U.S. Department of the Interior
Bureau of Land Management
Little Snake Field Office
455 Emerson Street
Craig, CO 81625-1129

ENVIRONMENTAL ASSESSMENT

EA NUMBER: CO-100-2006-055

PERMIT/ALLOTMENT NUMBER: 0501039/04302, 04325, 04329, 04330, 04335, 04340

PROJECT NAME: Renewal of the ten-year grazing permit for the **Dry Creek Allotment #04302**, **Cold Springs Allotment #04325, Beaver Basin Allotment #04329, Three Corners Allotment #04330, Spitzie Draw Allotment #04335** and **South Green River Allotment #04340,** licensed to Vermillion Ranch Limited Partnership (Vermillion Ranch).

LEGAL DESCRIPTION: See Allotment Maps, Attachments 1a-f

(a) Cold Springs Allotment #04325-

T10N R101W, parts of Secs. 3-10, 15-22, 27-32
T10N R102W, parts of Secs. 1-18, 22-27, 34-36
T10N R103W, parts of Secs. 1, 2, 12
T11N R101W, parts of Secs. 7-9, 16-21, 28-34
T11N R102W, parts of Secs. 8, 13-36
T11N R103W, parts of Secs. 2,3,5,7-11,14-30, 35,36
43,414 Public Acres
Management Unit 2 (Northern Central), 9 Cold Spring, 13A (Limestone Ridge ACEC), 13B (Irish Canyon ACEC)

(b) Dry Creek Allotment #04302-

T10N R99W, parts of Secs. 2-10, 18
T10N R100W, parts of Secs. 1-24, 26-28, 35
T10N R101W, parts of Secs. 1-3, 10-15, 22-27, 34
T11N R98W, parts of Secs. 7, 9, 15, 17-21, 30
T11N R99W parts of all Sections
T11N R100W, parts of all, except Sec. 3
T11N R101W, parts of Secs. 1-4, 8-16, 21-28, 34-36
T12N R99W, parts of Sec. 35 & 36
T12N R100W, parts of Sec. 32
89,357 Public Acres
Management Unit 2 (Northern Central), MU3

(Little Snake River), MU12 (Vermillion), MU 13C (Lookout Mountain ACEC)

(c) Spitzie Draw Allotment #04335- T9N R102W, parts of Sec. 4
T10N R102W, parts of Secs. 7, 17-20, 28, 29, 32, 33
T10N R103W, parts of Secs. 2-14, 23, 24
T11N R103W, parts of Secs. 29-35
(T10N R104W, part of Sec. 1-Utah allot in CO
T11N R104W, parts of Secs. 24-26 -Utah allot in CO)
22,559 Public Acres
Management Unit 3 (Little Snake River)

(d) South Green River Allotment #04340- T9N R102W, parts of Secs. 6, 7, 13, 19
T9N R103W, parts of Secs. 1-6, 8, 9, 11-14, 24
T10N R103W, parts of Secs. 18-21, 26-30, 32, 33, 35, 36
T10N R104W, parts of Secs. 13 & 24
15,574 Public Acres
Management Unit 10B (Diamond Breaks WSA)

(e) Beaver Basin Allotment #04329- T12N R103W, parts of Secs. 21 & 28
92 Public Acres
Management Unit 14 (Middle Mountain)

(f) Three Corners Allotment #04330- T12N R103W, parts of Secs. 18 & 19
281 Public acres
Management Unit 2 (Northern Central)

APPLICANT: Vermillion Ranch Limited Partnership

PLAN CONFORMANCE REVIEW: The Proposed Action and Alternatives are subject to the following plan:

Name of Plan: Little Snake Resource Management Plan and Record of Decision

Date Approved: April 26, 1989

Results: The Proposed Action and Alternatives are consistent with the Little Snake Resource Management Plan, Record of Decision, Livestock Grazing Management objective to improve range conditions for both wildlife and livestock through proper utilization of key forage plants and adjusting livestock stocking rates as a result of vegetation studies.

The Proposed Action and Alternatives are located in several management units:

Northern Central Management Unit (2) - The Proposed Action and Alternatives are compatible with the management objectives for this unit, which are to develop oil and gas resources.
Little Snake River Management Unit (3) - The Proposed Action and Alternatives are compatible with the management objectives for this unit, which are to improve soil and watershed values, increase forage production and enhance livestock grazing.

Cold Spring Management Unit (9) - The Proposed Action and Alternatives are compatible with the management objectives for this unit, which are to maintain and improve the quality of 1) the habitat of elk, mule deer and big horn sheep, 2) the fisheries in Beaver Creek, and 3) the recreational opportunities that exist here, primarily for hunting use. Public lands are open to livestock grazing.

Diamond Breaks WSA Management Unit (10B) - This unit is managed in compliance with BLM's Interim Wilderness Management Policy (BLM, Revised November 10, 1987) until they are reviewed and acted upon by Congress. Livestock grazing, where already established, is permitted.

Vermillion Management Unit (12) - The Proposed Action and Alternatives are compatible with the management objectives for this unit, which are to prevent any increases in soil erosion and/or sediment yield. Public lands are open to livestock grazing.

Limestone Ridge ACEC Management Unit (13A) - The Proposed Action and Alternatives are compatible with the management objectives for this unit, which are to protect or enhance remnant plant associations, Colorado BLM sensitive plant species and scenic quality. Public lands are open to livestock grazing and management practices consistent with the management objectives for the ACEC/RNA.

Irish Canyon ACEC Management Unit (13B) - The Proposed Action and Alternatives are compatible with the management objectives for this unit, which are to protect or enhance remnant plant associations, Colorado BLM sensitive plant species, geologic values, cultural resources and scenic quality. Public lands are open to livestock grazing. Management practices or range improvement projects will be permitted and existing range improvements will be maintained consistent with the management objectives for the ACEC.

Lookout Mountain ACEC Management Unit (13C) - The Proposed Action and Alternatives are compatible with the management objectives for this unit, which are to protect or enhance remnant plant associations, Colorado BLM sensitive plant species and scenic quality. Public lands are open to livestock grazing. Management practices or range improvement projects will be permitted and existing range improvements will be maintained consistent with the management objectives for the ACEC.

Middle Mountain Management Unit (14) - The Proposed Action and Alternatives are compatible with the management objectives for this unit, which are maintain and improve the quality of the habitat for elk, mule deer and raptors. Public lands are open to livestock grazing.

The Proposed Action and Alternatives have been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3).

NEED FOR PROPOSED ACTION AND ALTERNATIVES: BLM permit #0501039, which authorizes livestock grazing on allotments **(1) Dry Creek #04302**, **(2) Cold Springs #04325, (3) Beaver Basin #04329, (4) Three Corners #04330, (5) Spitzie Draw #04335,** and **(6) South Green River #04340 Allotments,** expired on February 28, 2001. This permit was renewed for two years under the Interior and Related Agencies Appropriation Act, 2001, P.L. 106-291, 114 Stat. 922, October 11, 2000, with the same terms and conditions as the expiring permit. This permit was extended again under Section 114, P.L. 107-67 for a term of one year, expiring February 28, 2004. The permit that is currently in place was extended under Section 325, P.L. 108-108 for a term of ten years, expiring February 28, 2015, pending the completion of NEPA compliance and the resolution of protest and appeal issues described below.

On March 25, 2003, a Proposed Decision was issued to renew the permit for ten years. This Proposed Decision was based on analysis in EA CO-100-LS-00-018. Protests of the Proposed Decision were filed by Vermillion Ranch on April 10, 2003 and Western Watersheds Project, Inc. on April 22, 2003. Field tours and meetings were conducted with all protesting parties to clarify and seek resolution to protest points. BLM responded to these protests and issued a Final Decision on February 1, 2005. The Final Decision addressed all protest points brought by Vermillion Ranch and Western Watersheds Project, provided clarifications, and sought to address concerns. Western Watersheds Project and Clee Sealing filed a Notice of Appeal, Statement of Reasons, and Petition for Stay of the Final Decision with the Interior Board of Land Appeals (IBLA) on February 28, 2005. IBLA issued a motion granting the Petition for Stay on March 24, 2005. This motion prevented the implementation of the Final Decision and the new permit was not put into effect. On May 9, 2005, BLM requested that IBLA dismiss the appeal and remand the decision back to BLM. This request was granted on May 10, 2005. In light of the motion granting the stay and the remand of the Final Decision, this EA will re-examine the Proposed Action and Alternatives presented and analyzed in EA CO-100-LS-00-018.

This permit is subject to renewal 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 permit/lease consistent with the provisions of the *Taylor Grazing Act, Public Rangelands Improvement Act, Federal Land Policy and Management Act,* and Little Snake Field Office's *Resource Management Plan/Environmental Impact Statement.* This Plan/EIS has been amended by *Standards for Public Land Health in the State of Colorado.*

The following Environmental Assessment will analyze the impacts of livestock grazing and related range improvements on public land managed by the BLM. The analysis will recommend terms and conditions to the permit which improve or maintain public land health. The Proposed Action will be assessed for meeting land health standards.

In order to graze livestock on public land, the livestock producer (permittee) must hold a grazing permit. The grazing permittee has a preference right to receive the permit if grazing is to continue. The land use plan allows grazing to continue. This EA will be a site specific look to determine if grazing should continue as provided for in the land use plan and to identify the conditions under which it can be renewed.

PUBLIC SCOPING PROCESS: BLM Little Snake Resource Area sent out a Notice of Public Scoping on July 15, 1999, to determine the level of public interest, concern, and resource conditions on the grazing allotments that were up for renewal in FY 2001. A public notice was printed in the *Craig Daily Press* and *Steamboat Pilot* newspapers. A Notice of Public Scoping was posted on the Internet, at the Colorado BLM Home Page, asking for public input on permit renewals. Individual letters were sent to the affected permittees, informing them their permit was up for renewal and requesting any information they wanted included in or taken into consideration during the renewal process. The issuance of grazing permits for these allotments has been carefully analyzed within the scope of the specific action being taken, resource issues or concerns, and public input received.

In addition, a meeting for affected interests was held at the BLM office in Craig on December 15, 2000. All individuals and groups who had indicated an interest in the Vermillion Ranch permit renewal were invited. The purpose of the meeting was to ensure that the BLM had a complete list of issues and concerns for all allotments.

BACKGROUND: The **(a) Cold Springs Allotment #04325** is located approximately 65 miles northwest of Craig, Colorado. The allotment is located south of Moffat County Road 94 and west of County Road 10. The allotment presently consists of approximately 69,067 acres with 3,749 acres deeded, 9,929 acres State Land Board, 1,754 acres Colorado Division of Wildlife and 53,635 acres public land. Under the proposed boundary changes the allotment would consist of approximately 58,114 acres with 3,745 acres deeded, 9,326 acres State of Colorado, 1,629 acres Colorado Division of Wildlife and 43,414 acres public land.

The existing permit is for 10 horses yearlong and 1553 cattle from 03/01 to 12/31, 33% PL, 5,198 AUMs total.

The **(b) Dry Creek Allotment #04302** is located approximately 55 miles northwest of Craig, Colorado. The allotment lies south of Moffat County Road 4 and east of Moffat County Road 10. The allotment presently consists of approximately 85,137 acres with 218 acres deeded, 1,854 acres State Land Board and 83,065 acres public land. Under the proposed boundary changes the allotment would consist of approximately 92,695 acres with 804 acres deeded, 2,548 acres State Land Board and 89,343 acres public land.

The existing permit is for 872 cattle from 11/01 to 05/31, 90% PL, 5,470 AUMs.

The **(c) Spitzie Draw Allotment #04335** is located approximately 75 miles northwest of Craig, Colorado. It is bisected east-west by Colorado Highway 318. Part of the allotment is located in

Utah. The allotment consists of approximately 15,054 acres with 250 acres deeded, 218 acres Colorado Division of Wildlife, and 14,048 acres public land. With the proposed boundary change, the allotment on the Colorado side would consist of approximately 18,378 acres with 252 acres deeded, 343 acres Colorado Division of Wildlife, and 17,245 acres public land. On the Utah side, there are a total of 6,460 acres, with 5,314 acres public land, 206 acres private, 867 acres state, and 73 acres of state wildlife reserve. This is a total of 24,838 acres of which a total of 22,559 are public land.

The **(d) South Green River Allotment #04340** is located approximately 70 miles northwest of Craig, Colorado, south of the Green River. The allotment consists of approximately 15,574 acres, all of which are public land.

The **(e) Beaver Basin Allotment #04329** is located approximately 80 miles northwest of Craig, Colorado. It is bisected by Moffat County Road 72. It is adjacent to the Wyoming state line on the north and one mile east of the Utah border The allotment consists of approximately 1,208 acres with 276 acres deeded, 840 acres State Land Board, and 92 acres public land.

Robert Simpson has a permit in common on this allotment, expiring February 28, 2009, for 17 cattle, 06/28 to 9/15, 100% PL, 45 AUMs.

The **(f) Three Corners Allotment #04330** is located approximately 85 miles northwest of Craig, Colorado, west of Moffat County Road 72. It is adjacent to the Wyoming state line on the north and two mile east of the Utah border The allotment consists of approximately 807 acres with 327 acres deeded, 199 acres State Land Board, and 281 acres public land.

MONITORING DATA: (See also Attachment 2, Actual Use Data and Attachment 3, Monitoring Plan)

Cold Springs Allotment #04325

Actual use- Preference is 5,198 AUMs. From 1992 to 2004, an average of 36% of the preference has been used. Actual use ranges from 1,380 to 2,540 AUMs.

Utilization- Recent, as well as prior, use maps indicate a distribution problem. The east end of the allotment receives heavier use than the west. Utilization throughout the uplands on this allotment range from light to heavy, however, the meadows and riparian areas on the east side of the allotment typically receive heavy to severe use.

Analysis of utilization data indicates that the allotment forage allocation is too high. Actual use has varied considerably, as has overall utilization. Seven years of data was calculated to find overall utilization rates in each year. The overall utilization figure and actual use AUMs were entered into a ratio to estimate how many AUMs would result in a desired utilization level of 50% (this method assumes that all areas have equal production, and that it is possible to evenly distribute livestock). Data indicate that a stocking rate of 1,302 - 2,936 AUMs would result in an overall utilization rate of 50%. This stocking rate would need to be implemented along with actions to improve distribution to alleviate areas of concentrated use. The mean of these results (seven year's data) is 2,218 AUMs.

Ecological Site Inventory- Data were collected by BLM in 2000 (dry year). There is an average of 17.5 ac/AUM , at this rate preference would be 3,064 AUMs. However, the data does not include juniper range sites, which would be much lower producing sites, lowering the average production.

Trend- There are six photo trend plots that were established in the early 1980's. The plots were reread in 2004 and indicated an overall upward trend relative to the early 1980's. Recommendation: Improve distribution and reduce utilization levels and season long use on riparian areas. Split the Limestone Pasture so cattle incoming in the spring do not use the same areas as cattle outgoing in the fall. Continue to monitor utilization and trend.

Dry Creek Allotment #04302

Actual use- Preference is 5,470 AUMs. From 1991-92 to 2004-2005, an average of 40% of the preference had been used. For this fourteen year period, 60% of the AUMs used have been used after April 1st. Actual use ranges from 1,452 to 3,372 AUMs. (The period of 2000-2001 was not included in the calculations due to a possible billing error.)

Utilization- Utilization mapping has not been done since 1992-93; past use was about 25-30% of preference, utilization levels varied greatly. Utilization was spot-checked in spring of 2000 and 2005, with slight to light use noted overall. In 2000 only about 60% of the use that season had been made by that time while the 2005 observations were made after livestock removal. Overall, utilization data indicate there is no problem with stocking rate, however, use maps indicate a distribution problem. The west side typically receives more use than the east.

Ecological Site Inventory- Some data are available on the west side. This was done in 2000 (a dry year) and data indicate there is an average of 21 ac/AUM available.

Trend- Fourteen trend plots were established in 1981. The three plots that could be relocated were reread in 2004 and indicated an overall static trend relative to the early 1980's.

Recommendation: No change in preference indicated at this time. Improve distribution. Continue to monitor utilization and trend.

Spitzie Draw Allotment #04335

Actual use- Preference is 2,457 AUMs. Since 1992-93, an average of 41% of the preference has been used. For this ten year period, approximately 48% of the AUMs used have been used after April 1. Actual use ranges from 419 - 1,564 AUMs.

Utilization- Analysis of utilization data indicates that the allotment forage allocation is too high. Actual use has varied considerably, as has overall utilization. Eight years of data was calculated to find overall utilization rates in each year. The overall utilization figure and actual use AUMs were entered into a ratio to estimate how many AUMs would result in a desired utilization level of 50% (this method assumes that all areas have equal production, and that it is possible to

evenly distribute livestock). Data indicate that a range of 203 - 1,664 AUMs would result in an overall utilization rate of 50%. The mean of these results (seven year's data) is 654 AUMs.

Ecological Site Inventory- Data were collected in 1994 and indicate 794 AUMs (ranging from 720 to 880) are available in the Colorado side, and 268 AUMs (ranging from 240 to 295) in the Utah side. This is a total of 1062 AUMs (960-1175); average production was 20.3 ac/AUM

Trend- No trend data available. Nine plots were established, seven are without photos; one plot was relocated (no prior photo). In 2004, only two of the plots could be relocated. These were re-read and showed a decline in trend, mostly due to a sharp decrease in perennial grasses. Repeat photographs were taken at three other locations as near to the lost plots as possible. These photographs indicated a similar downward trend relative to the original data collected.

Recommendation: Improve distribution and reduce utilization levels. Continue to monitor utilization and trend.

South Green River Allotment #04340

Actual use- Current preference is 505 AUMs. Since 1992-93, an average of 88% of the preference has been used. For this ten year period, approximately 53% of the AUMs used have been used after April 1st. Actual use ranges from 176 - 696 AUMs.

Utilization- Mapping was done from 1988-89 to 1993-94 and from 1999-2000 to 2001-02. Earlier use maps show use in the lower areas as mostly moderate, with lighter use on the slopes. These slopes were identified on the maps at that time as "unsuitable". The recent map shows the lower areas in heavy use and the slopes as slight to light use, and no areas mapped as "unsuitable".

Analysis of utilization data indicates that the allotment forage allocation is too high. Actual use has varied considerably, as has overall utilization. Nine years of data were calculated to find overall utilization rates in each year. The overall utilization figure and actual use AUMs were entered into a ratio to estimate how many AUMs would result in a desired utilization level of 50% (this method assumes that all areas produce equally, and that it is possible to evenly distribute livestock). Data indicate that a range of 97 - 1355 AUMs would result in an overall stocking rate of 50%. The mean of these results (seven year's data) is 400 AUMs. There were three years when overall utilization levels were approximately 50%. AUMs used in those years were 99, 284, and 595. The mean of these three years is 326 AUMs.

The variation in utilization compared to actual use may be due partly to wildlife use in the allotment and partly due to use being made off the allotment. For example, utilization for 2001-02 shows very little use on the allotment overall, most of this appears to be made by wildlife, in spite of 375 AUMs being authorized for this period.

The Browns Park National Wildlife Refuge has constructed a new fence between the South Green River Allotment and the Refuge. The previous fence was in disrepair, and allowed cattle to graze on the refuge. As of 2008, State Land Board has leased it's two parcels to Vermillion

Ranch for ten years. These parcels provide access to water along the Green River and are used in conjunction with the allotment.

Ecological Site Inventory- Data (collected in 2000, a dry year with less than average production) indicates an average of 21.6 ac/AUM (no transects run in juniper slopes). This would give 183 AUMs at this rate (36% of current preference).

Trend- not available.

Recommendation: Improve distribution and reduce utilization levels. Establish trend plots and continue to monitor utilization.

Beaver Basin Allotment #04329
Actual use- Current preference is 26 AUMs for Vermillion Ranch and 45 AUMs for Robert Simpson, a total of 71 AUMs. Vermillion Ranch livestock have made seven years of use since 1991, an average of 28 AUMs has been used. This exceeds current preference due to the fact that Vermillion Ranch was permitted for, and used, 86 AUMs in one year prior to 1997.

Utilization- Utilization was read on the BLM parcel in 1994 and 2004. 1994 data shows 40% utilization and 2004 data shows 56% utilization. Distribution was noted as very even in both years. Visual observations were made on the private in 2000 and 2001, and use appeared to be within acceptable limits, so it is assumed that since the BLM is located on a steeper slope, that use there was also acceptable.

Ecological Site Inventory- not available.

Trend- not available.

Recommendation: No changes indicated in stocking rate based on monitoring data at this time.

Three Corners Allotment #04330
Actual use- Current preference is 93 AUMs. Livestock have only been licensed five years since 1993; an average of 69% of the preference has been used. Use has been at or near 100% of permitted use since 2002.

Utilization- Utilization was read in 2001, 2002 through 2005, and 2007. Utilization for those years averages 50%. In 2004, higher use was noted on bunchgrasses than on sod-forming grasses, although use was relatively even throughout. Stubble height was measured across Little Red Creek in 2004, 2005, and 2007. Average stubble height was 6.8 inches.

Ecological Site Inventory- not available.

Trend- not available.

Recommendation: No changes in stocking rate indicated at this time, but continue monitoring utilization and riparian stubble height.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Proposed Action

Continue permitting livestock grazing on the **Cold Springs #04325, Dry Creek #04302**, **Spitzie Draw #04335**, **South Green River #04340, Beaver Basin #04329, and Three Corners #04330 Allotments**. Some boundaries between allotments would be adjusted as follows:

The boundary between the Spitzie Draw and Cold Springs Allotments would be moved north from the current boundary. The eastern boundary of Cold Springs would be moved from County Road 10N to the summit of Limestone Ridge. The area between Limestone Ridge and County Road 10N would become part of the Dry Creek Allotment.

Through agreement with Vermillion Ranch and the BLM, the AUMs would be reduced on the Cold Springs, Spitzie Draw, and South Green River Allotments. The initial stocking rate was agreed upon, as well as AUMs that might be available pending implementation of new management systems or pending results of monitoring.

On the **Cold Springs Allotment #04325**, the preference would be reduced from 5198 to 3800 AUMs. Of the reduction, 198 AUMs would be cancelled and 1000 would be placed in suspended nonuse (SNU). This reduction would also include 200 AUMs that would be added to the Dry Creek Allotment as a result of the boundary adjustment. The initial stocking rate would be 2500 AUMs. An additional 500 AUMs would be available when management is implemented. An additional 800 AUMs would be held in voluntary nonuse for a period of three years, pending monitoring results.

On the **Dry Creek Allotment #04302**, the preference would be increased from 5470 to 5670 due to the boundary adjustment between the Cold Springs and Dry Creek Allotments.

On the **Spitzie Draw Allotment #04335**, the preference would be reduced from 2457 to 1643 AUMs (614 AUMs would be cancelled and 200 would be placed in SNU). The initial stocking rate would be 1393, with 250 AUMs in voluntary nonuse for a period of three years, pending monitoring results.

On the **South Green River Allotment #04340**, the preference would be reduced from 505 to 435 AUMs, 70 AUMs would be cancelled. The initial stocking rate would be 385 AUMs, with 50 AUMs in voluntary nonuse, pending monitoring results.

There would be a joint BLM/Vermillion Ranch monitoring plan. See Attachment 3.

The Proposed Action will be evaluated based on the following proposed terms and conditions:

1. An Annual Operating Plan (AOP) must be submitted and approved for meeting performance standards prior to turning livestock out on public lands. This AOP will cover all allotments by pasture and by dates. The BLM must be notified of any deviation from the agreed-upon plan prior to livestock being moved.

2. All animals must be removed by the dates shown on the Annual Operating Plan. The only exception will be five (5) days flexibility on the move from Dry Creek to the Cold Springs Mountain pastures in spring to account for climactic and logistical uncertainties which can occur during the spring or fall transition periods.

3. The permittee will submit actual use forms, to be provided by BLM, to more accurately document livestock movements. These forms (4130-5) will be submitted twice a year, to coincide with the end of the two major seasons of use, by June 15 and November 15.

