Condition description tables for Range analysis.

Browns Creek C&H.

EXISTING CONDITION	DESIRED CONDITION
Range Management: 3 pasture "deferred rotational" system. On date June 16, off date September 30. 80 cow/calf pairs permitted	**Range Management:** Keep dates, numbers and AUMs the same. Rotate grazing schedule on the pastures. Develop water and pipe to tanks in the uplands. Manage for better distribution of the cattle and utilization of the upland forage.
Vegetation: **Upper Browns Pasture:** Healthy and diverse mix of upland grasses, riparian graminoids, woody species, and forbs present in mesic meadow and riparian areas. Properly functioning and self-perpetuating riparian plant communities. 2004 CF data shows good species diversity and good bare soil and litter %. **Lower Browns Pasture:** Mixed native grass and forb communities with variety of vegetative structure. Healthy and diverse mix of upland grasses, riparian graminoids, woody species, and forbs present in mesic meadow and riparian areas in proportion to moisture availability. Properly functioning and self-perpetuating riparian plant communities. 2004 photo point shows vigorous vegetation with good species diversity including native grasses forbs and shrubs. Spots of Canada thistle present. **Fourmile Pasture:** Good mix of native grasses, forbs, and variety of structure in grasslands. Healthy and diverse mix of riparian graminoids, woody species, and forbs present in mesic meadow and riparian areas in proportion to moisture availability. Properly functioning and self-perpetuating riparian plant communities.	**Vegetation:** **Upper Browns Pasture:** Maintain, continue to move toward, or start moving toward community type desired conditions that are outlined in Table 1. Pasture is moving toward DC. **Lower Browns Pasture:** Maintain, continue to move toward, or start moving toward community type desired conditions that are outlined in Table 1. Control or eradicate spots of Canada thistle. Pasture is moving toward or meeting DC. **Fourmile Pasture:** Maintain, continue to move toward, or start moving toward community type desired conditions that are outlined in Table 1. Pasture is moving or meeting DC.
Wildlife: **Habitats –** Alpine, Upland Grassland/Shrubland, Riparian, and Forest Habitats **T&E Species** – UFB, Canada lynx, and Gunnison prairie dog **FSS Species** – white-tailed ptarmigan, wolverine, Brewer's sparrow, loggerhead shrike, Gunnison prairie dog, Hudsonian emerald dragonfly, boreal toad *(known breeding site)*, northern leopard frog, pygmy shrew, black swift, bald eagle, northern harrier, peregrine falcon, purple martin, olive-sided flycatcher, Lewis' woodpecker, three-toed woodpecker, boreal owl, flammulated owl, northern goshawk, fringed myotis, Townsend's big-eared bat, hog-nosed skunk, American marten, bighorn sheep, and spotted bat	**Wildlife:** **T&E Species** **UFB:** ▪ Protect and maintain suitable habitat conditions, primarily areas of snow willow. **Canada Lynx:** ▪ Protect and maintain suitable lynx and snowshoe hare habitat conditions. ▪ Provide for the development of snowshoe hare habitat in natural or created openings within lynx habitat. ▪ Maintain and restore habitat connectivity across forested landscapes. ▪ For willow, achieve mid seral or higher condition, to maximize cover and prey availability. Such areas that are currently in late seral condition should not be degraded.

