Appendix Table of Contents – Garat Allotment Final EA

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7.1. Appendix A – Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management

Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management

FINAL

U.S. Department of the Interior
Bureau of Land Management

August 1997

Dear Reader,

After nearly two years of hard work, I am proud to announce the completion of "Standards for Rangeland Health and Guidelines for Livestock Grazing Management" for Idaho. These standards and guidelines, which provide the resource measures and guidance needed to ensure healthy, functional rangelands, went into effect on August 12 after they were approved by the Secretary of the Interior.

As you will recall, the BLM presented proposed standards and guidelines, developed by the 45 members of our three Resource Advisory Councils, to the public for feedback earlier this spring. We received 22 letters from individuals and organizations suggesting revisions. We provided a copy of each letter, as well as a summary of comments, to our Resource Advisory Councils and asked them to carefully consider each suggestion and provide us with recommendations for changes. We used our Resource Advisory Councils' recommendations, as well as input from the BLM Washington Office and the Department of the Interior, to develop the final standards and guidelines.

Subsequently, we conducted a comprehensive review of all of our existing land use plans in Idaho and found that the final standards and guidelines conform with them. We then prepared an Administrative Determination to that effect to meet National Environmental Policy Act requirements.

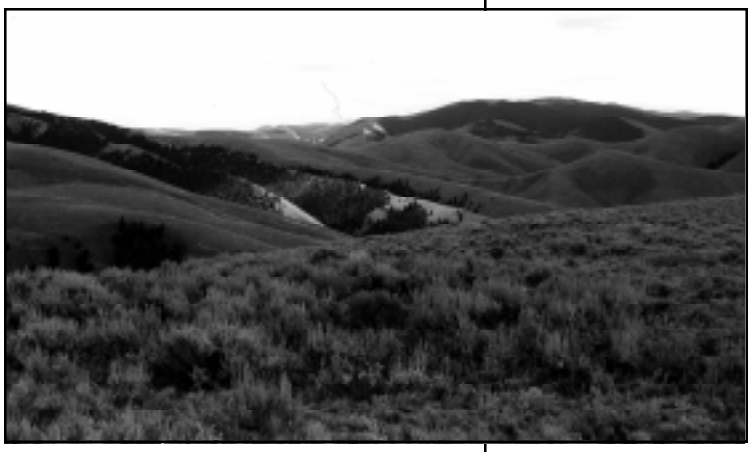
Now, we turn our attention away from developing standards and guidelines to implementing them. We are currently in the process of developing a strategy to prioritize our livestock grazing allotments and evaluate them to determine if standards and guidelines are being met or if significant progress towards meeting them is being achieved. As soon as this strategy is completed, sometime in the next few weeks, we will provide you with the appropriate detailed information.

The final standards and guidelines are the product of extensive discussion, debate, and compromise by individuals and organizations representing a wide variety of interests. Please be assured that we will offer many opportunities for interested parties to provide input as we implement the standards and guidelines and that your continued participation is critical to our success.

Sincerely,

Martha G. Hahn

Martha Hahn
BLM Idaho State Director



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Standards for Rangeland Health

The Standards for Rangeland Health, as applied in the State of Idaho, are to be used as the Bureau of Land Management's management goals for the betterment of the environment, protection of cultural resources, and sustained productivity of the range. They are developed with the specific intent of providing for the multiple use of the public lands. Application of the standards should involve collaboration between the authorized officer, interested publics, and resource users.

Rangelands should be meeting the Standards for Rangeland Health or making significant progress toward meeting the standards. Meeting the standards provides for proper nutrient cycling, hydrologic cycling, and energy flow.

Monitoring of all uses is necessary to determine if the standards are being met. It is the primary tool for determining rangeland health, condition, and trend. It will be performed on representative sites.

Appropriate to soil type, climate, and landform, indicators are a list of typical physical and biological factors and processes that can be measured and/or observed (e.g., photographic monitoring). They are used in combination to provide information necessary to determine the health and condition of the rangelands. Usually, no single indicator provides sufficient information to determine rangeland health. Only those indicators appropriate to a particular site are to be used. The indicators listed below each standard are not intended to be all inclusive.

The issue of scale must be kept in mind in evaluating the indicators listed after each standard. It is recognized that individual isolated sites within a landscape may not be meeting the standards; however, broader areas must be in proper functioning condition. Furthermore, fragmentation of habitat that reduces the effective size of large areas must also be evaluated for its consequences.

STANDARD 1 (WATERSHEDS)

Watersheds provide for the proper infiltration, retention, and release of water appropriate to soil type, vegetation, climate, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Indicators may include, but are not limited to, the following:

1. The amount and distribution of ground cover, including litter, for identified ecological site(s) or soil-plant associations are appropriate for site stability.

2. Evidence of accelerated erosion in the form of rills and/or gullies, erosional pedestals, flow patterns, physical soil crusts/surface sealing, and compaction layers below the soil surface is minimal for soil type and landform.

STANDARD 2 (RIPARIAN AREAS AND WETLANDS)

Riparian-wetland areas are in properly functioning condition appropriate to soil type, climate, geology, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Indicators may include, but are not limited to, the following:

1. The riparian/wetland vegetation is controlling erosion, stabilizing streambanks, shading water areas to reduce water temperature, stabilizing shorelines, filtering sediment, aiding in floodplain development, dissipating energy, delaying flood water, and increasing recharge of groundwater appropriate to site potential.

2. Riparian/wetland vegetation with deep strong binding roots is sufficient to stabilize streambanks and shorelines. Invader and shallow rooted species are a minor component of the floodplain.

3. Age class and structural diversity of riparian/wetland vegetation is appropriate for the site.

4. Noxious weeds are not increasing.

STANDARD 3 (STREAM CHANNEL/FLOODPLAIN)

Stream channels and floodplains are properly functioning relative to the geomorphology (e.g., gradient, size, shape, roughness, confinement, and sinuosity) and climate to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Indicators may include, but are not limited to, the following:

1. Stream channels and floodplains dissipate energy of high water flows and transport sediment. Soils support appropriate riparian-wetland species, allowing water movement, sediment filtration, and water storage. Stream channels are not entrenching.

2. Stream width/depth ratio, gradient, sinuosity, and pool, riffle and run frequency are appropriate for the valley bottom type, geology, hydrology, and soils.

3. Streams have access to their floodplains and sediment deposition is evident.

4. There is little evidence of excessive soil compaction on the floodplain due to human activities.

5. Streambanks are within an appropriate range of stability according to site potential.

6. Noxious weeds are not increasing.

STANDARD 4 (NATIVE PLANT COMMUNITIES)

Healthy, productive, and diverse native animal habitat and populations of native plants are maintained or promoted as appropriate to soil type, climate, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Indicators may include, but are not limited to, the following:

1. Native plant communities (flora and microbiotic crusts) are maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species.

2. The diversity of native species is maintained.

3. Plant vigor (total plant production, seed and seedstalk production, cover, etc.) is adequate to enable reproduction and recruitment of plants when favorable climatic events occur.

4. Noxious weeds are not increasing.

5. Adequate litter and standing dead plant material are present for site protection and for decomposition to replenish soil nutrients relative to site potential.

STANDARD 5 (SEEDINGS)

Rangelands seeded with mixtures, including predominately non-native plants, are functioning to maintain life form diversity, production, native animal habitat, nutrient cycling, energy flow, and the hydrologic cycle.

Indicators may include, but are not limited to, the following:

1. In established seedings, the diversity of perennial species is not diminishing over time.

2. Plant production, seed production, and cover are adequate to enable recruitment when favorable climatic events occur.

3. Noxious weeds are not increasing.

4. Adequate litter and standing dead plant material are present for site protection and for decomposition to replenish soil nutrients relative to site potential.

STANDARD 6 (EXOTIC PLANT COMMUNITIES, OTHER THAN SEEDINGS)

Exotic plant communities, other than seedings, will meet minimum requirements of soil stability and maintenance of existing native and seeded plants. These communities will be rehabilitated to perennial communities when feasible cost effective methods are developed.

Indicators may include, but are not limited to, the following:

1. Noxious weeds are not increasing.

2. The number of perennial species is not diminishing over time.

3. Plant vigor (production, seed and seedstalk production, cover, etc.) of remnant native or seeded (introduced) plants is maintained to enable reproduction and recruitment when favorable climatic or other environmental events occur.

4. Adequate litter and standing dead plant material is present for site protection and for decomposition to replenish soil nutrients relative to site potential.

STANDARD 7 (WATER QUALITY)

Surface and ground water on public lands comply with the Idaho Water Quality Standards.

Indicators may include, but are not limited to, the following:

1. Physical, chemical, and biologic parameters described in the Idaho Water Quality Standards.

STANDARD 8 (THREATENED AND ENDANGERED PLANTS AND ANIMALS)

Habitats are suitable to maintain viable populations of threatened and endangered, sensitive, and other special status species.

Indicators may include, but are not limited to, the following:

1. Parameters described in the Idaho Water Quality Standards.

2. Riparian/wetland vegetation with deep, strong, binding roots is sufficient to stabilize streambanks and shorelines. Invader and shallow rooted species are a minor component of the floodplain.

3. Age class and structural diversity of riparian/wetland vegetation are appropriate for the site.

4. Native plant communities (flora and microbiotic crusts) are maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species.

5. The diversity of native species is maintained.

6. The amount and distribution of ground cover, including litter, for identified ecological site(s) or soil-plant associations are appropriate for site stability.

7. Noxious weeds are not increasing.

Guidelines for Livestock Grazing Management

INTRODUCTION

Guidelines direct the selection of grazing management practices, and where appropriate, livestock management facilities to promote significant progress toward, or the attainment and maintenance of, the standards. Grazing management practices are livestock management techniques. They include the manipulation of season, duration (time), and intensity of use, as well as numbers, distribution, and kind of livestock. Livestock management facilities are structures such as fences, corrals, and water developments (ponds, springs, pipelines, troughs, etc.) used to facilitate the application of grazing management practices. Livestock grazing management practices and guidelines will be consistent with the Idaho Agricultural Pollution Abatement Plan.

