

ENVIRONMENTAL ASSESSMENT

DOI-BLM-CO-040-2015-0058 EA

Reissuance of Two Grazing Permits on the JQS Common Allotment
and One Permit on the Porcupine Common
and Spruce Gulch Common Allotments.



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CASEFILE NUMBER(S).

0500228, 0503703, 0507607, 0507632

LOCATION.

Garfield County, Northwest of Rifle, CO

LEGAL DESCRIPTIONS.

JQS Common Allotment #18908, T5S R94W portions of sections 2-5, 8-11, 13-15, 21-24, 25-28, 33-36 & T6S R95W portions of sections 1-2 & T6S R94W portions of sections 5-7. Porcupine Common Allotment #08119, T7S R94W portions of sections 10-12 & 14-15. Spruce Gulch Common Allotment #08121, T7S R94W portions of sections 3-4, 9 & 15-16. (see attached allotment maps in Appendix A).

APPLICANT.

Grazing Permittees.

PURPOSE AND NEED FOR ACTION.

These permits/leases are subject to renewal or transfer at the discretion of the Secretary of the Interior for a period of up to ten years. The U.S. Bureau of Land Management has the authority to renew the livestock grazing permits/leases consistent with the provisions of the Taylor Grazing Act, Public Rangelands Improvement Act, Federal Land Policy and Management Act, Roan Plateau Resource Management Plan Amendment, and the Colorado Public Land Health Standards.

The mission of the BLM is “to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations”. Land Health Standards and Guidelines for Livestock Grazing Management were developed between the BLM and the Colorado Resource Advisory Council to ensure that the mission of the BLM will be achieved. A 2013 land health assessment on the JQS Common Allotment determined that portions of the allotment, particularly riparian areas and adjacent uplands, were not meeting land health standards.

This action is needed to determine whether or not to reissue grazing permits on the JQS Common, Porcupine Common, and Spruce Gulch Common Allotments and if so under what terms and conditions to ensure that significant progress toward achievement of Public Land Health Standards is made and objectives for resource management are achieved.

SCOPING AND PUBLIC INVOLVEMENT AND ISSUES.

This action was scoped internally with the NEPA Interdisciplinary Team on January 9, 2013. Issues raised during the internal scoping are itemized in table 13 and analyzed in the Affected Environment and Environmental Consequences sections of each resource or resource use.

A notice of public scoping was posted on the Colorado BLM's Internet web page on September 1, 2011 regarding grazing permits and associated allotments scheduled for renewal in 2011-2012. A news release was posted on September 8, 2011 and again on March 11, 2013. The public was provided an opportunity to offer any information or concerns, or to be considered as an interested public on a permit or allotment scheduled for renewal. The Colorado River Valley Field Office Internet NEPA Register also lists grazing permit renewal NEPA documents that have been initiated. They are generally posted approximately one month prior to the estimated completion date.

BACKGROUND.

Grazing Management History of the Roan Plateau. The Roan Cliffs (NOSR # 1) was withdrawn from the public domain in 1916 and placed under jurisdiction of the Secretary of Navy. Little was done in the way of management for many years after withdrawal (Secretary of Defense 1973:11). On August 9, 1935, the Secretary of Navy and Dept. of Interior entered into a cooperative to manage NOSR surface resources in accordance with the Taylor Grazing Act of 1934. A November 7, 1959 memorandum to the files from BLM District Manager Lloyd W. Bruce summarized the past 22 years of management. He indicates that previous range managers had recognized that adjustments in stocking rates would be necessary to bring grazing use in balance with the carrying capacity of the range. He states, "However, this particular District has experienced many changes in district managers and approximately 14 different men have been charged with this responsibility, accordingly timely correction of the situation was not carried out to completion." In a 1958 Memorandum to the State Supervisor for Colorado Mr. Bruce indicated that, "...much of the grazing abuse and deterioration was the result of overgrazing prior to our administration and that adjustments had been made to the extent possible that public sentiment would permit." No specifics about these adjustments could be found. Mr. Bruce described grazing data for the Roan Cliffs as consisting of three common use cattle allotments, one common use sheep allotment, one individual cattle allotment, and two individual sheep allotments. Licensed rate over the entire area was described as 2,034 cattle (10,149 AUMS) and 3,955 sheep (2,355 AUMS). The period of use was approximately June 1 to Oct. 31 for most of the grazing allotments.

During the late 1950s and early 1960s concern about overstocking and management accelerated compared to years past. Other BLM inspection and summary reports from the late 1950s to early 1960s indicate difficulty in administering the area due to the lack of public access roads and the poor condition of these roads. Grazing trespass was apparently quite a problem and allotment boundary lines were not always well defined (lacked fencing and/or agreements where the boundary was located). Inspection reports commonly referred to over-grazing in the "wash bottoms." In 1957 BLM conducted a range survey of the area which indicated existing livestock

grazing well above the proper carrying capacity of the range and cuts ranging from 30 to 61 percent (depending upon the allotment) would have to be made to restore balance. The survey was rechecked in 1958, 1959 and 1960. A July 27, 1960 Memorandum from Dept. of Navy reported inspection results from a range survey and inspection of the area. The report stated, "Livestock had been using this range about 25 days prior to the inspection. Already the mountain valleys had been grazed out and the stock had started grazing up the steep mountain slopes." Due to the results of the survey, District Manager Lloyd Bruce began diligent efforts to work with grazing permittees and District Grazing Advisory Boards to resolve the problems. BLM's position on the area was that conservation plans (now called AMPs) had to be developed for the area which would propose numerous range improvements such as fencing, water developments, and reseeding. In the interim, it was felt that reductions in grazing use would need to come first. The Grazing Advisory Board concurred with reductions in grazing use (both period and animal numbers) but did not agree with the severity of the reductions suggested from the range survey. Apparently the grazing permittees did not concur with the proposed reductions and ultimately Lloyd Bruce had to issue grazing decisions on the matter.

On January 24, 1962, Mr. Bruce issued Final Notices (now called Final Decisions) to 28 grazing permittees. In summary, the final decisions were as follows: (1) changed period of use to June 16 to Oct. 15, (2) established exterior boundary lines for grazing allotments, (3) established the boundary line between JQS Common Allotment and East Fork Allotments, (4) reduced animal numbers, and (5) staggered the reductions over a three-year period. The reduction in grazing use varied by allotment and was as follows: East Fork Allotment was reduced down to 1521 AUMS (61 percent reduction), JQS Common Allotment was reduced down to 1828 AUMS (61 percent reduction), Anvil Point Allotment was reduced down to 464 AUMS (47 percent reduction), Clough-Alber was reduced down to 1089 AUMS (46 percent reduction), and Old Mtn Allotment was reduced down to 339 AUMS (30 percent reduction). Grazing permittees filed appeals of the District Managers Decision to Office of Hearings and Examiners (now called Office of Hearings and Appeals). On Oct. 11, 1963 the Hearing Examiner issued a decision basically affirming the District Manager's decision with slight modification with respect to calculation of the carrying capacity. Grazing permittees filed appeals of the Hearing Examiner's decision to the Director of the BLM. On Aug. 31, 1964 the Director affirmed the Hearing Examiner's decision, with exception of the modification in grazing capacity calculation, and placed the decision in full force and effect (eliminated the staggered reduction over a three-year period).

In the early 1960s BLM began to realize the need for rotational grazing on the Roan Cliffs and that reductions alone would not be enough to resolve the problems. In an effort to resolve grazing management problems and provide the infrastructure to carry out rotational grazing, BLM with cooperation from Dept. of Navy and some grazing permittees, began aggressively constructing range improvements. The Dept. of Navy began contributing approx. \$30,000 per year for the development of surface resources on the Roan Cliffs. The Sec. of Interior and Dept. of Navy entered into a new cooperative agreement for managing NOSR 1 & 3 on Nov. 17, 1966 which gave broader authority for managing the surface resources. Under the agreement, expenditures by BLM in connection with management were to be funded by Dept. of Navy with the exception of fire suppression

The push for rotational grazing was apparently spearheaded by R. Keith Miller, the new District

Manager for the area. Allotment boundaries were fenced, interior pasture fencing was constructed, and many new water developments were built. It appears that the JQS Common Allotment was the first to start a rotational grazing system which began as a three-pasture system in 1964. Reconstruction and realignment of the JQS Trail also began in 1964 to improve administrative access to the top of the Roan Cliffs. The trail was completed in 1966 to allow access to the area by two wheel drive pickups.

The August 31, 1964 BLM Decision which imposed up to 61 percent reductions in grazing use was a hard-fought battle by BLM but left bitter feeling amongst grazing permittees. In the fall of 1964, it appears BLM suggested that some of the previous reductions imposed might be eliminated by development of grazing plans. In a Feb. 2, 1965 memo to the State Director, District Manager Keith Miller acknowledged the limits placed on grazing use by the 1964 Decision but felt bottoms will be little improved without a period of rest during the grazing season. Mr. Miller recommended adoption of a four-pasture rest rotation grazing for the area.

On February 26, 1965, Keith Miller and Charles E. Shannon had a meeting with all users of the Roan Cliffs. He explained his rest rotational concepts for the area and that adoption of such a grazing system could mitigate the reductions imposed by the 1964 Director's Decision. Four plans were proposed as follows:

Plan A. Plan A would involve dividing the entire top of the Roan Cliffs into four pastures and all permittees would graze in common;

Plan B. Plan B would combine the JQS and Anvil Point Allotments to establish a rest rotation system. The East Fork and Clough-Alber Allotment would be combined and each would be divided into two pastures to form a four-pasture rest rotation system.

Plan C. Plan C would allow for the JQS and Anvil Point users to establish their own four pasture rest rotation, the East Fork permittees would establish their own four pasture rest rotation system, and the Clough-Alber would be an individual allotment (no rotation).

Plan D. Plan D would involve separating the Clough-Alber Allotment so that one half could be incorporated into East Fork and separating East Fork into three pastures to make a four-pasture rest rotation system.

Although Plan A was voted down by most of the permittees, it didn't appear consensus could be reached on the remaining plans. Based on subsequent events it appears that some version of Plan C was implemented. East Fork apparently began implementation of a three-pasture rest rotation system in 1965. In 1965 the JQS and Anvil Points Allotments were combined and a four-pasture rest rotation system was implemented. Clough-Alber allotment was not divided into pastures and remains that way today. A review of records indicates that BLM did grant temporary nonrenewable use for East Fork in the amount of 1376 AUMS (total active AUMS of 2558) and for JQS in the amount of 1358 AUMS (total active AUMS of 3964). The temporary nonrenewable use was later incorporated as part of active preference in the late 1970s and early 1980s.

Management plans for the JQS Common Allotment resulted in a four-pasture rest rotation system which was documented in an AMP in 1965 and 1968. The system was revised in 1970 to a “modified” rest rotation where one pasture was rested, one pasture had season long use by yearling cattle, and the other two pastures were rotationally grazed by cow/calf pairs. Sheep grazed three of the grazed pastures but at different times from cow/calf use periods. The grazing system was changed in 1972 to a three-pasture rest rotation. A major revision of the plan occurred in 1975 resulting in more emphasis placed on objectives and grazing management with respect to fisheries, aquatic habitat, and riparian. Another complete revision of the AMP occurred in 1985 to help resolve livestock distribution problems, riparian issues, and carrying capacity concerns. The AMP changed the grazing system to a three pasture deferred rotation system with exception of sheep which were to be held in one pasture season-long. It was felt that previous systems which required complete rest of one pasture were placing additional burden on the grazed pastures especially in the bottoms and riparian areas.

In the late 1970s, jurisdiction of the Naval Oil Shale Reserves 1 & 3 (Roan Plateau) passed to Department of Energy. After that time, BLM’s management responsibilities for the area were often unclear and fairly limited. Several attempts were made to replace the 1966 agreement with Dept. of Navy after DOE assumed responsibility but met with failure. In 1986 the BLM Colorado State Director called negotiations to a close and began ending BLM management of the NOSR. The Director of BLM soon became involved and was able to help resolve the impasse which resulted in the approval of a new agreement between DOE and BLM. Although the new agreement allowed BLM’s continued management of certain resources and uses such as livestock grazing, the agreement constrained management of the area by instituting a custodial management objective for the area. Funding provided by DOE was often inadequate to manage the surface resources. Other aspects of surface management that are essential to a focused, objective-driven management approach, such as the preparation and implementation of land use plans/resource management plans, were also not funded by DOE. The factors above created a fragmented, haphazard approach to management of resource values and uses. Due to the unpredictable, year-to-year management scenario of the NOSR'S and inadequate funding, the NOSR continually received low priority for the BLM as an area to focus management attention.

In 1990 the boundary between the JQS and Trapper Pastures was changed. A new boundary fence between the two pastures was constructed along Cook Ridge to form the Trapper “Riparian” Pasture, and the old boundary fence along Northwater Creek was removed. It was felt that the old boundary fence along the creek bottom compounded the problem with cattle congregating along the creek, and the newly located fence was ideal for grazing management in the upper watershed of Trapper Creek.

As a result of an allotment evaluation and the concern of some permittees that the allotment may be overstocked, active grazing use was reduced by agreement from 3963 to 3170 AUMS in 1990. In June 1993, the JQS Common Allotment AMP was revised with a major emphasis on riparian. More detailed objectives were listed for riparian and desired plant community objectives were established for upland vegetation. One of the unique features of the AMP is that it required a grazing plan be developed annually but did list several conditions and parameters for the annual plan. It also required that a rider be present on the allotment each day to minimize grazing use in bottoms. New projects were proposed such as ponds, prescribed burning, and a

solar pump/pipeline. Many of these projects have been constructed. The plan still remains in effect today. Also in 1993 a conversion from cattle to sheep took place (40 head of cattle converted to 200 sheep for a total number of 1200 sheep). A great deal of effort during the 1990s was made by the permittees and BLM to maintain older water developments and fencing.

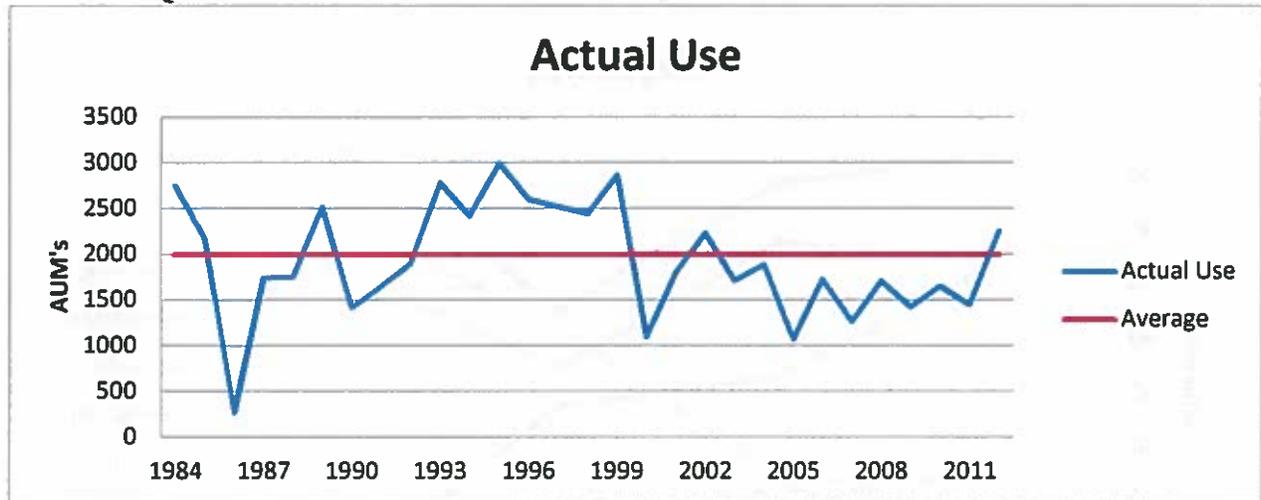
As part of the National Defense Authorization Act signed by President Clinton on Nov. 18, 1997, BLM assumed full responsibility for land management of the NOSR (Roan Plateau). Following the transfer of management, a resource management plan was prepared for the Roan Plateau. The primary reason for the plan was that the planning area has never been the subject of a coordinated planning process and is currently managed under the guidance of the DOE's Operational Management Plan, the 1988 Glenwood Springs Resource Area Plan.

In March 1997 the BLM issued the Record of Decision for the Colorado Public Land Health Standards and Guidelines for Livestock Grazing Management. In 1999 land health standards were determined to be marginally meeting for most of the Roan. Areas of concern were the streams where Properly Functioning Condition evaluations indicated that these areas were Functioning at Risk. Although many areas were not yet achieving the standards, most of the areas assessed had made significant progress relative to the earlier periods of management described above. A new land health evaluation was completed in 2013. This assessment found that many of the streams were in a static condition and had not made significant progress towards meeting the standards since the 1999 assessment. Further data collected through the Ecological Site Inventory method showed that many upland sites are dominated by brush species and grass production was much lower than expected. Forage production available to livestock was calculated to determine the amount of Animal Unit Months (AUMs) that could be available based on current production across the landscape.

SUMMARY OF USE AND MONITORING DATA.

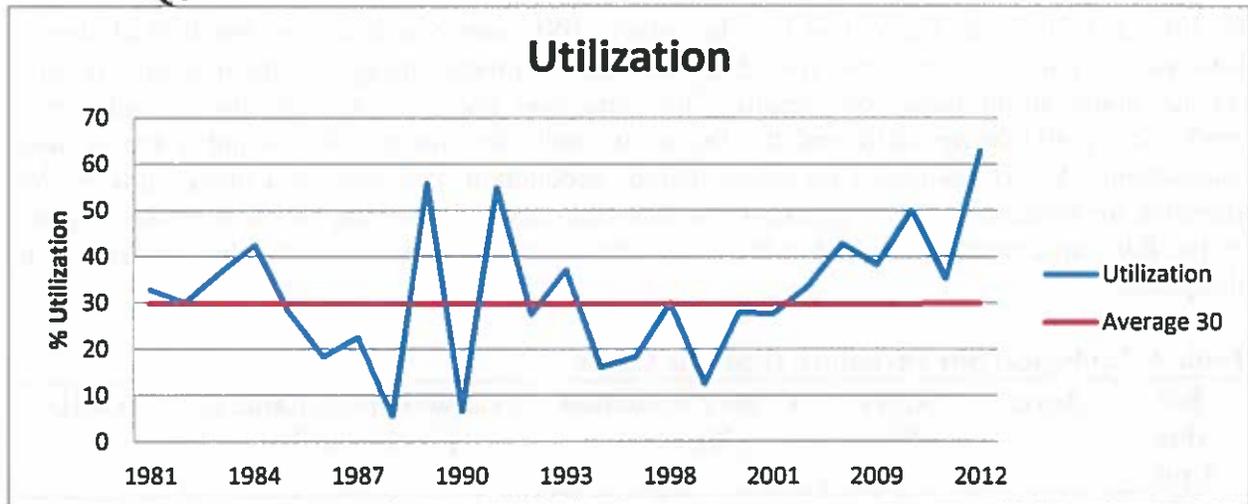
Grazing preference on the JQS Common Allotment has not been fully utilized based on a review of the billed use for the past 28 years beginning in 1984. Table 1 below summarizes actual billed use from 1984 to 2012:

Table 1. JQS Common Allotment Actual Billed Use from 1984 to 2012.



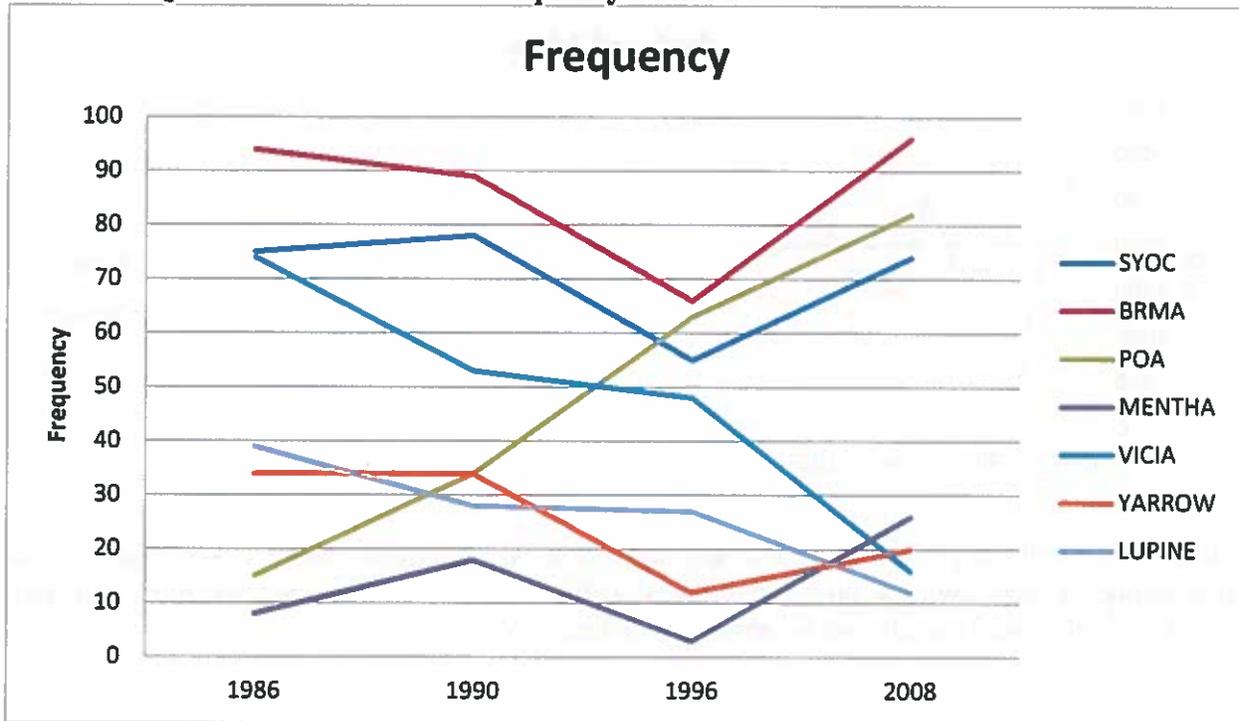
Utilization monitoring has occurred in key upland sites periodically since 1981. More recent monitoring has been focused on riparian areas. Table 2 below summarizes utilization averaged across several upland monitoring locations for different years.

Table 2. JQS Common Allotment Utilization Data.



Trend monitoring has occurred at Key upland sites. One measure of trend is how frequently a plant appears throughout the study transect. Table 3 summarizes the results of one of the studies conducted on the JQS allotment on Long Ridge. Identifiable trends are the general increase in Poa species (bluegrasses) and the general decrease in forbs (Vicia, Mentha, Yarrow, Lupine). Kentucky bluegrass is most likely the Poa species identified in the frequency studies. Kentucky bluegrass is an increaser on rangelands with heavy grazing use. It appears that a key grass species mountain brome (BRMA), and snowberry (SYOC) have remained at static levels.

Table 3. JQS Common Allotment Frequency Trend Data.



In 2012 and 2013, an Ecological Site Inventory (ESI) was completed on the JQS allotment. Information gathered from the ESI data included estimated forage production and relative species composition based on weight. This data was used to calculate the annual forage production available for cattle and the forage available for sheep. Table 4 and 5 shows these calculations. AUMs calculated for sheep include production of grasses and forbs while AUMs available for cattle is based on grasses only. The ESI data and potential cuts in numbers or dates on the JQS cattle permits resulted in the cattle permits on the JQS allotment being transferred to sheep use.

Table 4. Ecological Site Inventory (ESI) for Cattle.

Soil Map Unit	Acres	Acres >50%	Grass Production (lbs/acre)	Production Available to Livestock (lbs)	AUMs
36	1,181	81	340	130,900	164
37	216	45	340	20,349	25
38	621	71	229	44,083	55
48	2,513	133	371	309,043	386
53	4,272	203	471	670,775	838
60	1,060	106	295	98,501	123
61	15	7	295	826	1
63	150	6	533	26,863	34
Rock	429	86	0	0	0
Total	10,457	738		1,301,339	1,627

Table 5. Ecological Site Inventory (ESI) for Sheep.

Soil Map Unit	Acres	Acres >50%	Grass & Forb Production (lbs/acre)	Production Available to Livestock (lbs)	AUMs
36	1,181	81	783	301,455	377
37	216	45	783	46,863	59
38	621	71	338	65,065	81
48	2,513	133	1,294	1,077,902	1,347
53	4,272	203	995	1,417,029	1,771
60	1,060	106	1,726	576,311	720
61	15	7	1,726	4,833	6
63	150	6	2,342	118,037	148
Rock	429	86	0	0	0
Total	10,457	738		3,607,495	4,509

Other photo trend monitoring has been conducted on the JQS allotment, mostly in riparian areas. More recent monitoring in riparian areas has been conducted using the Multiple Indicator Method (MIM). Data collected from MIM monitoring has been focused on gathering more quantitative data on stream bank alteration as well as bank stability and relative species composition.

PROPOSED ACTION.

The Proposed Action would result in the JQS allotment being changed from 3 cattle permits and 1 sheep permit to 2 sheep permits. There would be no reduction in the total permitted use (AUMs) on the allotment. This action would implement a new allotment management plan (AMP) for the JQS allotment with resource objectives and management prescriptions to meet those objectives. The aim of the JQS AMP involves improving the condition of riparian areas and adjacent upland terraces and developing a rotational grazing system that promotes plant health by providing for periodic rest from grazing during critical growth periods, adequate recovery and regrowth periods, and opportunity for seed dissemination and seedling establishment. A description of these actions has been included in the AMP which is attached as Appendix 1. No changes are proposed on the Porcupine Common or Spruce Gulch Common allotments. The new permits will be issued for a 10-year period. The proposed action is in accordance with 43 CFR 4130.2. Scheduled grazing use, grazing preference, and terms and conditions for the proposed grazing permits are summarized below.

Table 6. Proposed Grazing Schedules in Proposed Action.

Permittee	Allotment	Livestock Number	Livestock Kind	Begin Date	End Date	% AUMs on BLM	AUMs
Hill	JQS Common	2,000	Sheep	6/1	10/30	100	1999
		2,525	Sheep	9/15	10/30	100	764
Bair	JQS Common	1,000	Sheep	6/1	7/1	100	204
		1,000	Sheep	10/1	10/30	100	197

Savage	Porcupine Common	195	Cattle	5/16	6/15	84	167
		11	Cattle	6/16	9/30	84	33
		70	Cattle	10/1	10/15	84	29
	Spruce Gulch Common	196	Cattle	5/16	6/30	38	113
		25	Cattle	10/1	10/30	38	9

Table 7. Permitted Use in Proposed Action.

Operator Name	Allotment	Active	Suspended	Total
Savage	Porcupine	229	149	378
	Spruce Gulch	123	0	123
Hill	JQS Common	2,764	1,988	4,749
Bair	JQS Common	401	0	401
TOTAL for JQS Common		3,165	-	-

Terms and Conditions Included on All Grazing Permits.

1. Maintenance of range improvements is required and shall be in accordance with all approved cooperative agreements and range improvement permits. Maintenance shall be completed prior to turnout. Maintenance activities shall be restricted to the footprint (previously disturbed area) of the project as it existed when it was initially constructed. The Bureau of Land Management shall be given 48 hours advance notice of any maintenance work that will involve heavy equipment. Disturbed areas will be reseeded with a certified weed-free seed mixture of native species adapted to the site.
2. The permittee and all persons associated with grazing operations must be informed that any person who injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law. If in connection with allotment operations under this authorization any of the above resources are encountered, the proponent shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM authorized officer of the findings. The discovery must be protected until further notified in writing to proceed by the authorized officer.

Terms and Conditions Included on JQS Grazing Permits Only.

1. Grazing management on the JQS Common Allotment will be in accordance with the 2014 JQS Common Allotment Management Plan (AMP). An actual use report shall be submitted to the BLM office no later than Nov 15 annually.
2. Administrative access on routes identified as "Foot/Horse Trail" will be allowed from June 1 to August 25 and should only be utilized for the maintenance of assigned range

improvement projects. Motorized administrative access on “Foot/Horse Trail” routes for grazing operation after August 25th will require the permit holder to seek and receive prior authorization from an authorized BLM officer.

3. New range improvements, maintenance of existing range improvements, or additional feeding areas may require cultural resource inventories, monitoring, and/or data recovery.
4. Grazing in riparian areas by livestock should leave an average minimum 4-inch stubble height of herbaceous vegetation and should not exceed an average utilization of 40% of the current year’s growth for browse species. Within the uplands, livestock utilization will be limited to 50% by weight on key grass species. If utilization is approaching allowable use levels, livestock will be moved to another portion of the allotment, moved to the next scheduled pasture or removed immediately from the allotment.

Terms and Conditions Included on Porcupine and Spruce Gulch Grazing Permit Only.

1. Within the uplands, average livestock utilization levels will be limited to 50% by weight on key grass species. Livestock will be moved to another portion of the allotment or removed immediately from the allotment when the upland utilization levels occur.

Grazing Use Currently Authorized. Three other grazing permits exist on these allotments but are not up for renewal at this time. They are included as part of the analysis.

Table 8. Other Existing Grazing Schedules.

Operator Name	Auth. No.	Allotment	Livestock Number	Livestock Kind	Begin Date	End Date	% AUMs on BLM	AUMs
Farris	0500001	Porcupine	49	Cattle	5/07	6/20	100	72
Farris	0503869	Porcupine	29	Cattle	5/07	6/20	100	43
Mackley	0507516	Spruce Gulch	14	Cattle	5/15	9/30	80	51

NO ACTION ALTERNATIVE.

The No Action Alternative is to reissue four grazing permits with the following terms and conditions. These are the existing terms and conditions with no changes. The JQS Common Allotment AMP established in 1993 will still be in effect. No new terms and conditions will be added to the existing list of other terms and conditions. The permits will be issued for a 10-year period. This action is in accordance with 43 CFR 4130.2. Other existing grazing use authorized in Table 8 would continue as currently authorized. Scheduled grazing use, grazing preference, and terms and conditions for the grazing permits are summarized below. Other use authorized on the Porcupine Common and Spruce Gulch Common Allotments would continue to be authorized as described in the Proposed Action (See Table 8).

Table 9. Existing Grazing Schedules.

Operator Name	Auth. No.	Allotment	Livestock Number	Livestock Kind	Begin Date	End Date	% AUMs on BLM	AUMs
Savage	0507632	JQS Common	387	Cattle	6/16	9/30	100	1,361
		Porcupine	195	Cattle	5/16	6/15	84	167
			11	Cattle	6/16	9/30	84	33
			70	Cattle	10/1	10/15	84	29
		Spruce Gulch	196	Cattle	5/16	6/30	38	113
			25	Cattle	10/1	10/30	38	9
Robinson	0507607	JQS Common	1,200	Sheep	6/16	9/30	100	844
TyBar	0500228	JQS Common	159	Cattle	6/16	9/30	100	559
Jensen	0503703	JQS Common	114	Cattle	6/16	9/30	100	401

Table 10. Permitted Use.

Operator Name	Auth. No.	Allotment	Active	Suspended	Total
Savage	0507632	JQS Common	1,362	1,147	2,509
		Porcupine	229	149	378
		Spruce Gulch	123	0	123
Robinson	0507607	JQS Common	844	636	1480
TyBar	0500228	JQS Common	561	205	766
Jensen	0503703	JQS Common	403	305	708
TOTAL for JQS Common			3,170	-	-

Existing Terms and Conditions Common to All Authorizations.

1. Maintenance of range improvements is required and shall be in accordance with all approved cooperative agreements and range improvement permits. Maintenance shall be completed prior to turnout.
2. Administrative access on routes identified as "Foot/Horse Trail" will be allowed from June 1 to August 25 and should only be utilized for the maintenance of assigned range improvement projects. Motorized administrative access on "Foot/Horse Trail" routes for

grazing operation after August 25th will require the permit holder to seek and receive prior authorization from an authorized BLM officer.

Existing Terms and Conditions for Authorization #0507632.

1. No other terms and conditions are attached.

Existing Terms and Conditions for Authorization #0507607.

