



United States Department of the Interior

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In Reply Refer To:
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(NV-022.15)

The following is a Summary of Protest Points of the Soldier Meadows Allotment Proposed Multiple Use Decision from the Western Watersheds Project (WWP) and Estill Ranches LLC.

WWP PROTEST POINTS SUBMITTED ON OCTOBER 28, 2003:

Protest Point #1

The outrageously high stocking rates under this decision are a complete giveaway to the livestock industry, and sacrifice these significant public lands a single use – production of Estill livestock.

Response

The Sonoma-Gerlach Grazing EIS (Land Use Plan) analyzed five alternatives including the proposed action and no livestock grazing. The SG/EIS also established forage allocations between livestock, wild horses/burros and wildlife. This land use planning effort, from which the alternatives are derived, is responsive to the requirements of the Federal Land Policy and Management Act (FLPMA) of 1976 including the policy goals that state, "That the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands..." The Winnemucca Field Office Grazing EIS analyzed impacts and developed mitigating measures and standard operation procedures to protect resource values.

The Soldier Meadows Allotment (SMA) Environmental Assessment (EA) analyzed five livestock grazing alternatives and another three alternatives that were considered but eliminated from detailed analysis. These grazing alternatives considered various use areas, seasons of use, and stocking rates and their effects on various resource values throughout the allotment. Portions of these alternatives that were analyzed in the EA along with comments received were taken into consideration in the development of the SMA Proposed Multiple Use Decision (PMUD).

Protest Point #2

We Protest BLM's failure to respond to, or even acknowledge, the extensive comments that we have provide. You have IGNORED nearly all of our concerns, and given the permittee whatever he wants.

Response

BLM has consulted, coordinated and cooperated with Western Watersheds Project (WWP) during the process of developing the PMUD. BLM has specifically responded to every request for information, (formal and informal), from WWP. Your comments and/or suggestions both in writing and during

office visits/field tours have been taken into consideration in the development of the PMUD.

Protest Point #3

We Protest BLM's failure to conduct a current carrying capacity study for the Soldier Meadows allotment.

Response

The original range survey and allotment adjudication process was completed on December 4, 1964. This range survey was a one-point-in-time analysis of the available forage on the allotments. After the completion of the range survey and in accordance with the Sonoma/Gerlach Management Framework Plan III Land Use Plan (LUP), future adjustments in carrying capacity for the allotments must be based on monitoring data. The 1993 Allotment Evaluation determined the total carrying capacity based upon vegetation utilization monitoring data and actual use. The 1994 Final Multiple Use Decision (FMUD) distributed forage proportionally between livestock, wild horses and wildlife based upon the monitoring data and the ratios of ungulate use established in the LUP. The current re-evaluation identified some areas of concern that could be corrected by changes in the livestock season of use, but determined that the current carrying capacity is still appropriate to allow for attainment and/or significant progress to be made toward attainment of allotment specific objectives/Standards for Rangeland Health (SRH).

Protest Point #4

We Protest BLM's failure to conduct a current grazing suitability analysis for this allotment .

Response

Refer to response to protest point #3.

Protest Point #5

We Protest BLM's failure to conduct current ecological site inventories for this allotment.

Response

Ecological Status Inventory (ESI) data has been provided in the SMA EA. Please refer to Section 3.4.1 ESI on page 46 and Appendix 16 Allotment ESI map on page 188 of the EA. Table 8 Ecological Seral Status, on page 46 of the EA, identifies Potential Natural Community (20%), Late Seral Stage (65%) with the remainder at Mid Seral (15%). The plant community is relatively stable, but it is in no sense static. Major changes in plant composition do not occur, unless induced by pounced disturbances, such as continued heavy grazing, prolonged drought, insects or fire. Section 4.5 Vegetation Environmental Consequence described the proposed action and alternatives, as related to ESI. The winter use areas ecological conditions have improved in the Calico (north and south) and the Black Rock (North and south) Use Areas. This is based on observations; the most noticeable improvements are on the sand sheets, ecological site NV027XY009 Sandy 5 to 8 inch precipitation in the Black Rock Use Area. Changes in the other use areas have not been observed and conditions are similar to the time of the inventory.

Protest Point #6

We Protest BLM's failure to provide data and analyses that support the extremely high stocking rate that is proposed.

Response

The 1994 SMA/FMUD determined the Appropriate Management Levels (AMLs) of wild horses/burros

and the livestock stocking rate based upon monitoring data and the ratios established in the Land Use Plan.

The SMA EA presented five grazing alternatives on pages 12-19 that were subsequently analyzed and three additional alternatives that were considered but eliminated from detailed analysis. These grazing alternatives considered various use areas, seasons of use, and stocking rates and their effects on various resource values throughout the allotment. Portions of these alternatives analyzed in the EA and comments received were considered in the development of the SMA PMUD.

The Council on Environmental Quality (CEQ), 40 CFR 1502.14(a) states in part; "Rigorously explore and objectively evaluate all reasonable alternatives." The BLM analyzed and rigorously explored five alternatives including various livestock stocking rates in order to comply with the CEQ regulations.

Protest Point #7

We protest BLM's failure to collect current data necessary to support its claims of riparian, upland, special status and T&E species habitat condition, functionality and health made in the Assessment, EA, MUD, etc.

Response

The SMA Re-evaluation utilized all available data that was collected during the Re-evaluation period from 1994-2000. Upon initiation of this Re-evaluation, BLM requested that any data collected by other agencies, organizations or individuals be submitted for inclusion in this process. The following types of data were utilized to determine attainment of allotment objectives and SRH; utilization, trend, actual use, climatological, stream survey, riparian functionality, water quality, wildlife habitat assessment, ecological site inventory and wild horse census/distribution. BLM will continue to collect and use any current data to assess attainment of allotment objectives/SRH.

Protest Point #8

We Protest BLM's failure to provide measurements of utilization data for all years and all pastures where the allotment was grazed, so that a reader can determine the utilization that has occurred under the current stocking rate.

Response

The SMA Final Multiple Use Decision, dated January 1994, required BLM to monitor the actual use of livestock and wild horses and their impacts on the vegetative resources, impacts to fish and wildlife habitat, and collect utilization data on stream bank and wetland meadow riparian habitats to determine achievement of short term objectives. All available data has been presented in the SMA Final Allotment Re-evaluation and SMA EA. The interested publics of record for the SMA received copies of the Final Allotment Re-evaluation, which presented various monitoring data compiled and analyzed during the re-evaluation period. The SMA Determination/MASR explained which objective(s) and standard(s) were not attained, and the SMA EA analyzed the grazing alternatives and the preferred alternative was brought forward in the SMA PMUD.

Protest Point #9

We Protest BLM's failure to provide Supplemental information (current and more complete and comprehensive) and data on current ecological condition, carrying capacity, functioning condition of ALL riparian areas – including springs, seeps and springbrooks, as we requested, to augment the meager, inadequate and out-dated data on which this decision is based.

Response

Refer to response to protest point #7, #5

PFC assessments for streams is a continuing process, the initial assessments were conducted in 1998 for SMA. Reassessments of these streams will occur once the new grazing system has been implemented to determine change over time. The WFO has conducted lentic assessments during the summer of 2003 in portions of the SMA.

Protest Point #10

We Protest BLM's failure to conduct NEPA on the new alternative that it has adopted as its Final Decision.

Response

The protest incorrectly states that NEPA analysis was not conducted on the selected grazing system as identified in the PMUD. The BLM has flexibility to provide a decision based on various portions of alternatives as long as the features of the decision have been analyzed in the range of alternatives. The BLM analyzed winter grazing under alternatives # 1,2,3 and 5. The PMUD grazing system was developed based on the NEPA analysis and public comment and has been fully analyzed under portions of the various alternatives.

Protest Point #11

We Protest BLM allowing violations of the FRH to continue in this allotment for prolonged periods while delaying making a decision here.

Response

BLM issued a Determination/Management Action Selection Report (D/MASR) in March of 2003. Information provided for the first time in the D/MASR determined that the existing grazing system was a contributing factor in not attaining the Standards for Rangeland Health (SRH) and allotment objectives. BLM has until the start of the next grazing year in 2004 to take action that would result in progress toward achievement of the SRH and allotment objectives. In 2003, BLM modified the existing grazing practices within one use area to ensure progress toward achieving the SRH. The Soldier Meadows Allotment Proposed Multiple Use Decision issued on October 17, 2003, presented the livestock management system identified in the 2003 Biological Opinion (BO). This grazing system and terms and conditions for livestock management will result in significant progress toward achieving the allotment objectives and the Standard for Rangeland Health (SRH).

Protest Point #12

We Protest BLM failing to conduct an adequate Standards and Guides assessment that ensures compliance with all components of the FRH and the appropriate Standards and Guides.

Response

Refer to response to protest points #11,73 and 85.

Protest Point #13

We Protest BLM failing to provide maps and other details on the desert dace exclosure. Will all BLM land desert dace habitat be excluded from livestock use? Why are you not reducing stocking rates commensurate with the "forage" you are excluding from grazing?

Response

An EA was completed for the Desert Dace Exclosure Fence after the PMUD was issued for SMA which was posted on the internet for a public comment period. All interested publics for the SMA were sent a letter identifying the location of this document and the dates the WFO would be accepting comments. The area proposed for exclusion from ungulate grazing includes all of the designated desert dace critical habitats on public land. This area comprises approximately 1% of the overall allotment; therefore the amount of forage excluded from grazing is negligible.

Protest Point #14

We Protest BLM shifting livestock use to an earlier time period in the Hot Spring Pasture when soils in the desert dace lands are likely to be thawed and most easily damaged.

Response

Please refer to the Range Improvements section on page ten (10) of the SMA/PMUD. Item #3 identifies the construction of the desert dace exclosure fence that will eliminate livestock grazing from desert dace critical habitat.

The proposed action includes the exclusion of the desert dace habitats from livestock and wild horse/burro grazing via the protective fence. In addition, the thermal nature of these habitats preclude the stream banks from being frozen except within the extreme downstream reaches where thermal load is lost, which subsequently results in the habitats not being suitable for desert dace.

Protest Point #15

We Protest BLM's failure to adequately assess all impacts of its Decision on the Wilderness lands.

Response

Please refer to pages 108 through 114 of the SMA/EA for a detailed analysis of livestock grazing alternatives on Wilderness values. The proposed grazing system presented in the SMA/PMUD would change the season of use to fall and winter, thereby eliminating hot season grazing. BLM has employed and will continue to employ the Best Management Practices to analyze and implement multiple use management on public lands.

The Special Designations Map (Appendix 25) on page 197 of the EA illustrates the portions of the allotment that are Wilderness or Instant Study Area. The EA states on page 108 that since the proposed grazing system would reduce hot season grazing in the SMA, naturalness in the Black Rock Range Wilderness would be maintained or enhanced.

Protest Point #16

We Protest BLM's failure to protect native grasses during growing periods. What are the periods of growth here?

Response

The grazing system proposed in the SMA/PMUD is from October through April which is a cool dormant period of use. Livestock grazing prior to the critical growth period would allow existing grasses and forbs to increase vigor, productivity, cover and the establishment of new seedlings. The periods of plant growth ranges from March through August depending upon the species and a variety of factors such as

precipitation, elevation, soil type and aspect. Refer to Section 4.5 on pages 91 – 95 for a detailed analysis of vegetative impacts.

Protest Point #17

We Protest BLM's failure to adequately assess all impacts of its Decision on the ACECs. How will these decisions affect the important and relevant values of the ACECs?

Response

Currently the only Area of Critical Environmental Concern (ACEC) in the SMA is the 307 acre Desert Dace ACEC. The Soldier Meadows Activity Plan (SMAP) Environmental Assessment (June 23, 1998) analyzed impacts from livestock grazing. This area will be included within the proposed Desert Dace Enclosure Fence and therefore be excluded from livestock grazing. Since this area will be excluded from livestock grazing there will be no impacts.

Protest Point #18

We Protest BLM's failure to adequately measure and assess the health and stability of soils in this allotment, including erosion, rilling, gullyng, microbiotic crusts, and other factors. BLM fails to apply scientific methods to this critical component of the ecosystem.

Response

The BLM has used two methods to determine health and sustainability of the soil in SMA. In section 4.5 Vegetation Environmental Consequences, the proposed action and alternatives addressed how to maintain and improve mid and early seral conditions. Ecological condition does relate to rangeland health and sustainability of the soil. Ecological condition is the present state of vegetation of an ecological site in relation to the climax plant community for the site. Ecological condition is an expression of the relative degree to which the kinds, proportions, and amount of the plants in the plant resemble that of the climax plant community for the site. ESI is basically an ecological rating of the plant community. The rating will be between 0 and 100, depending on how closely the plant community resembles the climax plant community of the ecological site. The seral stages are 20 percent at potential natural community, 64 percent at late seral, 15 percent at mid seral and less than one percent at early seral. Plants are appropriate for the ecological sites and progress is being made to maintain and increase the natural plant community. Since the natural plant communities are diverse and composition is appropriate, soil health will be maintained and/or improved.