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Terrestrial MIS – Abert's squirrel and elk **Overall** – Livestock use has been substantially limited in the past decade or so with limited to no use many years in much of the allotment. Livestock distribution is generally very limited to a small portion of the allotment (10-15%). The Four-mile Unit has high forage potential, but water is severely limited. In the Lower Brown's Unit, use is exclusively in the riparian areas as livestock move from/to the Four-mile to/from Upper Brown's Unit. In the Upper Brown's Unit, use is primarily in high alpine and subalpine riparian areas (wet meadows, potential fens, wet meadows, beaver pond complexes), aspen and other forested areas, grass/shrublands. Water sources are limited in the Lower and Upper Brown's Units to stream, beaver ponds, and other natural features (described above), thus use is concentrated almost exclusively in riparian and adjacent areas. Much of the Upper Brown's Unit is not utilized by livestock due to steep slopes and poor grazing capability and suitability. Livestock use in Upper and Lower Brown's Units has been extremely limited over the past decade due to non/very limited use by permittee for a variety of reasons (both resource protection during drought and personal non-use), thus the current habitat condition in some areas is likely better than if full permitted grazing had occurred. Precipation is low to relatively high (ranging from 10-32 inches annually, depending on elevation and location), which affects wildlife habitats and the capability of the allotment to support livestock grazing. Fair to good habitat conditions in some areas depending on livestock use and concentrations. Breeding/reproductive, cover/shelter, forage/prey, and dispersal/movement habitats for the below wildlife species/habitats have all been adversely impacted/degraded to varying degrees, primarily in riparian and associated forested and upland habitats. **T&E Species** – UFB (see Alpine Habitat), Canada lynx (see Alpine, Upland Grassland/Shrubland, Riparian, and Forest Habitats), and Gunnison prairie dog (see Upland Grassland/Shrubland Habitat) below. **Alpine Habitat –** Approximately 37% of this allotment. Mainly present in the Upper and Lower Brown's Units. Very little to no livestock use has occurred over the past decade in much in these habitats, but some has occurred in subalpine riparian habitats (also discussed below). Diverse	▪ In aspen stands - ensure sprouting and sprout survival is sufficient to perpetuate long-term viability of aspen clones. **Gunnison Prairie Dog:** ▪ Protect and maintain suitable habitat conditions. **FSS Species** **Boreal Toad:** ▪ Protect and maintain suitable breeding, summer, and winter hibernation habitat conditions and movement corridors for boreal toads: ▪ Maintain riparian-wetlands in proper functioning conditions (PFC). ▪ Minimize activities that may cause direct mortality (trampling) of boreal toads, egg masses, tadpoles, metamorphs (toadlets), and adults by livestock. ▪ Provide sufficient vegetation in boreal toad breeding, summer, and wintering areas (hibernacula) and movement corridors. Locate and protect toad movement corridors from livestock grazing impacts. ▪ Maintain a minimum of 75% of the streambank or shoreline in stable condition. ▪ Protect and enhance boreal toad habitat where possible with water developments. ▪ Minimize the spread of *Bd* (a chytrid fungus) to new areas from livestock grazing and associated activities. **Bighorn Sheep:** ▪ Protect lambing areas during the spring (May 15 to June 30) from disturbance. ▪ Maintain in perpetuity temporal and spatial separation between domestic sheep/goats and native bighorn sheep. **Terrestrial MIS** **Abert's Squirrel:** ▪ Encourage mature widely dispersed and interconnected ponderosa pine stands which sustain Abert's squirrel populations where potential exists. **Elk:** ▪ Maintain or improve habitat conditions for elk. ▪ Maintain adequate forage and security cover year-round to allow CDOW to meet management objectives.

EXISTING CONDITION	DESIRED CONDITION
mix of native grass, forb, and shrub communities and ground cover is suitable where developed soils exist; however, pedestaling, heavy browse of willow present in some areas. Fens may be present in portions of upper Brown's Unit. Overall good habitat condition depending on degree of concentrated livestock use. **Upland Grassland/Shrubland Habitat –** Approximately 5% of this allotment. Mainly present in Four-mile Unit with some present in Upper and Lower Brown's Units, although it is limited primarily to avalanche shoots and other natural opening which receive little to no livestock use. Desirable native species composition and grass and forb species diversity is fair to good in most areas with a mosaic of vegetative structure in most areas. Upland grasses decadent in some areas. Litter is low or absent in some areas. Native grasses and forbs interspersed in many areas. Noxious weeds present in limited areas (Canada thistle, diffuse knapweed). Generally, there is good growth and regeneration of mid-late seral shrub species. Current habitat condition ranging from fair to good, depending on use and location. **Riparian Habitat –** Approximately 2% of this allotment. Most riparian areas in the Four-mile and Lower Brown's Units are heavily forested with dense conifer/aspen vegetation and high overstory canopy cover. The Upper Brown's Unit consists of a large lake (Brown's Lake), a series of large subalpine beaver pond complexes, fragile wet meadows with highly saturated soils, possibly fens, large areas of willows/willow carrs, and a large naturally braded streams/wetland complex lying at the upper headwaters of Brown's Creek. There is a known boreal toad breeding site in the Lower Brown's Unit and trampling of vegetation around this pond by livestock has been documented. Willow communities present are generally diverse. Pedestaling observed and hedging of willows in some areas. Good vegetation cover and diversity in most areas although some areas impacted by trampling and livestock use in concentration areas in Upper and Lower Brown's Units. Stable channel types in Upper and Lower Brown's Units. Highly erosive soils and steep channel in extreme western portion of the Four-mile Unit has lead to increased sedimentation and stream braiding in some areas. Browns Creek benchmark in Upper Brown's Unit rated at PFC. Poor to good habitat conditions depending on degree of concentrated livestock use and location.	▪ Maintain and provide for movement corridors for elk that do not act as barriers/restrict movement or cause mortalities from range developments. ▪ Protect calving and other concentration areas. **All Habitats:** ▪ Reduce/eliminate the presence of noxious weeds to the extent possible. **Alpine Habitat:** ▪ Protect and maintain healthy alpine plant communities with a diverse mix of desirable native grass, forb and shrub communities, and minimal ground disturbance that provide suitable habitat conditions for alpine species. ▪ Where developed soils exist, ground cover is 80% or greater. ▪ Protect and maintain suitable habitat conditions in alpine and subalpine use areas (primarily willow carrs and riparian areas) to maintain or achieve mid seral or higher conditions to provide cover and forage for these species. **Forest Habitat:** ▪ Maintain/create forests with diverse age structure, late successional communities, openings, snags and down woody debris across forested areas; vigorous understory of native grasses (e.g., grama, needle and thread, junegrass, Arizona fescue, mountain muhly, mutton grass) and forbs where light allows. ▪ Perpetuate aspen communities with diverse age structure. Aspen areas shall include late successional communities, regeneration, openings, snags and down woody debris; vigorous and diverse native grass and forb understories shall be present. Protect aspen and other hardwood regeneration. **Upland Grassland/Shrubland Habitat:** ▪ Protect and maintain healthy upland grassland and shrubland plant communities that provides and maintains and/or enhances suitable habitat conditions for these species. **Riparian Habitat** ▪ Protect and maintain healthy riparian and wetland plant communities that provides and maintains and/or enhances suitable habitat conditions for riparian dependant species. Provide habitats for viable populations of wildlife species.