Grazing management practices and facilities are implemented locally, usually on an allotment or watershed basis. Grazing management programs are based on a combination of appropriate grazing management practices and facilities developed through consultation, coordination, and cooperation with the Bureau of Land Management, permittees, other agencies, Indian tribes, and interested publics.

These guidelines were prepared under the assumption that regulations and policies regarding grazing on the public lands will be implemented and will be adhered to by the grazing permittees and agency personnel. Anything not covered in these guidelines will be addressed by existing laws, regulations, Indian treaties, and policies.

The BLM will identify and document within the local watershed all impacts that affect the ability to meet the standards. If a standard is not being met due to livestock grazing, then allotment management will be adjusted unless it can be demonstrated that significant progress toward the standard is being achieved. This applies to all subsequent guidelines.

GUIDELINES

1. Use grazing management practices and/or facilities to maintain or promote significant progress toward adequate amounts of ground cover (determined on an ecological site basis) to support infiltration, maintain soil moisture storage, and stabilize soils.

2. Locate livestock management facilities away from riparian areas wherever they conflict with achieving or maintaining riparian-wetland functions.

3. Use grazing management practices and/or facilities to maintain or promote soil conditions that support water infiltration, plant vigor, and permeability rates and minimize soil compaction appropriate to site potential.

4. Implement grazing management practices that provide periodic rest or deferment during critical growth stages to allow sufficient regrowth to achieve and maintain healthy, properly functioning conditions, including good plant vigor and adequate vegetative cover appropriate to site potential.

5. Maintain or promote grazing management practices that provide sufficient residual vegetation to improve, restore, or maintain healthy riparian-wetland functions and structure for energy dissipation, sediment capture, ground water recharge, streambank stability, and wildlife habitat appropriate to site potential.

6. The development of springs, seeps, or other projects affecting water and associated resources shall be designed to protect the ecological functions, wildlife habitat, and significant cultural and historical/archaeological/paleontological values associated with the water source.

7. Apply grazing management practices to maintain, promote, or progress toward appropriate stream channel and streambank morphology and functions. Adverse impacts due to livestock grazing will be addressed.

8. Apply grazing management practices that maintain or promote the interaction of the hydrologic cycle, nutrient cycle, and energy flow that will support the appropriate types and amounts of soil organisms, plants, and animals appropriate to soil type, climate, and landform.

9. Apply grazing management practices to maintain adequate plant vigor for seed production, seed dispersal, and seedling survival of desired species relative to soil type, climate, and landform.

10. Implement grazing management practices and/or facilities that provide for complying with the Idaho Water Quality Standards.

11. Use grazing management practices developed in recovery plans, conservation agreements, and Endangered Species Act, Section 7 consultations to maintain or improve habitat for federally listed threatened, endangered, and sensitive plants and animals.

12. Apply grazing management practices and/or facilities that maintain or promote the physical and biological conditions necessary to sustain native plant populations and wildlife habitats in native plant communities.

13. On areas seeded predominantly with non-native plants, use grazing management practices to maintain or promote the physical and biological conditions to achieve healthy rangelands.

14. Where native communities exist, the conversion to exotic communities after disturbance will be minimized. Native species are emphasized for rehabilitating disturbed rangelands. Evaluate whether native plants are adapted, available, and able to compete with weeds or seeded exotics.

15. Use non-native plant species for rehabilitation only in those situations where:

a. native species are not readily available in sufficient quantities;

b. native plant species cannot maintain or achieve the standards; or

c. non-native plant species provide for management and protection of native rangelands.

Include a diversity of appropriate grasses, forbs, and shrubs in rehabilitation efforts.

16. On burned areas, allow natural regeneration when it is determined that populations of native perennial shrubs, grasses, and forbs are sufficient to revegetate the site. Rest burned or rehabilitated areas to allow recovery or establishment of perennial plant species.

17. Carefully consider the effects of new management facilities (e.g., water developments, fences) on healthy and properly functioning rangelands prior to implementation.

18. Use grazing management practices, where feasible, for wildfire control and to reduce the spread of targeted undesirable plants (e.g., cheatgrass, medusa head, wildrye, and noxious weeds) while enhancing vigor and abundance of desirable native or seeded species.

19. Employ grazing management practices that promote natural forest regeneration and protect reforestation projects until the Idaho Forest Practices Act requirements for timber stand replacement are met.

20. Design management fences to minimize adverse impacts, such as habitat fragmentation, to maintain habitat integrity and connectivity for native plants and animals.

Glossary

ACCELERATED EROSION — Soil loss at a rate in excess of natural or geologic erosion as a result of human-caused disturbance.

AGE CLASS — A classification of woody plant species according to relative age, e.g., seedling, young, mature, or decadent.

ALLOTMENT MANAGEMENT PLAN — A documented program which applies to livestock grazing on public lands, prepared by consulting, cooperating, and coordinating with the permittee(s), lessee(s), or other interested publics.

ANIMAL HABITAT —T he place and environment where an animal lives including all biotic, climatic, and edaphic factors.

BEST MANAGEMENT PRACTICE (BMP) — A component practice or combination of component practices determined to be the most effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals. (Idaho Agricultural Pollution Abatement Plan, August 1993)

COMPONENT PRACTICES — Approved practices, used alone or in combination with other practices, are used to develop BMPs. (Idaho Agricultural Pollution Abatement Plan, August 1993)

CONNECTIVITY — The state of being functionally connected by movement of organisms, material, or energy. The opposite of habitat fragmentation.

CONSULTATION, COORDINATION, AND COOPERATION — A process prescribed by the Public Rangelands Improvement Act of involving the permittee(s), lessee(s), federally recognized Indian tribes, and interested publics in the development of allotment management plans and other management programs on public lands. The process also includes trust responsibilities to Federally recognized Indian tribes.

COLLABORATION —T o work jointly with others.

COVER — (See Ground Cover)

DEFERMENT — Nongrazing, either by delay or discontinuance of grazing, from the beginning of plant growth until the seed is set or the equivalent stage of vegetative reproduction.

DIVERSITY — (1) The absolute number of species in a community, species richness; and (2) a measure of the number of species and their relative abundance in a community; low diversity refers to few species or unequal abundances, high diversity to many species or equal abundances.

ECOLOGICAL SITES — A kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and its response to management. Ecological site is synonymous with range site and ecological type.

ENERGY FLOW — The capture of sunlight energy by plants and the conversion through photosynthesis to biomass.

EXOTIC PLANT COMMUNITIES, OTHER THAN SEEDINGS — Assemblages of plants that are not indigenous to the area, such as cheatgrass, yellow star thistle, and medusa head rye.

FRAGMENTATION — The process of dividing habitats into smaller and smaller units until their utility as habitat is lost.

GRAZING MANAGEMENT PRACTICES — Techniques used to manage livestock and include season, duration (amount of the time grazing occurs), intensity of use, numbers of livestock, kind of livestock, and distribution (e.g., salting, herding, and water development).

GRAZING PLAN OR PROGRAM — A combination of grazing management and/or facilities used to ensure an expectation of meeting or making significant progress toward meeting the Standards for Rangeland Health.

GROUND COVER — The percentage of material, other than bare ground, covering the land surface. It may include live and standing dead vegetation, microbiotic crust, litter, cobble, gravel, stones, and bedrock. Ground cover, plus bare ground, totals 100 percent.

HUMAN ACTIVITIES — Any activity that is initiated or controlled by people, such as recreation, timber harvest, livestock grazing, road and other construction, and mining.

HYDROLOGIC CYCLE — The circulation of water in the atmosphere, on the surface of the earth, in the soil, and in the underlying rocks.

INDIAN TREATY — A contract in writing between the United States Government and Indian tribes formally signed by duly authorized representatives and ratified by the United States Senate.

INDICATOR — Components or attributes of a rangeland ecosystem that can be observed and/or measured that provides evidence of the function, productivity, health and/or condition of the ecosystem.

INFILTRATION — A soil, as influenced by soil texture, aspect, slope, and vegetation cover.

LANDFORM — A naturally formed element of the landscape that controls or influences hydrologic, physical, and ecological processes.

LANDSCAPE — Landform of a region in aggregate.

LAND USE PLAN — Land use plan means a resource management plan or management framework plan, developed under the provisions of 43 CFR 1600. These plans are developed through public participation in accordance with the provisions of the Federal Land Policy and Management Act of 1976 and establish management direction for resource uses of public lands. (43 CFR 4100)

LIFE FORM — Characteristic form or appearance of a plant species at maturity, e.g., tree, shrub, forb, grass, etc.

LITTER — Dead plant or animal material on the soil surface.

LIVESTOCK MANAGEMENT FACILITIES — Physical facilities, such as fences, water developments, and corrals that are used to handle and control livestock.

MICROBIOTIC CRUST — Community of non-vascular primary producers that occur as a "crust" on the surface of soils and made up of a mixture of algae, lichens, mosses, and cyanobacteria (bluegreen algae).

MONITORING — The orderly collection, analysis, and interpretation of resource data and information to evaluate progress toward meeting Standards for Rangeland Health and/or management objectives.

MULTIPLE USE — The definition of multiple use is defined in the Federal Policy and Management Act of 1976 as follows:

"The management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resource or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform with changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historic values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of the uses that will give the greatest economic return or the greatest output."

NATIVE SPECIES — Plants or animals indigenous to the area.

NON-NATIVE SPECIES — Plants or animals that are not indigenous to the area.

NOXIOUS WEEDS — Exotic plants that are listed by the State of Idaho and subject to Idaho weed control laws.

NUTRIENT CYCLE — The cyclical process by which plants and animals use chemical compounds and elements in the soil, water, and atmosphere to produce plants and animals and the decomposition of plants and animals to return chemical compounds and elements to the soil, water, and air for future use.

PRODUCTIVITY — The ability of a site to produce vegetation.

PROPER FUNCTIONING CONDITION (RIPARIAN) —
"Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve floodwater retention and ground-water recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity."

