1. **Species:** Gunnison's Prairie Dog (*Cynomys gunnisoni (gunnisoni = pop. 1)*)

2. **Status:** Table 1 summarizes the current status of this species or subspecies by various ranking entity and defines the meaning of the status.

Table 1. Current status of *Cynomys gunnisoni*

Entity	Status	Status Definition
NatureServe	G5T2	*Species is Imperiled* At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
CNHP	S2	*Species is Imperiled* At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
Colorado State List Status	SGCN, Tier 1	Species of Greatest Conservation Need
USDA Forest Service	R2 Sensitive	Region 2 Regional Forester's Sensitive Species
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 *Cynomys gunnisoni* is accepted as valid (ITIS 2015).

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

Gunnison's prairie dog range can be considered to occur in two separate range portions—higher elevations in the northeast part of the range (montane population) and lower elevations elsewhere (prairie population) (USDI Fish and Wildlife Service 2008). Portions of the montane population overlap with the planning area.

Historically, Gunnison's prairie dogs in Colorado were found in the San Luis Valley, South Park, along the Arkansas River Valley from Twin Lakes to Pueblo, westward into the upper Gunnison River drainage and the Saguache and the Cochetopa Park areas. In central Colorado, GPDs typically inhabit mountain parks, occurring at sites ranging in elevation from 5997-11,998 ft (Seglund et al. 2005). The species historically occupied an estimated 6 million acres in Colorado. By 1961, and estimated 116,000 acres was occupied in the State (USDI Fish and Wildlife Service 2008). Colorado Division of Wildlife (2007) estimated 182,237 acres of occupied habitat, 9,042 acres of inactive colonies, and 171,970 acres of unknown status, and estimated that 8.6% of

available habitat within the montane population was occupied (USDI Fish and Wildlife Service 2008).

A total of eight occurrences have been reported for the planning area within the past 20 years (Table 2). No reliable trend information is available for this species within the San Luis Valley population area. Fitzgerald (1991 cited in Seglund and Shnurr 2010) expressed concern about the status of the Gunnison's prairie dog in the San Luis Valley, indicating that plague and poisoning had eliminated some populations and overall populations were in poor condition in the area. No trends have been identified for portions of this population within the planning area.

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

Known Occurrences in the past 20 years	8
Year Last Observed	2014

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

The northeastern range (central and south-central Colorado, and northcentral New Mexico) consists primarily of higher elevation, cooler and more mesic plateaus, benches, and intermountain valleys. Gunnison's prairie dogs occupy grass-shrub areas in low valleys and mountain meadows within this habitat (Seglund et al. 2005).

Gunnison's prairie dogs inhabit grasslands and semi-desert and montane shrublands. The species is associated with intermountain valleys, benches, and plateaus that offer prairie-like topography and vegetation. These intermountain valleys, benches, and plateaus can range from very arid to mesic sites. Gunnison prairie dogs can occupy mesic plateaus and higher mountain valleys, as well as arid lowlands. The species is generally found in groups of several individuals, and often times forming colonies. They dig burrows that are used for raising young, and provide cover from predators (Fitzgerald et al. 1994, Knowles, 2002, cited in Seglund et al. 2005).

The species feeds on grasses, forbs, sedges, and shrubs. Insects are of minor importance to its diet. Flowers and other succulent parts of forbs and shrubs are also consumed but the animals do little digging for roots and tubers. The species is not known to store food in its burrow. As with all species of prairie dogs and most ground squirrels, they gather grasses and forbs for nesting materials, especially in late summer. Free water is not required (Fitzgerald et al. 1994 cited in Seglund et al. 1994).

Breeding occurs primarily in late April to early May (Hooglund 1998, Fitzgerald and Lechleitner 1974). Females produce one litter per year and are capable of reproducing at one year of age. Litters average 3 to 5 pups (Longhurst 1944, Hooglund 2001). Young emerge from the burrow from late May to early July (Seglund et al. 2005).

Gunnison's prairie dogs hibernate. In central Colorado around 10,000 feet, individuals entered burrows by October and emerged in mid-April. Hibernation periods at lower elevations are shorter and some individuals may even appear above ground in winter months (Raynor et al. 1987, cited in Fitzgerald et al. 1994).

Predators include badgers, golden eagles, coyotes, bobcats, and red-tailed hawks. Plague and poisoning have caused considerable retraction of the species in parts of Colorado and New

Mexico (Fitzgerald et al. 1994). In Colorado, prairie dogs are considered small game species and are provided no protection from harvest. Reproduction occurs May through mid-July.

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

Refer to the *Colorado Gunnison's and White-tailed Prairie Dog Conservation Strategy* (Seglund and Schnurr 2010) for objectives and strategy elements pertaining to reduction of risk associated with disease, energy and mineral development, genetics, poisoning, rangeland management, recreational shooting, and urban development. The conservation strategy also provides recommendations for population monitoring and reestablishment. Those applicable to NFS land management are summarized below:

<u>Disease</u>

- Participate in cooperative processes for application of dust or other appropriate flea control methods in priority prairie dog areas.