Bare ground, soil crusting, rock cover, compaction, plant hummocking, or soil movement may indicate a trend in ecological condition. These indicators are often misleading and most of them occur naturally. For example, plant hummocking is natural on silty soils that are subject to frost heaving. Ecological sites do not support complete plant cover. Bare ground, crusting, rock fragments on the soil surface, and localized soil movement may be completely normal. Even when induced by misuse, the soil surface trend indicators are not nearly as sensitive as those changes in plant composition and cover.

The second method is utilization which affects cover. Utilization level affects plants and plant residues (litter) on the soil surface most native plants remain vigorous and productive if at least 50 percent of the annual production, by weight, remains at the end of the grazing season. This plant litter provides for plant soil health by increasing organic matter. Plant litter is the source of food for microbes which make nutrient available for plant growth. Plant litter keeps the soil covered reducing raindrop impacts and slowing erosion. Plant litter cools the soil surface with shade to conserve soil moisture.

Biological soil crust has been addressed in the section 4.7. There may be some confusion on the terminology biological soil crusts; these include both macro and microscopic components. These biological soil crusts are composed of bacteria, fungi, algae, and bryophytes. Managing for healthy biological soil crust requires that grazing occur when crust are less vulnerable to shear and compressional forces. It is important to remove livestock before the end of the wet season to allow recovery of biological crusts.

Also Refer to response to protest point #5

Protest Point #19

We Protest BLM's failure to assess the impacts of livestock trailing, soil compaction and other {f}actors associated with increased livestock numbers on these lands.

Response

Livestock trailing and soil compaction were not directly addressed but impacts from livestock were. Please refer to section 4.7 Soil - Environmental Consequences.

Protest Point #20

We Protest BLM's failure to apply utilization standards on upland grasses and forbs that are necessary to protect and restore depleted upland vegetation.

Response

BLM has employed and will continue to employ the Best Management Practices to analyze and implement multiple use management of public lands. The fifty percent (50%) upland utilization standard, identified in the SMA/PMUD, was developed by a team of professionals representing the National Resource Conservation Service, U.S. Forest Service, BLM, University of Nevada-Reno, Agricultural Research Service and Range Consultants. This team determined that utilization levels of fifty percent (50%) during the spring and summer and up to sixty percent (60%) in the fall and winter months is allowable on perennial grasses and forbs. In any event the D/MASR determined that upland vegetative utilization objectives were achieved except for some upland sites in the Warm Springs Pasture near Rock and Clear Springs.

Protest Point #21

We Protest BLM's failure to adequately assess the impacts of its decision on weed infestation and spread in this arid landscape. What are the weed risks associated with all alternatives? What is the role {o}f livestock in proliferation of weeds? Will more livestock mean more weeds? A more rapid rate of weed spread?

Response

Refer to Section 4.6 on pages 96-97 of the SMA EA which analyzed the impacts from noxious weeds. Noxious weeds inventory are and will be an ongoing task at the WFO. There are four components of an effective noxious weed program; prevention, inventory, treatment and evaluation. The main vectors for weed spread are highways and waterways. Cattle appear to have little affect on the spread of weeds listed in Nevada as "Noxious".

Humboldt County and BLM system roads in the area were inventoried in 2002 and 2003. This inventory data is available within the Winnemucca Field Office (WFO) Geographic Information System (GIS) database. In June 2003, WFO partnered with Humboldt County to initiate noxious weed control

within the county road rights-of-way. Leonard Creek, Big Creek and Woodward roads, along with system roads within the area, were treated in June of 2003 with pesticides to slow the spread of the noxious weeds that are present.

The Winnemucca Field Office plans to partner with Washoe and Humboldt Counties in 2004 to initiate weed control on the county road (Hwy 200) from Gerlach to Summit Lake.

Protest Point #22

We Protest BLM's failure to assess a suitable range of alternatives. Most of the alternatives were variations on the Graze Lots More Cows theme.

Response

Refer to response to protest point #6

Protest Point #23

We Protest your failure to attach trampling standards and upland standards to ALL riparian areas. Why have you not taken action to protect them?

Response

Utilization objectives and the Standards for Rangeland Health apply to all riparian areas. If these habitats are impacted and livestock or wild horses/burros are determined to be the causal factor for non-attainment of objectives and SRH adjustments will occur to halt the impact and improve resource conditions.

Protest Point #24

We Protest your failure to conduct springsnail surveys, and to adequately identify and mitigate livestock impacts to known springsnail sites.

Response

Springsnail surveys have occurred within the SMA and actions to protect the known habitats in the form of reduced hot season use, fall back measures, and/or livestock exclusion were included in the PMUD.

Protest Point #25

We Protest your failure to analyze various alternative upland utilization levels.

Response

Refer to response to protest point #20

Protest Point #26

We Protest your failure to provide rest {f} or damaged lands.

Response

Refer to response to protest point #16

Protest Point #27

We Protest your reliance on "Technical Recommendations", which do not equate to alternatives under NEPA – yet you have treated them as such.

Response

There is no reference to "Technical Recommendations" in the SMA/PMUD. There is however a Technical Recommendation section in the SMA Final Allotment Evaluation (AE). This portion of the AE presents various grazing alternatives, range improvements, wild horse/burro management, wildlife management and allotment objectives. These components of multiple use management are considered in development of specific management actions for the allotment.

Protest Point #28

We Protest your failure to explain how livestock will be managed so as to minimize physical displacement and behavioral disturbance to native wildlife.

Response

The BLM did not address or explain how livestock will be managed so as to minimize physical displacement and behavioral disturbance to native wildlife because there are no data, concerns, or issues that we are aware of or that have been brought to our attention by the Nevada Department of Wildlife staff about this subject. In talking to Ed Partee, Wildlife Biologist, for the Nevada Department of Wildlife responsible for wildlife management on the Soldier Meadows Allotment he states "As far as he knows there is no problem or significant physical displacement and/or behavioral disturbance to wildlife on the Soldier Meadows Allotment." Mr. Partee further said a lot of factors influence wildlife yearlong such as: wildfires, habitat rehabilitation after fires, predators, parasites, disease, weather, drought (water sources drying up and reduction of forage and the reduction of nutrients in vegetation), wild horses (number and distribution), timing, and other factors including but not exclusively the cumulative factors. If you have any data showing otherwise please let us know all of the particulars.

Protest Point #29

We Protest your failure to assess how livestock grazing under all alternatives, including your NEW one will impact recreational uses and enjoyment of these lands.

Response

Please refer to section 4.11 on pages 106 – 107 of the SMA/EA. A range of alternatives were analyzed to determine the impacts on the human environment, which includes recreation. Through this analysis process a range of grazing impacts related to varying stocking rates, use areas and seasons of use were considered in selecting the livestock grazing alternative selected in the SMA/PMUD. Refer to response to protest point #10

Protest Point #30

We Protest your failure to assess and consider the many harmful impacts of this proposal and all alternatives. What does current ecological science show about the impacts of your decision?

Response

The BLM assessed environmental impacts in Chapter 4, Environmental Consequences, of the SMA EA.

Protest Point #31

We Protest your reliance on water quality data collected at only one point in time, and during a very limited period, and in very limited areas, and in periods when few if any livestock were present.

Response

Chemical water quality data for the Soldier Meadows Allotment (EA) were presented on pages 21-24 of the Environmental Assessment. The data was collected in 1999, 2001, and 2002 from a total of 16 separate sites. Stream temperature data is reported on pages 28-30 of the EA and was collected in 1995, 1996, 1999, 2001, and 2002 at a total of five different stations. The WFO does not feel that this represents a "limited period" or "limited areas".

Protest Point #32

We Protest your strong reliance on data from the old FAE (June 1998).

Response

The Final Allotment Re-evaluation (FAE) was not issued in 1998. The FAE and Determination/Management Action Selection Report (D/MASR) were issued on March 3, 2003. Monitoring data collected during the allotment Re-evaluation period from 1994 to 2000 was presented in these documents. These data determined if the current grazing management, as outlined in the 1994 FMUD was allowing for attainment of allotment specific objectives and the SRH. The FAE analyzed all of the monitoring data, and the D/MASR determined that the current grazing system was allowing for the attainment of some objectives/standards but was a significant factor in the non-attainment of other objectives/SRH within the SMA. The grazing system in the SMA/PMUD will result in progress toward attainment of the allotment objectives and SRH.

Protest Point #33

We Protest your failure to fully consider and assess the impacts of prolonged drought on the lands and waters, and how this increases the deficiency of your limited data.

Response

The severity of the drought and the time of grazing affect plant response and recovery. The management practices proposed meets plant biological requirements to produce strong, healthy vegetation. Periodic rest of plants during the critical period provides plants the opportunity to recovery, plants needs deep healthy roots to absorb nutrients and moisture from soil, refer to section 4.5 Vegetation – Environmental Consequences. The effects of the drought are reflected in the current conditions of the resources. Data indicating the condition of these resources were collected during the evaluation period and are included in the SMA Re-evaluation.

The SMA Re-evaluation utilized all available data that was collected during the Re-evaluation period from 1994-2000. Upon initiation of this Re-evaluation, BLM requested that any data collected by other agencies, organizations or individuals be submitted for inclusion in this process. The following types of data were utilized to determine attainment of allotment objectives and SRH; utilization, trend, actual use, climatological, stream survey, riparian functionality, water quality, wildlife habitat assessment, ecological site inventory and wild horse census/distribution.

Protest Point #34

We Protest your failure to set stocking rates necessary to protect lands during drought periods.

Response

Refer to response to protest point #33

Protest Point #35

We Protest your failure to address and mitigate structural alteration of shrubs by livestock.

Response

The utilization objectives on upland browse were not accomplished at Rock and Clear springs areas in the Warm Springs Use Area, utilization levels were exceeded in 1995, 1997, and 1999. These areas are used by livestock, horses and wildlife, in December 2000, 389 horses and 31 burros were removed from the Warm Spring Use Area. Impacts to vegetative resources should be further mitigated by the reduction of hot season grazing and a change to livestock grazing after the critical growth period.

Protest Point #36

We Protest your failure to address our concerns about the adequacy and validity of the limited PFC data that you present.

Response

These data were used in conjunction with stream survey information, ecological classification, and riparian utilization monitoring. Data indicated that riparian areas were being impacted by livestock and wild horses; therefore the action identified in the PMUD was developed to address these impacts and result in significant progress toward the attainment of the riparian objectives and SRH.

Protest Point #37

We Protest your failure to present information necessary to understand utilization data – was this data collected at the end of the grazing period?

Response

Please refer to page 19 of the Final Allotment Re-evaluation (FAE) which identifies the native species monitored and the utilization classes used to determine use levels. Also on pages 21 – 25 there is information related to the areas and time of year that monitoring was conducted within the allotment. Information related to monitoring methodologies can be found, but is not limited to the following publication; BLM 1996. Utilization Studies and Residual Measurements: Interagency Technical Reference. TR 1734-3. USDI, Bureau of Land Management – Service Center, Denver CO. 176p.

Protest Point #38

We Protest your failure to present use pattern mapping data.

Response

Refer to response to protest point #37

Protest Point #39

We Protest your failure to address concerns about wild horse that we raised.

Response

BLM is not aware of any concerns related to wild horses expressed by WWP. Information related to the management of wild horses/burros can be found on pages, 9–11, 36-38, 98-100 and 156-158 of the FAE. There is additional wild horse/burro information on pages 52-54, 102-104 and Appendix 15 of the SMA EA.

Protest Point #40

We Protest your failure to compare grazed vs. ungrazed areas, as a scientific basis for examining effects of livestock grazing here.

Response

To compare grazing to ungrazed areas on a scientific basis the soils and ecological site must be identical. Since no livestock grazing is authorized in the Stanley Camp Area it can be used as a reference area to similar soil and ecological sites. A fenced study enclosure exists in the Black Rock Use Area on a Hawsley soil type and the associated Sandy 5 to 8 inch ecological site. The purpose of this enclosure was to determine the vegetative response potential of this ecological site in a mid status with no livestock grazing. Native plant composition improved: Indian ricegrass, needleandthread and winterfat increased in composition within the enclosure. Since the implementation of the 1994 MUD, livestock grazing from January 1 to March 31 within the Black Rock Use Area resulted in improvements similar to the enclosure, this is based on observations.

Protest Point #41

We Protest the failure of Whitehorse Associates to rate stream class on Slumgullion, Cherry, Soldier Creeks and all springs and seeps.

Response

Whitehorse Associates did not "fail" by not assessing Slumgullion, Cherry and Soldier Creeks. Whitehorse Associates was contracted by the WFO to assess the watersheds that are designated as existing or potential LCT recovery streams. The three streams cited by the protestant are not in either of these categories.

Protest Point #42

We Protest your failure to respond to our concern that data did not justify rounding up wild horses in the past, and that you are rounding up horses to provide more forage for livestock.

Response

The 1993 Allotment Evaluation determined the total carrying capacity based upon recent vegetation utilization monitoring and actual use data. The 1994 Final Multiple Use Decision (FMUD) distributed forage proportionally between livestock, wild horses, and burros based upon monitoring data and ratios established in the Land Use Plan. The 1994 FMUD and EA# NV-020-00-27 established the Appropriate Management Level (AML) range for wild horses and burros in the SMA. Excess wild horses and burros will be removed periodically to manage the populations within the AML range. The AML range corresponds to the *BLM 2001 Wild Horse Strategy* which outlines a four year gather cycle plan to manage horses and burros Bureau-wide.

