Long-legged myotis

Myotis volans

Class: Mammalia
Order: Chiroptera

Conservation Status

Heritage	*Agency*		
G Rank: G5	USFWS/NOAA:	BLM:	AA:
S Rank: S2	SOA: Species of Greatest Conservation Need	USFS:	IUCN: Least Concern

Final Rank

Conservation category: **I. Red**

I = high status, biological vulnerability, and action need

Category	Range	Score
Status:	-20 to 20	6
Biological:	-50 to 50	-1.6
Action:	-40 to 40	28

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**

Population Trend (-10 to 10) 0

No data (Boland, OSU, personal communication).

Distribution Trend (-10 to 10) 6

Deforestation in Southeast has most likely reduced forested habitats in Alaska. Activity in second-growth forests rare.

Status Total: 6

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**

Population Size (-10 to 10) 6

Unknown, but suspected rare. Only five known specimens have been collected in Southeast Alaska (Parker et al. 1997).

Range Size (-10 to 10) -8

Only 5 known occurrences for this species in Southeast Alaska, although they are widely distributed on outer islands; from Polk Island on Prince of Wales Island north to Mole Harbor on Admiralty Island (AKNHP 2007). A 2005 survey of Southeast Alaska found them on Wrangell Island and Prince of Wales Island (Boland 2005).

Population Concentration (-10 to 10) 2

There are only 5 known occurrence records for this species in the state. Nursery colonies may include up to several hundred individuals.

Reproductive Potential

Age of First Reproduction (-5 to 5) -3.6

The age of sexual maturity for females is unknown (Nagorsen and Brigham 1993); however, according to Warner and Czaplewski (1984), first year females probably are sexually mature. According to Boland (OSU, personal communication), this species likely does not breed until their second year in cold climates like Alaska.

Number of Young (-5 to 5) 3

Mature females produce a single young.

Ecological Specialization

Dietary (-5 to 5) -2

Feeds primarily on moths. Also consumes a wide variety of invertebrates: fleas, termites, lacewings, wasps, small beetles, etc. (Warner and Czaplewski 1984).

Habitat (-5 to 5) 1

Occurs primarily in montane coniferous forests at 2000-3000 m; also riparian and desert (Baja California) habitats. May change habitats seasonally. Uses caves and mines as hibernacula, but winter habits are poorly known. Roosts in abandoned buildings, rock crevices, under bark, etc. In summer, apparently does not use caves as daytime roost site. In some areas crevices beneath bark and hollow trees are the most common nursery sites, but buildings and rock crevices are also used (Nature Serve 2006). In Alaska, the only tracked individual was found roosting in a live large diameter western red cedar (Nagorsen and Brigham 2003, Boland 2007).

Biological Total: -1.6

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**

Management Needs (-10 to 10) 10

No direct management.

Monitoring Needs (-10 to 10) 10

Not monitored.

Research Needs (-10 to 10) 6

The distribution of this species in Alaska has only been documented in forested areas (Parker 1996, Parker et al. 1997). Timber harvest in southeastern Alaska may have a significant detrimental effect on Myotis species (Parker 1996, Parker et al. 1996). Bat activity is rare in second-growth forests of Southeast Alaska (Parker and Cook 1996). Projected timber harvest plans for the Tongass National Forest (U.S. Forest Service 1991) should be managed to avoid significant elimination of potential roost sites and forest fragmentation. Destruction of karst by recreationalists or mineral extraction could be a concern, as these areas are critical hibernacula.

Little is known about this species' biology and ecology in southeastern Alaska. Research is needed to assess reproductive success, foraging strategies, prey availability, habitat preferences, migration habits, and hibernation ecology. Measure bat use in forest types and in karst caves to identify important habitats (e.g. roosting, breeding, foraging; AKNHP 2007). Although there is little information on this species in Alaska, long-legged myotis are closely associated with forests and roost in large diameter trees and snags (Nagorsen and Brigham 2003, Boland, OSU, personal communication).

