	Habitat System: Subsurfac	e Mines & Caves		
Macrogroup: Urbar	n-Suburban Built			
	Habitat System: Residentia	al - Low Intensity		
	Habitat System: Residentia	al - Rural-Sparse		
Formation: Freshwa	ter Aquatic			
Macrogroup: Lentic	;			
	Habitat System: Lentic Ma	crogroup - Unknown Habit	at System	
Macrogroup: Lotic				
	Habitat System: Lotic Mac	rogroup - Unknown habita	t system	
Formation: Freshwa	ter Marsh			
Macrogroup: Easte	rn North American Marsh, W	et Meadow & Shrubland		
	Habitat System: Eastern N	orth American Marsh, Wet	Meadow & Shrubla	nd Macrogroup -
	Unknown Habitat System			
Formation: Northea	stern Upland Forest			
Macrogroup: Acadi	an-Northern Appalachian Fo	est		
	<b>Habitat System:</b> Acadian-N System	Iorthern Appalachian Fores	st Macrogroup- Unk	nown Habitat
Threats				
			Moderate Severity	High Severity

Mammals Group	SGCN Report   Page 2 of 5
Widililiais Group	July Report   Fage 2 of J

**Highly Actionable** 

Moderately Actionable

Actionable with Difficulty

Medium-High

Medium

Low

High

Low

Medium-High

### **Little Brown Bat** *Myotis lucifugus* **Priority 2 SGCN**



#### **IUCN Level 1 Threat** Energy Production and Mining

**IUCN Level 2 Threat: Renewable Energy** 

**Severity:** High Severity **Actionability:** Moderately Actionable

Notes: Mortalities of this species have been documented at wind power facilities in Maine. The acummultive effect

of wind turbine mortalities could have a population level effect on this bat species in Maine.

#### **IUCN Level 1 Threat** Human Intrusions and Disturbance

**IUCN Level 2 Threat: Recreational Activities** 

**Severity:** Moderate Severity **Actionability:** Highly Actionable

**Notes:** Caving can disturb bats and awaken them from hibernation, thus depleting fat reserves. Furthermore, not

following disinfection procedures can spread the fungal pathogen that causes White Nose Syndrome, or

introduce other variants that could negatively impact our cave bats.

#### **IUCN Level 1 Threat** Other Options

**IUCN Level 2 Threat: Lack of knowledge** 

**Severity:** Moderate Severity **Actionability:** Highly Actionable

**Notes:** Maine has few caves and former mines that serve as hibernacula for this and other cave hibernating species.

Recently, little brown bats were documented hibernating on talus slopes in Maine (Heilakka 2023). But, previous work was limited in scope, so additional research is needed to identify and map likely hibernacula

locations and understand the factors influencing winter occupancy of talus slopes.

#### **IUCN Level 1 Threat** Invasive and Other Problematic Species, Genes and Diseases

**IUCN Level 2 Threat: Invasive Non-native-Alien Species-Diseases** 

**Severity:** High Severity **Actionability:** Actionable with Difficulty

**Notes:** White Nose Syndrome (a fungal pathogen) caused a >90

% population decline in *Myotis* bats in Maine and elsewhere in their range. In other parts of the U.S. there is ongoing research into treatments (e.g., ultraviolet light), habitat management (e.g., manipulating temperatures in hibernacula), and a vaccine. However, at this time none are readily available.

#### **Species Level Conservation Actions:**

None. Only species specific conservation actions that address high (red) or medium-high (orange) priority threats are summarized here.

Mammals Group SGCN Report | Page 3 of 5

## **Little Brown Bat** *Myotis lucifugus* **Priority 2 SGCN**



#### **Conservation Actions Associated with the Cave Bats Guild:**

Conservation Action	Category	<b>Biological Priority</b>	Type
Conduct a monitoring effort to address knowledge gaps pertaining	Survey and Monitoring	moderate	on-going
to the distribution, relative abundance, habitat use, and			
population trends of our cave bats.			

#### Threat(s) Addressed By This Conservation Action

· Lack of knowledge

Conservation Action	Category	Biological Priority	Туре
Conduct research to evaluate the use of talus slopes and other rocky habitats by hibernating bats, including determining the	Research	high	on-going
distribution of potential hibernacula, and the habitat and			
environmental factors that influence winter occupancy.			

#### Threat(s) Addressed By This Conservation Action

• Lack of knowledge

Conservation Action	Category	Biological Priority	Type
Implement curtailment procedures (and adjust as necessary) to	Species Management	high	on-going
reduce mortality associated with wind turbines. Evaluate the			
effectiveness of bat deterrents and implement if the science			
suggests that they can successfully reduce bat mortality.			

#### Threat(s) Addressed By This Conservation Action

• Renewable Energy

Conservation Action	Category	<b>Biological Priority</b>	Туре
Minimize the impact of White Nose Syndrome by limiting access to	Species Management	high	on-going
hibernacula, following decontamination procedures, and			
evaluating the practicality and effectiveness of treatments.			

#### Threat(s) Addressed By This Conservation Action

• Invasive Non-native-Alien Species-Diseases

#### **Broad Taxonomic Group Conservation Actions:**

Additional relevant conservation actions for this species are assigned within broader taxonomic groups in Maine's Wildlife Action Plan: Element 4.

#### **Habitat Based Conservation Actions:**

Additional conservation actions that may benefit habitat(s) associated with this species can be found in Maine's Wildlife Action Plan: Element 4. Click on the Habitat Grouping of interest to launch a habitat based report summarizing relevant conservation actions and associated SGCN.

Mammals Group SGCN Report | Page 4 of 5

# Little Brown Bat Myotis lucifugus Priority 2 SGCN



The Wildlife Action Plan was developed through a lengthy participatory process with state agencies, targeted conservation partners, and the general public. The Plan is non-regulatory. The species, threats, and voluntary conservation actions identified in the Plan complement, but do not replace, existing work

Mammals Group SGCN Report | Page 5 of 5