Protest Point #43

We Protest your failure to describe how and when AML was set.

Response

The original range survey and allotment adjudication process was completed on December 4, 1964. This range survey was a one-point-in-time analysis of the available forage on the allotments. After the completion of the range survey and in accordance with the Somona-Gerlach Management Framework Plan III Land Use Plan (LUP), future adjustments in carrying capacity for the allotments must be based on monitoring data. The 1993 Allotment Evaluation determined the total carrying capacity based upon vegetation utilization monitoring data and actual use. The 1994 Final Multiple Use Decision (FMUD)

distributed forage proportionally between livestock, wild horses and burros based upon the monitoring data and the ratios of ungulate use established in the LUP. The current Re-evaluation identified some areas of concern that could be corrected by changes in the livestock season of use, but determined that the current carrying capacity is still appropriate to allow for attainment and/or significant progress to be made toward attainment of allotment specific objectives and SRH.

Protest Point #44

We Protest your failure to take actions to mitigate harms (as ditches) to desert dace habitat that you have identified here.

Response

Please refer to page 10 of the SMA PMUD which identifies the proposed construction of approximately six miles of fence to protect Desert dace critical habitat. As stated previously, the desert dace habitats are being proposed to be excluded from livestock and wild horse and burro grazing. The protestant mentions impacts to desert dace via ditches, however no irrigation ditches have been altered or constructed in the dace habitats since the area was purchased under a Conservation Easement in the early 1990s.

Protest Point #45

We Protest your failure to assess and explain how its management of Conservation Easement lands affects attainment of the FRH.

Response

The Conservation Agreement does not specifically address the SRH; however the document provides that grazing activities would continue commensurate with the grazing privileges determined by the BLM in consultation with the landowner.

Protest Point #46

We Protest your failure to consider and assess the impacts – direct, indirect and cumulative – of Dude Ranch disturbance – for example, OHV use from guests.

Response

Please refer to pages 119-128 of the SMA/EA for specific information related to direct, indirect and cumulative impacts. Section 4.16.1.11 – Recreation, on pages 125-126 of the SMA/EA specifically addresses OHV impacts.

Protest Point #47

We Protest BLM's failure to adequately and accurately describe and assess separate horse and livestock impacts to land and water health in this allotment.

Response

It is virtually impossible to clearly distinguish between cattle and wild horse vegetative utilization without considerable monitoring. There is a dietary overlap between these two classes of ungulates compounded by the fact that they coexist throughout most of the allotment. BLM used all of the existing data to determine attainment or non-attainment of allotment objectives and SRH. These data have been collected and presented in the SMA Final Allotment Re-evaluation. The SMA Determination/MASR explained which objective(s) and standard(s) were not attained, the SMA EA analyzed the grazing alternatives and the preferred alternative was brought forward in the SMA PMUD.

Monitoring will be conducted on the allotment to ensure the management actions are leading to attainment of objectives/SRH. Specifically, monitoring will be conducted to determine what ungulates utilize what percentage of vegetation.

Protest Point #48

We Protest BLM's failure to collect adequate data and conduct adequate analyses of water quality impacts of livestock grazing on these lands.

Response

Please refer to protest point #31 and pages 21-24 and 28-30 of the SMA Environmental Assessment.

Protest Point #49

We Protest BLM's failure to attach mandatory terms and conditions to the permit that will firmly ensure compliance with the Fundamentals of Rangeland Health.

Response

Please refer to pages 11-12 of the SMA/PMUD for a list of the terms and conditions (T&C). The T&C'S must be in conformance with the Standards and Guidelines for the Sierra Front – Northwestern Great Basin Resource Advisory Council, approved by the Secretary of the Interior on February 12, 1997.

Protest Point #50

We Protest BLM's concocting this new alternative in private with the permittee, and failing to consult with Interested Public as this new alternative was developed, and failure to include reduced grazing and other alternatives as we have repeatedly requested and provided in comments.

Response

Refer to response to protest point #10

Protest Point #51

We Protest your failure to prepare a new EIS, and reliance on the long-outdated Sonoma-Gerlach MFP, which can not be used as a current basis {f}or administering livestock.

Response

The BLM took a "hard look" at the environmental effects to the human environment from the proposed action and alternatives as required by NEPA. The BLM identified relevant areas of environmental concern and has not identified any significant impacts requiring the preparation of an EIS. Refer to response to protest point #1

Protest Point #52

We also Protest your proposed violation of MFP protections for wildlife, soils, vegetation and other features.

Response

Refer to response to protest point #1

Protest Point #53

We Protest your using the extremely low "forage allocations" to wildlife. Why do they get only a tiny amount of forage, and the Estill cows get much more?

Response

The forage allocations were established by the Nevada Department of Wildlife as reasonable numbers in the 1982 Land Use Plan (LUP). The Nevada Department of Wildlife developed the reasonable numbers for the Soldier Meadows Allotment based upon the best available data at that time. The LUP is a public document written in conformance with NEPA. This document was posted for public comment and the interested publics had an opportunity to comment on the entire LUP document including the forage allocation process.

Protest Point #54

We Protest your failure to attach mandatory Terms and Conditions to the permit that are necessary to provide residual cover for sage grouse nesting, or grass necessary {f} or pygmy rabbit summer diets.

Response

The Bureau of Land Management did not "attach mandatory Terms and Conditions to the permit that are necessary to provide residual cover for sage-grouse nesting, or grass necessary for pygmy rabbit summer diets" because of the following reasons.

- With the upland habitat utilization at a maximum of 50% use we feel this is adequate. Most uplands are not grazed to the 50% level.
- The large ungulates on the Soldier Meadows Allotment graze mainly the grasses and forbs in the interspaces between the sagebrush and other shrubs and do not graze underneath the sagebrush and other shrubs because these grasses and forbs are not readily accessible. The sage-grouse nest underneath sagebrush and other shrub plants and not in the interspaces between the sagebrush and therefore have sufficient cover for nesting.
- The Bureau of Land Management to date has no knowledge of pygmy rabbits on the Soldier Meadows Allotment.
- The Bureau of Land Management has no data which indicates that a problem exists in uplands where a sagebrush community exists and where sage-grouse nest and other sage-steppe obligate species may occur.

Furthermore, the SMA PMUD is in conformance with the Interim Sage-Grouse Management Guidelines (Information Bulletin No. NV-2001-028). We are coordinating, communicating, and consulting with the Fish and Wildlife Service, Nevada Department of Wildlife, BLM-Sage-Grouse Habitat Conservation Strategy, Western Association of Fish and Wildlife Agencies (WAFWA), Nevada Governor's Sage-Grouse Conservation Strategy, and other Federal and state agencies on all sage-grouse plans being developed through a multidisciplinary process. Most plans are still being developed and the planning process is ongoing.

The sage-grouse use pattern throughout the Black Rock Population Management Unit (PMU) is very diffused over much of the landscape. Sage-grouse can be found in concentrations or specific use areas on a seasonal basis, but much of the PMU is not utilized by sage-grouse. The southern two thirds of the PMU has a population that is considered to be low to low-moderate with use areas in and around the Battle Creek basin, Butte Mt., the headwaters of Butte Creek, the headwaters of Paiute Creek, and around Big Mt. The northern one third of the PMU has low to moderate concentrations of sage-grouse in specific use areas, particularly on a seasonal basis. The key summer use areas are the top of Summit Lake Mt., Snow Creek basin, upper Mahogany Creek watershed, Dry Lake, and the headwaters of Crane and Center Creeks. Summer densities are considered to be low to low moderate with concentrations never supporting large numbers of birds (never observing more than 30-50 grouse in any location)

during the late summer months. During the winter months, large concentrations (200+ grouse) have been observed on a few occasions in association with heavy snow conditions. The wintering area is located on the east-west ridge between Crane and Center Creeks north of Dry Lake. The numbers do not correspond with summer densities and believed to be influenced by sage-grouse off an adjoining PMU. The most likely scenario is that birds off the eastern portion of the Sheldon PMU winter into this area when conditions push the grouse off areas such as Rock Springs Table. Subsequent helicopter lek surveys yielded no leks in and around this winter use area.

We have initiated monitoring to try to determine long term trends in sage-grouse habitat. Nevada Department of Wildlife and the Oregon State University are conducting research on sage-grouse in our district. Even though a specific concern/problem has been identified, Nevada Department of Wildlife personnel have stated that the long term recovery of sage-grouse populations will require approximately 25 years. Please refer to the D/MASR and the PMUD/FMUD for more detailed information regarding the allotment specific objectives for sage-grouse habitat.

Protest Point #55

We Protest your failure to allocate “forage” – as standing cover – necessary to provide successful sage grouse nesting, and habitat {f} or many other sage-steppe species.

Response

Refer to the response to Protest Point #54

Protest Point #56

We Protest your failure to collect, provide and assess baseline data on upland plant communities and special status species occurrence, habitats and populations.

Response

The Winnemucca Field Office manages the habitats occurring on the public lands in which it administers. Very little information is available on the habitat requirements of the listed species within SMA, therefore the BLM manages the habitats in accordance with the guidance found within the applicable recovery plans. The Nevada Department of Wildlife manages the species and is tasked with collecting population specific information.

Upland plant communities have been assessed by using ESI and available monitoring data; refer to section 4.5 Vegetation –Environmental Consequences

Protest Point #57

We Protest your failure to apply water quality standards to all surface waters in this allotment. Why are there no water quality standards for the numerous springs, springbrooks and many other waters in this allotment, including desert dace critical habitat, springsnail habitat, etc?

Response

The Bureau of Land Management does not possess the regulatory authority to “apply water quality standards”. This responsibility lies with the Nevada Division of Environmental Protection, Bureau of Water Quality Planning. Current water quality objectives for the SMA will be revised in the FMUD.

Protest Point #58

We Protest your failure to provide any significant rest of any kind {f} or these damaged lands.

Response

Refer to the response to Protest Point #1 & 16

Protest Point #59

We Protest your failure to describe how this meshes with older mid-90s decision.

Response

Please refer to the Terms and Conditions on page 12 of the SMA/PMUD which states: "The grazing authorization with the schedules of use outlined in this decision will be the only approved use and all other schedules, flexibilities and terms & conditions addressed in the 1994 SMA FMUD are suspended unless revised".

Protest Point #60

We Protest your failure to describe trespass in this allotment – trespass that we routinely observe on our visits to these lands.

Response

The federal range code prohibits the grazing of unauthorized livestock on public lands. It will continue to be the policy of the BLM to vigorously pursue unauthorized grazing use whenever it occurs. We encourage you to report any observed incidents of unauthorized livestock grazing to the WFO and we will initiate the appropriate actions in accordance with our regulations.

Protest Point #61

We Protest your failure to assess the impacts of livestock trampling during periods when soils are saturated.

Response

Soil compaction is caused by grazing when soils are wet, this is an over simplification. Soil texture affects compaction, sandy soil cannot be compacted. Soils with a bulk density of greater than 1.75 gram per cubic centimeter are difficult to compact. Surface rock fragments (gravel, cobbles and stones) reduce the ability of soil to be compacted. Soil compaction does not occur when soil are dry. Surface rock fragment contents in the Black Rock and Calico Ranges and the Warm Springs use area lessen compaction. The sandier areas in the Black Rock Use area would not be subject to compaction. No analysis has been conduct to determine soil surface texture related to compaction.

To mitigate the impact of soil compaction, plant litter (organic matter) would be left on the soil surface. Organic matter promotes aggregation of soil particles. This increases porosity and reduces bulk density (compaction). It also increases permeability and increases available soil moisture. Utilization level affects plants and plant residues (litter) on the soil surface most native plants remain vigorous and productive if at least 50 percent of the annual production, by weight, remains at the end of the grazing season. This plant litter provides for plant soil health by increasing organic matter. Plant litter is the source of food for microbes which make nutrient available for plant growth. Plant litter keeps the soil covered reducing raindrop impacts and slowing erosion. Plant litter cools the soil surface with shade to conserve soil moisture.

Protest Point #62

We Protest your failure to analyze harmful impacts of the decision to Lahontan Cutthroat trout streams and watersheds.

Response

An in-depth analysis, that can be found within the EA, BA, and supplement to the BA, did occur on effect of the proposed action on the LCT habitats, which resulted in formal Section 7 consultation with the USFWS. The USFWS concurred with BLM's analysis in the EA and BA and issued a non-jeopardy biological opinion in 2003 that included Terms and Conditions to minimize "take" of listed species as defined under the ESA (as amended).

Protest Point #63

We Protest your failure to assess the conditions of all existing range projects, and to include full Environmental analysis for proposed projects as part of this decisionmaking process.

Response

Please refer to term and condition #9 on page 12 of the SMA/PMUD which states; "The permittee is required to perform maintenance on range improvements as per their signed cooperative agreements and section 4 permits prior to livestock turnout". Refer to page 11 and Appendix 14 of the SMA/EA that address the proposed projects. Also the Desert Dace Fence EA was posted for public comment and the Idaho Canyon Pasture Fences will be upon completion of the NEPA documentation.

Protest Point #64

PD at 11 (2): It is impossible to understand what the use of the "and/or" means here. Please clarify exactly what requirements will be in place, and be specific as to exactly what standards will be placed on each stream. In fact, it is impossible to understand exactly what is meant parts by 2-4 on page 11 here.

