

## **Species Diversity Evaluation: Plants**

# **Habitat Needs, Distribution, and Description of Plant Species-of-Concern and Species-of-Interest Cimarron and Comanche National Grasslands**

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## **Introduction**

Under 2005 National Forest Systems Land Management Planning Rule (2005 Rule), the U.S.D.A. Forest Service is directed to “Focus evaluation and development of plan components for species diversity on those species for which the Responsible Official determines that provisions in plan components are needed” (36 CFR 219). Forest Service Handbook Interim Directives released in 2005 state: “The Responsible Official should identify federally threatened and endangered species, species-of-concern, and species-of-interest whose ranges include the plan area<sup>1</sup>, taking into account limitations that exist at the edge of a species’ range” (FSH 1909.12, 43.22). To meet these requirements, this document lists and describes the plant species-of-concern and species-of-interest for the draft Cimarron and Comanche National Grasslands (Grasslands) Land Management Plan (Plan). It also describes habitat needs for species-of-concern and species-of-interest to assess if Plan components provide for these identified species.

The botany specialist’s report includes existing conditions and a species-specific summary of current conditions for rare plant species in the Planning Area<sup>2</sup> that are of interest for conservation or monitoring objectives (USDA FS 2005). The existing conditions specialist report was the starting point for developing the species-of-concern and species-of-interest lists. However, additional criteria and species were also considered based on the guidance provided by the Interim Directives. As such, the proposed species-of-concern and species-of-interest lists were initially developed by applying the following criteria:

- Species listed as threatened, endangered, and candidate species listed by the U.S. Fish and Wildlife Service (USFWS) under the authority of the Endangered Species Act of 1973, as amended (ESA), for Baca, Otero, and Las Animas Counties in Colorado, and Morton and Stevens Counties in Kansas;
- Species that are known to occur within the Planning Area and are listed on the Regional Forester’s Sensitive Species list (Ryke et al. 2003);
- Species tracked by either the Kansas Natural Heritage Inventory (KNHI) or the Colorado Natural Heritage Program (CNHP)<sup>3</sup>.

Population dynamics of species-of-concern and species-of-interest plants are generally not well understood. Populations of these plants have been maintaining themselves with current management activities. There is a small total number of known species-of-concern or species-of-interest plant sites that makes monitoring individual populations possible. Current management in population areas should continue, and there should be more frequent monitoring of these populations. Maintaining a wide variety of habitat conditions and vegetative cover frequencies across the Grasslands would assure

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<sup>1</sup> Plan Area – The area that includes only those lands administered by the Forest Service.

<sup>2</sup> Planning Area – The area that includes Forest Service-administered lands described as the Plan Area plus all other adjacent lands, including private and state-owned and state-managed lands.

<sup>3</sup> No lichens or non-vascular plants being tracked by KNHI or CNHP are documented as occurring within the Planning Area.

appropriate conditions for all species-of-concern plants.

## **Species-of-Concern**

If the Responsible Official determines that management actions may be needed to prevent a species from being listed under the Endangered Species Act (ESA), that species may be identified as a species-of-concern. Following the recommendations described in FSH 1909.12, 43.22a, potential species-of-concern were identified as:

1. Species designated/listed as candidate and proposed species under the ESA.
2. Species with ranks of G1 through G3 on the NatureServe ranking system.
3. Intraspecific (subspecific) taxa with ranks of T1 through T3 on the NatureServe ranking system.

Eight plant species in the Planning Area meet one or more of the three criteria above:

1. Andean prairie-clover
2. Colorado fraseria
3. Colorado gumweed
4. Colorado Springs evening-primrose
5. Raven Ridge false goldenweed
6. Rocky Mountain bladderpod
7. Sandhill goosefoot
8. Wheel milkweed

### **Andean prairie clover**

NatureServe (2005) ranks Andean prairie-clover (*Dalea cylindriceps*) as G3G4, with a rounded global status of G3. The KNHI tracks this species and ranks it S2. Although widespread in the Great Plains, this species appears to be infrequent to rare range-wide (NatureServe 2005). Andean prairie-clover ranges from Wyoming and South Dakota south to New Mexico and Texas. There are at least six records from the Cimarron National Grassland (Cimarron) in Morton County, Kansas, and the species has also been documented on the Comanche National Grassland (Comanche) in Baca County, Colorado.