4. Implement grazing management for all allotments with the following performance standards:

All Allotments:
Utilization on the uplands will not exceed 50% on grasses and 40% on shrubs for all users.
Riparian areas:

- On spring/summer use pastures with creeks, no late season use (after August 15) one year in three along the following creeks: Talamantes Creek, Beaver Creek, Dry Creek, Antone Canyon, and Vermillion Creek

Cold Springs Allotment (South Slope pasture):
Growing season use
- No early spring use in the same pasture within an allotment for 2 consecutive years.
- No use for more than 30 days in any pasture.
- Trailing may occur in the unused spring pasture, but will be limited to 4 days.

Cold Springs (Summer Mountain pastures), Beaver Basin, and Three Corners Allotments:
Growing season use
- No early spring use in the same allotment, or pasture within an allotment, 2 consecutive years.
- Defer each allotment, or pasture within an allotment, until seed ripe one year in four.
- No use for more than 30 days in any pasture.
- Trailing may occur in the unused spring pasture, but will be limited to 4 days.

The allotments/pastures that will be deferred and those that will not be grazed in June will be identified in the Annual Operating Plan (AOP). Those that will be grazed in June will have time of use identified.

Spitzie Draw - Use will be limited to November 1st to May 15th. The Utah pasture may be used between May 1st and May 31st provided use does not exceed 15 days during this time. After April 1, no use in the same pasture 2 consecutive years, ***and*** no use for more than 30 days.

Dry Creek - Use will be limited to November 1st to May 15th. (See grazing system narrative.) After April 15th, no use in the same pasture 2 consecutive years, ***and*** no use for more than 30 days.

South Green River - Use will be limited to November 2nd to May 15th. (See grazing system narrative. Growing season standards will be applied after April 15th: No use in the same pasture 2 consecutive years during the growing season, ***and*** no use for more than 30 days during the growing season.)

Those areas in **Spitzie Draw** that will be grazed after April 1st and those in **Dry Creek and South Green River Allotments** that will be grazed after April 15th will be identified in the Annual Operating Plan (AOP).

Renew the grazing permit on the Beaver Basin #04329, Cold Springs #04325, Dry Creek #04302, South Green River #04340, Spitzie Draw #04335, and Three Corners #04330 Allotments for Vermillion Ranch, operator #0501039, for a period of ten years, expiring February 28, 2018. This permit would be renewed under Section 402 of the Federal Land Policy and Management Act of 1976 (FLPMA), as amended (43 USC 1752).

As shown, the permit would be changed from:

Allotment	Livestock	Dates			
Name & Number	Number and Kind	Begin	End	%PL	AUMs
Beaver Basin #04329	26 Cattle	06/05	09/13	30	26
Cold Springs #04325	10 Horses	03/01	02/28	33	40
	1533 Cattle	03/01	12/31	33	5156
				TOTAL	5196
				(2 AUMs not scheduled)	
Dry Creek #04302	872 Cattle	11/01	05/31	90	5470
South Green River #04340	72 Cattle	11/02	05/31	100	500
				(5 AUMs not scheduled)	
Spitzie Draw #04335	371 Cattle	11/01	05/31	95	2457
Three Corners	51 Cattle	06/01	09/30	45	92

#04330 (1 AUM not scheduled)

No Special Terms and Conditions

to:

Allotment Name & Number	Livestock Number and Kind	Dates Begin	End	%PL	AUMs
Beaver Basin #04329	17 Cattle	06/01	10/31	30	26
Cold Springs #04325					
South Slope Pasture	20 Horses	10/01	06/30	33	59
	520 Cattle	03/01	06/30	33	688
	317 Cattle	10/01	02/28	33	519
Mountain Pastures	20 Horses	06/01	10/31	33	33
	1505 Cattle	06/01	10/31	33	2498
				TOTAL	3797
				(3 AUMs not scheduled)	
Dry Creek	20 Horses	10/01	05/31	90	144
#04302	715 Cattle	10/01	05/31	90	5141
Blue Hill and Wilson Pastures	150 Cattle	04/01	06/25	90	382
				TOTAL	5667
				(3 AUMs not scheduled)	
South Green River #04340	67 Cattle	11/02	05/15	100	430
				(5 AUMs not scheduled)	
Spitzie Draw #04335					
Colorado	15 Horses	11/01	05/15	98	96
	188 Cattle	11/01	05/15	98	1187
Utah	69 Cattle	11/01	05/31	74	356
				TOTAL	1638
				(5 AUMs not scheduled)	

The AUM reduction is prorated between the Utah and Colorado portions: new stocking level in Colorado is estimated to be 1289 AUMs and 354 AUMs in Utah. The calculation of % PL is based on notes in the Vermillion Ranch case file that established the original 95% PL.

Three Corners #04330	41 Cattle	06/01	10/31	45	93

The above permit would be subject to the Standard and Common Terms and Conditions, see Attachment 4.

Specific Grazing Guidelines

This is a year long operation on public lands that rotates through several seasonal allotments and several pastures or use areas within those allotments. Herding, fencing, water developments, and adaptation to highly variable seasonal weather patterns are essential practices of this year long operation.

Those allotments that are currently winter use (Spitzie Draw, Dry Creek, and South Green River) but are also used for spring use have the potential for spring deferment, and cattle would be removed early enough to allow for regrowth.

Those allotments with summer use (Cold Springs, Beaver Basin, and Three Corners) have the potential to be grazed in a rotational system where the same areas would not be used every year in the early spring, livestock would be removed from pastures to allow for adequate regrowth in those pastures used early and livestock would not be allowed to remain season long on riparian areas.

Dry Creek Allotment #04302
BLM performance standard: Winter use would be limited to November 1st to May 15th. Spring use after April 15th would not occur in the same pasture two consecutive years and would be limited to 30 days. Several pastures do not meet the standard because livestock are removed on May 31st, however, due to the later growing season on this allotment, deferment and adequate time for regrowth could still be achieved. In addition, the Dry Creek pastures do not meet this standard due to the fact that spring use would occur in consecutive years, however use would be limited to 15 days and 30 days in alternate years.

1) 159 cattle AUMs may be converted to horses in all pastures except Lookout and Upper and Lower Dry Creek, due to proximity to the Sand Wash Herd Management Area (HMA). This is for emergency use as necessitated by occasional heavy snow conditions at higher elevations and would require notification of the Authorized Officer.

2) A fence is proposed to better separate the Irish Lake and Burnt Cedars Pastures. Until the fence is constructed, the wash at the gap would be the division line. Grazing use will alternate in spring deferment with the G Flat Pastures. Use will be from April 1st to May 31st and October 1st to December 31st. Every other year there will be complete spring rest, with the use occurring in G Flat.

3) Use on the G Flat (North and South) Pasture is from October 1st to May 31st. Use in the fall is primarily as a shipping pasture, and use in December through March is only for trailing out from the private fields. Movement in the spring between North and South will be by water locations

and herding. Every other year there will be complete spring rest, with the use alternating with the Irish Lake and Burnt Cedars Pastures.

4) The Blue Hill and Wilson pastures will be used primarily as spring bull pastures. Grazing use will be from April 10th to June 25th, and use will be limited to 30 days in each pasture. Use will occur early in one pasture for approximately 30 days and then all animals will move to the other pasture for the remaining time, approximately 30 days. Early use will be alternated each year.

5) The Dry Creek (Upper & Lower), Shell Creek, Vermillion Creek, and Lookout Pastures will be run in combination. Grazing use will be from October 1st to May 31st.

Cattle may use any area during the winter, but spring deferment will occur as follows: in year 1, use in April will be in Upper Dry Creek. Use in May will occur in Lower Dry Creek, South Lookout, and Vermillion Creek. In year 2 use in April will occur in Lower Dry Creek. Use in May will occur in Upper Dry Creek, North Lookout, and Shell Creek. Herding will be used to keep cattle on the correct side of the boundary between Upper and Lower Dry Creek Pastures.

Cold Springs Allotment #04325

BLM performance standards: No early spring use would occur in the same pasture or allotment two consecutive years, use would be limited to 30 days in each pasture, and each pasture or allotment would be deferred until seed ripe one year in four.

This allotment would be divided into those pastures that would be used only as summer range and those that would be used as spring and fall range.

1) The dates for spring and fall use in the South Slope Pasture will be from March 1st to June 30th and October 1st to February 28th for cattle and October 1st to June 30th for horses. All horse use prior to March 1st will be rotated to new areas through herding at least every 45 days. Throughout this time, horses will only be herded into those areas not used by cattle during the fall. After March 1st, horses will be rotated along with the cattle. After March 1st, grazing by cattle and horses will occur in areas with open water sources and growing season use will be rotated between the two pasture units within the South Slope Pasture. The growing season rotation will be accomplished by herding and ensure that no one area will used for two consecutive years during the growing season. Livestock would start in one pasture and move to the other and the movement would be alternated the next year.

2) In June, both the heifers and the horse band will be moved off the South Slope Pasture to the various summer pastures on top of Cold Springs. The horse band will join the main cow herd and the heifers will rotate through the pastures on Cold Springs, Beaver Basin, and Three Corners.

3) In the fall, the heifers will go to the Utah allotments and then return to the Spitzie Draw Allotment for the winter. The horse band will be herded back to the South Slope Pasture in late October or November for the winter. Occasionally (once in three or four years), this rotation may be reversed so that spring grazing by the replacement heifers occurs in the Utah allotments

and fall use is on the South Slope Pasture. The reversal of the rotation would accommodate the grazing system in Utah. The cattle use on the South Slope Pasture in any one year will be either spring or fall but not both.

A small band of ranch horses has traditionally grazed the South Slope of Cold Springs Mountain during the late fall/winter/early spring. This band consists of 10-20 head of extra riding stock and a few brood mares. Access to these horses is maintained season long in order to rotate active riding stock in and out of this rest band. This access also allows the horses to be moved to different areas on a regular basis and prevents them from becoming trapped or snowbound in any area. Winter use occurs on areas of the South Slope that are not otherwise grazed due to the lack of open water sources. There is virtually no overlap of winter horse use areas and the areas grazed by cattle or horses during the spring or fall. Winter foraging habits of these horses which select the higher open ridges and benches, the lack of open surface water and direct herding by Vermillion Ranch assures that winter horse use does not occur on areas of the South Slope that are grazed by cattle or horses at other seasons of the year.

4) No one Mountain Pasture (Thum, Swede Spring, Limestone, Willow Spring, Jug Spring, and Point of the Mountain) will receive early season use in consecutive years. Grazing use will be from June 1st to October 31st. Cattle will enter through either Limestone or the Swede Spring pasture. Cattle will trail out in the fall through the unused pasture.

5) Horses will follow the same rotation as cattle on the Mountain Pastures and in the spring and fall in the South Slope Pasture.

6) The Corral Pasture will be used as a gathering pasture in spring and fall and will not receive more than 30 days use in either season.

Beaver Basin #04329 and **Three Corners #04330 Allotments**
BLM performance standards: No early spring use would occur in the same pasture or allotment two consecutive years. Use would be limited to 30 days in each pasture. Each pasture or allotment would be deferred until seed ripe one year in four.

1) These allotments will be grazed in the summer in a rotation system similar to the summer pastures on Cold Springs. Grazing use will be from June 1st to October 31st. No pasture will be used early two consecutive years and use would be limited to 30 days. This excludes the Wilson and Shields Pastures which contain no public lands.

Spitzie Draw Allotment #04335
BLM performance standards: Grazing season use would be limited to November 1st to May 15th. Spring use after April 1st would not occur in the same pasture two consecutive years and would be limited to 30 days.

1) The allotment will be used primarily for winter use, but use occurring between April 1st and May 15th will be used in a rotation system. Spring use after April 1st will not occur in the same

pasture two consecutive years and will be limited to 30 days. The Utah pasture may be used between May 1st and May 31st for no more than 15 days.

2) 127 cattle AUMs may be converted to horses. This is for emergency use as necessitated by occasional heavy snow conditions at higher elevations and would require notification of the Authorized Officer.

South Green River Allotment #04340
BLM performance standards: Spring use after April 15th would not occur in the same pasture two consecutive years and would be limited to 30 days.

1) During the growing season, this allotment will be managed as two pastures using topography and existing fencing. All cattle will be gathered into one pasture on April 15th and growing season use, April 16th to May 15th, will occur in that pasture. This spring use will be rotated between the two pastures in alternate years.

The above permit would be subject to the Standard and Common Terms and Conditions, see Attachment 4.

Under this alternative, the permit would be subject to the following Special Terms and Conditions:

1) On the Cold Springs Allotment, the initial stocking rate will be 2500 AUMs. An additional 500 AUMs will be available when management is fully implemented. An additional 800 AUMs will be in voluntary nonuse for a period of three years, pending results of monitoring.

2) On the Spitzie Draw Allotment, the initial stocking rate will be 1393 AUMs, with 250 AUMs held in voluntary nonuse for a period of three years, pending results of monitoring.

3) On the South Green River Allotment, the initial stocking rate will be 385 AUMs, with 50 AUMs held in voluntary nonuse, pending results of monitoring.

4) On the Dry Creek Allotment, cattle AUMs may be converted for up to 20 horses within the permitted grazing window in all pastures except Lookout and Upper and Lower Dry Creek. This is for emergency use only, as necessitated by occasional heavy snow conditions and requires notification of the Authorized Officer (AO).

5) On the Cold Springs Allotment, horses will be rotated along with cattle in the Mountain Pastures.

6) On the Cold Springs Allotment, fall and winter horse use will be allowed on the South Slope Pasture provided that horses are moved to new areas at least every 45 days. These areas may not be those that were used by cattle the previous fall. Horses will be rotated

along with cattle during spring use on the South Slope Pasture. Cattle use on the South Slope Pasture in any one year will be either spring or fall but not both.

7) On the Spitzie Draw Allotment, cattle AUMs may be converted for up to 20 horses within the permitted grazing window for the Colorado portion of the allotment. This is for emergency use only, as necessitated by occasional heavy snow conditions, and will require notification of the AO.

8) An Annual Operating Plan (AOP) must be submitted and approved for meeting BLM performance standards prior to turning livestock out on public lands. This AOP will cover all allotments and pastures by dates. BLM must be notified of any deviation from the agreed-upon plan prior to livestock being moved.

9) All livestock must be removed from pastures/allotments by the dates shown on the AOP. The only exception will be five (5) days flexibility on the move from Dry Creek to the Cold Springs Mountain Pastures in the spring.

10) The permittee will submit actual use forms, to be provided by BLM, which accurately document livestock movements. These forms (BLM 4130-5) will be submitted twice yearly, coinciding with the end of the two major seasons of use, June 15 and November 15.

11) Implement grazing management for all allotments with the following performance standards:

Riparian areas:
On spring/summer pastures containing the following creeks, no late season use (after August 15) one year in three: Talamantes Creek, Beaver Creek, Dry Creek, Antone Canyon, and Vermillion Creek.

Cold Springs Allotment (South Slope Pasture):
No early spring use in consecutive years. No use for more than 30 days. Trailing may occur if the pasture is not otherwise used, but is limited to 4 days.

Cold Springs (Mountain Pastures), Beaver Basin, and Three Corners Allotment:
No early season use in the same pasture or allotment in consecutive years. Defer each allotment or pasture until seed ripe one year in four. No use for more than 30 days in any one pasture or allotment. Trailing may occur if the pasture is not otherwise used, but is limited to 4 days.

The allotments/pastures that will be deferred and those that will not be grazed in June will be identified in the AOP. Areas that will be grazed in June will have dates of use identified in the AOP.

Spitzie Draw Allotment:
After April 1st, no use in the same pasture in consecutive years and no use for more than 30 days. Use in the Utah pasture between May 1st and May 31st will not exceed 15 days. Areas that will be grazed after April 1st will be identified in the AOP. Horse AUMs may be converted to cattle.

Dry Creek Allotment:
After April 15th, there will be no use in the same pasture in consecutive years and no use for more than 30 days. Those areas that will be grazed after April 15th will be identified in the AOP.

South Green River Allotment:
No growing season use in the same pasture in consecutive years and no use for more than 30 days during the growing season. Areas that will be grazed after April 15th will be identified in the AOP.

Proposed Range Improvements: (see Attachment 5)
A number of range improvements are proposed in order to facilitate the proposed livestock rotations and to maintain and improve rangeland health. These improvements consist of fencing and water developments. Maps of the preliminary locations of these proposed improvements are shown in Attachment 6a-f. All improvements would be built to applicable BLM construction standards shown in Attachment 7.

None of the proposed improvements would be located in Wilderness Study Areas (WSAs), Areas of Critical Environmental Concern (ACECs), or fragile soil areas identified within MU 12.

The proposed improvements would be built in a phased manner over the course of the ten-year permit. Analysis in this EA will focus on the direct, indirect, and cumulative impacts of these improvements to livestock movement, the surrounding plant communities, and riparian and watershed health based on the proposed locations shown on the attached maps. As projects are located on-the-ground, class III cultural surveys would be completed prior to construction. The results of these surveys may require small modifications or movement of planned projects, but the character, approximate location, and purpose of each improvement described herein would remain the same.

An existing stackyard, located along Dry Creek in T10N R100W, Sec. 16, will not be approved and must be removed. See EA CO-100-LS-00-005 for a discussion of impacts. No analysis of this will be included in this EA.

Cold Springs Allotment:
-To eliminate repeated use of the east end of the Cold Springs Allotment by cattle in both the spring and fall of each year, a fence would be constructed to create separate pastures (Swede Springs and Limestone), each of which would only receive use once during the grazing season on an alternating basis. The fence would be constructed as shown in Attachment 6a.

-To provide for improved livestock distribution, 6 new ponds would be constructed as shown in Attachment 6a.

Dry Creek Allotment:
-To facilitate spring deferment on the Burnt Cedar Pasture, a division fence would be constructed as shown in Attachment 6b.

-To provide for improved livestock distribution, 14 new ponds would be constructed and 38 water haul sites would be approved. Test wells would be drilled at three sites to determine ground water availability. If one or more of these wells are successful, nearby water haul sites would be eliminated. See Attachment 6b.

Spitzie Draw Allotment:
-To facilitate spring deferment, a new pasture fence would be constructed as shown in Attachment 6c.

-To provide for improved livestock distribution and greater water availability, one existing pond would be enlarged, an existing pipeline system would be extended, and one new ponds would be constructed as shown in Attachment 6c.

Beaver Basin Allotment:
-To encourage wider livestock distribution into the southeastern portion of the allotment, a small catchment would be constructed as shown in Attachment 6d.

Three Corners Allotment:
-To alleviate livestock concentration on SLB land on the southern end of the allotment and encourage wider distribution through forested areas, 4 new catchments would be constructed as shown in Attachment 6e.

FENCES

New pasture fences are proposed to create new pastures and better facilitate livestock rotation in the Cold Springs, Dry Creek, and Spitzie Draw Allotments. In each of these allotments, one new three-strand barbed wire fence, bottom wire smooth, would be built. Wire spacing specifications would be for deer, pronghorn, and elk passage (38 inches, 26 inches, and 16 inches above ground) with metal posts spaced 12 feet apart and wood stays placed at the midpoints between the metal posts (see Attachment 7a). Where fences cross two two-track or larger vehicle routes, wire gates, metal gates, or cattleguards would be placed at those points. Where fences cross gullies, corral posts or custom-cut sheet metal would be suspended into the gullies to prevent livestock movement under the fence at those points while allowing for water and debris flow.

During construction, no blading would be allowed. Travel by ATV and four-wheel drive vehicle would be permissible along the flagged fence routes during construction. Some brush beating may be necessary and may be carried out within 15 feet on either side of the flagged line.

Fence Construction Stipulations
1. Installation of fences within ephemeral flood plains and active perennial flood plains will be properly sited to minimize intrusion into flood plains. Fences would need to cross flood plains in some situations, but fence corners and segments that parallel a flood plain will avoid the flood plain.

2. On the Limestone Fence, high visibility flagging (orange or pink) will be tied to the top wire between every other fence post upon construction to increase visibility to sage grouse. This will be for initial visibility and will not need to be replaced.

WATER DEVELOPMENTS

Water developments are proposed to improve distribution of livestock and accommodate increased stocking densities due to the short duration grazing rotations. These include ponds, water haul sites, pipelines, and wells.

Ponds
Water retention developments would be constructed in ephemeral drainages where a portion of seasonal water flow can be stored for use by livestock and wildlife. Construction of these developments would entail mechanical clearing of brush, core trenching of the dam site, and the construction of an earthen dam and water retention pit by dozer. Dams would not exceed 15 feet in height from the bottom of the embankment to the bottom of the spillway and all developments would retain between 0.2 and 0.5 acre-feet. A minimum of 4-feet freeboard would be added to the embankments to direct any spillage towards the embankments. Dams would be constructed in areas having high clay substratums to take advantage of the properties of clays that make it more conducive to embankment construction. Pits would be lined with bentonite to improve water retention. Each pond proposed would involve a direct surface disturbance of a *maximum* of 2 acres for construction, but more typically, total direct surface disturbance would be 1 acre or less, see Attachment 7b.

Pond Construction Stipulations
1. Access to and from each site will be on existing roads or trails. Where cross-country travel is mandatory, the same tracks will be used in and out. While traveling, the dozer blade will be kept up.

2. Top soil will be stockpiled and used to cover the disturbed area to the greatest extent possible.

3. Noxious weeds will be controlled by the permittee on any area disturbed as a result of these projects. Any spraying of weeds will need to be cleared through BLM prior to spraying.

4. No hazardous materials/hazardous waste or trash shall be disposed of on public lands. If a release does occur, it shall be reported to the Little Snake Field Office immediately at 970-826-5000.

5. Any surface disturbance will be reseeded with native species adapted to the area.

Catchments

Four catchments would be constructed on the Three Corners Allotment and one constructed on the Beaver Basin Allotment. These catchments would be small earthen pits similar in character to the water haul pits described below, except that these would be located in a manner that would capture seasonal water. These pits would require disturbance no larger than 1,000 square feet and hold no more than 0.1 acre/feet.

Water Haul Locations

Forty water haul sites would be established at fixed locations under a cooperative agreement(s). Water haul sites would be located at locations shown in Attachment 6b. Thirty six water haul sites would consist of portable water troughs placed at locations easily accessible by highway-legal vehicle. Four water haul sites would consist of small earthen pits. Each pit would require disturbance no larger than 200 square feet. All water troughs would be fitted with escape ramps for birds and small mammals. Troughs at haul sites would be removed when not in use.

Pipeline Extension

One pipeline extension is identified in the Spitzie Draw Allotment. It presently ends at a trough, but would be extended to terminate at a pond. A two inch PVC pipe would be placed in a ditch averaging three feet deep made by a vibratory ripper. Where the line goes through sagebrush, a fifteen foot wide swath would be brushbeat to facilitate ditching. This swath would be roughly half that width where the pipeline would run adjacent to the existing road. After placing the pipe in the ditch, the narrow ditch would fill in on its own, see Attachment 7c. Due to the narrowness of the disturbance created by the vibratory ripper, reseeding would not be necessary. The total additional length of the buried pipeline would be approximately 1,290 feet. The terminal pond would be constructed according to the aforementioned stipulations.

Wells

Three exploratory water wells are proposed on the Dry Creek Allotment. Tentative locations are shown on Attachment 5c. All wells would be drilled by either cable-tool or rotary methods. If the exploratory wells provide a viable water supply, the wells would be operated by submersible pump powered by a diesel engine-driven generator or solar array. The well heads would be surrounded by a 3x3 foot concrete platform, see Attachment 7d. Water would be pumped from the well to a storage tank and then to a trough. All proposed wells would be located adjacent to existing roads, so cross-country travel or the creation of new access roads would be unnecessary. Any well that would not provide a viable water supply would be reclaimed and reseeded with native species adapted to the site.

Stipulations Applicable to All Proposed Improvements

1. A ground survey will be conducted to determine if range improvements need to be relocated due to presence of sensitive plant species/remnant plant communities.

2. All projects will be located on the ground with a wildlife biologist to minimize impacts to existing habitats and wildlife uses, including existing prairie dog town complexes or other known T&E species habitats and aquatic wildlife resources, through construction activities or anticipated access routes. Timing of construction will also be regulated to minimize disturbance during critical periods, such as elk calving season or winter periods.

3. A survey for cultural resources will be conducted prior to construction of all proposed range improvement projects.

4. All projects will be located to minimize negative impacts to existing riparian systems.

5. The operator is responsible for informing all persons who are associated with the operation that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) (970) 826-5087. Within five working days the AO will inform the operator as to:

-whether the materials appear eligible for the National Register of Historic Places;

- the mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again.