1. Grazing use on the JQS Common Allotment shall be in accordance with the allotment management plan approved on June 18, 1993 and subject to the grazing use agreement executed on March 15, 1990. An actual use report shall be submitted annually to the BLM office no later than 15 days after livestock have been removed from the allotment (i.e. the grazing end period on the bill or permit/lease).
2. The operator is responsible for informing all persons who are associated with the allotment operations that if historic or archaeological material are discovered during any allotment activities and/or grazing activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer whether the materials appear to be eligible for the National Register of Historic Places and the mitigation measures the operator will have to undertake before the identified area can be used for grazing activities again.
3. Grazing in riparian areas by livestock should leave an average minimum 4-inch stubble height of herbaceous vegetation and should not exceed an average utilization of 40% of the current year's growth for browse species. Within the uplands, average livestock utilization levels will be limited to 50% by weight on key grass species. Livestock will be moved to another portion of the allotment, moved to the next scheduled pasture, or removed immediately from the allotment when the above utilization levels occur.

Existing Terms and Conditions for Authorization #0500228.

1. Grazing use on the JQS Common Allotment shall be in accordance with the allotment management plan approved on June 18, 1993 and subject to the grazing use agreement executed on March 15, 1990. An actual use report shall be submitted annually to the BLM office no later than 15 days after livestock have been removed from the allotment (i.e. the grazing end period on the bill or permit/lease).
2. The operator is responsible for informing all persons who are associated with the allotment operations that if historic or archaeological material are discovered during any allotment activities and/or grazing activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer whether the materials appear to be eligible for the National Register of Historic Places and the mitigation measures the operator will have to undertake before the identified area can be used for grazing activities again.

3. Grazing in riparian areas by livestock should leave an average minimum 4-inch stubble height of herbaceous vegetation and should not exceed an average utilization of 40% of the current year's growth for browse species. Within the uplands, average livestock utilization levels will be limited to 50% by weight on key grass species. Livestock will be moved to another portion of the allotment, moved to the next scheduled pasture, or removed immediately from the allotment when the above utilization levels occur.
4. Salt, mineral block and supplemental feed will be placed a minimum of 0.25 miles and preferably 0.5 miles from riparian areas and other water sources, including springs. The permittee should take note of the possible presence of cultural and historic resources and locate salt, mineral block and supplemental feed to avoid such locations.

Existing Terms and Conditions for Authorization #0503703.

1. Grazing use on the JQS Common Allotment shall be in accordance with the allotment management plan approved on June 18, 1993 and subject to the grazing use agreement executed on March 15, 1990. An actual use report shall be submitted annually to the BLM office no later than 15 days after livestock have been removed from the allotment (i.e. the grazing end period on the bill or permit/lease).
2. The operator is responsible for informing all persons who are associated with the allotment operations that if historic or archaeological material are discovered during any allotment activities and/or grazing activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer whether the materials appear to be eligible for the National Register of Historic Places and the mitigation measures the operator will have to undertake before the identified area can be used for grazing activities again.
3. Grazing in riparian areas by livestock should leave an average minimum 4-inch stubble height of herbaceous vegetation and should not exceed an average utilization of 40% of the current year's growth for browse species. Within the uplands, average livestock utilization levels will be limited to 50% by weight on key grass species. Livestock will be moved to another portion of the allotment, moved to the next scheduled pasture, or removed immediately from the allotment when the above utilization levels occur.
4. Pursuant to 43 CFR 10.4(G), the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(C) and (D), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.
5. Additional stipulations may be required over the term of the permit if new cultural sites are identified that have the potential to be adversely impacted from livestock grazing, or if Native American concerns need to be addressed.
6. If an assessment of rangeland health results in a determination that changes are necessary in order to comply with the standards for public land health and the guidelines for

livestock grazing management in Colorado, this permit will be reissued subject to revised terms and conditions.

NO GRAZING ALTERNATIVE.

Under this alternative the grazing permits described in the Proposed Action alternative would be cancelled. As a result, no cattle or sheep grazing would be authorized on the JQS Common, Porcupine Common, or Spruce Gulch Common allotments. This alternative would initiate the process in accordance with 43 CFR parts 4100 and 1600 to eliminate grazing on these allotments and would amend the resource management plan.

REDUCED AUMs GRAZING ALTERNATIVE.

This alternative would result in a 25% reduction in authorized use for the 2 sheep permits on the JQS Common Allotment resulting in a total permitted use of 2,375 AUMs. The resulting use and grazing preference would be modified as shown in Tables 11 and 12. The JQS Common Allotment AMP described in the proposed action and attached as Appendix 1 would continue to be implemented. The same terms and conditions applied in the proposed action would be applied in this action. Use previously authorized on the Porcupine Common and Spruce Gulch Common Allotments would continue as previously authorized. The permits will be issued for a 10-year period. This action is in accordance with 43 CFR 4130.2. Scheduled grazing use, grazing preference, and terms and conditions for the grazing permits are summarized below.

Table 11. Reduced Grazing Schedules.

Permittee	Allotment	Livestock Number	Livestock Kind	Begin Date	End Date	Public Land %	AUMs
Hill	JQS Common	2,074	Sheep	6/1	10/30	100	2,075
Bair	JQS Common	750	Sheep	6/1	7/1	100	153
		750	Sheep	10/1	10/30	100	148
Savage	Porcupine Common	195	Cattle	5/16	6/15	84	167
		11	Cattle	6/16	9/30	84	33
		70	Cattle	10/1	10/15	84	29
	Spruce Gulch Common	196	Cattle	5/16	6/30	38	113
		25	Cattle	10/1	10/30	38	9

Table 12. Reduced Grazing Preference AUMS.

Operator Name	Allotment	Active	Suspended	Total
Savage	Porcupine	229	149	378
	Spruce Gulch	123	0	123
Hill	JQS Common	2,075	2,674	4,749
Bair	JQS Common	301	101	401
TOTAL FOR JQS Common		2,376	-	-

Terms and Conditions Included on All Grazing Permits.

1. Terms and conditions identified in the Proposed Action would also apply to this alternative.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL.

No other alternatives were considered in detail.

PLAN CONFORMANCE REVIEW.

The proposed action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan. Glenwood Springs Resource Management Plan

Date Approved. Jan. 1984, revised 1988, amended in November 1991 - Oil and Gas Leasing and Development - Final Supplemental Environmental Impact Statement; amended Nov. 1996 - Colorado Standards and Guidelines; amended in August 1997 - Castle Peak Travel Management Plan; amended in March 1999 - Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement; amended in November 1999 - Red Hill Plan Amendment; and amended in September 2002 - Fire Management Plan for Wildland Fire Management and Prescriptive Vegetation Treatment Guidance; amended in September 2009; and amended in October 2012 - Approved Resource Management Plan Amendments/ Record of Decision (ROD) for Solar Energy Development in Six Southwestern States.

- The Proposed Action is in conformance ^{with} the LUP because it is specifically provided for in the following LUP decision(s):

RELATIONSHIP TO STATUTES, REGULATIONS, OTHER PLANS.

- Taylor Grazing Act of 1934 as amended;
- Federal Land Policy and Management Act of 1976;
- Public Rangelands Improvement Act of 1978;
- Title 43 of the Code of Federal Regulations Subpart 4100 – Grazing Administration;
- Noxious Weed Act of 1974;
- Endangered Species Act of 1973;
- National Environmental Policy Act of 1969;
- Migratory Bird Treaty Act of 1918;
- National Historic Preservation Act (16 USC 470f);
- Archeological Resources Protection Act;
- Native American Graves Protection and Repatriation Act;
- Indian Sacred Sites – EO 13007; and
- Consultation and Coordination with Indian Tribal Governments – EO 13175
- Colorado Public Health Standards and Livestock Grazing Management Guidelines - March 1997

STANDARDS FOR PUBLIC LAND HEALTH.

In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. The five standards pertain to the ecological health of: upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands.

A formal land health assessment was conducted in the Roan Cliffs Watershed in 1999 which included the JQS Common allotment. The allotment was considered to be meeting or making progress towards meeting all the standards at the time of the assessment, with the exception of the Parachute penstemon population at the Anvil Rim site which had experienced a sharp decline since first being discovered in 1991. Livestock grazing was not considered a causal factor in the decline since there was no evidence of livestock grazing within the occupied habitat.

A new land health assessment was conducted on the Roan Cliffs in 2013. The assessment focused on riparian area conditions, since prolonged livestock use in riparian areas continues to be a concern. Quantitative data gathered regarding riparian areas included species composition, stubble height, and bank alteration. Riparian Proper Functioning Condition assessment forms were also completed. Trend photos have been repeated at various upland and riparian sites. Upland monitoring has included trend, utilization, and ecological site inventory. These data were analyzed to determine current conditions relative to the 5 Standards. The assessment found that approximately 44% of riparian stream miles in the JQS Common Allotment were not meeting Standard 2. Less than 10% of the upland areas were not meeting for Standard 1, 3 or 4 (BLM, 2014).

Porcupine Common and Spruce Gulch Common allotments are located within the Rifle West Landscape which was assessed in 2004 (BLM 2005). Porcupine Common and Spruce Gulch Common were considered to be meeting all the standards except Standard 3 for wildlife species due to habitat fragmentation and habitat loss associated with oil and gas activities.

The impact analysis addresses whether the proposed action or any alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions for each of the five standards. These analyses are located in the program-specific analysis in this document.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.

This section provides a description of the human and natural environmental resources that could be affected by the proposed action and alternatives. In addition, the section presents comparative analyses of the direct and indirect consequences on the affected environment stemming from the implementation of the various actions.

A variety of laws, regulations, and policy directives mandate the evaluation of the effects of a proposed action and alternative(s) on certain environmental elements. Not all programs, resources or uses are present in the area, or if they are present, may not be affected by the proposed action and alternatives (Table 13). Only those elements that are present and potentially affected are described and brought forth for detailed analysis

Table 13. Programs, Resources, and Uses (Including Supplemental Authorities)

Programs, Resources, and Uses	Potentially Affected?	
	Yes	No
Access and Transportation		X
Air Quality		X
Areas of Critical Environmental Concern		X
Cadastral Survey		X
Cultural Resources	X	
Native American Religious Concerns	X	
Environmental Justice		X
Farmlands, Prime or Unique		X
Fire/Fuels Management		X
Floodplains		X
Forests		X
Geology and Minerals		X
Law Enforcement		X
Livestock Grazing Management	X	
Noise		X

Paleontology		X
Plants: Invasive, Non-native Species (Noxious Weeds)	X	
Plants: Sensitive, Threatened, or Endangered	X	
Plants: Vegetation	X	
Realty Authorizations		X
Recreation		X
Social and/or Economics	X	
Soils	X	
Visual Resources		X
Wastes, Hazardous or Solid		X
Water Quality, Surface and Ground	X	
Water Rights		X
Wetlands and Riparian Zones	X	
Wild and Scenic Rivers	X	
Wilderness/WSAs/Wilderness Characteristics	X	
Wildlife: Aquatic / Fisheries	X	
Wildlife: Migratory Birds	X	
Wildlife: Sensitive, Threatened, and Endangered Species	X	
Wildlife: Terrestrial	X	

CULTURAL RESOURCES

AFFECTED ENVIRONMENT.

Grazing authorization renewals are undertakings under Section 106 of the National Historic Preservation Act. During Section 106 review, a cultural resource assessment (CRVFO#1014-13) was completed for the JQS Common, Porcupine Common, and Spruce Gulch Common allotments on March 13, 2014 by Erin Leifeld, Colorado River Valley Field Office Archaeologist. The assessment followed the procedures and guidance outlined in the 1980 National Programmatic Agreement Regarding the Livestock Grazing and Range Improvement Program, IM-WO-99-039, IM-CO-99-007, IM-CO-99-019, and IM-CO-01-026. The results of the assessment are summarized in the table below. Copies of the cultural resource assessments are available at the Colorado River Valley Field Office archaeology files.

Data developed here was taken from the cultural program project report files, site report files, and base maps filed at the Colorado River Valley Field Office as well as information from General Land Office (GLO) maps, BLM land patent records, and the State Historic Preservation Office (SHPO) site records, report records, and GIS data.

Table 14 is based on the allotment specific analysis for the three allotments in this EA. The table shows known cultural resources, the potential of Historic Properties, and Management recommendations.

Table 14. Cultural Resources Assessment Summary.

Allotment Name and Number	Land Status	Acres Inventoried at a Class III level	Acres NOT Inventoried at a Class III Level	Percent Allotment Inventoried at a Class III Level (%)	Number of Cultural Resources known in Allotment	Potential of Historic Properties	Management Recommendations (Additional inventory required and historic properties to be visited)
JQS Common #18908	BLM	6,927.5	3,514.6	66.3%	88	Moderate	Additional Inventory of 41.6 acres; Monitor a portion of eligible sites (see narrative)
Porcupine Common #08119	BLM	583.5	1342	30.3%	36	Moderate	No additional inventory; Monitor two sites (5GF.1233 & 5GF.3755)
	Private	80.1	211.1	27.5%			
Spruce Gulch Common #08121	BLM	1217.8	498	70.9%	28	Moderate	Additional inventory of 6 acres; Monitor one site (5GF.4060)
	Private	365.1	910.7	28.6%			

A total of 20 cultural resource inventories (CRVFO CRIR# 68, 200, 224, 236, 253, 380, 786, 1047, 1048, 1069, 1075, 1134, 9408, 9413, 1012-32, 1095-17, 1095-25, 1111-18, 1112-12, 8396-1 a&b) have been previously conducted within the JQS Common Allotment #18908 resulting in the survey coverage of 6,927.5 acres at a Class III level. Eighty-eight cultural resources have been documented with these inventories. There are a total of 36 prehistoric cultural resources, of which, 11 are open camps and open lithic sites (5GF.32, 5GF.40, 5GF.53, 5GF.60, 5GF.64, 5GF.88, 5GF.89, 5GF.90, 5GF.92, 5GF.2223, 5GF.2225) which are eligible; three are open camps sites (5GF.29, 5GF.31, 5GF.2218) which are needs data; and 22 are open camps and open lithic sites which are not eligible for the National Register of Historic Places (NRHP). There are a total of 16 historic sites, of which, one (5GF.1271) is an eligible historic livestock trail dating to 1885. Fifteen historic sites (5GF.2229, 5GF.2216, 5GF.2215, 5GF.432, 5GF.865, 5GF.1463, 5GF.2413, 5GF.4681, 5GF.4682, 5GF.2410, 5GF.2242, 5GF.2236, 5GF.2012, 5GF.431) are not eligible for the NRHP and include aspen art, cabins, and fences. Two sites are multicomponent sites; one is a historic ditch and prehistoric open lithic site (5GF.36) that is needs data for the NRHP and one is a historic sheep camp and prehistoric open camp (5GF.77) that is not eligible for the NRHP. Additionally, there is one historic isolated find and 32 prehistoric isolated finds all of which are not eligible for the NRHP. Looking at the historic GLO map of T5S R94W from 1890 shows no potential for historic sites and the map from 1918 shows a historic corral, trail, and cabins, although all of these features have been documented except the trail. In T6S R94W the historic maps from 1890 and 1916 show no potential for historic sites. In T6S R95W the historic maps from 1890, 1895, and 1923 also show no potential for historic sites. No areas were identified in the previous assessment for inventory or monitoring.

Within the Porcupine Common Allotment #08119 a total of 34 cultural resource inventories (CRVFO CRIR# 902, 1092, 1114, 1148, 1161, 1174, 1175, 1217, 1281, 9451, 9452, 94102,

94103, 94109, 1004-28, 1100-5, 1104-4, 1100-5, 1107-34, 1109-1, 1111-33, 129-1, 1295-2, 16908-1, 16909-1, 16911-1, 5402-6, 5406-6A, 5497-5, 5499-6, 9496A, 9496B) have been previously conducted resulting in the survey coverage of 663.7 acres at a Class III level. A total of 9 prehistoric sites and 6 historic sites have been documented within the allotment. Of the prehistoric sites, two sites (5GF.1233 & 5GF.3755) are eligible, two sites (5GF.3752 & 5GF.3753) are needs data, and five sites (5GF.3541, 5GF.1329, 5GF.1750, 5GF.4516, 5GF.2058) are not eligible for the National Register of Historic Places (NRHP). Of the historic sites, six sites (5GF.4548, 5GF.4560, 5GF.3750, 5GF.3751, 5GF.2739.1, 5GF.2739.2) are not eligible for the NRHP. Additionally, 17 cultural resources are prehistoric isolated finds and four are historic isolated finds all of which are not eligible for the NRHP. Looking at the historic GLO map of T7S R94W from 1890 and 1913 shows no potential for historic sites. No areas were identified in the previous assessment for inventory or monitoring.

A total of 24 cultural resource inventories (CRVFO CRIR# 406, 769, 778, 870, 902, 1114, 1161, 1174, 1175, 1295, 1004-28, 1006-20, 1006-20, 1104-4, 1107-34, 1108-13, 1109-8, 1111-34, 1111-8, 14508-1, 16909-1, 5404-10, 5406-6A, 5498-5) have been conducted within the Spruce Gulch Common Allotment #08121 resulting in the survey coverage of 1,582.9 acres at a Class III level. A total of 28 cultural resources have been documented within the allotment. Two cultural resources are prehistoric open camps, one of which (5GF.4060) is eligible and one (5GF.4144) is not eligible for the National Register of Historic Places (NRHP). Eight cultural resources are historic and include three historic ditch segments (5GF.4162.1-3) which are eligible for the NRHP. Three historic sites are structures that include a corral (5GF.1300), a dugout (5GF.1301), and a cabin with barn (5GF.1322); one is a historic rock pile (5GF.4069); and one is a historic fence post cache (5GF.4065) all of which are not eligible for the NRHP. One site is a multicomponent site (5GF.875) which is a historic homestead and a prehistoric open camp site which is eligible for the NRHP. Additionally, there are 17 prehistoric isolated finds that range from projectile points, bifaces, manos, and debitage which are not eligible for the NRHP. Looking at the historic GLO map of T7S R94W from 1980 shows no potential for historic sites. The historic map from 1913 shows some potential for historic sites near a pond on BLM land and near a road on private land. No areas were identified in the previous assessment for inventory or monitoring.

ENVIRONMENTAL CONSEQUENCES.

The direct impacts that occur where livestock concentrate, during normal livestock grazing activity, can include trampling, chiseling, artifact breakage, and churning of site soils, cultural features, and cultural artifacts. Impacts from livestock standing, leaning, and rubbing against historic structures, above-ground cultural features, and rock art can also have direct impacts to cultural resources. Indirect impacts include soil erosion and gullying, which can lead to increased ground visibility which has the potential to increase unlawful collection and vandalism. Continued livestock use in these concentration areas has the potential to cause substantial ground disturbance and in turn, irreversible adverse effects to historic properties.

Based on the affected environment narrative, portions of allotments may require additional inventory in areas livestock concentrate, areas of known historic activity, or monitoring of known cultural resources. Within the JQS Common Allotment, a portion of 41.6 acres of

inventory is recommended to be completed around stock ponds that have never been inventoried. Additionally, a portion of the eligible sites within the JQS Common Allotment is also recommended to be monitored (5GF.32, 5GF.40, 5GF.53, 5GF.60, 5GF.64, 5GF.88, 5GF.89, 5GF.90, 5GF.92, 5GF.2223, 5GF.2225). Additionally, no area needs to be inventoried within the Porcupine Common allotment and two eligible sites (5GF.1233 & 5GF.3755) are recommended to be monitored. Finally, in the Spruce Gulch Common allotment a total of 6 acres is recommended to be inventoried around a spring and pond. Additionally, one site (5GF.4060) is recommended to be monitored.

Proposed Action. *JQS Common Allotment.* Changes in livestock kind proposed for the JQS Common Allotment in this alternative will not likely change ground disturbing impacts to cultural resources because the total AUMs will stay the same. Extending the grazing period for sheep within the JQS Common Allotment has some potential to impact cultural resources due to extended ground disturbance from livestock. Additionally, having condensed use of the allotment in the fall has the potential to create more ground disturbing impacts due to more animals in a shorter amount of time. Assuring that utilization in the JQS Common Allotment does not exceed minimum stubble height or average pasture utilization may be beneficial to lessen ground disturbance and therefore livestock will not be grazing to the point where soils are more exposed or more susceptible to erosion. Utilizing a rest-rotation schedule will also help minimize ground disturbing impacts where livestock concentrate by ensuring there is appropriate forage and areas around water sources or salting locations do not experience heavy trampling.

Porcupine Common and Spruce Gulch Common Allotments. Continuing use with no changes in the Porcupine Common and Spruce Gulch Common Allotments should not change the current condition of cultural resources within these allotments.

No Action Alternative. *All Allotments.* Under this alternative, no new changes would be proposed to livestock kind, season of use, or duration of use within the three allotments. Likely no new disturbances to cultural resources will occur from this continued use.

No Grazing Alternative. *All Allotments.* Under this alternative, direct and indirect impacts to cultural resources from grazing would be reduced based on the absence of livestock and no related surface disturbing activities.

Reduced AUMs Grazing Alternative. *JQS Common Allotment.* Under this alternative, there is a 25% reduction in authorized use for the sheep permits on the JQS Common Allotment with all other changes following the Proposed Action alternative. This would be beneficial to cultural resources by reducing the number of AUMs on the JQS Common Allotment and therefore, helping to reduce the potential for ground disturbance related to grazing. Extending the grazing period for sheep within the JQS Common Allotment has some potential to impact cultural resources due to extended ground disturbance from livestock. Assuring that utilization in the JQS Common Allotment does not exceed minimum stubble height or average pasture utilization limits may be beneficial to lessen ground disturbance and therefore livestock will not be grazing to the point where soils are more exposed or more susceptible to erosion.

Porcupine Common and Spruce Gulch Common Allotments. Continuing use with no changes in the Porcupine Common and Spruce Gulch Common allotments should not change the current condition of cultural resources within these allotments.

NATIVE AMERICAN RELIGIOUS CONCERNS

AFFECTED ENVIRONMENT.

American Indian religious concerns are legislatively considered under the American Indian Religious Freedom Act of 1978 (PL 95-341), the Native American Graves Environmental Assessment Protection and Repatriation Act of 1990 (PL 101-601), and Executive Order 13007 (1996; Indian Sacred Sites). These require, in concert with other provisions such as those found in the NHPA and Archaeological Resources Protection Act (ARPA), that the federal government carefully and proactively take into consideration traditional and religious Native American culture and life. This ensures, to the degree possible, that access to sacred sites, the treatment of human remains, the possession of sacred items, the conduct of traditional religious practices, and the preservation of important cultural properties are considered and not unduly infringed upon. In some cases, these concerns are directly related to “historic properties” and “archaeological resources”. In other cases, elements of the landscape without archaeological or other human material remains may be involved. Identification of these concerns is normally completed during the land use planning efforts, reference to existing studies, or via direct consultation.

The Ute have a generalized concept of spiritual significance that is not easily transferred to Euro-American models or definitions. The BLM recognizes that the Ute have identified sites that are of concern because of their association with Ute occupation of the area as part of their traditional lands. The cultural resource evaluation of these allotments describing known cultural resources and their condition was sent to the Southern Ute Indian Tribe, Ute Mountain Ute Tribe, and the Uinta and Ouray Agency Ute Indian Tribe. The letter, sent on April 8, 2014, requested the tribes to identify issues and areas of concern within the allotments. No comments were received.

ENVIRONMENTAL CONSEQUENCES.

Proposed Action. No traditional cultural properties, unique natural resources, or properties of a type previously identified as being of interest to local tribes, were identified during the overview of the cultural resources inventory of the project area. Therefore, areas of concern to Native American tribes will not be affected.

No Action Alternative. No traditional cultural properties, unique natural resources, or properties of a type previously identified as being of interest to local tribes, were identified during the overview of the cultural resources inventory of the project area. Therefore, areas of concern to Native American tribes will not be affected.

No Grazing Alternative. Under this alternative, direct and indirect impacts to cultural resources from grazing would be reduced based on the absence of livestock and no related surface

disturbing activities. Therefore, areas of concern to Native American tribes would not be affected.

Reduced AUMs Grazing Alternative. No traditional cultural properties, unique natural resources, or properties of a type previously identified as being of interest to local tribes, were identified during the overview of the cultural resources inventory of the project area. Therefore, areas of concern to Native American tribes will not be affected.

LIVESTOCK GRAZING MANAGEMENT

AFFECTED ENVIRONMENT.

JQS Common Allotment. The JQS Common Allotment, consisting of 10,458 acres, is located on the Roan Plateau north of First Anvil Creek and south of Trappers creek; Township 5 & 6 South Range 94 & 95 West. The allotment lies within Garfield County approximately 10 miles northwest of Rifle. The allotment ranges in elevation from 8,100 to 9,300 feet and averages 20 inches of precipitation a year. Common vegetation types include aspen, conifer, mountain shrub and sagebrush.

Porcupine Common and Spruce Gulch Common Allotments. The Porcupine Common and Spruce Gulch Common allotments lie southwest of the town of Rifle, CO and south of the Colorado River on north-facing slopes. Elevations range from approximately 5,400 feet to 8,600 feet. Vegetation within the allotments is dominated by pinyon-juniper woodlands and sagebrush parks at lower elevations transitioning to Gambel oak/mesic mountain shrub dominated communities at higher elevations.

ENVIRONMENTAL CONSEQUENCES.

Proposed Action. *JQS Common Allotment.* The Proposed Action would transfer the use on the JQS Common Allotment from mostly cattle with some sheep to all sheep. Sheep use would begin earlier in the spring and be authorized throughout the summer and into late fall. Sheep have been more easily controlled on the allotment and although the period of use will be longer it would include areas that historically have not been utilized very much by cattle. Sheep, being intermediate grazers, would also utilize forage that was not previously utilized by cattle. If sheep use occurs during the spring, summer, and fall, utilization would occur on all forage types (forbs, grasses, and shrubs).

This alternative would alleviate existing concerns with livestock concentrating in riparian areas. The objectives in the AMP would be achieved which include meeting properly functioning condition (PFC) criteria by 2020 and to achieve a more late seral plant community in riparian areas. This alternative is expected to achieve the objectives in the AMP (and land health standards) in the same time frame as the Reduced AUMs Alternative without a reduction in use.

This alternative authorizes 3,000 sheep in the spring, 2,000 sheep during the summer, and up to 5,525 sheep in the fall. The larger permit would authorize use across 5 pastures. The sheep

would likely be divided into 2 bands for spring and summer and utilize 4 different pastures. Rotations will be adjusted annually to accommodate for varying conditions and to achieve land health standards and grazing management guidelines. Fall use would likely be maintained in 2 pastures. The smaller permit would authorize use spring and fall in the same small pasture. Use would most likely occur in all parts of the pasture during each use period due to its size and water availability. Areas of the allotment may be used more than once in a grazing year but forage utilization would vary from grasses and forbs in the spring to grasses and brush during the fall.

Although this action would authorize full use every year it is anticipated that the allotment would not always be fully stocked. The AMP also implements management prescriptions that would help to protect sensitive resources. This alternative allows permittees to run more sheep than the reduced AUMs alternative while still achieving land health standards and objective in the AMP.

Porcupine Common and Spruce Gulch Common Allotments. Impacts would be similar to the No Action Alternative.

No Action Alternative. *JQS Common Allotment.* This alternative would authorize the same level of use as previously authorized. The existing AMP would be continued and existing permit terms and conditions would continue to be implemented. Land health assessments completed in 1999 show riparian areas primarily as functioning at risk but with an upward trend. Land health monitoring since then has shown that these areas generally are not improving anymore and are in a static trend. Riparian areas, which are the primary resource concern in the JQS Common Allotment, would continue to be functioning at risk with a static or downward trend.

Porcupine Common and Spruce Gulch Common Allotments. This alternative authorizes the existing level of use on the allotment. There are currently no issues that have been brought forward with livestock grazing. Both of these allotments were determined to not be meeting land health standards due to causes other than existing livestock grazing.

No Grazing Alternative. *All Allotments.* Under this alternative these grazing permits would be cancelled. Cancelling grazing use on these allotments may result in economic harm to the permittees. This alternative would initiate the process in accordance with 43 CFR parts 4100 and 1600 to eliminate grazing on these allotments and devote the land to some other purpose and would result in amendments to the resource management plan.

Reduced AUMs Alternative. *JQS Common Allotment.* This alternative is similar to the Proposed Action except the authorized use would be reduced by 25%. 2,074 sheep would be authorized from 6/1 to 10/30 and 750 sheep would be authorized from 6/1 to 7/1 and 10/1 to 10/30. The reduced numbers would allow for more rest and recovery time in-between use periods. The larger permit would still have use on 5 pastures and would be able to rotate use areas with less overlap annually. Like-wise, the smaller permit would be authorized only in one pasture and would be able to use one area in the spring and another part of the pasture in the fall. This alternative would be expected to achieve the objectives defined in the AMP.

This alternative would have the greatest impact on the operators because it would reduce active grazing preference from 3,165 to 2,376 AUMs.

Porcupine Common and Spruce Gulch Common Allotments. Impacts would be similar to the No Action Alternative.

PLANTS: INVASIVE NON-NATIVE SPECIES (NOXIOUS WEEDS)

AFFECTED ENVIRONMENT.

A landscape-wide weed inventory has not been completed on the JQS Common, Porcupine Common, or Spruce Gulch Common Allotments. However, monitoring and other inventories have shown that several species of noxious weeds and invasive non-native species occur within the area of the Proposed Action. Table 15 lists noxious weed species known to occur in each allotment associated with the Proposed Action. Canada thistle and houndstongue are common in the riparian areas of the JQS Common Allotment. Houndstongue is present in upland sagebrush/mixed mountain shrub sites on the JQS Common Allotment. Kentucky bluegrass, an invasive, introduced perennial grass, is relatively common at many riparian and upland sites.

Table 15. Noxious Weeds Infestation Known to Occur in Area of the Proposed Action.

Scientific Name	Common Name	Statewide List Type
<i>Acroptilon repens</i>	Russian knapweed	B List
<i>Linaria vulgaris</i>	Yellow toadflax	B List
<i>Carduus nutans</i>	Musk thistle	B List
<i>Cirsium arvense</i>	Canada thistle	B List
<i>Cynoglossum officinale L.</i>	Houndstongue	B List
<i>Carduus acanthoides L.</i>	Plumeless thistle	B List
<i>Cirsium vulgare</i>	Bull thistle	B List
<i>Verbascum Thapsus L.</i>	Common mullein	C List
<i>Arctium minus Bernh.</i>	Common burdock	C List

ENVIRONMENTAL CONSEQUENCES.

Proposed Action. Weeds generally germinate and become established in areas of surface disturbing activities. Livestock grazing can contribute to the establishment and expansion of noxious weeds through various mechanisms. In addition, noxious weed seed can be transported and introduced to new areas by fecal deposition or by seed that clings to the animal’s coat. Grazing as proposed should not create areas of bare ground and should maintain the vigor and health of native plant species, particularly herbaceous species, thus, the Proposed Action should not cause a substantial increase in noxious weeds. Noxious and invasive plant species are not expected to increase as a result of the continuation of livestock grazing practices and most infestations will be isolated to watering facilities, salting areas, and other high concentration locations.

No Action Alternative. *All Allotments.* The No Action Alternative would entail more grazing use in the spring and substantially less use in the fall on the JQS Common Allotment. Impacts would be similar to the Proposed Action except that without the sheep permits there would be less utilization during the spring on Canada thistle thus increasing seed production. Overall, the No Action Alternative would not have significantly different impacts on the spread or control of invasive non-native species.

No Grazing Alternative. *All Allotments.* Under this alternative, no livestock grazing would occur on the allotments and there would be no direct or indirect impacts to weeds from livestock use. Grazing by wildlife may continue to create localized disturbances that would enable weed expansion. Wildlife, recreationists, and vehicles would continue to be vectors for the transportation of noxious weeds.

Reduced AUMs Alternative. *JQS Common Allotment.* The Reduced AUMs Alternative would have similar impacts on invasive, non-native species as the Proposed Action and would not be expected to cause a substantial increase in noxious weeds.

Porcupine Common and Spruce Gulch Common Allotments. Impacts would be similar to the No Action Alternative.

PLANTS: SENSITIVE, THREATENED AND ENDANGERED

AFFECTED ENVIRONMENT.

