Mammals	Rocky mountain bighorn sheep *Ovis canadensis canadensis*	Known to occur	Bighorn sheep populations have declined in Western North America from an estimated 500,000 at the onset of European settlement to an estimated 15,000 to 20,000 by 1960. Numbers have increased since 1960 due to population translocations and augmentations and other conservation efforts. The distribution of bighorn sheep is naturally fragmented due to the patchy nature of preferred habitats, and bighorn sheep typically make seasonal movements to alpine habitats in summer and lower elevation habitats or south-facing slopes during the winter period. The primary risk to persistence on the Forest is pathogen transmission between domestic sheep and bighorn sheep, and subsequent disease outbreaks and population impacts. Current and expected future domestic sheep grazing includes some risk of contact between domestic sheep and bighorn sheep which can result in respiratory disease outbreaks in bighorn sheep. Respiratory disease in bighorn sheep can result in all age die-offs which can have lasting impacts on populations through suppressed lamb recruitment following disease outbreaks. In-breeding, loss of alpine habitat due to changing temperature and precipitation patterns, and unintentional human harassment can also represent added stressors further impacting persistence of local herds and populations. Despite the risks to bighorn sheep from domestic sheep, Forest bighorn sheep populations have persisted for the past several decades. Colorado Parks and Wildlife has identified 12 Game Management Units that occur entirely or partially on the Forest. Several herds cross administrative boundaries and occur on adjacent public or private lands during part of their life cycles. Overall population estimates for the 12 herds total approximately 1,100 individuals. The total population estimates have fluctuated from approximately 1,000 to 1,500 animals during the past 30 years. Population die-offs due to disease have been observed or suspected in several herds during this time, and some herds have been augmented via population translocations. Currently, several bighorn sheep herds are still recovering from die-off events in the 1990's. The presence of some type of respiratory pathogen has been confirmed in 8 herds. Most herds are currently hunted with regulations and population objectives established by Colorado Parks and Wildlife. Among the herds whose Game Management Unit boundaries overlap the Forest, three occur in areas where domestic sheep grazing is not currently permitted and is not anticipated in the foreseeable future. These herds (S08, S09, and S68, though S68) occur in the Sangre de Cristo mountains on the eastern Forest boundary and account for an estimated 40 percent of the forestwide bighorn sheep population. While long-distance movements from other herds could potentially move pathogens into these herds, this is a relatively low likelihood concern and these herds are considered secure based on management actions under Forest authority. Other Forest herds are at some risk of contact with domestic sheep and transmission of pathogens is possible. Despite the risk to herds outside the Sangre de Cristo Mountains, bighorn sheep are likely to persist due to the strongholds in the Sangre de Cristo mountains and the absence of the domestic sheep grazing, the main threat to persistence. Population management by Colorado Parks and Wildlife will contribute to the persistence of bighorn sheep on the planning unit through establishing population objectives, managing hunting opportunities and potentially through population augmentation via translocations. Lastly, through collaborative monitoring with Colorado Parks and Wildlife and other partners

Category	Species	Evidence of Occurrence	Substantial Concern About the Species Capability to Persist over the Long Term
			will help provide information on the effectiveness of management actions and help identify potential changes in management needed to support the persistence of bighorn sheep.
Mammals	Townsend's big-eared bat *Corynorhinus townsendii townsendii*	Eleven records in the past 20 years.	Concern for the persistence stems from white-nose syndrome. Although not yet detected within Colorado, the disease continues to spread west. The agency has measures in place to protect bat roost and maternity sites from white-nose syndrome, but it remains possible for the disease to infect colonies despite these measures. An 80 to 90 percent loss of the species could be realized, including the loss of entire colonies. In addition, Climate change vulnerability assessments for the state indicate that this species may experience a slight increase in vulnerability due to changes in its physiological hydrological niche and physical habitat due to changes in temperature regimes and precipitation patterns.
Plants	*Black Canyon gilia* *Aliciella penstemonoides*	Known from six occurrences. Last observed in 1998.	This species is found in rocky areas with a spruce-fir overstory, the approximately 90 percent mortality of spruce is a threat to this species because of the resulting loss or alteration of this species' habitat from the loss of that canopy cover. Climate change vulnerability assessments for areas surrounding the Forest indicate that this species is moderately vulnerable to negative impacts from changes in temperature and precipitation regimes, particularly because there are limits to dispersal. Forest occurrences are small and isolated populations which are susceptible to genetic drift and stochastic events.
Plants	*Stonecrop gilia* *Aliciella sedifolia*	This G1 species is known from two locations. Last observed in 2016. Of the entire global distribution of this species, two of the three occurrences are on the Forest.	Climate change vulnerability assessments for areas surrounding the Forest indicate that this species is extremely vulnerable to negative impacts from changes in temperature and precipitation regimes because of the loss of alpine habitat. Of the entire global distribution of this species, two of the three occurrences are on the Forest.
Plants	*Brandegee milkvetch* *Astragalus brandegeei*	Known from two occurrences. Both observed in 1986, aerial imagery indicates no evidence that the bristlecone habitat at these two locations has changed, thus there is no evidence to assume that the species is no longer present.	Climate change vulnerability assessments for areas surrounding the Forest indicate that the bristlecone pine habitat of this species is highly vulnerable to negative impacts from changes in temperature and precipitation regimes across Colorado. Isolated and small Forest populations are susceptible to threats from genetic drift and stochastic events.