6. Pursuant to 43 CFR 10.4(g) (Federal Register Notice: Monday December 4, 1995, Vol 60, No. 232) the holder of this authorization must notify the AO, by telephone (970) 826 5087, 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.

7. Project construction will not occur until a Form 4120-6, Cooperative Agreement for Range Improvements, is signed by authorized representatives from Vermillion Ranch Limited Partnership and BLM. The Cooperative Agreement will include all applicable stipulations.

No Action Alternative

Under this alternative, existing management would continue with no changes to the existing permit. Season of use would not be changed and a short duration rotation system would not be implemented. All allotment boundaries would remain the same. No additional range improvements would be implemented.

Under this alternative, the existing permit would continue to be subject to the Standard and Common Terms and Conditions shown in Attachment 4.

Alternatives Considered but not Analyzed:

NEPA requires federal agencies to rigorously explore and evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). As also required by NEPA, the range of alternatives considered in detail includes only those alternative that would fulfill the purpose and need for the Proposed Action.

No Grazing Alternative

No livestock grazing would take place under this alternative.

This alternative is eliminated from detailed study because it is not a realistic, implementable alternative, nor does it meet the requirements of the Federal Land Policy and Management Act of 1976. When the RMP was approved, it was determined that livestock grazing was an appropriate use of this land. Eliminating grazing is not analyzed because no new issues or concerns have been identified that would require this action.

Implementation of the grazing schedule of the Proposed Action without implementation of new range improvements

Implementation of more intensive management through the rotations and performance standards designed to maintain and/or improve forage, soil, and watershed conditions without the additional livestock control provided by the proposed improvements would result in far less effective management and result in continued issues with livestock distribution and impede growing season deferments. As mentioned previously, monitoring data has consistently shown that distribution of livestock has been problematic on the Cold Springs, Spitzie Draw, and Dry Creek Allotments, resulting in large areas either being excessively utilized or properly utilized with large areas being consistently under utilized. This alternative would not afford the operator the ability to successfully implement needed rotations or address long term distribution issues.

All but two of these allotments are vast in size, with climatological and meteorological influences that make direct control of cattle very difficult if not impossible. Great distances, large expanses of easily traversable land, and few barriers to movement mean that, even with constant attention by mounted herders, cattle would often move to undesirable areas regardless of herder actions. Unless the livestock are being actively and constantly driven, a practice which would overly concentrate use on a continual basis, herding would be unworkable, impractical, and unable to meet the objectives of sound resource management.

Reducing active use on all allotments to levels of actual use in the last ten years

BLM grazing permits and leases are designed to reflect the total available forage to livestock from public lands during years of normal precipitation and growing conditions. Actual use and

utilization have fluctuated greatly over the last fifteen years, with actual use and utilization being below active use/acceptable utilization limits in most years.

Reductions are implemented in the Proposed Action, i.e. an initial decrease of 5 acres/AUM on the Cold Springs Allotment, 1 acres/AUM on the Dry Creek Allotment, 8 acres/AUM on the Spitzie Draw Allotment, and 2 acres/AUM on the useable portions of the South Green River Allotment.

AFFECTED ENVIRONMENT/ENVIRONMENTAL IMPACTS/MITIGATION MEASURES:

CRITICAL RESOURCES

AIR QUALITY

Affected Environment: The allotments do not lie within any Environmental Protection Agency non-attainment areas for major air pollutants.

Environmental Consequences, common to all alternatives: Although pollutants would be released into the air by vehicles supporting livestock operations through emissions and dust, releases would be minimal. The lack of human activity in the area results in no more than releases of trace amounts of dust and other pollutants into the air. The allotments are well vegetated enough to limit the amount of soil particles released into the air on windy days. Air quality would not be adversely impacted by either alternative.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/29/01

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Affected Environment: There are no Areas of Critical Environmental Concern (ACEC) in the Beaver Basin, Three Corners, Spitzie Draw, and South Green River Allotments.

The Irish Canyon ACEC lies within the Cold Springs and Dry Creek Allotments. The Limestone Ridge ACEC area lies within Cold Springs Allotment. A portion of the Lookout Mountain ACEC, Ink Springs, G Gap and Vermillion Bluffs special management areas all lie within the Dry Creek Allotment.

The Irish Canyon ACEC was selected due to scenic, cultural, geologic history, and botanical resources. The Limestone Ridge ACEC was designated due to scenic values, sensitive plant species, and remnant plant communities. Lookout Mountain ACEC was selected because of its scenic and visual qualities, rare plant species, and remnant plant associations. All three special management areas include remnant plant communities and/or sensitive plant species.

Environmental Consequences, common to all alternatives: Existing roads and trails would be utilized except for emergencies. Maintenance of existing projects would be limited to the minimum necessary in order to reduce the visual and resource impacts from grazing management operations in these areas while continuing to ensure the effectiveness of those projects. None of these activities would adversely impact the ACECs.

Environmental Consequences, Proposed Action: Potential impacts to botanical resources are similar as those described under the special status plants section. Grazing itself would not negatively affect other aspects of the ACEC.

The portion of the Lookout Mountain ACEC within the Dry Creek Allotment is on a steep, sparsely vegetated, north facing slope. The allotment here is bordered by the Sandwash Herd Management Area fence. Due to topography and marginal grazing value, livestock grazing would not adversely impact this portion of the ACEC.

There would be no impacts from the proposed range improvements as none would be constructed in any ACEC.

Environmental Consequences, No Action: Cattle grazing north of Irish Canyon along County Road 10, but within the Irish Canyon ACEC, is licenced from mid October through the end of June. This area appears to have the greatest impact from ungulate grazing, both livestock and big game, within the Irish Canyon ACEC. In addition to long duration grazing, supplemental feed to livestock along this corridor was provided for many years prior to 2001, congregating animals in small areas. Although this area does not represent a large acreage of the ACEC, the area does reflect changes in native vegetation due to heavy grazing pressures. Continuation of existing grazing management would likely continue these degraded resource conditions on a small scale.

Cattle grazing as described under the Dry Creek Allotment discussion has resulted in most potential and historic impacts from grazing practices occurring along County Road 10 within the Irish Canyon ACEC. The rest of the Irish Canyon and Limestone Ridge ACECs occur on steeper slopes, and are not as accessible to livestock.

Mitigative Measures: None

Name of specialist and date: Robin A. Sell 8/4/01

CULTURAL RESOURCES

Affected Environment: The final E.I.S. for Rangeland Reform '94 notice published in the **Federal Register,** December 30, 1994.

Data developed here, as well as in the allotment specific analysis, was taken from the cultural program project report files, site report files, and base maps kept at the Little Snake Field Office as well as from An Overview of Prehistoric Cultural Resources Little Snake Resource Area,

Northwestern Colorado, Bureau of Land Management Colorado, Cultural Resources Series, Number 20, and An Isolated Empire, A History of Northwestern Colorado, Bureau of Land Management Colorado, Cultural Resource Series, Number 2 and Appendix 21 of the Little Snake Resource Management Plan and Environmental Impact Statement, Draft February 1986, Bureau of Land Management, Craig, Colorado District, Little Snake Resource Area. Other data that will be used for the GIS maps is developed from the Little Snake Field Office Geographic Information System (GIS).

The GIS maps will be developed that show the springs and creeks, rivers, intermittent drainage, riparian areas as well as slopes. These maps will be used to guide initial survey efforts to locate livestock concentration areas in each Allotment. This effort to identify and evaluate cultural resources will take place during upcoming field seasons.

The table below is based on the allotment specific analysis developed for each allotment in this EA. Copies of the allotment specific analysis are on file at the Little Snake Field Office. The table shows cultural resources, eligible and need data, and those that are anticipated to be in each allotment. The known sites will be evaluated for grazing impact during subsequent field seasons.

Allotment Number	Acres Surveyed at a Class III Level[1] [2]	Acres NOT Surveyed at a Class III Level	Percent -%- Of Allotment Inventoried at a Class III Level	Eligible or Need Data Sites – Known in Allotment (Site Numbers)	Estimated Sites for the Allotment** (Total Number)	Estimated Eligible or Need Data Sites in the Allotment (Number)
04302	781[2]	84356.2	.9%	5MF4591 5MF4325 5MF47 5MF48 5MF721 5MF4617 5MF958 5MF3066 5MF2238 5MF2237 5MF619/450 5MF4629 5MF797 5MF1798 5MF2720 5MF2721 5MF4425 5MF2010 5MF4313 5MF638 5MF637 5MF639 5MF636 5MF633 5MF634 5MF625 5MF626 5MF635 5MF640 5MF632 5MF628 5MF627 5MF641 5MF644 5MF643 5MF647 5MF646 5MF645 5MF642 5MF631 5MF1800	2261.4	678.4
04329	2[2]	1206.09	.16%	None	32.08	9.6
04330	3[2]	803.74	.37%	None	21.42	6.4

04325	656[2]	68411.34	.95%	5MF1697 5MF2235 5MF2027 5MF2233 5MF4607 5MF4680 5MF2054 5MF690 5MF610 5MF4389 5MF2048 5MF2047 5MF2026 5MF2036 5MF2037 5MF2038 5MF2251 5MF2017 5MF2039 5MF624 5MF606 5MF4628	1834.6	550.38
04335	110[2]	14943.7	.73%	5MF493 5MF3434 5MF3410 5MF842 5MF2746	399.8	119.9
04340	2[2]	449.72	.04%	5MF2679 5MF2299 5MF2301 5MF5226 5MF5010 5MF5009 5MF5011 5MF2298 5MF4890 5MF5033 5MF5051 5MF5034 5MF5035 5MF5036 5MF5037 5MF5038	118.1	35.4

(Note: *Acres are derived from GIS allotment maps. 1. BLM only acres or 2. BLM and other acres in the allotment. See allotment specific analysis form. **Estimates of site densities are based on known inventory data. Estimates represent a minimum figure which may be revised upwards based on future inventory findings.)

Environmental Consequences, common to all alternatives:
Monitoring of the previous years range permit renewal EA's, FY98, FY99, and FY2000, has been carried out for some of the known eligible and need data sites identified in the cultural records review. This information is covered in the following reports:

Keesling, Henry S. and Gary D. Collins, Patrick C. Walker
2000 Cultural Resource Evaluation of Known Eligible and Need Data Sites within Range Allotments for Range Permit Renewal EA's FY98 and FY99. Bureau of Land Management, Little Snake Field Office, Craig, Colorado. Copy on file at that office.

Collins, Gary D., and Patrick C. Walker, Sam R. Johnson, Henry S. Keesling
2001 Addendum to Cultural Resource Evaluation of Known Eligible and Need Data Sites within Range Allotments for Range Permit Renewal EA's FY98 and FY99, Range Permit Renewal EA's FY2000 and FY2001. Bureau of Land Management, Little Snake Field Office, Craig, Colorado. Copy on file at that office.

Collins, Gary D. and Ryan J. Nordstrom, Henry S. Keesling
2002 The Second Addendum to The Cultural and Need Data Sites Within Range Allotments for Range Permit Renewal EA's FY98, FY99, FY00. FY01, and FY02. Bureau of Land Management, Little Snake Field Office, Craig, Colorado. Copy on file at that office.

These reports represent three field seasons of evaluation work on the eligible and need data sites that were identified in previous cultural records review for other range permit renewal EA's. The fieldwork conducted in 2000 and 2001, as expected, identified impacts to some of the cultural resources being evaluated. Reports, cited above, have been provided to the Colorado State Historic Preservation Office and the Bureau of Land Management, Colorado State Office. The above two cited reports do not cover any of the cultural resources identified in this EA. Fieldwork for the cultural resources on the above table will be carried out in FY02 or in subsequent years.

BLM has committed to a ten year phased evaluation being conducted for cultural resources that take into account identified livestock concentration areas and the cultural resources that are either eligible and/or need data and to carrying out mitigation on cultural resources that require this action. The phased monitor and mitigation approach will mitigate identified adverse effects, significant impacts and data loss, (NHPA Section 106, 36CFR800.9; Archaeological Resource Protection Act 1979; BLM/Colorado SHPO Protocol 1998; NEPA/FLPMA requirements) to an acceptable level.

Further, to meet the other obligations, GIS maps will be created showing springs, stream course features, riparian areas, springs, and slopes that are greater than 30% slope within the allotment. The data will be gathered from the USGS Maps and data on file at this office. The GIS maps will provide a computer generated visual departure point for the proposed fieldwork. The selected areas are those in which grazing concentrations have the potential to cause substantial ground-disturbing impacts. These impacts may cause cumulative effects, some of which could be considered significant, and may also cause long-term, irreversible, potentially irretrievable adverse impacts and data loss. However, the phased identification and evaluation fieldwork will identify mitigation measures that will reduce these impacts to an acceptable degree (NHPA Section 106; 36 CFR 800.9; Archaeological Resource Protection Act 1979; BLM/Colorado SHPO Protocol 1998; NEPA/FLPMA requirements), to an acceptable level.

Other project specific Class III surveys initiated by the BLM, industry, or ranching will identify previously unrecorded cultural resources within these allotments. Newly identified cultural resources will need to be mitigated in relationship to the proposed project(s). Further, these

cultural resources will be incorporated into current and future grazing review efforts to be evaluated and monitored as necessary.

Proposed range projects are discussed in the Proposed Action and Alternatives Section above. These projects have not gone through the Section 106 process in this EA. The projects will have the Section 106 process carried out at a later date when the projects are specifically identified on the ground and initial evaluation and feasibility of the project has taken place. See Stipulation 5 below.

Mitigative Measures: Standard Stipulations for cultural resources are included in Standard Terms and Conditions (Attachment 2).

Allotment Specific Stipulations for this EA

1. GIS maps based upon stream course features and springs from the 7.5 minute USGS maps and riparian/spring data in this office will be used to initially establish evaluation areas for domestic animal concentrations. These areas will be field evaluated for concentration areas. Identified concentration areas will have the following cultural surveys preformed.

Riparian areas, streams or creeks, intermittent drainage will have a Class III survey in the area of concentration that includes an additional 50 feet around the impacted area.

Springs will have a Class III survey in the area of concentration and include an additional 50 feet around the impacted area.

2. GIS maps showing slope potential, 30% or greater, where rock art and rock shelters are predicted to occur will be used to initially establish evaluation areas for Class III survey. These areas will be evaluated for cattle concentrations. Identified concentration areas will have the following cultural surveys preformed.

Potential rock shelters, rock art areas will be evaluated to see if cultural materials are present. When cultural resources are identified they will be recorded and appropriate mitigation will be developed.

3. Previously identified sites, table above, and new sites recorded and evaluated as eligible and/or need data during other project specific Class III survey will need to be evaluated and monitored too. Initial recording of new sites and re-evaluation of the known sites will establish current condition of the resource and help in developing a monitoring plan for all sites. Some sites will have to be monitored more often than others. Sites that are found to be impacted by grazing activities will need further monitoring, physical protection or other mitigative measures developed.

4. Site monitoring plans, other mitigation plans, will be developed and provided to the Colorado State Historic Preservation Officer in accordance with the Protocol (1998) and subsequent programmatic agreements regarding grazing permit renewals.

Conducting Class III survey(s), monitoring, and developing site specific mitigation measures will mitigate the adverse effects, data loss, and significant impacts (NHPA Section 106, 36 CFR 800.9; Archaeological Resource Protection Act 1979; BLM Colorado and Colorado SHPO Protocol 1998; and NEPA/FLPMA requirements) to an acceptable level.

The Colorado State Historic Preservation Officer (SHPO) agreed with the Bureau of Land Management, Colorado, (BLM) that the BLM could issue its Range Renewal Permits with the proposed Cultural Resource Management actions, monitoring known eligible and need data sites and conducting Class III and/or modified Class III surveys on selected areas of BLM lands within in a ten year time frame (Cultural Matrix Team Meeting 26 January 1999, Colorado BLM State Office).

The Little Snake Field Office will initiate the monitoring of known eligible and need data sites the first field season following the issuing of the permit if possible. This survey will be based upon an acceptable, BLM and SHPO, research design that will establish criteria for evaluation of the sites for livestock impacts and any needed mitigation and future monitoring needs.

Name of specialist and date: Henry S. Keesling 10/3/02

ENVIRONMENTAL JUSTICE

Affected Environment: All six allotments are remote from human settlement of any size, particularly those containing minorities and/or low income populations.

Environmental Consequences, common to all alternatives: Neither alternative would impact minorities or low income populations.

Mitigative Measures: None

Name of specialist and date: Phillis A. Bowers 2/1/01

FLOOD PLAINS

Affected Environment: Flood plains are associated with Beaver Creek, Vermillion Creek, Dry Creek, Talamantes Creek and Shell Creek. The flood plains adjacent to Vermillion Creek and Talamantes Creek are part of riparian systems, but most segments along Shell Creek and Dry Creek are not.

Along Vermillion Creek the majority of the land surface adjacent to the stream is considered the 1st terrace of the valley and not an active flood plain. The 1st terrace along Talamantes Creek is

much narrower, but similar to Vermillion Creek in that it is entrenched from the 2nd terrace or canyon toe slope soils by a high vertical terrace bank. Vermillion and Talamantes Creek have stream channels throughout their length.

The Shell Creek drainage is a broad flood plain valley within a badland landscape, having an ephemeral to intermittent flow regime. Flashy runoff events and poor water retention in the badland landscape of the upland watershed have initiated gully erosion within this valley and it is downcutting. These conditions are typical and expected in a badland landscape. Side drainages deposit sediment and debris into the valley and a series of alluvial fans occur along the length of Shell Creek. When these features occur no stream channel is present, because it silts in. Remnant channels can be traced by the growth of willows and rushes through this actively developing drainage as the channels move across the flood plain. When a stream channel is present it is often severely incised or gullied in the deposited silts. Upstream of the alluvial fans the incised stream channel begins to shallow as it approaches these fans. Stream flow then spreads and scours across the fan area until it falls into a headcut on the downstream edge. The headcuts quickly turn into 15 to 25-foot gullies. This geomorphologic development is common to a badland landscape. The lower portion of Shell Creek forms the boundary between the Dry Creek Allotment and the Hiawatha TriDistrict Allotment, which is held by another livestock operator. The lack of a stream channel in some areas of the flood plain or alluvial fans of Shell Creek may allow a mixing of livestock in some areas.

The upper reaches of Dry Creek are a sandy wash with an active flood plain stabilized with coyote willow, rabbitbrush, aster and western wheatgrass. Downstream the stream channel becomes incised in the badland landscape without a sufficient flood plain area for a portion of its length. Stream segments that once appeared to support a riparian system, probably had flood plain areas that were sub-irrigated from a higher water table. However, lower Dry Creek and its lower tributaries have incised through the alluvial deposits of the badland landscape and possibly lowered the water table. The normal development of a flood plain through this area will result as Dry Creek erodes the streambank and terrace slopes sufficiently for an adequate flood plain to develop in these reaches. Gullies that were observed in the spring of 1996 within the lower tributaries were actively eroding through the unconsolidated silts and still cutting vertically. A 2-mile riparian reach occurs upstream of the confluence with Vermillion Creek to the G-Gap road crossing. It was noted on the riparian data forms for this reach that cow trails were crossing the flood plain/point-bars and that overflow water from high flow events were running down these trails with some evidence of headcutting through these silts.

The stream channel is incised in many parts of Dry Creek and its lower tributaries. Gullies that were observed in the spring of 1996 within the lower tributaries were actively eroding. Coyote willows that were thriving on some flood plain areas along Dry Creek are in poor vigor, diseased and dying out. Apparently this particular flood plain area was being irrigated with stream or alluvial water, but these plants were left high and dry when the Dry Creek stream channel incised and continues to stabilize. Any headcuts that develop can move upstream and lower the elevation of the streambed with respect to flood plain areas. This is an occurrence in the Shell Creek drainage as well. The active process of channel and flood plain formation in

this badland landscape will leave remnant traces of willows and rushes as can be observed in the Vermillion Creek drainage. Headcuts will likely continue to move upstream cutting closer to the incised stream channel on the upstream side of the alluvial fan. When the downstream gully joins the upstream gully the stream channel will be completely incised through the alluvial fan and valley erosion of Shell Creek alluvium will follow at a much accelerated rate until a meander and flood plain again develops.

Beaver Creek has an active flood plain prior to descending into the steep canyon reach that flows off Cold Springs Mountain. When Beaver Creek enters Browns Park at the bottom of the mountain it flows into a series of beaver ponds before a major water diversion. Downstream of the water diversion the creek may be slightly incised and not in contact with an active flood plain. However, the streambanks within this short reach on public lands are well vegetated and stable.

Spitzie Draw and many other named and unnamed drainages flow from the steep southerly break slopes of Cold Springs Mountain, into the Spitzie Allotment and across Browns Park to the Green River. The same holds true on the other side of the river, as many drainages flow from Diamond Breaks across the South Green River Allotment.

Existing developments associated with these flood plains are unimproved roads and range improvements such as fences, windmills, wells, watering tanks.

Environmental Consequences, common to all alternatives: No threat to human safety, life, welfare and property would result from any flood plain impacts by renewing the grazing permit under any of the alternatives.

Winter and spring grazing would occur in the Spitzie Draw, South Green River, Dry Creek Allotments. Winter storms would move livestock into the drainage areas, but the soils would typically be frozen. Physical disturbance to soil surfaces could occur when the surface thaws diurnally in late winter. The spring grazing would occur in the Shell Creek and Vermillion Creek pastures on alternate years and include an additional three pastures on which to disperse livestock. This grazing period, which could occur during the active growing season of range shrubs and grass plants, is generally after high water. Flood plain soils would receive use by livestock when they are moist but this would occur on alternate years and be distributed through four pastures.

Environmental Consequences, Proposed Action: The Proposed Action would shorten spring livestock use in the South Green River and Spitzie Draw Allotments through rotation and deferments in the spring, allowing more time for late season growth to occur, which would enhance plant vigor, carbohydrate storage and root development. Reductions are proposed for Spitzie Draw, Cold Springs, and South Green River Allotments, which would help to reduce livestock concentration areas. The rotation grazing practices that would be implemented would be expected to provide the greatest benefit to flood plain resources including those on Beaver Creek which is the principal flood plain in the Cold Springs and Spitzie Draw allotments.

Grazing pressure from horses on areas containing flood plains in the spring would be alleviated. Restricting horse use on the Cold Springs Allotment (South Slopes) and removing horses for much of the growing season would provide for vigorous plant growth and improved water retention.

PROPOSED PROJECTS
The proposed pasture fences would only cross small ephemeral tributaries of larger drainages that do not have developed, active flood plains. Ponds would be built in ephemeral channels that are incised and not in contact with an active flood plains. This would enhance drainage stability downstream and promote new flood plain formation.

Environmental Consequences, No Action: Livestock use within the allotments would not be modified. Grazing seasons on some pastures are longer than the preferred rotations in the Proposed Action. It would be expected that over-utilization would continue on some flood plain areas. No fences or ponds would be authorized and consequently would not impact any flood plain areas.

No impacts to the flood plains along Beaver Creek would occur due to the use periods and areas along Beaver Creek in the Cold Springs and Spitzie Draw allotments. In the canyon bottoms of Talamantes Creek, Shell Creek, Vermillion Creek and Dry Creek, over-utilization would occur during periods of severe winter weather and be cumulative through the winter. Storms in the late winter and spring would concentrate animals in the canyon bottoms. Soil disturbance and forage utilization would be most impacting during periods of diurnal thawing. The grazing period would continue through late winter/spring for these sites. Opportunity for vigorous regrowth of forage plants would be reduced.

Stream channel incision in many parts of Dry Creek and its lower tributaries would continue as expected in the badland landscape but would be at a more rapid rate than under the Proposed Action.

Upland soil conditions on extensive areas of the plateaus above the badland creeks and on the canyon toe slope soils would not improve under the current permit. Flashy runoff events that have caused the gullies to form in Shell Creek and Dry Creek and many of the tributaries to all of the badland creeks would continue.