The Proposed Action would occur in Garfield County, Colorado. According to the USFWS, four federally listed plant species may occur within or be impacted by actions occurring in Garfield County. Designated critical habitat for the threatened Parachute penstemon (*Penstemon debilis*), is also present within the Proposed Action area. In addition, there are six BLM sensitive plant species with occupied or potential habitat in Garfield County (BLM 2009). The following table lists these species and summarizes information on their habitat descriptions and potential for occurrence in the Proposed Action area based on known geographic range and habitats present.

Table 16. Special Status Plant Species.

Federally Listed, Proposed or Candidate Plant Species		
Species and Status	Habitat Description	Potential For Occurrence
Colorado hookless cactus (<i>Sclerocactus glaucus</i>) – Threatened	Rocky hills, mesa slopes, and alluvial benches in salt desert shrub communities; often with well-formed microbiotic crusts; can occur in dense cheatgrass. 4,500 to 6,600 feet	No: Proposed action area is outside of elevation range for species. No potential habitat is present.
DeBeque phacelia (<i>Phacelia submutica</i>) – Threatened	Sparsely vegetated, expansive clay soils derived from the Atwell Gulch and Shire Members of the Wasatch Formation; 4,700 to 6,200 feet. In salt desert shrubland or scattered juniper woodland	No: Some mapped potential habitat in northern Porcupine Common parcel, but no Wasatch exposures present.

Parachute penstemon (<i>Penstemon debilis</i>) -- Threatened	Steep, sparsely vegetated, white shale talus of the Parachute Creek Member of the Green River Formation; 8,000 to 9,200 feet	Yes: A known occurrence and designated critical habitat fall within the JQS Common Allotment.
Ute ladies'-tresses orchid (<i>Spiranthes diluvialis</i>) -- Threatened	Seasonally flooded or subirrigated alluvial soils along streams, lakes or wetland areas; 4,500 to 7,000 feet	No: Some mapped potential habitat in northern portion of Porcupine & Spruce Gulch Allotments, but no subirrigated riparian habitat capable of supporting Ute ladies'-tresses is known to be present
BLM Sensitive Plant Species		
Cathedral Bluffs meadowrue (<i>Thalictrum heliophilum</i>)	Endemic on sparsely vegetated, dry shale slopes of the Green River Formation between 6,200 and 8,800 feet in elevation.	Potential: Some potential habitat along southern escarpment of Roan, but previous surveys have found no known occurrences
DeBeque milkvetch (<i>Astragalus debequaeus</i>)	Found on varicolored, fine-textured soils of the Wasatch Formation in the vicinity of DeBeque and Rulison, Colorado. Elevations of known populations are between 5,100 and 6,400 feet.	No: No exposures of the Wasatch Formation are present in these allotments
Harrington's penstemon (<i>Penstemon harringtonii</i>)	Wyoming or mountain sagebrush or mixed mountain shrub communities on rocky loam or rocky clay loam soils of basaltic origin between 6,200 to 10,000 feet.	Yes: Multiple known occurrences in Porcupine Common and Spruce Gulch Common Allotments.
Naturita milkvetch (<i>Astragalus naturitensis</i>)	Sandstone mesas, ledges, crevices, and slopes in pinyon-juniper woodlands between 5,000 and 7,000 feet. In shallow soils over exposed bedrock.	No: No sandstone rimrock or ledges present in these three allotments
Piceance bladderpod (<i>Lesquerella parviflora</i>)	A western Colorado endemic on shale outcrops of the Green River Formation, on ledges and slopes of canyons in open areas; 6,200 to 8,600 feet.	Potential: Some potential habitat present in JQS Common Allotment, but no occurrences documented in vicinity
Roan Cliffs blazing star (<i>Mentzelia rhizomata</i>)	On steep talus slopes of the Green River Formation from 5,800 to 9,000 feet.	Yes: One small occurrence known within JQS Common Allotment

JQS Common Allotment. Parachute penstemon. Parachute penstemon was listed as a threatened species under the ESA in 2011 and critical habitat for the species was designated in 2012. Parachute penstemon is found only on the Parachute Creek Member of the Green River Formation. This formation is exposed intermittently along the rim of the Roan Plateau which forms the southern and eastern boundary of the JQS Common Allotment.

Parachute penstemon is uniquely adapted to survive on steep and constantly moving talus slopes. Vegetation on these talus slopes is generally quite sparse (less than 20 percent canopy cover), providing little competition for the Parachute penstemon.

One occurrence of Parachute penstemon was discovered within the JQS Common Allotment in 1991. Extensive surveys were performed on the Roan Cliffs in 1995 and 1996, but no additional populations of Parachute penstemon were found. During the summer of 2014, updated surveys were conducted within potential habitat along the southern rim of the Roan Plateau in the JQS Common Allotment. No new populations were discovered.

The one known occurrence of Parachute penstemon has declined in the number of plants over the last twenty years from an estimated “hundreds of plants” to only two plants in 2012 and 2013. The factors contributing to the decline of this population appear to be natural in origin as no human-caused factors have been observed. Livestock grazing is not considered to be a factor in the decline, as the area is too steep and sparsely vegetated to attract much livestock grazing and monitoring over the past 20 years has never found any evidence of livestock grazing within the occupied habitat. The precarious nature of the slope also restricts OHV use, and no noxious weeds or other invasive species have been documented at the site.

Critical habitat for Parachute penstemon was defined with a one kilometer buffer around the known plant occurrences in order to protect pollinators and pollinator habitat of importance to the species, as well as occupied and suitable habitat for Parachute penstemon. Pollinators use a variety of habitats and floral resources and, therefore, are not confined to suitable habitat for Parachute penstemon. Within the Anvil Points Critical Habitat Unit, the windswept Roan Plateau rim supports a grassland community which exhibits a good diversity of plant species, including beardless bluebunch wheatgrass (*Pseudoroegneria spicata* var. *inermis*), scarlet gilia (*Ipomopsis aggregata*), locoweed (*Oxytropis* spp), buckwheat (*Eriogonum* spp), and mat penstemon (*Penstemon caespitosus*). Although the pollinators of Parachute penstemon are generalists and require a diversity of plant species, the presence of mat penstemon (*Penstemon caespitosus*) may be especially important because pollinators of *P. debilis* also depend on mat penstemon and the species may provide connectivity between populations (McMullen 1998, p. 27; Tepedino 2011, p. 3). Mat penstemon also occurs within some of the big sagebrush/mesic mountain shrub communities within the critical habitat.

Roan Cliffs blazing star and Cathedral Bluffs meadowrue. Both the Roan Cliffs blazing star and Cathedral Bluffs meadowrue occupy the same or similar type of habitat as Parachute penstemon.

Significant Natural Plant Communities. The hanging garden sullivania (*Sullivantia hapemanii* var. *purpusii*) is a Colorado endemic plant that is found in seeps along the steep canyon walls of East Fork Parachute Creek and several of its tributaries within the JQS Common allotment. This is considered a significant plant community because the Roan Plateau supports nearly 62% of the global population of this species.

Porcupine Common and Spruce Gulch Common Allotment. Harrington’s penstemon. Multiple populations of the BLM Sensitive plant, Harrington’s penstemon, are known to occur within the Porcupine Common and Spruce Gulch Common allotments. Habitat for Harrington’s penstemon consists of open sagebrush parks with rocky loam or clay loam soils. Harrington’s penstemon is a pioneer species which does not compete well with dense vegetative cover.

ENVIRONMENTAL CONSEQUENCES.

All Alternatives. *JQS Common Allotment. Parachute penstemon (and Roan Cliffs blazing star and Cathedral Bluffs meadowrue).* Domestic livestock grazing can result in direct effects to special status plants from herbivory or trampling. Plants may be killed if an individual is uprooted or its meristem is destroyed. Trampling may crush or bury individual plants. Trampling can also affect plants indirectly by disturbing or compacting soils or destroying ground nests of pollinators. Effects from trampling will be greatest in areas where livestock concentrate, such as along trails, salt licks, bedding grounds, and at water sources. Trailing across steep talus slopes may cause accelerated shifting or sliding of talus substrate, thereby burying plants or shearing off roots. Due to the rocky nature of Parachute penstemon habitat, soil compaction is not likely a concern.

Grazing could also have indirect effects to Parachute penstemon by altering the plant community composition or through the introduction and spread of invasive plants. Livestock grazing results in the direct removal of vegetation, both green shoots from the current year and old, dried growth from the previous year. Properly managed livestock grazing can improve plant vigor by removing dried stems and seedheads thereby improving photosynthetic activity of live plant material (Loeser et al 2004). If the timing or intensity of grazing does not allow adequate recovery and regrowth periods between grazing events, grazing may reduce plant vigor or cause plant mortality by depleting root reserves, change the species' composition in favor of less palatable plant species (Fleischner 1994, Jones 2000), and create surface disturbance and bare ground that serves as a niche for the invasion of noxious weeds. These effects have the potential to alter the function and utility of a community for rare plant species. Grazing that reduces the density of native grasses and forbs and allows an increase in woody species can reduce the quality of pollinator habitat. Increasing shrub density is often correlated with a decline in the abundance of forbs which would negatively affect floral resources available to pollinators.

Conversely, grazing management that allows for the maintenance of a diverse composition of native perennial forbs is assumed to help maintain Parachute penstemon by maintaining quality pollinator habitat. The magnitude and intensity of these effects on rare plants depends on many things, including grazing intensity and timing, livestock species, plant species' habit and life history, and the nature of the soils and vegetation community the plants grow in.

Indirect effects of grazing may include the use of herbicides to treat weeds. Herbicide application may result in direct mortality of Parachute penstemon if herbicides contact the plant through direct application or drift. No noxious weeds have been noted in occupied habitat for Parachute penstemon so it is unlikely that any treatments would occur in these areas. Herbicide use may also indirectly affect reproduction of Parachute penstemon if pollinator populations are impacted. Chemicals pose threats to non-target terrestrial plant species, such as native flowering broad-leaved plants, especially from direct spraying, but in some cases also from drift. Implementation of the conservation measures for weed treatments (in the JQS Common Allotment AMP) would regulate use of herbicides within the vicinity to minimize threats to Parachute penstemon and pollinator habitat from herbicide applications.

Significant Natural Plant Communities. Due to their location at the edge of waterfalls and on cliff faces above the valley floor, the hanging gardens receive no grazing use and the

communities are in excellent condition. None of the grazing alternatives would have any measurable impact on this plant community.

Proposed Action. The Proposed Action would transfer the use on the JQS Common Allotment from mostly cattle with some sheep to all sheep. Sheep use would begin earlier in the spring and be authorized throughout the summer and into late fall.

Grazing by sheep only on the JQS Common Allotment would have different impacts on the action area than grazing in which cattle are the predominant user. Sheep have differing foraging habits and forage preferences than cattle which would result in different impacts on the landscape and on Parachute penstemon habitat. Characteristics of sheep grazing are as follows:

- 1) Distribution:
 - a) Sheep spend more time in the uplands than riparian areas and will selectively graze steeper terrain than most cattle.
 - b) Sheep are accompanied by a herder and are regularly moved to different use areas by herding.
 - c) Sheep are concentrated in bedding areas each night.
- 2) Utilization:
 - a) Sheep diets vary by habitat and season of year, but tend to utilize forbs and shrubs more readily than cattle. Sheep will utilize both grasses and forbs, but show a preference for forbs, particularly in spring when tender. Later in the season when grasses and forbs have cured out, sheep will transition to browse species to maintain their nutritional needs (Pollock et al, 2007, Walker et al. 2006). Since sheep use would occur during spring, summer, and fall, utilization would occur on all forage types.
 - b) Sheep will consume noxious weeds far more than cattle do, thereby helping to suppress or slow the proliferation of weeds.
 - c) Sheep mouths are anatomically different from cattle such that they can harvest prostrate plants or strip leaves or flower stems. (Walker et al. 2006)

The potential for direct impacts to Parachute penstemon from browsing or trampling are somewhat greater with sheep grazing than with cattle. Sheep are known as intermediate grazers, meaning they select grass, forb, and shrubs opportunistically depending on availability in the habitat and on season of use. Sheep will also graze steeper terrain than most cattle. There is an existing barbed wire fence which partially encloses the only known occurrence in the allotment. As mitigation, the fence would be extended and modified to exclude sheep so the potential for direct effects to Parachute penstemon from livestock grazing would be negligible.

Approximately 1,155 acres of Critical Habitat for Parachute penstemon falls within the JQS Common Allotment. Critical habitat is found within two of the six pastures within the allotment: Anvil and Golden Castle. (See Appendix C, Figure 1). Potential effects to Parachute penstemon critical habitat from BLM-authorized grazing and associated activities would be similar to effects to occupied habitat, as described above. Livestock grazing and associated activities have the potential to affect the following PCEs identified in the final rule: (1) the plant community and (2) habitat for pollinators.

Noxious weeds may affect the plant community and pollinator habitat PCEs within critical habitat. Properly managed grazing can increase the vigor and health of native plants that creates a plant community more resistant to noxious weed and invasive non-native plant species invasion. Conversely, severe and repeated defoliation during grazing can cause a decline in desirable native plant species and ground cover. These areas of reduced herbaceous cover provide a niche for noxious weeds and non-native invasive plants to establish. Changing from cattle to sheep, which are herded and moved frequently, would decrease the potential for overgrazed areas to occur. However, sheep aggregate in bedding grounds at night and during daily movements to and from bedding grounds. This behavior may result in distinctive swaths of heavily trampled soil or bare ground which may serve as a niche for noxious weed invasion. Sheep will consume noxious weeds at some stages in the weed's lifecycle, which may help to control weed proliferation.

The distribution and utilization habits of sheep would benefit riparian habitat because sheep do not like to linger in these low-lying, wet areas. In addition, sheep are herded which allows greater control over the location, timing, degree, duration and frequency of use. Under the Proposed Action, riparian areas and adjacent terraces would begin to recover and native perennials would likely increase there. Grazing exclusively by sheep may also reduce shrub canopies as sheep will browse on shrubs, especially later in the year as herbaceous vegetation begins to cure out and becomes less nutritious. Browsing on shrubs may reduce woody canopy cover which may lead to increased herbaceous cover by reducing competition for light and moisture. An increase in herbaceous cover, especially forbs, would benefit pollinators.

However, the Proposed Action would authorize 3,164 AUMs, which are more AUMs than have been grazed on the allotment in the past 15 years. The Proposed Action would authorize 1,000 sheep for one month in both late spring and early fall and would authorize 2,000 sheep for 5 months each year plus an additional 2,525 sheep in the fall. The smaller permit would utilize only the Third Water pasture in both spring and fall and the larger permit would use the remaining 5 pastures. Sheep are typically managed in bands of approximately 1,000 ewes. With full use that would likely mean two bands of sheep on four pastures for five months and over 2,500 sheep for 45 days on one pasture in the fall. This alternative would entail longer use in several pastures and much more intensive fall use than the Reduced AUMs Alternative. Longer use in the spring and summer in several pastures may result in heavy or repeated use on forbs and grasses and extra use in the fall may lead to heavy use on shrubs and/or grasses, if they are not dormant.

The Anvil and Golden Castle pastures are within the critical habitat for Parachute penstemon. These two pastures are also south-facing and have a more open cover type which means these pastures would likely be free of snow and accessible for grazing earlier in the season. Using these pastures early (June-July) in the year, would coincide with the flowering period for most forbs. Sheep favor herbivory of forbs in spring and early summer when forbs are tender and high in nutrient value. Prolonged or repeated grazing on forbs would reduce flower production. If there are fewer flowers, the habitat will support fewer pollinators, which, in turn, would reduce opportunities for pollination of Parachute penstemon. In order to protect forbs, the Conservation Measures resulting from Section 7 consultation with the USFWS for the protection of Parachute penstemon would be attached as terms and conditions on the permit. These are listed in Appendix 2, Conservation Measures. The Conservation Measures provide for limiting

utilization on forbs, grazing within the critical habitat only once in a year, and rotating timing of grazing within the Anvil and Golden Castle pastures, such that the critical habitat is not used at the same time of year each year. This would provide rest during critical growth periods for forbs.

If grazing complies with the AMP, the Conservation Measures, and the terms and conditions of the permit, the Proposed Action “may affect, but is not likely to adversely affect” Parachute penstemon and its critical habitat. BLM submitted an amendment to the Biological Assessment for Grazing on the JQS Allotment on March 24, 2015 (BLM 2015). The Fish and Wildlife Service concurred with BLM’s determination on March 27, 2015. If the terms are not met, the action “may affect and is likely to adversely affect” Parachute penstemon and “may adversely modify” its critical habitat. If this occurs, reductions in AUMs or changes in grazing management would need to be implemented.

Porcupine Common and Spruce Gulch Common Allotments. Harrington’s penstemon. The flowering stalks of Harrington’s penstemon are highly palatable to both livestock and wildlife and flowering stalks and sometimes basal rosettes are removed by grazing or trampling. Impacts to the plant populations could result if excessive grazing removes a high percentage of the flower stalks each year thereby inhibiting seed dissemination and reproduction. The flowering season for Harrington’s penstemon varies across sites based on elevation and varies annually due to changes in temperature and precipitation patterns, but generally occurs between June 1 and July 10. The grazing period on both the Porcupine Common and Spruce Gulch Common allotments would overlap the flowering season for Harrington’s penstemon.

In the Porcupine Common allotment, grazing use levels measured in 2008, 2010 and 2011 after the intensive use period from 5/15-6/15 varied from non-use to a maximum of 30% use. There is no recent utilization data for the Spruce Gulch Common allotment. Assuming similar use levels in Spruce Gulch as in Porcupine Common allotment, the current levels of livestock grazing are not expected to result in removal of a high percentage of Harrington’s penstemon flower stalks. Grazing under the Proposed Action is not expected to have any adverse impacts on long-term viability of Harrington’s penstemon populations.

No Action Alternative. *JQS Common Allotment.* This alternative would authorize the same class of livestock and the same level of use as previously authorized. Under current grazing management, there have been no direct impacts to Parachute penstemon plants or its habitat. Ecological Site Inventory (ESI) data and observations made during the 2013 land health assessment process indicate a general trend toward dense, old-age class shrubs with less cover and diversity of grasses and forbs than expected. Currently, the allotment is grazed mostly by cattle which have typically made little use of these upland shrub communities. Without grazing or other disturbances, mesic mountain shrub communities have a tendency to increase in density and canopy cover, which inhibits grass and forb production. Continuation of current livestock grazing may indirectly affect Parachute penstemon populations by reducing the forb production that is needed to support pollinators of Parachute penstemon. These effects could be offset by vegetation treatments and the No Action Alternative would have discountable or beneficial effects on Parachute penstemon and its habitat.

Porcupine Common and Spruce Gulch Common Allotments. Harrington's penstemon. This alternative authorizes the existing level of use on the allotment. Impacts and proposed mitigation would be the same as in the Proposed Action.

No Grazing Alternative. *JQS Common Allotment.* Under the No Grazing Alternative, all livestock grazing would be discontinued on the JQS Common Allotment. This would result in increased vegetative biomass and flower production which would benefit pollinators for Parachute penstemon and may ultimately increase reproductive success through more effective pollination of the rare plants. However, over the long term, the absence of grazing may result in a denser shrub canopy cover which may begin to crowd out the understory forb communities which are needed for Parachute penstemon pollinators. These impacts may ultimately balance out and the resulting change in Parachute penstemon populations and the condition of Critical Habitat would be minor.

Porcupine Common and Spruce Gulch Common Allotments. Under this alternative, no livestock grazing would occur on these allotments. Without livestock, fewer flowering stalks of Harrington's penstemon may be removed by grazing, and there may be a slight increase in population density due to more successful reproduction of Harrington's penstemon plants. Conversely, without livestock grazing, there would be less removal of competing vegetation and penstemon populations may decrease due to competition with other plants. These impacts may ultimately balance out and the resulting change in Harrington's penstemon populations would be negligible or minor.

Reduced AUMs Alternative. *JQS Common Allotment.* This alternative would be similar to the Proposed Action except the authorized use would be reduced by 25%. The smaller permit would authorize 750 sheep from 6/1 to 7/1 and from 10/1 to 10/30. The smaller permit would be able to use one half of the Third Water Pasture in the spring and the other half in the fall, thereby providing adequate rest for maintenance of plant health. The larger permit would authorize 2,074 sheep from 6/1 to 10/30. The larger permit would still have use of 5 pastures and the 2,074 sheep would likely be divided into 2 bands. With 2 bands of sheep distributed over 5 pastures, the average period of use in any one pasture would likely be 30 days or less. The herders' ability to distribute sheep throughout the 5 pastures to prevent overgrazing or regrazing the same areas more than once a year is much greater and he would be able to rotate the timing of use in each pasture so that no pasture is used at the same time of year each year. The reduced numbers would allow for more rest and recovery time in-between use periods.

Critical habitat for Parachute penstemon overlaps the Anvil Pasture and a portion of the Golden Castle Pasture (Appendix 2.) These pastures would typically be used early in the season due to their more southerly aspect and more open vegetation communities which allows snow to melt off and vegetation to begin growth earlier than in the remaining pastures. With reduced numbers, there would be more flexibility to rest or defer the critical habitat within the 2 pastures until after the forbs (flowering plants) have set seed. Since the health of Parachute penstemon populations are tied closely to their habitat condition, it is expected that a sheep-only grazing system with reduced numbers would maintain the condition of occupied habitat and maintain or improve habitat for pollinators within the allotment.

This alternative “may affect but would not likely adversely affect” Parachute penstemon and “is not likely to adversely modify” its critical habitat within the JQS Common Allotment.

Porcupine Common and Spruce Gulch Common Allotments. No changes would occur under this alternative so environmental impacts would be identical to the Proposed Action discussion above.

ANALYSIS OF PUBLIC LAND HEALTH STANDARD 4 FOR THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES.

JQS Common Allotment. The land health assessment found that the one population of Parachute penstemon within the JQS Common Allotment was not meeting the standard for special status plants. The population has declined dramatically since first being discovered in 1991. Factors contributing to this decline are assumed to be natural in origin as no livestock or human activities have been documented within the occupied habitat over the last 20 years. The condition of the critical habitat for Parachute penstemon was considered to be meeting the standard at the time of the assessment.

The No Action and No Grazing Alternatives are both expected to maintain or improve the conditions of the occupied and critical habitat for Parachute penstemon. The change from cattle to sheep in the Proposed Action and Reduced AUMs Alternatives may have either beneficial or detrimental impacts on Parachute penstemon populations and habitat. Sheep generally prefer grasses and forbs during spring and then browse shrubs later in the growing season. Heavy use of forbs within the critical habitat may adversely affect Parachute penstemon pollinators. On the other hand, browsing on shrubs later in the season may reduce the dense canopy of shrubs and promote an increase in grass and forb production which would benefit pollinators. Herding of sheep, rotational grazing and adherence to the Conservation Measures for Parachute penstemon should ensure that Standard 4 for special status plants would continue to be met.

Porcupine Common and Spruce Gulch Common Allotments. Based on the Rifle-West Land Health Assessment Report (BLM 2005), both Porcupine Common and Spruce Gulch allotments were meeting the standard for special status plant species at the time of the assessment. Continuation of livestock grazing, as proposed, should not result in a failure to achieve this standard.

PLANTS: VEGETATION

AFFECTED ENVIRONMENT.

JQS Common Allotment. JQS Common Allotment consists of 10,458 acres of BLM land and is located above the cliffs on the eastern and southeastern rim of the Roan Plateau near Rifle, Colorado. The allotment ranges in elevation from 8,100 to 9,300 feet and averages 20 inches of precipitation per year. The landscape consists of a series of narrow ridges dissected by steep-sided canyons. Three streams flow generally east to west through the allotment: Trapper, Northwater and East Fork Parachute Creek and their tributaries. Vegetation types within the

allotment include: sagebrush, mixed mountain shrublands, grasslands, aspen woodlands, spruce-fir forests, and both herbaceous and woody riparian areas.

Ecological site inventory data collected in 2011 and 2012 demonstrate that upland vegetation tends toward late seral plant communities with high shrub densities and canopy cover, and reduced cover and production of grasses and forbs relative to the Ecological Site Descriptions. Field observations and data collected during the Roan Cliffs land health assessment in 2013 found that the opposite is true on upland terraces immediately adjacent to riparian areas. These terraces show signs of heavy use, trailing and compaction and have more bare ground and less vegetative cover than expected. Vegetation on these upland terraces is dominated by weeds and other early seral plant species such as houndstongue, Canada thistle, coneflower, wooly mullein, and Kentucky bluegrass.

Porcupine Common and Spruce Gulch Common Allotments. These two allotments lie southwest of the town of Rifle, CO and south of the Colorado River on north-facing slopes. Elevations range from approximately 5,400 feet to 8,600 feet. Vegetation within the allotments is dominated by pinyon-juniper woodlands and sagebrush parks at lower elevations transitioning to Gambel oak/mesic mountain shrub dominated communities at higher elevations. Sagebrush stands have a high percentage of decadent shrubs and encroachment of pinyon-juniper trees into sagebrush is common.

ENVIRONMENTAL CONSEQUENCES.

Common to All Alternatives. Livestock grazing results in the direct removal of vegetation, both green shoots from the current year and old, dried growth from the previous year. Properly managed livestock grazing can improve plant vigor by removing dried stems and seedheads thereby improving photosynthetic activity of live plant material (Loeser et al 2004). If the timing or intensity of grazing does not allow adequate recovery and regrowth periods between grazing events, grazing may reduce plant vigor or cause plant mortality by depleting root reserves, change the species' composition in favor of less palatable plant species (Fleischner 1994, Jones 2000). Excessive trampling causes soil compaction resulting in decreased vegetative cover, less vigorous root systems, and more exposure of the soil surface to erosion and invasion by noxious weeds. As described under the Special Status Plants section, grazing may affect plant communities in a variety of ways depending on the class of livestock, season, and intensity of use.

Proposed Action. *JQS Common Allotment.* The Proposed Action would involve changing from cattle and sheep to sheep only.

Sheep Diet. Sheep diets vary by habitat and season of year, but tend to utilize forbs and shrubs more readily than cattle. Sheep will utilize grasses and forbs in the spring and summer, but show a preference for forbs, particularly in spring when they are most tender. Later in the season when grasses and forbs have cured out or are dessicated, sheep will transition to browse species to maintain their nutritional needs (Pollock et al. 2007; Walker et al. 2006). Sheep will consume noxious weeds far more than cattle do, thereby helping to suppress or slow the proliferation of weeds.

Sheep Use Patterns. Sheep will selectively graze steeper terrain than cattle and do not like to linger in low-lying areas for fear of predators. As such, sheep are likely to spend more time on the ridges and side slopes and less time in riparian areas and adjacent terraces. The cover of native perennial vegetation in riparian areas and adjacent upland terraces would be expected to increase and progress towards later seral species with greater species diversity and deeper and more extensive root systems. Sheep would also be accompanied by a herder who would keep them from concentrating in areas for extended periods of time, other than for bedding and salting.

Sheep do aggregate in bedding grounds at night and during daily movements to and from bedding grounds. This behavior may result in distinctive swaths of heavily trampled vegetation or increases in bare ground which may serve as a niche for noxious weed invasion. As the number of AUMs increases, these effects would be magnified.

This alternative would authorize 3,000 sheep in the spring, 2,000 sheep during the summer, and up to 5,525 sheep in the fall. The smaller permit would authorize use both spring and fall in the Third Water pasture. Use would most likely occur in all parts of the pasture during each use period due to its size and water availability. The larger permit would rotate use across the other 5 pastures. Two pastures would generally be used with 1,000 sheep from 6/1 to 7/30, two other pastures would be used with 1,000 sheep from 8/1 to 10/30 and the fifth pasture would be used with 2,525 sheep from 9/15 to 10/30. This alternative would entail longer use in several pastures and more intensive fall use than the Reduced AUMs Alternative. Grazing some pastures for 90 days and one pasture with over 2,500 sheep for 45 days may present some difficulties in adhering to the utilization limits and may create more surface disturbance associated with trailing and bedding. Excessive trampling or concentrated use may lead to decreased vegetative cover and more bare ground for weed invasion.

If pastures are used for a longer period in spring and summer, this may lead to a decrease in forb cover and flower production. However, in the pastures that are used for 90 days it is possible that sheep would switch from using grasses and forbs in summer to shrubs in the fall which would help maintain utilization levels within acceptable limits and may provide sufficient rest and recovery of vegetation to maintain long-term plant health. The alternative would add 2,525 sheep to the allotment from 9/15 to 10/30. Sheep would not utilize forbs much at this time of year since forbs would be dormant. Grasses may also be dormant unless fall rains have caused regrowth. As such, fall grazing would likely focus on browsing of shrubs. Browsing on shrubs may reduce woody canopy cover providing opportunities for an increase in grass and forb cover by reducing competition for light and moisture.

Monitoring will be implemented to ensure utilization levels do not exceed requirements of the AMP and that resource objectives in the AMP and the Conservation Measures for threatened plants are being achieved. As long as the terms of the permit are met and land health standards are achieved, negative impacts to upland vegetation from sheep grazing are expected to be minimal and isolated.

Porcupine Common and Spruce Gulch Common Allotments. The scheduled grazing use on the Spruce Gulch allotment authorizes 196 cows from 5/16 to 6/30 and on Porcupine Common allotment authorizes 195 cows from 5/15 to 6/15 with 11 cows from 6/16 until the end of the growing season (9/30) and 70 cows for 15 days in October. The majority of the grazing use lasts

between 30-45 days, which should allow adequate time for plant recovery and regrowth following grazing and for seed dissemination and establishment. However, eleven (11) cows would remain on Porcupine Common throughout the growing season. If these eleven cows all congregate in the same area throughout the growing season, overutilization may occur and there could be localized reductions in desirable plant species. In the Porcupine Common Allotment, grazing use levels measured in 2008, 2010 and 2011 after the intensive use period from 5/15-6/15 varied from non-use to a maximum of 30% use. No utilization data is available for the end of the growing season on the Porcupine Common Allotment. There is no recent utilization data for the Spruce Gulch Common Allotment. Assuming similar use levels in Spruce Gulch as in Porcupine Common Allotment, the current levels of livestock grazing are not expected to result in a long-term decline in desirable plant community cover or composition.

Mitigation: Utilization levels should be monitored on key areas of the Porcupine Common Allotment at the end of the growing season (end of August through end of September) to ensure that localized utilization does not exceed 50%.

No Action Alternative. JQS Common Allotment. This alternative would authorize the same level of use and class of livestock as previously authorized. The allotment would continue to be grazed primarily by cattle with a small amount of use by sheep. The 2013 Land Health Assessment and monitoring studies have shown that the majority of upland terraces adjacent to riparian areas have less desirable perennial vegetative cover than expected for the ecological site and are dominated by noxious weeds and undesirable plants which increase with grazing, such as houndstongue, Canada thistle, coneflower, woolly mullein and Kentucky bluegrass (BLM 2014). Under the existing management and use levels, vegetation conditions on the upland terraces would likely remain in poor condition. Cattle have made little use of the side hills and ridgetops, thus vegetation in many of these areas is trending toward late-successional stage plant composition. Continuation of current grazing is likely to continue to progress towards dense, old-age class shrubs and corresponding reductions in the abundance of understory grasses and forbs.

Porcupine Common and Spruce Gulch Common Allotments. This alternative would authorize the existing level of use on the allotment. Impacts would be the same as the Proposed Action.

No Grazing Alternative. All Allotments. Under this alternative, no livestock grazing would occur on these allotments and there would be no direct or indirect impacts to vegetation from livestock use. There would be an increase in vegetative biomass (plant height and production) without the presence of livestock to remove vegetative material. Native perennial grass and forb cover and densities on upland terraces would begin to recover more rapidly under this alternative than any other alternative. Some trampling or removal of plant material would still occur from wildlife grazing, but this would likely be less than is currently occurring with both livestock and wildlife use. Without livestock grazing, dead and dried stems and seed stalks may build up over time, particularly on the more mesic and more productive sites, reducing photosynthetic activity and resulting in less vegetative vigor and biomass in the long-term. There would also be less surface disturbance due to trampling and removal of vegetation and therefore, less risk of noxious weed invasion and dispersal. Wind, wildlife and vehicular traffic would continue to distribute weed seeds and contribute to weed expansion.