Andean prairie-clover is a perennial plant found in sandy prairie and dunes. In the Planning Area, habitat for this species occurs in the Sandsage Prairie and Canyonland Ecosystems. It is tolerant of moderate disturbance based on its occurrence in sandy soils. Potential threats may include grazing, prescribed fire, roads, trails, weed management, oil and gas development, and unregulated recreation. Fire and grazing during the summer have the potential to damage actively growing plants and to reduce seed production. Grazing and prescribed fire outside the growing season may have beneficial impacts on this species by reducing competition and providing germination sites. Any herbicide use in the vicinity of these populations should be closely monitored.

Andean prairie-clover is recommended as a species-of-concern because

1. It is tracked by the KNHI.

2. It is a low density species throughout its range.
3. Within the range of the Andean prairie-clover, the Grasslands provide an important area of potential habitat.

### ***Plan components that contribute to self-sustaining populations***

Several components of the Desired Conditions expressed in the Plan would contribute to self-sustaining populations of Andean prairie-clover. Land Administration desired conditions provide for acquiring tracts of land that provide habitat for this species. The Desired Conditions for the Sandsage Prairie and Canyonland ecosystems include periodic disturbance by livestock grazing and prescribed fires, which in turn can provide germination sites for this species.

Guidelines established in the Plan's Design Criteria are important in providing for sustainable populations of this species because it occurs in areas with potential for future ground-disturbing activities<sup>4</sup> associated with oil and gas development. The Plan includes a guideline that these activities should not occur directly on known populations of the Andean prairie-clover (Ecol-4), a guideline for the management of livestock grazing during the flowering/fruiting period (LivGraz-6), and a guideline involving the use of herbicides near known populations (Invas-3).

### **Colorado fraseria**

NatureServe (2005) ranks Colorado fraseria (*Frasera coloradensis*) as G3. The CNHP tracks this species and ranks it S3. Colorado fraseria is endemic to southeastern Colorado, including Baca and Las Animas Counties. There are ten records of this species on the Comanche. It was formerly on the Regional Forester Sensitive Species list (Ryke et al. 2003). The CNHP has been tracking this species for many years because it has limited range and habitat in Colorado.

Colorado fraseria is found in dry, rocky outcrops and on sparsely vegetated slopes, white limestone breaks, and in piñon-juniper woodlands and prairie. In the Planning Area habitat for this species occurs in the Shortgrass Prairie and Canyonland Ecosystems, and in particular in the OU Creek recommended special area. Potential threats may include grazing, prescribed fire, roads, trails, and unregulated recreation. Fire and grazing have the potential to damage actively growing plants and reduce seed production. Grazing and prescribed fire may have beneficial impacts on this species by reducing competition; fire releases nutrients stored in plant matter.

Privately-owned land is being converted from prairie to other uses, such as dry-land or irrigated cropland, or cattle feedlots. As a result, some of the best remaining habitat

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<sup>4</sup> The term "ground-disturbing activities" refers to actions such as the construction of roads, oil and gas wells, pipelines and water wells that result in the destruction of both above- and below-ground vegetation. In contrast, use of the terms "disturbance" and "disturbance processes" in relation to the management of ecological resources refers to forces such as fire, herbivory and storm events that remove above-ground vegetation from an ecosystem, and thereby influence its composition and structure.

available for Colorado fraseria is on the Comanche. This species also warrants attention because it is a local endemic with a small known geographic range. The Grasslands provide consistent habitat quality and quantity for this plant.

Colorado fraseria is recommended as a species-of-concern because

1. It is endemic to southeastern Colorado.
2. It was formerly on the Regional Forester Sensitive Species list.
3. CNHP has been tracking this species for many years.

To ensure the species is sustainable within its small known geographic range, management actions may be necessary or desirable to provide the appropriate habitat conditions for Colorado fraseria.