Mitigative Measures, Proposed Acton: None

Name of specialist and date: Ole Olsen 07/10/01

INVASIVE, NONNATIVE SPECIES

Affected Environment: Invasive and noxious weeds occur within the six allotments. Cheatgrass and halogeton are common colonizing plant species that take advantage of surface disturbing activities and plant communities that have been suppressed by heavy grazing and

have the potential to move into disturbed areas lacking in perennial grasses and forbs. These two species of weeds are present in varying amounts in lower elevations of the affected area. Canada thistle and other biennial thistles are also fairly common. Black henbane, spotted knapweed, Russian knapweed, and diffuse knapweed have been reported in the area. Tall white top is a problem on lower Cold Springs Mountain, Spitzie Draw, South Green River, and Dry Creek Allotments. A program of detection and rapid treatments for noxious weeds is in place for this part of Moffat County under the Northwest Weed Management Area project. The BLM is in cooperation with the Moffat County Cooperative Weed Management program to employ the principals of Integrated Pest Management to control noxious weeds on public lands.

Environmental Consequences, common to all alternatives: Access to public land within these allotments provides many more opportunities for noxious weeds to be introduced. Wind, water, and wildlife species are other ways that noxious weeds can be introduced into these allotments. Land practices and land uses by the livestock operator and their weed control efforts would largely determine the identification and potential occurrence of noxious weeds within the allotments.

Environmental Consequences, Proposed Action:
The improved grazing practices described in the Proposed Action would enhance the vigor of desirable plant species and/or promote more soil cover would reduce the potential for invasive species to be introduced and slow the rate of spread.

PROPOSED PROJECTS
Most of the plant communities in the lower elevation allotments (Dry Creek, Spitzie Draw, and South Green River) are susceptible to invasion by halogeton. Halogeton tends to establish at even the most minimal soil disturbances. It is expected that pond construction and, to a lesser degree, fence construction would result in the establishment of halogeton as a result of the direct soil and plant community impacts necessary to construct these projects. Halogeton is not particularly persistent and is a minimal threat for invasion within intact native plant communities. It will be important that all newly constructed ponds are seeded with the appropriate native species upon completion to minimize halogeton presence. Fence construction would not create a great enough disturbance to require this, but some halogeton may occur along any newly constructed fences at lower elevations.

The higher elevation allotments (Cold Springs, Three Corners, and Beaver Basin) are far more mesic and do not suffer the invasion by non-native plants that lower elevation areas are susceptible to. Native species seeding on any newly constructed ponds will occur, but this will be more for soil protection than keeping weeds at bay.

Mitigative Measures: None

Name of specialist and date: Michael J. Alpe 3/14/01

MIGRATORY BIRDS

Affected Environment: Many species of birds listed on the USFWS's Bird of Conservation Concern List may be found within these six grazing allotments. Golden eagles can be expected to nest within all six allotments. Brewers sparrows and sage sparrows can be found in sagebrush grasslands and sagebrush mixed shrub habitats throughout all six allotments. Ferruginous hawks are relatively common within the east half of the Dry Creek Allotment. Prairie falcons are known to nest within the Dry Creek Allotment. Mountain plover and burrowing owls can be found nesting within prairie dog colonies throughout the Dry Creek Allotment although they are both uncommon. Black-throated gray warblers and pinyon jays can be found in juniper pinyon woodlands within the Spitzie Draw, Cold Springs, and South Green River Allotments.

Environmental Consequences, Proposed Action: Cliff and tree nesting birds such as golden eagle, prairie falcon, pinyon jay and black-throated gray warblers would not likely be impacted directly by livestock grazing. Habitat for prey species or food sources might be positively influenced by the reduced preference.

The Proposed Action would result in a boundary adjustment between the Dry Creek and Cold Springs Allotments. This adjustment would not have a negative impact on any Birds of Conservation Concern or their habitat and would not result in take. The construction of a pasture fence dividing the Irish Lake Pasture and the Burnt Cedars Pasture would not likely to result in take because it would be placed predominantly along Moffat County Road 10, an unlikely nesting location for any of these birds. This pasture fence would likely benefit nesting habitat by promoting a better grazing rotation with less potential for cattle drifting into rested pastures. The Dry Creek Allotment would also have deferred grazing rotation among its pastures in which no pasture would receive spring livestock grazing during two consecutive years. This would likely benefit ground and shrub nesting birds such as brewers and sage sparrow by improving nesting habitat and reducing potential for nest destruction in ungrazed pastures.

Proposed preference reductions on the Cold Springs, Spitzie Draw, and South Green River Allotments would benefit ground and shrub nesting birds by improving habitat conditions. These allotments would also have deferred grazing rotation among their pastures in which no pasture would receive spring livestock grazing during two consecutive years. This would likely benefit ground and shrub nesting birds such as Brewers and sage sparrow by improving nesting habitat and reducing potential for nest destruction in ungrazed pastures. The Proposed Action would not likely result in take of any of bird listed on the USFWS 2002 Birds of Conservation Concern List. Under the No Action Alternative, the current level of AUMs would continue and the allotment boundaries would remain the same. While there would be little chance for take to occur as a result of this alternative, there would be little opportunity to improve habitat for migratory birds.

The Beaver Basin Three Corners Allotments would not have a reduction in preference. This would not likely to affect any bird listed on the USFWS 2002 Birds of Conservation Concern List because both allotments are capable of supporting habitat at current preference. There would be little potential for take of any of these species to occur within these two allotments.

Environmental Consequences, No Action: Under the No Action Alternative, there would not be an allotment boundary readjustment, pasture division fence or deferred grazing among its pastures. There would be little opportunity to improve habitat for migratory birds but there would be little potential for take to occur.

Mitigative Measures: None

Name of specialist and date: Timothy Novotny 7/6/06

NATIVE AMERICAN RELIGIOUS CONCERNS

A letter was sent to the Uinta and Ouray Tribal Council, Southern Ute Tribal Council, Ute Mountain Utes Tribal Council, and the Colorado Commission of Indian Affairs on October 26, 2001. The letter discussed the range permits that the BLM would be working on in FY02. Comments received from the Southern Ute Tribal Council did not foresee any impacts. No other comments were received (Letters on file at the Little Snake Field Office, Craig, Colorado.)

Name of specialist and date: Henry S. Keesling 2/25/01

PRIME & UNIQUE FARMLANDS

Affected Environment: Not present.

Environmental Consequences, common to all alternatives: None

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/29/01

SPECIAL STATUS SPECIES - SENSITIVE PLANTS

Affected Environment: There are no sensitive plant species documented on BLM administered land within the Beaver Basin, Three Corners, and South Green River Allotments.

Dry Creek Allotment- There are at least eight sensitive plant species which have been documented within the Dry Creek Allotment. These include debris milkvetch (*Astragalus detritalis)*, tufted cryptanth (*Cryptantha caespitosa*), Dutch biscuitroot (*Cymopterus duchesnensi*), woodside buckwheat (*Eriogonum tumulosum*), ligulate feverfew (*Parthenium ligulatum*), Yampa beardtongue (*Penstemmon yampaensis*), rock-tansy (*Sphaeromeria*

capitata), and strigose Easter-daisy (*Townsendia strigosa*). All of these forbs flower between April and June, with woodside buckwheat continuing to flower as late as July. Most of these plants are associated with sparsely vegetated areas or lower growing vegetation such as *Haplopappus* and *Eriogonum*, and several occur in juniper or desert-shrub communities. In 1997, one population of Yampa beardtongue was monitored and found in good condition, while a nearby population of tufted cryptanth was noted in fair condition. There is little impact from existing grazing here, probably due to lack of water nearby. The tufted cryptanth, located in badlands nearby, is in fair condition, with off-road vehicle use having more direct impact to individual plants than grazing use.

Another ten remnant plant communities have been identified by the Colorado Natural Heritage Program as being in good condition within this allotment. Most of these remnant plant associations are located within the Irish Canyon ACEC and Ink Springs special management area on the west side of the allotment, and in the Lookout Mountain ACEC and G Gap and Vermillion Bluffs special management areas which lie in the southern portion of the Dry Creek Allotment. All of these plant communities include at least one shrub component (such as juniper, black sagebrush, or Nuttall's saltbush) and all except one include a grass component (such as bluebunch wheatgrass or needle-and-thread grass). A black sagebrush-bluebunch wheatgrass community located near Irish Lakes was observed in good condition in recent years.

Spitzie Draw Allotment- Two sensitive plant species have been documented within this allotment, ligulate feverfew and Gibben's beardtongue (*Penstemon gibbensii*). Gibben's beardtongue was monitored by the Colorado Natural Heritage Program in 1999. It is most often found on white shale and sandstone in the area. This species has been known to flower from June to late September. According to the CNHP report, this plant is believed to be "a poor competitor and may have evolved to exploit largely unoccupied and severe habitats". Extent of this population was found to be limiting. It does, however, occur in more than one pasture of this allotment. The ligulate feverfew has been identified on similar barren soil types, often on steep slopes which are susceptible to erosion. This is a perennial forb which typically flowers in April and May.

Cold Springs Allotment- Two sensitive plant species have been documented within this allotment. These are Yampa beardtongue and narrow-leaf evening primrose (*Oenothera acutissima*). The Yampa beardtongue is found on shallow soils, primarily on steeper slopes, within this allotment. The narrow-leaf evening primrose is documented across the top of Cold Springs Mountain in rocky soils, in association with good herbaceous and shrub communities. CNHP conducted a survey of narrow-leaf evening primrose on Cold Springs Mountain in 2006 and found populations to be in good condition (Denise Culver, pers. comm.). In addition, at least six remnant plant communities, in good ecological condition, have been identified in this area. Most of these plant associations are identified within the Limestone Ridge/Irish Canyon ACECs, and occur on ridgetops and steep slopes in the eastern half of the allotment. Both species flower from late May into June.

Environmental Consequences, Proposed Action: The proposed boundary changes between the Cold Springs and Dry Creek Allotments and the Cold Springs and Spitzie Draw Allotments would be beneficial toward the management and appropriate season of use for these areas. No negative impacts would occur from these boundary changes.

Dry Creek Allotment- This alternative would enhance existing native vegetation by rotating early spring grazing periods, and limiting grazing during this season to 30 days, which reflects the need for growing season rest in this area. Therefore, these alternatives are most in line with providing habitat for special status plant species and remnant plant communities, especially along the Moffat County Road 10N.

Spitzie Draw Allotment- Reductions in AUMs bring grazing use in this allotment more in line with vegetative resource capability. This alternative includes spring rotation of use. The Utah portion of this allotment receives April rest under both alternatives and limits May use to 15 days, which would benefit early vegetative production & vigor.

Cold Springs Allotment- An AUM reduction for this allotment would benefit existing native vegetation by bringing authorized grazing closer to available resource capabilities in the area. This alternative requires rotation of grazing use on top of the mountain where it is most likely to affect existing sensitive plants. It also ensures that grazing duration would be kept to 30 days in any area during the growing season, that grazing periods would be rotated in consecutive years, and total AUMs authorized would be determined by continual monitoring of the allotment. These practices would be most beneficial toward enhancement of native plant communities across ownership boundaries and providing potential habitat for special status plants and remnant plant communities to flourish.

The Proposed Action would not adversely impact populations of narrow-leaf evening primrose based on surveys of this species conducted on Cold Springs Mountain, Moffat County, Colorado in 2006. These populations have not been directly impacted by past grazing, but some trampling has been observed. Based on surveys conducted on seven populations of this plant, all on lands grazed by livestock and wildlife, the primary limiting factor for population health is maintenance of adequate moisture (Culver, 2006). Cattle presence on Cold Spring Mountain would not impede the health or reproductive capability of these populations. Cattle do not appear to prefer this plant and trampling in other areas has not been severe enough to impede reproductive capability and overall population health.

PROPOSED PROJECTS

Cold Springs Allotment- In the locations proposed, none of the proposed ponds or the proposed Limestone Fence would impact any existing populations of narrow-leaf evening primrose. If any of these projects are sited differently than where shown in Attachment 6a, the project would be checked against the locations of current populations and re-sited to a location that avoids all populations of BLM sensitive plant species. No impact to sensitive plants would occur.

Dry Creek Allotment- In the locations proposed, none of the proposed ponds or the proposed pasture fence would impact any existing populations of BLM sensitive plants. If any of these projects are sited differently than where shown in Attachment 6b, the project would be checked against the locations of current populations and re-sited to a location that avoids all populations of sensitive plant species. No impact to sensitive plants would occur.

Spitzie Draw Allotment- In the locations proposed, none of the proposed ponds would impact any existing populations of BLM sensitive plants. If any of these projects are sited differently than where shown in Attachment 6c, the project would be checked against the locations of current populations and re-sited to a location that avoids all populations of sensitive plant species. The proposed pasture fence, as mapped, could impact a population of Gibben's beardtoungue. The route of this proposed fence would be surveyed for this plant during the time that it is in flower. If any populations are found that would be impacted by the initial siting of the fence or livestock trailing along the fence, the project would be re-routed to avoid this plant completely. No impact to sensitive plants would occur.

Environmental Consequences, No Action:

Dry Creek Allotment- Because the boundary is unfenced, grazing could occur along Moffat County Road 10N from mid-October through the end of June. Grazing duration in this area would run into the heart of the growing season and may remove both residual grasses and early growing grasses and forbs. Over time, vigor of desirable plant species may be reduced. The area of Irish Canyon which lies within the Dry Creek Allotment is not heavily grazed at this time. No impacts are expected with continuation of existing grazing for the one sensitive plant location and one remnant plant community identified in here.

The remainder of the plant species/associations of concern are located in the central and southern portion of this allotment. Some plants occur on steeper slopes and are not accessible for livestock grazing. Others occur on sparsely vegetated soils and do not typically attract cattle. This portion of the allotment is usually used later in the winter/early spring. Duration of grazing is shorter and there is no indication of overutilization in these areas. Although these populations and/or communities have not been monitored recently, no negative impact to plants in this portion of the allotment is anticipated.

Spitzie Draw Allotment- Current operations include cattle grazing during winter and late spring within this allotment (between November 1 and May 31st). Management and resource conditions which may negatively impact Gibben's beardtongue include livestock grazing (primarily late spring and summer), trampling from livestock, OHV use, and weed infestations- primarily cheatgrass, halogeton, and Russian thistle in this area. Although this species typically inhabits barren, shale soils, documented locations include the flat areas within two pastures of this allotment. Livestock may not be eating this forb during much of the time period in question, however, conditions exist where trampling by livestock could become a concern - especially if animals are allowed to remain in these pastures beyond prescribed limits. In addition, current range conditions in at least one of the pastures indicate the potential for

cheatgrass or other weedy species to out-compete existing native vegetation. The CNHP report recommends that exclosures be considered to minimize impacts to existing populations of Gibben's beardtongue. If impacts are identified through monitoring, these exclosures would be implemented. No information is known about the ligulate feverfew populations documented within this allotment. Current management includes cattle grazing in this allotment through the end of May. This would encompass the entire flowering period for this species and may be detrimental to continued reproduction of this forb.

Cold Springs Allotment- Observations and surveys on populations of this plant in June and July of 2006 reveal that populations are not receiving grazing pressure when livestock are present, but do receive some trampling impacts. This impact does not appear to be limiting the abundance or distribution of this plant (Culver, 2006). The Yampa beardtongue most often occurs on the east side of the mountain on shallow and steep slopes. This area is not used by horses and is typically used in the winter and/or spring by cattle, overlapping the early part of this species flowering period. Due to the location of this species, grazing may have minimal impact on known populations at this time.

Mitigative Measures: None

Reference: Culver, Denise R., 2006. *Letter to the State Botanist, Bureau of Land Management, Colorado and the Chief Scientist, The Nature Conservancy reporting on the condition of occurrences of Oenothera acutissima surveyed between June 19 and June 30, 2006 in Moffat County, Colorado.* Colorado Natural Heritage Program, Colorado State University, Fort Collins, Colorado.

Name of specialist and date: Robin A. Sell 8/4/01, revised by Hunter Seim 7/10/06

THREATENED AND ENDANGERED SPECIES – ANIMALS

Affected Environment: No threatened, endangered, or proposed wildlife species have been identified for the Three Corners or Beaver Basin Allotments.

The Green River, which flows between the South Green River and Spitzie Draw Allotments, provide habitat for four endangered Colorado fish - humpback chub, bonytail chub, Colorado pike minnow and razorback sucker. Irish Canyon, which lies between Dry Creek and Cold Springs Allotments, provides habitat for peregrine falcons, although no nesting site has been documented.

The Dry Creek Allotment also supports a number of white-tailed prairie dog towns which provide habitat for a variety of species, including the burrowing owl (state endangered), black-footed ferret (federally endangered), and mountain plover (BLM sensitive species).

Environmental Consequences, common to all alternatives:
White-tailed Prairie Dog Town Associations: Livestock grazing, primarily in the Dry Creek Allotment, is not anticipated to negatively affect habitat for mountain plover, burrowing owl, or black-footed ferrets due to their association with prairie dog towns and/or low growing vegetation. Although there is a slight possibility of trampling of mountain plover nests, the majority of grazing in this allotment occurs before mountain plover return to the area.

Colorado Endangered Fish: Impacts to habitat of the four Colorado Endangered fish are related to water depletion activities, such as the construction of ponds**,** and have been mitigated through annual payments to the FWS as outlined in a statewide Biological Opinion (BO). Livestock grazing itself would not negatively impact existing habitat for fish species. All proposed ponds would be recorded in an annual report to the USFWS upon construction.

Peregrine Falcon: Livestock grazing within Irish Canyon and between the Cold Springs and Dry Creek Allotments would not be detrimental to maintenance of prey species for the peregrine falcon under either alternative. Grazing appears to be limited and largely a result of trailing from this permittee and others. Current conditions indicate that suitable residual vegetation and vegetative structure is maintained and provides adequate habitat for a variety of prey species.

Mitigative Measures: None

Name of specialist and date: Robin A. Sell 8/4/01

THREATENED AND ENDANGERED SPECIES - PLANTS

Affected Environment: There are no federally listed threatened or endangered plant species, or habitat for such, on BLM administered land on any of the six allotments. At least one occurrence of Ute ladies' tresses orchid, a federally threatened species, has been documented along the Green River within the Browns Park National Wildlife Refuge. The Refuge borders both the South Green River and Spitzie Draw Allotments.

Environmental Consequences, common to all alternatives: None

Mitigative Measures: None

Name of specialist and date: Robin A. Sell 11/2/00

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no hazardous or solid wastes identified on the six allotments affected by the Proposed Action.

Environmental Consequences, common to all alternatives: There is potential for the release of hazardous wastes in the form of vehicle fluids (oil, fuel, coolant) from equipment used during grazing management or range improvement construction or maintenance activities. The potential for releases of these materials is low and, if they were to occur, would be extremely limited with no adverse impacts to the project area as a whole.

Mitigative Measures: None

Name of specialist and date: James T. Wood 2/1/01

WATER QUALITY - GROUND

Affected Environment: All six allotments have some ground water aquifers containing meteoric water. The ground water quality in these areas ranges from potable to useable in aquifers within porous and fractured formations (mostly sandstone and conglomerates).

Environmental Consequences, common to all alternatives: Due to dispersal of livestock over a fairly large area, there would be no adverse impacts to ground water quality within the six allotments. Both alternatives would be conducted in accordance with existing Colorado laws for water quality. Specifically, all permitted activities must comply with the applicable water quality regulations in The Colorado Water Quality Control Act and they would be in conformance with the classifications and numeric standards for water quality established by the Colorado Water Quality Control Commission. None of the proposed projects would impact ground water quality.

Mitigative Measures: None

Name of specialist and date: Fred Conrath 5/31/01

WATER QUALITY - SURFACE

Affected Environment: The Green River in Colorado has the following beneficial uses classified for the affected river segment: Aquatic Life Cold 1, Recreation 1, Water Supply, and Agriculture. Beaver Creek is classified for Aquatic Life Cold 1, Recreation 2, Water Supply, and Agriculture. All other tributaries to the Green River in Colorado, including Vermillion Creek, are designated Use Protected and have the following classified uses: Aquatic Life Warm 2, Recreation 2, and Agriculture. There is no specific listing for Talamantes Creek, Shell Creek, or Dry Creek in the Colorado Department of Public Health and Environment, Water Quality Control Commission (Regulation No. 37) Classifications and Numeric Standards for the Lower Colorado River Basin. However, these likely fall into the same classifications that are listed for Vermillion Creek.

The Green River in Colorado is listed in the Colorado Non-point Assessment Report of 1989 for having elevated sediment. The document states that high concentrations of sediment and

salinity have been noted in Vermillion Creek and are mostly caused by natural erosion. The natural erosion of the badlands may have been accelerated in the past with historic grazing practices. Gully erosion was initiated in the past on bench and toe slope soils along Vermillion and Shell Creeks and within several tributary drainages of Dry Creek.

Environmental Consequences, Proposed Action: No adverse impact would result from implementation of the Proposed Action. Benefits to surface water quality would result from improved upland soil conditions and improved vegetation and improved riparian conditions.

PROPOSED PROJECTS

The proposed fences and water developments would improve livestock management and distribution and would have a beneficial effect on water quality parameters and beneficial uses within the identified streams due to improvement and maintenance of riparian and upland forage health. The proposed ponds would trap some sediment and prevent it from reaching perennial streams, but the overall impact to existing sediment loads in these streams would be minimal.

Environmental Consequences, No Action: This alternative would not have direct adverse impacts on water quality parameters of the affected streams. The contributions to the elevated sediment levels within the Green River from Vermillion Creek and its tributaries which flow through the badland landscape would to continue. This alternative would not increase or reduce sediment inflows to the Green River from current levels.

Mitigative Measures: None

Name of Specialist and Date: Ole Olsen 7/18/01

WETLANDS & RIPARIAN ZONES

Affected Environment: Lotic riparian systems that occur on BLM lands within the affected allotments are Vermillion Creek, the lower reaches of both Shell and Talamantes Creeks, Dry Creek, and Beaver Creek. Numerous springs and wet meadows occur on Cold Springs Mountain on public, private, and state lands.

VERMILLION CREEK

Vermillion Creek, an interrupted stream with perennial and intermittent reaches, meanders through quaternary alluvium deposits that have remained saline and alkaline in the arid environment. Upstream of the affected area greasewood occupies much of the first terrace above the streambed. Where high waters or the flood prone area are apparent, rabbitbrush is favored over the greasewood. A second terrace of toe slope soils occurs through most of the badland canyons and it potentially supports an alkali upland range site. Bordering the narrow bottomlands are steep slopes comprised of geologic outcrops and soils with limited profile development.

Portions of Vermillion Creek are rated as Functioning at Risk. This is largely due to the streams being slightly to moderately incised. All of these streams and their flood plains or 1st terraces are entrenched from the upland toe slope or bench soils that separate the lowered flood plains from the steep canyon slopes. The stream beds within the affected allotments appear to be supported by alluvium materials. As is typical of this badland landscape the canyon drainages are subjected to extreme erosion rates and insufficient water flow to remove all the sediment that may come into the system. Willows and cottonwood saplings are heavily utilized in these areas.

A reach below the confluence of Vermillion Creek and Dry Creek contains a solid riparian plant community of willows and tamarisk approximately 200 feet wide with a woody canopy 4 feet in height. The willows are thick and continuous but heavily grazed with none over 4 or 5 feet in height. Riparian plant succession trend is stable with adequate vigor.

Downstream of this site, the channel is straight and narrow with phragmites lining the upper and lower stream banks with increasing incisement of the stream. The first terrace is wide and comprised mainly of sagebrush and rabbitbrush, although there are some young willow shoots scattered throughout the terrace area. Isolated young and mature cottonwoods occur along this reach. This reach is rated as Functioning at Risk with a downward trend. The riparian vegetation is confined to the stream banks and consists of phragmites and coyote willow. Sagebrush and greasewood are present on the upland terrace. There is low to moderate utilization on vegetation, but moderate to high utilization is also noted in places, especially on willows. The upstream portion of the reach is not as incised as the downstream portions and a small flood plain is apparent. Beaver activity is present in this reach and there are signs that beaver were removing the willow.