Reduced AUMs Alternative. *JQS Common Allotment.* This alternative is similar to the Proposed Action except the authorized use would be reduced by 25%. Under this alternative, the larger permit would use 5 pastures for 5 months with approximately 2,000 sheep. The sheep would likely be divided into two bands and would either use each pasture with both bands for approximately 30 days or would split the bands between two pastures and rotate use to provide rest between use periods. The reduced numbers would allow for more rest and recovery time in between use periods and less use in the fall. This would provide for adequate rest and recovery to maintain strong root masses and vigorous vegetative growth. Degraded terraces adjacent to streams would be expected to improve more quickly with this alternative compared to the Proposed Action. Sheep grazing would provide some browsing of shrubs in the fall which may help reduce the canopy of existing late-seral shrubland communities and increase herbaceous cover, but with reduced fall use compared to the Proposed Action, this effect would be less noticeable. With less intensive use in fall, there would also be less surface disturbance due to trailing and bedding and less opportunity for weed invasion.

ANALYSIS OF PUBLIC LAND HEALTH STANDARD 3 FOR HEALTHY PLANT COMMUNITIES.

JQS Common Allotment. A land health assessment conducted on the Roan Plateau in the summer of 2013 found that approximately 10% of the landscape was not achieving Standard 3 for healthy plant communities due to grazing impacts. Upland terraces adjacent to streams had less cover of native perennial species than expected and noxious weeds and other invasive species were common. Mesic mountain shrub communities along the ridge tops and side slopes were in late successional stage with denser shrubs and fewer grasses and forbs than expected. These areas were still meeting the Standard but were trending away from meeting the standard.

Under the No Action Alternative, vegetation conditions adjacent to streams would likely remain static and would not make progress towards meeting the Standard.

The No Grazing Alternative would eliminate all grazing within the JQS Allotment which would result in the quickest recovery of land health conditions in the upland terraces. However, with no livestock grazing in the mesic mountain shrublands, the shrub communities would likely remain in static condition or trend away from meeting the standard.

Both the Reduced AUMs Alternative and the Proposed Action would improve vegetation conditions in riparian areas and adjacent terraces and make significant progress towards meeting the standards because sheep are herded and are not inclined to linger in riparian areas.

Sheep grazing may also improve the ecological condition of the mountain shrublands along the ridgetops by reducing the density of shrubs and allowing an increase in herbaceous cover. However, under the Proposed Action, the full permitted number of AUMs would likely result in areas of the allotment that receive heavy use or repeated use throughout the year. Sheep aggregate in bedding grounds at night and during daily movements to and from bedding grounds. This alternative may result in distinctive swaths of heavily trampled soil and vegetation and loss of palatable plants in localized areas that are grazed intensively or grazed more than once each

year. The Reduced AUMs Alternative is most likely to result in achievement of Land Health Standard 3 on the degraded terraces as well as in the mountain shrub community.

Porcupine Common and Spruce Gulch Common Allotment. Based on the Rifle-West Land Health Assessment, BLM staff concluded that vegetation is meeting Standard 3 (BLM 2005). Implementation of the Proposed Action is not anticipated to degrade the condition of upland plant communities.

SOCIO-ECONOMICS

AFFECTED ENVIRONMENT.

Regionally, livestock operations are dependent on both federal lands (BLM and U.S. Forest Service) and nonfederal lands (state and private). The federal grazing fee for public lands managed by the BLM and the U.S. Forest Service is \$1.35 per animal unit month (AUM). An AUM is the amount of forage needed to sustain one cow and her calf, one horse, or five sheep or goats for a month. The annually adjusted grazing fee is computed by using a 1966 base value of \$1.23 per AUM for livestock grazing on public lands in the western states. The figure is then adjusted according to three factors - current private grazing land lease rates, beef cattle prices, and the cost of livestock production. The formula used for calculating the grazing fee, established by Congress in the 1978 Public Rangelands Improvement Act, has continued under a presidential Executive Order issued in 1986. Under that order, the grazing fee cannot fall below \$1.35 per AUM, and any increase or decrease cannot exceed 25 percent of the previous year's level.

Public land grazing in the CRVFO supports a traditional and historical way of life. Although historically livestock grazing in the region was at a higher intensity than at the present time, the livestock business has, and continues to be a traditional way of life for many permit holders. Income derived from public land grazing permits continues to comprise a moderate to substantial portion of their individual livelihoods.

The total economic contribution from ranching operations on BLM lands is statistically low within the region. Jobs and labor income associated with BLM grazing accounts for less than 1 percent of the area's total jobs and labor income (BLM 2014).

Fees paid to the federal government for livestock grazing permits generate revenue for the U.S. Treasury, of which 12.5 per cent is returned to the local Grazing Advisory Board to fund range improvements and maintenance projects. This provides a direct economic benefit to the permit holders who pay the fees. The support of livestock operations contributes to the economic support of local communities and to the livestock industry in the West in general.

ENVIRONMENTAL CONSEQUENCES.

Proposed Action. The Proposed Action would renew ten year term grazing permits for the livestock operator, thereby continuing an historical and traditional way of life for this area. The social value of retaining a rural, agricultural lifestyle would be preserved and would align with many of the public's perception of the western Colorado culture.

Issuance of the permits would allow the permit holders to continue their grazing operations with some degree of predictability during the ten-year period of the term permit.

The local economy is benefited from capital spent to establish and maintain a ranching operation and contributions to the labor force. The Proposed Action would support some direct employment. Additional employment would be generated as the affected livestock operators purchase services and materials as inputs (“indirect” effects) and ranchers spend their earnings within the local economy (“induced” effects).

No Action Alternative. Under this alternative grazing would continue at past levels on the allotments. The ranching livelihood, local economic benefit, and cultural settings of the area would continue to be supported and no net increase or loss to the permittee or county would be expected.

No Grazing Alternative. Under the No Grazing Alternative, the ten year term grazing permit would not be renewed. The individual permit holders could be negatively impacted in the short term by loss of income. If livestock grazing was terminated, there would also be adverse impacts to the base property owner(s). There could be an annual loss of income because they may not be able to lease their private lands without having the BLM land grazing allotments. Consequently, the value of their properties could be reduced because of the elimination of the federal grazing preference. Such a loss of income would be important to the individuals, but would likely not measurably or adversely impact the local economies.

Reduced AUMs Alternative. This alternative would reduce permitted use by 25% on two sheep permits in the JQS Common Allotment. The loss of AUMs would have some impacts to the economic value of the permits but would not impact the local economy or employment.

SOILS

AFFECTED ENVIRONMENT.

JQS Common Allotment. According to the *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties* (NRCS 1985), the JQS Common Allotment contains five soil map units. In addition, some areas within the allotment are mapped as proposed Controlled Surface Use (CSU) () for erosive soils on slopes greater than 30% and proposed No Surface Occupancy (NSO) () for slopes greater than 50% regardless of soil type. Following is a brief description of the five different soil map units found within the JQS Common Allotment (NRCS 2014):

Irigul channery loam (36). This shallow, well drained, rolling to steep soil is found on upland ridges and mountainsides at elevations ranging from 7,800 to 8,700 feet and on slopes of 9 to 50 percent. It is derived from sandstone and marlstone. Surface runoff for this soil is medium and the erosion hazard is slight.

Irigul-Starman channery loams (38). This soil map unit is found on ridges and mountainsides at elevations ranging from 7,800 to 9,000 feet and on slopes of 5 to 50 percent. These soils are derived from sandstone and marlstone parent rocks. Approximately 55 percent of this unit is composed of the

Irigul soil and approximately 30 percent the Starman soil. Both of these soils are shallow, well drained, and have slight erosion hazards with medium surface runoff.

Northwater loam (48). This deep, well drained soil is found on mountainsides at elevations ranging from 7,600 to 8,400 feet and on slopes of 15 to 65 percent. The Northwater loam is derived from sedimentary rocks. Surface runoff for this soil is slow and the erosion hazard is slight.

Parachute-Rhone loams (53). These gently sloping to steep soils are found on ridges and mountainsides at elevations ranging from 7,600 to 8,600 feet and on slopes of 5 to 30 percent. The Parachute soil is derived from sandstone and or marlstone while the Rhone soil is derived from fine-grained sandstone. Approximately 55 percent of this unit consists of the Parachute soil while approximately 30 percent is the Rhone soil. The Parachute soil is moderately deep, well drained, and has a moderate erosion hazard with medium surface runoff. The Rhone soil is deep, well drained, and has a slight erosion hazard with slow surface runoff.

Rhone loam (60). This deep, well drained, gently sloping to steep soil is found on ridges and mountainsides at elevations ranging from 7,600 to 8,600 feet and on slopes of 5 to 30 percent. This soil is derived from sandstone and marlstone. Surface runoff for this soil is slow and the erosion hazard is slight.

Spruce Gulch Common Allotment. According to the *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties* (NRCS 1985), the Spruce Gulch Allotment contains eight soil map units, scattered throughout the allotment. The following is a brief description of the soil map units (NRCS 2014):

Bucklon-Inchau loams (12). These soils occur on ridges and mountainsides at elevations ranging from 7,000 to 9,500 feet and on slopes of 25 to 50 percent. About 55 percent of this soil map unit is Bucklon soil and 35 percent Inchau soil. The remaining 10 percent of the soil map unit are made up of varying amounts of Cochetopa, Cimarron, and Jerry soils. The Bucklon soil is found on steep, convex areas while the Inchau soil is found on more concave areas. The Bucklon soil is shallow, well drained and has medium surface runoff with severe erosion hazard. The Inchau soil is moderately deep, well drained and has medium surface runoff with severe erosion hazard.

Cochetopa loam (17). This deep, well drained soil is found on mountainsides and alluvial fans at elevations ranging from 7,000 to 9,500 feet and on slopes of 9 to 50 percent. Parent material for this soil is basaltic alluvium. Surface runoff for this soil is slow and erosion hazard is severe.

Ildefonso stony loam (34). This deep, well drained, hilly soil is found on mesas, sides of valleys, and alluvial fans at elevations from 5,000 to 6,500 feet and on slopes of 25 to 45 percent. This soil is derived primarily from basalt and may contain a small amount of eolian material at the top of the unit. Surface runoff for this soil is medium and erosion hazard is severe.

Morval-Tridell complex (45). This soil map unit is found on alluvial fans and the sides of mesas at elevations ranging from 6,500 to 8,000 feet and on slopes of 6 to 25 percent. The Morval soil makes up about 55 percent of the unit and is found on lower slopes while the Tridell soil makes up about 30 percent of the unit and is found on the sides of mesas. Both soils are deep, well drained and have medium surface runoff and moderate erosion hazard.

Potts-Ildefonso complex (58) and (59). This complex is found on mesas, alluvial fans, and the sides of valleys at elevations ranging from 5,000 to 6,500 feet and on slopes of 12 to 45 percent. Parent material for this soil complex consists of sandstone, shale, and basalt. Approximately 60 percent of

this complex is the Potts soil while about 30 percent is the Ildefonso soil. This soil complex is deep, well drained, and has medium surface runoff and moderate to severe erosion hazard.

Torriorthents-Rock outcrop complex, steep (67). This complex consists of stony soils and exposed outcrops of Mesa Verde sandstone and Wasatch shale that occur on slopes of 15 to 70 percent. Approximately 60 percent of this complex is Torriorthents and 25 percent is Rock outcrop. The Torriorthents are clayey to loamy and contain gravel, cobbles, and stones; many of which are basaltic in origin. Erosion hazard for this complex varies from moderate to severe.

Villa Grove-Zoltay loams (71). These soils occur on mountainsides and alluvial fans at elevations ranging from 7,500 to 7,600 feet and on slopes of 15 to 30 percent. About 50 percent of this soil map unit is the Villa Grove soil and 40 percent the Zoltay soil. The remaining 10 percent of this soil map unit consists of varying amounts of Vale, Potts, and Morval soils. The Villa Grove soil is deep, well drained and has slow surface runoff with slight erosion hazard. The Zoltay soil is deep, well drained and has medium surface runoff with moderate erosion hazard.

Porcupine Common Allotment. According to the *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties* (NRCS 1985), the Porcupine Common Allotments contains 12 different soil map units (9, 12, 17, 33, 34, 44, 45, 47, 59, 65, 66, 67, 71) scattered throughout the allotment, and have been identified as having moderate to severe erosion hazard potential. The following is a brief description of the three dominate soil map units (NRCS 2014):

Morval-Tridell complex (45). See description above.

Torriorthents-Camborthids-Rock outcrop complex, steep (66). This soil map unit consists of sandstone and shale bedrock and soils of variable depth occurring on slopes of 15 to 70 percent. About 45 percent of this complex is Torriorthents, 20 percent is Camborthids, and 15 percent is Rock outcrop. The Camborthids occur on the lower toe slopes on foothills and mountainsides while the Torriorthents are found on the foothills and mountainsides below the Rock outcrop. The Torriorthents are shallow to moderately deep, and clayey to loamy with gravel, cobbles, and stones. The Camborthids are shallow to deep and clayey to loamy. Rock outcrop primarily consists of Mesa Verde sandstones and Wasatch shales with occasional basaltic boulders and stones.

Torriorthents-Rock outcrop complex, steep (67). See description above.

ENVIRONMENTAL CONSEQUENCES.

All Alternatives. Livestock grazing can result in direct soil compaction and displacement that increase the likelihood of erosional processes, especially on steep slopes and areas devoid of vegetation. Livestock trailing typically results in soil compaction and erosional processes such as rills and gulying. Localized soil disturbances would likely be limited to trailing and watering areas. Soil detachment and sediment transport are likely to occur during runoff events associated with spring snowmelt and short-duration high intensity thunderstorms.

Proposed Action. *JQS Common Allotment.* The Proposed Action would involve changing from cattle to sheep, which would benefit upland soil conditions, since sheep are constantly herded and kept from concentrating in areas for extended periods of time, other than bedding and salting, which are typically located along roadways and previously disturbed ground. The terraces adjacent to perennial streams are expected to improve significantly, since loafing is less

likely to occur. However, with no reduction in the total AUM's on the allotment, there may be limited rest and recovery of vegetation and soil conditions. The limiting factor with this alternative is the amount of acreage that may be utilized more than once in a year. Under this alternative, a rotational grazing system will be implemented to promote plant health and provide periodic rest from grazing during critical growth periods, which should provide adequate recovery and regrowth periods. It is expected that over time, the change in livestock type would improve upland vegetation and soil conditions overall, but likely season-long high intensity grazing may result in concentrated use areas that would be slow to recover.

Porcupine Common and Spruce Gulch Common Allotments. No changes in management are proposed. Upland soil conditions were determined to be meeting land health standards in 2004. Thus, soil impacts are expected to be minimal, and overall soil conditions will be maintained at the current level under this alternative.

No Action Alternative. *JQS Common Allotment.* This alternative would authorize the same level of use as previously authorized. Land Health Assessments and monitoring have shown that the majority of upland terraces adjacent to riparian areas are not meeting land health standards due to soil compaction, abundance of weeds and non-desirable vegetation, and more bare ground than expected (BLM 2014). Under the existing management and use levels, soil conditions adjacent to streams would likely remain in a static condition or declining trend. Soil impacts from continuous livestock loafing and trailing are expected to continue or further degrade conditions under this alternative.

Porcupine Common and Spruce Gulch Common Allotments. This alternative authorizes the existing level of use on the allotment. Impacts would be same as the Proposed Action.

No Grazing Alternative. Under this alternative, no livestock grazing would occur and there would be no direct impacts to soils on any of the allotments. Indirect benefits to soils are likely to occur quickly in the absence of livestock grazing, as vegetation and soil conditions return to more natural conditions. Trampling or removal of plant material may still occur from wildlife grazing, and soil disturbance and erosion may persist due to other surface disturbing activities, such as roads and trails that exist throughout the allotments, which could potentially affect water quality.

Reduced AUMs Alternative. *JQS Common Allotment.* This alternative is similar to the Proposed Action except the authorized use would be reduced by 25%. The reduced numbers would allow for more flexibility with a rotational grazing system and promote rest and recovery of vegetation and soil conditions, particularly the degraded terraces adjacent to streams. Improvements in soil infiltration rates, less bare ground and recovery from surface compaction are expected to occur relatively quickly compared to the Proposed Action, and the benefits to soils are suspected to be sustained for the long-term.

Porcupine Common and Spruce Gulch Common Allotments. Impacts would be the same as the Proposed Action alternative.

ANALYSIS OF PUBLIC LAND HEALTH STANDARD 1 FOR SOILS.

JQS Common Allotment. The 2013 Land Health Assessment found the majority upland terraces adjacent to perennial streams have pervasive weeds, compacted surfaces and more bare ground than expected, and thus considered Not Meeting Standard 1 (BLM 2014). The Proposed Action, the Reduced AUM Alternative, and the no grazing alternatives will improve soil conditions over time with varying rates of recovery from longest to shortest by order of alternative listed. Under the No Action Alternative, soil conditions adjacent to streams will continue to decline.

Porcupine Common and Spruce Gulch Common Allotments. Based on the Rifle-West Land Health Assessment, BLM staff concluded that soils are meeting Standard 1 (BLM 2005). Implementation of the Proposed Action is not anticipated to degrade soil health from current conditions.

WATER QUALITY, SURFACE AND GROUND

AFFECTED ENVIRONMENT.

JQS Common Allotment. The JQS Common Allotment is located northwest of the City of Rifle, along the eastern edge of the Roan Plateau. The northern part of the allotment contains the perennial drainages Trapper and Northwater Creek and their intermittent tributaries including Tichner Draw, which is tributary to Northwater Creek. The southern part of the allotment contains the perennial drainage East Fork Parachute Creek and its tributaries JQS Gulch and Golden Castle Gulch at the headwaters; Second Anvil Creek to the south; and First Water, Second Water, and Third Water Creeks to the north. Numerous springs have been documented in the JQS Common Allotment, and many sources have been developed for livestock watering. Approximately 67 sources have decreed water rights.

Porcupine Common Allotment. The Porcupine Common allotment is located southwest of the City of Rifle, within the Porcupine Creek 6th field watershed. Over 2 miles of the perennial Porcupine Creek flows through the allotment, along with several unnamed ephemeral tributaries, which are all tributary to the Colorado River and classified as segment 13a of the Lower Colorado River Basin. There are several springs (Log Mesa Spring No. 1, 2, 3 and Porcupine Spring), three of which have decreed water rights.

Spruce Gulch Common Allotment. The Spruce Gulch allotment is located southwest of the City of Rifle, within the 4,554 acre Spruce Creek 6th field watershed. Flowing through the allotment is a short segment (only 0.2 miles) of the intermittent Spruce Creek and several unnamed ephemeral tributaries, which are all directly tributary to the Colorado River. In the southern parcel of the allotment, there are three springs (Mackley Spring No. 1 and No. 2, and Oil Shale Spring) with decreed water rights.

The State of Colorado has developed *Stream Classifications and Water Quality Standards* (Water Quality Control Commission, Regulation No. 37) that identify beneficial uses of water

and numeric standards used to determine allowable concentrations of water quality parameters (CDPHE 2013). The segments listed below are within the Lower Colorado River Basin and found within the proposed allotments (CDPHE 2013):

Table 17. Stream Segment Description.

Stream Segment Description	Classifications	Numeric Standards*
8. Mainstem of Northwater and Trapper Creeks, including all tributaries and wetlands, from their sources to the confluence with the East Middle Fork of Parachute Creek. East Middle Fork of Parachute Creek, including all tributaries and wetlands, from the source to the confluence with the Middle Fork of Parachute Creek.	Aq Life Cold 1 Recreation N Water Supply Agriculture Outstanding Waters	T=TVS(CS-I) °C D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 E.coli=630/100ml
11g. All tributaries to East Fork Parachute Creek on the south side of the East Fork Parachute Creek from a point immediately below First Anvil Creek to the confluence with Parachute Creek; all tributaries to Parachute Creek on the east side of Parachute Creek from a point immediately below the East Fork of Parachute Creek to the confluence with the Colorado River; and all tributaries to the Colorado River on the north side of the Colorado River from a point immediately below Cottonwood Creek to the confluence with Parachute Creek except for specific listings in segment 7a.	Aq Life Cold 2 Recreation N Agriculture	T=TVS(CS-I) °C D.O. = 6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 E.coli=630/100ml
12a. All tributaries to East Fork Parachute Creek from its source to a point immediately below the mouth of First Anvil Creek.	Aq Life Cold 1 Recreation N Agriculture	T=TVS(CS-I) °C D.O. = 6.0 mg/l D.O.(sp)=7.0 mg/l pH = 6.5-9.0 E.coli=630/100ml
13a. All tributaries to the Colorado River including wetlands, from a point immediately below the confluence of Roan Creek to the Colorado/Utah border except for the specific listings in Segments 13b through 19	Aq Life Warm 2 Recreation P Agriculture	T=TVS(WS-IV) oC D.O.= 5.0 mg/l pH = 6.5-9.0 E.Coli=205/100ml

*Note: only the Physical and Biological Numeric Standards are shown here. Refer to Regulation 37 for all numeric standards including metals and inorganics (CDPHE 2013).

The aquatic life cold 1 classification refers to stream segments that are capable of sustaining a wide variety of cold water biota. Aquatic life cold/warm 2 are waters that are not capable of sustaining a wide variety of cold/warm water biota, including sensitive species, due to physical habitat, water flows, or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species. Recreation N refers to stream segments with surface waters that are not suitable or intended to become suitable for primary contact recreation uses. Recreation P means potential primary contact uses. Water supply and agriculture refer to stream segments that are suitable or intended to become suitable for potable water

supplies and suitable for irrigation or livestock use. In 2013, the Water Quality Control Commission designated the Lower Colorado River Basin segment 8 as “Outstanding Waters”, which affords such water bodies anti-degradation protections (CDPHE 2013).

The State of Colorado also has a 303 (d) List of Impaired Waters and Monitoring and Evaluation List that identifies stream segments that are not currently meeting water quality standards with technology-based controls alone or suspected to have water quality problems (CDPHE 2012). No stream segments in the proposed allotments are currently on either list, meaning water quality is generally meeting state standards. However, sampling results by the CDPHE indicate several exceedences of chronic or acute water quality standards in the JQS Common Allotment related to dissolved selenium, dissolved iron, dissolved lead, and dissolved oxygen (Bembenek 2014). Other parameters of concern based on sampling by BLM and Trout Unlimited include *E. coli* and water temperature. Additional data collection may warrant new listings of segments on the Monitoring & Evaluation list during the next rulemaking session by the State in June 2014 or subsequent triennial reviews.

JQS Common Allotment. Historically water quality data has been collected on the Roan Plateau by various agencies and groups that include: continuous monitoring by the USGS from 1976-1983, data collected by the Department of Energy in 1981, data collected by the BLM in 1999 as part of the Roan Cliffs Land Health Assessments, data collected by Colorado Trout Unlimited in 2007, data collected by BLM in 2008-2009, and various periods of record by CDPHE, Division of Water Resources from 2000 - 2013. In 2013, the BLM interdisciplinary team re-evaluated Land Health Standards for water quality and found a few specific exceedences of State Standards pertinent to the Lower Colorado Segments 8, 11g and 12a. Parameters of concern include dissolved selenium, dissolved iron, dissolved lead, dissolved oxygen and water temperature. A complete water quality data summary and conclusions can be found in the 2013 *Abbreviated Roan Cliffs Land Health Assessment* (BLM 2014). Additional characterization by the CDPHE is necessary to make definitive conclusions about potential contaminant sources and the extent of water quality exceedences. Following is a subset of water quality results specific to the JQS Common Allotment:

Table 19. 1999 Roan Cliffs Land Health Assessment.

1999 Roan Cliffs Land Health Assessment						
Stream Name	Date	Discharge (cfs)	Temp. (°C)	Cond. (µS/cm)	pH	Salinity 0/00
East Fork Parachute Creek	7/12/99	1.50	15.0	382	9	0
Golden Castle Gulch	8/24/99	0.02	12.5	389	8.5	0
JQS Gulch	8/24/99	0.03	12.5	518	8	0
Northwater Creek	7/6/99	1.20	22.6	445	-	0
Second Anvil Creek	8/24/99	0.02	24.5	567	7.6	0
Third Water Gulch	8/25/99	0.05	14.7	416	8.8	0
Trapper Creek	7/6/99	0.41	20.2	451	-	0

Table 20. 2007 Colorado Trout Unlimited Water Quality Data.

2007 Colorado Trout Unlimited Water Quality Data							
Stream	Date	E. coli	pH	Dissolved Oxygen mg/L	Ammonia NH3 mg/l	Nitrate NO3 mg/l	Hardness CaCO3 mg/L
Northwater Creek	8/30/07	285	8.5	7.4	0	0.046	216
	11/07/07	325	7.0	8.9	0.05	0.132	188
Trapper Creek	6/06/07	13.4	7.8	8.1	0	0.414	214
	11/07/07	**1,986	8.5	8.8	0	0	220

Table 21. 2013 Roan Cliffs Land Health Assessment.

2013 Roan Cliffs Land Health Assessment						
Water Source Name	Date	Discharge (Q)	Temp (°F)	Conductivity (us)	TDS (ppm)	Salinity (ppm)
Trapper Creek - Reach 1	7/9/13	1cfs *	58.8	489	347	232
First Anvil Spring	7/11/13	1 gpm	45.1	576	408	263
First Anvil Creek	7/11/13	2 gpm *	49.8	571	396	266
Second Anvil Spring	7/11/13	2 gpm	54.7	497	352	233
Second Anvil Creek	7/11/13	1 gpm	65.1	479	340	229
Golden Castle Creek	7/11/13	0.25 gpm *	55.4	467	331	224
JQS Spring 1	10/24/13	2 gpm *	48.2	423	299	192
EF Parachute Creek	10/24/13	0.114 cfs	45.9	469	330	214

* denotes a visual estimation of flow. **Red text = exceedance of State water quality standard.

While most of the water quality data results consist of basic parameters that cannot be directly correlated to grazing activities, data collected by Colorado Trout Unlimited in 2007 show elevated levels of *E. coli* following the grazing season. These bacteria are present in the intestinal tracts of warm blooded animals and are measured in colonies per 100ml of water. The current *E. coli* standard for this segment based on recreation class N is 630 colonies/100ml, which means that the sample collected by Colorado Trout Unlimited on Trapper Creek on November 7, 2007 exceeded this standard.

Additionally, continuous monitoring of dissolved oxygen and water temperature in Trapper and Northwater Creeks in 2008 and 2009 also suggest some water quality problems related to grazing. The only recorded exceedances of the maximum daily water temperature (21.2°C) occurred along Trapper and Northwater Creeks on June 17, 2011 (BLM 2014). Though, water temperatures from mid to late July recorded near the exceedance threshold in 2009 and 2010. Causal factors for low dissolved oxygen and high stream temperatures can be directly related to historic and current livestock management. During the 2013 Land Health Assessment, the majority of streams that were determined to be Functioning-At-Risk or Non-Functional for riparian health, had overly wide and shallow stream channels due to livestock trampling of stream banks, which directly impacts water quality.

In addition to water quality monitoring, streambank monitoring occurred through the summers of 2008 - 2013 by BLM on major drainages on the Roan Plateau. The results have shown that livestock are occupying the riparian areas for extended periods throughout the grazing season. These activities have resulted in decreased vegetative cover and loss of riparian function and stream bank failures. Together these impacts lead to loss of aquatic cover and habitat by increasing water temperatures and sediment input, resulting in overall reduced surface water quality.

Throughout the JQS Common Allotment, there are over 60 documented springs and seeps, and potentially several more groundwater sources that have yet to be inventoried. Very limited water quality data exists for these sources, many which have been developed for livestock watering. Additional monitoring and evaluation of groundwater sources is necessary in the future. However, at the present time with the limited data available, groundwater quality is assumed to be meeting State Standards.

Spruce Gulch and Porcupine Common Allotments. During the Rifle West Land Health Assessment in 2004, very limited water quality data was collected and both Spruce Gulch and Porcupine Creek were determined to be non-riparian stream systems. Discharge and basic field parameters for Porcupine Creek are shown below. No water quality data was collected on Spruce Creek due to lack of stream flow during the assessment.

Table 22. Discharge and Basic Field Parameters for Porcupine Creek.

Stream Name	Date	Flow (cfs)	Temp. (C)	Cond. (uS\cm)	pH
Porcupine Creek	4/28/2004	2.62	8.3	648	8.3

Original survey data from 1982 indicates that the spring sources in these allotments have relatively good water quality and serve as watering sources for wildlife as well as livestock. No recent data has been collected at these sources.

Table 23. Water Quality.

Spring Name	Flow (gpm)	Water Temp (°C)	Conductivity (umhos/cm)	pH
Mackley Spring #1	1	1.4	160	7.9
Mackley Spring #2	0.25	2	150	8.2
Oil Shale Spring	N/A	6.3	759	6.89
Log Mesa Spring #1	0.25	N/A	1600	8.2
Log Mesa Spring #2	0.75	N/A	1150	7.9
Log Mesa Spring #3	3	N/A	850	7.9

ENVIRONMENTAL CONSEQUENCES.

All Alternatives. Direct impacts to water quality resulting from livestock grazing can be elevated turbidity, nutrients and fecal coliform bacteria, if livestock congregate near water sources for extended periods of time. Hoof action can cause surface compaction, stream bank shearing, loss of riparian vegetation, elevated erosion rates and subsequent deterioration of water quality. Indirect impacts may result from excessive utilization in upland watershed areas reducing effective vegetative cover, elevating erosion potential and increasing sediment delivery to streams, which can negatively impact water quality. Grazing activities may result in soil compaction and displacement that increase the likelihood of erosional processes, especially on steep slopes and areas devoid of vegetation. Soil detachment and sediment transport are likely to occur during runoff events associated with spring snowmelt and short-duration high intensity thunderstorms and may be contributing factors to the water quality exceedances of dissolved selenium, dissolved iron, dissolved lead, and dissolved oxygen that have been documented by CDPHE (Bembek 2014).

Proposed Action. JQS Common Allotment. The Proposed Action would involve changing from cattle to sheep, which would greatly benefit the riparian systems and directly improve water quality, since sheep are constantly herded and kept from concentrating along water bodies. However, with no reduction in the total AUM's on the allotment, there may be limited rest and recovery of vegetation and soil conditions, which indirectly affect water quality. The limiting factor with this alternative is the amount of acreage that may be utilized more than once in a year. Under this alternative, a rotational grazing system will be implemented to promote plant health and provide periodic rest from grazing during critical growth periods, which should provide the needed soil recovery and vegetative regrowth periods. Thus, it is expected that over time, the change in livestock type would improve riparian areas and soils and thus water quality, but likely season-long high intensity grazing may result in concentrated use areas that would be slower to recover and thus still impact certain water quality parameters.

Porcupine Common and Spruce Gulch Common Allotments. No changes in livestock grazing management are proposed. Thus, water quality conditions are expected to be maintained at the current level. Based on the number of livestock and lack of major perennial drainages within the allotment, the potential for measureable water quality degradation associated with the proposed activities is minimal.

No Action Alternative. JQS Common Allotment. This alternative would authorize the same level of use as previously authorized. Land Health Assessments and monitoring have shown that the many of the riparian areas are degraded and functioning at risk. Under the existing management and use levels, riparian areas would likely remain in a static condition, and the currently documented water quality problems are expected to continue or degrade further under this alternative.

Porcupine Common and Spruce Gulch Common Allotments. This alternative authorizes the existing level of use on the allotment. Impacts would be same as the Proposed Action.

No Grazing Alternative. *All Allotments.* Under this alternative, no livestock grazing would occur and there would be no direct impacts to water quality on any of the allotments. Indirect benefits to water quality are likely to occur quickly in the absence of livestock grazing, as vegetation and soil conditions return to more natural conditions. Trampling or removal of plant material may still occur from wildlife grazing, and soil disturbance and erosion may persist due to other surface disturbing activities, such as roads and trails that exist throughout the allotments, which could potentially affect water quality.

Reduced AUMs Alternative. *JQS Common Allotment.* This alternative is similar to the Proposed Action except the authorized use would be reduced by 25%. The reduced numbers would allow for more flexibility with a rotational grazing system and promote adequate rest and recovery of riparian and upland vegetation, which will directly and indirectly benefit water quality conditions. Improvements in water quality are expected to occur faster compared to the Proposed Action, and the benefits to water quality are suspected to be sustained for the long-term.