USDI. 1993, Revised 1995. Riparian Area Management, Process for Assessing Proper Functioning Condition, Technical Report 1737-9, p. 4. Bureau of Land Management, BLM/SC/ST-93/003+1737+REV95, Service Center, CO. 51 pp.

USDI. 1994. Riparian Area Management, Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas. Technical report 1737-11. Bureau of Land Management, BLM/SC/ST-94/008+1737, Service Center, CO. 37 pp.

RANGELAND — A kind of land on which the native vegetation is predominately grasses, grass- like plants, forbs, or shrubs. Rangelands include natural grasslands, savannas, shrublands, most deserts, alpine communities, riparian areas, and wet meadows.

RANGELAND CONDITION — The present status of a unit in terms of specific values or potential.

RANGELAND HEALTH — The degree to which the integrity of the soil and ecological processes of rangeland ecosystems is maintained.

National Research Council. 1994. Rangeland Health: New Methods to Classify, Inventory and Monitor Rangelands.

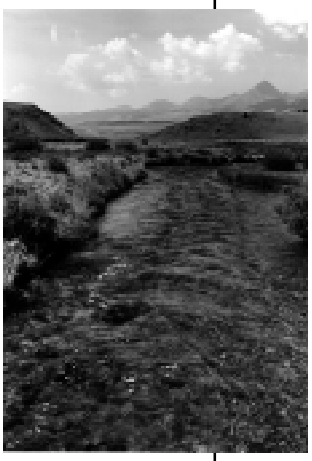
RESIDUAL VEGETATION — Amount, cover, and species composition of the vegetation on a site after it has been grazed for a period of time.

REST — Nongrazing for a specified period of time, generally a full growing season up to a full year.

RIPARIAN AREAS — A form of wetland transition between permanently saturated wetlands and uplands. The areas exhibit vegetation or physical characteristics that reflect permanent surface or subsurface water influence. Typical riparian areas include such areas as lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers, streams, glacial potholes, and shores of lakes and reservoirs with stable water levels. Riparian areas do not include ephemeral (permanently above the water table and flows only during or immediately after a rainstorm or snowmelt) streams that do not exhibit the presence of vegetation dependent upon free water in the soil. (Bureau of Land Management Technical Reference TR 1737-9 and 11)

SENSITIVE PLANTS AND ANIMALS — Plants and animals listed by the Bureau of Land Management State Directors.

SIGNIFICANT PROGRESS — Measurable and/or observable (i.e., photography, use of approved qualitative procedures) changes in the indicators that demonstrate improved rangeland health.



SPATIAL SCALE — The relative size of an area under consideration. For example, a small scale is a site, a mid-scale is a watershed, and a large scale is a basin.

SPECIAL STATUS SPECIES — Plant and animal species that are federally listed as threatened or endangered, proposed threatened or endangered, candidate species, State listed as threatened or endangered, or listed by a Bureau of Land Management State Director as sensitive.

SUSTAINED PRODUCTIVITY OF THE RANGE — Maintaining the production capability of the rangeland for long periods of time (100 years +).

TREND — The direction of change in ecological status or resource value rating observed over time.

USE — Human activities (e.g., mining, forestry, livestock grazing, vegetation manipulation, road construction and maintenance, other construction and maintenance activities, wild horses, recreation, habitat manipulation, and management facility construction and maintenance).

WATERSHED — An area that collects and discharges runoff to a given point. It is often used synonymously with drainage basin or catchment.

WETLAND — Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and which under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Typical wetlands include marshes, shallow swamps, sloughs, lake shores, bogs, wet meadows, and riparian areas. (Bureau of Land Management Technical Reference TR 1737-9 and 11)

7.2. Appendix B – Recent actual use report and utilization summaries for the Garat Allotment

Table B-1: Garat allotment actual use 1986 through 2014 (calculated at 94 percent PD on spreadsheet from 2006 forward)

Year	Dry Lake Piute Creek			Forty-Five			Kimball			Big Horse			Juniper Basin			Allotment AUMs
	From	To	AUMs	From	To	AUMs	From	To	AUMs	From	To	AUMs	From	To	AUMs	
1986	3/22	7/22	2,299	3/22	7/24	1,159	4/7	7/20	3,395	7/26	9/20	697	7/27	9/22	1640	9,190
1987	4/1-10/15*															10,904
1988	4/1	6/20	3,535	RESTED			3/15	8/1	7,401	7/1	8/5	751	8/1	9/25	2,607	14,294
1989	3/15	6/28	3,670	3/20	7/19	5,343	RESTED			7/11	9/25	1,928	6/21	9/27	4,493	15,434
1990	RESTED			3/20	7/26	3,548	3/15	7/19	6,102	7/17	9/28	2,139	7/9	9/27	5,519	17,308
1991	3/19	5/31	1,127	RESTED			3/15	8/2	6,945	7/26	9/20	646	7/11	9/20	3,824	12,542
1992	3/15	6/20	3,309	3/18	6/20	2,327	6/15	8/18	1,442	RESTED			4/16	8/6	6,090	13,168
1993	RESTED			4/4	7/19	4,062	7/8	9/26	2,743	3/31	7/9	3,645	7/10	10/10	3,292	13,742
1994	3/17	7/14	4,438	RESTED			3/22	7/15	5,368	RESTED			6/26	9/28	4,720	14,526
1995	3/25	6/24	996	3/19	6/28	3,144	RESTED			3/15	6/25	3,730	6/21	9/28	6,568	14,438
1996	RESTED			3/19	6/23	4,101	6/17	9/8	2,368	3/15	6/12	3,063	6/10	10/12	5,519	15,051
1997	3/20	6/24	3,802	6/21	6/27	169**	3/16	6/16	3,958	6/25	9/10	2,310	6/11	10/14	5,507	15,746
1998	3/17	6/27	4,514	3/20	6/28	3,018	6/15	8/25	3,018	RESTED			8/20	10/15	5,650	16,200
1999	RESTED			3/17	6/14	4,948	6/24	9/18	4,017	3/15	6/23	4,615	6/21	10/15	5,296	18,876
2000	3/19	7/10	4,896	RESTED			3/16	6/22	4,393	RESTED			6/15	10/15	7,863	17,152
2001	RESTED			3/18	7/15	5,059	6/30	9/18	3,500	3/15	6/23	4,610	6/19	10/15	5,485	18,654
2002	3/17	7/14	4,423	3/20	7/13	4,657	6/18	9/28	4,249	RESTED			6/21	10/15	4,901	18,230
2003	3/17	7/10	1,623	RESTED			3/20	6/21	2,512	3/16	5/15	966	4/10	9/15	5,618	10,719
2004	4/16	7/1	9,06	3/31	7/15	3,390	RESTED			3/27	7/5	3,030	7/25	9/18	3873	11,199
2005	3/15	7/9	3,140	3/15	7/11	1,739	3/18	7/15	4,528	RESTED			7/18	10/15	6,081	15,488
2006	3/27	7/8	2,251	RESTED			3/18	7/15	5,264	3/15	6/27	2,817	6/25	10/15	8,538	18,870
2007	3/15	7/9	4,612	3/19	6/1	2,454	4/17	8/30	3,533	RESTED			6/18	10/10	3,781	14,380

Year	Dry Lake Piute Creek			Forty-Five			Kimball			Big Horse			Juniper Basin			Allotment AUMs
	From	To	AUMs	From	To	AUMs	From	To	AUMs	From	To	AUMs	From	To	AUMs	
2008		RESTED		3/27	7/14	3,341	5/12	8/23	3,657	3/22	5/15	1,980	6/19	10/15	4,342	13,320
2009	3/16	7/9	4,254	3/20	7/6	4,501	6/16	10/11	2,724	RESTED			6/27	10/13	3,487	14,966
2010	3/21	7/7	4,391	RESTED			3/24	7/14	4,640	RESTED			6/22	9/20	4,975	13,106
2011	RESTED			3/21	7/15	4,908	5/18	9/12	3,694	3/17	7/1	4,183	6/17	9/30	4,565	17,350
2012	3/17	6/25	2,071	3/21	6/22	1,079	3/20	6/28	1,799	RESTED			5/21	8/2	1,907	6,856
2013	3/17	6/16	2,767	3/17	5/26	1,079	4/22	7/8	1,643	RESTED			6/15	10/10	3,396	8,985
2014	RESTED			3/18	6/10	1,332	3/18	6/14	1,363	RESTED			5/26	10/15	2,134	4,800

*Actual use reported on an allotment basis in 1987.
** Considered a rest year in rest/rotation schematic.

Table B-2: The Garat allotment percent (%) bluebunch wheatgrass utilization by pasture, 1979-2011

Year	Pastures 1&2 Dry Lake & Piute Creek	Pasture 3 Forty-Five	Pasture 4 Kimball	Pasture 5 Big Horse	Pasture 6 Juniper Basin
1979	44	--	39	--	--
1981		--	--	5	36
1988	33	--	29	--	--
1989	39	21	--	45	52
1990	--	--	12	27	19
1991	--	--	19	--	49
1992	29	2	7	--	34
1993	--	39	39	44	--
1994	49	--	51	--	24
1995	15	37	--	42	35
1997	26	--	3	56	--
2002	40	15	25	--	--
2003	41	--	--	19	28
2004	12	24	--	61	--

Year	Pastures 1&2 Dry Lake & Piute Creek	Pasture 3 Forty-Five	Pasture 4 Kimball	Pasture 5 Big Horse	Pasture 6 Juniper Basin
2007	13	17	--	--	34
2008	--	--	34	--	20
2009	--	--	15	--	22
2010	--	--	15	11	16
2011	--	--	31	--	--
2012	--	--	--	--	--
2013	--	--	--	--	--
Average	31	22	25	37	31

-- No Data or Rested

7.3. Appendix C – Performance-based Alternative Lotic/ Lentic Riparian Area Monitoring Protocol

Lentic (spring/seep/wetland) Area Performance Standard Criteria Protocol May 8, 2012