The longest reach of Vermillion Creek is currently rated at Proper Functioning Condition. Canyon Creek flows into Vermillion Creek near the upper end of this reach (outside of the affected area), Shell Creek flows in near the middle, and Talamantes Creek flows into this reach on the lower end. Therefore, there is more tributary water in this reach. Riparian vegetation is dominated by willow, but no beaver activity appears to be present. There is moderate utilization on willow near the confluence with Talamantes Creek. Severe gullies are present on the toe slope uplands above the terrace. The stream channel is narrow, straight, and densely lined with coyote willow. The first terrace is wide and mainly vegetated by rabbitbrush and sagebrush with coyote willow scattered within the upland shrub community extending for about 160 feet across the bottom. Very few grasses or forbs are present and there is quite a bit of bare soil under the bushes. The riparian width is approximately 60 feet, which excludes some of the terrace that was reported as part of the habitat in 1991. The terrace is vegetated with rabbitbrush and sagebrush. The percent canopy cover of the riparian community in this reach is composed of 35% willow, followed by 10% rabbitbrush, 5% phragmites, 25% inland saltgrass, 2% rush, 2% sagebrush, 1% tamarisk, and 20% other mixed forbs and grasses.

TALAMANTES CREEK

Talamantes Creek is one of the larger tributaries to Vermillion Creek. It flows into Vermillion Creek and is fed by springs and drainage from the northern slopes of Cold Springs Mountain and the southern slopes of Middle Mountain and Diamond Peak. Many of the headwater tributaries and springs which combine to form Talamantes Creek are located on state and private lands. Water diversions upstream are present. The reach located above the confluence with Vermillion Creek is about 1.8 miles in length. It is currently rated as Functioning at Risk with a downward trend. It does not have an active flood plain for most of its length, but flood plains do exist in limited areas. There is some beaver activity and siltation exists behind beaver dams. In places downstream of the dams there is evidence of scouring.

A second reach of Talamantes Creek has no current PFC rating, but wildlife habitat quality has been assessed. Narrow leaf cottonwoods are decadent and not regenerating and willows are heavily grazed but abundant, and streambank characteristics are generally good. The riparian width is approximately 60 feet. Terraces are vegetated with rabbitbrush and sagebrush. The percent canopy cover of the riparian community in this reach is composed of 35% willow, 10% rabbitbrush, 5% phragmites, 25% inland saltgrass, 2% rush, 2% sagebrush, 1% tamarisk, and 20% other mixed forbs and grasses.

A small tributary to Talamantes Creek which flows from the eastern end of Cold Springs Mountain in a large canyon is delineated into 5 reaches. NS Creek flows through Antone Canyon and flows into Talamantes Creek on private land. Beginning at the top of the mountain, Reach 5 is located within an isolated 40 acre BLM parcel, surrounded by private and state land. It is a lentic riparian area of approximately three acres, is associated with a spring, and was considered Functioning at Risk due to moderate hoof action and some heavy grazing by cattle and elk on the sedges. Willows are minimally utilized. Reach 4 is an area inaccessible to livestock. It is rated at Proper Functioning Condition in a bedrock, boulder channel. Aspen and chokecherry are the dominant trees. Reach 3 runs along a steep gradient, and, consequently has little floodplain development. Besides the riparian vegetation, there are large woody debris and rocks protecting against erosion. There are several seeps with riparian vegetation along this reach. There is slight grazing by livestock within this reach. The segment of Antone Canyon/ NS Creek that comprises reach 2 is an ephemeral stream, with upland vegetation along the stream banks. Reach 1 is a marginal riparian reach, which supports narrowleaf cottonwood and basin wildrye, with more riparian vegetation increasing downstream. It is also rated as Functioning at Risk due to two large headcuts and wide streambed with insufficient vegetation to protect against erosion in places along the reach.

SHELL CREEK

There are two stream reaches along Shell Creek within the Dry Creek Allotment. Shell Creek drains highly erosive badlands with characteristic gully formation. Discontinuous riparian systems are present and appear to be supported by ground water. There are riparian plants, such as willows and rushes, lining stream channels and gullies that appear to have perennial water. Headcuts and gullies are present. Near the confluence with Vermillion Creek the headcuts disappear and the water table is higher. Upstream of the alluvial fans the riparian systems are

Functioning at Risk, quickly turning to Non Functional downstream of the alluvial fans. Otherwise, the entire Shell Creek is Functioning at Risk.

DRY CREEK

The upper reaches of Dry Creek are a sandy ephemeral wash with an established flood plain stabilized with rabbitbrush, aster, and western wheatgrass. Along one reach in the upper watershed (T11N R99W, Secs. 21 and 22) the streambanks are stabilized with coyote willow for almost 12,000 feet. These are likely supported from ground water seepage rather than stream water. One such area in the lower portions of Dry Creek occurs in T10N R100W Secs. 2, 3, and 10. The stream channel and flood plains support some riparian systems dominated by coyote willows. The stream channel has incised and the willows that are established on the flood plain and/or point bar areas are diseased and dying. A much more defined riparian system occurs near the confluence with Vermillion Creek. This is delineated as Reach 1 and is rated as Functioning at Risk.

The lotic riparian systems are not showing direct evidence of heavy grazing except in a few isolated areas, such as near the confluence of Dry Creek with Vermillion Creek.

BEAVER CREEK

Beaver Creek tributaries drain the western portion of Cold Springs Mountain. Skeltcher Creek and Beaver Creek converge and form a large wetland within Beaver Basin, just north of the Cold Springs Allotment. This wetland system is on private lands, and Beaver Creek flows from it into the allotment through private and state lands before it reaches public lands. It meanders onto the public land within a deeply entrenched valley and the stream gradient begins to increase within the next 0.5 mile which is delineated as Reach 3. Both reaches are rated as Proper Functioning Condition. In one reach, stream banks are protected by Nebraska sedge and tall willows are scattered in the flood plain/terrace area. The condition of the sedge community is good, but the stream appears to be straightening and there may be a few abandoned meanders. Grazing occurs on the sedges and browsing occurs on the willows, especially on the upper end of the reach. This use is not heavy and the vegetation remains very capable of protecting the streambanks and flood plain areas. Along the eastern edge of the valley a few springs are near the top of the slope and support brushy riparian vegetation. The terrace or flood plain areas on this side of the creek are receiving some additional irrigation from these and other seeps.

The second reach is an A type stream with an assortment of herbaceous and brushy species. It flows down the west side of Cold Springs Mountain within a canyon for about 4.5 miles before it flows into Utah. A few different willow species, red alders, birch, and red osier dogwood are dense along this reach and narrowleaf cottonwoods are occasionally present. There are some steep to vertical escarpments up to an old terrace in places, but sometimes the severe slopes are where the stream is against, or had been against, the canyon slopes. The stream channel is lined with woody species and small boulders. Near the middle of this reach the stream and valley gradient decreases and there are some active beaver dams. Some of these dams may wash out periodically.

Another reach begins at the Utah border as Beaver Creek re-enters Colorado and crosses public lands for about 0.35 miles. On the upper end of this reach, there are a series of beaver ponds and overflow channels with more beaver ponds. It is marshy with numerous cattails, sedges, and bullrushes. Below, there are two water diversions which were constructed by the Colorado Division of Wildlife. Associated with the newer diversion is a berm of raw dirt lining the ditch which parallels the creek for a short distance. The stream channel is densely vegetated with willows, red alders, birch, red osier dogwood, and forbs with some weeds present.

LENTIC RIPARIAN AREAS (WETLANDS)
Using the BLM PFC checklist, most lentic systems that have been evaluated are Functioning at Risk. A few have been rated as Proper Functioning Condition. Few of the systems are rated as Non Functional.

Most of the springs, and lentic riparian areas that are supported by them, are within the Cold Springs Allotment. There are 42 documented springs in this allotment, but only about 16 have been assessed. Ten of these systems are Functioning at Risk, four are in Proper Functioning Condition, and two are considered to be Non Functional. In Little Beaver Creek two spring sites are dry and the one that has flowing water is considered to be Functioning at Risk with a downward trend. It appears that the wet meadow has decreased in size due to severe hoof action by cattle, elk, and the presence of elk wallows. A spring is located in the channel of Little Beaver Creek. It is rated as Functioning at Risk, as is a nearby spring on a hill slope. A nearby spring is rated as Non Functional because the riparian area has been degraded by the construction a livestock pond.

All of the lentic riparian systems are too numerous to discuss, but there are generalities that can be applied to most systems that are Functioning at Risk. They usually show hoof shear by cattle and/or elk, have some soil compaction, and frost heaving that allows overland flow which could find a flow path and channelize. All of the lentic assessment data is available in the Little Snake Field Office riparian files and is in the process of being incorporated into the GIS spatial data.

In the past, several small riparian systems have been developed for livestock watering purposes. This has included excavating into riparian systems, allowing water to drain into a shallow excavation, and spring developments. Some spring developments have removed significant volumes of water from these small riparian systems, and insufficient water remains for irrigating riparian plant communities. Elk Springs has been fenced to protect the springs from livestock and to discourage big game animals from utilizing the spring areas. Further fencing (as separate projects) will continue to protect springs and small lentic tributaries.

Environmental Consequences, Proposed Action: Livestock grazing in riparian areas would cause bank shearing and trampling of soils. These impacts are alleviated with duration and timing of livestock grazing, exclosure fencing, and development of upland ponds. Direct impacts such as trampling and grazing of palatable riparian plants can be reduced with the

proposed grazing schedule especially when regrowth is allowed after spring or early summer use.

The planned reductions that would occur in grazing preference and stocking rates would improve the upland resources and help alleviate areas of use that have impacted surface drainages and/or downstream riparian resources. The un-assessed lentic riparian systems that occur in the South Green River Allotment would improve under the rotation of spring grazing that would occur.

Implementation of the grazing guidelines would provide ample opportunity for regrowth after the grazing treatment. Alternating early spring use and limiting the duration of grazing during the growing season would enhance the riparian soil properties that intercept and store water and relieve the physical disturbance to wet soils caused by hoof shear.

Under this alternative the horse use for up to 20 horses in the South Slope of Cold Springs Allotment and the Spitzie Draw Allotment would be rotated throughout the winter and through the growing season. This traditional horse use has not shown any direct impacts attributed to horses.

PROPOSED PROJECTS- FENCES
None of the proposed fences would directly impact existing wetlands or riparian areas. Indirectly, the improved ability to rotate livestock would be beneficial to these areas as the required rotations and deferments would be more effective with the proposed fences. The proposed Limestone Fence, in particular, would provide for needed rest for the meadow areas on the east side of Cold Springs Mountain.

PROPOSED PROJECTS- PONDS
Ponds that are established within riparian systems generally degrade the system and reduce the overall riparian component in the landscape. For this reason, all proposed ponds would be in ephemeral drainages and upland areas that support little to no riparian development. These ponds would further decrease livestock dependence on riparian areas by further reducing grazing pressure on existing riparian systems, particularly those containing surface water. The resulting impact would be an indirect improvement of riparian areas and wetlands through improved distribution and reduced use on these areas.

Environmental Consequences, No Action: Livestock grazing practices would not be modified. The late fall and winter use may preclude the ecological potential of having more willows, cottonwoods, and other desirable woody species throughout the badland canyon riparian systems.

The lentic riparian systems that are functioning at risk would continue to degrade. If hoof action and gullying become severe in these isolated sites, the riparian soils may be eroded away, leaving little substrate for water storage and plant growth.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 7/17/01

WILDERNESS, WSA, AND WILD & SCENIC RIVERS

Affected Environment: The Green River flows through Browns Park National Wildlife Refuge and Dinosaur National Monument, and not across BLM lands within the Little Snake Field Office. The Green River has been studied by the National Park Service and was nominated to Congress for "Wild" status in the late 1970's. No further action has been taken.

Portions of the Proposed Action occur within Cold Springs and Diamond Breaks Wilderness Study Areas (WSA). BLM WSA Interim Management Guidelines require that project actions result in no irreversible or irretrievable harm to wilderness values.

A portion of Beaver Creek within the Cold Springs Allotment has been determined to be eligible for further consideration and suitability determination under the Wild and Scenic Rivers Act (WSR) for its ability to provide habitat for the Colorado River cutthroat trout.

In 1997, BLM completed a wilderness characteristics inventory for the Vermillion Basin. BLM determined that approximately 77,000 acres outside of existing WSAs contain wilderness characteristics, i.e. naturalness, opportunities for solitude and/or unconfined recreation. A portion of this area lies within the Dry Creek Allotment. In addition, as part of the Little Snake Resource Management Plan revision process, areas on Cold Springs Mountain were also determined to contain wilderness characteristics outside of the Cold Springs WSA. Portions of the Cold Springs and Spitzie Draw Allotments overlie this area.

Environmental Consequences, common to all alternatives: None of the alternatives would negatively impact WSAs. No irreversible or irretrievable harm to wilderness values in WSAs would occur. Surface disturbing actions (including new fences and stock ponds) are not proposed within WSAs. Proper implementation of the Proposed Action would enhance naturalness through appropriate management of grazing activities.

Environmental Consequences, Proposed Action: One pond, the Thum Pasture Pond, is proposed within the watershed of Beaver Creek. This pond would be located approximately 0.75 miles upstream of the creek itself and the limited amount of water that would be retained by this pond (less than 0.2 acre-feet) would not impact the ability of Beaver Creek to provide sufficient flow to protect the Colorado River cutthroat trout, for which a WSR designation would be designed to protect.

The Thum Pasture Pond would be located within the Cold Springs lands with wilderness characteristics. Currently, there are two ponds similar to the proposed pond within that 997 acre unit. In total, there are thirteen other similar water developments within the inventoried area. The limited extent of the proposed pond is comparable with existing structures within the area

and would not result in impacts that would prevent the characteristics of naturalness and outstanding opportunities for solitude or primitive recreation from being present within the area.

The four Rock Bed Ground Ponds and the two Upper Dry Creek Ponds would be located within the Vermillion Basin lands with wilderness characteristics. At the time of the latest inventory of wilderness characteristics in 1997, there were sixteen water developments within the area that were similar in size and scope to those that are proposed. The isolated and limited extent of the ponds proposed in the area is comparable with the existing extent and distribution of existing ponds. The presence of six new ponds, as proposed, would not result in impacts that would prevent the characteristics of naturalness and outstanding opportunities for solitude or primitive recreation from being present within the inventoried area.

Environmental Consequences, No Action: No direct impacts would occur to the Beaver Creek Watershed or the Vermillion Basin and Cold Springs lands with wilderness characteristics.

Mitigative Measures: None

Name of specialist and date: Jim McBrayer 6/25/01; revised by Hunter Seim 4/29/08

NON-CRITICAL ELEMENTS

SOILS

Affected Environment:

BEAVER BASIN ALLOTMENT
The small portion of public lands within this allotment is composed of two soils: the Forsey-Libeg complex, 3 to 25 percent slopes, very stony and the Dranyon loam, 3 to 20 percent slopes. These loamy soils are basalt, quartzite, and sandstone derived and exist on mountain slopes. Both soils are nonsaline, contain varying amounts of gravel and cobbles with medium to high runoff rates and moderate to moderately low permeability.

COLD SPRINGS ALLOTMENT
The major soils supporting key areas of livestock use are Carbol-Irigul-Rock outcrop complex, 3 to 25 percent slopes, very stony; Carbol-Miracle complex, 3 to 12 percent slopes; Forsey-Libeg complex, 3 to 25 percent slopes, very stony; and Miracle-Coldspring complex, 3 to 12 percent slopes.

The Carbol-Irigul-Rock outcrop complex is composed of 65% Cabol and Irigul soils, 25% rock outcrops, and 10% minor components. The soils within the complex are sandstone derived, loamy, nonsaline, and well drained with very high runoff and moderate to moderately slow permeability and very low water holding capacity. These soils are also fairly shallow with unweathered bedrock typically 14 to 19 inches below the surface.

The Carbol-Miracle complex is composed of 75% Carbol and Miracle soils with 25% minor components. This complex is very similar in character to the Carbol-Irigul-Rock outcrop complex with the exception deeper soils, up to 41 inches to unweathered bedrock, on the Miracle soils.

The Forsey-Libeg complex is composed of 80% Forsey and Libeg soils with 20% minor components. These soils are derived from relict fluvial deposits and contain high amounts of cobbles, many of which are exposed at the surface. They exhibit moderate permeability but have low water holding capacity, are well drained, nonsaline, and have medium runoff. Soil depths are up to 60 inches.

The Miracle-Coldsprings complex is composed of 80% Miracle and Coldsprings soils with 20% minor components. These loamy soils have moderate permeability, low to moderate water holding capacity, medium to high runoff, and are nonsaline. Soil depths range from 41 to 51 inches.

A significant inclusion within the above soils on top of Cold Springs Mountain is the Coldspring Loam, Moist, 1-12 percent slopes. This soil is indicative of the more mesic areas on top of the mountain that support stands of aspen and some mountain shrub communities. This sandstone derived loamy soil is well drained with moderate permeability, water holding capacity, and runoff. It is nonsaline and exhibits depths of up to 51 inches.

The steeper south slope of Cold Springs Mountain and the Limestone Ridge area on the easterly end of the allotment are primarily composed of Joebas-Rock outcrop complex, 5 to 40 percent slopes, Rock outcrop-Torriorthents complex, 50 to 75 percent slopes, and Torriorthents-Rock outcrop, Sandstone complex, 25 to 75 percent slopes.

The Joebas-Rock outcrop complex is composed of 60% Joebas soils, 30% rock outcrop, and 10% minor components. The soils are derived from sandstone and quartzite and generally make up the bench areas along the slope of the mountain. These gravelly sandy loams are well drained with moderate permeability and very low water holding capacity and runoff is very high. They are nonsaline and have depths of 10 to 20 inches.

DRY CREEK ALLOTMENT

Some soils within the badland component of this allotment are susceptible to erosion due to steep slopes, flashy rainfall, and low plant cover. They occur within areas identified as fragile soil areas and are within Management Unit (MU) 12 as delineated in the 1989 Little Snake RMP. Much of the soil surface is lacking soil cover in the interspaces between shrubs due to slope, aridity, and high salinity. The steep slopes have dense runoff patterns and are highly dissected. Management emphasis in relation to livestock grazing is to protect these soils from activities which would increase erosion and sediment yield by implementing water and fencing projects to encourage relocation of livestock from these soils. Cattle grazing occurs at the foot of slopes within these areas, but little use occurs on steeper slopes.

The major soils supporting key uplands for livestock use throughout the allotment include the Leswill-Rogrube complex, 1 to 7 percent slopes and the Torriorthents-Rock outcrop, Shale complex, 30 to 75 percent slopes. Three important upland soils within the east half of the allotment are the Badland; Tresano-Hiatha-Kandaly association, 2 to 20 percent slopes; and Torriorthents, 12 to 25 percent slopes. Three additional upland soils that are widespread in the west half of the allotment are the Castee loam, 3 to 12 percent slopes; Fonce gravelly sandy loam, 3 to 12 percent slopes, very stony; and Rentsac channery sandy loam, 25 to 65 percent slopes.

The Leswill-Rogrube complex is composed of 50% Leswill soils, 30% Rogrube soils, and 20% minor components. The soils within this complex are derived from gypsiferous shale. These loamy soils have moderately slow permeability and high water holding capacity. Runoff if medium, they are slightly to moderately saline, and soil depths are 60 to 75 inches.

The Torriorthents-Rock outcrop, Shale complex is composed of 60% Torriorthents soils and 40% rock outcrops. The Torriorthents soils are derived from sandstone and shale and comprise much of the breaks above major drainages. These stony loam soils are moderately permeable with very low water holding capacity and medium runoff. They are very slightly saline and soil depths vary greatly with depths from 4 to 30 inches to weathered bedrock. The rock outcrop component is exposed bedrock, nonsaline, with very high runoff.

The Badland soils are extremely shallow, ill-defined soils that have depths no greater that three inches. They are strongly saline with very high runoff. They are primarily found along the northwesterly slopes and benches below Lookout Mountain.

The Tresano-Hiatha-Kandaly association is composed of 35% Tresano soils, 30% Hiatha soils, 15% Kandaly soils, and 20% minor components. The Tresano soils are loamy soils derived from sandstone and shale and are primarily found at the foot of slopes. They are nonsaline, well drained, are moderately permeable, have high water holding capacity, and experience medium runoff. Soil depths are approximately 60 inches. The Hiatha soils are silty clays derived from shale and are found on slopes and summits of hills. These soils are well drained and nonsaline with very slow permeability and very low water holding capacity. Runoff is very high and soil depths are approximately 18 inches. The Kandaly soils are loamy sands derived from sandstone. They are generally located on the summits of hills. They are rapidly drained and have rapid permeability, low water holding capacity, and are nonsaline. Runoff is very low and soil depths are up to 60 inches.

The Castee loam soil is derived from relict fluvial deposits. This well drained, loamy soil exhibits moderate permeability and moderate water holding capacity. It has medium runoff and is very slightly saline. Soil depths are up to 60 inches.

The Fonce gravelly sandy loam is found on fan terraces and is derived from sandstone. This well drained soil is nonsaline, has moderate permeability, low water holding capacity. Runoff is medium and is up to 60 inches deep.

The Rentsac channery sandy loam is derived from sandstone. This somewhat rapidly drained soil has moderately rapid permeability, very low water holding capacity, and is nonsaline. Runoff is very high and soil depths range from 10 to 20 inches.

There are two major soils that comprise the major drainages within the Dry Creek Allotment: the Quealman sand, 0 to 3 percent slopes and the Talamantes loam, Saline, 0 to 8 percent slopes. The Quealman sand is found on terraces and floodplains of the major drainages with Talamantes loam typically found on toeslopes adjacent to Quealman sand.

The Quealman sand soils are derived from alluvium from mixed sources. These sandy soils are well drained with moderately rapid permeability and moderate water holding capacity. They are nonsaline with very low runoff and soil depths are up to 60 inches.

The Talamantes loam soils are loamy soils derived from sedimentary rocks. They are well drained with moderately slow permeability and moderate water holding capacity. They are moderately saline with medium runoff and soil depths are up to 60 inches.

SOUTH GREEN RIVER ALLOTMENT

The major upland soils on the South Green River Allotment are Clifsand-Chroder complex, 3 to 12 percent slopes; Rock outcrop-Earsman complex, 10 to 45 percent slopes; and Willwood-Tipperary complex, 12 to 40 percent slopes. The Willwood-Sheppard, Cool, complex, 1 to 12 percent slopes is found within the Chokecherry and Yellow Jacket drainages.

The Clifsand-Chroder complex is composed of 60% Clifsand soils, 30% Chroder soils, and 10% minor components. They are typically found on fan terraces. The Clifsand soils are derived from sedimentary rock alluvium, are well drained, and nonsaline. Permeability is moderately rapid and water holding capacity is low. These loamy and sandy soils have depths up to 60 inches. The Chroder soils are derived from eolian deposits and are similar in most characteristics with Clifsand soils except that water capacity is moderate.

The Rock outcrop-Earsman complex is composed of 70% rock outcrop, 20% Earsman soils, and 10% minor components. This complex is found on the slopes and escarpments within the allotment. The rock outcrop component of this complex is composed of areas of bare rock with little soil development found on many of the steeper slopes within this allotment. The Earsman soils are derived from sandstone and quartzite. These extremely stony loamy sands are somewhat rapidly drained and nonsaline. Permeability is moderately rapid and water holding capacity is very low. Soil depths are shallow, but vary greatly between 4 and 20 inches.

The Willwood-Tipperary complex is composed of 55% Willwood soils and 45% Tipperary soils. This complex, made up of loamy fine sands and very cobbly loamy fine sands, is found on lower terraces and is derived from alluvium and eolian deposits from mixed sources. Both of these soils are rapidly drained, have rapid permeability, and low to very low water holding capacity. Both soils are nonsaline and have depths up to 60 inches.

The Willwood-Sheppard, Cool, complex is composed of 55% Willwood soils, 35% Sheppard soils, and 10% minor components. Both of these soils are found on alluvial fans and are derived from sandstone and quartzite. These soils are loamy sands and loamy fine sands and rapidly drained. They exhibit moderately rapid permeability with low to very low water holding capacity. Runoff is low, the soils are nonsaline and have soil depths up to 60 inches.

SPITZIE DRAW ALLOTMENT

The major soils within this allotment are Rock outcrop-Torriorthents complex, 50 to 75 percent slopes; Tipperary-Willwood complex, 1 to 12 percent slopes; Torriorthents-Rock outcrop, Sandstone complex, 25 to 75 percent slopes; Willwood-Sheppard, Cool, complex, 1 to 12 percent slopes; and Willwood-Tipperary, cobbly Substratum complex, 1 to 12 percent slopes. Significant inclusions within these soils are Fonce gravelly sandy loam, 3 to 12 percent slopes, very stony; Tipperary loamy fine sand, 3 to 12 percent slopes; and Willwood-Tipperary complex, 12 to 40 percent slopes.