Response

The inclusion of "and/or" allows for monitoring techniques to be utilized based on site specific conditions or streambank riparian community characteristics. For example, a stream that has no woody riparian species and no potential for woody riparian species would not be subject to the woody riparian utilization objectives. Moreover, this stream would likely be a sod banked system and subject to the stubble height criterion and bank alteration objectives.

Protest Point #65

We Protest your failure to specify exact mandatory measures that will be taken if grazing standards are not met.

Response

To address resource issues it is important to allow for maximum flexibility when applying changes in livestock management over time. A reduction in hot season use may correct a riparian related resource problem, but a problem in the uplands may require a period of rest or reduced grazing during the critical growth period for the species present. One size does not fit all; however non-attainment of objectives and Standards will be addressed through site specific changes in livestock management to insure that progression is made toward the attainment of allotment objectives and SRH prior to authorizing livestock grazing the following year.

Protest Point #66

We Protest your failure to attach 6" stubble height triggers and 5% or less bank trampling standards to all riparian areas in this allotment.

Response

An extensive body of peer reviewed scientific literature addresses the application of stubble height criteria and to a smaller degree bank alteration. One size does not fit all and site specific application of stubble height criteria and stream bank alteration were recommended in the PMUD. For example, riparian areas dominated by woody vegetation are not appropriate for techniques the protestant recommends. Furthermore, stubble heights and stream bank alteration levels were determined based on literature, site specific conditions, stream morphology, functionality, season of use, and aquatic community composition; all of which allows for the best use of science to improve resource conditions.

Protest Point #67

We Protest the flexibility in turnout dates. This leaves room for the permittee to turn livestock out during hot periods.

Response

The PMUD shortens hot season livestock grazing (80 percent of the use is outside of the hot season). The term and condition related to livestock flexibility in the final decision will be as follows: Livestock turnout and removal dates may be modified by up to two weeks. A modified turnout into a pasture will be dependent upon range readiness factors such as state of plant growth, soil moisture and condition of meadows and weather conditions, such as cold temperatures or snow accumulation. BLM will allow up to two weeks for livestock to move between use areas. This flexibility is necessary especially when moving cows with young calves between the South and Warm Springs Use Areas in the spring. This flexibility will facilitate livestock movement between use areas without any detrimental effects on uplands, streambank and wetland riparian habitats or other range resources. Any changes to the season of use (i.e. turn out or off dates) would have to be coordinated and authorized by the BLM in advance.

Protest Point #68

We Protest your failure to provide a detailed description of what is meant by "BLM will monitor the allotment" PD at 12. What monitoring will you do? What is the schedule and location of all monitoring? Will you monitor water quality, interference with recreational activities, interference with wintering sage grouse or bighorn sheep – what will you do?

Response

The techniques used to collect monitoring data can be found in the Interagency Technical Reference (1996). The techniques are widely accepted and utilized by the US Department of the Interior and the US Department of Agriculture. Monitoring techniques developed by the ID BLM State Office will be utilized to determine Streambank Alteration levels.

BLM 1996. Utilization Studies and Residual Measurements: Interagency Technical Reference. TR 1734-3. USDI, Bureau of Land Management – Service Center, Denver CO. 176p.

Monitoring will occur annually at Key Management Areas selected by the BLM and permittee.

Monitoring will vary within each use area but will focus on vegetative utilization, big game habitat studies, sage-grouse studies, stream habitat evaluations, and techniques for evaluating streambank riparian conditions.

Protest Point #69

We Protest your evaluating data every 2 years for the next decade to see if the permittee can get a bonanza of phased-in livestock use. This will create an endless nightmare of hounding by permittee consultants and others, until BLM caves in, and increases AUMs – to the detriment of all public lands values.

Response

BLM will collect monitoring data to determine if the allotment objectives and standards are achieved. Please refer to term and condition #5 of the SMA/PMUD. BLM will monitor the allotment to determine if the 4,481 Not Scheduled AUMs would be activated in 25% increments, or approximately 1,120 AUMs, 2 years after implementing the grazing system. These AUMs would be phased in if the criteria outlined in the allotment terms and conditions are attained for two consecutive grazing seasons. However, if these criteria are not achieved, livestock numbers and AUMs would remain at current levels. Data would be evaluated every two years until year 2014 to determine if the Not Scheduled AUMs would be phased in.

Protest Point #70

Again, BLM lacks current and sufficient data to base this decision on. You have never analyzed the impacts of the Proposed Decision, including its direct, indirect and cumulative impacts. It will result in destruction of significant public lands values. You need to honestly assess the condition of these lands, and place stringent livestock use conditions on them until you do so.

Response

Please refer to the SMA/EA, SMA/PMUD and the above responses to protest points. BLM has employed and will continue to employ the Best Management Practices to analyze and implement multiple use management on public lands.

**ESTILL RANCHES LLC PROTEST POINTS SUBMITTED ON OCTOBER 30,
2003:**

Protest Point #71

BLM lacks jurisdiction to issue a Livestock Decision. Estill has appeals pending before the Office of Hearings and Appeals relating to the same subject matter. BLM should halt any further action relating to livestock grazing until such appeals are adjudicated. To the extent that BLM is intent on illegally ignoring the pending appeals, Estill still protests the Livestock Decision on the following additional points, all of which are subject to Protest Point #1, above.

Response

On August 19, 2002, Administrative Law Judge William E. Hammett issued a Decision that AFFIRMED the June 11, 2002 Decision issued by BLM's Winnemucca Field Office.

In the August 19, 2002, Decision, Administrative Law Judge William E. Hammett states; "Under the circumstances presented here, I conclude that the July 24, 2001, Biological Assessment is not a final grazing decision ..." He continues to state; "It was entirely appropriate for BLM to refuse approving for Appellant a season of use different from that which had already been established ..."

Based upon the aforementioned ruling BLM maintains jurisdictional authority to issue the SMA/PMUD.

Protest Point #72

Estill incorporates by reference its Statement of Reasons in its appeal, dated February 22, 2002, as such portions of that appealed Decision are carried forth in the present Livestock Decision.

Response

BLM incorporates by reference their responses to Estill's Statement of Reasons of their appeal as it relates to the SMA/PMUD.

Protest Point #73

Estill protests Objective A.1.a.

The restriction of utilization to result in a 6-inch height on Coleman Creek is unfounded in the data and science, and is an unnecessary and unreasonable restriction to attain the long-term objective for the streams.

Response

Background

Colman Creek, which is being proposed to have a 6" stubble height short term objective, is considered a salmonid fishery by NDOW, the USFWS, and the BLM. Colman Creek is cited in the NDOW Species Management Plan for Lahontan Cutthroat Trout (1999) and also in the US Fish and Wildlife Service Lahontan Cutthroat Trout Recovery Plan (1995) as a recovery stream for Lahontan cutthroat trout within the Northwestern Lahontan Basin Distinct Population Segment (DPS). Lahontan cutthroat trout (*Onchorhynchus clarki henshawi*, LCT) were listed as endangered in 1970 (Federal Register Vol. 35, p.13520) and subsequently reclassified as threatened in 1975 (Federal Register Vol. 40, p.29864). Colman Creek is currently inhabited by LCT, which were introduced in 1999 from Washburn Creek (Montana Mtn. Range). Overall, LCT populations within the DPS are declining due to drought and land use; therefore it is increasingly important to improve and/or maintain occupied recovery streams to insure LCT's long term population viability.

The BLM is required to ensure protection and enhancement of aquatic habitat and fishery values (BLM Manual - Aquatic Resource Management 6720.23, 6720.33). In addition, the BLM is required to ensure that activities affecting special status species habitats are consistent with recovery goals and objectives (BLM Manual - Special Status Species Management 6840.06). The BLM feels that stubble height objectives would allow for the protection and enhancement of these habitats.

The BLM is also required to implement the mandatory terms and conditions of 2003 Biological Opinion for the SMA (USFWS 2003), which included stubble height objectives for Colman Creek. In accordance with BLM manual guidance, the Bureau should also implement conservation recommendations if they are consistent with BLM land use planning and policy and are technically and economically feasible objectives (BLM Manual - Special Status Species Management 6840.06).

The Rangeland Health Standards and Guidelines (S & Gs) for the Sierra Front-Northwestern Great Basin Area were approved in 1997. The S & Gs provide guidance by which the public land is to be managed. The S & Gs vary by geographic area; however principles developed within one area may be

applicable for use within others. The S & Gs for the Great Basin specifically address the management of riparian and stream habitats as follows:

“Management practices within allotments will maintain or promote stream channel morphology, appropriate soil organisms; adequate amounts of ground cover to support infiltration, maintain soil moisture storage, and stabilize soils; and the hydrologic cycle, nutrient cycle and energy flow”

“Departure from traditional grazing management practices may be authorized by BLM to achieve Standards on a case by case experimental basis for rangeland restoration and rehabilitation”

“The best available science and technology will be utilized in monitoring and assessing the condition of rangelands from the pasture to the BLM District level”

The Northwestern Nevada S & Gs, which were approved in 1999 and apply to the area of Nevada that borders SMA to the west, recommend that more restrictive utilization measures should be used in fall use pastures and sensitive stream habitats, such as those containing fragile fisheries or easily eroded streambanks. They further state that in allotments not meeting or making significant progress toward the Standards should have several guidelines applied, one of which is that a “4-6 inch stubble height will remain at the end of the growing season in most riparian areas”.

Rationale for the Short Term Objective of a 6” Stubble Height

1) Riparian Functionality and Channel Stability

Colman Creek is a perennial stream which is over 10 miles in length. Colman Creek was assessed for Riparian Functionality in 1998. The lower portion of the watershed was assessed as Properly Functioning Condition; however the headwater reaches were assessed to be Functional At-Risk and Non-Functional. The lower portion of the watershed is deeply incised and sensitive to disturbance from livestock grazing (Photograph 1). The Rosgen (1996) channel types for this system range from A3 and B3 types in the mid to upper watershed and F/G6 types in the lower watershed.

Photograph 1. Lower Colman Creek (note the arrow illustrating a 6-7' willow within the channel)



Rosgen (1996) has developed guidance for interpreting grazing impacts to streams based on channel type and the streams inherent characteristics. Table 1 illustrates these interpretations based on the characteristics of channel types that dominate the Colman Creek drainage.

Table 1. Rosgen (1996) channel characteristics and livestock management interpretations for Colman Creek

Stream Type	Sensitivity to Disturbance ^a	Recovery Potential ^b	Sediment Supply ^c	Streambank Erosion Potential	Vegetation Controlling Influence ^d
A3	VERY HIGH	VERY POOR	VERY HIGH	VERY HIGH	NEGLIGIBLE
B3	LOW	EXCELLENT	LOW	LOW	MODERATE
F6	VERY HIGH	FAIR	HIGH	VERY HIGH	MODERATE
G6	VERY HIGH	POOR	HIGH	HIGH	HIGH

Based on the table above and photograph 2 (below), it is clear that Colman Creek is sensitive to impacts resulting from ungulate grazing. Rosgen (1996) recommends that to properly design grazing strategies, it is necessary to:

1. understand the sensitivity of the stream type

^a Includes increase in streamflow magnitude and timing and/or sediment increases.

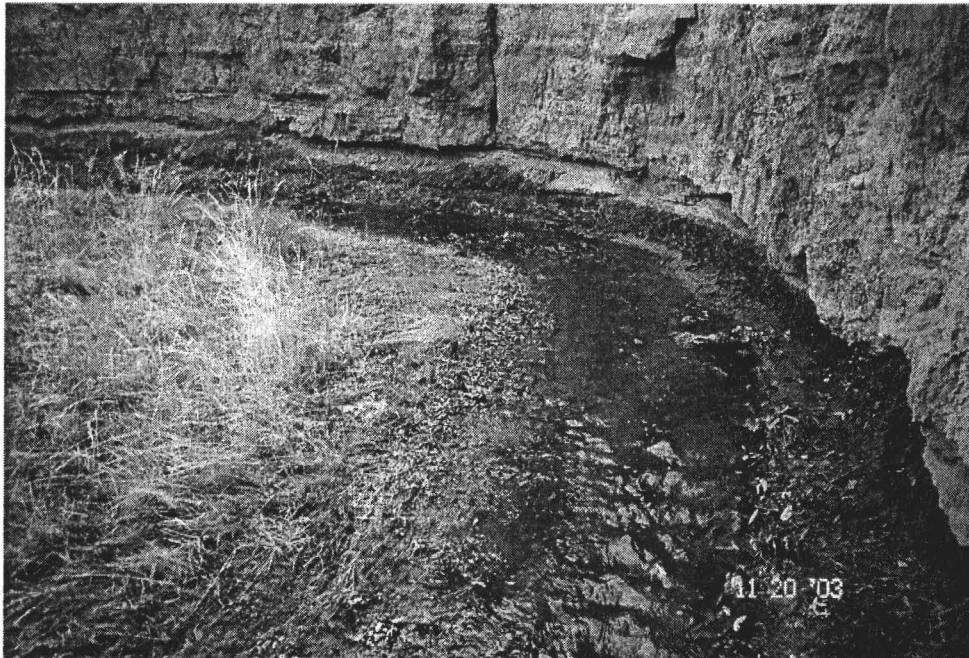
^b Assumes natural recovery once the cause of instability is corrected

^c Includes suspended and bedload from channel derived sources and/or from adjacent slopes.