<u>Energy and Mineral Development</u>

- Develop adaptive prairie dog BMPs for energy and mineral development that use the best available information. Review existing industry, agency, and other state oil and gas BMPs.
- Identify high quality GUPD and WTPD habitat with conservation potential, and work toward protective management of these areas.
- Develop potential mitigation measures (e.g. speed limits, seasonal road closures) to improve habitat connectivity within GUPD and WTPD range.
- Minimize impacts to GUPDs & WTPDs from energy and/or mineral development by implementing BMPs that modify pad size, location, pad construction, and road construction based on topographic features and prairie dog colony location (e.g., co-location, directional drilling, collector roads to access multiple well sites).
- Develop reclamation requirements to allow for GUPD and WTPD movement and re-colonization.
- Maintain reclaimed areas as weed-free sites within GUPD and WTPD habitat.
- During revision of LUPs to manage leasing and development in GUPD and WTPD complexes, address prairie dog management needs and maximize habitat potential to prevent prairie dog habitat loss.
- Use larger-scale planning (i.e., geographic area plans) to adequately address cumulative impacts of oil and gas development in GUPD and WTPD habitat.
- Design energy development to maintain large blocks of undisturbed GUPD and WTPD habitat to ensure long term functionality of the ecosystem for prairie dogs and associated species.

<u>Monitoring</u>

- Develop monitoring schemes in areas identified for implementation of prairie dog conservation strategies to identify responses of populations to management.
- Refine and standardize GUPD and WTPD mapping to facilitate data collection for land-use planning.

<u>Reestablishment</u>

- Participate in cooperative processes that identify approve reestablishment sites.

Rangeland Condition

- Minimize loss and fragmentation of GUPD and WTPD habitat due to shrub and piñon-juniper encroachment.
- Identify and map significant areas of current or former prairie dog habitat that have experienced encroachment by shrubs and/or piñon-juniper.
- Prioritize areas in prairie dog range to treat for shrub and/or piñon-juniper encroachment.
- When reseeding a treatment area in prairie dog habitat, use certified weed-free seed stock.
- Prioritize areas of GUPD and WTPD habitat to treat for weed infestations.
- In areas experiencing drought, adjust grazing practices, prescriptive fire, and/or vegetation management to minimize additive impacts to prairie dog habitat.

7. **Threats and Risk Factors**

Gunnison's prairie dogs are extremely susceptible to sylvatic plague, Plague is the greatest single threat to prairie dog populations in Colorado, particularly when compounded by other factors present on the landscape, and will likely remain a threat throughout the range of Gunnison's prairie dog in the foreseeable future (Seglund and Schnurr 2010). In addition to plague, poisoning has caused considerable retraction of the species in parts of Colorado and New Mexico (Armstrong et al. 2011).

Habitat-associated risk factors include agricultural land conversion, urbanization, oil and gas exploration and extraction, livestock grazing, noxious weeds, and altered fire regimes (Seglund et al. 2005, USFWS 2010). Other factors include recreational shooting and climate events such as drought. Gunnison's prairie dogs are considered small game species in Colorado and are protected from harvest from March 1 – June 14 on public lands (CPW 2015).

Agricultural land conversions historically had a significant impact on Gunnison's prairie dog habitat. Gunnison's prairie dogs have been displaced from some of the more productive valley bottomlands in Colorado. However, agriculture is not considered a major rangewide threat because of the small percentage of the range affected, but also because agriculture provides highly productive forage in place of the native arid landscape (Seglund et al. 2005).

Possible direct negative impacts associated with oil and gas development include clearing and crushing of vegetation, reduction in available habitat due to pad construction, road development and well operation, displacement and killing of animals, alteration of surface water drainage, and increased compaction of soils. Vibroseis (seismic exploration) may also affect prairie dogs by collapsing tunnel systems, causing auditory impairment, and disrupting social systems. Indirect effects include increased access into remote areas by shooters and OHV users (Seglund et al. 2005).

The impact of overgrazing on prairie dog populations is contradictory. Some reports note that species density is positively correlated with the number of native plants and that grazing has decreased forage availability (Seglund et al. 2005). Other reports have concluded that prairie dog density is positively correlated with an increase in grazing, which simulates the shortgrass-type of prairie environment preferred by prairie dogs (Fagerstone and Ramey 1996, p. 88; Marsh 1984, p. 203, Slobodchikoff et al. 1988, p. 406 cited in USDI Fish and Wildlife Service 2008). Considering the conflicting conclusions of published literature, and the lack of large-scale population decreases due to habitat alterations from livestock grazing, USFWS found that

livestock grazing is not a significant threat to the Gunnison's prairie dog (USDI Fish and Wildlife Service 2008).

Alteration in fire regimes within the range of the GPD has produced changes in structure and function of plant communities. Habitat associations of GPDs have not been examined over a large number of colonies or across a large geographic area, but vegetation changes associated with altered fire frequency may be affecting the species' distribution (Seglund et al. 2005).

8. Key literature:

CPW (Colorado Parks and Wildlife). 2015. Small game dates and fees. Accessed online at: http://cpw.state.co.us/thingstodo/Pages/SmallGameDatesFees.aspx [07/07/2015].