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Forest Habitat – Approximately 43% of this allotment. The Upper Brown's Unit primarily consists of stands of mixed conifer and spruce/fir. Aspen is mostly limited to narrow stringers along riparian areas and smaller stands interspersed with conifers which are encroaching and reducing aspen component. There is a diverse native grass and forb understory. Downed logs present where recent vegetation/fuels management activities have not occurred. Diverse age structure is generally present. May be some browse by livestock of aspen regeneration in some concentration use areas. Ponderosa pine has experienced recent infestations of MPB. Bunchgrass understory is increasing as canopy cover is reduced due to insect infestations, timber harvesting, and prescribed burning. Some un affected/untreated forests are denser. Mortality of ponderosa pine resulting in higher numbers of snags/logs in untreated areas, lacking in treated areas. Large stands of lodgepole are present in portions of each unit. Mixed conifer past spruce budworm activity as resulted in some mortality and high number of snags/logs. Overall, the habitat is in good condition depending on degree of concentrated livestock use.	
Fisheries: Lower Browns Creek supports a very low density brook and brown trout population. Since 2005, mean biomass annually ranks in the lower 9th percentile of surveys conducted across the Forest. Multiple year classes are present, but fish are smaller than average. Reproduction and/or recruitment appear limited. Steep gradient and recreational angling may be impacting the fishery at the survey location. No impacts from grazing have been observed in the survey area. In contrast to lower Browns Creek, upper Browns Creek above Browns Creek Lake supports a thriving, high density cutthroat trout population. The contrast in fish density between the two survey sites is somewhat puzzling but may be explained by at least two primary factors. At the lower survey site, stream gradient is high where sampling was conducted; leading to high water velocities. This may limit habitat suitability in that reach of stream. Fish density may be higher at the upper site because of the repeated stockings of Browns Creek Lake and because the lake may provide better winter refuge, leading to higher over-winter survival than the lower survey site. **Mollusks:** Presence of Rocky Mountain capshell snail or suitable habitat on the allotment is unknown. **Aquatic invertebrates:** Suitable habitat for *O.*	**All aquatic species:** Riparian ecosystems meet or move towards at least an upper mid-seral stage. Riparian plant communities are healthy and self-perpetuating. State and Federal water quality standards met. Stream channels and still water-body shorelines are stable and well vegetated with appropriate species. Suitable riparian habitat exists for viable populations of wildlife, fish and terrestrial and aquatic invertebrates.