Porcupine Common and Spruce Gulch Common Allotments. Impacts would be the same as the Proposed Action alternative.

ANALYSIS OF PUBLIC LAND HEALTH STANDARD 5 FOR WATER QUALITY.

JQS Common Allotment. Water quality monitoring has documented exceedances of State standards for elevated levels of *E. coli*, low dissolved oxygen, high stream temperatures, elevated iron, lead and selenium. Additional monitoring and analysis by CDPHE is necessary to determine the extent of these water quality impairments and if any stream segments are warranted for listing on the *303 (d) List of Impaired Waters and Monitoring and Evaluation List*. Until the State's triennial review, it is believed that Standard 5 for Water Quality is meeting with problems for the JQS Common Allotment (BLM 2014). By alternative, the Proposed Action, the Reduced AUMs Alternative and the No Grazing Alternative would likely improve water quality conditions over time, from longest to shortest duration of recovery in the order listed. Under the No Action Alternative, water quality would likely continue to have specific exceedances of State standards and may even decline further.

Spruce Gulch and Porcupine Common Allotments. In 2004 the BLM evaluated area drainages as part of the Rifle-West Land Health Assessment. During that time, the limited data collected by BLM did not show any violations of the water quality standards established by the State of Colorado. Based on the number of livestock scheduled and the lack of major perennial drainages within the allotments, it is not likely that grazing activities would prevent Land Health Standard 5 for Water Quality from being met.

WETLANDS AND RIPARIAN ZONES

AFFECTED ENVIRONMENT.

Background. Wetlands and riparian areas are defined as ecosystems that occur around watercourses and water bodies. They occupy the transitional zone between wet and dry ecosystems and require more water than adjacent upland plant communities. These areas make up a relatively small portion of the landscape, but provide some of the most productive wildlife habitat and forage for livestock (USDI 2006). Riparian areas also provide important ecological functions such as ground-water storage, water quality enhancement and erosion control.

Healthy riparian areas are reflected in the vigor and composition of the vegetation. Late seral vegetation has deep and extensive root structures that stabilize stream banks and shorelines, and trap sediment that cleans and filters water. Decaying organic matter mixes with sediments creating a sponge that is penetrated by root masses as it stores water which is then slowly released back into the stream attenuating water flow and mitigating drought effects. The retention of water benefits adjacent plant communities as localized water tables rise. The aggraded sediments are colonized by additional riparian plants. As the banks build up, the creek channels narrow and deepen and become covered with overhanging vegetation that shades and cools the slower flowing water. Residual plant material at the end of the growing season benefits water retention by capturing snow that later melts to provide additional water to riparian areas. A healthy riparian system slows the departure of water from the landscape creating conditions right for biological successional processes to occur that benefit plant and animal life.

General Description of Riparian/Wetland Systems. Within the JQS Common Allotment there are at least twelve (12) creeks/streams and numerous springs. Riparian resources are found along East Fork Parachute Creek, First Anvil Creek, Second Anvil Creek, First Water Gulch, Second Water Gulch, Third Water Gulch, Golden Castle Gulch, JQS Gulch, Northwater Creek, Trapper Creek and a tributary to Trapper Creek. There are numerous active and non-active springs along the canyons where water seeps from the exposed rock strata. Cattle and sheep use these riparian areas for forage, water, loafing and to travel from one location to another within the allotment.

Historical photos available in the Colorado River Valley Field Office provide no clear indication of what these riparian areas should look like since even photos from the 1960's show evidence of heavy use in the "bottoms". BLM staff believe that the Trapper Creek exclosures provide evidence of the potential of those stream reaches on the Roan Plateau which have similar gradient, geology, and water flows. Riparian areas in the Trapper Creek exclosures support late seral herbaceous riparian plants such as sedges and rushes as well as various species of willows and narrowleaf cottonwoods. The following photo within the exclosure on Trapper Creek is representative of a properly functioning riparian system.

Riparian Area within the Trapper Creek Enclosure.



Proper Functioning Condition. A properly functioning riparian area has adequate vegetation, land form or large woody debris to: dissipate stream energy, filter sediment, improve ground-water recharge, develop root masses that stabilize streambanks, provide habitat characteristics necessary for fish and wildlife, and support greater biodiversity. An assessment of proper functioning condition (PFC) is a qualitative method for assessing the condition of riparian-wetland areas. The following table displays the results of the latest proper functioning condition (PFC) monitoring from the JQS Common Allotment in 2013.

Table 24. PFC Assessment Results from the JQS Allotment in 2013.

Allotment	Riparian Area Name	Reach	Miles	Current Condition Rating
JQS Common	First Anvil Creek	upper	0.4	PFC ¹
		lower	1.2	
	Second Anvil Creek	upper	0.7	FAR Not Apparent ²
		low	0.6	FAR Not Apparent
		lower	0.5	PFC
	First Water Gulch	upper	0.5	FAR Not Apparent
		lower	0.2	PFC
	Second Water Gulch	above and below fork	0.9	FAR Not Apparent
		lower	0.3	PFC

Allotment	Riparian Area Name	Reach	Miles	Current Condition Rating
	Third Water Gulch	entire reach	0.9	
	East Fork Parachute Creek	upper	1.2	FAR Not Apparent
		middle	0.4	PFC
	Golden Castle Gulch	upper	0.1	Non Functioning ³
	JQS Gulch	upper	0.5	FAR Not Apparent
		lower	0.9	PFC
	Northwater Creek	upper	1.8	FAR Not Apparent
	Trapper Creek	upper	2.5	PFC
Tributary to Trapper Creek	upper	0.7		
JQS and East Fork Common	East Fork Parachute Creek	middle reach	2.7	
JQS and East Fork Common and Mahaffey Summer	East Fork Parachute Creek	lower reach	3.3	
Porcupine Common	There are no known riparian areas within these two allotments.			
Spruce Gulch Common				
Notes:				
1. PFC - Lentic riparian-wetland areas are in Properly Functioning Condition when adequate vegetation, landform, or debris is present to: dissipate energies associated with wind action, wave action, and overland flow from adjacent sites, thereby reducing erosion and improving water quality; filter sediment and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize islands and shoreline features against cutting action; restrict water percolation; develop diverse ponding characteristics <i>to provide</i> the habitat and the water depth, duration, and temperature necessary for fish production, waterbird breeding, and other uses; and support greater biodiversity.				
2. FAR Not Apparent ; Functioning-At Risk, trend Not Apparent are riparian-wetland areas that are currently in functional condition, but have an existing soil, water, or vegetation attribute that makes them susceptible to degradation. In this case the trend is not apparent.				
3. Nonfunctioning - Riparian-wetland areas that clearly are not providing adequate vegetation, landform, or woody debris to dissipate energies associated with flow events, and thus are not reducing erosion, improving water quality, etc.				

Riparian Areas Meeting Land Health Standard 2. Streams with a condition rating of PFC or FAR with an Upward Trend are generally considered to be meeting Land Health Standard 2. The following riparian areas were meeting Land Health Standard 2 for wetland and riparian zones: First Anvil Creek, Third Water Gulch, Trapper Creek, a tributary to Trapper Creek, and the middle and lower reaches of East Fork Parachute Creek.

Riparian Areas NOT Meeting Land Health Standard 2. Streams rated as Functioning at Risk with No Apparent Trend or Non-functioning are not meeting Land Health Standard 2. These wetlands and riparian zones include: Second Anvil Creek, First Water Gulch, Second Water Gulch, upper East Fork Parachute Creek, JQS Gulch and Northwater Creek. Golden Castle Gulch was rated as non-functional.

Multiple Indicator Monitoring (MIM). This monitoring method provides quantitative data for adaptive riparian resources management. The MIM protocol integrates short-term monitoring with a long-term trend indicator that allows for the evaluation of the impacts of livestock grazing management. Methodologies utilized from MIM included stubble height, streambank alteration, and greenline composition. Three MIM sites were established in 2009 within the JQS Common allotment: upper East Fork Parachute Creek, JQS Gulch and upper Northwater Creek.

Stubble Height. To limit livestock utilization, a 4-inch minimum stubble height on key riparian forage plant species was established. By controlling defoliation levels, riparian plant species have sufficient photosynthetic material to allow for plant physiological activities like root carbohydrate replenishment, root elongation and seed production. These physiological processes are necessary for a healthy riparian plant community. Moreover, maintaining a 4-inch stubble height or higher provides physical structure essential for trapping fine sediments and building flood plains for riparian systems as described in the background of this resource section. As the stubble height is reduced this capability reduces in proportion.

Stubble height monitoring results in Table 25 indicate that utilization levels in 2010 and 2011 exceeded four inches on JQS Gulch. Stubble heights were within one and two inches of this target in years 2009 to 2012, on East Fork Parachute Creek, JQS Gulch and upper Northwater Creek. ID Team observations of upland areas immediately adjacent to MIM sites showed more intense levels of utilization and trailing that this methodology does not capture.

Table 25. Stubble Height.

MIM Site		2009	2010	2011	2012	2013
East Fork Parachute Creek		6	6	--	5	10
JQS Gulch		13	3	3	5	10
Northwater Creek	Upper	6	5	6	5	12
	Lower	8	7	10	9	No Grazing
Trapper Creek		8	11	20	6	15

Streambank Alteration. To limit livestock’s physical impact upon riparian areas within the allotment, an objective was established to limit alteration of the streambank to no more than twenty-five percent (25%). See photos TR 1737-23 page 32 (USD1, 2011). Streambank alteration monitoring results in Table 26 indicate that alteration of JQS Gulch and upper Northwater Creek streambanks exceeded this target from 2010 to 2012. (In year 2011 the alteration was within one percentage point (1%) on JQS Gulch.)

Table 26. Streambank Alteration Percentage.

MIM Site		2009	2010	2011	2012	2013
East Fork Parachute Creek		14	12	--	20	6
JQS Gulch		22	57	24	39	14
Northwater Creek	Upper	21	28	26	47	14
	Lower	9	0	0	3	No Grazing
Trapper Creek		--	4	0	15	18

Greenline Composition. Vegetation is critically important for the stability of streambanks, streambank morphology (width, depth, and shape), water quality, and aquatic habitat quality (BLM 2011). Livestock grazing, as well as other anthropogenic disturbances, may impact vegetation through reduced vigor, soil compaction, changing species, and physical disturbance of the streambanks (Platts 1991; USDA 2000). Disturbance activities, such as overgrazing or trampling by animals or people, result in vegetation changes to shallower, weakly rooted species such as Kentucky bluegrass [or redbtop] (BLM 2011). Reduced vegetative cover decreases shading leading to warmer water temperatures. Increased erosion of riparian soils reduces water storage capacity and plant species habitat. Deposits are accumulating in the channel instead of upon the streambank. This inability to retain humus soils also reduces water storage and attenuation. Livestock grazing pressure leads to a change from willows and sedges to drier species with low root density (BLM 2011).

Greenline composition monitoring data was collected beginning in 2009 and every year until 2013. Greenline composition data (Table 27) indicates that tufted hairgrass dominates MIM sites on East Fork Parachute Creek, JQS Gulch, and upper Northwater Creek. ID team observations found that redbtop, a shallow-rooted, early seral species was often the subdominant species and this plant association has a streambank stability rating of four out of ten (USDA 2000). The higher the streambank stability rating the more resistant the streambanks are to high water flows and the effects of erosion. The reference location at Trapper Creek was dominated by beaked sedge in 2011 and would suggest that the streambank stability rating is nine out of ten.

Table 27. Greenline Composition.

Riparian Area		Site Dominant Species			
		2009	2010	2011	2012
East Fork Parachute Creek		DECE	DECE	--	DECE
JQS Gulch		DECE	DECE	DECE	DECE
Northwater Creek	upper	DECE	DECE	DECE	DECE
Trapper Creek (Desired Plant Community)		--	AGGI2	CAUT	AGGI2

Summary. Issues identified by the ID Team during the 2013 land health assessment include the lack of woody or other late seral riparian species at some locations. Riparian vegetation was dominated by early seral species which have shallower and less extensive root systems, which do not act as a “sponge” to retain and release water over longer periods. Riparian zones were not

widening nor had they reached their maximum extent. Riparian zones were being used by cattle for trailing between use areas. Exposed soils were being invaded by early seral, exotic plant species like Kentucky bluegrass and white clover. On some streams, hoof action had caused bank shearing, soil compaction and hummocking. Cattle grazing was identified as a significant causal factor.

ENVIRONMENTAL CONSEQUENCES.

General. Grazing in riparian areas removes plant growth and biomass and can lead to changes in the plant community structure and composition. Grazing in riparian areas when soils are wet, such as in the spring, may lead to excessive trampling damage to streambanks and soil compaction. Livestock can indirectly and directly affect stream condition through soil compaction, bank shearing, or severing of roots of riparian vegetation, which are needed for plant survival and bank stability (Behnke and Raleigh 1978). Overutilization of late seral riparian plant species diminishes the plants' vigorousness to withstand grazing. Loss of photosynthetic plant material reduces plant physiological abilities to store root carbohydrates, grow elongated roots and produce seed. Stressed late seral plant species disappear from riparian plant communities and are replaced by species more capable of exploiting stressed habitats. This is expressed in riparian plant composition changes from a suite of late seral plants to a community dominated by Kentucky bluegrass, redbud and other early seral species.

Micheli and Kirchner (2002) have shown that late-seral riparian species are six to ten times more effective in providing bank stability and in resisting the forces of water than early-seral plant species adapted to drier environments.

Attributes that can change in response to grazing include (USDI 2006);

- Plant community composition, distribution, and production
- Plant species diversity
- Rooting characteristics (deep-rooted or shallow rooted)
- Vegetation contribution to percentage of soil organic matter
- Amount of bare ground vs. vegetated ground cover
- Plant community structure including woody plant size, diverse age classes, location, and abundance.

Proposed Action. *JQS Common Allotment.* The Proposed Action would change the class of livestock from a mixture of predominantly cattle with a small amount of sheep, to all sheep. This alternative would authorize 3,000 sheep in the spring, 2,000 sheep during the summer, and up to 5,525 sheep in the fall.

The distribution and utilization habits of sheep would benefit riparian areas because, unlike most cattle, sheep do not like to linger in these low-lying, wet areas. Sheep naturally prefer hillsides to the confining nature of riparian bottoms out of fear of predation and will quickly leave drainages after drinking. Sheep are also tended by herders and moved to fresh feed and new portions of the allotment at regular intervals. When properly herded, sheep cause less trampling damage than cattle (Stoddart et al. 1975). The Proposed Action would authorize more AUMs than the Reduced AUMs Alternative, with the additional use occurring in the fall. Fall sheep

grazing has the potential to result in excessive browsing of woody riparian species. If the revised AMP is properly implemented and timely monitoring is conducted, the Proposed Action should result in decreased grazing pressure on stream bottoms.

It is anticipated that riparian areas on the allotment would improve over time with this change in class of livestock. Degraded stream reaches would show a reduction in streambank alteration, narrowing and deepening of the channel, an increase in riparian vegetation cover, a widening of the riparian area, and a gradual shift from earlier to later seral riparian species.

Porcupine Common and Spruce Gulch Common Allotments. There are no known riparian resources on these allotments. As such impacts from grazing livestock are not discussed further.

No Action Alternative. *JQS Common Allotment.* The No Action Alternative would continue to authorize grazing with a mix of mostly cattle and some sheep and full AUMs. The existing JQS Common Allotment AMP approved on June 18, 1993 would apply. The AMP calls for the rotation of livestock amongst 3 pastures based on timely utilization monitoring and the presence of at least one rider each day to distribute cattle and a herder to accompany the sheep. The AMP has not been fully implemented and has only been partly effective. The Trapper Pasture has not been used for many years, except by sheep for a brief period of time each year. While this has improved riparian conditions in upper Trapper Creek, it has concentrated more animals and more use within the Anvil and JQS Gulch pastures which is likely at least a partial cause for the apparent downward to static trend in JQS Gulch and the upper portions of both Northwater Creek and East Fork Parachute Creek. Cattle tend to prefer flat shady areas closer to water and abundant forage during the hottest part of the year. Frequent riding has occurred, but it has proven largely ineffective at keeping cattle out of stream bottoms given the topography, vegetation types and lack of reliable upland water sources. The result has been cattle grazing and loafing in stream bottoms and on the adjacent upland benches for longer than desired timeframes.

From the PFC and MIM data, excessive grazing, trailing and loafing by cattle has led to undesirable changes in riparian plant composition from late seral communities to earlier seral communities, invasive, exotics, and noxious weeds.

Porcupine Common and Spruce Gulch Common Allotments. There are no known riparian resources on these allotments. As such impacts from grazing livestock are not discussed further.

No Grazing Alternative. With complete rest, the riparian areas within the JQS Common Allotment would not be grazed by cattle or sheep during the hot season. Cattle and sheep would not be on the allotment and the riparian areas would respond very quickly to complete rest and continue to improve over time. This alternative would be the best in allowing recovery of degraded riparian areas on the JQS Common Allotment.

Reduced AUMs Alternative. *JQS Common Allotment.* This alternative is similar to the Proposed Action except the authorized use would be reduced by 25%. The reduced AUMs would reduce the intensity of use and allow riparian vegetation more rest and recovery between use periods.

The smaller permit would graze 750 sheep for one month in the spring and one month in the fall. The larger permit would still use 5 pastures and the 2,074 sheep would likely be divided into two bands. With two bands of 1,000 sheep, herders would be able to rotate use areas with less overlap annually. Both permits would graze at a lower intensity of use than the Proposed Action. Riparian areas would recover more rapidly under this alternative than the Proposed Action alternative.

ANALYSIS OF THE PUBLIC LAND HEALTH STANDARD 2 FOR RIPARIAN SYSTEMS.

In terms of meeting or improving Land Health Standard 2 for wetlands and riparian zones, the conversion from cattle and sheep to all sheep would be a major improvement because of how sheep are managed on the allotment. Sheep are more easily herded away from riparian areas where cattle tend to concentrate. The Reduced AUMs Alternative would maintain and improve riparian conditions faster than the Proposed Action. However, the Proposed Action may also achieve riparian objectives outlined in the Allotment Management Plan.

The No Grazing, Reduced AUMs, and Proposed Action alternatives would, in order of timeliness and likelihood, move the allotment towards meeting Land Health Standard 4 along all impacted stream reaches. The No Action alternative would be unlikely to achieve Land Health Standard 2 on streams that are accessible to cattle.

WILD AND SCENIC RIVERS

AFFECTED ENVIRONMENT.

JQS Common Allotment. The JQS Common Allotment encompasses portions of five stream segments (Trapper Creek, JQS Gulch, East Fork of Parachute Creek, Golden Castle Creek, and Second Anvil Creek) and is adjacent to one additional segment (First Anvil Creek) found to be eligible under a Roan Plateau Eligibility Report for the National Wild and Scenic Rivers System in 2002 (BLM, 2002). All eligible segments will be managed to preserve the identified Outstanding Remarkable Values (ORV's) until such a time as a suitability study is completed. The ORV's identified for these segments were their core conservation population of Colorado River cutthroat trout and for its rare hanging garden sullivania (*see Aquatic Wildlife: Sensitive, Threatened, or Endangered, Vegetation*).

Porcupine Common and Spruce Gulch Common Allotments. Porcupine Common and Spruce Gulch Common allotments do not contain any eligible Wild and Scenic River segments.

ENVIRONMENTAL CONSEQUENCES.

Proposed Action. The Proposed Action would improve stream habitat for the Fish ORV. See *Aquatic Wildlife: Sensitive, Threatened, or Endangered* for specific impact analysis. The free flowing condition of the stream segments and the tentative classification of the segments would

not be impacted. Water quality may improve if soil erosion and compaction decreases within the stream corridor (see Water Quality, Surface and Ground for specific impact analysis). Negligible impacts are expected to the hanging garden sullivantia ORV due to its location within seeps on canyon walls and cliffs where livestock are not known to access and therefore do not trample it (see Vegetation impact analysis).

No Action Alternative. The No Action Alternative would continue to cause habitat degradation and negatively impact the Fish ORV. See Aquatic Wildlife: Sensitive, Threatened, or Endangered for specific impact analysis. The free flowing condition of the stream segments and the tentative classification of the segments would not be impacted. Water quality may improve if soil erosion and compaction decreases within the stream corridor (see Water Quality, Surface and Ground for specific impact analysis). No impacts would occur to the hanging garden sullivantia ORV (see Vegetation impact analysis.)

No Grazing Alternative. The No Grazing Alternative would improve the stream habitat and benefit the Fish ORV. See Aquatic Wildlife: Sensitive, Threatened, or Endangered for specific impact analysis. The free flowing condition of the stream segments and the tentative classification of the segments would not be impacted. Water quality would improve within the stream corridor (see Water Quality, Surface and Ground for specific impact analysis). Since livestock are not known to access the canyon walls and cliffs where hanging garden sullivantia occur, no impact is expected to the hanging garden sullivantia ORV (see Vegetation impact analysis).

Reduced AUMs Alternative. The Reduced AUMs Alternative would have the same impacts as the Proposed Action except a possible improvement in stream habitat would be more likely and quicker. See Aquatic Wildlife: Sensitive, Threatened, or Endangered for specific impact analysis. The free flowing condition of the stream segments and the tentative classification of the segments would not be impacted. Water quality may improve faster than the Proposed Action if soil erosion and compaction decreases within the stream corridor (see Water Quality, Surface and Ground for specific impact analysis). Negligible impacts are expected to the hanging garden sullivantia ORV due to its location within seeps on canyon walls and cliffs where livestock are not known to access and therefore do not trample it (see Vegetation impact analysis).

WILDERNESS

AFFECTED ENVIRONMENT.

JQS Common Allotment. The JQS Common allotment's southern half is within the eastern portion of the East Fork Wilderness Character Inventory Unit. The northern portion of the unit is bounded by maintained roads and range developments along Long Ridge and Short Ridge. The western boundary and portions of the southern boundary follow private property lines while the eastern boundary follows the Rim Road which travels along the prominent southern cliffs. The inventory unit contains 8,330 acres that were found to have wilderness character in the inventory conducted in Roan Plateau Wilderness Inventory Findings in 2014.

In addition, the far western portion of the Southeast Cliff Wilderness Character Inventory Unit is located in the southernmost portion of the JQS Common Allotment. The inventory boundary on the west follows the main Anvil Points road #8014 on top of the Plateau; the southern boundary follows the northern boundary of the Production Area. It has 5,193 acres that were found to contain wilderness characteristics.

Porcupine Common and Spruce Gulch Common Allotments. Porcupine Common and Spruce Gulch Common allotments do not contain any wilderness characteristics.

ENVIRONMENTAL CONSEQUENCES.

Proposed Action. The Proposed Action would result in decreased grazing pressure on stream bottoms and reduced loafing. This will improve the natural vegetation in riparian areas and enhance the naturalness of the unit. Outstanding opportunities for primitive, unconfined recreation and/or solitude may continue to be negatively impacted when encountering a grazing permit holder using administrative access on routes that the public cannot access.

No Action Alternative. The No Action Alternative would continue habitat degradation, especially within riparian corridors. This would result in continuing degradation to natural vegetation leading to negative impacts to the naturalness of the unit. Outstanding opportunities for primitive, unconfined recreation and/or solitude may continue to be negatively impacted when encountering a grazing permit holder using administrative access on routes that the public cannot access.

No Grazing Alternative. The No Grazing Alternative would improve the habitat through the removal of livestock, specifically along the riparian corridors. This would improve the naturalness of the unit through natural revegetation and restoration. In addition, range developments and improvements may be removed which would lead to further improvement to the naturalness of the unit. Outstanding opportunities for primitive, unconfined recreation and/or solitude may improve with no range related administrative access and use, eliminating the need for the grazing permit holder to be in that area and encountering the public.

Reduced AUMs Alternative. The Reduced AUMs Alternative would have the same impacts as the Proposed Action, except that the benefit to the naturalness from habitat and riparian improvements would be more likely and quicker. Outstanding opportunities for primitive, unconfined recreation and/or solitude may continue to be negatively impacted when encountering a grazing permit holder using administrative access on routes that the public cannot access.

AQUATIC WILDLIFE: INCLUDING SPECIAL STATUS AQUATIC WILDLIFE

AFFECTED ENVIRONMENT.

The action area is located in Garfield County, Colorado. According to the latest species list from the USFWS, five Federally listed fish species may occur within or be impacted by actions occurring in Garfield County. In addition, there are five BLM sensitive fish species with occupied or potential habitat in Garfield County (BLM 2009). The following table lists these species and summarizes information on their habitat descriptions and potential for occurrence in the Proposed Action area based on known geographic range and habitats present.

Table 28. Special Status Aquatic Wildlife Species Summary.

Federally Listed, Proposed or Candidate Aquatic Wildlife Species		
Species	Habitat/Range	Occurrence/ Potentially Impacted
Green Lineage cutthroat trout (<i>Oncorhynchus clarkii stomias</i>)	Federally listed as threatened. The greenback cutthroat trout is the subspecies of cutthroat trout native to the Platte River drainage on the Eastern Slope of Colorado. Currently, FWS is advising federal agencies to consider Green Lineage cutthroat trout on the west slope of CO as threatened until such time as review and interpretation of recent genetics and meristic research has been completed. A Green Lineage cutthroat trout population is located in Beaver Creek within the Porcupine Common Allotment, south of Rifle, CO inside the Proposed Action area.	Present/Yes
Bonytail (<i>Gila elegans</i>)	Federally listed as endangered. This large chub is a member of the minnow family found in large, fast-flowing waterways of the Colorado River system. Their current distribution and habitat status are largely unknown due to its rapid decline prior to research into its natural history. The bonytail is extremely rare in Colorado and no self-sustaining population exists. Only one has been captured in the state since 1980.	Absent /No
Colorado pikeminnow (<i>Ptychocheilus lucius</i>)	Federally listed as endangered. Primarily exists in the Green River below the confluence with the Yampa River, the lower Duchesne River in Utah, the Yampa River below Craig, Colo., the White River from Taylor Draw Dam near Rangely downstream to the confluence with the Green River, the Gunnison River in Colorado, and the Colorado River from Palisade, Colo., downstream to Lake Powell. Colorado pikeminnow populations in the upper Colorado River basin are now relatively stable or growing. Designated Critical Habitat includes the Colorado River and its 100-year floodplain west (downstream) from the town of Rifle.	Absent /No
Humpback chub (<i>Gila cypha</i>)	Federally listed as endangered. Found in deep, clear to turbid waters of large rivers and reservoirs over mud, sand or gravel. The nearest known population of humpback chub is in the Colorado River at Black Rocks west of Grand Junction.	Absent /No
Razorback sucker (<i>Xyrauchen texanus</i>)	Federally listed as endangered. The razorback sucker was once widespread throughout most of the Colorado River Basin from Wyoming to Mexico. In the upper Colorado River Basin, they are now found only in the upper Green River in Utah, the lower Yampa River in Colorado and occasionally in the Colorado River near Grand Junction. Because so few of these fish remain in the wild, biologists have been actively raising them in hatcheries in Utah and Colorado and stocking them in the Colorado River. Designated Critical Habitat for the razorback sucker includes the Colorado River and its 100-year floodplain west (downstream) from the town of Rifle.	Absent /No

BLM Sensitive Aquatic Wildlife Species		
Species	Habitat/Range	Occurrence/ Potentially Impacted
Northern leopard frog (<i>Rana pipiens</i>)	Generally found between 3,500 to 11,000 feet, in wet meadows and in shallow lentic habitats. They require year-round water sources, deep enough to provide ice free refugia in the winter. Within the CRVFO, this species has been documented in locales where quality riparian vegetation exists in conjunction with perennial water sources. Larger populations of this species have been documented northwest of King Mountain within the small drainage that feeds King Mountain (Ligon) Reservoir, June Creek and East Divide Creek south of Silt, Colorado, and in portions of the Rifle Creek watershed north of Rifle, Colorado.	Absent /No
Great Basin spadefoot toad	This toad is known to occupy a wide variety of habitat including lowlands, foothills, and shortgrass plain. This species generally inhabits and breeds in seasonal pools and ponds in pinyon-juniper woodland, sagebrush, and semi-desert shrubland habitats, mostly below 6,000 feet in elevation.	Absent /No
Bluehead sucker (<i>Catostomus discobolus</i>), Flannelmouth sucker (<i>Catostomus latipinnis</i>), and Roundtail chub (<i>Gila robusta</i>)	Primarily found in larger rivers but may also be found in smaller tributaries with good connectivity to larger river systems. These fish are endemic to the Colorado River basin and reside within the mainstem Colorado River and its major tributary streams. Given their biology, feeding habits, habitat needs, and niche in the ecosystem, these species can persist in the face of actions that increase sediments to streams and rivers containing these species.	Absent /No
Mountain sucker (<i>Catostomus platyrhynchus</i>)	The mountain sucker is found primarily in small, low- mid elevation streams in northwestern Colorado with gravel, sand or mud bottoms. They inhabit undercut banks, eddies, small pools, and areas of moderate current. Young fish prefer backwaters and eddies. Within the CRVFO, the only known occurrence is in Piceance Creek.	Absent /No
Colorado River cutthroat trout (CRCT) (<i>Oncorhynchus clarkii pleuriticus</i>)	Select streams within the action area contain Colorado River cutthroat trout - Blue Lineage. CRCT prefer clear, cool headwaters streams with coarse substrates, well-distributed pools, stable streambanks, and abundant stream cover. CRCT occur in Trapper Creek, Northwater, Creek, East Fork Parachute Creek, and JQS Gulch within the action area.	Present/Yes

JQS Common Allotment. JQS Common Allotment contains a very small interconnected genetically pure population of Colorado River cutthroat trout – Blue Lineage, a BLM sensitive species. The Blue Lineage are native to the White-Yampa river basins, but have been stocked extensively across the state. Although residing outside of the historic range of this lineage, genetically pure populations are still of conservation value.

Streams also contain nonnative brook trout (*Salvelineous fontinalis*). Brook trout are outcompeting native cutthroat trout and endangering the long-term prosperity of native cutthroat trout within their native range.

Porcupine Common Allotment. This allotment encompasses Porcupine Creek a perennial stream that contains aquatic insects but no known fishery. It is a flashy system with varying flows and heavy natural sediment loading. Base flows are too small to support fish as insufficient holding habitat is present. The allotment also contains 0.125 miles of Beaver Creek. This stream contains a conservation population (90%-98.9% genetically pure) of Green Lineage cutthroat trout currently considered a threatened species. Beaver Creek also contains a population of brown trout (*Salmo trutta*).

Spruce Gulch Common Allotment. This allotment contains small portions of Spruce Creek, an intermittent stream that contains no fish. In the southern parcel of the allotment, there are three springs (Mackley Spring No. 1 and No. 2, and Oil Shale Spring) with decreed water rights. Other water sources are primarily upland ponds with limited aquatic insects but no known special status aquatic species.

All Allotments. Aquatic habitats within the allotments include aquatic invertebrates. Aquatic invertebrates are aquatic animals without backbones that live on the bottom of freshwater habitats during all or part of their life cycle and that are large enough to be seen with the naked eye. Major groups of macroinvertebrates include arthropods (i.e., crustaceans and insects), mollusks, sponges and nematode worms. The most abundant are typically immature life states (larvae) of aquatic insects such as mayflies, stoneflies, and caddis flies. The allotments also contain habitat for amphibians such as Woodhouse's toad and chorus frogs.

Streambank Alteration. As large herbivores (e.g., elk, deer, and cattle) walk along streambanks or cross streams, the animals' weight can cause shearing that result in a breakdown of the streambank and subsequent widening of the stream channel. It also exposes bare soil, increasing the risk of erosion of the streambank. Animals walking along streambanks may increase the amount of soil exposed to the erosive effects of water by breaking or cutting through the vegetation and exposing roots and/or soil. Excessive trampling causes soil compaction, resulting in decreased vegetative cover, less vigorous root systems, and more exposure of the soil surface to erosion. Soil detachment and sediment transport are likely to occur during spring runoff from snowmelt and during short-duration high intensity thunderstorms.