^d Vegetation that controls the width-depth stability ratio.

2. understand what riparian species are necessary to maintain the channel stability
3. prescribe grazing that “best favors” the species that contribute to the channel stability
4. develop acceptable utilization limits for browse and other riparian species
5. determine allowable levels of streambank alteration
6. plan water systems to help distribute animals
7. design restoration efforts simultaneously with grazing plans

Photograph 2. Colman Creek (note the high levels of sediment being captured by the stream margin vegetation)



In developing the subject allotment specific objective of a 6” stubble height, the aforementioned factors were considered. Colman Creek is in a degraded state and progression toward improved channel stability, riparian condition, and aquatic habitat condition will occur over time as streambanks rebuild, the incised channel walls recede, and the stream develops a wide floodplain with deep rooted vegetation. A key element for the restoration process is the entrapment and retention of sediment at or below bank top. Sediment deposition in a degraded stream system is an essential building material for the natural recovery of channel form (Clary et al. 1996). Streambank vegetation has been shown to increase channel roughness. Increased channel roughness, in turn, dissipates energy and promotes sediment deposition (Heitschmidt 1998). Total sediment retention appears to be at or near maximum for flexible stubble heights up to 6” during the depositional phase (when sediment is being deposited) of the hydrograph, although longer length vegetation appears to retain a larger portion of the sediment deposited during the flushing phase (when sediments are being flushed through the system) of the hydrograph (Clary et al. 1996). Therefore a short stubble height may capture as much sediment as a longer stubble height; however longer stubble heights continue to retain sediment after the shorter stubble heights have become over topped by sediment during multiple flushing events.

In addition to the physical attributes of stubble height, palatability of vegetation species also changes as stubble height is lowered. Because of their preferred eating habits, cattle prefer vegetation greater than 3” high. As stubble heights are grazed below 3” for the most palatable species, vegetation preference will change, forcing cattle onto less desirable areas or eating less desirable species, such as changing from grass to sedges to shrubs (Hall and Bryant 1995). Other

researchers found a shift in preference from herbaceous vegetation to shrubs below a stubble height of 4-6", or about 45% utilization. Stubble heights below 2-4", or about 60% utilization, induced excessive browsing of willows (Mosley et al. 1997). This in turn can influence the vigor and distribution of herbaceous and woody riparian vegetation, which in turn can directly affect channel stability. Therefore, stubble height not only has a direct correlation to physical channel stabilizing attributes, but reflects a point at which livestock may change from consuming grass and grass-like herbaceous species to woody riparian species. Considering the improved stability deep rooted woody riparian species provide, a livestock shift to these species would not be preferable on Colman Creek. Hall and Bryant (1995) noted that this switch may not be preferable in relation to channel maintenance features, water quality and/or fisheries habitat; which is true related to the long term objectives for Colman Creek.

Improved channel stability within Colman Creek would result from the retention of a 6" stubble height at the end of the grazing season. The 6" stubble height would improve sediment capture, stabilize streambanks, improve the formation of undercut banks and stream margin habitats, reduce the formation of anchor ice, provide thermal refugia to the stream, buffer spring runoff events, and would likely preclude livestock use on early age class woody riparian species.

2) Plant Vigor

The height of grassy and herbaceous vegetation on a site has been termed stubble height (Heitschmidt et al. 1998). Stubble height is a surrogate for plant vigor and streambank and riparian protection/rebuilding capabilities. However, it is not only a way to measure utilization by grazing, but it also has value in evaluating how well vegetation and grazing management meets channel stability goals and objectives. Several researchers have advocated specific residual stubble heights following grazing to maintain plant vigor and protect or improve stream banks (Heitschmidt et al. 1998). Research also offers support for measuring stubble height to monitor grazing effects on plant vigor (Heitschmidt et al. 1998, Skinner 1998).

Clary et al. (1989) recommended that a minimum herbage stubble height be present on all streamside areas at the end of the growing season, or at the end of the grazing season if grazing occurs after frost in the fall, to maintain plant vigor and health. They suggest residual stubble or regrowth should be at least 4 to 6" to provide sufficient herbaceous forage biomass to meet the requirements of plant vigor maintenance, bank protection and sediment entrapment. The stubble height criterion should be adhered to regardless of the grazing system used (Clary et al. 1989).

3) Salmonid Habitats

Clary (1999) found that most measurements of streamside variables moved closer to those beneficial for salmonid fisheries when pastures were grazed to a 10 cm (4") graminoid stubble height, while virtually all measurements improved when pastures were grazed to 14 cm (6") stubble height. The Rocky Mountain Region, Watershed Conservation Handbook, (September 1996) advocates removal of livestock from riparian areas when average stubble height on key species reach 4" in early-use pastures and 6" or more in late-use pastures. Hockett and Roscoe (1993) advocate greenline end-of-season stubble heights of at least 20 cm (8") for riverine systems of high sensitivity levels. Based the recommendations and guidance noted in Hockett and Roscoe (1993), Colman Creek would be considered as having a high sensitivity level based on its status as a salmonid fishery and its Rosgen channel types.

Platts (1991) suggests that trees, brush, grasses and forbs each play an important role in building and maintaining productive stream ecosystems. Grasses and grass-like plants, especially sod-forming types, help build and bind bank materials and reduce erosion. As well-sodded banks erode, they create the undercuts important as hiding cover for fish. Even though he does not suggest specific stubble heights, he does emphasize the importance of streamside vegetation for cover. This suggests that 1" or even 6" stubble heights may not be enough to provide needed protection, but longer stubble heights that bend over the bank may be needed for cover and protection as well as to provide thermal moderation in smaller streams, such as Colman Creek.

Managing Colman Creek for salmonid habitat, specifically for LCT, requires riparian conditions to be at Properly Functioning Condition (PFC) and progressing toward a late seral riparian community (NDOW 1999). In 1999, the Winnemucca Field Office contracted Whitehorse Associates (Jensen 1999) to conduct ecological classifications of numerous streams located within the district. The streams were classified based on numerous factors, which included geology, land form, ecoregion, riparian condition, and stream survey data. As a result of this effort, Colman Creek was classified as being in "fair" condition for riparian and also stream habitats based on the stream's potential. Therefore, the proposed long term objective of improving fishery habitats to good to excellent condition is attainable. Recognizing the site specific conditions that exist on Colman Creek, the short term objectives should allow for attainment of this long term objective.

Management at the watershed scale is increasingly important, since salmonids require various habitat components to complete their life cycle. One important habitat component for salmonids is the headwaters of a watershed. The headwaters serve as spawning and rearing habitats and should exhibit relatively silt-free substrate, undercut and well vegetated stream banks. The headwaters of Colman Creek do not exhibit these characteristics and have been impacted by unauthorized livestock and wild horses grazing. Improvements to this portion of the watershed were identified and stubble height was a major component in the attainment of PFC and improved salmonid habitats. Stubble height, streambank alteration, and woody riparian utilization objectives were all specifically identified in Appendix A "Recommended Livestock Grazing Guidelines (For Use Within Range of Lahontan Cutthroat Trout)" Interagency Memorandum of Agreement (1996) as condition thresholds that should be monitored on LCT recovery streams.

4) Summary: 6" Stubble Height is Reasonable and Technically Feasible

The summaries below specifically address how the proposed stubble height objective on Colman Creek is reasonable and technically feasible.

Technically Feasible

Stubble height appears to be an appropriate parameter to monitor potential effects on plant vigor, bank stability and regeneration, and movement of livestock to other plant types and species. Maintaining a minimum stubble height helps preserve forage plant vigor, retain sufficient forage to reduce cattle browsing of willows, trap and stabilize sediments, indirectly limit streambank trampling, maintain cattle gains and provide an easily communicated management criterion (Clary and Leininger 2000).

It appears that stubble heights less than 2-3" is an indicator of detrimental effects to plant vigor, movement to other plant species, bank stability and bank building. Maintenance of plant vigor, which includes development of root systems, is extremely important for bank stability. When stubble heights below 6" are realized, there is a prominent change in livestock forage palatability and preference. This change is magnified when stubble heights of < 2" are attained. Clary and Leininger (2000) recommend a 4" stubble height be a minimum starting point and that monitoring should be conducted to determine if adjustments are needed. Adjustments to the 4" recommendation occurred as result of site specific monitoring on Colman Creek, which resulted in a proposed 6" stubble height.

Bank sediment holding capacity is diminished below 2" and maximized during the sediment deposition phase of the hydrograph at 6". Therefore, 2" appears to be an absolute minimum allowable stubble height under any circumstances, no matter what the channel type or overall riparian condition. For most applications, 4-6" residual appears to be all that is necessary to maintain bank-building process and reduce livestock migration to less palatable species and also woody riparian species. As a result, a range in stubble heights between 2" and 6" appears to be appropriate to maintain bank stability, plant vigor and riparian plant integrity, with a medium range of 4-6" being appropriate for most circumstances. Therefore, the use of a 6" stubble height objective is recognized as an appropriate tool for improved riparian management, whereas a 4" stubble height is appropriate for maintenance of riparian areas.

In situations where aspects such as fish cover, water quality protection and thermal moderation are important, stubble heights of ≥ 6 inches are applicable. This may be especially important along non-forest streams where overhead shrub and tree cover/canopy may be lacking and the water surface is exposed to solar radiation, similar to that found on upper Colman Creek. Hockett and Roscoe (1993) appeared to recognize this and advocated an end-of-season stubble height of at least 8" on sensitive streams.

Reasonable

Ungrazed stubble heights on the Soldier Meadows Allotment are likely to exceed 11" in height by the end of the growing season. This statement is based on monitoring data collected in 2003 from allotments bordering SMA and also from data collected on riparian areas within SMA, which found ungrazed stubble heights to be between 11-13" on average. In conclusion, the 6" stubble height objective is reasonable given the level of riparian herbaceous growth noted in adjacent allotments and also on other riparian areas within the SMA.

Peer Reviewed Scientific Literature Supporting the Use of a 6" Stubble Height

Hall and Bryant (1995)

This article is a US Forest Service Technical Report and discusses herbaceous stubble height as a warning of impending livestock grazing damage to riparian areas. In general the authors discuss stubble heights from 0.75 to 3.0 inches; however the authors note that "[s]ite-specific objectives and conditions may dictate taller stubble heights and other standards".

Colman Creek, as stated earlier, is deeply incised and highly sensitive to livestock grazing. Hall and Bryant (1995) recommend a ≤ 3 inch stubble height to **prevent** unacceptable impacts associated with heavy use or trampling, or both, within a streambank riparian zone. BLM has documented that livestock

become trapped within the channel and as a result heavy trampling and channel damage is incurred, in addition to heavy riparian utilization.

Skinner (1998)

This article discusses the use of stubble height and its effect on riparian functions.

Skinner reinforces the utility of stubble versus more traditional measures of utilization based on plant vigor and the growth curves for riparian areas. In fact, the author states that the traditional view of "take half, leave half" may not be applicable to riparian areas based on regrowth potential and plant vigor maintenance. The Sonoma-Gerlach Management Framework Plan (1982) outlined 30% utilization guidelines for fishery streams, which included Colman Creek. The Forest Service Handbook 2209.21 (1993) describes average utilization levels of riparian graminoids of 24-32% equated to a 6" stubble height. Therefore the 6" stubble height objective would likely encompass the utilization objective identified in the MFP.

Leonard et al. (1997)

This document is a BLM Technical Reference Handbook which provides grazing management guidelines for riparian areas. This document supports the use of stubble height as an indicator of progression toward long term objectives. The long term objective for Colman Creek relevant to fishery resources is to "[i]mprove and/or maintain fisheries habitat in good to excellent condition based on stream potential". As stated earlier, the proposed short term objectives, which include stubble height, are tied to improving riparian and fishery habitat condition toward this long term objective. Ecological Classification conducted on the riparian and fishery habitats within Colman Creek noted fair conditions based on the system's potential.

USDI-BLM (1999)

This is a photographic guide to stubble height developed by Idaho BLM. This document supports the use of a 4-6" stubble height to maintain or improve riparian communities, capture sediment, and protect streambanks.

Turner and Clary (2001)

This article discusses the use of stubble height as a short term objective and focuses on the development of a sequential sampling protocol for monitoring using stubble height criteria. The authors state that the use of stubble height "...after grazing is most appropriately used as a short-term guide applied to long-term ecological objectives".

This article simply reinforces the utility of stubble height objectives as indicators of progression toward long term goals for a stream system, such as improving the degraded headwaters of Colman Creek toward PFC and good to excellent fishery habitat.

Clary and Webster (1990a & 1990b)

These articles were co-authored by Warren Clary, who was the Forest Service research scientist and is a respected authority on riparian ecosystem restoration and management. Clary was a research project leader for riparian, watershed, and fisheries research with the Forest Service's Rocky Mountain Research Station lab in Boise, Idaho and has been actively involved in range issues since 1960. The research program led by Clary produced many significant technical publications concerning some of the most important and urgent natural resource challenges in the West, including livestock grazing in riparian ecosystems.