EA No. DOI-BLM-ID-B030-2012-0012

Since there is not a specific or inclusive methodology available for the collection of the lentic metrics, the MMIM protocol would be modified for use. Measurements would be collected for herbaceous stubble height, woody browse, and alteration caused by livestock along the margins of the riparian-wetland area. Both the stubble height and the woody browse measurements would follow the MMIM protocol assuming the tape strung through the center of the long axis of the spring area is the greenline. The edge shear alteration measurement would occur along the margin of the spring area. The protocol is described below:

1. Collect all data digitally using the MMIM Excel spreadsheet (Data_Entry_Module Livestock Use 2011)- Toughbook, PDA or GPS unit:
   Access online: http://rmsmim.com/Downloads/tabid/62/Default.aspx
2. Select representative (both spatially balanced and proportional to the amount of the resource within the pasture/ allotment) key riparian spring area(s) to monitor through coordination with the permittee (s)
3. Establish spring area: String tape along the long axis of the spring - modify and assume the tape is the greenline
4. Use MMIM woody browse protocol to measure browse – assume tape is the greenline (Interagency Technical Reference 1737-23, *Multiple Indicator Monitoring of Stream Channels and Streamside Vegetation*)
5. Use MMIM to measure stubble height along the tape
6. Use MIM frame along edge to measure current years alteration – see MIM protocol for measuring stream bank alteration

7.4. Appendix D – Comparison of Alternatives

Table D-1: Garat allotment (#584) alternative comparison of allotment data

	Alternative 1 ***Current Situation***	**Alternative 2 Years 1-3** ***Applicant's Proposed Action***	**Alternative 2 Years 4-10** ***Applicant's Proposed Action***	**Alternative 3** ***Performance-Based***	**Alternative 4** ***Season-Based***
Cattle Number (based on 96 percent public)	2,955 (2,837 on Public Domain) Flexibility for 250 head 10/1-10/15 (118AUMs) 15 horses 3/15 to 9/30 (99 AUMs)	3,164 (3,036 on Public Domain) Flexibility for 250 Cattle 10/1-10/15 (118AUMs); 25 horses 3/15 to 10/15 (177 AUMs)	3,557 (3,414 on Public Domain) Flexibility for 250 Cattle 10/1-10/15 (118AUMs); 25 horses 3/15 to 10/15 (177 AUMs)	3,054 (2,932 on Public Domain) Flexibility for 250 head 10/1-10/15 (118AUMs) 15 horses 3/15 to 9/30 (99 AUMs)	1,604 (1,540 on Public Domain) Flexibility for 250 head 10/1-10/15 (118AUMs) 15 horses 3/15 to 10/15 (106 AUMs)
Active AUMs	18,870	20,264	22,750	19,500	10,350
Voluntary Nonuse AUMs	0	2,486	0	0	0
Suspension AUMs	10,896	10,896	10,896	10,896	10,896
Permitted AUMs	29,766	33,646	33,646	30,296	21,246
% Change compared to recent average actual use-14,802 AUMs (2002-2011)	+27%	+37%	+54%	+32 %	-30 %
% Change Compared to Current Authorized Active use AUMs (permit; 19,500 AUMs)	-3%	+4%	+17%	No Change	-47%
% Change Compared to Current Situation alternative Active	No change	+7%	+21%	+3%	-45%

	Alternative 1 ***Current Situation***	**Alternative 2 Years 1-3** ***Applicant's Proposed Action***	**Alternative 2 Years 4-10** ***Applicant's Proposed Action***	**Alternative 3** ***Performance-Based***	**Alternative 4** ***Season-Based***
use AUMs (18,870 AUMs)					

(Alternative 5 is the No Grazing alternative and has no data for use)

Table D-2: Garat allotment (#00584) alternative comparison of pasture data alternatives 1, 2, and 3

	Pasture	**Alternative 1**		**Alternative 2**		**Alternative 3**	
		No Action		***Applicant's Proposed Action***		***Performance-Based***	
Seasons of Use by Pasture	1 Dry Lake	Year 1	3/15 to 6/15	All Years	3/15 to 6/30 (Avoid grazing use between 4/15 and 6/15 at least one in each three years)	Year 1	3/15 to 6/15
		Year 2	Rest			Year 2	Rest
		Year 3	3/15 to 6/15			Year 3	3/15 to 6/15
	2 Piute Creek	Year 1	3/15 to 6/15	All Years	3/15 to 6/30 (Avoid grazing use between 4/15 and 6/15 at least one in each three years)	Year 1	3/15 to 6/15
		Year 2	Rest			Year 2	Rest
		Year 3	3/15 to 6/15			Year 3	3/15 to 6/15
	3 Forty-Five	Year 1	3/15 to 6/15	All Years	3/15 to 6/30 (Avoid grazing use between 4/15 and 6/15 at least one in each three years)	Year 1	3/15 to 6/15
		Year 2	3/15 to 6/15			Year 2	3/15 to 6/15
		Year 3	Rest			Year 3	Rest
	4 Kimball	Year 1	Rest	All Years	3/15 to 9/30 (defer grazing use until after 6/15 at least one in each three years, or rest at least one in five years)	Year 1	Rest
		Year 2	3/15 to 6/15			Year 2	3/15 to 6/15
		Year 3	3/15 to 6/15			Year 3	3/15 to 6/15
	5 Big Horse	Year 1	8/1 to 9/30	All Years	3/15 to 6/30 (Avoid grazing use between 4/15 and 6/15 at least one in each three years)	Year 1	8/1 to 9/30
		Year 2	8/1 to 9/30			Year 2	8/1 to 9/30
		Year 3	6/16 to 9/30			Year 3	6/16 to 9/30
	6 Juniper Basin	Year 1	6/16 to 9/30	All Years	6/15 to 9/30	Year 1	6/16 to 9/30
		Year 2	6/16 to 9/30			Year 2	6/16 to 9/30
		Year 3	6/16 to 9/30			Year 3	6/16 to 9/30
Number of	1	Year 1	62	All Years	Summary for all pastures:	Year 1	62

	Pasture	Alternative 1		Alternative 2		Alternative 3	
		No Action		*Applicant's Proposed Action*		*Performance-Based*	
Days by Pasture	Dry Lake	Year 2	0		200	Year 2	0
		Year 3	62			Year 3	62
	2 Piute Creek	Year 1	62			Year 1	62
		Year 2	0			Year 2	0
		Year 3	62			Year 3	62
	3 Forty-Five	Year 1	62			Year 1	62
		Year 2	62			Year 2	62
		Year 3	0			Year 3	0
	4 Kimball	Year 1	0			Year 1	0
		Year 2	62			Year 2	62
		Year 3	62			Year 3	62
	5 Big Horse	Year 1	61			Year 1	61
		Year 2	61			Year 2	61
		Year 3	108			Year 3	108
	6 Juniper Basin	Year 1	47 (full herd) 61 (½ of herd)			Year 1	47 (full herd) 61 (½ of herd)
		Year 2	47 (full herd) 61 (½ of herd)			Year 2	47 (full herd) 61 (½ of herd)
		Year 3	108			Year 3	108
AUMs by Pasture (PD only)	1 Dry Lake	Year 1	2,776 AUMs (½ of herd)	All Years	Allotment-wide 20,263 in years 1-3 and 22,750 in years 4-10	Year 1	2,988 AUMs (½ of herd)
		Year 2	0 AUMs			Year 2	0 AUMs
		Year 3	2,776 AUMs (½ of herd)			Year 3	2,988 AUMs (½ of herd)
	2 Piute Creek	Year 1	2,776 AUMs (½ of herd)			Year 1	2,988 AUMs (½ of herd)
		Year 2	0 AUMs			Year 2	0 AUMs
		Year 3	(½ of herd)			Year 3	2,988 AUMs (½ of herd)
	3 Forty-Five	Year 1	2,776 AUMs (½ of herd)			Year 1	2,988 AUMs (½ of herd)
		Year 2	2,776 AUMs (½ of herd)			Year 2	2,988 AUMs (½ of herd)

	Pasture	Alternative 1		Alternative 2		Alternative 3	
		No Action		*Applicant's Proposed Action*		*Performance-Based*	
		Year 3	0 AUMs			Year 3	0 AUMs
	4 Kimball	Year 1	0 AUMs			Year 1	0 AUMs
		Year 2	2,776 AUMs (½ of herd)			Year 2	2,988 AUMs (½ of herd)
		Year 3	2,776 AUMs (½ of herd)			Year 3	2,988 AUMs (½ of herd)
	5 Big Horse	Year 1	2,731 AUMs (½ of herd)			Year 1	2,940 AUMs (½ of herd)
		Year 2	2,731 AUMs (½ of herd)			Year 2	2,940 AUMs (½ of herd)
		Year 3	3,224 AUMs (⅓ of herd)			Year 3	3,470 AUMs (⅓ of herd)
	6 Juniper Basin	Year 1	4,209 AUMs (full herd) + 2,731 AUMs (½ of herd)			Year 1	4,530 AUMs (full herd) + 2,940 AUMs (½ of herd)
		Year 2	4,209 AUMs (full herd) + 2,731 AUMs (½ of herd)			Year 2	4,530 AUMs (full herd) + 2,940 AUMs (½ of herd)
		Year 3	6,448 AUMs (⅔ of herd)			Year 3	6,940 AUMs (⅔ of herd)
Acres per AUM by Pasture (PD only)	1 Dry Lake	Year 1	12.4	All Years	Allotment-wide: 10.0 in years 1-3 and 8.9 in years 4-10	Year 1	11.4
		Year 2	NA			Year 2	NA
		Year 3	12.4			Year 3	11.4
	2 Piute Creek	Year 1	12.4			Year 1	11.4
		Year 2	NA			Year 2	NA
		Year 3	12.4			Year 3	11.4
	3 Forty-Five	Year 1	15.5			Year 1	14.3
		Year 2	15.5			Year 2	14.3
		Year 3	NA			Year 3	NA
	4 Kimball	Year 1	NA			Year 1	NA
		Year 2	13.9			Year 2	12.9

