

CALIFORNIA MYOTIS

Myotis californicus Audubon and Bachman, 1842
(Vespertilionidae)

Global rank G5 (05Nov1996)

State rank S2 (14Nov2008)

State rank reasons

Only five known occurrences in Southeast Alaska, but suspected year-round resident. Abundance, population trend and distribution relatively unknown but suspected rare. Logging and deforestation are probably the biggest threats to this species (Parker et al. 1996).

Taxonomy

Subspecies *Myotis californicus caurinus* changed to *Myotis californicus*. Alaskan specimens have been included under the subspecies name *M. c. caurinus* (Hall 1981). For information on geographic variation and subspecies in the southwestern U.S. and Mexico see Bogan (1975).

General description

Pelage usually dark chestnut in color, but varies from pale to dark, being darker in high-altitude populations (Bogan 1975). Ear extends beyond muzzle when laid forward. No distinct sexual dimorphism. Body mass of both male and female adults range from 3.3 to 5.4 g; total length, 74-95 mm (Simpson 1993). Small, slender, and weak hind feet; hind foot is usually <50% the length of the tibia (Miller and Allen 1928, Simpson 1993).

Length (cm) 9 (total)

Weight (gm) 6.5

Reproduction

Breeds in late fall in most of range, or early spring in California. Has delayed fertilization (Simpson 1993) and females give birth to single young in late May to mid-June (Barbour and Davis 1969), and in July in Canada (Banfield 1974, van Zyll de Jong 1985). In southwestern California, no pregnant females were found after mid-June. Potential reproductive lifespan of 15 years. Colonies are usually small, up to about 25 individuals.

Ecology

In summer, roosts alone or in small groups (Simpson 1993).

Migration

Considered to be nonmigratory (Barbour and Davis 1969).



Food

Insectivorous. Forages in a slow erratic flight pattern approximately 5-10 feet above the ground. Forages along margins of tree clumps, around edge of tree canopy, over water, and well above ground in open country (Simpson 1993).

Phenology

Most active in early evening; begins foraging shortly after sunset; second peak in activity may occur after midnight following initial activity and subsequent rest period; activity may be curtailed and unimodal in cool weather (Simpson 1993). Known to hibernate in U.S. during winter, but may also be active in winter; in southern California occasional individuals have been found active on warm winter days. Active bats have been caught regularly in Nevada in fall and winter, often in temperatures below 43 F.

Global habitat

Western lowlands; sea coast to desert, oak-juniper, canyons, riparian woodlands, desert scrub, and grasslands. Often uses man-made structures for night roosts. Uses crevices of various kinds, including those in buildings, for summer day roosts. May also roost on small desert shrubs or on the ground (Simpson 1993). Hibernates in caves, mines, tunnels, or buildings. May form small maternity colonies in rock crevices, under bark, or under eaves of buildings. For information on roosting ecology of *Myotis californicus* in British Columbia, see Brigham et al. 1997.

State habitat

Temperate rainforest of Southeast Alaska contains abundant live trees, snags, and fallen

logs in a variety of sizes. Natural roosts of *M. californicus* are located under loose bark or in snags in hollow trees, which provide suitable hollows for this cavity-roosting species (Parker et al. 1997). The extensive karst formations in Southeast Alaska also provide numerous caves where hibernating bats have been observed and collected (Parker et al. 1997).

Global range

Western North America, from southern Alaska south through British Columbia and the western U.S. to southern Baja California and Guatemala (Koopman, in Wilson and Reeder 1993). In U.S. found throughout desert Southwest, and in lowlands to Montana, Utah, and Colorado. Winters in California, Nevada, Utah, Arizona, and Texas; full extent of winter range unknown (Barbour and Davis 1969). To elevations of 6000 ft.

State range

This species has been collected only in Southeast Alaska: from Long Island (SW coast of Prince of Wales Island) and from El Capitan Cove on Prince of Wales Island (Parker et al. 1997). The nearest specimens in British Columbia are from the Queen Charlotte Island at Massett (Parker et al. 1997). Appears to reach northern limits south of 59°N, in temperate rainforests of Southeast Alaska (Parker et al. 1997). Potentially inhabits Southeast Alaska year-round, although difficult to confirm based on low number of observations (Parker et al. 1997).

Global abundance

One of the most abundant bats occurring in desert scrub habitats throughout western North America, and uncommon to common in forest habitats of western North America. For information on population size in Mexico see Arita (1993).

State abundance

Unknown, but suspected rare. Only five known occurrences in the state (Parker et al. 1997).

Global trend

For general information on conservation status in Mexico see Arita (1993).

State trend

Unknown.

State protection

Managed in Alaska as a nongame species.

Global threats

Logging activities, especially habitat fragmentation aspect, may exert the most limiting effect on roosting and foraging habitat.

State threats

The distribution of this species is associated with coastal forests. The extent of past and future 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). Timber harvest plans for the Tongass National Forest (U.S. Forest Service 1991) include significant levels of clearcut logging, which could result in habitat loss and fragmentation (Thomas 1988, Carey 1989, Thomas and West 1991, Firman et al. 1992). Destruction of karst by recreationalists or mineral extraction could be a concern, as these areas are critical hibernacula.

Global research needs

More comprehensive data on roosting behavior is needed. Data describing territory, population numbers, migratory habits and hibernation habits are also needed.

State research needs

Little is known of species biology and ecology in southeastern Alaska. Research is needed to assess reproductive success, foraging strategies, prey availability, habitat preferences, migration, and hibernation ecology. Measure and quantify bat use in forest types to identify important habitats (e.g. roosting, breeding, foraging).

State inventory needs

Intensive surveys are needed throughout southeast Alaska to determine the distribution and abundance of this species. Inventory areas proposed for timber harvest. Document distribution and abundance in second growth habitat.

State conservation and management needs

Because some of the most productive forests in southeastern Alaska are on karst, this component of Southeast Alaska's rainforest system is likely to be important bat habitat, providing forest and cave roosts, as well as foraging habitat (Parker et al. 1996). An adequate supply of roosting sites, foraging habitat, and other critical habitat should be maintained.

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Life history and Global level information were obtained from the on-line database, NatureServe Explorer (www.natureserve.org/explorer). In many cases, life history and Global information were updated for this species account by Alaska Natural Heritage Program zoologist, Tracey Gotthardt. All Global level modifications will be sent to NatureServe to update the on-line version.

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