### ***Plan components contributing to self-sustaining populations***

Several components of the Desired Conditions expressed in the Plan would contribute to self-sustaining populations of Colorado fraseria. Land Administration desired conditions provide for acquiring tracts of land with exposures of Dakota sandstone and Greenhorn limestone formations that provide habitat for this species. Desired Conditions for the Shortgrass Prairie and Canyonland ecosystems include periodic disturbance by livestock grazing and fire in order to provide germination sites for this species. Finally, Desired Conditions for the OU Creek recommended special area provide specifically for use of prescribed fire and livestock grazing that would result in enough ground disturbance to ensure seedling establishment and still maintain adequate vegetative cover for mature plants.

Guidelines established in the Plan's Design Criteria are intended to reduce factors detrimental to the sustainability of Colorado fraseria on the Grasslands, including ground-disturbing activities that affect known populations (Ecol-4), livestock grazing during the flowering/fruitletting period (LivGraz-6), and the use of herbicides near known populations (Invas-3).

### **Colorado gumweed**

NatureServe (2005) ranks Colorado gumweed (*Grindelia inornata*) as G2?, which suggests that this plant may require management actions to prevent listing under the ESA. This plant is a local endemic known only from seven counties in eastern Colorado, including the three Grasslands Planning Area counties of Baca, Las Animas, and Otero. There are at least two records on the Comanche dating from 1997 (CNHP 2004).

Most known sites for Colorado gumweed are along roadsides. Habitat in the Planning Area for this species occurs in the Shortgrass Prairie (Timpas Unit) Ecosystem and the Picket Wire Canyonland and Bent Canyon Bluffs recommended special areas. The species is apparently tolerant of moderate disturbance. Although a habitat generalist, this species occurs at low density in its habitat. Management actions that may affect this species include grazing, prescribed fire, roads, trails, weed management, and unregulated recreation. Efforts should be made to maintain current populations by avoiding ground disturbance at known sites to protect established plants. Any herbicide use in the vicinity

of these populations should be closely monitored. Searches should be conducted for additional plants in appropriate habitat. Soil disturbance may be necessary to provide seedbed for population expansion.

Privately-owned land is being converted from prairie to other uses, such as dry-land or irrigated cropland, or cattle feedlots, effectively reducing suitable habitat for Colorado gumweed. As a result, some of the best remaining habitats available for this species is on the Comanche. This species also warrants management attention because it is a local endemic with a small known geographic range. Ensuring that habitat is available and is being managed appropriately for this species would help prevent a trend toward federal listing under the ESA. However, very little is known about this species' ecology, or the effects land management practices would have on individuals or populations.

Colorado gumweed is not recommended as a species-of-concern because this is a species over which Forest Service management would have no known influence in the Plan Area

## **Colorado Springs evening-primrose**

NatureServe (2005) ranks the Colorado Springs evening-primrose (*Oenothera harringtonii*) as G2, which suggests that this plant may require management actions to prevent listing under the ESA. This species is endemic to eastern Colorado, known only from Colorado Springs to Las Animas and Otero Counties (NatureServe 2005). There are two records from the Comanche dating from 1997, with additional records nearby (CNHP 2004).

The Colorado Springs evening-primrose occurs in silty clay soils to loose rock or sandy soils in open grasslands, typically where vegetative cover is 20 – 50%. In the Planning Area, habitat for this species occurs in the Shortgrass Prairie Ecosystem. This species may have a relatively long life in the seed bank with widely variable numbers from year to year, but there are few known locations (17) and there is likely to be fewer than 400 extant plants (Ladyman 2005). Although a habitat generalist, this species occurs at low density in its habitat. As a result, management actions that may affect this species include grazing, prescribed fire, roads, trails, weed management, and unregulated recreation. Efforts should be made to maintain current populations by avoiding ground disturbance at known sites to protect established plants. Any herbicide use in the vicinity of these populations should be closely monitored. Searches should be conducted for additional plants in appropriate habitat. Soil disturbance may be necessary to provide seedbed for population expansion.