The Rock outcrop-Torriorthents complex consists of 70% rock outcrop, 25% Torriorthents soils, and 5% minor components and is located on relatively steep slopes. The rock outcrop component is similar to rock outcrops described above. The Torriorthents soils are derived from sandstone and shale. These well drained, nonsaline soils have moderate permeability with very low water holding capacity. Runoff is very high and soil depths vary between 4 and 30 inches.

The Tipperary-Willwood complex consists of 50% Tipperary soils, 40% Willwood soils, and 10% minor components. These soils are located on toeslopes and are sandstone derived. Both soils are rapidly drained loamy fine sands with rapid permeability and low to very low water holding capacity. Runoff is very low, the soils are nonsaline, and soil depths range up to 60 inches.

The Torriorthents-Rock outcrop, Sandstone complex is composed of 55% Torriorthents soils, 35% rock outcrop, and 10% minor components. The rock outcrop component is similar to rock outcrops described above. The Torriorthents soils are derived from sandstone and shale. They are well drained, nonsaline, and moderately permeable with very low water holding capacity. These sandy loams range in depth from 4 to 30 inches.

The Willwood-Sheppard, Cool, complex is the same as described for the South Green River Allotment.

The Willwood-Tipperary, cobbly Substratum complex is composed of 60% Willwood soils, 25% Tipperary and cobbly substratum soils, and 15% minor components. These soils are derived from alluvium and eolian deposits from mixed sources and are rapidly drained. These loamy fine sands are nonsaline and exhibit moderately rapid permeability with low to very low water holding capacity. Runoff is low and soil depths are up to 60 inches.

The Fonce gravelly sandy loam is derived from sandstone and is located on fan terraces. This well drained soil is moderately permeable with low water holding capacity. It is nonsaline with low runoff and soil depth is up to 60 inches.

The Tipperary loamy fine sand is derived from sandstone and is located on toeslopes. It is nonsaline, rapidly drained, and exhibits rapid permeability with low water holding capacity. Runoff is very low and soil depth is up to 60 inches.

The Willwood-Tipperary complex is composed of 55% Willwood soils and 45% Tipperary soils. These soils are derived from alluvium and eolian deposits from mixed sources. The soils in this complex are found on terraces and are rapidly drained. They range from loamy fine sands to very cobbly loamy fine sands. They exhibit rapid permeability and low to very low water holding capacity. Runoff is low and soil depths are up to 60 inches.

The bench or toe slope soils may have lost the perennial grass component in some areas and there are extensive areas of saltbush that have experienced unexplained die-offs, usually occurring on western and southern aspects. This pattern may have resulted from a saltbush die-off related to winter kill that was noted by locals in the mid 1970's and to a lesser extent again in 1999. The toe slope or bench soils are Talamantes loam, saline, 1 to 12% slopes. These soils are within Management Unit 12 which was established to put emphasis on the management of the fragile soil resources on the break slopes and toe slopes within the canyons. Many times a vertical terrace slope defines the boundary of these soils and separates them from the lower lying flood plain or first terrace. The difference in elevation from the bench soils to the flood plain/terrace area results in rapid flows into the drainages during runoff events. Many of these drainages are gullied all the way from the vertical terrace bank to the steep canyon slopes. Additional side drainages develop along these deep gullies and sheet erosion from adjacent soils is flushed into the newly formed side drainage and carried offsite.

The perennial grass component may also be lacking from some of the saltbush areas on the plateau. However saltbush sites are generally not grass sites due to alkalinity. One such area that is seemingly lacking grass is located in T11N, R100W, sections 14 and 22 on soils mapped as Leswell-Rogrube complex, 1-7 % slopes. This area would be represented by the Leswell soil, because of the presence of saltbush; the Rogrube soil would support Wyoming big sagebrush. Typically the surface layer for Leswell soils is light brownish gray calcareous clay loam five inches thick. The upper nine inches of the subsoil is strongly alkaline light brownish gray clay loam. Further inventory is planned to determine the appropriate site description.

The clay loam texture of the soils on the west end of the Dry Creek Allotment is susceptible to compaction. The ephemeral drainage in the valley below this area is deeply incised all the way from its confluence with Dry Creek to the steep canyon slopes that lead up to the plateau. The channel appears to be cut within deposits of colluvium and alluvium. The density of the plant community in the valley is a factor contributing to gully formation as well as the amount of runoff water from the plateau above.

The biological soil crusts in these allotments are cyanobacteria, moss, and lichens and are important for nutrient cycling and improving resistance to erosion. Much of the biological soil crusts found within the six allotments occur under the brush canopy, where trampling effects are lessened but sunlight is still available. In lower elevations, particularly within salt desert plant communities, much more cyanobacteria is found within shrub interspaces. Cyanobacteria is also far more critical in these communities as there is far less plant cover to provide litter cover and soil protection from wind and water erosion.

Areas of livestock concentration occur within the allotments along fencelines, trails, roads, and watering areas. Soil compaction and heavy utilization of forage resources are associated with these areas.

Environmental Consequences, common to all alternatives: No significant loss or gain of biological soil crusts would occur as a result of implementing any of the alternatives. Slight responses of biological soil crusts to improved grazing practices would result in improved cover, distribution, diversity, and vigor of these crusts on upland soils. Lighter or occasional use by livestock and wildlife allow biological soil crusts to persist. This was observed during the Cold Springs Landscape Rangeland Health Assessment within the Spitzie Draw Allotment in Utah (Site 23). The gelatinous lichens were abundant throughout the site. However, the site was lacking vegetative density and canopy cover, which is more characteristic of the range site and its potential.

Soil compaction would be somewhat alleviated in livestock concentration areas by placing salts and supplements away from some of these areas and rotating grazing use. Under all alternatives these affects would occur on the livestock concentration areas, but the majority of the affected lands would have adequate protection based on proper utilization of forage resources.

Isolated sites in these canyon bottoms, compared to other bench areas in this badland canyon environment exhibit more stability within the side drainage channels, suggesting that the persistence of the grass component has benefits for surface hydrology and drainage channel morphology. A reference area which would enable some comparison with degraded sites and it would help to determine the ecological potential of this landscape component.

Environmental Consequences, Proposed Action: The Proposed Action would improve the current grazing practices for all of the allotments by reducing providing more intensive rotations and reducing the amount of time livestock are present in a given area. This would be accomplished by the rotation early spring use between pastures and limiting grazing use during the growing season, resulting in increased vigor of key forage plants in the spring. This would generally allow more time for natural processes to occur between grazing treatments that will benefit the hydrologic regime and productivity of the soils. In areas of the Dry Creek Allotment where the grass component is diminished or lacking, the management of livestock grazing in the spring by limiting the duration of use and alternating the early spring use would increase the vigor of these plants. Deferred grazing use would allow the plant community, especially the

grasses, to set seed and recruit new grass plants. Rotating the early spring use would enhance the establishment of recruitment plants.

A positive benefit to upland soils would be expected in the South Green River Allotment by providing spring deferment. Less physical disturbance to upland soils by livestock trampling would occur with winter use due to frozen soils and spring deferment would increase the ability of upland plants to regrow and provide soil protection.

Because the condition of the plant communities on the toe slopes or bench soils within the badland canyons is poorly understood, monitoring and adaptive management to address these unknowns will be necessary.

Horse use would occur on the South Slope pasture of Cold Springs Allotment in the fall, winter, and spring. As horses tend to stay banded together there is a potential for soil compaction in the late winter and spring when soils are moist.

PROPOSED PROJECTS-PONDS
The establishment of upland ponds would result in livestock concentration around the ponds, resulting in localized areas of soil compaction and bare soil. A concentration area surrounding a pond would typically not add more than one-half acre of soil disturbance in addition to the pond itself, resulting in an approximate total soil disturbance (assuming 1.5 acres total disturbance per pond) by allotment as follows: Cold Springs- 14 acres disturbed across 43,414 BLM acres; Spitzie Draw- 8 acres disturbed across 22,559 BLM acres; Dry Creek- 17 acres disturbed across 89,357 BLM acres; Beaver Basin- 1.5 acres disturbed across 92 BLM acres; Three Corners- 6 acres disturbed across 281 BLM acres. These highly localized areas would not adversely impact soils throughout the allotments as the overall improvements in distribution of livestock and forage utilization would maintain and/or improve soil conditions.

PROPOSED PROJECTS-FENCES
Minor soil disturbance would result from construction activity along the proposed fencelines and subsequent maintenance. Disturbance would be increased on slopes exceeding 35% if soils are wet and surface ruts become established.

The minor disturbance caused from construction would be stabilized by existing and colonizing plants as well as with biological soil crusts. Some portions of the new fences may receive additional trailing by livestock, causing soil compaction in the trail area. This potential is minimal as the vast majority of the proposed fences run along nearly level ground or gentle slopes.

Environmental Consequences, No Action: The grazing practices on the remaining allotments would not be modified under this alternative. Some key forage plants would be reduced, losing their individual capability to provide plant diversity and optimal protection of the soil resource. Grazing distribution problems would not be resolved.

There are concerns in the way that grazing has been allowed to occur in late winter and continue through much of the growing season without deferments for Dry Creek, Spitzie Draw, and South Green River Allotments and that these allotments are used this way each year. This alternative reduces the opportunity for regrowth of upland plants, reducing their ability to contribute to long term soil stability.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/29/01

SURFACE WATER HYDROLOGY

Affected Environment: Surface drainage from all affected allotments ultimately drains into the Green River. The Green River flows into Colorado from Utah and through the Browns Park Wildlife Refuge. The South Green River Allotment and the Spitzie Draw Allotment border the refuge on the north and south. Many ephemeral drainages flow directly to the Green River from and through these allotments. Much of the Cold Springs Allotment forms the headwater areas for the drainages that flow through the Spitzie Draw Allotment. However, in the western portion of the Cold Springs Allotment and in the Beaver Basin and Three Corners Allotments, flows run into Beaver Creek and Willow Creek prior to their confluence with the Green River. Part of the Three Corners Allotment drains into Red Creek.

The northern slopes of Cold Springs Mountain drain into Talamantes Creek where flow is augmented by springs and seeps in and adjacent to the stream channel. Talamantes Creek flows easterly from higher elevations through the Dry Creek Allotment to join Vermillion Creek in the badlands canyon bottom. Vermillion Creek and Shell Creek flow southerly from Wyoming and are badland canyon drainages when they enter the Dry Creek Allotment. Only the lower portion of the Shell Creek drainage, prior to its confluence with Vermillion Creek, is included in the Dry Creek Allotment. Upper Dry Creek is located in the eastern portion of the Dry Creek Allotment. The upper watershed is typically sandy with gently rolling terrain. As the drainage flows westerly to its confluence with Vermillion Creek the relief becomes greater as it flows into the badland landscape which it and its lower tributaries helped form.

Most of the springs are concentrated in the Cold Springs Allotment. Many of the water rights are held by the livestock operator for livestock watering. Most of the springs support lentic riparian areas.

As is typical to a badland landscape, some deep gullies exist within the tributaries of Vermillion, Shell, and Dry Creeks that are still actively eroding and carrying high amounts of sediment and salts. These occur in the lower valleys of Dry Creek and on the canyon toe slopes above Vermillion and Shell Creeks.

Many ponds have been established in this badland landscape for water sources and for sediment control check dams. The interval between clean-outs is highly variable and depends on the size and location of these structures.

Environmental Consequences, common to all alternatives: Livestock grazing impacts on surface hydrology would be directly associated with livestock use on the soils, vegetation, and riparian resources. In those areas where upland water sources are not present, high forage use and impacts would occur in the flood plains, riparian areas, and along streambanks, particularly on lower elevation areas after the growing season is completed.

Environmental Consequences, Proposed Action: Providing more intensive grazing management would result in benefits to surface water hydrology. These benefits would come from improved upland soils and vegetative resources, improved floodplain capture and infiltration, and riparian health that would slow down and improve capture of overland flow and decrease flashy flood flows. Implementing improved livestock management practices would provide needed rest from grazing during the growing season and improve the vigor and other properties of these upland resources and reduce the amount of over use in flood plain and riparian areas. Surface hydrology would show substantial improvement as soil health and plant vigor is enhanced by implementing the grazing guidelines. These benefits would be achieved by improved capture of overland flow and decreases in flashy runoff events. Under the Proposed Action, these impacts would not continue in the long term, as monitoring is completed and management is adapted to insure proper use of forage resources.

PROPOSED PROJECTS- PONDS

The proposed ponds would have an overall beneficial effect to natural hydrologic systems at the surface due to the increased ability to distribute livestock and avoid concentrations along streams. The total capture of water by the proposed ponds would be limited to no more than 0.25 acre-foot per pond, or approximately 7.25 acre-feet across the watersheds that are affected. This capture would not be large enough to adversely affect surface hydrology thoughout the watersheds that serve Vermillion Creek, Beaver Creek, or the Green River.

Environmental Consequences, No Action: This alternative would not initiate disturbance to established ephemeral drainages from pond development, however, this alternative would not increase or enhance the stability within these drainages compared to the Proposed Action. Grazing distribution problems would still occur within the allotments because range improvements such as fences and upland water sources would not be installed.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 7/18/01

VEGETATION

Affected Environment: The vegetation in the six allotments varies depending upon elevation. The lower elevations within the South Green River, Spitzie Draw, and Dry Creek Allotments are a mixture of winterfat, salt desert shrub, and big sagebrush communities, moving into juniper forests as the elevation increases. Cold Springs, Beaver Basin, and Three Corners Allotments are primarily higher elevation areas with a mix of mountain big sagebrush, juniper forests, aspen, and mountain brush communities. The wetter meadow areas support riparian vegetation species.

Environmental Consequences, Proposed Action:

Winter/Spring Use Allotments (Spitzie Draw, South Green River, Dry Creek)
The Proposed Action would provide deferred grazing during the growing season on the Spitzie Draw and Dry Creek Allotments. The BLM Performance Standard states that use after April 1 and April 15, respectively, would not occur in the same pasture two consecutive years and would be limited to 30 days. This is met on the Spitzie Draw Allotment. Although the proposed system in the Dry Creek Allotment allows for use in consecutive years on the Dry Creek pastures (15 days and 30 days in alternate years), this is met in all other pastures. Past monitoring has not indicated any overutilization problems, but under the new system distribution would improve.

On the South Green River Allotment cattle would begin a two-pasture deferred grazing system on April 15 continuing until May 15. The shorter duration spring use with higher numbers alternating between pastures each year would improve distribution, which would be beneficial to the vegetation.

In addition, the proposed AUM reductions would reduce overall utilization on the Spitzie Draw and South Green River Allotments. Monitoring data show that overuse occurs on both of these allotments.

Spring rotation that is required would also improve distribution on all allotments.

Currently, there are no upland water developments on the South Green River Allotment. Livestock have historically obtained water from snow at higher elevations in the southerly portion of the allotment and directly from the Green River via water gaps that cross the Browns Park National Wildlife Refuge. In July, 2006, the water gaps on the Refuge were removed. The only remaining access to the river on this allotment is via the two state sections that are leased by Vermillion Ranch. Each state land section provides water access to each pasture. Portions of this allotment lie within the Diamond Breaks WSA, and no developments would be authorized unless they can meet BLM's nonimpairment mandate for WSA management, an analysis which will not be addressed in this EA. Projects may be implemented on state lands that may or may not include the adjacent BLM lands. If the system cannot be implemented,

AUMs would be further reduced if monitoring indicates that adequate distribution does not occur.

Season of use on the Wilson and Blue Hill pastures in the Dry Creek Allotment would be from April 10 to June 25. Although the current permit specifies that grazing ends on the Dry Creek Allotment May 31, these areas have historically been used until June 25. Under the Proposed Action, both pastures would receive deferred use but would still be grazed during the growing season. The 30 day limitation of use during this period would ensure that use on new spring growth is not in excess of 50 percent and that spring tillers have an opportunity for growth initiation.

Dry Creek would receive an increase in AUMs and acreage due to a boundary adjustment. There would be no anticipated adverse impacts. The boundary change would lead to greater administrative control of the Irish Lake area, as the allotment boundary is unfenced.

The Irish Lakes and Burnt Cedars pastures would be used between October 1 to December 31. Spring use would be limited to alternate years. The late fall-early winter use would be on dormant plant material and grasses in the process of producing lead tillers for initiation of growth the following spring. Providing for spring rest every other year would favor maintenance of adequate forage productivity by allowing ungrazed fall tillers the opportunity to initiate full growth potential every other spring.

The G Flat pasture would be used from October 1 to May 31. Fall use is primarily as a shipping pasture and use from December through March is restricted to trailing out from the private fields. Spring use would be deferred in alternate years. Trailing often results in light use overall but may impact specific locations due to overuse of the same areas and overuse of favorite plants along the route. Negative impacts would be minimal.

Winter horse use would be allowed in the Spitzie Draw Allotment and some pastures in the Dry Creek Allotment. Diets and habits of cattle and horses in the winter are similar. However, horses graze plants closer than cattle and are also capable of ripping vegetation up by the roots, especially in wet or fragile soils. This can be more damaging in the spring when soils may be wet and plants are actively growing and green growth will be actively sought. These impacts would be minimal given that permitted winter horse use comprises approximately 2.5% of total AUMs on the Dry Creek Allotment and approximately 6% of AUMs on the Spitzie Draw Allotment. Conversion of up to 20 head worth of cattle AUMs to horse use on an emergency basis would result in negligible additional impacts due to horse use within these allotments.

<u>Summer allotments (Cold Springs, Beaver Basin, and Three Corners)</u>
Season of use would be lengthened by two to four weeks, but no adverse impacts would occur under the system that incorporates the rotation performance standards and is aided by the proposed developments.

The Proposed Action would implement a rotation system which would allow for spring rest, limit use to 30 days in each pasture, and would defer grazing until seed ripe one year in four. This would allow for spring rest on the upland species, as well as allow riparian areas time to regrow. The rotation system would also improve distribution.

The Proposed Action would also reduce permitted use on the Cold Springs Allotment. This would reduce overall levels of utilization.

On the Cold Springs Allotment, the percent public range on the expiring permit (33%) is based on the allotment as a whole. However, under the Proposed Action, the allotment would now be licensed as two distinct areas. The South Slope pasture is nearly 100% federal range, whereas the Mountain pastures are closer to only 25%. The Proposed Action would include monitoring for three years on this allotment to determine if additional AUMs are available. At this time the percent federal range would also be evaluated and adjusted accordingly.

Over the fall and winter period, the horses would be moved to new areas at least every 45 days and must avoid areas that were used by cattle during the fall. This would ensure that sufficient residual grass remains to protect soils and spring growth. Spring deferments would allow cool season forage species full opportunity for growth with little to no utilization on a periodic basis, improving plant vigor, productivity, and reproductive capacity. Rotating horse use between the Mountain and South Slope Pastures would improve distribution and ensure that foraging by horses does not occur in the same areas on a year-long basis, also enhancing forage productivity and reproductive capability.

As mentioned earlier in this section, horses are extremely damaging to plants when green, both for their ability to graze closer than cattle and their ability to tear plants from the ground. Since horses would make up a small portion of total livestock use (5% of allocated AUMs within the South Slope Pasture would be for horses), these impacts would be minimal. This impact would be further lessened by ensuring that areas are not used in consecutive growing seasons.

PROPOSED PROJECTS

Fences would allow for the development of pastures. This would lead to better distribution and control of livestock. The Limestone Fence would provide much needed opportunities for deferment to the east side of Cold Springs. At present, livestock utilize the east pasture twice a year, once moving up from the Dry Creek Allotment during the spring and again moving down to the Dry Creek Allotment in the fall. This doubled-up use every year has resulted repeated use on meadows and adjacent uplands. This fence would allow alternating spring and fall deferments in these areas and improve vigor and diversity of grasses, especially in the meadows. The Spitzie Draw Pasture Fence would also ensure that spring deferments can be accomplished. This would be a positive impact on both upland and riparian vegetation.

Water developments would improve distribution and, in the summer allotments, pull livestock off of riparian areas. However, they also create concentration areas and localized damage to vegetation. If sited properly, the benefits would outweigh localized impacts to vegetation.

Environmental Consequences, No Action: On all of the winter/spring use allotments, existing use is from November 1 to May 31. Phenology studies indicate that the growing season begins the beginning of April on Spitzie Draw and South Green River, and slightly later (mid-April) on Dry Creek. This means that plants may receive two months of grazing during the critical growing season. Repeated use during this time leads to plant mortality.

On Cold Springs, historic use has been from March 1 to December 31 for cattle and March 1 to February 28 for horses. This has resulted in use throughout the growing season on much of the allotment, especially in the higher elevation areas. This has resulted in heavy to severe use on the higher meadows and riparian areas.

At least two areas in the Nuttall's saltbush plant communities in the Dry Creek Allotment are lacking in appropriate native plant diversity and have become dominated by weedy species such as halogeton. It is not known whether this change in vegetation type is due to winter kill and to what extent livestock grazing has influenced this change, however continuation of existing grazing practices would not improve these resource conditions. One of these sites is located in close proximity to the stackyard identified in T10N R100W Sec. 16. Continued use of this facility would continue the existing resource conditions. The other site occurs near private land where supplemental feeding practices have occurred in previous years. In addition, continuous spring grazing (between March and May) in Nuttall's community would be detrimental to the species over time, especially if the grazing period is not followed immediately by substantial precipitation events. This desirable species would continue to reduce in both production and vigor, due to lack of rest during the critical growing period.

Mitigative Measures: None

Name of specialist and date: Andrea Minor 8/10/01

WILD HORSE & BURRO MANAGEMENT AREA

Affected Environment: Dry Creek Allotment adjoins portions of the northern and northwestern boundaries of the Sand Wash Wild Horse Herd Management Area (HMA). The Dry Creek Allotment and the HMA are separated by a fence. The fence, where properly maintained, is adequate to maintain wild horses within the HMA.

Wild horse bands seasonally concentrate along the northern HMA boundary fenceline in the vicinity of Coffeepot Spring.

Sections of the northern HMA fence do get broken by big game and wild horses, especially in the late spring and fall months. Wild horses have been documented crossing downed spans of fence into Dry Creek Allotment.

The gates between the Dry Creek Allotment and the HMA are wire-constructed and require annual maintenance. These gates sometimes are not closed by traffic traveling between the Dry

Creek and the HMA. Wild horses are known to have drifted outside the HMA into Dry Creek Allotment through open gates.

While wild horses have the capacity to cycle anytime during the year, a mare's primary breeding cycle occurs in the mid-spring and early summer months, April through June. Band competition and drift is at a high during the breeding season. Studs are most aggressive during the primary breeding season.

The majority of wild horse mares foal between March and the middle of June. Lead mares within bands are often most aggressive during the peak foaling season.

Environmental Consequences, Proposed Action: The *Wild Horse and Burro Program Management Considerations* handbook states that domestic horse grazing shall not be allowed in allotments adjoining Herd Management Areas if domestic and wild horses are likely to intermingle.

The Proposed Action allows for conversion of cattle AUMs for up to 20 head of horses, but both include stipulations that no domestic horses will be in the Lookout and Upper and Lower Dry Creek pastures, due to proximity to the Sand Wash Herd Management Area (HMA). The Proposed Action would not impact the wild horse herd.

Environmental Consequences, No Action: The existing permit makes no restrictions on domestic horses using pastures adjacent to the Sand Wash HMA. This alternative could allow for intermingling of domestic and wild horses.

Mitigative Measures: None

Name of specialist and date: Valerie Dobrich 2/27/01

RANGE ALLOTMENT(S)/RANGE IMPROVEMENT PROJECTS

Affected Environment: The affected grazing allotments are listed at the beginning of this EA. The existing range improvements on BLM land are listed in Attachment 3. Any newly constructed range improvements would be documented under a cooperative agreement with the BLM and permittee sharing construction and/or maintenance costs.