Survey Needs (-10 to 10) 2

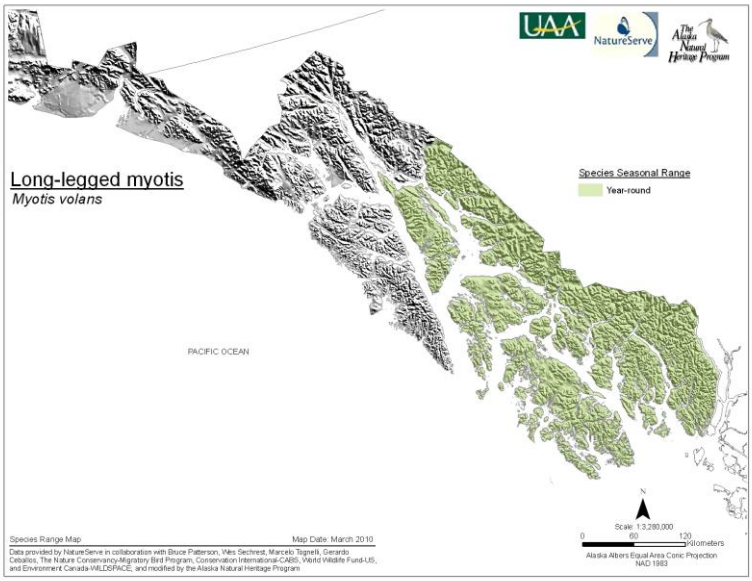
Only 7 documented observations for this species. Targeted surveys in preferred habitats have yielded few results.

Action Total: 28

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

Range Map



References

Alaska Natural Heritage Program (AKNHP). 2007. Alaska Natural Heritage Program Occurrence Database. Anchorage, AK.

Boland, OSU, personal communication

Boland, J. 2005. Preliminary unpublished data from 2005 bat field survey in southeast Alaska. Oregon State University, Corvallis, Oregon.

Boland, J. 2007. Distribution of bats in Southeast Alaska and selection of day-roosts in trees by Keen's Myotis on Prince of Wales Island, Southeast Alaska. M.S. Thesis, Oregon State University. Corvallis, OR.

Nagorsen, D. W. and R. M. Brigham. 1993. Bats of British Columbia. Royal British Columbia Museum Handbook. Volume 1, The mammals of British Columbia. UBC Press. Vancouver, British Columbia, Canada. 164 p.

Nagorsen, D. W. and R. M. Brigham. 2003. Bats of British Columbia. Royal British Columbia Museum Handbook. Volume 1, The mammals of British Columbia. UBC Press. Vancouver, British Columbia, Canada. 164 p.

NatureServe. 2006. NatureServe Explorer: An online encyclopedia of life. Version 5.0. NatureServe, Arlington, VA. Available http://www.natureserve.org/explorer.

Parker, D. I. 1996. Forest ecology and distribution of bats in Alaska. M. S. thesis. Univ. of Alaska, Fairbanks. 73 pp.

Parker, D. I. and J. A. Cook. 1996. Keen's long-eared bat, Myotis keenii, confirmed in Southeast Alaska. The Canadian Field-Naturalist, Vol. 110 pp. 611-614.

Parker, D. I., J. A. Cook, and S. W. Lewis. 1996. Effects of timber harvest on bat activity in southeastern Alaska's temperate rainforest. Pp. 277-292, In: R.M.R. Barclay and R.M. Brigham (eds.). Bats and Forests Symposium, October 19-21, 1995, Victoria,

Parker, D. I., B. E. Lawhead, and J. A. Cook. 1997. Distributional limits of bats in Alaska. Arctic 50:256-265.

Forest Service (USFS). 1991. Environmental effects. In: Tongass land management plan revision, supplement to the draft environmental impact statement. R10-MB-146. United States Department of Agriculture, U.S. Forest Service, Juneau Alaska. Pages 1-765.

Warner, R. M., and N. J. Czaplewski. 1984. Myotis volans. Mammal. Species 224: 1-4.

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For details on the development of the ASRS and criteria, please see: Gotthardt, T. A., K. M. Walton, and T. L. Fields. 2012. Setting Conservation Priorities for Alaska's Wildlife Action Plan. Alaska Natural Heritage Program, University of Alaska Anchorage, AK.