In 1988, Clary teamed up with Sawtooth National Forest Range Staff Officer Bert Webster to write the riparian grazing guidelines for the Intermountain Region of the Forest Service, which are the subject citations shown above. This publication was based on Clary's expertise and vast experience related to livestock grazing and riparian management. The authors state that the grazing recommendations discussed are a product of research and management experience, current literature, and discussions with concerned individuals.

The publication states "[t]he residual stubble/regrowth should average at least 4-6 inches in height to provide sufficient herbaceous forage biomass to meet the requirements of plant vigor maintenance, streambank protection, and sediment entrapment in most meadow and meadowlike situations". The publication further states that the recommendations discussed were developed to aid in reducing nonpoint pollution in western streams and also as appropriate State Best Management Practices. The authors also note that if the riparian area has become degraded it may need complete rest from livestock grazing and that the period of rest may be extended if the stream is incised and confined.

This article supports the use of the 6" stubble height and proposes that rest may be required given the degraded, incised, and confined nature of the Colman Creek.

Kaufmann et al. (1983)

This article discusses the impacts of livestock on streambanks in northeastern Oregon. This article illustrates that greater streambank erosion rates and disturbance levels often exist along grazed versus ungrazed streams. This accelerated rate of erosion and increased disturbance can be mitigated via the use of stubble height, based on the ability of residual vegetation to capture and retain sediment during runoff periods.

As stated earlier, the proposed 6" stubble height more effectively captures and retains sediment compared to shorter stubble heights.

Myers (1989a & 1989b)

This article, which is also discussed in Leonard et al. (1997), is an analysis of 34 grazing systems and it qualifies "successful" and "unsuccessful" grazing systems based on season of use, duration of use, and intensity of livestock grazing. He noted that "successful" livestock grazing systems were those that allowed riparian areas to be in good to excellent condition or an upward trend if in fair condition. The results highlighted the need to maintain adequate vegetative vigor, which was demonstrated above to be inherently tied to stubble heights of 4-6" (Clary et al. 1989).

These articles support the use of stubble height and indicate that 75% of successful riparian grazing strategies were tied to the maintenance of plant vigor and leaving residual streambank cover after the growing season. The season of use on Colman Creek is during the fall and winter, which will eliminate the opportunity for vegetative regrowth to occur once livestock are removed. This further strengthens the need for the proposed 6" stubble height at the end of the grazing season/growing period on Colman Creek to allow for improvement toward PFC and good to excellent fishery habitat conditions.

Clary and Webster (1989)

This is a US Forest Service General Technical Report (INT-263) which was intended to be used as guidance for implementing and developing riparian grazing procedures. The authors state that "fall use of streamside vegetation should not exceed about 30%, and the herbaceous stubble remaining at the end of the growing period should meet the 4- to 6-inch criterion". The authors also recommend that

“[s]pecial situations such as critical fisheries habitats or easily eroded streambanks may require stubble heights greater than 6 inches” and that “the area may need permanent protection, or at a minimum, grazing may need to be removed for long periods”.

Clary (1999)

This article found that most measurements of streamside variables moved closer to those beneficial for salmonid fisheries when pastures were grazed to a 10 cm (4”) graminoid stubble height, while virtually all measurements improved when pastures were grazed to 14 cm (6”) stubble height.

The need to improve the conditions of Colman Creek to maintain the population of LCT is increasingly important given the declining condition of LCT within this DPS. Therefore, measures such as the 6” stubble height were proposed to insure the improvement of the Colman Creek given its stream channel characteristics and riparian condition.

The Rocky Mountain Region, Watershed Conservation Handbook (1996)

This article advocates the removal of livestock from riparian areas when average stubble height on key species reach 4” in early-use pastures and 6” or more in late-use pastures.

Colman Creek is within a late use pasture since it is being proposed to be grazed by livestock from fall through winter; therefore this article supports the proposed 6” stubble height criterion.

Clary and Leininger (2000)

This article reviews the utility of stubble height as a riparian management tool and provides some specific guidance. The authors state that a 4” stubble height is a good starting point; however the authors further note that site specific conditions, such as streambanks highly vulnerable to trampling, may require a 6-8” stubble height.

This article supports the use of a 6” stubble height on sensitive streambanks, such as those found on Colman Creek.

Platts and Nelson (1985)

This article determined that disproportionate use of the uplands versus the riparian areas occurred throughout all of the analyzed grazing systems. The authors note that special management should be explored on western streams, which “allows for a protective mat to be maintained on the streambank during critical runoff periods”.

This article indirectly supports the maintenance of a level of herbaceous vegetation on streambanks to buffer runoff events. The ability of various stubble heights to fulfill this requirement was illustrated earlier in this document. Research indicates the short stubble heights capture more sediment; however long stubble heights retain higher levels of sediment during the runoff phase.

Clary et. al (1996)

This article found that short stubble heights collect sediment more effectively than taller stubble heights, but the deposition may be lost if it is not stabilized by growing or long plant material. These findings are also supported by Rumsey (1996) and Gray et al. (1997).

Protest Point #74

Estill protests Objective A.1.b.

The restriction of utilization to result in a 4-inch and/or 6-inch stubble height on Donnelly Creek is unfounded in the data and science, and is an unnecessary and unreasonable restriction to attain the long-term objective for the streams.

Response

Please reference the response for Protest Point #73. The lower portions of Donnelly Creek are primarily dominated by woody vegetation; therefore the stubble height objectives would not apply based on the site characteristics. The wording of the objectives in the PMUD allows for the appropriate monitoring techniques to be employed based on site specific conditions. The 2003 USFWS Biological Opinion for the SMA identified Donnelly Creek within the Conservation Recommendations as a system which should have a stubble height criteria applied. As stated earlier, BLM manual guidance states that the Bureau should also implement conservation recommendations if they are consistent with BLM land use planning and policy and are technically and economically feasible objectives (BLM Manual – Special Status Species Management 6840.06).

Protest Point #75

Estill protests Objective A.1.c.

The restriction of utilization to 30% on willow species greater than 5 feet in height, 20% on willows less than 5 feet in height, and 10 percent on any height of aspen species is unfounded in the data and science, and is an unnecessary and unreasonable restriction to attain the long-term objective for the streams.

Response

Please reference the response for Protest Point #73 & #74. The lower portions of Donnelly Creek are primarily dominated by woody vegetation; therefore the stubble height objectives would not apply based on the site characteristics. The wording of the objectives in the PMUD allows for the appropriate monitoring techniques to be employed based on site specific conditions. As stated earlier, the Bureau is required to implement the Terms and Conditions of the Biological Opinion. This objective was identified within the 2003 Biological Opinion as a Term and Condition.

Protest Point #76

Estill protests Objective A.1.d.

The restriction of “streambank alteration” to 10% is not defined by the Livestock Decision and is otherwise unfounded in the science and data, and is not a component of LCT habitat condition ratings. The restriction is further unreasonable as it pertains to “potential habitat” for LCT, because it amounts to restricting livestock use from areas which are not occupied by the species, and therefore affects livestock grazing on areas in which no harm could come to the threatened species. Finally, it is an unnecessary and unreasonable restriction to attain the long-term objective for the streams.

Response

Please reference the response for Protest Point #73 & #74. The lower portions of Donnelly Creek are primarily dominated by dense woody vegetation; therefore the streambank alteration objective would likely not apply based on the site characteristics. The wording of the objectives in the PMUD allows for the appropriate monitoring techniques to be employed based on site specific conditions. As stated earlier, the Bureau is required to implement the Terms and Conditions of the Biological Opinion. This objective was identified within the 2003 Biological Opinion as a Term and Condition.

Protest Point #77

Estill protests Objective A.2.

The restriction of utilization of the listed species to 50% is unfounded in the data and science. The species listed can sustain much higher utilization levels while maintaining and/or improving the condition of the resource. The restriction is unreasonable.

Response

Refer to response to protest point #20

Protest Point #78

Estill protests Objective A.3.

The restriction of utilization of the listed species to 30% is unfounded in the data and science. The species listed can sustain much higher utilization levels while maintaining and/or improving the condition of the resource. The restriction is unreasonable.

Response

Refer to response to protest point #20

The protestant's claim that utilization of willow species greater than 30% may have merit from the phenological standpoint of the plant; however other factors such as increased canopy cover, improved salmonid habitat, riparian habitat recovery, functionality assessment data, thermal insulation of the stream, etc. were also considered. Therefore the utilization objective of 30% was identified in the PMUD.

Protest Point #79

Estill protests Objective A.4.

The restriction of utilization of the listed species to 50% is unfounded in the data and science. The species listed can sustain much higher utilization levels while maintaining and/or improving the condition of the resource. The restriction is unreasonable.

Response

Refer to response to protest point #20

Protest Point #80

Estill protests Objective B.1.a,b,c.

The Objective is beyond the natural ecological site potential of portions of the allotment to which the objective applies.

Response

Agreed as written the Objective B.1.a,b,c may not be obtainable for all portions of the Soldier Meadows Allotment. The Bureau of Land Management has restated this objective to read as follows:

B. Long Term Objectives:

1. Manage, maintain, or improve public rangeland conditions to provide forage on a sustained yield basis for big game, with reasonable numbers of 786 AUMs for mule deer, 429 AUMs for pronghorn, and 264 AUMs for bighorn sheep by:
 - a. Improve to and maintain mule deer habitat in good to excellent condition within the ecological potential of the rangeland habitat.
 - b. Improve to and maintain pronghorn habitat in fair to good condition within the ecological potential of the rangeland habitat.
 - c. Improve to and maintain bighorn sheep habitat in good to excellent condition within the ecological potential of the rangeland habitat.

Protest Point #81

Estill protests Objective B.2.

The objective is not in conformance with or otherwise consistent with the objectives of the pertinent Land Use Plan.

Further, the objectives for nesting habitat are not supported by the data and science.

Further, the objective for "late season" brood rearing habitat are not supported by the data and science.

Response

The SMA PMUD is in conformance with the Interim Sage-Grouse Management Guidelines (Information Bulletin No. NV-2001-028). We are coordinating, communicating, and consulting with the Fish and Wildlife Service, Nevada Department of Wildlife, BLM-Sage-Grouse Habitat Conservation Strategy, Western Association of Fish and Wildlife Agencies (WAFWA), Nevada Governor's Sage-Grouse Conservation Strategy, and other Federal and state agencies on all sage-grouse plans being developed through a multidisciplinary process. Most plans are still being developed and the planning process is ongoing.

The sage-grouse use pattern throughout the Black Rock Population Management Unit (PMU) is very diffused over much of the landscape. Sage-grouse can be found in concentrations or specific use areas on a seasonal basis, but much of the PMU is not utilized by sage-grouse. The southern two thirds of the PMU has a population that is considered to be low to low-moderate with use areas in and around the Battle Creek basin, Butte Mt., the headwaters of Butte Creek, the headwaters of Paiute Creek, and around Big Mt. The northern one third of the PMU has low to moderate concentrations of sage-grouse in specific use areas, particularly on a seasonal basis. The key summer use areas are the top of Summit Lake Mt., Snow Creek basin, upper Mahogany Creek watershed, Dry Lake, and the headwaters of Crane and Center Creeks. Summer densities are considered to be low to low moderate with concentrations never supporting large numbers of birds (never observing more than 30-50 grouse in any location) during the late summer months. During the winter months, large concentrations (200+ grouse) have been observed on a few occasions in association with heavy snow conditions. The wintering area is located on the east-west ridge between Crane and Center Creeks north of Dry Lake. The numbers do not correspond with summer densities and believed to be influenced by sage-grouse off an adjoining PMU. The most likely scenario is that birds off the eastern portion of the Sheldon PMU winter into this

area when conditions push the grouse off areas such as Rock Springs Table. Subsequent helicopter lek surveys yielded no leks in and around this winter use area.

We have initiated monitoring to try to determine long term trends in sage-grouse habitat. Nevada Department of Wildlife and the Oregon State University are conducting research on sage-grouse in our district. Even though a specific concern/problem has been identified, Nevada Department of Wildlife personnel have stated that the long term recovery of sage-grouse populations will require approximately 25 years. Please refer to the D/MASR and the PMUD/FMUD for more detailed information regarding the allotment specific objectives for sage-grouse habitat.

BLM has restated the sage-grouse objective in the FMUD to read as follows:

Improve and/or maintain suitable sage-grouse strutting, nesting, brood rearing, and/or wintering habitat in good condition within the site potential of the rangeland habitat.

The following parameters have been found to constitute optimum (good) conditions for sage-grouse use:

Strutting Habitat

Low sagebrush or brush free areas for strutting and nearby areas of sagebrush having 20-50% canopy cover for loafing.

Nesting Habitat

1. Sagebrush between 7 and 31 inches in height (optimum= 16 inches).
2. Sagebrush canopy cover of 15-30% (optimum = 27%).
3. 25-35% basal ground cover.
4. Average understory height of 6-7 inches (grasses).

Brood Rearing Habitat

Early Season

1. Sagebrush canopy cover 10-21% (optimum = 14%).

Late Season

1. Meadow areas that are in functioning condition.
2. Residual meadow vegetation of no less than 3-6 inches in height.

Winter Habitat

1. Greater than 20% sagebrush canopy cover.

Protest Point #82

Estill protests Objective B.6.