	Pasture	Alternative 1		Alternative 2		Alternative 3	
		No Action		*Applicant's Proposed Action*		*Performance-Based*	
		Year 3	13.9			Year 3	12.9
	5 Big Horse	Year 1	13.9			Year 1	12.9
		Year 2	13.9			Year 2	12.9
		Year 3	11.8			Year 3	11.0
	6 Juniper Basin	Year 1	7.0			Year 1	6.5
		Year 2	7.0			Year 2	6.5
		Year 3	7.6			Year 3	7.0

(Data for Alternative 4 with three sub-alternatives are provided in Table D-3; Alternative 5 is the No Grazing alternative and has no data for use)

Table D-3: Garat allotment (#00584) alternative comparison of pasture data Alternatives 4 sub-alternatives A, B, and C

	Pasture	Alternative 4A		Alternative 4B		Alternative 4C	
		Season-Based with Pasture-wide Constraints		*Season-Based with Herding to Meet Riparian Constraints*		*Season-Based with Pasture 4 Water-Gap*	
Seasons of Use by Pasture	1 Dry Lake	Year 1	3/15 to 6/30	Year 1	3/15 to 6/30	Year 1	3/15 to 6/30
		Year 2	3/15 to 4/15	Year 2	3/15 to 4/15	Year 2	3/15 to 4/15
		Year 3	3/15 to 4/15	Year 3	3/15 to 4/15	Year 3	3/15 to 4/15
	2 Piute Creek	Year 1	3/15 to 6/30	Year 1	3/15 to 6/30	Year 1	3/15 to 6/30
		Year 2	3/15 to 4/15	Year 2	3/15 to 4/15	Year 2	3/15 to 4/15
		Year 3	3/15 to 4/15	Year 3	3/15 to 4/15	Year 3	3/15 to 4/15
	3 Forty-Five	Year 1	7/1 to 10/15 (flexible use with pastures 5 and 6)	Year 1	7/1 to 10/15 (flexible use with pastures 4, 5, and 6)	Year 1	7/1 to 10/15 (flexible use with pastures 4, 5, and 6)
		Year 2	Rest	Year 2	7/1 to 10/15 (flexible use with other pastures)	Year 2	Rest
		Year 3	4/16 to 6/30	Year 3	4/16 to 6/30 (with flexibility to extend use to 10/15)	Year 3	4/16 to 6/30
	4 Kimball	Year 1	Rest	Year 1	7/1 to 10/15 (flexible use with other pastures)	Year 1	7/1 to 10/15 (flexible use with pastures 4, 5, and 6)
		Year 2	4/16 to 6/30	Year 2	4/16 to 6/30 (with flexibility to extend use to 10/15)	Year 2	4/16 to 6/30 (with flexibility to extend use to 10/15)
		Year 3	7/1 to 10/15 (flexible use with pastures 5 and 6)	Year 3	7/1 to 10/15 (flexible use with other pastures)	Year 3	7/1 to 10/15 (flexible use with other pastures)
	5 Big	Year 1	3/15 to 6/30 (use can extend to 10/15)	Year 1	3/15 to 6/30 (use can extend to 10/15)	Year 1	3/15 to 6/30 (use can extend to 10/15)

	Pasture	Alternative 4A		Alternative 4B		Alternative 4C	
		Season-Based with Pasture-wide Constraints		***Season-Based with Herding to Meet Riparian Constraints***		***Season-Based with Pasture 4 Water-Gap***	
	Horse	Year 2	7/1 to 10/15 (flexible use with other pastures)	Year 2	7/1 to 10/15 (flexible use with other pastures)	Year 2	7/1 to 10/15 (flexible use with other pastures)
		Year 3	7/1 to 10/15 (flexible use with other pastures)	Year 3	7/1 to 10/15 (flexible use with other pastures)	Year 3	7/1 to 10/15 (flexible use with other pastures)
	6 Juniper Basin	Year 1	3/15 to 6/30 (use can extend to 10/15)	Year 1	3/15 to 6/30 (use can extend to 10/15)	Year 1	3/15 to 6/30 (use can extend to 10/15)
		Year 2	7/1 to 10/15 (flexible use with other pastures)	Year 2	7/1 to 10/15 (flexible use with other pastures)	Year 2	7/1 to 10/15 (flexible use with other pastures)
		Year 3	7/1 to 10/15 (flexible use with other pastures)	Year 3	7/1 to 10/15 (flexible use with other pastures)	Year 3	7/1 to 10/15 (flexible use with other pastures)
Number of Days by Pasture	1 Dry Lake	Year 1	106 (use with pasture 2, 5, and 6)	Year 1	106 (use with pasture 2, 5, and 6)	Year 1	106 (use with pasture 2, 5, and 6)
		Year 2	31 (use with pasture 2)	Year 2	31 (use with pasture 2)	Year 2	31 (use with pasture 2)
		Year 3	31 (use with pasture 2)	Year 3	31 (use with pasture 2)	Year 3	31 (use with pasture 2)
	2 Piute Creek	Year 1	106 (use with pasture 1, 5, and 6)	Year 1	106 (use with pasture 1, 5, and 6)	Year 1	106 (use with pasture 1, 2, and 6)
		Year 2	31 (use with pasture 1)	Year 2	31 (use with pasture 1)	Year 2	31 (use with pasture 1)
		Year 3	31 (use with pasture 1)	Year 3	31 (use with pasture 1)	Year 3	31 (use with pasture 1)
	3 Forty- Five	Year 1	106 (flexible use with pastures 5 and 6)	Year 1	106 (flexible use with pastures 4, 5, and 6)	Year 1	106 flexible use with other pastures)
		Year 2	Rest	Year 2	106 (flexible use with pastures 4, 5, and 6)	Year 2	Rest
		Year 3	75	Year 3	75 (with flexibility to extend use to 10/15)	Year 3	75
	4 Kimball	Year 1	Rest	Year 1	106 (flexible use with other pastures)	Year 1	106 (flexible use with other pastures)
		Year 2	75	Year 2	75 (with flexibility to extend use to 10/15)	Year 2	75 (with flexibility to extend use to 10/15)
		Year 3	106 (flexible use with pastures 5 and 6)	Year 3	106 (flexible use with other pastures)	Year 3	106 (flexible use with other pastures)
	5 Big Horse	Year 1	212 (with flexibility to use multiple pastures)	Year 1	212 (with flexibility to use multiple pastures)	Year 1	212 (with flexibility to use multiple pastures)
		Year 2	106 (flexible use with other pastures)	Year 2	106 (flexible use with other pastures)	Year 2	106 (flexible use with other pastures)
		Year 3	106 (flexible use with other pastures)	Year 3	106 (flexible use with other pastures)	Year 3	106 (flexible use with other pastures)
	6 Juniper Basin	Year 1	212 (with flexibility to use multiple pastures)	Year 1	212 (with flexibility to use multiple pastures)	Year 1	212 (with flexibility to use multiple pastures)
		Year 2	106 (flexible use with other pastures)	Year 2	106 (flexible use with other pastures)	Year 2	106 (flexible use with other pastures)

	Pasture	Alternative 4A		Alternative 4B		Alternative 4C	
		Season-Based with Pasture-wide Constraints		*Season-Based with Herding to Meet Riparian Constraints*		*Season-Based with Pasture 4 Water-Gap*	
		Year 3	106 (flexible use with other pastures)	Year 3	106 (flexible use with other pastures)	Year 3	106 (flexible use with other pastures)
AUMs by Pasture (PD only)	1 Dry Lake	Year 1	5,366 in common with pastures 2, 5, and 6 through 6/30	Year 1	5,366 in common with pastures 2, 5, and 6 through 6/30	Year 1	5,366 in common with pastures 2, 5, and 6 through 6/30
		Year 2	1,569 (in common with pasture 2)	Year 2	1,569 (in common with pasture 2)	Year 2	1,569 (in common with pasture 2)
		Year 3	1,569 (in common with pasture 2)	Year 3	1,569 (in common with pasture 2)	Year 3	1,569 (in common with pasture 2)
	2 Piute Creek	Year 1	5,366 in common with pastures 1, 5, and 6 through 6/30	Year 1	5,366 in common with pastures 1, 5, and 6 through 6/30	Year 1	5,366 in common with pastures 1, 5, and 6 through 6/30
		Year 2	1,569 (in common with pasture 1)	Year 2	1,569 (in common with pasture 1)	Year 2	1,569 (in common with pasture 1)
		Year 3	1,569 (in common with pasture 1)	Year 3	1,569 (in common with pasture 1)	Year 3	1,569 (in common with pasture 1)
	3 Forty-Five	Year 1	5,366 in common with pastures 5 and 6 after 6/30	Year 1	5,366 in common with pastures 4, 5, and 6 after 6/30	Year 1	5,366 in common with pastures 4, 5, and 6 after 6/30
		Year 2	Rest	Year 2	Flexible use with pastures 4, 5, and 6 after 6/30	Year 2	Rest
		Year 3	3,797	Year 3	3,797 through 6/30 (with flexibility to extend use to 10/15 in common with pastures 4, 5, and 6)	Year 3	3,797
	4 Kimball	Year 1	Rest	Year 1	5,366 in common with pastures 3, 5, and 6 after 6/30	Year 1	5,366 in common with pastures 3, 5, and 6 after 6/30
		Year 2	3,797	Year 2	3,797 through 6/30 (with flexibility to extend use to 10/15)	Year 2	3,797 through 6/30 (with flexibility to extend use to 10/15)
		Year 3	5,366 in common with pastures 5 and 6 after 6/30	Year 3	5,366 in common with pastures 3, 5 and 6 after 6/30	Year 3	5,366 in common with pastures 5 and 6 after 6/30
	5 Big Horse	Year 1	5,366 in common with pastures 1, 2, and 6 through 6/30 (with flexibility to extend use to 10/15)	Year 1	5,366 in common with pastures 1, 2, and 6 through 6/30 (with flexibility to extend use to 10/15)	Year 1	5,366 in common with pastures 1, 2, and 6 through 6/30 (with flexibility to extend use to 10/15)
		Year 2	5,366 in common with other pastures after 6/30	Year 2	5,366 in common with other pastures after 6/30	Year 2	5,366 in common with other pastures after 6/30
		Year 3	5,366 in common with other pastures after 6/30	Year 3	5,366 in common with other pastures after 6/30	Year 3	5,366 in common with other pastures after 6/30
	6 Juniper Basin	Year 1	5,366 in common with pastures 1, 2, and 5 through 6/30	Year 1	5,366 in common with pastures 1, 2, and 5 through 6/30	Year 1	5,366 in common with pastures 1, 2, and 5 through 6/30

