

Long-eared myotis

Class: Mammalia
Order: Chiroptera

Myotis evotis

Review Status: Peer-reviewed

Version Date: 19 December 2017

Conservation Status

NatureServe: *Agency:*

G Rank: G3 ADF&G: Species of Greatest Conservation Need IUCN: Least Concern Audubon AK:

S Rank: S3S4 USFWS: BLM:

Final Rank		
Conservation category: IV. Orange		
unknown status and high biological vulnerability and action need		
<u>Category</u>	<u>Range</u>	<u>Score</u>
Status	-20 to 20	0
Biological	-50 to 50	-7
Action	-40 to 40	16
Higher numerical scores denote greater concern		

Status - variables measure the trend in a taxon's population status or distribution. Higher status scores denote taxa with known declining trends. Status scores range from -20 (increasing) to 20 (decreasing).

	Score
<i>Population Trend in Alaska (-10 to 10)</i>	0
<p>Population trends are unknown for Alaska. Note: The Alaska population of <i>M. evotis</i> was previously considered as Keen's myotis (<i>Myotis keenii</i>). Recent genetic analyses suggest that <i>M. keenii</i> and <i>M. evotis</i> are the same species (Lausen et al. 2019) and we tentatively follow the recommendation provided by Lausen et al. (2019) to consider the two as conspecifics. With the exception of the Supplemental Information, which do not contribute to the overall score, the information presented here is unaffected by this taxonomic change.</p>	
<i>Distribution Trend in Alaska (-10 to 10)</i>	0
<p>Unknown. Additional research is needed to determine the impacts of deforestation on distribution and habitat availability (Parker 1996; COSEWIC 2003).</p>	
Status Total:	0

Biological - variables measure aspects of a taxon's distribution, abundance and life history. Higher biological scores suggest greater vulnerability to extirpation. Biological scores range from -50 (least vulnerable) to 50 (most vulnerable).

	Score
<i>Population Size in Alaska (-10 to 10)</i>	-2
<p>Relatively widespread throughout southeast Alaska. This species has been detected or captured at several sites in southeast Alaska south of Yakutat (Olson and Fiely 2014; K. Blejwas, ADF&G, pers. comm.). Estimated population size is between 3,001 and 10,000 individuals (K. Blejwas, pers. comm.).</p>	

<i>Range Size in Alaska (-10 to 10)</i>	-2
Reported from several locations in southeast Alaska south of Yakutat, including on Prince of Wales, Wrangell, and Mitkof Islands (Boland et al. 2009a), in Juneau (Boland et al. 2009a), and as far north as Skagway (Olson and Fiely 2014; ARCTOS 2016). Estimated range size is <100,000 sq. km.	
<i>Population Concentration in Alaska (-10 to 10)</i>	-8
In the summer, reproductive females concentrate in small numbers at maternity colonies (COSEWIC 2003; Hayes and Wiles 2013; Snider et al. 2013), whereas males and non-reproductive females roost alone (Boland et al. 2009b; Hayes and Wiles 2013). Very little is known about hibernation in Alaska or elsewhere in this species' range (e.g. COSEWIC 2003; Schmidt 2003). Hibernacula supporting large numbers of individuals have not been reported in Alaska, but given population size we suspect that number of sites >25 and potentially >250. We therefore rank this question as $0.5 * C + 0.5 * D$.	
<i>Reproductive Potential in Alaska</i>	
<u>Age of First Reproduction (-5 to 5)</u>	-5
Can potentially give birth within their first year if they are in good enough body condition, but reproduction may be delayed until their second year in colder climates (Nagorsen and Brigham 1993; Frick et al. 2010b).	
<u>Number of Young (-5 to 5)</u>	4
Females give birth to a single pup, but may not reproduce every year if resources are scarce or if they are in poor body condition (COSEWIC 2003; Frick et al. 2010b). The proportion of females that forego reproduction in a given year is unknown. To reflect this uncertainty, we rank this question as $0.5 * A + 0.5 * B$.	
<i>Ecological Specialization in Alaska</i>	
<u>Dietary (-5 to 5)</u>	1
Aerial insectivore. In southeast Alaska, trichopterans, spiders, and flies were consumed (Parker and Cook 1996). Moths and spiders were the most common prey in coastal forests of British Columbia (COSEWIC 2003; Burles et al. 2008). Prey are either caught in flight or gleaned from bark, needles, and leaves (COSEWIC 2003). Because invertebrates are an ephemeral and potentially unpredictable food source, we rank this question as B- Moderately adaptable with key requirements common.	
<u>Habitat (-5 to 5)</u>	5
Typically found in old-growth, coniferous forests near waterbodies (COSEWIC 2003; Boland et al. 2009a; Hayes and Wiles 2013; Anthony and Sanchez 2019), although a few records come from urban sites (COSEWIC 2003). Parker (1996) documented low levels of bat activity in clearcuts and second-growth forests of southeast Alaska. Requires cavities or crevices for roosting. Roosts have been reported from caves, rock crevices, large trees and snags, and occasionally buildings (COSEWIC 2003; Boland et al. 2009b; Olson and Fiely 2014; Anthony and Sanchez 2018). In the winter, hibernates in mid-elevation caves (COSEWIC 2003; Hayes and Wiles 2013) but additional information on wintering sites is needed.	

Biological Total:	-7
Action - variables measure current state of knowledge or extent of conservation efforts directed toward a given taxon. Higher action scores denote greater information needs due of lack of knowledge or conservation action. Action scores range from -40 (lower needs) to 40 (greater needs).	Score
<i>Management Plans and Regulations in Alaska (-10 to 10)</i>	2
Bats may be intentionally killed by humans when they are perceived as nuisance or disease-carrying species. In Alaska, state laws prohibit the killing of nuisance animals unless a permit is obtained (5	

AAC 92.420. Taking nuisance wildlife).

Knowledge of Distribution and Habitat in Alaska (-10 to 10) 2

This species has been reported from several locations in southeast Alaska (Boland 2009a; ARCTOS 2016). A recent survey in Skagway extended the known distribution of this species in Alaska, indicating the need for additional surveys to determine northern range limits (Olson and Fiely 2014). Foraging and roost habitats have been studied (Boland et al. 2009b; Olson and Fiely 2014), but further research is needed on habitat characteristics of hibernacula and maternity colonies.

Knowledge of Population Trends in Alaska (-10 to 10) 2

Bats in southeast Alaska are currently being monitored by ADF&G using road surveys and acoustic monitoring stations, but current data are insufficient for monitoring statewide population trends.

Knowledge of Factors Limiting Populations in Alaska (-10 to 10) 10

Little is known about the population dynamics of *M. evotis*/*M. keenii* in Alaska or elsewhere in its range. In northern British Columbia, an unusually cool, wet summer affected reproductive phenology, but had no influence on reproductive success (Burles et al. 2009). Because this species is closely associated with large-diameter trees and snags (Boland et al. 2009b), timber harvest (Parker 1996; Hayes and Wiles 2013) and urbanization may affect habitat availability and behavior. Additional research is needed to assess ecological requirements, demographic parameters, winter ecology, and vulnerability to white-nose syndrome.

Action Total: 16

Supplemental Information - variables do not receive numerical scores. Instead, they are used to sort taxa to answer specific biological or management questions.

Harvest:	None or Prohibited
Seasonal Occurrence:	Year-round
Taxonomic Significance:	Monotypic species
% Global Range in Alaska:	<10%
% Global Population in Alaska:	<25%
Peripheral:	Yes

References

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