Environmental Consequences, common to all alternatives: None

Mitigative Measures: None

Name of specialist and date: Andrea J. Minor 8/28/01

WILDLIFE - AQUATIC

Affected Environment: Isolated areas of riparian vegetation and aquatic wildlife habitat associated with springs and wet meadows occur on public land within the Three Corners and Beaver Basin Allotments. Habitat for aquatic wildlife on BLM land is associated with isolated springs and seeps and is very limited in the South Green River Allotment. The Spitzie Draw Allotment includes riparian potential associated with Beaver Basin and Spitzie Draw, as well as isolated springs-primarily on private and state land.

Dry Creek and Cold Springs Allotments include a variety of riparian areas which protect stream banks and fisheries and provide habitat for numerous wildlife species. Moose have been known to frequent the willow stream bottoms, and beaver occupy stream systems at high and low elevations. Most ponds or water sources occurring within these allotments provide limited aquatic habitat for amphibians, reptiles, and other wildlife. Northern leopard frogs have been documented at higher elevations nearby. The Dry Creek Allotment includes perennial stream segments at mid elevations such as Vermillion Creek. The Cold Springs Allotment includes perennial streams at higher elevations such as Beaver Creek and provides suitable habitat for Colorado River cutthroat trout. Springs and wet meadows are scattered throughout the affected environment. Quality and diversity of existing riparian areas varies by elevation, past grazing practices, and existing vegetative conditions.

Environmental Consequences, common to all alternatives:

Dry Creek Allotment- Grazing under all alternatives would maintain existing riparian habitats in this allotment. Grazing periods end in the early summer, allowing for growth during the later growing season when it is most beneficial for woody riparian areas. Beaver have been documented in several areas of this allotment, further flooding the area and providing additional aquatic habitat.

Spitzie Draw Allotment and South Green River Allotments- Grazing in these allotments ends on or before May 31st under both alternatives. This would allow time for riparian areas to regrow during the later part of the growing season.

Environmental Consequences, Proposed Action:

Beaver Basin and Three Corners Allotments- In these allotments, grazing use would be from June 1 to October 31 and include a rotation requirement as well as a 30 day limitation. Existing resource conditions on public lands in these allotments indicate that the existing grazing regime is consistent with maintenance of native habitats. Rotation of early season grazing under the Proposed Action would further enhance herbaceous riparian conditions and potential habitat for aquatic wildlife species in these allotments.

South Green River Allotment- Spring rotation under this alternative would additionally enhance opportunities for herbaceous riparian vegetation to regrow following grazing use. Reductions in

AUMs would bring authorized grazing in the allotment closer to existing available resources, increasing the likelihood of maintaining suitable use levels. In addition, limiting spring grazing to 30 days in an area and removing livestock by 5/15 would enhance herbaceous riparian vegetation in the allotment. Winter use, especially at reduced levels, would not adversely impact aquatic habitats due to frozen soils and reliance on snow for water.

Cold Springs Allotment- The proposed AUM reduction would bring grazing authorization closer to actual available resources on this allotment. This alternative includes a rotation system, with grazing duration limits, to increase the likelihood of enhancing wet meadow and riparian areas. These are the very sites that livestock tend to linger in if left behind, or if they stay in an area too long. By maximizing the opportunity for herbaceous riparian vegetation to grow during different times in the growing season, these areas would have a greater chance for recovery and providing future habitat for amphibians and other aquatic species.

PROPOSED PROJECTS-PONDS
The proposed ponds would positively impact aquatic wildlife species by improving riparian conditions as described in the Riparian section of this EA.

Environmental Consequences, No Action:

Beaver Basin and Three Corners Allotments- While current management under the existing permit is maintaining suitable aquatic habitat, there is no provision to ensure that this management would continue. With season-long grazing windows and no rotation prescriptions, it would be possible to manage livestock in a manner that would result in degradation of these habitats.

Cold Springs Allotment- A large portion of the wet meadows and springs in this allotment occur on state and private land. Many of these areas are negatively impacted from improper duration, season, and intensity of grazing use in the past. These impacts include compacted soils from trampling, overutilization of riparian species, headcutting, drying, and/or loss of desired plant species composition. Several meadows are dominated by weedy forb species or increased upland species, and lack herbaceous riparian species and production expected for those sites. Continuation of these grazing practices would decrease available aquatic habitat for fisheries and wildlife in some areas of the allotment.

Mitigative Measures: None

Name of specialist and date: Robin A. Sell 8/4/01

WILDLIFE - TERRESTRIAL

Affected Environment: The majority of allotments covered by this analysis include habitat for nesting raptors. These sites are documented along major waterways such as the Green River, in junipers, aspen, and coniferous trees and in association with major topographic

features such as steep cliffs or ravines. Habitats covered by this analysis range from salt desert shrub and sagebrush grasslands to juniper woodlands and mountain shrub communities to mosaics of higher elevation aspen/coniferous forest. Elevations range from less than 5000 feet to over 9000 feet on Cold Springs Mountain. This diversity in vegetative communities provides excellent wildlife habitat for a variety of species, including neotropical birds, small mammals, predators, and all the big game species that occur in northwest Colorado. Specifically mapped crucial habitats and general vegetative communities are described by allotment below. It is important to note that big game numbers and distribution has varied widely throughout these allotments.

BEAVER BASIN ALLOTMENT

There is a small section of public land in the southeast portion of this allotment. The public land occurs on relatively steep west and southwest facing slopes. Aspen stands in this area include excellent elk calving, avian, and mammalian habitats. Some of the aspen are healthy old growth stands. Open areas are dominated by grassy meadows and sagebrush/mountain shrub communities. Diversity of plant communities are common in the allotment. Few isolated areas have high iris densities, suggesting heavy historic grazing pressure from both elk and cattle. No critical wildlife habitats have been mapped for this area.

THREE CORNERS ALLOTMENT

The majority of public land in this allotment lies on north facing, moderate to steep slopes. There are large forested pockets, primarily aspen, with openings of sagebrush, mountain shrub, and grassy meadows. This area provides habitat for raptors, small mammals, blue grouse, neotropical birds, and various big game species and predators. This is also a productive elk calving area. No critical wildlife habitats have been mapped for the allotment.

DRY CREEK ALLOTMENT

The majority of this allotment incorporates lower elevation habitat types ranging from Nuttall's saltbush and sagebrush communities to juniper woodlands and cliff ecosystems. Along County Road 10 this allotment has been mapped as severe winter range for deer and antelope and critical habitat for antelope. This is due, in part, to the occurrence of important winter forage species such as winterfat and Nuttall's saltbush. Although not mapped as such, the area provides habitat for elk during a majority of the year. Large herds of elk have been observed between County Road 10 and Vermillion Creek during some winters. The County Road 10 corridor has seen consistent use from all three big game species (deer, elk and antelope) during longer periods of time than were historically documented. In addition, livestock grazing use authorizations expanded spring use from April 30 in the permit dated 1983 to May 31 in 1988. Antelope are yearlong residents in the majority of the allotment as well.

There are numerous raptor nesting opportunities in the allotment and sage grouse production areas have been mapped in the northwest corner of the area. Neotropical birds, killdeer, prairie dogs and associated species, and horned lizards are among the diverse fauna which inhabit the more arid ecotypes in this allotment.

COLD SPRINGS ALLOTMENT

This allotment provides a wide range of very productive habitat types at higher elevations. The entire top of the mountain is mapped as sage grouse production habitat, with numerous leks being monitored each year. The uplands support healthy mountain big sagebrush communities with a diverse grass and forb component in the understory. This is one of the most productive sage grouse areas in Moffat County. The majority of the top of the mountain is in private and state land ownership. Large areas of non-federal land have been sprayed to remove sagebrush.

Severe winter range for deer is mapped along Talamantes Creek and west of County Road 10. Critical habitat and severe winter range for antelope is located along County Road 10 (this would be part of the Dry Creek Allotment following boundary changes). A large herd of elk reside on the mountain yearlong and the area is managed as a trophy hunt unit. Because these elk reach many areas as soon as the snow melts, some meadows receive very early grazing pressure and some shrubs and aspen are heavily browsed when food is scarce late in the season. The aspen component is a concern for the area because little regeneration exists and the current aspen stands are fairly old in age and growing on marginal sites. Due to elk and livestock use and marginal growing conditions, these stands may not be replaced when the existing aspens die out. Both deer and antelope also inhabit the mountain during the summer and fall months and bighorn sheep occurred historically on the west end of the mountain. The bighorn sheep herd dwindled and was believed to be infected by disease when CDOW removed the remaining animals. A bighorn sheep was observed on Beaver Creek at the west end of the allotment in 2000 and was likely a transplant that was released in Utah several years ago.

Small areas of prairie dog towns have been identified in the northern end of the allotment. In addition, numerous birds and raptors have been observed in the area, including northern goshawk. The majority of habitat types on the mountain range from mountain big sagebrush to aspen to mountain shrub and juniper, providing a wide diversity of habitat types.

SPITZIE DRAW ALLOTMENT

Elk severe winter range is mapped for this allotment from the Utah/Colorado border east to the Sterling Place. Some of these areas show a lack of herbaceous understory, probably the result of heavy historic elk use compounded with heavy historic winter and spring cattle grazing. Deer severe winter range is documented along the Browns Park Refuge boundary throughout the majority of the allotment. A small area of sage grouse production is mapped south of Highway 318 and in the far west edge of the allotment. A portion of the allotment south of Highway 318, in the center of the allotment, has substantial herbaceous growth. An area dominated by winterfat has seen extensive utilization from both livestock and big game animals. Other areas are dominated by cheatgrass, although remnant native vegetation still persists.

SOUTH GREEN RIVER ALLOTMENT

The majority of this allotment is mapped as severe winter range for deer and elk. A small area of sage grouse production is identified in the west end of the allotment. Isolated sage grouse droppings were observed in this area during land health assessment field visits in 2000. The

overall sagebrush component in this allotment has experienced heavy historic and current grazing pressures, primarily from game animals. Understory vegetation is spotty with some areas (especially the wide trailing area leading to the watering source along the Green River) lacking productive herbaceous vegetation.

Environmental Consequences, common to all alternatives: The following are resource objectives, which if achieved, would benefit sage grouse in particular, but many wildlife species in general. These objectives are set for the sagebrush and wet meadow communities within Cold Springs Allotment and the north/northwestern portion of the Dry Creek Allotment and are consistent with the Sage Grouse Conservation Plan and the "Guidelines to manage sage grouse populations and their habitats", Connelly et al. Proposed management will be evaluated in regard to the potential of meeting these objectives.

1) Maintain residual herbaceous vegetation of 4-8" height (which would be met at utilization levels of moderate or less).
2) Maintain and/or achieve vegetative composition of 15-25% of desirable grass cover and 8-10% desirable forb cover in uplands and wet meadows.
3) Maintain healthy sagebrush with 15-25% cover in large areas to provide nesting, brood rearing and escape cover for sage grouse.

Existing resource conditions indicate the maintenance of native vegetation and habitats in these allotments, and no areas of resource concerns have been identified. The Proposed Action is committed to growing season rotation of use, as well as requiring a 30 day limitation, while asking for a 30-45 day extension into the fall. All alternatives are consistent with maintenance of healthy wildlife habitats and continued grazing use is acceptable. Rotation of growing season grazing under the Proposed Action would further enhance existing native vegetation for these allotments.

Environmental Consequences, Proposed Action: The proposed boundary changes between the Cold Springs and Dry Creek Allotments and the Cold Springs and Spitzie Draw Allotments would be beneficial toward the management and appropriate season of use for these areas. No negative impacts would occur from these boundary changes.

Dry Creek Allotment- The Nuttall's community throughout this allotment, and the County Road 10 corridor especially, would improve under this alternative with rotational spring grazing and limiting duration during this period to 30 days. The forb component in potential sage-grouse nesting habitat would also improve in the long run. These grazing management practices would meet sage grouse objectives 1 and 2 over time.

Cold Springs Allotment- The spring grazing period on the south slope of this allotment would be limited to alternate years in each area and use limited to no more than 30 days. This grazing scenario would help maintain the vigor of limited understory vegetation in this area.

This alternative would greatly enhance vegetative conditions throughout the Mountain pastures of the Cold Springs Allotment. Although conditions in many uplands areas are currently good, the No Action Alternative would be detrimental to all areas due to lack of committed and complete rotational systems and lack of limits to grazing duration during the growing season. The Proposed Action ensures that each area would be grazed once during the growing season, that all animals would be removed with rotations, allow vegetation an opportunity to regrow, that horses would be grazed with other livestock, and that grazing would include periodic deferments during critical growing periods for riparian areas and perennial grass species. This alternative is most likely to enhance existing wet meadow and riparian resource composition (objective #2) throughout the allotment, and maintain or improve herbaceous residual vegetation (objective #1) necessary for sage grouse nesting habitat. The reduction in use period on the south slope of this allotment would allow the sparse vegetation in the juniper understory an opportunity to grow before livestock grazing begins in the spring. The juniper canopy on the south slope is a limiting factor to understory improvement. Additional rotation of use every other year would help to improve vigor in these sparse areas.

Spitzie Draw Allotment- This alternative would improve herbaceous and desirable shrub vigor in this allotment by incorporating an AUM reduction, rotational spring grazing, and grazing duration limit of 30 days during spring use periods. These management practices, along with the standards, would improve resource and habitat conditions within the allotment, including winterfat vigor and development of native plant communities. Rotational grazing may also be used at key times to reduce cheatgrass in isolated areas, possibly allowing native vegetation to gain a stronger hold. Reducing the grazing season to 5/15 under this alternative is responsive to the need for growing season rest in this area.

South Green River Allotment- This alternative reduces the grazing season to the spring each year with a rotation system between the two pastures. Big game use in this area would have a greater effect on sagebrush for grouse than livestock grazing. Livestock use would be limited to 30 days during the majority of the early growing season which would ensure that utilization of grasses does not exceed 50% and adequate forb and grass composition are maintained. This alternative would improve habitat conditions for sage grouse if all the standards are met. Winter grazing would not adversely affect sage grouse as winter use at proposed levels would not decrease existing sagebrush canopies below ten percent.

PROPOSED PROJECTS-FENCES

Any type of barbed wire fence has the potential to trap wild ungulates as they jump over the fence in order to move across it. The presence of the proposed fences would increase the chances of this type of mortality, but with proper design, construction, and maintenance, the impacts of new fences on terrestrial wildlife are minimal.

The fence construction specifications shown in Attachment 7 requires wire spacing of 38”, 26”, and 16” inches above the ground with the bottom wire smooth. This spacing is intended to reduce deer and antelope entanglement as much as possible by providing a large gap between the top and second wires to reduce the chance of the rear legs of mule deer to become entangled

while jumping. Since elk typically drag their hind legs over the top wire while jumping, elk entanglement is less of a concern. The use of smooth wire and the spacing of the bottom wire above the ground are intended to ease passage by pronghorn antelope and juvenile ungulates. Use of wooden stays is preferred because they are better at maintaining wire tautness and spacing than wire stays and are highly visible to wildlife. Brush beating along the line of fence construction provides an additional cue to wildlife to the presence of the fence, reducing collisions when the fence is new. The new fence could cause sage grouse mortality from collisions if the birds are not acclimated to its presence. The requirement to tie high visibility flagging to the top wire between every other fence post would increase visibility to sage grouse and better allow them to avoid collisions.

PROPOSED PROJECTS-PONDS

In Cold Springs, Spitzie Draw, and Dry Creek Allotments, proposed projects are needed to implement improved livestock management. Therefore, the projects would provide a long term benefit to wildlife, even if causing short term impacts to small amounts of habitat.

Smaller pits or "catchments" are proposed on public land within Three Corners and Beaver Basin Allotments. These more closely spaced but scaled down developments would benefit wildlife within these smaller, more intensively managed, allotments in the same manner as improved distribution through better water distribution would benefit habitat on the larger allotments.

Environmental Consequences, No Action Alternative:

Dry Creek Allotment- Grazing is authorized from 11/1 to 5/31 each year with the majority of use occurring in the spring period. Monitoring data suggests that stocking rate is appropriate for this allotment, although a distribution problem is documented. Continuation of existing spring grazing along County Road 10 would lead to even further reduction of essential winter forage for big game species in the area. Continuous early spring grazing would also reduce desired forbs in the northwest corner of the allotment which are a vital component of sage grouse brood rearing habitat. This alternative is not compatible with sage grouse objectives 1 and 2 due to lack of best management practices, such as short duration and rotation of grazing use during critical growth periods.

Cold Spring Allotment- Monitoring data indicate that this allotment is currently over-allocated and livestock use needs to be more evenly distributed. It has a long grazing season with no restrictions on grazing duration or rotation among existing pastures. Under the current authorization, the upper portion of the allotment can be used during the entire growing season, not allowing for any rest from grazing pressures. Grazing the allotment in this fashion, as would be allowed under this alternative, would result in damage to wildlife habitat resources through poor distribution and disproportionately high levels of forage allocated to livestock.

Spitzie Draw Allotment- Monitoring and resource conditions have documented that this allotment is overstocked and distribution is poor, with a grazing season from fall into late

spring. Under the current authorization, there is no provision for rotational grazing, particularly in early spring. Grazing the allotment in this fashion, as would be allowed under this alternative, would result in damage to wildlife habitat resources through poor distribution and sustained suppression of spring growth of forage species.

South Green River Allotment- Continuation of this permit as it stands would result in direct conflict with big game winter range areas and could lead to poor resource conditions throughout due to repeated early season use throughout the allotment.

Mitigative Measures: None

Name of specialist and date: Robin A. Sell 8/5/01

RECREATION & VISUAL RESOURCES

Affected Environment: The Proposed Action is within portions of the Extensive Recreation Management Area (ERMA). Dispersed recreation activities, primarily hunting, occur in the ERMA.

Visual Resource Management (VRM) Classifications within the area of the Proposed Action include: Class II (low levels of landscape change allowed); Class III (moderate levels of landscape change allowed); Class IV (major modification of landscape change allowed) and unclassified areas.

Environmental Consequences, common to all alternatives: None of the alternatives would adversely affect recreation activities or resources or VRM classifications. Grazing and associated range management improvements are generally compatible with current and projected recreation uses within the project area. The presence of livestock, livestock waste, livestock trails and/or associated grazing management facilities is considered undesirable to some segments of the recreating public. However, these impacts are part of the BLM multiple-use mandate and are consistent with the Little Snake Resource Management Plan Record of Decision. Conscientious application of good management practices would enhance recreation opportunities by improving the overall vegetative communities throughout the landscape.

Mitigative Measures: None

Name of specialist and date: Jim McBrayer 6/25/01

OTHER NON-CRITICAL ELEMENTS: For the following elements, those brought forward for analysis will be formatted as shown above. *Where an aspect of proposed range improvements would have no impact to a particular resource element, it is not described in the above analyses.*

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Fluid Minerals		FC 5/31/01	

Forest Management		MME 5/31/01	
Hydrology/Ground		FC 5/31/01	
Hydrology/Surface			OO 7/18/01
Paleontology		RE 5/31/01	
Range Management			AM 8/28/01
Realty Authorizations		PAB 2/1/01	
Recreation/Travel Mgmt		RS 5/31/01	
Socio-Economics		PAB 2/1/01	
Solid Minerals		FC 5/31/01	
Visual Resources			JM 6/25/01
Wild Horse & Burro Mgmt			VD 2/27/01

CUMULATIVE IMPACTS SUMMARY: The Proposed Action is similar in character and purpose to other human activities in the area and would not present an impact that would alter existing uses in the area or appreciably add to the combined impacts that are currently present. The vicinity of the six allotments are a mix of public and private lands that are managed chiefly for livestock grazing, wildlife habitat, and watershed protection. The primary recreational activity in the area is big game hunting, but off-highway vehicle use and wildlife viewing are also common activities. Impacting facilities that support these uses are fences, water developments (pit ponds, wells, buried pipelines, and troughs), a network of maintained and unmaintained unpaved roads, and public facilities that include a developed campground within and a restroom facility at the mouth of Irish Canyon. State Highway 318 runs across the Spitzie Draw Allotment, but it turns to a maintained dirt road at the Utah border and receives little traffic throughout most of the year. Moffat County Road 10N is a well used route to Rock Springs, Wyoming and constitutes the most well used public thoroughfare in the area.

Oil and gas development around the Hiawatha Oil Camp is a center of human activity year-round and represents the greatest level of human activity and impact in the area. Impacts are in the form of numerous roads, well pads, weeds, and truck traffic and have resulted in substantial loss of native vegetation, spread of weeds (especially halogeton), noise, and dust. These impacts are expected to grow substantially in the next few years as gas drilling expands, especially within the Questar Hiawatha Project Area, located in Colorado and Wyoming, which could result in 1,400 to 4,000 wells in addition to existing drilling activities. The existing and expected increase in drilling activity will continue to decrease available forage, introduce halogeton (beyond areas directly impacted by drilling), and create large areas avoided by livestock and wildlife due to noise and human activity.

STANDARDS:

PLANT AND ANIMAL COMMUNITY (animal) STANDARD: *Both alternatives* would meet this standard within the Beaver Basin, Three Corners, and the majority of the Dry Creek Allotments. Grazing management under the *No Action* would not meet this standard along the County Road 10 corridor in Dry Creek Allotment and within the Cold Springs, Spitzie Draw, and South Green River Allotments due to the AUMs authorized, lack of grazing rotation, and

long duration grazing season. *The Proposed Action* would enhance habitats for wildlife species in the area through best management practices such as short duration grazing during critical growth periods and rotation of season of use. These practices would improve vegetative structure and native habitats and would meet the standard for healthy animal communities. The proposed fencing and water projects, as designed, would promote habitat quality with minimum negative impacts at the local level. Thus, the proposed projects would meet this standard.

Name of specialist and date: Robin A. Sell 8/5/01

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (animal) STANDARD: Four of the allotments covered by this analysis include habitat for the black-footed ferret, mountain plover, bald eagle, peregrine falcon, and/or four species of endangered fish. The Proposed Action would meet this standard as it relates to peregrine falcon, ferrets, plover, and fish due to location and/or lack of anticipated negative impacts to these species from livestock grazing. The *No Action Alternative* would only marginally meet this standard for bald eagle due to potential impacts on prey species due to higher stocking rates, long season and/or long duration of use. *The Proposed Action* would enhance habitats essential for eagle prey species in the area through best management practices such as short duration grazing and rotation of season of use during critical growth periods. These practices would improve vegetative structure and native habitats and would meet the standard for threatened, endangered, and special status wildlife. The proposed fencing and water projects, as designed, would aid in promoting habitat quality with minimum negative impacts. Thus, the proposed projects would meet this standard.

Name of specialist and date: Robin A. Sell 8/5/01

PLANT AND ANIMAL COMMUNITY (plant) STANDARD: Under the *No Action Alternative*, this standard is currently being met on a watershed scale. However, on individual sites, vegetation is lacking in diversity and shows overuse by livestock and wildlife. Vegetative conditions would improve under the *Proposed Action*, and would, therefore, meet this standard on all affected sites. The proposed projects would minimally impact vegetation in a highly localized manner, but would improve overall management of the uplant plant communities, and, therefore, meet this standard.

Name of specialist and date: Andrea Minor 8/16/01

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (plant) STANDARD: There are no known threatened or endangered plant species or habitat for such, on BLM administered land in the affected environment. Sensitive plant populations and remnant plant communities are documented on the Spitzie Draw, Cold Springs, and Dry Creek Allotments. Although some of these plant communities occur in areas not likely to be impacted by livestock, the *Proposed Action* would benefit special status plants in all three allotments through reductions in forage allocated to livestock, rotation of spring and growing season use, and limiting the duration of grazing. These management tools would enhance native vegetative

communities, thus providing habitat for and meeting the standard for special status plants and, thus, meet this standard.

Name of specialist and date: Robin A. Sell 8/4/01

RIPARIAN SYSTEMS STANDARD: The *Proposed Action* would meet the riparian standard for healthy rangeland by improving the overall vegetative cover, vigor of riparian plants, maintenance of soil moisture. This alternative controls the duration, timing, and intensity of use across the landscape and would improve the hydrologic component within the riparian system. Improved plant cover and soil properties on the uplands and upland draws would slow surface water movement, allowing increased infiltration and percolation of soil water and increasing the amount of water that could reach the ground water. Some stream segments along the Beaver, Talamantes, Shell, and Vermillion Creeks would receive additional waters from improved upland conditions. The proposed fence and water development projects would be necessary to fully implement this alternative.