Privately-owned land is being converted from prairie to other uses, such as dry-land or irrigated cropland, or cattle feedlots. As a result, some of the best remaining habitat available for Colorado Springs evening-primrose is on the Comanche. This species also warrants attention because it is a local endemic with a small known geographic range. Ensuring that habitat is available and is being managed appropriately for this species would help prevent a trend toward federal listing under the ESA.

The Colorado Springs evening-primrose is recommended as a species-of-concern because it is a local endemic plant with relatively few known individuals, and the most reliable habitat management is on the Comanche. To prevent listing under ESA, efforts should be made to maintain current populations by avoiding certain ground-disturbing activities at known sites, and ensuring appropriate habitat is maintained for this species.

### ***Plan components contributing to self-sustaining populations***

Several components of the Desired Conditions expressed in the Plan would contribute to self-sustaining populations of Colorado Springs evening-primrose. Land Administration desired conditions provide for acquiring tracts of land that provide habitat for this species. The Desired Conditions for the Shortgrass Prairie Ecosystem specifically include maintenance of sparse, low-structure vegetation in and adjacent to existing populations of Colorado Springs evening-primrose. Maps of existing populations of this species on the Timpas Unit would be used to identify areas where these habitat conditions should be maintained and monitored.

Objectives in the Strategy section of the Plan specific to the Shortgrass Prairie Ecosystem provide details on how Grasslands management would maintain and improve habitat conditions for the Colorado Springs evening-primrose. The objective to maintain at least 0.5 – 5% of the shortgrass ecosystem on the Timpas Unit affected by fire annually (see Fire Use Objectives) contributes to improved habitat for this species. An additional objective (see Livestock Grazing Administration) is to target the combined use of spring burning and grazing in areas where this species occurs, in order to contribute to habitat maintenance and expansion. These activities could provide the low levels of vegetative cover where seedlings of the species could establish.

Guidelines established in the Plan's Design Criteria are intended to reduce factors detrimental to the sustainability of Colorado Springs evening-primrose on the Grasslands, including the types of ground-disturbing activities that may affect known populations (Ecol-4), livestock grazing during the flowering/fruitlet period (LivGraz-6), and the use of herbicides near known populations (Invas-3).

### **Raven Ridge false goldenweed**

NatureServe (2005) ranks Raven Ridge false goldenweed (*Oenopsis foliosa* var. *monocephala*) as G2G3T2. The rounded rank is T2, which suggests that this plant may require management actions to prevent listing under the ESA. The CNHP tracks this species but ranks it SNR. It is reported as "Endemic to Las Animas County, Colorado, but quite common in certain edaphic situations (e-mail from G. K. Brown, Univ. Wyoming, to K. Maybury 8/20/96)" by NatureServe (2005).

This plant is a local endemic to the Arkansas River Valley, known from Las Animas and Baca Counties in Colorado. In spite of a reported occurrence on the Timpas Unit of the Comanche, there are no definitive records of this plant on the Grasslands.

This plant inhabits shortgrass prairie; most records are on privately owned ranch land. In

the Planning Area, habitat for this species occurs in the Shortgrass Prairie Ecosystem. It occurs frequently in tracked-vehicle training areas on the U.S. Army Pinon Canyon Maneuver Site; this suggests that it is tolerant of or may even require moderate to intense disturbance.

Privately-owned land is being converted from prairie to other uses, such as dry-land or irrigated cropland, or single family housing. As a result, some of the best remaining habitat available for Raven Ridge false goldenweed is on the Comanche. This species also warrants attention because it is a local endemic with a small known geographic range. The Grasslands provide consistent habitat quality and quantity for this plant.

Raven Ridge false goldenweed is being recommended as a species-of-concern because it is a local endemic with a small known geographic range. There are no definitive records of this species on the Comanche, but populations occur on the adjacent Pinon Canyon Maneuver Site and the Comanche provides a large area of potential habitat for this plant.