Sediment Loading. Increases in sediments entering the stream can impact resident cutthroat trout by covering spawning/rearing areas, thereby reducing the survival of fish embryos and juveniles (USDA Forest Service 2000). Excessive sedimentation can also fill in important pool habitats reducing their depth and making them less usable by cutthroat and other aquatic organisms. Pool habitats are important as over-summer and over-winter thermal refugia areas for these fish and are limited in many of these streams. A number of sublethal effects to resident cutthroat may also occur as a result of sedimentation, including avoidance behavior, reduced feeding and growth, and physiological stress (Waters 1995). Over the long-term, increased sediment loads reduce primary production in streams (USDA Forest Service 2000). Reduced insect productivity results from excessive sediment that fills in the interstitial spaces between stream substrates needed by these aquatic invertebrates. This loss in stream productivity can disrupt the food chain and result in reduced food sources for resident fish as well as terrestrial bird and bat species.

Reduction of Streamside Riparian Vegetation. The reduction of streamside riparian vegetation can alter the nutrient dynamics of the aquatic habitat. In areas where riparian vegetation has been depleted or lost, a shift in energy inputs from riparian organic matter to primary production by algae and vascular plants have been predicted and observed. The increased solar radiation that results from the loss of streamside (or poolside, etc.) vegetation causes temperatures, light levels, and autotrophic production (i.e., plants and algae) to increase. This change in a stream's food web could alter the composition of food and thus energy sources that are available to resident cutthroat and aquatic invertebrates. Terrestrial insect diversity and productivity also decreases with reductions in streamside vegetation which also effects food availability for resident fish. Increased stream temperatures affect cutthroat by reducing their growth efficiency and increasing their likelihood of succumbing to disease. Prolonged and excessive utilization of streamside/riparian vegetation can also result in increased peak flows as vegetation is not sufficient to slow stream velocities and act as a "sponge" to retain water over longer periods. This can result in reduced water quantities throughout the summer into fall when stream temperatures are at their highest which further negatively impacts resident fish. These effects may occur until such time as sufficient streamside vegetation is re-established along disturbed portions of the streams.

ENVIRONMENTAL CONSEQUENCES.

Proposed Action. *JQS Common Allotment.* The Proposed Action calls for changing the class of livestock from a mix of sheep and cattle to all sheep. The revised allotment management plan (AMP) would be implemented and followed. If the AMP is strictly adhered to and timely monitoring is conducted, the Proposed Action should result in decreased grazing pressure on stream bottoms. Sheep are tended by herders and are moved to fresh feed and new portions of the allotment at regular intervals. This reduces loafing. Sheep prefer uplands and will quickly leave drainages after drinking. It is anticipated that degraded portions of upper Northwater Creek, JQS Gulch, and East Fork Parachute Creek would improve over time with this change in class of livestock. Degraded stream reaches should show reductions in stream width, reduced sediment loading, increases in stream depth, increased vegetative cover, and reduced bank alteration.

Porcupine Common Allotment. This allotment calls for the grazing of cattle from 5/16 to 10/15 each year. On paper this provides essentially no growing season rest. However, the allotment is typically not used during the summer months. The summer schedule permits cattle use from livestock that may stray back onto the BLM but they do not stay there. The portion of the allotment that contains Beaver Creek is not grazed and is isolated from the remaining BLM portions of the allotment. Beaver Creek contains a lush, dense riparian area and steep banks that makes livestock grazing along the reach virtually impossible. In addition, a county road is located adjacent to the stream which limits livestock access. Continued livestock grazing as proposed on this allotment would have "no effect" to Green Lineage cutthroat trout or their habitat.

Spruce Gulch Common Allotment. Based on: (1) the authorization of the existing number of AUMs, (2) the lack of current livestock conflicts and (3) the lack of major perennial drainages

within the allotment; the potential for severe streambank alteration, sediment loading or a reduction of streamside riparian vegetation that would impact aquatic wildlife is minimal.

No Action Alternative. *JQS Common Allotment.* The No Action Alternative would continue livestock grazing as has been authorized for the past several years with a mix of both sheep and cattle and full AUMs. In addition, the action calls for grazing use on the allotment in accordance with the JQS Common Allotment AMP approved on June 18, 1993 and subject to the grazing use agreement executed on March 15, 1990. The proposed terms and conditions would also apply. The AMP has many good actions in it. Key actions include:

- The timely rotation of livestock amongst 3 pastures based on timely utilization monitoring
- Herding/riding requirements – for cattle at least one rider will be on the allotment each day. For sheep a herder will be on the allotment each day

However, neither of these actions has been occurring on a consistent basis. Use of the Trapper Pasture has not occurred for several years. While this has improved conditions in upper Trapper Creek, it has concentrated more animals and more use within the Anvil and JQS Common Allotment pastures which is likely at least a partial cause for the apparent downward to static trend in JQS Gulch and the upper portions of both Northwater Creek and East Fork Parachute Creek. Riding would help to keep cattle out of stream bottoms but it is difficult and has largely proven ineffective given the topography, number of animals, and costs. The result has been cattle grazing and loafing in stream bottoms and on the adjacent upland benches for longer than desired timeframes.

Prolonged livestock congregation within these small stream corridors is also affecting water quality for cutthroat trout. With increased nutrient input and limited summer and fall streamflows, eutrophication can and has been occurring. This is the condition in which the increase of mineral and organic nutrients has reduced the dissolved oxygen levels within the stream, producing an environment that favors plant life over animal life. In other words, the mineral and organic nutrient levels being inputted into these streams are greater than the streams flows can handle or carry through the system. This routinely occurs within portions of all of these streams and results of this are often seen as large algae blooms that form dense patches of algae within the creek. This further depletes oxygen levels and reduces habitat quality for resident cutthroat.

In summary, continued livestock grazing as proposed would continue to result in: streambank alteration, some soil compaction, reduced oxygen levels, reduced streambank cover, and increased sediment loading in streams. Greater impacts would occur on steeper slopes, and at livestock concentration areas (e.g., salting and mineral sites, water sources, and creek bottoms). All of the above effects are negatively impacting resident cutthroat trout in select stream reaches and can result in declines in species recruitment and overall productivity. It is important to note that full authorized cattle grazing preference has not occurred for several years. Should AUMs reach authorized levels, impacts identified above would occur over larger stream reaches and further degrade riparian and aquatic habitats.

Porcupine Common Allotment. Since the portion of the allotment that contains Beaver Creek is not grazed and is isolated from the remaining BLM portions of the allotment, the environmental analysis would be the same as the Proposed Action. This alternative would have “no effect” to Green Lineage cutthroat trout or their habitat.

Spruce Gulch Common Allotment. This alternative would authorize the existing level of use on the allotment. Impacts would be the same as the Proposed Action.

No Grazing Alternative. JQS Common Allotment. Under the No Grazing Alternative, livestock grazing would be discontinued on the allotment. This would result in an improvement of select degraded stream and riparian habitats within the allotment. Impacts identified above under the No Action Alternative would cease and cutthroat trout would likely increase in population density.

Porcupine Common Allotment. Since the portion of the allotment that contains Beaver Creek is not grazed and is isolated from the remaining BLM portions of the allotment, the environmental analysis would result in the same conclusions as the Proposed Action.

Reduced AUMs Alternative. JQS Common Allotment. The Reduced AUMs Alternative would be the same as the Proposed Action except that a 25% reduction in AUMs would be implemented. This would result in a reduced number of sheep grazing the allotment as compared to the Proposed Action. Anticipated habitat conditions and changes would be the same as discussed under the Proposed Action except that improvement in stream habitat conditions would likely occur quicker given the reduced AUMs.

Porcupine Common Allotment. Under the Reduced AUMs Alternative only the JQS Common Allotment would have reductions. Impacts for this allotment would be the same as the Proposed Action. This alternative would have “no effect” to Green Lineage cutthroat trout or their habitat.

ANALYSIS OF THE PUBLIC LAND HEALTH STANDARDS 3 FOR AQUATIC WILDLIFE SPECIES AND 4 FOR SPECIAL STATUS AQUATIC WILDLIFE SPECIES.

JQS Common Allotment. A land health assessment was completed for the JQS Common Allotment in 2013 (BLM 2014). Portions of the allotment were not meeting Land Health Standard 4 for cutthroat trout or Land Health Standard 3 for aquatic species – brook trout. Livestock grazing was identified as a significant causal factor for not meeting the standards on some streams. East Fork Parachute Creek and JQS Gulch are also not meeting due to the presence of nonnative brook trout which have outcompeted cutthroat trout.

The No Grazing, Reduced AUMs, and Proposed Action Alternatives would, in order of timeliness and likelihood, move the allotment towards meeting Land Health Standards 3 and 4.

Porcupine Common Allotment. A land health assessment was completed on this allotment in 2004 (BLM, 2005). The allotment was meeting Land Health Standard 3 for aquatic species and Land Health Standard 4 for special status aquatic wildlife. Based on analysis in this EA and

grazing use levels measured in 2008, 2010 and 2011; all alternatives would continue to maintain land health standards.

Spruce Gulch Common Allotment. A land health assessment was completed on this allotment in 2004 (BLM, 2005). The allotment was meeting Land Health Standard 3 for aquatic wildlife. All alternatives would continue to maintain land health standards.

TERRESTRIAL WILDLIFE: MIGRATORY BIRDS

AFFECTED ENVIRONMENT.

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the U.S. Fish and Wildlife Service (USFWS) to “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973.” *Birds of Conservation Concern 2008* (<http://www.fws.gov/migratorybirds/reports/BCC2008/BCC2008m.pdf>) is the most recent effort to carry out this mandate. The conservation concerns may be the result of population declines, naturally or human-caused small ranges or population sizes, threats to habitat, or other factors. The primary statutory authority for *Birds of Conservation Concern 2008 (BCC 2008)* is the Fish and Wildlife Conservation Act of 1980 (FWCA), as amended. Although there are general patterns that can be inferred, there is no single reason why any species was is on the list. The Glenwood Springs Field Office is within the Southern Rockies/Colorado Plateau Bird Conservation Region (BCR). The 2008 list include the following birds: Gunnison sage grouse, American bittern, bald eagle, ferruginous hawk, golden eagle, peregrine falcon, prairie falcon, snowy plover, mountain plover, long-billed curlew, yellow-billed cuckoo, burrowing owl, Lewis's woodpecker, willow flycatcher, gray vireo, pinyon jay, juniper titmouse, veery, Bendire's thrasher, Grace's warbler, Brewer's sparrow, grasshopper sparrow, chestnut-collared longspur, black rosy-finch, brown-capped rosy-finch, and Cassin's finch.

Habitat loss due to alteration or destruction continues to be the major reason for the declines of many species (USFWS, 2008). When considering potential impacts to migratory birds the impact on habitat, including: 1) the degree of fragmentation/connectivity expected from the proposed project relative to before the proposed project; and 2) the fragmentation/connectivity within and between habitat types (e.g., within nesting habitat or between nesting and feeding habitats. Continued private land development, surface disturbing actions in key habitats (e.g. riparian areas) and the proliferation of roads, pipelines, oil and gas pads, powerlines and trails are local factors that reduce habitat quality and quantity.

The CRVFO planning area provides both foraging and nesting habitat for a variety of migratory birds that summer, winter, or migrate through the area. The habitat diversity provided by the broad expanses of sagebrush, mixed mountain shrub, aspen, pinyon-juniper woodlands, other types of coniferous forests and riparian and wetland areas support many bird species. The pinyon jay is characteristically found in pinyon/juniper woodlands. The Brewer's sparrow (*Spizella breweri*) is found within sagebrush habitats and is discussed in more depth in the special status species section (below) due to the likelihood of potential impacts on this species. Other Birds of

Conservation Concern may also occur locally. Many species of raptors (red-tailed hawks, golden eagles, northern goshawks, Cooper's hawks, kestrels and owls) not on the Fish & Wildlife Service's Birds of Conservation Concern list also could occur in the area.

ENVIRONMENTAL CONSEQUENCES.

Proposed Action. All Allotments. Limited bird count or species data exists for these allotments; however, the greater concern is the continued fragmentation of habitat and losses of large blocks of contiguous habitat required by many bird species. No intentional take of native bird species is anticipated under the Proposed Action. Livestock grazing could result in the accidental destruction of ground nests through trampling. This impact is expected to be minimal and isolated and would not influence populations of migratory birds on a landscape level. Given current overall habitat condition, livestock grazing, as proposed, will not negatively affect the degree of fragmentation relative to the existing condition of the allotment or the connectivity between habitat types (e.g., within nesting habitat or between nesting and feeding habitats would also likely not change).

JQS Common Allotment. Habitat conditions for migratory birds using riparian areas and adjacent terraces are expected to improve because sheep will not linger in these areas as cattle did. Perennial vegetation should become denser and move towards later seral stages with increased plant diversity. Sheep in upland areas are expected to forage on shrubs, particularly later in the year. This will likely reduce shrub canopy cover and lead to an increased grass and forb cover. These changes are expected to benefit some migratory birds and possibly degrade conditions for birds that select shrubs with dense canopy cover for nesting.

To address potential impacts from running full numbers of sheep on JQS, a 6-pasture rotational grazing system was designed to promote plant health by providing periodic rest from grazing. This arrangement will be coordinated with BLM annually. Monitoring will be implemented to ensure that resource objectives are being achieved and utilization levels do not exceed requirements of the AMP. As long as acceptable utilization levels are maintained and land health standards are achieved, any negative impacts to migratory birds from livestock grazing are expected to be minimal and isolated, and should not influence migratory bird populations on a landscape level.

Porcupine Common and Spruce Gulch Common Allotments. In the Porcupine Common allotment, grazing use levels measured in 2008, 2010 and 2011 after the intensive use period from 5/15-6/15 varied from non-use to a maximum of 30% use. There is no recent utilization data for the Spruce Gulch Common allotment. Assuming similar use levels in the future, livestock grazing is likely to maintain adequate habitat conditions for migratory birds.

No Action Alternative. JQS Common Allotment. This alternative allows for current grazing schedule and kind of livestock (cattle) which has been identified as a contributing factor to portions of the allotment not meeting Land Health Standard 3 for terrestrial wildlife. It is expected that this alternative would perpetuate continued poor livestock distribution and current vegetation trends.

Porcupine Common and Spruce Gulch Common allotment. This alternative would authorize the existing level of use on the allotment. Impacts would be same as the Proposed Action.

No Grazing Alternative. All Allotments. This alternative would benefit some species while constraining other species. A no grazing alternative precludes a grazing disturbance that could potentially maintain some level of age-class diversity needed for the greatest range of species that stand to benefit from varying habitat conditions. This alternative provides the greatest availability of cover which could allow for increased nesting and recruitment success. Potential trampling of nests or disturbance by livestock would not occur.

Reduced AUMs Alternative. JQS Common Allotment. This alternative is similar to the Proposed Action except the authorized use would be reduced by 25%. This would provide for adequate rest and recovery for vegetation. Herders would also be able to rotate use areas with less overlap annually. Degraded terraces adjacent to streams would be expected to improve more quickly with this alternative compared to the Proposed Action. The overall habitat conditions for migratory birds should also improve faster with this alternative compared to the Proposed Action.

TERRESTRIAL WILDLIFE: SENSITIVE, THREATENED, AND ENDANGERED SPECIES

AFFECTED ENVIRONMENT.

JQS Common Allotment. Greater Sage-grouse. The greater sage-grouse (*Centrocercus urophasianus*), a species restricted to sagebrush rangelands in western North America, is declining across much of its range (CGSGCP 2008). The U.S. Fish and Wildlife Service (USFWS) announced in 2010 that the greater sage-grouse would be added to the Endangered Species Act “Candidate” list. The reason for the listing is tied to reduced habitat quality and quantity throughout its range. Locally the primary threat to this population is energy and mineral development, with secondary threats such as livestock grazing and habitat quality. (Parachute – Piceance - Roan Conservation Plan 2008).

Colorado Parks and Wildlife developed the greater sage-grouse GIS data set identifying Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH) within Colorado. This data is a combination of mapped grouse occupied range, production areas, and modeled habitat (summer, winter, and breeding). PPH is defined as areas of high probability of use (summer or winter, or breeding models) within a 4 mile buffer around leks that have been active within the last 10 years. Isolated areas with low activity were designated as general habitat. PGH is defined as greater sage-grouse occupied range outside of PPH that could be capable of supporting birds. PGH is the only class of mapped habitat overlapping the JQS Common Allotment.

Greater sage-grouse on the Roan Plateau are part of the Parachute-Piceance-Roan (PPR) population which is part of a smaller sub-population (<200 birds) that is on the most southerly

range of known greater sage-grouse habitat. There are no known leks near the JQS Common Allotment.

The most suitable habitat in the landscape tends to be on non-forested south-facing slopes of relatively mild slope with sagebrush and mixed mountain shrub communities precipitating into more open riparian areas. Ridge tops and spines capable of supporting big sagebrush are also identified as suitable habitat for sage grouse on the landscape.

Townsend's Big-eared Bat and Fringed Myotis. Townsend's big-eared bats (*Corynorhinus townsendii*) and Fringed myotis (*Myotis thysanodes*) occur as scattered populations at moderate elevations on the western slope of Colorado. Habitat associations are not well defined. Both bats will forage over water and along the edge of vegetation for aerial insects. These bats commonly roost in caves, rock crevices, mines, buildings or tree cavities. Both species are widely distributed and usually occur in small groups. Townsend's big-eared bats are not abundant anywhere in their range. This is attributed to patchy distribution and limited availability of suitable roosting habitat (Gruver, J.C. and D.A. Keinath 2006). Anvil Points Claystone Cave is the closest identified roost site and hibernaculum for Townsend's big-eared bats (Neubaum 2013). Limited swarming behavior has been recorded at Anvil Points Mine and Claystone Caves near the cliffs and toe-slope of the Roan Cliffs in September of 2013.

Northern Goshawk. The Northern goshawk (*Accipiter gentilis*) is a rare to uncommon resident in the mountains and an occasional migrant to lower elevations. Predominantly uses mature stands of aspen, and ponderosa/ lodgepole pines. Goshawks prey on small-medium sized birds and mammals. It breeds in coniferous deciduous and mixed forests. The nest is typically located on a northerly aspect in a drainage or canyon and is often near a stream. Nest areas contain one or more stands of large, old trees with a dense canopy cover. Ideal nesting conditions are pockets of mature aspen on relatively flat shelves or benches between cliffs or steeper topography. A goshawk pair occupies its nest area from March until late September. The nest area is the center of all movements and behaviors associated with breeding from courtship through fledging. None were observed during the assessment however adequate habitat exists on the Roan Plateau that would be suited for foraging or nesting adults.

Brewer's Sparrow. The Brewer's sparrow (*Spizella berweri*) is a 72dequate72m72 migrant that summers in western Colorado mountain parks and is a spring/fall migrant at lower elevations. The species is a sagebrush obligate with an apparently secure conservation status in Colorado. Primary Brewer's sparrow habitat is identified as mature big sagebrush (*Artemisia 72dequate72m spp.*) ranging in height from 1.6 ft to 3 ft, with low to moderate canopy cover, and habitat patches greater than or equal to 15 acres. Mesic sites, particularly riparian areas within sagebrush habitats, were also identified as an important primary habitat component. Alteration of vegetation in sagebrush habitats due to livestock grazing may affect Brewer's sparrow abundance. (Vasquez 2005). Grazing may occasionally affect Brewer's sparrows nests through trampling or disturbance.

Ocular surveys during the 2013 Land Health Assessment and ESI data generally show sagebrush shrublands are very mature with a closed canopy which is not preferred by Brewer's sparrows.

Spruce Gulch Common and Porcupine Common Allotments. Bald Eagles. On June 28, 2007 the Department of Interior took the bald eagle off the Endangered Species List. The bald eagle remains on the BLM Sensitive Species list and reserves protections under the Bald and Golden Eagle Protection Act of 1940 against “take” of eagles. Bald eagle winter foraging habitat overlaps with the Spruce Gulch Common Allotment.

Midget-Faded Rattlesnake. Midget faded rattlesnakes are found within most habitat types within their range. There are no published records of trend or abundance in Colorado. Populations may be higher to the west in and around Grand Junction, Colorado. The main threats to this species are development, outright killing, and illegal collection of individuals for commercial purposes.

Although site specific locations may not be achieving Standard 3, the landscape as a whole appears to provide suitable habitat in quantities commensurate with the limited number of individuals likely to occur in the area. Standard 4 is being achieved for this snake species within the Rifle West Watershed.

ENVIRONMENTAL CONSEQUENCES.

Proposed Action. *JQS Common Allotment.* Greater Sage-grouse. The change in the kind of livestock (cattle to sheep) would be beneficial for maintaining sage-grouse habitat on the JQS Common Allotment for the following reasons:

- 1) Distribution (relative to landscape)
 - a) Sheep are known as intermediate grazers meaning they select grass, forb, and browse opportunistically when available.
 - b) Sheep will selectively graze steeper terrain (uplands) more than cattle and tend to avoid wet marshy areas.
- 2) Utilization (physiological advantages)
 - a) Grasses and forbs are preferred in the spring when tender and then transition to browse later in the season when grasses and forbs have cured to maintain nutritional demands. Sheep are able to digest more secondary plant compounds found in shrubs than cattle.
 - b) Anatomically different from cattle, they can harvest prostrate plants or strip leaves or flower stems. (ASI 2006)

Additionally, sheep are well adapted to short dense upland shrub communities that are prevalent on the Roan Plateau. As intermediate grazers, sheep are expected to thin out canopy covers that are currently believed to be too dense for sage-grouse structural habitat selection (CGSGCP 2008).

This alternative authorizes 2,000 sheep from 6/1 to 10/30 and 2,525 sheep from 9/15 to 10/30. Another permit authorizes 1,000 sheep from 6/1 to 7/1 and 10/1 to 10/30. To address potential impacts from running full numbers of sheep on JQS, a 6-pasture rotational grazing system was designed to promote plant health by providing periodic rest from grazing. This arrangement will be coordinated with BLM annually. Monitoring will be implemented to ensure that resource objectives are being achieved and utilization levels do not exceed requirements of the AMP.

Townsend's Big-eared Bat and Fringed Myotis. This alternative is expected to cause reduced vegetation heights and cover. Sheep grazing on certain species such as perennial grasses and forbs can indirectly cause less root masses and species composition that produce insects needed by these species. Additionally increased defoliation of shrub species could likely reduce insect gleaning opportunities for these species. These impacts would be difficult to measure, and it is expected that insects would be abundant and widespread enough that there would not be a measurable effect to the resident or occasional bat use.

Northern Goshawk. This accipiter generally uses interior mature forest and hunts in open pockets surrounded by dense timber or steep topography. Sheep use is not expected to overlap or be concentrated in these habitats and thus not likely to have measurable direct or indirect effect to this species.

Brewer's Sparrow. Benefits from this alternative would be similar to those described above for greater sage-grouse. Sheep are intermediate grazers that can open up shrub canopies and interspaces associated with short dense vegetation types typical of the Roan Plateau landscape. Brewer's sparrow may benefit from some moderate canopy cover reduction in sagebrush shrublands.

Spruce Gulch and Porcupine Common Allotments. Bald Eagles. Bald eagles are suspected to be seasonal, occasional visitors to the allotments. Raptors like bald eagles should continue to find an adequate and diverse prey base since native vegetation communities and riparian areas are meeting land health standards.

Midget-faded Rattlesnake. Little is known of the presence or use of these allotments by this species. Impacts from grazing could result in the reduction of herbaceous cover and hiding cover for prey species. The grazing schedule is not likely to cause measurable impacts to habitat or populations of this species.

No Action Alternative. *JQS Common Allotment.* Greater Sage-grouse. No changes to the current livestock grazing would be authorized under this alternative. Within the JQS Common Allotment, habitat for this species most likely represents late-brood rearing (summer and fall) habitat.

Chick survival has been identified as a population "sink," where chicks are not surviving past the brood rearing period of the spring through summer (CGSGCP 2008). Causes for low chick recruitment can indirectly be attributed to overgrazing that would cause less residual herbaceous heights necessary for sage grouse survival such as concealment from predation. Low herbaceous heights may also cause avoidance behavior or brood abandonment near mesic areas that hold critical forb and insect production needed for brood development. The majorities of streamside terraces are currently experiencing heavy grazing utilization and receiving proportionately high soil compaction that is impacting vegetation's ability to grow and establish root masses capable of supporting insect production. This concentrated livestock use is limiting the vegetative species composition typical of these sites and creating an unnatural edge effect between riparian and upland shrub communities that may discourage sage-grouse use in these areas. Adequate cover and forb production in these areas is essential as these mesic areas represent feeding

grounds for developing broods. During the Roan Cliffs land health assessment, observations determined that basic upland structural vegetation heights and cover associated with brood rearing activity in mesic zones and streamside terraces were not being met on the majority of these sites.

Mountain shrub communities, particularly serviceberry, are more common and extensive in the PPR population than elsewhere in the greater sage-grouse range. Although this population of grouse is known to use serviceberry (CGRSCP 2008), lack of disturbance has allowed mountain shrub communities to crowd out healthy sagebrush communities which are preferred habitat. 2013 ESI monitoring shows of the 33 transects performed, 6 were suitable to meet structural and vegetative species composition needs for sage-grouse. The remainder were either forested (7 transects) or showed too dense of shrub canopy cover to be considered suitable for sage-grouse. Overall, under the current grazing schedule, dense canopy covers associated with late seral shrub communities and inadequate upland cover near streamside terraces would persist and limit sage-grouse abundance.

Townsend's Big-eared Bat and Fringed Myotis. Little is known about the use of these species in the area; however, adequate forage and roosting habitats are available within the allotment. These are insectivores that typically glean insects off tree leaves or large vegetation. Current livestock grazing is not expected to negatively impact these species.

Northern Goshawk. Little is known about the presence or use of this allotment by this species. Cattle grazing could impact vegetation cover needed to support prey species of goshawk and indirectly cause negative impacts to this species by disrupting this cycle or potential.

Brewer's Sparrow. Under the existing management and use levels, vegetation conditions on the upland terraces would likely remain in poor condition. Cattle have made little use of the side hills and ridgetops, thus vegetation in many of these areas is trending toward late-successional stage plant composition. Continuation of the current grazing schedule is likely to foster dense, old-age class shrubs and corresponding reductions in the abundance of understory grasses and forbs which will reduce the quality of Brewer's sparrow habitat.

Spruce Gulch Common and Porcupine Common Allotments. Bald Eagle and Midget-Faded Rattlesnake. This alternative would authorize the existing grazing schedule on the allotment. Impacts would be same as the Proposed Action.

No Grazing Alternative. *JQS Common Allotment.* Greater Sage-Grouse and Brewer's Sparrow. These species prefer less dense shrub canopies than are occurring within the allotment. Without some level of disturbance (e.g., grazing) or active management, these communities could become unusable by these species, so the no grazing alternative could be detrimental over the longterm. Conversely for sage-grouse, no grazing on riparian terraces would likely make these habitats more valuable for sage-grouse hens and their broods as herbaceous cover would be restored and provide root masses capable of producing insects.

Northern Goshawk and Bats. These species would likely benefit from this alternative as more vegetation would be available overall which could produce more prey.

Spruce Gulch Common and Porcupine Common Allotments. Bald Eagles and Midget-faded Rattlesnake. These species would likely benefit from this alternative as more vegetation would be available overall which could provide more hiding cover and indirectly produce more prey species.

Reduced AUMs Alternative. *JQS Common Allotment.* This alternative calls for a 25% reduction of AUMs and a sheep only rotation. Anticipated habitat conditions and recovery would be the same as the Proposed Action except that improvements to upland terraces would likely occur faster given the reduced AUMs.

Greater Sage-grouse. The environmental effects to this species would be very similar for this alternative to the Proposed Action. Although difficult to predict a reduced sheep use impact, it would likely still benefit sage-grouse with reduced upland shrub canopies while allowing recovery of mesic areas as sheep are not expected to concentrate use on these sites.

Townsend's Big-eared Bat and Fringed Myotis. This alternative is expected to cause reduced vegetation heights and foliar cover. Sheep grazing on certain species such as perennial grasses and forbs can indirectly cause less root masses and species composition that produce insects needed by these species. Additionally, increased defoliation of shrub species could likely reduce insect gleaning opportunities for these species. These impacts would be difficult to measure, and it is expected that insects would be abundant and widespread enough to not have a measurable effect to the few resident or occasional bat use possibilities anticipated.

Northern Goshawk. This accipiter generally uses interior mature forest and hunts in open pockets surrounded by dense timber or steep topography. Sheep use is not expected to overlap or be concentrated in these habitats and thus not likely to have measurable direct or indirect effect to this species.

Brewer's Sparrow. Benefits from this alternative would be similar to the above sage-grouse analysis for sheep utilization. Sheep are intermediate grazers that are equipped to open up canopies and interspaces associated with short dense vegetation types typical of the Roan landscape. Brewer's sparrow benefit from sage communities that have some level of disturbance and are initially expected to benefit from the reduced AUM alternative.

Spruce Gulch and Porcupine Common Allotments. This alternative would authorize the existing grazing schedule on the allotments. Impacts would be same as the Proposed Action.

ANALYSIS OF LAND HEALTH STANDARD 4 FOR SPECIAL STATUS TERRESTRIAL WILDLIFE

JQS Common Allotment. Land health standards for the Roan Plateau were assessed in the summer of 2013, and approximately 10% of the landscape was not achieving standard 4 for special status species. The areas not achieving were attributed to fragmentation by fences, weeds, and primarily poor livestock distribution. Species that were most negatively impacted by livestock use on the Roan Plateau likely are the Brewer's sparrow and the greater sage-grouse. The 2011-2012 ESI transects revealed a sample of upland vegetation conditions that are expected

to be too dense for suitable habitat for these birds. Additionally, most riparian terraces were not meeting structural herbaceous cover heights or vegetative species composition associated with conservation standards for sage-grouse survival and recruitment of offspring.

The alternatives presented in this document offer a solution to helping the allotment achieve Standard 4 in the foreseeable future. Most notably, authorizing sheep instead of cattle was identified by the interdisciplinary staff as a viable option for improving the landscape for multiple resources. Authorizing sheep would likely benefit special status species by diversifying vegetative age classes on multiple upland habitat types that were identified as being too dense to support some species or in poor condition. It is expected that grazing alternatives authorizing sheep would allow a balance of use and rest necessary for these areas to thrive and recover. The Reduced AUMs Grazing Alternative is expected to achieve Land Health Standard 4 for special status species faster than the Proposed Action.

Spruce Gulch and Porcupine Common Allotments. A final Land health assessment report was completed for the Rifle West Watershed in 2005 for these allotments. The allotments were meeting Land Health Standard 4 for special status terrestrial wildlife. Renewal of the same grazing schedule as the current livestock grazing permit would likely result in maintaining the current ecological condition of the allotments. Based on analysis in this EA and grazing use levels measured in 2008, 2010 and 2011, all alternatives would continue to maintain land health standards for special status terrestrial wildlife species.

TERRESTRIAL WILDLIFE

AFFECTED ENVIRONMENT.

Reptiles. Reptile species most likely to occur in these allotments include the western fence lizard (*Sceloporus 77dequate77*) and gopher snake (bullsnake) (*Pituophis catenifer*) in xeric shrublands or grassy clearings and the western terrestrial garter snake (*Thamnophis elegans*) along creeks/riparian areas. Other reptiles potentially present along creeks, although more commonly found at lower elevations than the site, are the milk snake (*Lampropeltis 77dequate77m*) and smooth green snake (*Opheodrys vernalis*).

Passerine Birds. Passerine (perching) birds are commonly found in the assessment area include: the American robin (*Turdus migratorius*), western scrub-jay (*Aphelocoma californica*), black-capped chickadee and mountain chickadee (*Poecile atricapilla* and *Poecile gambeli*), cedar waxwing (*Bombycilla cedrorum*), crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), sparrow spp., humming birds (*Selasphorus platycercus* and *Archilochus alexandri*), and black billed magpie (*Pica pica*).

Gallinaceous Birds. Gallinaceous (game birds) are commonly found in the area and include ring-necked pheasant (*Phasianus colchicus*), dusky grouse (*Dendragapus obscurus*), greater sage-grouse (JQS Common Allotment only), and wild turkey (*Meleagris gallopavo*).