The provision to “maximize” reproduction and recruitment is unfounded in the data and science, and is unnecessary to maintain/improve riparian meadow habitats. This provision of this objective is unreasonable, and may result in the future unnecessary restriction and/or elimination of livestock (and wild horse and wildlife) from the Allotment, so as to “maximize” reproduction and recruitment of riparian vegetation species.

Response

Data indicated that meadow (lentic) riparian areas were being impacted by livestock and wild horses. The meadow riparian areas objectives are not being met. These meadow riparian areas need an adequate amount of vegetation cover to support infiltration, maintain soil moisture storage, and stabilize soils. The distribution of riparian vegetation determines the riparian-wetland areas ability to accommodate period of overland flow and drought. In order to persist or improve, the riparian plant species must be both healthy and productive to increase their numbers into riparian plant community. Graminoid obligate wetland plant species have high erosion control potential, since they form a continuous, interwoven mat of roots. These properties aid in soil development creating a more favorable environment for wetland plant establishment. The best protection against erosion is the preservation of adequate vegetation cover to dissipate the erosive force during overland flow. Living and dead vegetation has the potential to reduce energies improving water retention, ground water recharge, and filter and trap sediment.

To maintain/improve riparian meadow habitats it is essential to manage for the riparian vegetation. The healthy wetland riparian areas provide storage of water for slow release to maintain wetlands and stream flows. Maximizing the wetland habitat potential benefits not only riparian species, but livestock by providing increased water and increased vegetation production.

The first step is to achieve proper functioning conditions, when this is achieved. Then a desired plant community objective can be determined for future management.

Protest Point #83

Estill protests Objective B.8.

The objective is nebulous, and its attainment is not measurable by a repeatable scientific method. The objective exposes Estill’s Permit to jeopardy at the whim of the authorized officer.

Response

Objective B.8 requires the BLM to manage for Proper Functioning Condition of riparian areas. This objective is part of the Standards for Rangeland Health developed by the Sierra Front-Northwestern Great Basin Resource Advisory Counsel. This objective is also part of the Bureau nationwide Standards for Rangeland Health.

Protest Point #84

Estill does not Protest Water Quality Objectives 1 – 4 to the extent they are consistent with Nevada Water Quality Standards, but Estill protests the objectives to the extent that they are not consistent. Estill also contends, however, that BLM lacks jurisdiction to determine satisfaction of State Water Quality Standards, which can only be determined by the State of Nevada.

BLM does not have the statutory authority to create and enforce water quality standards which are not the standards of the State and which the State has not determined to have been "violated".

Response

The protestant is correct in asserting that the BLM lacks the statutory authority to create and enforce water quality standards. This objective does not attempt to accomplish either. The State of Nevada's water quality standards are as binding on the BLM as they are on the individual permittee. This means that for BLM authorized activities, such as grazing on the Soldier Meadows Allotment, the BLM is accountable for meeting the standards of the State of Nevada.

Water Quality objective 1 is merely a restatement of the State of Nevada's regulation at NAC 445A.124. By incorporating the State's regulation as a management objective; monitoring, analysis, and changes can take place to ensure that the Bureau's authorized activities remain in compliance with the State of Nevada's regulations. For those areas where the State of Nevada's regulations are silent, the BLM is establishing management objectives to determine if impacts remain within acceptable limits. The BLM can not make determinations as to whether a water quality standard has been met, but they can make adjustments in permitted activities to maintain the health of the landscape.

Protest Point #85

Estill protests Objectives C.1,2,3,4,5, the Standards and Guidelines of Rangeland Health, as Allotment Objectives.

The S&G's are generic, subjective, not specific to the Allotment, unmeasured and/or unmeasurable, and are subject to the future interpretation of the Authorized Officer on a whim. As such they subject the Permit to jeopardy at the whim of the Authorized Officer.

Either the (objective, measurable) Allotment-specific objectives and T&C's are consistent with the S&G's or they are not. If the allotment-specific objectives and T&C's are consistent with the S&G's, then the inclusion of the S&G's is a confusing and potentially disastrous double-jeopardy to the Permittee, because the S&G's may be "interpreted" differently in the future than the allotment-specific objectives and T&C's. If the objectives and T&C's are not consistent with the S&G's, then they must be changed so as to be consistent, and must be allotment-specific, objective, measurable, and reasonably attainable. Estill must be fully, accurately, and objectively informed of what are BLM's future expectations of the Allotment and the Permit so as to not be surprised and condemned at the "eleventh hour". The nebulous S&G's do not provide that information in a manner that is objective, allotment specific, measurable, or (potentially) reasonably attainable.

Response

The SRH were developed by the Sierra Front - Northwestern Great Basin Resource Advisory Council, and approved by the Secretary of the Interior on February 12, 1997. These SRH were adopted by BLM and will be evaluated along with the site specific allotment objectives, in accordance with existing policies and manuals, to collectively determine rangeland health.

Protest Point #86

Estill protests the withholding of 4,481 AUMs of Permitted Use from immediate authorization as Active AUMs, and further protests the withholding of Estill's 3,902 AUMs of Suspended Use from immediate activation. All data presented in BLM's evaluations of the allotment show there to be sufficient forage

to sustain all of Estill's Permitted Use, plus the appropriate management level of wild horses and burros, plus the wildlife demand, without over-utilizing the public land.

Response

Sufficient forage is not a problem, however, not meeting SMA specific objectives and SRH is a concern. The BLM cannot justify increasing livestock use allotment wide when the meadows and the riparian areas objectives are not being met. The meadow and riparian habitats are sensitive areas and are indicator areas which show the health of the habitat communities for the whole allotment.

Furthermore, Humboldt County has been experiencing varying degrees of drought which impacts: availability of water (springs drying up), less forage (the vegetation produces less forage and the nutrient value is less), and the meadows and riparian areas are further impacted due to reduced upland forage availability.

The SMA Final Allotment Re-evaluation found utilization objectives regarding riparian/wet meadows were not universally met and upland grass/dry meadow utilization and upland browse utilization levels were exceeded in the Warm Springs Pasture. Since AML has not been achieved and sustained during the reevaluation period, vegetative utilization specific to wild horses and burros has not been measured. Several riparian vegetation objectives were not met as well. Wild horse and burro populations continue to exceed AML despite two gathers during the reevaluation period. AUM demands ranged between 11,766 and 19,020 AUMs over the reevaluation period. These numbers are considerably above the allotted level of 5,034 AUMs for wild horses and burros (1994 SMA FMUD, pg. 20).

Protest Point #87

Estill protests the Season of Use. The subject period of use de-stabilizes Estill's yearlong livestock operation, leaving Estill with nowhere to place its Soldier Meadows Ranch cattle from May 1 through September 30 of each year. Absolutely no data or research rationally justifies the change in the season of use to winter use (especially in the face of the previously issued Biological Assessment dated July 24, 2001 and the Biological Opinion issued therefrom).

The BLM's rationale that such change is necessary to "further BLM's administration of the livestock grazing on the SMA" is not reasonable or sustainable, because other similar grazing allotments within the Wimmemucca Grazing District (and throughout Nevada) which have similar resource issues and objectives are not so restricted as to season of use.

Response

The existing livestock grazing system is from 7/15 to 10/14 and 11/16 to 4/30, not yearlong.

The season of use the protestant claim "de-stabilizes Estill's yearlong livestock operation" was proposed by the protestant on April 24, 2003 to the BLM, which the BLM carried forward into Section 7 consultation with the USFWS on May 23, 2003. This grazing system was presented in the SMA/PMUD.

Protest Point #88

Estill protests the required rotation of the livestock, and especially the specificity as to exact days of use. No data or rationale basis exist to do so.

As to the specificity of the rotation schedule, the Pastures are unbarriered, and livestock (and wild horse and burro) drift occurs across the “map lines” which purportedly define the pasture boundaries. Such unbarriered borders and such specificity in the use dates create a “trespass trap” should livestock drift across the “imaginary” boundaries.

Response

The protestant claims that the use area boundaries create a “trespass trap”; however only one use area boundary was proposed by BLM in the PMUD compared to the numerous boundaries under the existing system. In addition, an exceptional amount of flexibility was added after a meeting in April of 2003 with the protestant to address and resolve this concern. One important note, however, is that the system proposed by the protestant that was analyzed in the SMA EA had numerous “unbarriered borders”, which could create an increased “trespass trap” risk for which the protestant ignored to raise concern over.

Protest Point #89

Estill protests the prohibition^c of livestock use of the “Stanley Camp Riparian Pasture” in any and all years, for any one or all of the following reasons:

- (a) The science and data do not support such prohibition. The best scientific and commercial data available show the LCT-occupied streams within the “Stanley Camp Riparian Pasture” to be in good to excellent habitat condition for the Lahontan Cutthroat Trout.
- (b) BLM has failed to construct the necessary fences around the “Stanley Camp Riparian Pasture”. These same fences were authorized in BLM 1994 Decision, but were never constructed by BLM. The “Stanley Camp Riparian Pasture” is therefore unbarriered from (at least) other portions of “Idaho Canyon Pasture”. The prohibition therefore creates a “trespass trap” for Estill.
- (c) The prohibition creates an unnecessary and unwarranted hardship on Estill in requiring livestock to be trailed miles out of the way around the Pasture, rather than a direct trail through the pasture.
- (d) The prohibition would forever prohibit Estill’s use of their livestock water and water rights within the Stanley Camp area. The Livestock Decision thereby creates a Taking of Estill’s water and water rights without just compensation as provided for under the Fifth Amendment of the Constitution.

Response

Please reference the analysis in the SMA EA found in Section 4.3.5 Alternative 3 – Stanley Camp Use on pages 73-74. The 1994 FMUD included a fence between Soldier and Paiute Meadows Allotments and another fence along the southern boundary of the Stanley Camp Riparian Pasture as well as the northern (Idaho Canyon) boundary fence. Refer to page 11 and Appendix 14 of the SMA EA that address the proposed Stanley Camp Riparian Pasture Fences. These projects will eliminate livestock drift into the Stanley Camp Riparian Pasture and potential impacts to LCT habitat. The Stanley Camp Riparian Pasture Fences will be constructed upon completion of additional NEPA documentation. The SMA is over forty (40) miles long and fifteen (15) miles wide with livestock currently trailing

^c This prohibition, and this protest, applies to each year and all years.

throughout the allotment without a hardship. Livestock trailing through the Stanley Camp Riparian Pasture would require livestock movement through steep mountainous terrain that is seasonally subjected to saturated soils and snow drifts.

Protest point 89 (d) indicates that the proposed grazing system will result in a “takings” of water and water rights. This issue has been discussed on numerous occasions between the WFO and the protestant. Here, and in all cases, the protestant has failed to identify those water rights that are in jeopardy and subject to the claim of takings. The only water rights that the WFO is aware of occur on private land and would not be affected by the proposed action.

Protest Point #90

Estill protests the “Resource Criteria or Restrictions” which further condition Estill’s grazing use, because the criteria or restrictions are unfounded in the science and data.

Response

The Northwestern Lahontan Basin DPS team guides recovery activities within northwestern Nevada for LCT. This team includes members of the USFWS, NDOW, ODFW, BLM, Summit Lake Paiute Indian Tribe, Researchers, and the USFS. This team has unanimously agreed that livestock grazing in the Summit Lake Basin would impact LCT and should not occur. Taking this into account, in addition, to the analysis found in the SMA EA found on pages 72-73 under 4.3.5 Alternative 3 – Stanley Camp Use, the BLM felt that no livestock grazing should occur on Mahogany, Summer Camp, and Snow Creeks, which comprise the Summit Lake Basin and serve as the only spawning habitat for the lacustrine population of LCT in Summit Lake. This population is one of only two lacustrine populations of LCT remaining today and is considered a recovery unit for the future delisting of LCT.

Protest Point #91

Estill does not protest the “interim” grazing system until fences are constructed between Idaho Canyon and Stanley Camp sub-pastures, but protests:

The indefinite nature of the provision. BLM 1994 Decision regarding the Soldier Meadows Allotment prescribed the construction/reconstruction of these fences, yet BLM has not constructed the fences in the ensuing eight years. BLM has unreasonably delayed the construction of these range improvements, and present Livestock Decision contains no date-certain by which they will be constructed.

The requirement to “prevent” livestock access, via riders, to Stanley Camp Riparian Pasture and areas of wildland fire of 2000. Riders cannot be present 24 hours a day so as to completely “prevent” livestock access. Riders can certainly remove livestock from the areas and, when they are present, divert livestock from the areas. However, livestock may enter the areas during the night, or from areas unseen by riders. The requirement to “prevent” access is unreasonable.

Response

Refer to response to Protest Point #89

Protest Point #92

Estill does not Protest the Range Improvements, but protests the rationale for Range Improvement #3. No data or science support a conclusion that the Desert Dace need a fence to be "protected", and certainly not from livestock grazing.

Response

Herding was identified in the existing grazing decision and the 1993 Biological Opinion as a requirement when livestock grazing occurred within use areas with riparian vegetation. The range rider was to be present at least 80% of the period when livestock were grazing. In addition, Term and Condition 2) i. states that "[i]f livestock cannot be kept out of the desert dace habitat through riding, then a pasture fence or an appropriate alternative technique shall be evaluated and implemented. Furthermore, the Soldier Meadows Activity Plan and Environmental Assessment (1998) states that livestock grazing would be eliminated from desert dace, cinquefoil stands, and cultural sites via fencing.