### ***Plan components contributing to self-sustaining populations***

Several components of the Desired Conditions expressed in the Plan would contribute to self-sustaining populations of Raven Ridge false goldenweed. Land administration desired conditions provide for acquiring tracts of land that provide habitat for this species. The Desired Conditions for the Shortgrass Prairie Ecosystem specifically include the combined use of prescribed fire and livestock grazing disturbance, targeted near any documented populations of Raven Ridge false goldenweed. The documentation of this species in areas experiencing intense above-ground disturbances on the Pinon Canyon Maneuver Site suggests similar management on the Timpas Unit of the Comanche could contribute to population expansion

Objectives in the Strategy section of the Plan specific to the Shortgrass Prairie Ecosystem provide details on how Grasslands management would maintain and improve habitat conditions for Raven Ridge false goldenweed. These include the objective to maintain at least 0.5 – 5% of the Shortgrass Prairie Ecosystem affected by fire annually (see Fire Use Objectives) and the objective for the combined use of spring burning followed by livestock grazing (see Livestock Grazing Administration).

Guidelines established in the Plan's Design Criteria are intended to reduce factors detrimental to the sustainability of Raven Ridge false goldenweed on the Grasslands, including ground-disturbing activities that could harm any populations that are documented in the future (Ecol-4), livestock grazing during the flowering/fruitletting period (LivGraz-6), and the used of herbicides near documented populations (Invas-3).

### **Rocky Mountain bladderpod**

NatureServe (2005) ranks Rocky Mountain bladderpod (*Lesquerella calcicola*) as G2, which suggests that this plant may require management actions to prevent listing under the ESA. This species is endemic to five counties in southeastern Colorado from the Arkansas River south to Mesa de Maya. Although this species has been reported from

several locations near the Comanche (Hazlett 2004), there are no definitive records available.

Rocky Mountain bladderpod occurs in limestone and gypsum soils. In the Planning Area habitat for this species occurs in the Shortgrass Prairie and Canyonland Ecosystems. It may be tolerant of light disturbance based on its habitat in limestone breaks. Potential threats may include roads, trails, and unregulated recreation.

Privately-owned land is being converted from prairie to other uses, such as dry-land or irrigated cropland, or single-family housing. As a result, some of the best remaining habitat available for Rocky Mountain bladderpod is on the Comanche. This species also warrants attention because it is a local endemic with a small known geographic range. The Grasslands provide consistent habitat quality and quantity for this plant. However, very little is known about this species' ecology, or the effects land management practices would have on individuals or populations.

Rocky Mountain bladderpod is not recommended as a species-of-concern because the effects of management are unknown and it is unlikely that Forest Service management would affect the species or its habitat in the Plan Area.

There are no definitively known populations on the Comanche, but the Grassland provides consistent habitat quality and quantity for this plant. If populations of this plant are found on the Comanche, and future studies identify ways in which Forest Service management could provide for the species, consideration should be given to making this a species-of-concern.

## **Sandhill goosefoot**

NatureServe (2005) ranks sandhill goosefoot (*Chenopodium cycloides*) as G3G4, with a rounded global status of G3. The CNHP tracks this species and ranks it S1. The KNHI also tracks this species, giving it a rank of S2.

Sandhill goosefoot ranges from southeastern Colorado and southwestern Nebraska, south to western Texas and southern New Mexico (NatureServe 2005). This species has been recorded in Morton County, Kansas, and in Las Animas and Pueblo Counties, Colorado. It has been recorded at ten sites on the Cimarron (KNHI 2004), and at two sites within five miles of the Comanche (CNHP 2004).

Habitat of sandhill goosefoot consists of unstable sandy soils on dunes, and stabilized sand in blowouts in sand prairie (Spackman *et al.* 1997). In the Planning Area, habitat for this species occurs in the Sandsage Prairie and Riparian and Aquatic Ecosystems. As an annual life cycle species, populations of this plant may vary widely from year to year, and how long seeds may persist in the seed bank is unknown. Because this is a plant of temporal habitats, it may be threatened by sand prairie stabilization. Other potential threats may include grazing, prescribed fire, roads, trails, weed management, oil and gas development, and unregulated recreation. Grazing and prescribed fire may have beneficial impacts on this species, but both fire and grazing have the potential to damage

actively growing plants, reducing seed production. Fire and grazing benefit plants by reducing competition; fire releases nutrients stored in plant matter.