Seglund, A.E., A.E. Ernst, and D.M. O'Neill. 2005. Gunnison's prairie dog conservation assessment. Unpublished Report. Western Association of Fish and Wildlife Agencies, Laramie, WY. 87 pp.

Seglund, S.E. and P.M. Shnurr. 2010. Colorado Gunnison's and white-tailed prairie dog conservation Strategy. Colorado Division of Wildlife, Denver, CO. 218 pp.+appendices.

USDI Fish and Wildlife Service. 2008. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Gunnison's Prairie Dog as Threatened or Endangered. Federal Register 73(24): 6660-6684.

9. Map of Known Occurrences and Modeled Suitable Habitat

Gunnison's prairie dog habitat was modeled for the planning area using elevation, slope, soils, and vegetation characteristics. Areas below 10,500 feet on slopes less than 15%, with suitable soils for excavating (e.g. loamy, outwash, limy, and sandy) that coincide with grass or riparian cover types generally lacking tree cover (<10%) were selected. A total of 90,320 acres is modeled as suitable within the planning area (Figure 1).

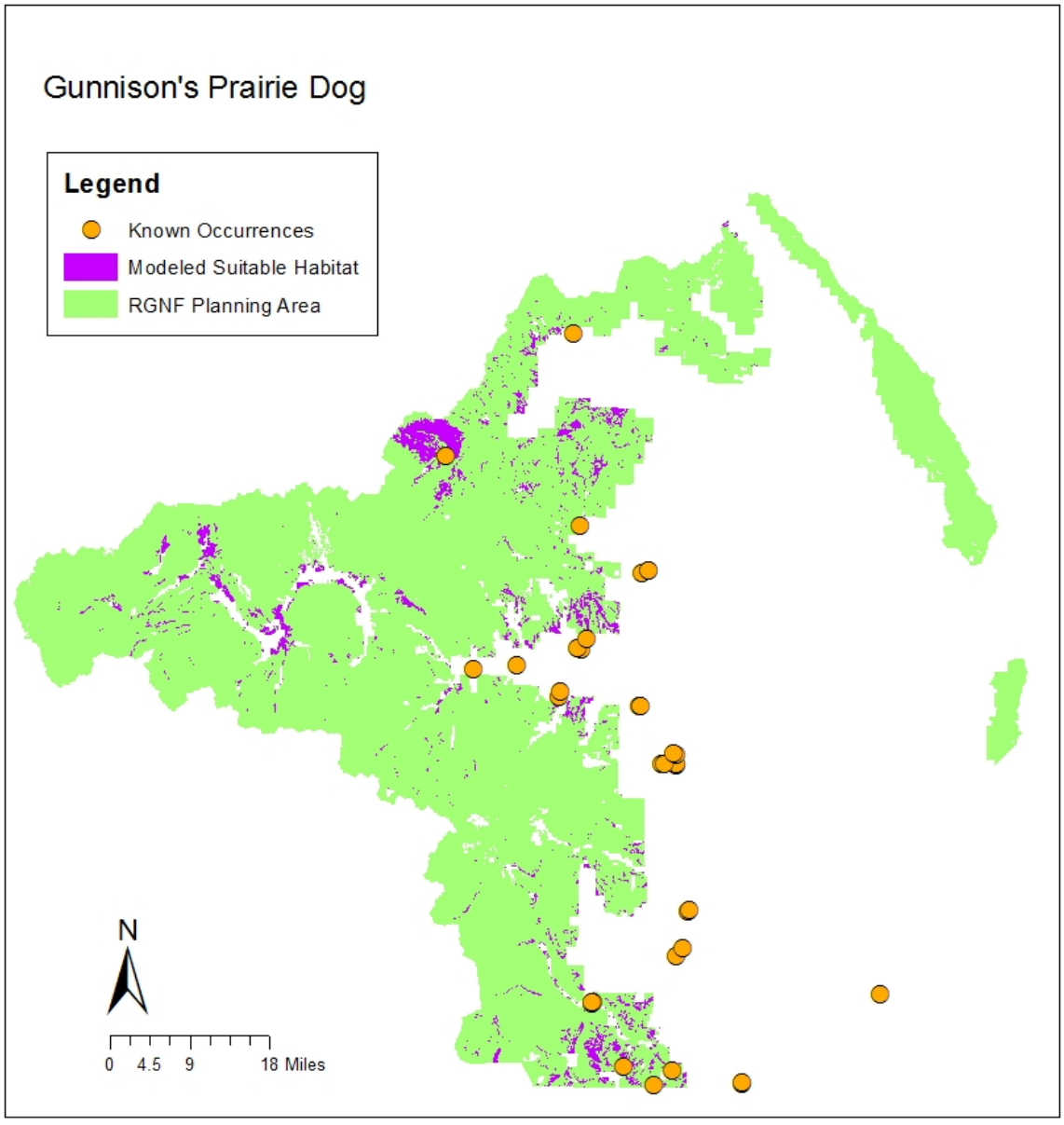

Figure 1. Gunnison's Prairie Dog Modeled Habitat and Known Occurrences.