The *No Action Alternative* would not meet this standard. Most of the lentic riparian systems are functioning at risk under current management and under this alternative they would continue to not achieve a Proper Functioning Condition if livestock grazed on these systems through the majority of the growing season.

Name of specialist and date: Ole Olsen 7/18/01

WATER QUALITY STANDARD: The water quality standard for healthy rangelands would be met under *all alternatives*. Runoff from snow melt and summer storms drains from the affected lands directly into stream segments that are presently supporting classified uses. Presently, no stream segments are listed as impaired. The water quality of surface water runoff would be expected to improve under the *Proposed Action* because the livestock operator would be required to implement grazing guidelines that would improve upland soils and vegetative resources. The *Proposed Action* would adjust the stocking rate to a level consistent with available forage for Spitzie Draw, South Green River, and Cold Springs Allotments. These are considered Best Management Practices (BMP's) that would enhance management of the vegetative resources to meet the objective of improving the overall vigor and quality of the plant communities across the landscape. Additional BMP's would be employed with the installation of fences and construction of ponds that would help to control the distribution of livestock and allow the operator to employ this more intensive management.

Name of specialist and date: Ole Olsen 7/18/01

UPLAND SOILS STANDARD: All of these allotments were assessed as part of the Cold Springs Landscape and Dry Creek Watershed Land Health Assessments. The upland soils within the Cold Springs Landscape are meeting the upland soil standard with the exception of the toe slope and bench soils found in the canyon bottoms along Vermillion, Shell, and Talamantes Creeks. Other soils within the Cold Springs Landscape are meeting standards as

outlined in the Colorado Standards for Public Land Health. All upland soils within the Dry Creek Watershed are currently meeting the standard.
The *Proposed Action* would meet this standard. Adjusting the stocking rate and implementing more intensive grazing management with rotation of early spring use, limiting the duration of grazing during the growing season and providing deferred rest one in four years would allow the upland plant communities to increase their vigor and diversity and provide good protection for the upland soil resource. The projects that would be installed under this alternative would be necessary for the full implementation of this alternative.

The *No Action Alternative* would not modify the grazing practices and no changes with respect to the upland soil resource would occur. Late winter and spring use on some soils along with inherent grazing distribution problems would not provide the needed rest during the growing season for plant communities, especially grasses, to improve or re-establish on these soils. Most of the upland soils are meeting standards, but there are areas of grazing use that could be reduced if the duration of grazing could be reduced or redistributed. Since there is a major component of the upland soils in this landscape that is not meeting standards, the continuation of present management outlined in the *No Action Alternative* would not meet this standard.

Name of specialist and date: Ole Olsen 7/18/01

PERSONS/AGENCIES CONSULTED: See Attachment 8.

MITIGATION MEASURES:
BLM COMMITMENTS
Allotment Specific Stipulations for this EA (Cultural)
1. GIS maps showing slope potential, 30% or greater, where rock art and rock shelters are predicted to occur will be used to initially establish Class III survey areas. This field work would also target isolated boulders and rock outcrops as well as the bases of cliffs and on steep slopes with rock outcrops. Areas within the allotment(s) will need to be identified for these topographic conditions and looked at for rock art and rock shelters. Field work evaluations of the allotment(s) will change size and scope of cultural field work that will have to be carried out.

2. GIS maps based upon stream course feature areas from the 7.5 minute USGS maps will be used to initially establish Class III survey areas, 500 feet on either side of the creek, river, riparian area, and intermittent drainage. Springs identified on the USGS maps and in BLM records will be surveyed at a 1000 feet around the spring. Known riparian areas will also be integrated into this map. Field work evaluations of the allotment(s) will change size and scope of cultural field work that will have to be carried out.

3. Previously identified sites, table above, and new sites recorded and evaluated as eligible and/or need data during other project specific Class III survey will need to be evaluated and monitored too. Initial recordation of new sites and re-evaluation of the known sites will establish current condition of the resource and help in developing a monitoring plan for all sites.

Some sites will have to be monitored more often than others. Sites that are found to be impacted by grazing activities will need further monitoring, physical protection or other mitigative measures developed.

4. Site monitoring plans, other mitigation plans, will be developed and provided to the Colorado State Historic Preservation Officer in accordance with the Protocol (1998) and subsequent programmatic agreements regarding grazing permit renewals.

Conducting Class III survey(s), monitoring, and developing site specific mitigation measures will mitigate the adverse effects, data loss, and significant impacts (NHPA Section 106, 36 CFR 800.9; Archaeological Resource Protection Act 1979; BLM Colorado and Colorado SHPO Protocol 1998; and NEPA/FLPMA requirements) to an acceptable level.

The Colorado State Historic Preservation Officer (SHPO) agreed with the Bureau of Land Management, Colorado, (BLM) that the BLM could issue its Range Renewal Permits with the proposed Cultural Resource Management actions, monitoring known eligible and need data sites and conducting Class III and/or modified Class III surveys on selected areas of BLM lands within in a ten year time frame (Cultural Matrix Team Meeting 26 January 1999, Colorado BLM State Office).

The Little Snake Field Office will initiate the monitoring of known eligible and need data sites the first field season following the issuing of the permit. This survey will be based upon an acceptable, BLM and SHPO, research design that will establish criteria for evaluation of the sites for livestock impacts and any needed mitigation and future monitoring needs. This is covered in the "Procedural Addition 1: Bureau of Land Management (BLM) Rangeland Activities and Cultural Resource Management".

The cultural survey (Class III and/or modified Class III) of selected areas of the allotments will be initiated in the second field season following the issuing of the permit. This is covered in the "Procedural Addition 1: Bureau of Land Management (BLM) Rangeland Activities and Cultural Resource Management".

COMPLIANCE PLAN(S): Employees of the Little Snake Field Office will periodically monitor this allotment to determine the effectiveness of the implemented action in meeting the standards for public health.

ATTACHMENTS:

Attachment 1a, Map of Cold Springs Allotment #04325
Attachment 1b, Map of Dry Creek Allotment #04302
Attachment 1c, Map of Spitzie Draw Allotment #04335
Attachment 1d, Map of South Green River Allotment #04340
Attachment 1e, Map of Beaver Basin Allotment #04329
Attachment 1f, Map of Three Corners Allotment #04330

Attachment 2, Actual Use Summary
Attachment 3, Monitoring Plan
Attachment 4, Standard and Common Terms and Conditions
Attachment 5, Proposed Range Improvements
Attachment 6a, Map of Existing and Proposed Range Improvements on the Cold Springs Allotment #04325
Attachment 6b, Map of Existing and Proposed Range Improvements on the Dry Creek Allotment #04302
Attachment 6c, Map of Existing and Proposed Range Improvements on the Spitzie Draw Allotment #04335
Attachment 6d, Map of Existing and Proposed Range Improvements on the Beaver Basin Allotment #04329
Attachment 6e, Map of Existing and Proposed Range Improvements on the Three Corners Allotment #04330
Attachment 7a, Typical Barbed Wire Fence (3-Wire), BLM Wire Spacing Standards
Attachment 7b, Typical Water Retention Pit
Attachment 7c, Water Pipeline Types
Attachment 7d, Well Construction Details, Concrete Platform
Attachment 8, Interested Public List for December 2000 meeting

SIGNATURE OF PREPARER:

DATE SIGNED:

SIGNATURE OF ENVIRONMENTAL REVIEWER:

DATE SIGNED:

Finding of No Significant Impact (FONSI)

Based on the analysis of potential environmental impacts contained in the EA and all other available information, I have determined that the proposal and the alternatives analyzed do not constitute a major Federal action that would adversely impact the quality of the human environment. Therefore, an EIS is unnecessary and will not be prepared. This determination is based on the following factors:

1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests or the locality. The physical and biological effects are limited to the Little Snake Field Office and adjacent land.

2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.

3. There would be no adverse impacts to regional or local air quality, prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplain, areas with unique characteristics, ecologically critical areas or designated Areas of Critical Environmental Concern.

4. There are no highly controversial effects on the environment.

5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.

6. This alternative does not set a precedent for other actions that may be implemented in the future to meet the goals and objectives of adopted Federal, State or local natural resource related plans, policies or programs.

7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.

8. Based on previous and ongoing cultural surveys, and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no known American Indian religious concerns or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice Policy.

9. No adverse impacts to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act were identified. If, at a future time, there could be the potential for adverse impacts, treatments would be modified or mitigated not to have an adverse effect or new analysis would be conducted.

10. This alternative is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

SIGNATURE OF AUTHORIZED OFFICIAL:

DATE SIGNED:

Attachment 4
CO-100-2006-055 EA
STANDARD AND COMMON TERMS AND CONDITIONS

Standard Terms and Conditions

1) Grazing permit or lease terms and conditions and the fees charged for grazing use are established in accordance with provisions of the grazing regulations now or hereafter approved by the Secretary of the Interior.

2) They are subject to cancellation, in whole or in part, at any time because of:
a. Non compliance by the permittee/lessee with rules and regulations;
b. Loss of control by the permittee/lessee of all or part of the property upon which it is based;
c. A transfer of grazing preference by the permittee/lessee to another party;
d. A decrease in the lands administered by the Bureau of Land Management within the allotments(s) described;
e. Repeated willful unauthorized grazing use;
f. Loss of qualifications to hold a permit or lease.

3) They are subject to the terms and conditions of allotment management plans if such plans have been prepared. Allotment management plans MUST be incorporated in permits and leases when completed.

4) Those holding permits or leases MUST own or control and be responsible for the management of livestock authorized to graze.

5) The authorized officer may require counting and/or additional or special marking or tagging of the livestock authorized to graze.

6) The permittee's/lessee's grazing case file is available for public inspection as required by the Freedom of Information Act.

7) Grazing permits or leases are subject to the nondiscrimination clauses set forth in Executive Order 11246 of September 24, 1964, as amended. A copy of this order may be obtained from the authorized officer.

8) Livestock grazing use that is different from that authorized by a permit of lease MUST be applied for prior to the grazing period and MUST be filed with and approved by the authorized officer before grazing use can be made.

9) Billing notices are issued which specify fees due. Billing notices, when paid, become a part of the grazing permit or lease. Grazing use cannot be authorized during any period of delinquency in the payment of amounts due, including settlement for unauthorized use.

10) Grazing fee payments are due on the due date specified on the billing notice and MUST be paid in full within 15 days of the due date, except as otherwise provided in the grazing

permit or lease. If payment is not made within that time frame, a late fee (the greater of $25 or 10 percent of the amount owed but not more than $250) will be assessed.

11) No member of, or Delegate to, Congress or Resident Commissioner, after his/her election of appointment, or either before or after he/she has qualified, and during his/her continuance in office, and no officer, agent, or employee of the Department of the Interior, other than members of Advisory committees appointed in accordance with the Federal Advisory Committee Act (5 U.S.C. App. 1) and Sections 309 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) shall be admitted to any share or part in a permit or lease, or derive any benefit to arise therefrom; and the provision of Section 3741 Revised Statute (41 U.S.C. 22), 18 U.S.C. Sections 431-433, and 43 CFR Part 7, enter into and form a part of a grazing permit or lease, so far as the same may be applicable.

Common Terms and Conditions

A) Grazing use will not be authorized in excess of the amount of specified grazing use (AUM number) for each allotment. Numbers of livestock annually authorized in the allotment(s) may be more or less than the number listed on the permit/lease within the grazing use periods as long as the amount of specified grazing use is not exceeded.

B) Unless there is a specific term and condition addressing utilization, the intensity of grazing use will insure that no more than 50% of the key grass species and 40% of the key browse species current years growth, by weight, is utilized at the end of the grazing season for winter allotments and the end of the growing season for allotments used during the growing season. Application of this term needs to recognize recurring livestock management that includes opportunity for regrowth, opportunity for spring growth prior to grazing, or growing season deferment.

C) Failure to maintain range improvements to BLM standards in accordance with signed cooperative agreements and/or range improvement permits may result in the suspension of the annual grazing authorization, cancellation of the cooperative agreement or range improvement permit, and/or the eventual cancellation of this permit/lease.

D) Storing or feeding supplemental forage on public lands other than salt or minerals must have prior approval. Forage to be fed or stored on public lands must be certified noxious weed free. Salt and/or other mineral supplements shall be placed at least one-quarter mile from water sources or in such a manner as to promote even livestock distribution in the allotment or pasture.

E) Pursuant to 43 CFR 10.4(g), the holder of this authorization must notify the authorized officer, 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. The operator is responsible for informing all persons who are associated with the allotment operations that they will be subject to prosecution for knowingly

disturbing historic or archaeological sites or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any allotment activities or grazing activities, the operator is to immediately stop activities in the immediate vicinity and immediately contact the authorized officer. Within five working days, the authorized officer will inform the operator as to:

-whether the materials appear to be eligible for the National Register of Historic Places;
-the mitigation measures the operator will likely have to undertake before the identified area can be used for grazing activities again.

If paleontological materials (fossils) are uncovered during allotment activities, the operator is to immediately stop activities that might further disturb such materials and contact the authorized officer. The operator and the authorized officer will consult and determine the best options for avoiding or mitigating paleontological site damage.

F) No hazardous materials/hazardous or solid waste/trash shall be disposed of on public lands. If a release does occur, it shall immediately be reported to this office at (970) 826-5000.

G) The permittee/lessee shall provide reasonable administrative access across private and leased lands to the BLM and its agents for the orderly management and protection of public lands.

H) Application of a chemical or release of pathogens or insects on public lands must be approved by the authorized officer.

I) The terms and conditions of this permit may be modified if additional information indicates that revision is necessary to conform with 43 CFR 4180.

Attachment 2
CO-100-2006-055 EA
ACTUAL USE SUMMARY

Winter allotments (Spitzie Draw, South Green River and Dry Creek) AUMs were totaled beginning with fall use through coming off in spring. Summer allotments (Cold Springs, Beaver Basin and Three Corners) were totaled beginning March 1 through February 28.

Spitzie Draw #04335; Preference = 2457 AUMs

YEAR	AUMs USED	% OF PREFERENCE	% OF AUMs USED AFTER 4/1
2005-2006	1416	58	49
2004-2005	1039	42	52
2003-2004	311	13	57
2002-2003	315	13	66
2001-2002	1469	60	48
2000-2001	602	25	54
1999-2000	1564	64	33
1998-99	634	26	75
1997-98	1177	48	34
1996-97	1049	43	32
1995-96	1238	50	49
1994-95	1104	45	38
1993-94	419	17	72
1992-93	428	17	66
1991-92	507	21	63
1990-91	681	28	38

16 year mean = 872 AUMs, 35% of preference; 52% of AUMs used after 4/1

Dry Creek #04302; Preference = 5470 AUMs

YEAR	AUMs USED	% OF PREFERENCE	% OF AUMs USED AFTER 4/1
2005-2006	2999	55	41
2004-2005	2438	45	52
2003-2004	1931	35	65
2002-2003	1730	32	69
2001-2002	3575	65	44
2000-2001	909	17	0
1999-2000	3372	62	43
1998-99	2571	47	69
1997-98	1696	31	74
1996-97	2308	42	68
1995-96	2278	42	34
1994-95	2760	50	46
1993-94	1877	34	79
1992-93	1775	32	49
1991-92	1452	26	53
1990-91	1564	28	80

16 year mean = 2202 AUMs, 40% of preference; 54% of AUMs used after 4/1

South Green River #04340; Preference = 505 AUMs

YEAR	AUMs USED	% OF PREFERENCE	% OF AUMs USED AFTER 4/1
2005-2006	500	99	59
2004-2005	435	86	59
2003-2004	342	68	84

2002-2003	362	72	82
2001-2002	375	74	59
2000-2001	306	61	73
1999-2000	595	118	34
1998-99	395	78	51
1997-98	641	127	35
1996-97	555	110	54
1995-96	303	60	66
1994-95	176	35	84
1993-94	441	87	51
1992-93	284	56	65
1991-92	225	44	68
1990-91	148	29	100

16 year mean = 380 AUMs, 75% of preference; 64% of AUMs used after 4/1

Cold Springs #04325; Preference = 5198 AUMs (was 4730 AUMs 1997 & prior)

YEAR	AUMs USED	% OF PREFERENCE
2006	2656	51
2005	1210	23
2004	1562	30
2003	1560	30
2002	2250	43
2001	2141	41
2000	2075	40
1999	2445	47
1998	1949	37
1997	1890	40

1996	2540	54
1995	1794	38
1994	1575	33
1993	1425	30
1992	1380	29
1991	1938	41

16 year mean = 1899 AUMs, 38% of preference

Three Corners #04330; Preference = 93 AUMs, 118 prior to 1997

YEAR	AUMs USED	% OF PREFERENCE
2006	92	99
2005	93	100
2004	93	100
2003	93	100
2002	93	100
2001	23	25
2000	69	74
1999	23	25
1998	0	0
1997	0	0
1996	0	0
1995	118	100
1994	0	0
1993	0	0
1992	0	0
1991	0	0

Mean of 9 years used = 77 AUMs, 80% of preference

Beaver Basin #04329; Preference = 26 AUMs, 86 AUMs prior to 1997

YEAR	AUMs USED	% OF PREFERENCE
2006	26	100
2005	26	100
2004	26	100
2003	26	100
2002	26	100
2001	3	12
2000	23	88
1999	3	12
1998	0	0
1997	0	0
1996	0	0
1995	86	100
1994	0	0
1993	0	0
1992	0	0
1991	0	0

Mean of 9 years used = 27 AUMs, 79% of preference

Attachment 5
CO-100-2006-055 EA
PROPOSED RANGE IMPROVEMENTS

Cold Springs Allotment #04325
Limestone Division Fence
North Chicken Springs Pond
Thum Pasture Pond
Long Meadow Canyon Ponds (3)

Dry Creek Allotment #04302
Burnt Cedars Pond
Burnt Cedar Wells (2-3)
Burnt Cedar Division Fence
G Flat Ponds (2)
Water haul sites (38; 35 w/ portable tanks, 3 w/pits)
Five Monument Ponds (2)
Upper Dry Creek Ponds (2)
North Dry Creek Ponds (2)
Rock Bed Ground Ponds (4)

Spitzie Draw Allotment #04335
Pasture Fence
Spitzie Pond
George Draw Pipeline Extension, Tank, and Pond
Sterling Pond Enlargement

Beaver Basin Allotment #04340
Middle Mountain Catchment

Three Corners Allotment #04330
Myers Mountain Catchments (4)

Attachment 8
CO-100-2006-055 EA
Vermillion Ranch Limited Partnership Permit Renewal
Interested Public Meeting (December 15, 2000) Invitation List

Vermillion Ranch Limited Partnership
Wright Dickinson
14883 CO Road 10 North
Maybell, CO 81640

Wayne Burkhardt
Ranges West
2410 River Road
Indian Valley, ID 83632

National Wildlife Federation
Rocky Mountain Natural Resource Center
2260 Baseline Road, Suite 100
Boulder, CO 80302

Sinapu
2260 Baseline Road, Suite 203
Boulder, CO 80302
(*Sinapu requested to be removed from Affected Interest status for all livestock grazing decisions issued by the Little Snake Field Office on April 17, 2006.*)

Clee Sealing
1670 N ½ Road
Fruita, CO 81521

Dan Prenzlow, Area Wildlife Manger
Colorado Division of Wildlife
Box 1181
Meeker, Colorado 81641

Ms. Beverly Rave
Colorado State Land Board
P.O. Box 1094
Craig, Colorado 81626

Pete Kolbenschlag
West Slope Field Representative
Colorado Environmental Coalition
1000 North 9th Street #29
Grand Junction, Colorado 81501

Land and Water Fund
2260 Baseline Road, Suite 200
Boulder, CO 80302

Western Watersheds Project (added to interested public list October 4, 2001)
Box 1770
Hailey, ID 83333

Attachment 9
CO-100-2006-055 EA
Performance Standards

Utilization on the uplands will not exceed 50% on grasses and 40% on shrubs for all users.

Riparian areas:
- No late season use (after August 15) one year in three along the following creeks, if there is summer use: Talamantes Creek, Beaver Creek, Dry Creek, Antone Canyon and Vermillion Creek.

Cold Springs, Beaver Basin and Three Corners:
The AOP will cover use in all allotments by pasture and by dates.

Those areas that receive spring and /or fall use (South Slope area of Cold Springs Mountain) will be identified as separate pastures. Performance standards will be developed to address adequate deferment on spring use pastures.

Growing season use
- no early spring use (June) in the same allotment, or pasture within an allotment, 2 consecutive years, ***and***
- defer each allotment, or pasture within an allotment, until seed ripe one year in four, ***and***
- no use for more than 30 days in any pasture.

Season of use will be changed to June 1 to October 31 on the upper Cold Springs pastures for both cattle and horses.

The allotments/pastures that will be deferred and those that will not be grazed in June will be identified in the Annual Operating Plan (AOP). Those that will be grazed in June will have time of use identified.

The standards will help us achieve the following management objectives for the Cold Springs Allotment and the north and northwest portion of the Dry Creek Allotment:
- Maintain residual herbaceous vegetation of 4-8" height.
- Maintain and/or achieve vegetative composition of desirable grass and forb cover in uplands and wet meadows, based on ecological site descriptions.
- Maintain healthy sagebrush with 15-25% cover in large areas to provide nesting, brood rearing and escape cover for sage grouse.

Winter Allotments:
The AOP will cover use in all allotments by pasture and by dates.

South Green River - Use will be limited to November 1 to March 31.

Spitzie Draw - Use will be limited to November 1 to May 15th.
After April 1: no use in the same pasture 2 consecutive years, ***and*** no use for more than 30 days.

Dry Creek - Use will be limited to November 1 to May 15th.
After April 15: no use in the same pasture 2 consecutive years, ***and*** no use for more than 30 days.

Those areas in Dry Creek and Spitzie Draw that will be grazed between April 1st and May 15th will be identified in the Annual Operating Plan(AOP).

Attachment 3
CO-100-2006-055 EA
Vermillion Ranch Limited Partnership -Monitoring Plan

Monitoring will continue on all allotments in order to determine if resource objectives are being met and will be used to make adjustments in management, if necessary.

On those allotments where AUMs will be held in voluntary nonuse pending results of monitoring (Cold Springs, Spitzie Draw and South Green River), decisions will be based on actual use data provided by Vermillion Ranch; at least three years of utilization data, based on utilization at established key areas and use pattern maps; and trend data, where available.

Utilization studies have been read in the past in generally the same areas year after year. These locations will continue to be the basis for future monitoring, but locations may be reevaluated due to the establishment of pastures. Additional sites may be established as needed.

Trend studies were established on some allotments. These included photo points and/or permanent vegetation transects. Efforts will be made to locate these plots, and their location will be evaluated. Additional sites may be established. Vegetation objectives will be established based on ecological site descriptions.

Monitoring methodologies and procedures will conform to BLM technical guides and policies, or as otherwise agreed upon. When possible, the BLM staff and Vermillion Ranch and its consultants will monitor jointly.

The following is a list of initial monitoring needed:

Dry Creek Allotment
Utilization (including use pattern mapping, if necessary) after use by livestock, by pasture (April-May)
Relocate, reevaluate and re-read and/or establish trend plots
Continue to read growing season phenology
Establish precipitation studies

South Green River Allotment
Utilization (including use pattern mapping, if necessary) after use by livestock by pasture (April - May)
Establish key areas
Establish trend plots
Continue to read growing season phenology

Spitzie Draw Allotment
Utilization (including use pattern mapping, if necessary) after use by livestock by pasture (March - May)
Establish key areas
Relocate, reevaluate and re-read and/or establish trend plots
Continue to read growing season phenology
Establish precipitation studies

Cold Springs Allotment
Utilization (including use pattern mapping if necessary) after use by livestock by pasture (June-October)
Establish key areas on upland communities
Relocate, reevaluate and re-read and/or establish trend plots in upland communities
Establish photo points on riparian areas
Identify need and locations for three-phase exclosures to monitor impacts of wildlife and livestock on aspen and mountain brush communities
Establish precipitation studies
Determine annual production on meadows

Beaver Basin Allotment
Utilization after use by livestock (June - October)
Establish trend plots

Three Corners Allotment
Utilization after use by livestock (June - October)
Establish trend plots