Although bordering between “vulnerable” and “apparently secure” at the range-wide level, sandhill goosefoot would be a useful species to continue monitoring as an “indicator” of unstable sand areas, required by a small but distinct group of plant and animal species. The CNHP has been tracking this species for many years because of its limited range and habitat in Colorado.

Sandhill goosefoot is recommended as a species-of-concern because

1. It is tracked by both CNHP and KNHI.
2. Is rare in both Colorado and Kansas.

It would also serve as a useful species to monitor unstable sand areas. Management actions may be necessary or desirable to ensure unstable sand prairie habitats are retained for a small but distinct group of plant and animal species.

### ***Plan components contributing to self-sustaining populations***

Several components of the Desired Conditions expressed in the Plan would contribute to self-sustaining populations of sandhill goosefoot. Land Administration desired conditions provide for acquiring tracts of land that provide habitat for this species. The Desired Conditions for the Sandsage Prairie and the Riparian and Aquatic Ecosystems specifically include maintenance of disturbed areas on sandy soils, targeted in and adjacent to existing populations of sandhill goosefoot. Maps of existing populations of this species on both Grasslands can be used to identify areas where these habitat conditions should be maintained and monitored.

Objectives in the Strategy section of the Plan specific to the Sandsage Prairie Ecosystem provide details on how Grasslands management would maintain and improve habitat conditions for sandhill goosefoot. The objective to maintain at least 1 – 5% of the Sandsage Prairie Ecosystem affected by fire annually (see Fire Use Objectives) contributes to improved habitat for this species. An additional objective (see Livestock Grazing Administration) is to target the combined use of spring burning and grazing in areas where this species occurs, in order to contribute to habitat maintenance and expansion. These activities would provide adequate ground disturbance to ensure seedling establishment.

Guidelines established in the Plan’s Design Criteria are intended to reduce factors detrimental to the sustainability of sandhill goosefoot on the Grasslands, including ground-disturbing activities that affect known populations (Ecol-4), livestock grazing during the flowering/fruited period (LivGraz-6), and the used of herbicides near known populations (Invas-3).

### **Wheel milkweed**

Wheel milkweed (*Asclepias uncialis* ssp. *uncialis*) is ranked by NatureServe (2005) as G3G4T2T3. The rounded rank is T2, which suggests that this plant may require

management actions to prevent listing under the ESA. Current research is being conducted on the taxonomy of this group and the subspecies, which may elevate it to species rank. In this case, subspecies *uncialis* would become G2G3 or G2, considering apparent declines in the species populations.

Wheel milkweed is found in shortgrass prairie dominated by blue grama (*Bouteloua gracilis*) and buffalograss (*Buchloe dactyloides*). In the Planning Area, habitat for this species occurs in the Shortgrass Prairie and Canyonland Ecosystems. In its habitat, wheel milkweed is a low-density species. It was formerly regularly encountered, but there are few recent records (NatureServe 2005). Although a habitat generalist, this species is rare because of its sensitivity to soil disturbance (Locklear 1996). As a result, management actions that may affect this species include grazing, prescribed fire, weed management, and unregulated recreation. Efforts should be made to maintain current populations by avoiding ground disturbance at known sites. Any herbicide use in the vicinity of these populations should be closely monitored. Searches should be conducted for additional plants in appropriate habitat.

Wheel milkweed ranges from Utah and Colorado south to Arizona and New Mexico (NatureServe 2005). There are records from Baca, Las Animas, and Otero counties in Colorado (CNHP 2004). There are two records from NFS lands on the Comanche (CNHP 2004). One of these records is from 1997, and the other is from 1948.

The conversion of privately-owned land from prairie to other uses, such as dry-land or irrigated cropland, or cattle feedlots, may be partly responsible for the low frequency of encounters of wheel milkweed. As a result, some of the best remaining habitat available is on the Grasslands. Ensuring that habitat is available and is being managed appropriately for this species would help prevent a trend toward federal listing under the ESA.