Please reference the analysis found within the 2003 Desert Dace (*Eremichthys acros*) Protective Fence EA (NV-020-03-024) for the analysis of the data and science related to the fence.

Protest Point #93

Estill protests as a Term and Condition to the Permit the statement that "The terms and conditions must be in conformance with the Standards and Guidelines for the Sierra Front-Northwestern Great Basin Resource Advisory Council, approved by the Secretary of the Interior on February 12, 1997."

The regulation do not provide for the inclusion of the generic Standards and Guidelines as terms and conditions of the Permit, but instead, that the terms and conditions within the Permit itself be reflective of the standards and guidelines. See also SOR #15.

Response

Refer to response to Protest Point #85

Protest Point #94

Estill protests Term and Condition #1, as it relates to Stanley Camp Riparian Pasture. See SOR #19.

Response

Refer to response to Protest Point #90

Protest Point #95

Estill protests Term and Condition #2.a. See SOR #3.

Response

Refer to response to Protest Point #73

Protest Point #96

Estill protests Term and Condition #2.b. See SOR #4.

Response

Refer to response to Protest Point #73 & 74

Protest Point #97

Estill protests Term and Condition #2.c. See SOR #5.

Response

Refer to response to Protest Point #75

Protest Point #98

Estill protests Term and Condition #2.d. See SOR #6.

Response

Refer to response to Protest Point #76

Protest Point #99

Estill protests Term and Condition #3 as to "livestock off dates", which T&C limits livestock management flexibility to the detriment of the permittee and the resources. Further no rational basis exists to conclude that there exists any need to "conserve the range resources". All data show that the range resource is more than sufficient to satisfy all of Estill's Permitted Use.

Response

Refer to the Conclusions section on pages 45-58 of the SMA/FAE and pages 22-31 of the D/MASR. These documents identify areas that are not achieving the allotment objectives and/or standards thereby requiring a need to conserve range resources. Also T&C #3 on page 11 of the SMA/PMUD which allows some flexibility of turn out dates based upon range readiness and resource values.

Protest Point #100

Estill protests Term and Condition #5. The Term and Condition is not a proper Term and Condition, because there exists no rational reason for BLM to withhold any part of Estill's Active Use (nor, for that matter, activate Estill's Suspended Use). There exists no rational nexus between the level of livestock authorization (number of AUMs) and the Terms and Conditions, even as stated by the Livestock Decision.

Response

Refer to the Proposed Grazing System on pages 8-9 and T&C # 5 on page 12 of the SMA/PMUD. The SMA/PMUD identifies the details and conditions related to the activation of AUMs. BLM contends that there is a direct correlation between the level of livestock (number of AUMs) and the associated impacts to resources.

Protest Point #101

Estill does not protest Term and Condition #6 as it may apply to public land, but protests the term and condition as it may apply to private intermingled lands not under the jurisdiction of BLM via an Exchange of Use Agreement.

Response

BLM has no authority, expressed or implied, to manage any of the private lands within the SMA with the exception of limited restrictions granted by the Conservation Easement and Water Management Plan. All of the Terms and Conditions, including #6, are only applicable to public lands within SMA.

Protest Point #102

Estill protests Term and Condition #7. See Protest SOR #18.

Response

Refer to response to Protest Point #88 & 89

Protest Point #103

ESTILL does not protest Term and Condition #9 as to the requirement to maintain, but Estill protests Term and Condition #9 as to the requirement to maintain prior to livestock turnout in the Allotment, rather than turnout into the particular pastures.

Response

The requirement of T&C #9 is to maintain the range improvements in the pastures within the allotment. Fully functional range improvement projects are an essential component of successful livestock management resulting in maintaining rangeland health.

Protest Point #104

Estill protests Term and Condition #11. See Protest SOR #1.

Response

Refer to response to Protest Point #71

Protest Point #105

Estill protests Term and Condition #12. See Protest SOR #1. In addition, Estill protests the BLM flexibility to modify authorization if such modification is on account of "standards for rangeland health", and apparent BLM flexibility to modify authorization which is outside the provisions of the Grazing Permit, without exposing the modification to the provisions of 43 CFR Part 4100, Subpart 4160.

The T&C destroys the stability provided Estill in the issuance of a Grazing Permit.

Response

Refer to response to Protest Point #71

LITERATURE CITED

Bauer, Stephen B and Stephen C. Ralph. 1999. Aquatic Habitat Indicators and their Application to Water Quality Objectives within the Clean Water Act. EPA-910-R-99-014. US EPA, Region 10, Seattle WA.

Beaverhead National Forest. 1997. Beaverhead Forest Plan Riparian Amendment, Final Environmental Impact Statement, Appendix A, September 1997.

Bengeyfield, P. and D. Svoboda. 1998. Determining allowable use levels for livestock movement in riparian areas. Specialty Conference on Rangeland Management and Water Resources. Proceeding. American Water Resources Association. Reno, NV.

Clary, Warren P. 1999. Stream Channel and Vegetation Responses to Late Spring Cattle Grazing, J. Range Management, 52:218-227, May 1999.

- Clary, Warren P. and Wayne C. Leininger. 2000. Stubble Height as a Tool for Management of Riparian Areas, *Journal of Range Management* 53: 562-573, November 2000.
- Clary, Warren P., Christopher Thornton and Steven Abt. 1996. Riparian Stubble Height and Recovery of Degraded Streambanks, *Rangelands* 18(4), August 1996, pg. 137-140.
- Clary, Warren P and Bert F. Webster. 1989. Managing Grazing of Riparian Areas in the Intermountain Region, USDA Forest Service, Intermountain Research Station, General Technical Report INT-263, May, 1989.
- Clary, W. P and B. F. Webster. 1990a. Recommended riparian grazing practices. Proceedings of Conference XXI: Erosion Control: Technology in Transition. Washington, D.C. USA
- Clary, Warren P. and Bert F. Webster. 1990b. Riparian Grazing Guidelines for the Intermountain Region, *Rangelands* 12(4).
- Hall, Frederick C. and Larry Bryant. 1995. Herbaceous Stubble Height as a Warning of Impending Cattle Grazing Damage to Riparian Areas, USDA, Forest Service, Pacific Northwest Research Station, General Technical Report PNW-GTR-362, September, 1995.
- Hayslip, G.A. 1993. EPA Region 10 in-stream biological monitoring handbook (for wadable streams in the Pacific northwest. U.S. Environmental Protection Agency - Region 10, EPA 910/9-92-013.
- Harper, John, Ken Tate and Mel George. 2000. *Fact Sheet No. 14: Grazing Effects on Riparian Areas*, UCCE Rangeland Water Quality Fact sheet #14, University of California, September 2000.
- Heitschmidt, Rod. 1988. Stubble Height and Utilization Measurements, Uses and Misuses, Agricultural Experiment Station, Oregon State University, Station Bulletin 682, May, 1988.
- Hockett, Brian L. and James W. Roscoe. 1993. Livestock Management Guidelines for Grazing in Southwest Montana Riparian-Wetland Areas. Workshop on Western Wetlands and Riparian Areas: Public/Private Efforts in Recovery, Management, and Education, Snowbird, UT, p. 102-106.
- Interagency Memorandum of Agreement. 1996. Memorandum of Agreement between the US Fish and Wildlife Service and US Forest Service, Bureau of Land Management, Nevada Division of Wildlife, Oregon Department of Fish and Wildlife.
- Kaufman, J. Boone and W.C. Krueger. 1984. Livestock Impacts on Riparian Ecosystems and Streamside Management Implications..A Review, *Journal of Range Management* 37(5), p. 430-438, Sept. 1984
- Leonard, Steve, Gene Kinch, Van Elsbernd, Dr. Mike Borman, Dr. Sherman Swanson. 1997. Riparian Area Management, Technical Reference 1737-14, USDI, BLM, National Applied Resource Sciences Center, Denver, CO, 1997 pg. 13-15.
- Marcuson, Patrick E., Overgrazed Streambanks Depress Fishery Production in Rock Creek, Montana, Presented at the Workshop on Livestock and Wildlife-Fisheries Relationships in the Great Basin, Sparks, Nevada, May 3-5, 1977.

Montana Monitoring Working Group. 1998. Monitoring for success, ranch planning, upland monitoring, stream channel and riparian area monitoring. State of Montana, Department of Natural Resources and Conservation. Helena, MT.

Mosley, Jeffrey C., Philip S. Cook, Amber J. Griffis, and Jay O'Laughlin. 1997. Guidelines for Managing Cattle Grazing in Riparian Areas to Protect Water Quality: Review of Research and Best Management Practices Policy, Report No. 15, Idaho Forest, Wildlife and Range Policy Analysis Group, University of Idaho, 1997.

Myers, L. 1989a. Grazing and riparian management in southwestern Montana. Fifteen years experience. Proc., Practical Approaches to Riparian Resource Management an Education Workshop. Billings, Montana.

Myers, L. 1989b. Riparian area management- inventory and monitoring of riparian areas. TR 1737-3. USDI, Bureau of Land Management – Service Center, Denver CO. 89p.

NDOW. 1999. Lahontan cutthroat trout species management plan for the Quinn River/Black Rock basins and North Fork Little Humboldt River sub-basin. Federal Aid Project F-20-27, Job 113-P.

Pfankuch, Dale. 1978. Stream Reach Inventory and Channel Stability Evaluation. USDA Forest Service, Northern Region, Missoula MT.

Platts, William S., Robert J. Behnke, John Buckhouse and others. 1983. Livestock Interactions with Fish and their Environment, In: Menke, John W. ed. Proceedings of the workshop on livestock and wildlife-fisheries relationships in the Great Basin, Sparks NV., Special Publication 3301, Berkley CA, 1983. pg. 36-41

Platts, W.S. 1990. Managing fisheries and wildlife on rangelands grazed by livestock, a guidance and reference document for biologists. Nevada Department of Fish and Game. Reno, NV.

Platts, William S. and John N. Rinne. 1985. Riparian and Stream Enhancement Management and Research in the Rocky Mountains, North American Journal of Fisheries Management, Vol5, No. 2A, 1985.

Platts, W.S., C. Armour, G.D. Booth, M. Bryant, J.L. Bufford, P. Cuplin, S. Jensen, G.W. Lienkaemper, G.W. Minshall, S.B. Monson, J.R. Sedell, and J.S. Tuhy. 1987. Methods for evaluating riparian habitats with applications to management. U.S. Department of Agriculture, Forest Service, Intermountain Research Station, General Technical Report INT-221. Ogden, UT.

Platts, W. S. and R. L. Nelson. 1989. Stream canopy and its relationship to salmonid biomass in the Intermountain West. North American Journal of Fisheries Management. 9(4):446-457.

Platts, W. S. 1991. Livestock grazing. Pages 389-423. In: W. R. Meehan (ed.), Influences of forest and rangeland management on salmonid fishes and their habitats. American Fisheries Society Special Publication 19. Bethesda, Md.

Platts, William S. and Rodger Loren Nelson. 1985. Streamside and upland vegetation use by cattle. *Rangelands* 7(1), pp. 5-7, February 1985

Rosgen, David. 1996. *Applied River Morphology, Wildland Hydrology*, Pagosa Springs, 1996.

Skinner, Quentin, D. 1988. Stubble Height and Utilization Measurements, Uses and Misuses, Agricultural Experiment Station, Oregon State University, Station Bulletin 682, May, 1988.

Thompson, W.H., R.C. Erhart, P.L. Hansen, T.G. Parker, and W.C. Haglan. 1998. Assessing health of a riparian site. *Rangeland Management and Water Resources (Proceedings)*. American Water Resources Association. Reno, NV.

Turner, D. L. and W. P. Clary. 2001. Sequential sampling protocol for monitoring pasture utilization using stubble height criteria. *Journal of Range Management* 54, p. 132-137, March 2001.

USDA FS, R1/R4. 1995. *Soil and Water Conservation Handbook 2509.22, part 17.05*, USDA Forest Service, updated 4/95.

USDA FS. Undated. *Allowable Streambank Alteration and the Beaverhead Riparian Guidelines*, Beaverhead National Forest, USFS R-1.

USDA FS. 1995. *Inland Native Fish Strategy Environmental Assessment*, USDA Forest Service, Intermountain, Northern and Pacific Northwest Regions, 1995.

USDA FS. 1996. *Watershed Conservation Practices Handbook*, USDA Forest Service, Rocky Mountain Region, September, 1996.

USDA Forest Service. 1999. FSH 2209.13 – *Grazing Permit Administration Handbook, R-6 Supplement 2209-99-01, Chapter 15.13b – Special Terms and Conditions*, 1999.

USDI BLM 1999. *Photographic guide to median stubble heights*. Idaho BLM Tech Bulletin. 99-01.

USFWS 1995. *Lahontan cutthroat trout, *Oncorhynchus clarki henshawi*, Recovery Plan*. Portland, OR. 147pp.

USFWS 2003. *Biological Opinion for the 2003 through 2013 Livestock Grazing System for the Soldier Meadows Allotment, Humboldt County, Nevada*