	Pasture	Alternative 4A		Alternative 4B		Alternative 4C	
		Season-Based with Pasture-wide Constraints		***Season-Based with Herding to Meet Riparian Constraints***		***Season-Based with Pasture 4 Water-Gap***	
			(with flexibility to extend use to 10/15)		(with flexibility to extend use to 10/15)		(with flexibility to extend use to 10/15)
		Year 2	5,366 in common with other pastures after 6/30	Year 2	5,366 in common with other pastures after 6/30	Year 2	5,366 in common with other pastures after 6/30
		Year 3	5,366 in common with other pastures after 6/30	Year 3	5,366 in common with other pastures after 6/30	Year 3	5,366 in common with other pastures after 6/30
Acres per AUM by Pasture (PD only)	1 Dry Lake	Year 1	22.4 in common with pastures 2, 5, and 6 through 6/30	Year 1	22.4 in common with pastures 2, 5, and 6 through 6/30	Year 1	22.4 in common with pastures 2, 5, and 6 through 6/30
		Year 2	21.9 (with pasture 2)	Year 2	21.9 (with pasture 2)	Year 2	21.9 (with pasture 2)
		Year 3	21.9 (with pasture 2)	Year 3	21.9 (with pasture 2)	Year 3	21.9 (with pasture 2)
	2 Piute Creek	Year 1	22.4 in common with pastures 1, 5, and 6 through 6/30	Year 1	22.4 in common with pastures 1, 5, and 6 through 6/30	Year 1	22.4 in common with pastures 1, 5, and 6 through 6/30
		Year 2	21.9 (with pasture 1)	Year 2	21.9 (with pasture 1)	Year 2	21.9 (with pasture 1)
		Year 3	21.9 (with pasture 1)	Year 3	21.9 (with pasture 1)	Year 3	21.9 (with pasture 1)
	3 Forty- Five	Year 1	Flexible use with pastures 5 and 6 after 6/30	Year 1	Flexible use with pastures 4, 5, and 6 after 6/30	Year 1	Flexible use with pastures 4, 5, and 6 after 6/30
		Year 2	Rest	Year 2	24.0 Flexible use with pastures 5 and 6 after 6/30 (pasture 4 also available after 6/30)	Year 2	Rest
		Year 3	11.3	Year 3	11.3 through 6/30 (with flexibility to extend use to 10/15)	Year 3	11.3
	4 Kimball	Year 1	Rest	Year 1	Flexible use in common with pastures 3, 5, and 6 after 6/30	Year 1	Flexible use in common with pastures 3, 5, and 6 after 6/30
		Year 2	10.0	Year 2	10.0 through 6/30 (with limited flexibility to extend use to 10/15)	Year 2	10.0 through 6/30 (with limited flexibility to extend use to 10/15)
		Year 3	Flexible use with pastures 5 and 6 after 6/30	Year 3	Flexible use in common with pastures 3, 5, and 6 after 6/30	Year 3	Flexible use with pastures 5 and 6 after 6/30
	5 Big Horse	Year 1	22.4 in common with pastures 1, 2, and 6 through 6/30 (with flexibility to extend use to 10/15)	Year 1	22.4 in common with pastures 1, 2, and 6 through 6/30 (with flexibility to extend use to 10/15)	Year 1	22.4 in common with pastures 1, 2, and 6 through 6/30 (with flexibility to extend use to 10/15)
		Year 2	16.0 Flexible use with pasture 6 after 6/30	Year 2	24.0 Flexible use with pastures 3 and 6 after 6/30 (pasture 4 also available after 6/30)	Year 2	16.0 Flexible use with pasture 6 after 6/30

	Pasture	Alternative 4A				Alternative 4C	
		Season-Based with Pasture-wide Constraints		***Season-Based with Herding to Meet Riparian Constraints***		***Season-Based with Pasture 4 Water-Gap***	
		Year 3	23.1 Flexiblke use with pastures 4 and 6 after 6/30	Year 3	23.1 Flexible use with pastures 4 and 6 after 6/30 (pasture 3 also available after 6/30)	Year 3	23.1 Flexible use with pastures 4 and 6 after 6/30
	6 Juniper Basin	Year 1	22.4 in common with pastures 1, 2, and 5 through 6/30 (with flexibility to extend use to 10/15)	Year 1	22.4 in common with pastures 1, 2, and 5 through 6/30 (with flexibility to extend use to 10/15)	Year 1	22.4 in common with pastures 1, 2, and 5 through 6/30 (with flexibility to extend use to 10/15)
		Year 2	16.0 Flexible use with pasture 5	Year 2	24.0 Flexible use with pastures 3 and 5 after 6/30 (pasture 4 also available after 6/30)	Year 2	16.0 Flexible use with pasture 5
		Year 3	23.1 (Flexible use with pastures 4 and 5 after 6/30)	Year 3	23.1 Flexible use with pastures 4 and 5 after 6/30 (pasture 3 also available after 6/30)	Year 3	23.1 Flexible use with pastures 4 and 5 after 6/30

(Data for alternative 1, 2, and 3 are provided in Table D-2; Alternative 5 is the No Grazing alternative and has no data for use)

Form 4130-1
(February 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

GRAZING SCHEDULE
GRAZING APPLICATION

FORM APPROVED
OMB NO. 1004-0041
Expires: August 31, 2014

FOR BLM USE ONLY

State Idaho
Office Owyhee Field Office, Boise District
Authorization No. 1101449
Schedule No.
Billing Code
Special Bill Code

Name *(last, first, middle initial)*
Petan Company of Nevada, Inc.

Address *(include street, city, State, and zip code)*
HC 32, Box 450
Tuscarora, Nevada 89834

I hereby apply for the following grazing use on the public lands and/or other lands administered by the Bureau of Land Management (BLM).

(1) ALLOTMENT NAME	(1) ALLOTMENT NO.	(2) PASTURE NO.	(3) LIVESTOCK NUMBER	(4) LIVESTOCK KIND	(5) PERIOD BEGIN	(5) PERIOD END	(6) % PL USE	(7) TYPE USE	(8) AUM'S
1 - Garat	00584		3042	C	03/15/2015	09/30/2015	96	A	19,202
2 - Garat	00584		250	C	10/01/2015	10/15/2015	96	A	118
3 - Garat	00584		25	H	03/15/2015	10/15/2015	100	A	177
4 - Garat	00584		121	C	03/15/2015	09/30/2015	96	A	764
5 - Garat	00584		394	C	03/15/2018	09/30/2016	96	A	2,487

See attached Appendix: August 2014 Grazing Application.

Show your recorded brands, earmarks, and wattles JP Left hip/Left rib

Show reason for nonuse, if requested: ☐ conservation and protection of the public lands; ☐ annual fluctuation of livestock operations; ☐ financial or other reasons beyond control of the operator; or ☐ livestock disease or quarantine.

Signature Mgr Sec/Tres. Date August 22. 2014

Reason for nonuse: ☐ Approved ☐ Disapproved *(Decision Required)* Signature of BLM Date

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

(See terms and conditions on page 2)

TERMS AND CONDITIONS

(See 43 CFR 4100)

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

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

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

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

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

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

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

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

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

10. The holder of this authorization must notify the authorized officer immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (cultural items), stop the activity in the area of the discovery and make a reasonable effort to protect the remains and/or cultural items.

11. Grazing fee payments are due on the date specified on the billing notice and must be paid in full within 15 days of the due date, except as otherwise provided in the grazing permit or lease. If payment is not made within that time frame, a late fee (the greater of $25 or 10 percent of the amount owed but not more than $250) will be assessed.

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

NOTICES

The Privacy Act and 43 CFR 2.48(d) require that you be furnished with the following information in connection with information requested by this form.

AUTHORITY: 43 U.S.C. 315b, 315m, 1181d, 1732, 1752, and 1903, and 43 CFR part 4100.

PRINCIPAL PURPOSE: The BLM will use the information you provide to process your application to graze livestock or request a change in grazing use on the public lands.

ROUTINE USES: In accordance with the Bureau of Land Management's (BLM) System of Records Notice published in the Federal Register on December 29, 2010 [Bureau of Land Management's Range Management System—Interior, LLM–2; Notice To Amend an Existing System of Records; Privacy Act of 1974; as Amended], names and addresses provided by the applicant on this form will be publically available in reports on the BLM public website.

EFFECT OF NOT PROVIDING INFORMATION: Disclosure of the information is required to obtain or retain a benefit. Failure to submit all of the requested information or to complete this form may result in delay or the rejection and/or denial of your application.

The Paperwork Reduction Act requires that you be furnished with the following information in connection with the information requested by this form: BLM collects this information to authorize livestock grazing on public lands. Response to this request is required in order to obtain or retain a benefit. You do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 15 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to: U.S. Department of the Interior, Bureau of Land Management (1004-0041), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Room 2134LM, Washington, D.C. 20240.

APPENDIX: AUGUST 2014 GRAZING APPLICATION OPTION I

I. APPLICATION TO RENEW PERMIT:

This is an application to renew the Permittee's (Petan Company of Nevada, Inc., "Petan") grazing permit for the Garat Allotment in accordance with the *Administrative Procedure Act*, 5 U.S.C. 558(c) and Public Law 113-76, Section 411.

This grazing application amends and supersedes the previous grazing application modification dated February 12, 2013, including Attachment A to the February 12, 2013 grazing application modification.

II. LINE NOTES:

Lines 1, 4, and 5 reflect a grazing season for cattle in the Garat Allotment of March 15 through September 30.

Line 2 provides management flexibility for strays at the close of the grazing season; not to exceed 250 head from 10/1 to 10/15.

