

1. **Species:** Big Free-tailed Bat (*Nyctinomops macrotis*)
2. **Status:** Table 1 summarizes the current status of this species or subspecies by various ranking entity and defines the meaning of the status.

Entity	Status	Status Definition
NatureServe	G4G5	<i>Species is Apparently Secure</i> At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
CNHP	S1	<i>Species is Critically Imperiled</i> At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
Colorado State List Status	SGCN, Tier 2	Species of Greatest Conservation Need
USDA Forest Service	None	N/A
USDI FWS ^b	N/A	N/A
^a Colorado Natural Heritage Program.		
^b US Department of Interior Fish and Wildlife Service.		

The 2012 U.S. Forest Service Planning Rule defines Species of Conservation Concern (SCC) as “a species, other than federally recognized threatened, endangered, proposed, or candidate species, that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species’ capability to persist over the long-term in the plan area” (36 CFR 219.9). This overview was developed to summarize information relating to this species’ consideration to be listed as a SCC on the Rio Grande National Forest, and to aid in the development of plan components and monitoring objectives.

3. Taxonomy

Genus/species *Nyctinomops macrotis* is accepted as valid (ITIS 2015).

4. Distribution, abundance, and population trend on the planning unit [12.53.2,3,4]:

The big free-tailed bat ranges from most of South America northward to include Mexico, Arizona, New Mexico, southern and western Texas, southern California and southeastern Nevada, southern Utah, and north to central Colorado (Navo 2003). In Colorado, the species has been recorded primarily along the Front Range as well as along tributaries of the Purgatoire River in the southeast and Dolores, Gunnison, and Colorado rivers on the Western Slope (Navo 2001).

The first confirmed occurrence adjacent to the planning area was reported in 2002, approximately 0.8 miles from the RGNF boundary at the Orient Mine. Since then, the species has been recorded acoustically at several locations within the planning area and is likely to forage within the planning area and throughout the San Luis Valley (R. Ghormley, pers. comm.).

Table 2. Known Occurrence Frequency within the Planning Area (NRIS database)

Known Occurrences in the past 20 years	Several acoustic observations
Year Last Observed	Not specified

5. Brief description of natural history and key ecological functions [basis for other 12.53 components]:

Big free-tailed bats mainly inhabit rugged, rocky habitats in arid landscapes. It has been located in a variety of plant associations including desert shrub, woodlands, and evergreen forests. It appears to be associated with lowlands primarily below 5,900 ft in the southwestern U.S. (Easterla 1973, Findley et al. 1975, cited in Milner et al. 1990), but has been documented at around 7,900 ft in New Mexico (Navo 2003).

This species is a seasonal migrant. It roosts mainly in the crevices of cliff rocks although there is some documentation of roosting in buildings, caves, and tree cavities. Corbett (2008) reported roost sites in New Mexico in tall vertical cliff faces ranging from 100 to 500 ft in height. Navo (2001) reported that roost sites in cliff faces along the Dolores River were at or above 39 ft in height. Maternity colonies are formed and females bear one young in late spring or early summer. Lactating females have been taken in July, August and September, and volant juveniles recorded on 8 and 27 August. Maternity roosts have been documented in rock crevices, with evidence of long-term use of the crevices reported (Navo 2003).

Big free-tailed bats feed almost entirely on large moths, but some data exists to document occasional foraging on other insects including grasshoppers, beetles, crickets, leafhoppers and flying ants. Owls appear to be the only documented predator of this species (Navo 2003).

6. Overview of ecological conditions for recovery, conservation, and viability [12.53 7, 9?, 10, 11, 12]:

In northern Arizona, *N. macrotis* did not restrict their movements to desert scrub, the vegetation type where roosts were located, but were also active over pinyon-juniper woodlands and ponderosa pine forests. Several bats made rapid climbs in elevation when moving to different vegetation types and used canyons as access. Canyons provided landmarks to make ascents to higher elevations and wind currents might have assisted flight (Corbett et al. 2008).

N. macrotis is reportedly vulnerable to roost disturbance/loss and degradation of foraging habitat caused by human activities in some areas, and in arid regions may be vulnerable to loss of drinking water sources such as may result from climate change or other factors (but opportunistically uses large artificial water sources) (NatureServe 2015).

Corbett et al. (2008) reported that ponds where individuals were captured *N. macrotis* had large surface areas and open flight paths but were shallow. The minimum pond size where *N. macrotis* was captured (46 ft) may indicate the limit in size that these bats can use for drinking although they selected larger ponds on average. Having artificial waters distributed across the landscape may improve habitat quality by increasing prey densities or increase the spatial extent this species can travel because reliable water sources are available (Corbett et al. 2008).

7. Threats and Risk Factors

No known threats to the species have been identified to date. However, some of the general threats to bats could apply to big free-tailed bats. These could include impacts to foraging areas from grazing, riparian management, the use of pesticides, and in some places disturbance to the roost site (e.g., blasting of cliffs or constructing water impoundments) (Navo 2003), but most roosts probably are not vulnerable to such impacts (NatureServe 2015).

In arid regions, the bats are possibly limited by the availability of large, obstacle-free drinking sites (Tuttle 1996, Corbett et al. 2008 cited in NatureServe 2015). Such sites are known to have decreased in number compared to the historical situation (New Mexico Department of Game and Fish 1997 in NatureServe 2015), and ongoing climate change could increase this threat. Broadcast application of pesticides could have direct or indirect (e.g., food resource) impacts, but effects are uncertain (NatureServe 2015).

8. Key literature:

Corbett, R.J.M., C.L. Chambers, and M.J. Herder. 2008. Roost and activity areas of *Nyctinomops macrotis* in northern Arizona. *Acta Chiroperologica* 10(2): 323-329.

Ghormley, R. 2015. Forest Biologist, RGFN. Personal Communication.

Milner, J., C. Jones, and J. Knox Jones, Jr. 1990. *Nyctinomops macrotis*. *Mammalian Species* 351: 1-4.

NatureServe. 2015. Explorer, an online encyclopedia of life. Accessed online at: <http://explorer.natureserve.org/index.htm> [06/25/2015].

Navo, K.W. and J.A. Gore. 2001. Distribution of the big free-tailed bat (*Nyctinomops macrotis*) in Colorado. *Southwestern Naturalist* 46(3): 370-376.

Navo, K.W. 2003. Big free-tailed bat (*Nyctinomops macrotis*). Pgs. 78-79 in Ellison, L. E., M. B. Wunder, C. A. Jones, C. Mosch, K. W. Navo, K. Peckham, J. E. Burghardt, J. Annear, R. West, J. Siemers, R. A. Adams, and E. Brekke. 2003. Colorado bat conservation plan. Colorado Committee of the Western Bat Working Group. 107 pp.

9. Map of Known Occurrences and Modeled Suitable Habitat

Known occurrences within the planning area have not been mapped. Potentially suitable roosting habitat consisting of vertical cliffs has not been modeled within the planning area.