Waterfowl. The Colorado River, numerous creeks, reservoirs, ponds, and associated riparian vegetation provide habitat for a wide variety of waterfowl and shorebirds. Common species include great blue heron (*Ardea 78dequate*), Canada goose (*Branta Canadensis*), mallard (*Anas platyrhynchos*), green-winged teal (*Anas Carolinensis*), common merganser (*Mergus merganser*), northern pintail (*Anas acuta*).

Birds of Prey. Birds of prey (eagles, falcons, hawks, and owls) may migrate, nest, or are residents in the area. Common raptor species in the area include the: northern harrier (*Circus cyaneus*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), northern goshawk (*Accipiter gentilis*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), rough-legged hawk (*Buteo lagopus*), American kestrel (*Falco sparverius*), barn owl (*Tyto alba*), flammulated owl (*Otus flammeolus*), western screech-owl (*Otus kennicottii*), great horned owl (*Bubo virginianus*), northern pygmy-owl, long-eared owl (*Asio otus*), boreal owl (*Aegolius funereus*), and northern saw-whet owl (*Aegolius acadicus*).

Mammals. Numerous small mammals reside within the assessment area including ground squirrels (*Spermophilus* spp.), chipmunks (*Neotamias* spp.), rabbits (*Sylvilagus* spp.), skunks (*Mephitis mephitis*), and raccoons (*Procyon lotor*). Many of these small mammals provide the main prey for raptors and larger carnivores. These species are most likely to occur along the drainages, near the margins of dense mountain shrub, or in the small area of aspen and spruce/fir. Larger carnivores expected to occur include the bobcat (*Lynx rufus*) and the coyote (*Canis latrans*). Black bears (*Ursus americanus*) make use of oaks and the associated chokecherries and serviceberries for cover and food.

Big Game. Mule deer (*Odocoileus hemionus*) Rocky Mountain elk (*Cervus elaphus nelsonii*), and moose (*Alces alces*) occur in the project area. Although not considered habitat, there have been incidental reports of bighorn sheep on the cliffs of the Roan Plateau (CPW pers. Comm. 2013). In addition to grazing by domestic livestock, wild ungulate grazing is a factor contributing to range conditions in the landscape. BLM lands provide a good portion of the undeveloped habitat available to big game. CPW maps big game habitats in Colorado.

The management of big game is the responsibility of CPW. CPW manages big game species through specific management objectives for each species. BLM participates in the planning process when Data Analysis Unit (DAU) objectives for mule deer and elk are revised and updated. When big game populations exceed objectives, the CPW generally issues additional licenses to reduce the numbers to objective levels. BLM is responsible for the management of wildlife habitats under its jurisdiction and works cooperatively with the CPW in managing these habitats on BLM lands within the watershed. The CRVFO's 1984 (Revised 1988) Resource Management Plan (RMP) allocated existing forage proportionately to livestock and big game, the criterion being active preference for livestock and 5-year average demand for big game.

Mule Deer. Mule deer are a recreationally important species which are common throughout suitable habitats in the region. Deer are migratory, meaning they summer at higher elevations and move down slope as winter approaches. Deer move to lower elevations and forage on sagebrush-dominant ridges and south-facing slopes at lower elevation in the winter. The JQS Common Allotment is considered entirely and exclusively summer habitat for mule deer.

Porcupine Common is considered 24% winter concentration. Spruce Gulch is considered 46% winter concentration with 11% of that area also considered severe winter habitat for mule deer.

Mule Deer within the landscape assessment are managed in DAU D-41 for JQS Common Allotment and D-12 for Spruce Gulch and Porcupine Common. DAUs are population estimates for individual big game herds found throughout the state. Game Management Units (GMUs) are areas managed for permitted harvest of big game numbers based on overall herd (DAU) population objectives. Current population estimate and herd objectives are summarized below.

Logan Mountain Deer Herd Plan DAU D-41 (GMUs: 31 & 32):

Current Population Estimate: 7,690 deer / (post hunt 2009)
CPW Recommended Population Objective: 6,500 – 8,500 deer

Grand Mesa North Deer Herd Plan DAU D-12 (GMUs 41, 42, & 421):

Current Population Estimate 20,750 deer/ (post hunt 2009)
CPW Recommended Population Objective: 17,000 – 23,000 deer

Rocky Mountain Elk. Another recreationally important big game ungulate (hoofed animal), the Rocky Mountain elk, is also present. Rocky mountain elk can be found in most habitat types and elevations at least on a seasonal basis. Elk are considered generalist feeders that utilize shrubs, grasses, and forbs. Calving grounds are carefully selected by the cows and are generally in locations where cover, forage, and water are found together. Elk tend to inhabit higher elevations during spring and summer and migrate to lower elevations for winter range. Elk form large, sometimes mixed, herds on favored winter range. Porcupine Common is considered 98% winter range for elk. Spruce Gulch is considered 39% winter concentration and 15% elk production or calving. The JQS Common Allotment is considered 62% calving and summer use in its entirety.

Rocky Mountain elk in the assessment area are managed in DAU E-10 for the JQS Common Allotment and DAU E-14 for Spruce Gulch and Porcupine Common. Herd objectives are summarized below.

Yellow Creek Elk Herd Plan E-10 (GMUs: 21, 22, 30, 31, & 32):

Current Population Estimate: 11,760 elk/ (post hunt 2009)
CPW Recommended Population Objective: 7,000 – 9,000 elk

Grand Mesa Elk Herd Plan DAU E-14 (GMU's 41, 42, 411, 421, 52, & 521):

Current Population Estimate: 18,120 elk/ (post hunt 2009)
CPW Recommended Population Objective: 9,000 – 11,000 elk

Moose. Shiras moose (*Alces alces shirasi*) rarely compete with livestock or other big game for forage as they primarily forage on willow. Moose tend to be found along riparian areas and in

timbered areas, though they will cross semi-desert shrublands at times. Moose sightings have been reported on the Roan Plateau and are managed by hunting in DAU M-5 for the greater Grand Mesa region including the Spruce Gulch and Porcupine Common allotments.

Mountain Lions. Mountain lions within the landscape assessment area are managed in DAU L-7 and L-9, which encompass a very large northwest portion of Colorado. Mountain lions are primarily associated with the lower elevation habitats within these DAUs among the rocky, steep canyons. As in most areas in Colorado, lion habitat overlaps with the range of their principle food source, mule deer. It is estimated that this landscape contains a high density of mountain lions as much of the DAU areas are undeveloped and low elevation.

ENVIRONMENTAL CONSEQUENCES.

Proposed Action. JQS Common Allotment. The 2013 Land Health Assessment identified cattle distribution as a limiting factor, so the change from cattle to sheep is expected to benefit terrestrial wildlife. Sheep are expected to open up shrub canopies, and because sheep do not concentrate near water, riparian areas and adjacent terraces are expected to recover. To address potential impacts from running full numbers of sheep on JQS, a 6-pasture rotational grazing system was designed to promote plant health by providing periodic rest from grazing. This arrangement will be coordinated with BLM annually. Monitoring will be implemented to ensure that resource objectives are being achieved and utilization levels do not exceed requirements of the AMP. As long as acceptable utilization levels are maintained and land health standards are achieved, any negative impacts to terrestrial wildlife from sheep grazing are expected to be minimal and isolated, and should not influence terrestrial wildlife populations on a landscape level.

Porcupine Common Allotment. Vegetation within the allotment is dominated by pinyon-juniper woodlands and sagebrush parks at lower elevations transitioning to Gambel oak/mesic mountain shrub dominated communities at higher elevations. Sagebrush stands have a high percentage of decadent shrubs and encroachment of pinyon-juniper trees into sagebrush is common. Two miles of the perennial Porcupine Creek flows through the Porcupine Common Allotment, along with several unnamed ephemeral tributaries. These serve as watering sources for wildlife. In the Porcupine Common Allotment, grazing use levels measured in 2008, 2010 and 2011 varied from non-use to a maximum of 30% use. Livestock grazing is not a major factor affecting the quality or quantity of terrestrial wildlife habitat. Since no changes in livestock grazing management are proposed, adequate terrestrial wildlife habitat conditions are expected to be maintained.

Spruce Gulch Common Allotment. Vegetation within the allotments is dominated by pinyon-juniper woodlands and sagebrush parks at lower elevations transitioning to Gambel oak/mesic mountain shrub dominated communities at higher elevations. Sagebrush stands have a high percentage of decadent shrubs and encroachment of pinyon-juniper trees into sagebrush is common. There is no recent utilization data for the Spruce Gulch Common allotment. Livestock grazing is not a major factor affecting the quality or quantity of terrestrial wildlife habitat. Since no changes in livestock grazing management are proposed, adequate terrestrial wildlife habitat conditions are expected to be maintained.

No Action Alternative. JQS Common Allotment. Elk populations are exceeding objectives and the upland habitat remains resilient from big game use. However, the 2013 ESI and ocular estimates taken during the assessment process show a general trend of dense undisturbed upland vegetation (high canopy cover and increasing shrub components) that are hindering overall age class diversity of plants needed to sustain healthy and diverse wildlife habitats. Alternatively, concentrated livestock use in riparian zones and adjacent terraces show these areas are not adequately rested and are diminishing cover needs for a wide variety of wildlife species. These issues are expected to continue under this alternative.

Spruce Gulch Common and Porcupine Common Allotments. This alternative would authorize the existing level of use on the allotments. Impacts of this alternative would be the same as the Proposed Action.

No Grazing Alternative. All Allotments. In the absence of livestock grazing, any competition for forage between livestock and terrestrial wildlife, especially big game, would be eliminated, and BLM lands within the allotments would be available for exclusive use by wildlife. However, other land uses and authorizations affecting terrestrial wildlife would continue to occur. Since the Proposed Action only affects BLM lands, nearby private lands could see an increase in livestock use to make up for the loss grazing on BLM lands.

Reduced AUMs Alternative. JQS Common Allotment. This alternative is similar to the Proposed Action except the authorized use would be reduced by 25%. The reduced numbers would allow for more rest and recovery time in between use periods. The larger permit would still use 5 pastures, and the 2,074 sheep would be authorized from 6/1 to 10/30 and 750 sheep would be authorized from 6/1 to 7/1 and 10/1 to 10/30. Fewer sheep would be expected to have fewer negative impacts on vegetation than the Proposed Action. This alternative would offer some needed disturbance to existing mid-climax seral shrubland communities and address the habitat issues caused by cattle grazing. Vegetation is expected to recover more quickly under this alternative than the Proposed Action due to the reduced number of AUMs.

Spruce Gulch Common and Porcupine Common Allotments. Under the Reduced AUMs Alternative, only the JQS Common allotment would have reductions. Impacts of this alternative would be the same as the Proposed Action.

ANALYSIS OF LAND HEALTH STANDARD 3 FOR TERRESTRIAL WILDLIFE

JQS Common Allotment. Land health standards for the Roan Cliffs were assessed in the summer of 2013, and approximately 9% of the landscape was not achieving standard 3 for healthy animal communities. ESI and ocular estimates taken during the assessment process show a general trend of dense undisturbed upland vegetation (i.e., high canopy cover and increasing shrub densities) that are hindering overall age class diversity of plants needed to sustain healthy and diverse wildlife habitats. Alternatively, concentrated cattle use in riparian zones and adjacent terraces show these areas are not adequately rested and are diminishing cover needs for a wide variety of wildlife species.

The change from cattle to sheep should improve the habitat issues caused by cattle grazing and help move conditions towards improving Land Health Standard 3 for terrestrial wildlife. Sheep generally prefer grasses and forbs during spring and then browse shrubs later in the growing season. This should provide a disturbance to the dense upland vegetation in this allotment. Additionally, sheep do not linger in wetlands, which should provide much needed relief in riparian areas and adjacent upland terraces.

Spruce Gulch and Porcupine Common Allotments. A final Land health assessment report was completed for the Rifle West Watershed in 2005 for these allotment areas. Livestock grazing was not considered a factor in not achieving Land Health Standard 3 on these allotments. Renewal of the same grazing schedule as the current livestock grazing permit would likely result in maintaining the current ecological condition of the allotments. Based on analyses in this EA and grazing use levels measured in 2008, 2010 and 2011, all alternatives would continue to maintain land health standards for terrestrial wildlife species.

CUMULATIVE EFFECTS.

Soil and Water. Cumulative impacts to soil and water resources can occur from existing roads and trails throughout the JQS Common allotment. Roads and trails contribute to increased surface runoff and accelerated erosion, especially where proper drainage is lacking. BLM Road #8006 runs adjacent to Northwater Creek for a substantial portion of the allotment. The proximity of the road to the stream has influenced the soils and water quality, by confining the stream channel in places, limiting riparian vegetation, and compacting soils. The road also facilitates livestock trailing along the creek, which further degrades soils and water quality. Other impacts such as vegetation treatments and weed treatments may also change water infiltration or runoff rates and affect soil and water resources. Cumulative effects to soil and water are difficult to quantify; however, if proper best management practices are implemented along with compliance with the terms and conditions of the AMP, cumulative impacts to soils and water can be substantially mitigated.

Threatened, Endangered, and Sensitive Plants. The Anvil Points Critical Habitat Unit for Parachute penstemon extends beyond the JQS Common Allotment into a portion of the Mahaffey Summer, Cottonwood Gulch, Webster Park, and Sharrard Park Allotments. In the Cottonwood Gulch, Webster Park and Sharrard Park Allotments, the Critical Habitat Unit consists of the southern cliff face of the Roan Plateau. No livestock grazing occurs on these steep talus slopes. The Mahaffey Summer Allotment lies above the rim of the Plateau on more gentle topography. The allotment has not been grazed by livestock for nearly a decade. As such, there would be no cumulative impact of livestock grazing on the remainder of the Anvil Points Critical Habitat Unit.

Wildlife, Including Special Status Species. The area covered by the Proposed Action only comprises a portion of the watershed. Other land use activities (e.g., recreation, hunting, road maintenance, oil and gas development) occur within the watershed. Some of these activities have altered the amount of suitable and potentially suitable habitat for wildlife. Cumulatively, many of the future actions planned on private and other lands may have some undetermined effect on

wildlife including special status species habitat. The Proposed Action would create negligible landscape-level cumulative impacts to wildlife when viewed in comparison with those activities currently occurring and reasonably certain to occur on adjacent private/other lands.

CONSULTATION.

The following stakeholders were contacted:

- Southern Ute Indian Tribe
- Ute Mountain Ute Tribe
- Uinta and Ouray Agency Ute Indian Tribe
- Grazing permittees

LIST OF PREPARERS.

Members of the CRVFO interdisciplinary team who participated in the impact analysis of the Proposed Action and alternatives, development of appropriate mitigation measures, and preparation of this EA are listed in Table 29, along with their areas of responsibility.

Table 29. BLM Interdisciplinary Team Authors and Reviewers.

Name	Title	Areas of Participation
Isaac Pittman	Rangeland Management Specialist	NEPA lead, Range Management
Carla DeYoung	Ecologist	Areas of Critical Environmental Concern; T/E/S Plants; Vegetation; Wetlands and Riparian Zones; Land Heath Standards
Greg Wolfgang	Outdoor Recreation Planner	VRM, Recreation, Travel Management
Kimberly Miller	Outdoor Recreation Planner	Wild and Scenic Rivers, Wilderness, Recreation
Erin Leifeld	Archaeologist	Cultural Resources and Native American Religious Concerns
Darren Long and Hilary Boyd	Wildlife Biologist	Aquatic Wildlife Including T/E/S, Migratory Birds, and Terrestrial Wildlife Including T/E/S
Pauline Adams	Hydrologist	Air Quality, Water Quality, Soils, Geology
Brian Hopkins	Planning and Environmental Coordinator	NEPA Compliance

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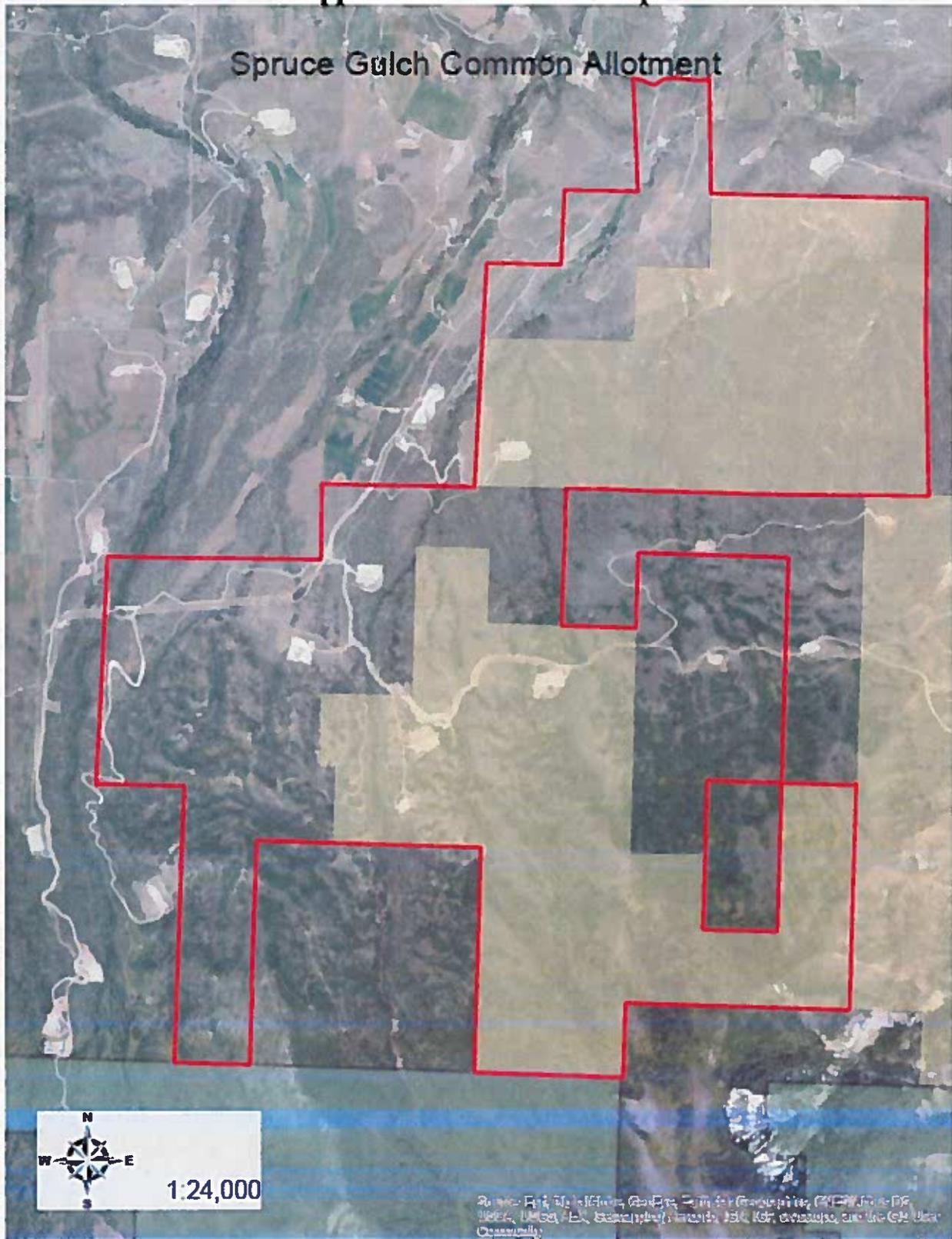
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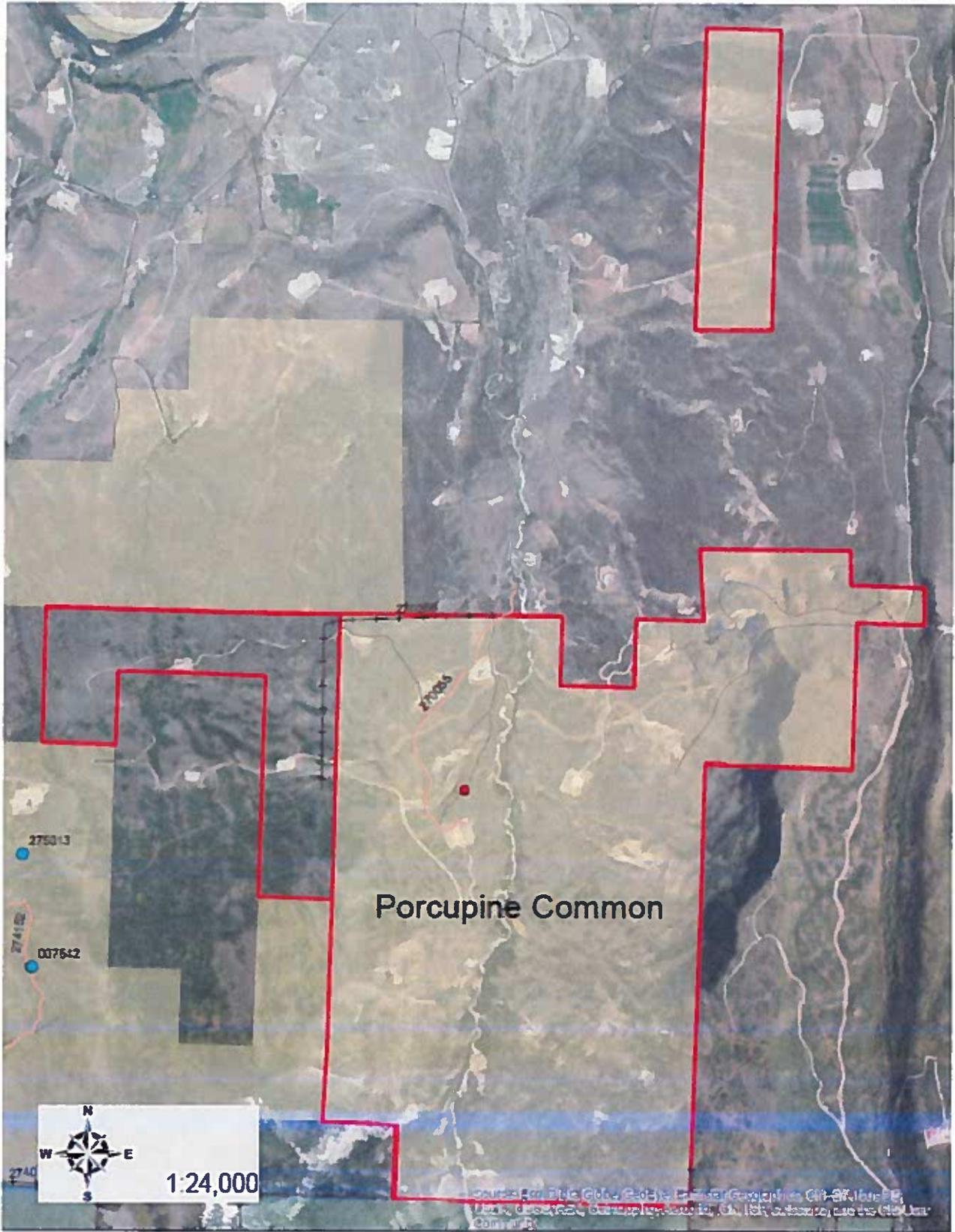
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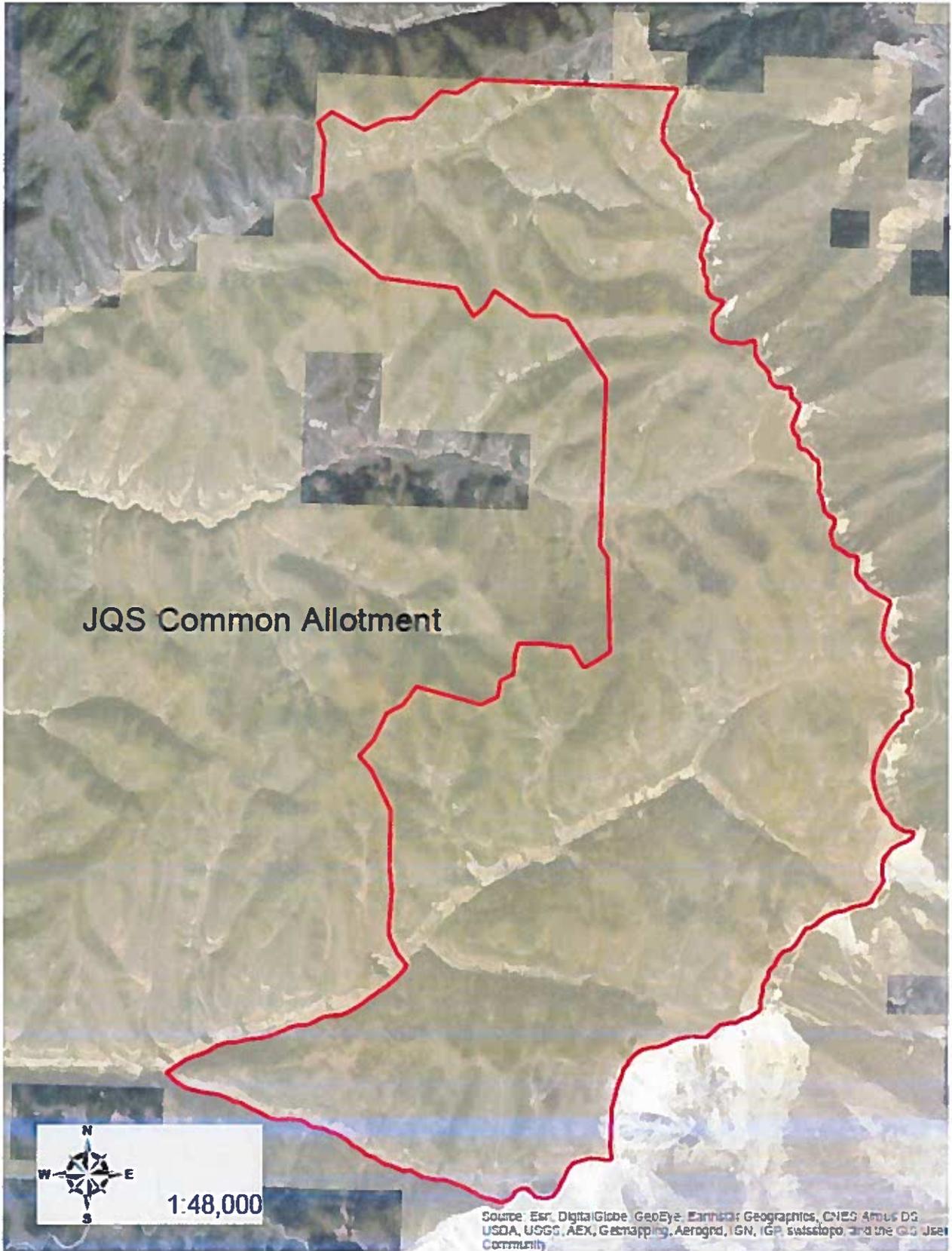
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Appendix A - Allotment Maps







Appendix B - JQS Common Allotment Management Plan Revision

Bureau of Land Management
Colorado River Valley Field Office

2014 JQS COMMON ALLOTMENT
MANAGEMENT PLAN REVISION

Prepared by:

Isaac Pittman
Rangeland Management Specialist

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1. Map

I. Introduction

The JQS Common Allotment, consisting of 10,458 acres, is located on the Roan Plateau north of First Anvil creek and south of Trappers creek; Township 5 & 6 South Range 94 & 95 West. The allotment lies within Garfield County approximately 10 miles northwest of Rifle. The allotment ranges in elevation from 8,100 to 9,300 feet and averages 20 inches of precipitation a year. Common vegetation types include aspen, conifer, mountain shrub and sagebrush.

The 1994 evaluation summary of this allotment recommended developing additional watering supplies and ensures existing projects are maintained. It also mentioned trouble spots, identified areas for possible temporary livestock exclusion, range riding and salting should be focused on keeping livestock out of stream bottoms, and suggested that more emphasis be placed on monitoring of riparian zones.

Since then applications have been made to change the type of use on the allotment from cattle and sheep combined to sheep only. In this new plan the major focus is to maintain or improve the quantity and quality of forage in the uplands and improve riparian habitats by improving livestock distribution and making better use of the available forage on uplands and slopes that were not utilized by cattle.

II. Land Use Planning Guidance

From the Glenwood Springs Resource Management Plan (RMP) 1988 as amended:

Increase fish production and recreational fishing use on streams having more than ½ miles of continuous flow across public land. (Only streams and lakes with existing or easily obtainable public access and either an existing or potential fishery qualify for management).

Streams specifically listed in the RMP to monitor and improve aquatic habitat on the allotment include: Second Anvil Creek, East Fork Parachute Creek, Northwater Creek, Trapper Creek, JQS Gulch, First Water Gulch, and First Anvil Creek.

Provide approximately 506 AUMs of big game forage, improve existing wildlife habitat conditions, and increase wildlife species diversity.

Manage all suitable commercial forest land and woodland to meet saw timber and fuel wood demand and maintain stand productivity. The RMP designates several areas within the allotment as commercial forest land and aspen which are suitable for management.

Protect the cultural and historical values in the resource area from accidental or intentional destruction and give special protection to high cultural resource values.

Maintain existing visual quality throughout the resource area and protect unique fragile resource values. Review future project proposals to determine whether or not Proposed

Actions are consistent with the designated visual resource management (VRM) class to identify possible mitigation measures. The JQS Common Allotment is designated as VRM class III (partial retention of the landscape character). This includes areas where changes in the basic elements (form, line, color, or texture) caused by management activity may be evident in the characteristic landscape; however, the changes should remain subordinate to the visual strength of the existing character.

III. Specific Resource Objectives

1. Achieve Proper Functioning Condition (PFC) on all riparian areas by 2020.
2. Achieve or be moving toward late seral stage riparian communities at key areas by 2020. This objective will be achieved if all of the following conditions are met:
 - a. Carex (Nebraska sedge or beaked sedge) has increased by at least 5% (ex. From 5% to 10%).
 - b. Riparian zones have widened by at least 10% (ex. From 5ft to 5 ½ ft).
 - c. An increase in woody species where currently present (eg. willow).
 - d. Greenline to greenline width has decreased.
 - e. The following have been identified as key riparian species: Nebraska sedge, beaked sedge, redtop, tufted hairgrass, and willow spp.
3. Maintain at least 20% species composition by weight of key upland forage species at key areas.
 - a. The following have been identified as key upland forage species: needlegrass spp., wheatgrass spp., Junegrass, wild rye, mountain brome, and elk sedge.
 - b. Maintain the relative abundance of key upland grass species within the appropriate range for the ecological site.
4. Maintain at a minimum, the composition and production of forbs measured in the Ecological Site Inventory (ESI) studies completed in 2012-2013.
5. Increase native perennial grass species by at least 5% by 2020 on upland terraces immediately adjacent to key riparian areas.

*Resource objectives will be monitored at key areas identified on the attached map.

IV. Management Prescriptions Necessary to Meet Resource Objectives

1. Sheep will not be allowed to turnout until the range is ready. The range will be considered ready when the snow has melted off the majority of the pasture and grasses have started their spring growth.
2. Supplemental feed such as salting blocks should be placed at least ¼ mile from water developments and riparian areas and, where applicable, up to a ½ mile. This will encourage livestock distribution and give permittees more control over what areas are

being used. Salting areas have been identified on the attached map.

3. Grazing in riparian areas by livestock should leave an average minimum 4-inch stubble height of herbaceous vegetation and should not exceed an average utilization of 40% of the current year's growth for browse species. Within the uplands, livestock utilization will be limited to 50% by weight on key grass species. Livestock will be moved to another portion of the allotment, moved to the next scheduled pasture, or removed immediately from the allotment when the above utilization levels occur.
4. Maintain streambank alteration below 25% of key stream reaches.
5. The period of use within specific areas should be altered annually to provide rest from grazing pressure during different times of the year. This will allow for recovery of root reserves and seed dissemination and seedling establishment. Pasture rotations will be coordinated with the BLM prior to the grazing season in a pre-season meeting.
6. Sheep will be moved to new bedding areas and fresh feed as often as needed to prevent overuse in any one area. Sheep use shall be avoided as much as possible in the bottom of East Fork Parachute Creek.
7. Maintenance of range improvements is required and shall be in accordance with all approved cooperative agreements and range improvement permits. Maintenance shall be completed prior to turnout. Maintenance activities shall be restricted to the footprint (previously disturbed area) of the project as it existed when it was initially constructed. The Bureau of Land Management shall be given 48 hours advance notice of any maintenance work that will involve heavy equipment. Disturbed areas will be reseeded with a certified weed-free seed mixture of native species adapted to the site. (See Map Appendix for Existing Range Improvements)
8. An actual use report shall be submitted annually to the BLM office no later than 15 days after livestock have been removed (i.e. the grazing end period on the permit).
9. Follow attached conservation measures for Parachute penstemon habitat in Appendix C.