Line 3 provides management flexibility for an average of 25 head of horses through the grazing season within the horse fields located near Stateline Camp and Four Corners Camp. Approximately 15 saddle horses may be kept at one or both of these locations season-long, but not to exceed 75 horses during periods when cattle are being moved between pastures or during branding; not to exceed 177 AUMs.

Line 4 reflects an application to authorize 764 AUMs of the 3,250 AUMs of Voluntary Non-Use prescribed by the 1989 Agreement, which Petan applies to be activated from Year 1 through Year 10 of the renewed grazing permit, or until the next permit renewal decision is issued, whichever is later.

Line 5 reflects an application to authorize 2,487 AUMs of the 3,250 AUMs of Voluntary Non-Use prescribed by the 1989 Agreement, which Petan applies to be activated from Year 4 through Year 10 of the renewed grazing permit, or until the next permit renewal decision is issued, whichever is later. Petan will continue applying for Voluntary Non-Use to the extent of 2,487 AUMs from Year 1 through Year 3.

Lines 1 - 4 total 20,261 AUMs, consistent with an overall stocking rate of 10 acres per AUM upon the 202,618 public acres within the Garat Allotment.

Lines 1 - 5 total 22,748 AUMs, consistent with the 22,750 AUM active permitted use specified by the *Approved Owyhee Resource Management Plan* dated December 30, 1999. Petan's permitted use includes 10,896 Suspended AUMs, for 33,646 AUMs of total permitted use associated with this application for permit renewal.

III. OTHER TERMS AND CONDITIONS:

The following Other Terms and Conditions will apply to the Grazing Permit for the Garat Allotment, in addition to the terms and conditions printed on the face of Form 4130-1 (***Grazing Schedule****: Grazing Application*) and the Standard Terms and Conditions printed on the back (page 2) of Form 4130-1 to which this "Appendix: August 2014 Grazing Application" is affixed:

1. Grazing use will be in accordance with the provisions set forth in the "Appendix: August 2014 Grazing Application" for the Garat Allotment (#00584) dated August 2014, which serves as the functional equivalent of an Allotment Management Plan for the Garat Allotment.

2. Line 2 of the schedule above provides management flexibility for strays at the close of the grazing season; not to exceed 250 head from 10/1 to 10/15.

3. Line 3 of the schedule above provides management flexibility for an average of 25 head of horses through the grazing season within the horse fields located near Stateline Camp and Four Corners Camp. Approximately 15 saddle horses may be kept at one or both of these locations season-long, but not to exceed 75 horses during periods when cattle are being moved between pastures or during branding; not to exceed 177 AUMs.

4. Livestock turnout dates are subject to the following Range Readiness criteria. Range Readiness is defined as that point in time when the soils have firmed after the spring thaw, when squirrel-tail (SIHY) has 2-4 inches new growth, and bluebunch wheatgrass (AGSP) has 4-6 inches new growth. When these parameters are reached, the rangelands in the Garat Allotment are considered ready for livestock use; the plants having achieved a growth stage that enables them to maintain themselves. Pastures with substantial old feed may be used before these limits are reached after mutual agreement with the BLM.

5. Your completed actual use report is due within 15 days of completing your authorized annual grazing use.

6. Salt and/or supplements shall not be placed within one quarter (¼) mile of springs, streams, meadows, aspen stands, playas, or water developments.

7. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.

8. Range improvements must be maintained in accordance with the cooperative agreements or range improvement permits to which you are a signatory or assignee.

9. Petan is authorized to place salt and to access and maintain its range improvements within the Owyhee River Wilderness areas located in the Garat Allotment with motorized vehicles and equipment consistent with the management it practiced in such areas prior to their designation as wilderness[1]. Petan's range improvements within the Owyhee River Wilderness areas located in the Garat Allotment are listed at page 14 of Appendix A[2] of the April 2014 *Owyhee Canyonlands Wilderness and Wild & Scenic Rivers Management Plan and Environmental Assessment* (Wilderness Plan), and are depicted on the map at page 33 of Appendix B[3] of said Wilderness Plan.

10. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.

11. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of $25.00 or 10 percent of the grazing bill, whichever is greater, not to exceed $250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR § 4140.1(b)(1) and shall result in action by the authorized officer under 43 CFR § 4150.1 and § 4160.1.

12. You will be annually billed for your grazing use after-the-fact based upon your "as filed" *Actual Grazing Use Report Form*, or its equivalent.

13. Grazing Strategy: The grazing strategy presented below provides a framework for a grazing system within the Garat Allotment designed to continue to meet Owyhee RMP goals and objectives and conform to Idaho Standards, while allowing adjustments due to annual variability in precipitation, forage production, and livestock water availability without placing undo demands and stresses upon BLM staff and resources. Likewise, the mid-season (6/15 - 6/30) overlap in use periods is allowed to ensure that livestock movement between pastures occurs in a controlled fashion to optimize the distribution of livestock between pastures within the Garat Allotment.

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[1] The equipment type, frequency of access for fence inspection and maintenance (as well as access for reservoir inspection regarding water levels and livestock use), frequency of access for reservoir maintenance, and comments regarding Petan's typical access and use of wilderness improvements prior to wilderness designation are shown in Table 1, titled "Table 1: Wilderness Improvements and Salt Routes, Use Prior to Wilderness Designation" hereby attached and incorporated by reference. Table 1 also shows the equipment type and frequency of use for roads that Petan typically used as salt routes prior to wilderness designation. Table 1 was prepared based upon information shared during cooperative meetings between Petan and the BLM prior to and after the Owyhee River Wilderness was designated, before the Wilderness Plan was finalized.

[2] The footer of the Wilderness Plan mislabels page 14 as Appendix D.

[3] The footer of the Wilderness Plan also mislabels page 33 as Appendix D.

Grazing Strategy : Garat Allotment

Dry Lake 1	Spring	3/15 to 6/30		
Dry Lake 2*	Spring	3/15 to 6/30		
"45"	Spring	3/15 to 6/30		
Big Horse	Spring	3/15 to 6/30		
Kimball	Flexible	3/15 to 6/30	or	6/15 to 9/30
Juniper Basin	Summer	6/15 to 9/30		

* May be renamed the "Piute Creek" pasture after the proposed Piute Creek fence improvement is completed.

- Avoid grazing Spring pastures between 4/15 and 6/15 at least once every 3 years.
- Graze at least two of the Spring pastures between 3/15 and 5/15 each year.
- If mid-season water is adequate, use 1 to 3 of the Spring pastures longer (as late as 6/30), and defer grazing the Kimball and Juniper Basin pastures until after 6/15.
- If water is scarce in Spring pastures, graze the Kimball pasture anytime during the Spring period (3/15 – 6/30) and graze the Juniper Basin pasture as early as 6/15, distributing cattle as needed.
- Defer grazing the Kimball pasture until after 6/15 at least once every 3 years, or rest it once every 5 years.
- Utilization may not exceed 50 percent of the current year's growth.
- Management Flexibility for Strays: Not to exceed 250 cattle from 10/1 – 10/15.

14. Grazing use outside of the parameters established herein may be allowed for the Garat Allotment upon prior notification and approval by an authorized officer of the BLM.

15. Petan will cooperate with the Idaho Department of Lands to identify, evaluate, and install range improvement stock wells upon State owned lands associated with Petan's Idaho State Grazing Lease G-6570 to improve livestock distribution within the Garat Allotment, particularly within the following Idaho State sections:

Highest Priority	T15S R3W, Section 36; T15S R2W, Section 36; and, T16S R2W, Section 16.
High Priority	T14S R2W, Section 16; T15S R3W, Section 16; 1W, Sections 16 & 36; and, T16S R1W, Section 16.
Moderate Priority	T14S R4W, Sections 16 & 36; and, T14S R3W, Section 36.

16. Petan and the BLM will cooperate to evaluate and complete the Piute Creek fence improvements depicted in Map 1, titled "Map 1: Piute Creek Fence Improvements" hereby attached and incorporated by reference. These range improvements are a modification of the cross-fence layout in the Piute Creek/Piute Basin area from the improvements that were presented in our June 27, 1997 "Comments to the Draft Owyhee Resource Management Plan and Draft Environmental Impact Statement" to avoid potential delays in approving and completing such range improvements in light of the Owyhee River Wilderness that was designated by Congress after Petan's June

27, 1997 fence improvement proposal. The Piute Creek fence improvements depicted herein are range improvement projects that would improve livestock distribution in the Garat Allotment and increase management flexibility, without requiring that any improvement structures be constructed within the Owyhee River Wilderness. The Piute Creek Fence range improvements would create a water lot around Piute Basin Reservoir that would provide access to stock water from both Pasture 2 (the Dry Lake 2 Pasture [or Piute Creek Pasture][4]) and Pasture 3 (the Forty-Five Pasture). As is the case for the fences to be removed by these proposed improvements, maintenance for the new fences will be Petan's responsibility.

17. Petan and the BLM will cooperate to identify and evaluate additional range improvement projects to improve livestock distribution within the Garat Allotment, particularly projects where existing or additional livestock water sources could be restored, improved, or developed in the pastures herein identified as Spring pastures. As such projects are identified, Petan and the BLM will cooperatively assess their feasibility and potential to improve livestock distribution within the Garat Allotment. The BLM will provide the necessary environmental and cultural clearances needed to implement such projects[5].

18. Petan recognizes the two existing well locations in the Big Horse Pasture of the Garat Allotment known as *Middle Windmill* and *45 Windmill* as additional range improvements that could be completed to provide livestock water to significantly improve livestock distribution in the Big Horse Pasture. These locations have the potential to provide livestock water at each old windmill site, as well as to significant additional acreage in the Big Horse Pasture by means of gravity fed pipelines to lower elevation areas. Petan and the BLM will begin a cooperative process as soon as workloads allow in order to determine what would be required to restore these wells and their associated water delivery structures to a functioning condition, and to develop a pipeline system from one or both sites to provide water to additional acreage downhill from the existing well locations.

19. Pursuant to 43 CFR § 10.4(b), you must notify the BLM Field Manager, by telephone with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR § 10.2) on federal lands. Pursuant to 43 CFR § 10.4(c), you must immediately stop any ongoing activities connected with such discovery and make a reasonable effort to protect the discovered remains or objects.