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susanae (large springs) does not exist on the allotment.	
Hydrology: **Upper Browns Pasture:** Upper Browns benchmark. Site visited by hydrologist on September 29, 2005. Beautiful, wide riparian dominated by willows across entire valley bottom. Active beaver dams in area. Channel well armored and stable. Some bare ground in and around dispersed campsites and well animals water from stream. From the trailhead to this benchmark, there doesn't seem like much feed for cattle in the uplands. Hydrologist rated this benchmark at proper functioning condition; no form was completed. **Middle Browns Pasture:** Middle Browns benchmark. Benchmark was dropped, and no data was collected. **Water Developments:** Existing: 1pit	**Hydrology:** **Upper Browns Pasture:** Maintain the riparian in its current condition. Consider reclaiming and/or hardening some of the dispersed recreation sites. Also, consider closing FSR 278 at its junction with FSR 278B (leads to Mount White). This would reduce the impacts to the upper Browns Creek watershed. **Water Developments:** Existing unchanged: 1pit Existing redeveloped: None Proposed: None Summary: 1 developed watering sites on NFS 0 miles of pipeline constructed
Soils: Photographs of key areas, benchmark areas, and from the hydrology report, soil resource appears to be stable with good ground cover and little compaction/disturbance. Major soil type of Browns Creek Allotment found in Key Area BCUBK1and BCFMK1and middle pasture benchmark: **623G Leighcan family – Rock outcrop Cryaquolls complex,** Ecological Land Unit: subalpine fir, Engelmann spruce, willows, and sedges on subalpine ice scoured glacial valley bottoms. Leighcan soils have an effective rooting depth greater than 20 inches. Cryoaquolls have an effective rooting depth greater than 60 inches. **693G Howardsville family,** Ecological Land Unit: subalpine fir and Engelmann spruce on subalpine reworked ground moraines. Howardsville have an effective rooting depth greater than 60 inches. Major soil type of Browns Creek Allotment found in upper pasture benchmark:	**Soils:** Continued maintenance of good ground cover with stable soils, little or no pedestaling/puddling of soils in riparian areas. **623G Leighcan family - Cryaquolls complex,** Revegetating Leighcan soil requires mulch to retain soil moisture. Revegetating Cryaquolls soil with riparian vegetation requires maintaining a high water table. **693G Howardsville family,** Mulch or similar treatment will protect the soil from erosion, help conserve soil moisture, and protect emerging plant seedlings. Fertilizer will supplement low inherent fertility. **950C—Moran family - Cryaquolls - Histosols complex,** Revegetation limitations: **Moran:** severe- short growing season, Low available water capacity and low inherent fertility. **Cryaquolls:** severe- short growing season and high water table. **Histosols:** severe- short growing season; organic

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950C—Moran family - Cryaquolls – Histosols complex, Ecological land unit: willows, grasses, forbs, and sedges on alpine cirque bottoms. Soils are moderately deep to deep with an effective rooting depth 40 to greater than 60 inches.	material takes thousands of years to replace. Cold tolerant plants are required to survive alpine climate. Mulch or similar treatment will protect the soil from erosion, help conserve soil moisture, and protect emerging plant seedlings. Revegetating Cryaquolls soil with riparian vegetation requires maintaining a high water table. Histosols revegetation requires high water table and replacing organic materials.
Recreation: Recreation use is high with the major activities including disperse camping, hiking, mountain biking, horseback riding, hunting, fishing, and driving/sightseeing. There are three major hiking trails, the Colorado Trail, Wagon Loop Trail, and the Browns Creek Trail which receives heavy use. The Little Browns Creek Trail receives less use. The Upper Browns pasture receives heavy OHV traffic. Browns Lake is a popular remote camping and fishing destination. The NFSR 272 receives heavy use from disperse campers and is the main overflow camping area from Chalk Creek. Big game hunting is popular throughout this allotment. There are two agricultural water ditches crossing the allotment in the Fourmile Pasture.	**Recreation:** Maintain compatible use with campers and cattle where campers are minimally affected by cattle's waste and trampling, and campers are not blocking cattle paths. Recreationist are well informed they are sharing the land with cattle, and when to keep gates closed and open, depending on whether cattle are in the pastures. Range improvements do not conflict with recreation use, i.e. placing water improvements in highly desirable campsites and trails.
Forestry: Majority of the ponderosa pine forests has been infected with the mountain pine beetles, resulting in heavy mortality throughout the allotment. Upland bunch grasses have increased in quantity and quality due to the decrease of overstory trees. Salvage timber sales and thinnings have (past 6 years) and are occurring throughout the allotment reducing stand stocking levels, reducing the fuel loadings, and removing slash barriers that are affecting cattle movements in these upland forest grasslands. Understory forage conditions are expanding from the openness of the forest and are in good condition. Prescribed burning projects have occurred on approximately 20 % of the lower unit of the allotment. More burning projects are planned in the next 5 years. These burns will benefit the quality of the understory vegetation while also reducing the fuel loadings.	**Forestry:** Maintain a healthy, mixed-conifer forest community of ponderosa pine, Douglas-fir and aspen with a dispersed age structure, openings, snags and down woody debris across these forested areas. Improve forest health conditions throughout. Perpetuate aspen communities with diverse age structures including late successional communities, regeneration, and openings. Maintain a vigorous understory of native grasses (grama, needle and thread, junegrass, Arizona fescue, mountain muhly, mutton grass) and forbs throughout these forest communities. Minimize the encroachment of conifers onto the grassland types.