V. Specifications of Flexibility

1. On-off dates may be adjusted by up to 14 days. The BLM authorized officer must be notified of any changes in numbers of livestock or dates prior to turn-out in a pre-season meeting.
2. The management of a 6-pasture rotational grazing system will be the responsibility of the permittees and will be coordinated with the BLM annually. The rotational system will promote plant health by providing for periodic rest from grazing during critical growth periods, adequate recovery and regrowth periods, and opportunity for seed

dissemination and seedling establishment. Actual use statements will show period of use in each pasture.

3. Bair shall only use the 3rd Water Pasture. Hill's may use the Trapper Pasture, Northwater Pasture, 1st Water Pasture, Golden Castle Pasture, and Anvil Pasture.
4. Sample rotation: Bair – 3rd Water Pasture 1000 Sheep 6/1 to 7/1
3rd Water Pasture 1000 Sheep 10/1 to 10/30 (60 days)
Hill – Northwater Pasture 1000 Sheep 8/1 to 10/30 (90 days)
First Water Pasture 1000 Sheep 6/1 to 7/30 (60 days)
Golden Castle Pasture 1000 Sheep 6/1 to 7/30 (60 days)
Anvil Pasture 1000 Sheep 8/1 to 10/30 (90 days)
Trapper Pasture 2525 Sheep 9/15 to 10/30 (45 days)

VI. Provisions of Monitoring

1. The following are existing upland key areas that will be monitored. Upland areas are lower priority when monitoring for short term indicators. (See Map Appendix for Existing Monitoring Locations):
JQS Pasture Key Area #3 (Location: T5S R94W sec. 24 NWNW)
Trapper Pasture Key Area #2 (Location: T5S R94W sec. 3 SWSE)
Anvil Pasture Key Area #2 (Location: T6S R95W sec. 1 SESE)
2. The following are riparian key areas that will be monitored (See Map Appendix for Existing Monitoring Locations):
Northwater Creek MIM (Location: T5S R94W sec. 15 NWSE)
JQS Gulch MIM inside exclosure constructed 2014 (Location: T5S R94W sec. 23 SESE)
East Fork MIM (Location: T5S R94W sec. 27 NESE)
2nd Anvil Creek (Location: T5S R94W sec. 34 SESE)
3rd Water Gulch (Location: T5S R94W sec. 2 NWSE)
Trapper Creek (Location: T5S R94W sec. 5 NESE)
3. Other repeat photo sites have been established and photos will be repeated to help determine trend in condition over time. Besides these identified monitoring sites, others may be established in riparian areas or uplands to better determine and document trend. These sites will be used for both short term and long term monitoring.
4. Short term (annual) monitoring needs:
Residual stubble in riparian areas and immediately adjacent terraces (MIM)
Streambank alternation (MIM)
Upland utilization (Key Species Method)
5. Long term (every 5 years) monitoring needs:
Species Composition (MIM, Daubenmire, ESI)
Riparian width (MIM, Winward)

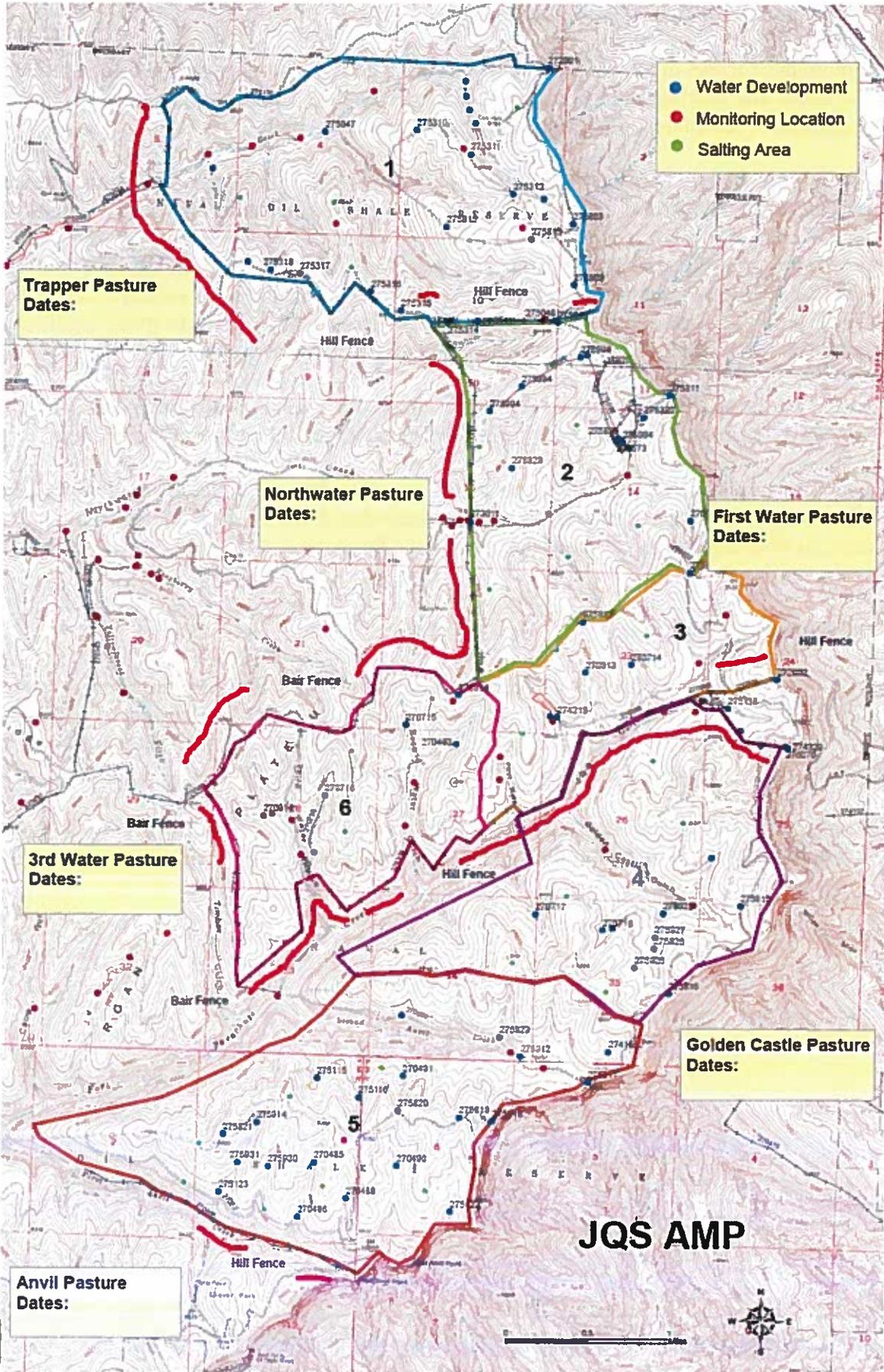
Carex monitoring (MIM, Line Intercept)

6. Compliance Inspections will be conducted throughout the grazing period to determine if the terms and conditions of this plan are enforced. Other studies may also be conducted according to the Glenwood Springs Resource Monitoring Plan.
7. As indicated in the grazing regulations, active use will be reduced if utilization levels exceed the livestock carrying capacity and are causing a negative impact to watersheds, habitat, water quality, vegetative composition, or ecological processes. If monitoring determines that the resource objectives in this plan are not being achieved or utilization levels exceed the minimum requirements of this plan, the authorized officer may require delayed turnout dates the following year or 1 or more years of rest to make significant progress toward achieving objectives in this plan.
8. If monitoring shows that more AUMs are available for livestock use, then AUMs may be restored to permittees based on the permittees percentage of the total authorized use.
9. Establish riparian reference sites and gather baseline data for monitoring comparisons. These would include enclosure sites or other areas that do not receive livestock utilization and can be compared to key areas that do receive livestock use.

VII. Terms and Conditions

Livestock grazing permits and leases shall contain terms and conditions determined by the authorized officer to be appropriate to achieve management and resource condition objectives for the public lands and other lands administered by the Bureau of Land Management, and to ensure conformance with land health standards.

“Management Prescriptions Necessary to Meet Resource Objectives” described in the AMP will be included as terms and conditions in the grazing permits.



Appendix C - Conservation Measures for Parachute penstemon (from Section 7 consultation with the US Fish and Wildlife Service)

The following conservation measures designed to avoid, minimize, and/or remediate effects to Parachute penstemon occupied habitat and critical habitat will be added to the terms and conditions of the QJS Common Allotment grazing permits.

Permittee Actions:

1. No salt will be placed on or east of the Anvil Rim Road.
2. No sheep grazing will be allowed east of the Rim Road until surveys for Parachute penstemon have been completed and no occurrences have been located. If occurrences are located on or above the cliff rim during these surveys, the same protections will be applied to these new populations as to the existing population.
3. No concentrations of livestock activities including but not limited to herding, bedding, trailing, salt or supplement, portable watering, and new stock ponds will be allowed within 200 meters (656 feet) of individual plants or populations, except as provided below:
 - Concentration may be allowed where separated by a fence or topographic feature (cliff) that will render the impacts to listed plants insignificant, discountable, or if the impacts are wholly beneficial (distribute livestock away from listed plants).
 - Trailing will be allowed along the Anvil Rim Road to access the Anvil Pasture.
4. Utilization of forbs, especially mat penstemon, within the Anvil Points Critical Habitat Unit (Anvil and Golden Castle pastures) will not exceed 50% of current year's growth/flowers. Livestock will be removed from the pasture(s) when this utilization limit is reached and will not be allowed to regrazed the pasture in the same growing season.
5. The Anvil and Golden Castle Pastures will not be grazed at the same time of year for more than 2 consecutive years in order to allow rest from grazing during critical growth stages.
6. The permittee is required to notify the BLM Rangeland Management Specialist prior to any surface disturbing range project maintenance activity (standard for all BLM allotments). Surveys and avoidance measures will be required where effects to listed plants may occur.
7. If a permittee wishes to apply an herbicide treatment, they must obtain prior approval from the BLM. Appropriate applicator licenses must be obtained, copies of the appropriate *Pesticide Use Proposal* must be obtained from the BLM, and a *Pesticide Application Record* must be completed and returned to BLM no later than 10 days after herbicide application (standard for all BLM allotments).

- The permittee must consult with the BLM Rangeland Management Specialist and Botanist/Ecologist prior to applying herbicides or pesticides within 200 meters (656 feet) of individual plants or populations. Such treatments may be restricted or modified to avoid effects to Parachute penstemon.
 - All treatments will comply with the CRVFO *Integrated Weed Management Plan* (BLM 2009) which tiers to the Vegetation Treatment EIS for 17 Western States.
8. Within 200 meters (656 feet) of listed plants, motorized access for livestock grazing operations will be limited to existing roads and routes. Any additional access proposed for grazing operations would require additional surveys and section 7 consultation.
 9. Monitoring (e.g., LHAs, utilization, trend, Ecological Site Inventory) will be conducted as needed to evaluate rangeland health. If monitoring/LHAs conclude that the JQS Common Allotment is not meeting or making significant progress towards meeting the standards for special status plants, vegetation, or soils, and livestock grazing is identified as a significant causal factor in not meeting those standards, grazing permit modifications, mitigation, or other prescriptive measures will be required by BLM, such as:
 - The BLM Rangeland Management Specialist will work with the permittee to pursue opportunities to provide yearlong rest or deferment from grazing within critical habitat during the critical growing season to increase plant vigor and allow forbs, particularly mat penstemon, which is considered an important food source for pollinators, to flower and set seed.
 - Enclosures or drift fences may be considered in certain areas where individual plants or populations require special protections from livestock grazing or associated activities, as determined by the BLM.
 - Permit terms and conditions may be modified to minimize impacts to listed plants (e.g., improved distribution, changes in season of use/class of livestock).

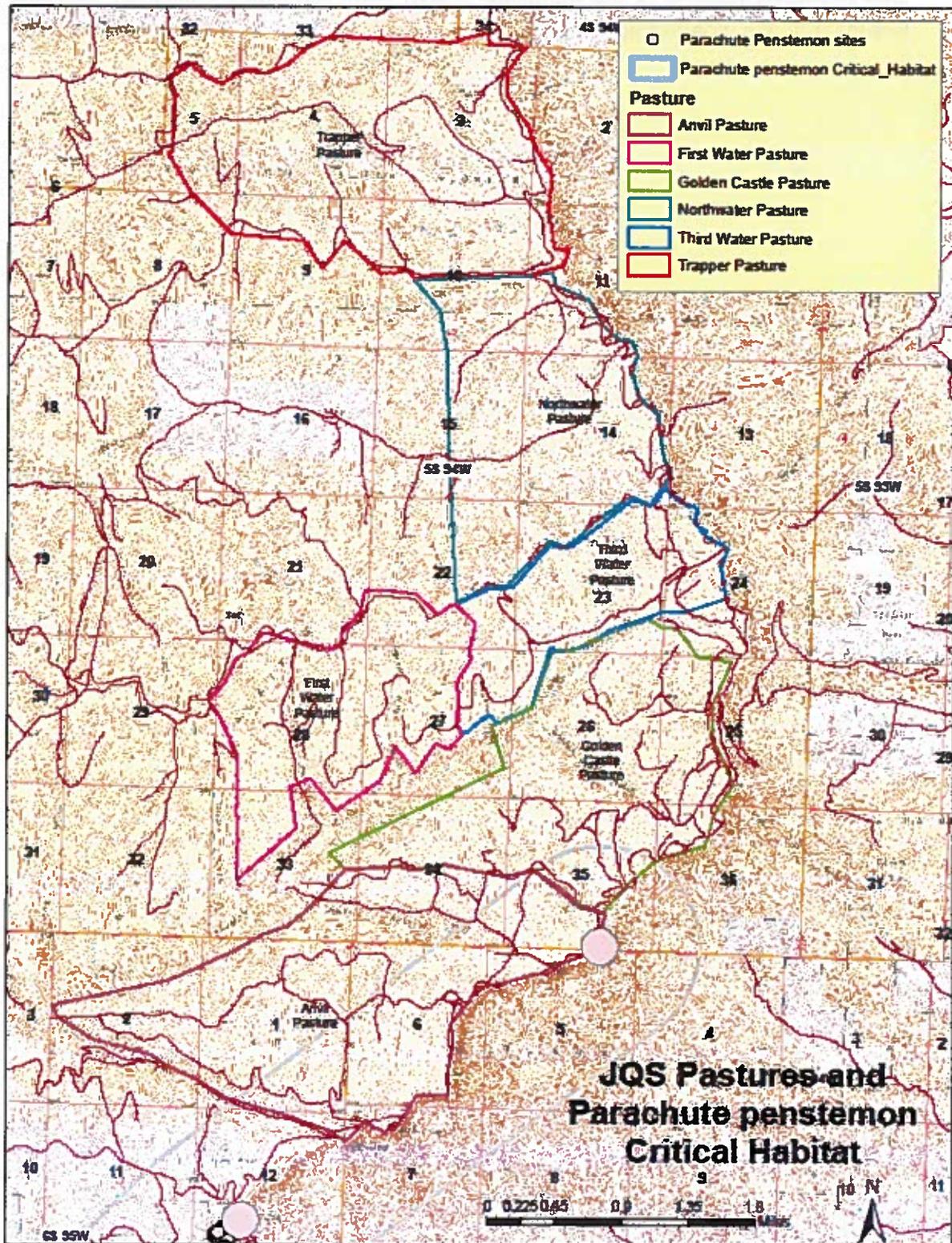
BLM Actions:

1. Maps will be provided to permittees that identify sensitive areas where restrictions may apply to particular grazing-related activities for the Parachute penstemon (including a 200 meter [656 feet] buffer around occurrences). Maps provided to permittees will include sufficient buffers and randomized perimeters to avoid disclosing exact species locations.
2. The existing fence around the known population of Parachute penstemon in T5S, R94W, S. 34 and T6S, R94W, S. 5 will be reconstructed and extended to the cliff to exclude sheep grazing within occupied habitat. The fence encloses an area of approximately 100 meters by 70 meters and includes all of the potential habitat at the site.
3. BLM will continue periodic monitoring of the Parachute penstemon population within the JQS Common Allotment to assess any grazing-related impacts to the population.

4. BLM will identify at least one new key area within the critical habitat unit to monitor grazing-related impacts to the pollinator habitat (forb utilization and weed invasions). Results from the monitoring will be used to inform future grazing management.



Figure 1. Critical Habitat for Parachute penstemon within JQS Common Allotment



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COLORADO RIVER VALLEY FIELD OFFICE
SILT, COLORADO

FINDING OF NO SIGNIFICANT IMPACT

DOI-BLM-N040-2014-0006-EA

Finding of No Significant Impact

I have reviewed the direct, indirect and cumulative effects of the selected alternative documented in the EA referenced above. The effects of the selected alternative are disclosed in the Alternatives and Environmental Consequences sections of the EA. Implementing regulations for NEPA (40 CFR 1508.27) provide criteria for determining the significance of the effects. Significant, as used in NEPA, requires consideration of both *context* and *intensity* as follows:

(a) Context. This requirement means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the selected alternative. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long-term effects are relevant (40 CFR 1508.27):

(b) Intensity. This requirement refers to the severity of the impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following are considered in evaluating intensity (40 CFR 1508.27).

1. Impacts that may be both beneficial and/or adverse.

Impacts associated with issuing these livestock grazing permits are identified and discussed in the Affected Environment and Environmental Consequences sections of the EA. The selected alternative will not have any significant beneficial or adverse impacts on the resources identified and described in the EA.

2. The degree to which the action affects health or safety.

The selected alternative will not significantly affect public health or safety. The purpose of the selected alternative is to allow for multiple uses while maintaining or improving resource conditions to meet standards for rangeland health in the allotment. Similar actions have not significantly affected public health or safety.

3. Unique characteristics of the geographic area such as prime and unique farmlands, caves, wild and scenic rivers, wilderness study areas, or ACECs.

The JQS Common Allotment's southern half is within the eastern portion of the East Fork Wilderness Character Inventory Unit. The northern portion of the unit is bounded by maintained roads and range developments along Long Ridge and Short Ridge. The western boundary and portions of the southern boundary follow private property lines while the eastern boundary follows the Rim Road which travels along the prominent southern cliffs. The inventory unit contains 8,330 acres that were found to have wilderness character in the inventory conducted in Roan Plateau Wilderness Inventory Findings in 2014.

In addition, the far western portion of the Southeast Cliff Wilderness Character Inventory Unit is located in the southernmost portion of the JQS Common Allotment. The inventory boundary on the west follows the main Anvil Points road #8014 on top of the Plateau; the southern boundary follows the northern boundary of the Production Area. It has 5,193 acres that were found to contain wilderness characteristics.

Porcupine Common and Spruce Gulch Common allotments do not contain any wilderness characteristics.

4. The degree to which the effects are likely to be highly controversial.

The possible effects of continued livestock grazing are not likely to be highly controversial.

5. The degree to which the effects are highly uncertain or involve unique or unknown risks.

The possible effects on the human environment are not highly uncertain nor do they involve unique or uncertain risks. The technical analyses conducted for the determination of the impacts to the resources are supportable with use of accepted techniques, reliable data, and professional judgment. Therefore, I conclude that there are no highly uncertain, unique, or unknown risks.

6. The degree to which the action may establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration.

This EA is specific to the JQS Common, Porcupine Common, and Spruce Gulch Common Allotments. It is not expected to set precedent for future actions with significant effects or represent a decision in principle about a future management consideration in or outside of these allotments.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

The Proposed Action is not related to any other actions with individually insignificant but cumulatively significant impacts.

8. The degree to which the action may adversely affect scientific, cultural, or historical resources, including those listed in or eligible for listing in the National Register of Historic Places.

The potential for historic properties on these allotments is moderate. Within the JQS Common Allotment 88 cultural resources have been identified. Within the Porcupine Common allotment 36 cultural resources have been identified. And within the Spruce Gulch Common allotment 28 cultural resources have been identified. None of these were eligible for listing under the National Register of Historic Places. Management Prescriptions identified in the AMP will mitigate potential impacts to cultural resources.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

Properly managed livestock grazing (i.e. meeting land health standards) is generally compatible with all wildlife species. The development and maintenance of water sources for livestock may unintentionally provide beneficial effects to foraging bat and bird species. As long as acceptable utilization levels are maintained and land health standards are achieved there would be no anticipated direct or indirect impact of grazing on special status bat or bird species.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The selected alternative does not violate or threaten to violate any Federal, State, or local law or requirements imposed for the protection of the environment.

Based upon the review of the test for significance and the environmental analyses conducted, I have determined that the actions analyzed in the EA will not significantly affect the quality of the human environment. Accordingly, I have determined that the preparation of an Environmental Impact Statement is not necessary for this proposal.


Karl Mendonca
Acting Field Manager
Colorado River Valley Field Office


Date

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United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Colorado River Valley Field Office
2300 River Frontage Road
Silt, Colorado 81652



IN REPLY REFER TO:
ON 0504935 (CON040)

NOTICE OF PROPOSED DECISION

Introduction & Background.

Lazy 3X Sheep Company applied to transfer grazing preference on the JQS Common allotment from Joan Savage on Jan 31, 2014, and from Danciger Tybar Ranch and Larry Robinson on Feb 6, 2014. Also, Bair Bros. Sheep Company applied to transfer grazing preference on the JQS Common allotment from Jesse Jensen on Feb 13, 2014. Subsequently applications were submitted by both parties for grazing permits on the JQS Common Allotment.

The transfer would result in two new permits on the JQS Common Allotment and one new permit on the Porcupine Common and Spruce Gulch Common Allotments. This decision addresses only the decision on the JQS permits.

The action of issuing the new permits has undergone review for conformance with the land use plan and compliance with the National Environmental Policy Act (NEPA). The review and NEPA compliance has been completed as documented in Environmental Assessment (EA) No. DOI-BLM-CO-N040-2015-0058. A copy of the EA is enclosed. Renewal of the permit has also been reviewed for compliance with 43 Code of Federal Regulations (CFR) 4110.1(b)(1) which requires a satisfactory record of performance prior to renewal.

Finding Of No Significant Impact (FONSI).

The environmental assessment, analyzing the environmental effects of the action, has been reviewed. The action with mitigation measures result in a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

Rationale: The analysis of the action with mitigation measures did not identify any impacts that would be significant in nature either in context or intensity. The new grazing authorizations allow for adequate plant growth recovery and promotes healthy rangelands as it relates to

rangeland standards. In addition, there is nothing to indicate the action is highly controversial or that it is related to other actions with individually insignificant but cumulatively significant actions.

Proposed Decision.

As a result of this process, it is my proposed decision to cancel all existing permits on the JQS Common Allotment, approve the grazing preference transfers, and to issue grazing permit No. 0504935 to Lazy 3X Sheep Company for a period of 10 years (May 15, 2015 – May 14, 2025) and issue grazing permit No. 0504997 to Bair Bros. Sheep Company for a period of 10 years (May 15, 2015 – May 14, 2025). My proposed decision results in no reduction in the amount of AUMs previously authorized on the JQS Common Allotment and implements a new Allotment Management Plan (AMP). Table 1 and 2 outline scheduled grazing use and permitted use. Also included are terms and conditions applied to the permits.

Table 1. Scheduled Grazing Use.

Permittee	Allotment	Livestock Number	Livestock Kind	Begin Date	End Date	% AUMs on BLM	AUMs
Hill	JQS Common	2,000	Sheep	6/1	10/30	100	1999
		2,525	Sheep	9/15	10/30	100	764
Bair	JQS Common	1,000	Sheep	6/1	7/1	100	204
		1,000	Sheep	10/1	10/30	100	197

Table 2. Permitted Use (AUMS).

Operator Name	Allotment	Active	Suspended	Total
Hill	JQS Common	2,764	1,988	4,749
Bair	JQS Common	401	0	401
TOTAL for JQS Common		3,165	-	-

Terms and Conditions Included on the Grazing Permits.

1. Maintenance of range improvements is required and shall be in accordance with all approved cooperative agreements and range improvement permits. Maintenance shall be completed prior to turnout. Maintenance activities shall be restricted to the footprint (previously disturbed area) of the project as it existed when it was initially constructed. The Bureau of Land Management shall be given 48 hours advance notice of any maintenance work that will involve heavy equipment. Disturbed areas will be reseeded with a certified weed-free seed mixture of native species adapted to the site.

2. The permittee and all persons associated with grazing operations must be informed that any person who injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law. If in connection with allotment operations under this authorization any of the above resources are encountered, the proponent shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM authorized officer of the findings. The discovery must be protected until further notified in writing to proceed by the authorized officer.
3. Grazing management on the JQS Common Allotment will be in accordance with the 2014 JQS Common Allotment Management Plan (AMP). An actual use report shall be submitted to the BLM office no later than Oct 15 annually.
4. Administrative access on routes identified as "Foot/Horse Trail" will be allowed from June 1 to August 25 and should only be utilized for the maintenance of assigned range improvement projects. Motorized administrative access on "Foot/Horse Trail" routes for grazing operation after August 25th will require the permit holder to seek and receive prior authorization from an authorized BLM officer.
5. New range improvements, maintenance of existing range improvements, or additional feeding areas may require cultural resource inventories, monitoring, and/or data recovery.
6. Grazing in riparian areas by livestock should leave an average minimum 4-inch stubble height of herbaceous vegetation and should not exceed an average utilization of 40% of the current year's growth for browse species. Within the uplands, livestock utilization will be limited to 50% by weight on key grass species. If utilization is approaching allowable use levels, livestock will be moved to another portion of the allotment, moved to the next scheduled pasture or removed immediately from the allotment.

Rationale for the Proposed Decision.

Transferring and issuing grazing permits is in conformance with the Glenwood Springs Resource Management Plan (RMP), approved January, 1984, revised 1988, amended in November 1991 - Oil and Gas Leasing and Development - Final Supplemental Environmental Impact Statement; amended Nov. 1996 - Colorado Standards and Guidelines; amended in August 1997 - Castle Peak Travel Management Plan; amended in March 1999 - Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement; amended in November 1999 - Red Hill Plan Amendment; amended in September 2002 - Fire Management Plan for Wildland Fire Management and Prescriptive Vegetation Treatment Guidance; and amended in October 2012 - Approved Resource Management Plan Amendments/ Record of Decision (ROD) for Solar Energy Development in Six Southwestern States.

The transfer of grazing preference and issuing new grazing permits is in conformance with Administrative Actions (pg. 5) and Livestock Grazing Management (pg. 20) of the Glenwood

Springs RMP. Administrative actions states, "Various types of actions will require special attention beyond the scope of this plan. Administrative actions are the day-to-day transactions required to serve the public and to provide optimal use of the resources. These actions are in conformance with the plan". The livestock grazing management objective as amended states, "To provide 56,885 animal unit months of livestock forage commensurate with meeting public land health standards."

An interdisciplinary team prepared an EA (No. DOI-BLM-CO-N040-2015-0058) for the proposed permits. My proposed decision is based on the findings of the analyses contained in the EA. The analysis of the proposed action indicated that the current conditions and land health standards in the JQS Common allotment are expected to be maintained or improved. The grazing use proposed allows for adequate plant growth recovery and promotes healthy rangelands as it relates to rangeland standards.

Terms and conditions have been included to mitigate potential impacts from grazing use and to authorize flexibility in the permits.

Authority.

43 CFR 4110.2-2(a) states: "Permitted use is granted to holders of grazing preference and shall be specified in all grazing permits or leases. Permitted use shall encompass all authorized use including livestock use, any suspended use, and conservation use, except for permits and leases for designated ephemeral rangelands where livestock use is authorized based upon forage availability, or designated annual rangelands. Permitted livestock use shall be based upon the amount of forage available for livestock grazing as established in the land use plan, activity plan or decision of the authorized officer under § 4110.3-3, except, in the case of designated ephemeral or annual rangelands, a land use plan or activity plan may alternatively prescribe vegetation standards to be met in the use of such rangelands."

43 CFR 4110.2-3(a) states: "Transfer of grazing preference in whole or in part are subject to the following requirements: (1) The transferee shall meet all qualifications and requirements of 4110.1, 4110.2-1 and 4110.2-2."

43 CFR 4130.2(a) states: "Grazing permits or leases authorize use on the public lands and other BLM-administered lands that are designated in land use plans as available for livestock grazing. Permits and leases will specify the grazing preference, including active and suspended use. These grazing permits and leases will also specify terms and conditions pursuant to §§4130.3, 4130.3-1, and 4130.3-2."

43 CFR 4160.1(a) states: "Proposed decisions shall be served on any affected applicant, permittee or lessee and any agent and lien holder of record, who is affected by the proposed actions, terms or conditions, or modifications relating to applications, permits and agreements (including range improvement permits) or leases, by certified mail or personal delivery. Copies of the proposed decisions shall also be sent to the interested public".

Protest and/or Appeal.

Any applicant, permittee, lessee or other interested public may protest a proposed decision under Sec. 43 CFR 4160.1 and 4160.2, in person or in writing to Karl Mendonca, Associate Field Office Manager, Bureau of Land Management, 2300 River Frontage Road, Silt, Colorado 81652 within 15 days after receipt of such decision. The protest, if filed, should clearly and concisely state the reason(s) as to why the proposed decision is in error.

In accordance with 43 CFR 4160.3 (a), in the absence of a protest, the proposed decision will become the final decision of the authorized officer without further notice unless otherwise provided in the proposed decision.

In accordance with 43 CFR 4160.3 (b) upon a timely filing of a protest, after a review of protests received and other information pertinent to the case, the authorized officer shall issue a final decision.

Any applicant, permittee, lessee or other person whose interest is adversely affected by the final decision may file an appeal in accordance with 43 CFR 4.470 and 43 CFR 4160.3 and 4160.4. The appeal must be filed within 30 days following receipt of the final decision, or within 30 days after the date the proposed decision becomes final. The appeal may be accompanied by a petition for a stay of the decision in accordance with 43 CFR 4.471 and 4.479, pending final determination on appeal. The appeal and petition for a stay must be filed in the office of the authorized officer, as noted above. The person/party must also serve a copy of the appeal on any person named [43 CFR 4.421(h)] in the decision and the Office of the Solicitor, United States Department of Interior, 755 Parfet Street, Suite 151, Lakewood, Colorado 80215. The BLM does not accept appeals by facsimile or email.

The appeal shall state the reasons, clearly and concisely, why the appellant thinks the final decision is in error and otherwise complies with the provisions of 43 CFR 4.470.

Should you wish to file a petition for a stay, see 43 CFR 4.471 (a) and (b). In accordance with 43 CFR 4.471(c), a petition for a stay must show sufficient justification based on the following standards:

- (1) The relative harm to the parties if the stay is granted or denied.
- (2) The likelihood of the appellant's success on the merits.
- (3) The likelihood of immediate and irreparable harm if the stay is not granted, and
- (4) Whether the public interest favors granting the stay.

As noted above, the petition for stay must be filed in the office of the authorized officer and serviced in accordance with 43 CFR 4.473. Any person named in the decision from which an appeal is taken (other than the appellant) who wishes to file a response to the petition for a stay may file with the Hearings division a motion to intervene in the appeal, together with the response, within 10 days after receiving the petition. Within 15 days after filing the motion to intervene and response, the person must serve copies on the appellant, the office of the Solicitor and any other person named in the decision (43 CFR 4.472(b)).

Please take a moment to review your enclosed grazing permit. **If you do not have any concerns with the permit as offered, please sign, date, and return both copies to our office.** If you have any questions about this proposed decision please contact Isaac Pittman (Rangeland Management Specialist) at (970)876-9069.

Sincerely,


Karl Mendonca
Acting Field Manager
Colorado River Valley Field Office

4/21/2015
Date

Enclosure(s)
Form 4130-2a (Grazing Permit)
EA# DOI-BLM-CO-N040-2015-0058

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