Wheel milkweed is recommended as a species-of-concern because

- This subspecies is rare throughout its range.
- The frequency of observations has declined in recent decades.
- It is sensitive to soil-disturbing activities.

To prevent listing wheel milkweed under ESA, efforts should be made to maintain current populations by avoiding certain ground-disturbing activities at known sites.

### ***Plan components contributing to self-sustaining populations***

Several components of the Desired Conditions expressed in the Plan would contribute to self-sustaining populations of wheel milkweed. Land Administration desired conditions provide for acquiring tracts of land that provide habitat for this species. Desired Conditions and Objectives for the Shortgrass Prairie Ecosystem include maintaining shortgrass communities that are dominated by blue grama and buffalograss and have 70 – 80% vegetative cover in areas with wheel milkweed populations, and avoiding the use of management practices that produce sparse, low-structure vegetation in areas with wheel milkweed populations. Special areas provide the best quality examples of habitat for this species, and the Desired Conditions for the OU Creek recommended special area include

management of livestock grazing to maintain habitat for wheel milkweed

Guidelines established in the Plan's Design Criteria are intended to reduce factors detrimental to the sustainability of wheel milkweed on the Grasslands, including the types of ground-disturbing activities that may affect known populations (Ecol-4), livestock grazing during the flowering/fruited period (LivGraz-6), and the use of herbicides near known populations (Invas-3).

## **Species-of-Interest**

Species-of-interest are defined as species for which the Responsible Official determines that management actions may be necessary or desirable to achieve ecological or other multiple use objectives (FSH 1909.12, 43.22b). Based on the evaluations provided below, species evaluations in the existing conditions specialist report, "Chapter 4 Botany: Threatened, Endangered, and Sensitive Plants," and a consideration of species of public interest, one plant species was identified for the Grasslands' species-of-interest list: Tamarisk

### **Tamarisk**

NatureServe (2005) ranks tamarisk (*Tamarix ramosissima*) as GNR. Tamarisk (also known as saltcedar) is on the Colorado State noxious weed list. It is native to Ukraine and Iraq east to China, Tibet, and Korea. It is locally abundant in several watersheds in eastern Colorado and western Kansas.

Tamarisk is most abundant in creek and river bottoms. Several areas infested with this plant, including the Picket Wire Canyonlands recommended special area, are undergoing eradication treatments that use prescribed fire, mechanical, and chemical methods. Concern about tamarisk invasion was brought up in most "existing condition" and "desired condition" specialist reports. Although numerous noxious weeds are locally present on the Grasslands, tamarisk has the greatest effect on a wide variety of resources on the Grasslands. Identifying tamarisk as a species-of-interest would enable tamarisk to serve as an indicator of progress made in riparian ecosystem restoration efforts, riparian wildlife habitat conditions, and improvement in range condition.

The Forest Service Fire Effects Information System for this species offers extensive and current information on life history, ecology, fire effects, and management.

Tamarisk is recommended as a species-of-interest because it would serve as an indicator of progress made in riparian ecosystem restoration efforts, riparian wildlife habitat conditions, and improvement in range condition.

### ***Plan components contributing to tamarisk management***

Several components of Desired Conditions listed in the Plan contribute to the management of tamarisk. Tamarisk's ability to spread and reestablish quickly from

adjacent private land necessitates broad landscape scale treatment to ensure effective long term treatment. Tamarisk is the primary invasive species that has affected riparian and aquatic ecosystems on the Grasslands. Tamarisk invasion has displaced native cottonwoods and willows, and altered the hydrology of the floodplain by using more water than the native vegetation it has replaced. Its ability to concentrate salts has produced changes in soil chemistry, further limiting native species establishment. Efforts to restore native plant communities in tamarisk-infested riparian areas have been initiated on the Grasslands. Desired Conditions for the Riparian and Aquatic Ecosystem identify the need to remove tamarisk from the riparian corridors, and replace it with native plant species. Objectives for this ecosystem include the treatment of an average of 400 – 500 acres of tamarisk annually within the Plan Area.

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