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[4] The Dry Lake 2 Pasture could be renamed the Piute Creek Pasture after the fence improvements are completed.

[5] Petan and the BLM will cooperate to identify potential funding sources that might be used to implement any agreed upon range improvement projects within the Garat Allotment, including, but not limited to, range betterment funds and Grazing Lands Conservation Initiative project grants. Petan and the BLM will identify all economic contributions, construction responsibilities, and maintenance responsibilities for each party associated with any such projects through Section-4 Range Improvement Permits or Cooperative Agreements.

Table 1: Wilderness Improvements and Salt Routes, Use Prior to Wilderness Designation

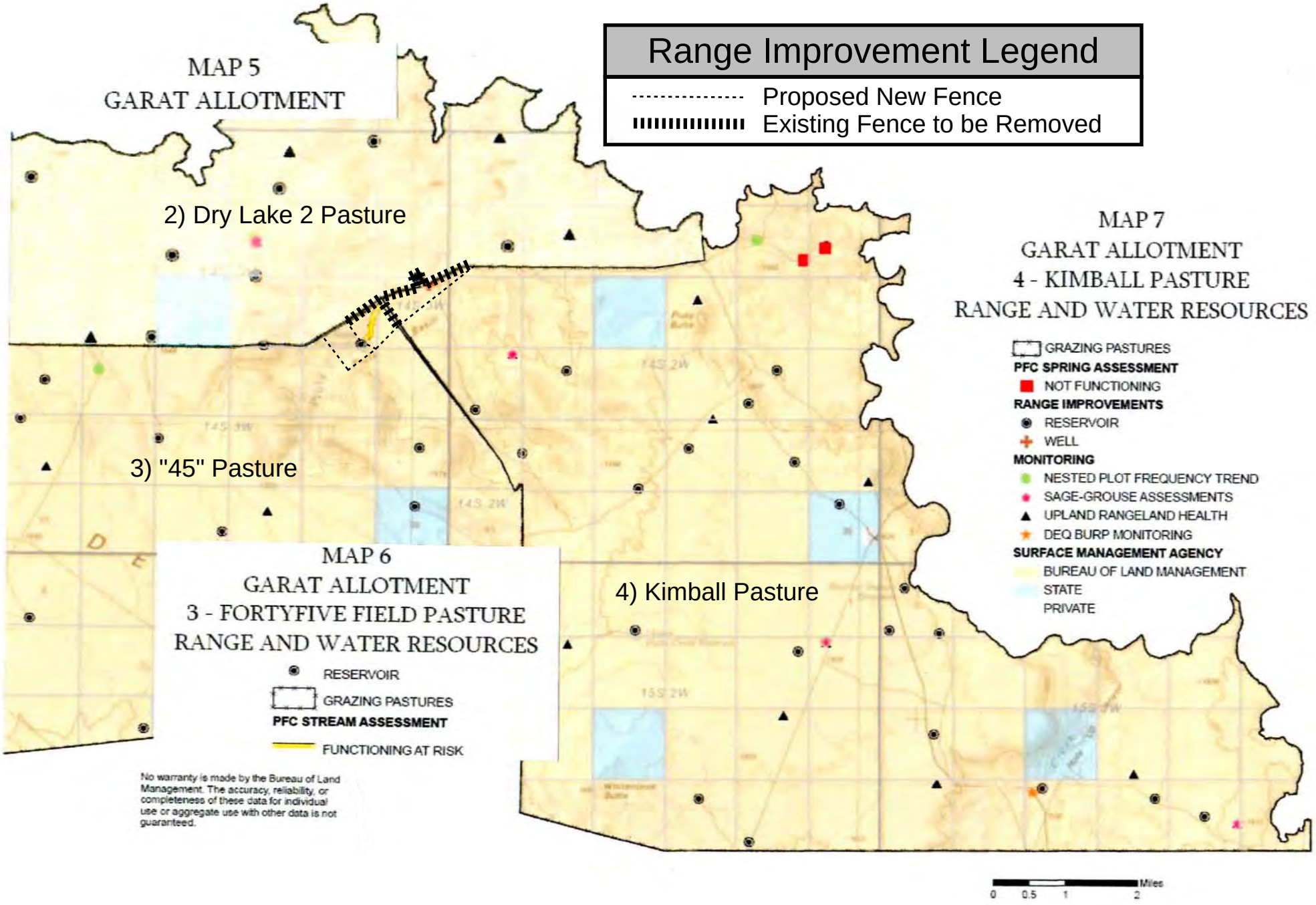
RIPS#	PROJECTS	T	R	SEC	SUB	ALLOTMENT	Allotment #	Permittee	Amount in Wilderness	Year built	Equipment Type	Fence	Reservoir	Comments
												Frequency of Use (number of times per year)		.2=5yrs .1=10yrs .067=15yrs .05=20 yrs .04=25yrs .033=30yrs
Owyhee River Wilderness														
Projects in Garat Allotment 584														
300390	Chilly Gulch Reservoir/Crutcher Crossing Res.	13 S.	4 W.	32	NWNW	GARAT	584	Petan Co.	Part	1960 1968	N/A	N/A	N/A	will be excluded w/ bndy change and is no longer Wilderness reservoir
301247	Dry Lake Fence	13 S.	4 W.	34	E1/2	GARAT	584	Petan Co.	All	1966	pickup/ATV	3	N/A	
301247	Dry Lake Fence	14 S.	4 W.	3	E1/2	GARAT	584	Petan Co.	Part	1966	pickup/ATV	3	N/A	
300350	Reservoir 14/ Jackrabbit Res.	14 S.	4 W.	18	NWNW	GARAT	584	Petan Co.	All	1960	pickup/bulldozer	56	0.1	Maintain Res., temp. corral setup, brand cattle with pickup and bulldozer
301127	Garat Reservoir 1	14 S.	4 W.	29	NENW	GARAT	584	Petan Co.	All	1952	N/A	N/A	N/A	will be excluded w/ bndy survey
	Corral in Grassy Ridge	14 S.	4 W.	29	NWNE	GARAT	584	Petan Co.	All		N/A	N/A	N/A	will be excluded w/ bndy survey
300296	Petan Reservoir 2	15 S.	1 W.	23	SWNE	GARAT	584	Petan Co.	Part	1960	N/A	N/A	N/A	will be excluded w/ bndy survey
300328	Reservoir 5/Big Hole Res.	14 S.	3 W.	2	NENE	GARAT	584	Petan Co.	All	1960	pickup/bulldozer	56	0.1	
300845	Beta Reservoir 9/ Hidden Res.	14 S.	2 W.	12	NESW	GARAT	584	Petan Co.	All	1963	pickup/bulldozer	56	0.1	
	Unnamed Reservoir/Little Hidden Res.	14 S.	2 W.	11	SESE	GARAT	584	Petan Co.	All		pickup/bulldozer	56	0.1	
300838	Kimball Basin Reservoir/Garat Res.	14 S.	2 W.	23	SWNE	GARAT	584	Petan Co.	Part	1963	N/A	N/A	N/A	will be excluded w/ bndy survey
300325	Reservoir 2A	14 S.	2 W.	7	NESE	GARAT	584	Petan Co.	All	1960	pickup/bulldozer	56	0.1	
300096	Petan Piute Basin Fence	14 S.	2 W.	10	WSE	GARAT	584	Petan Co.	Part	1960	pickup	4	N/A	
300364	Reservoir 21 (Coyote Hole on Topo)	15 S.	4 W.	3	SESW	GARAT	584	Petan Co.	Part	1960	N/A	N/A	N/A	will be excluded w/ bndy survey
305045	Middle Well	16 S.	3 W.	9	NWNW	GARAT	584	Petan Co.	All	1960	N/A	N/A	N/A	will be excluded w/ bndy survey
305046	Stateline Windmill (South Well)	16 S.	3 W.	26	SESESE	GARAT	584	Petan Co.	All	1960	N/A	N/A	N/A	will be excluded w/ bndy survey
300301	Petan Land & Cattle Co. Fence (ID/NV boundary & pastures)	16 S.	1 W.	23	Multiple	GARAT/45	584/629	Petan Co.	Part	1944	N/A	N/A	N/A	will be excluded w/ bndy survey Access will continue only on Nevada side
0411	Big Bend Reservoir/Chilly Gulch Res.	13 S.	4 W.	28	NESW	GARAT	584	Petan Co.	All		N/A	N/A	N/A	Will be part of Cherry Stem and Non Wilderness

0068	Sewell Fence	14 S.	2 W.	5, 6	N1/2	GARAT	584	Petan Co.	All		pickup	4	N/A	
	Division Fence by 45 Ranch	14 S.	4 W.	19	NE	Garat	584	Petan Co.	Part		pickup/ATV	3	N/A	
Sec 4 TGA	Dennis Swisher Fence	13 S.	4 W.	30, 31		Garat	584	Petan Co.	Part		N/A	N/A	N/A	Not currently maintaining If fence exists would be same as Dry Lake Fence
	Division Fence (Coyote Hole)	15 S.	4 W.	22, 23, 24	N1/2	Garat	584	Petan Co.	Part		pickup/ATV	3	N/A	
	Gap Fence at Garat Crossing	14 S.	1 W.	19	SWSWSW	GARAT	584	Petan Co.	All		N/A	N/A	N/A	Non motorized equiptment for repair/maintenace within wilderness
	Division Fence by Duck Valley	15 S.	1 W.	24	S1/2	GARAT	584	Petan Co.	Part		N/A	N/A	N/A	Not within Wilderness Accessed outside of Wilderness
	Wiley Ranch Access Gap Fence	14 S.	2 W.	2	SESW	GARAT	584	Petan Co.	All		pickup/ATV	3	N/A	
	Boundary Fence (Duck Valley/BLM)	15 S.	1 W.	24	E1/2	GARAT	584	Petan Co.	Part		pickup/ATV	35	N/A	

 = Table entries that are not applicable because the improvements are not in the wilderness.

Salting, Motorized Herding and Proposals

Permittee	Allotment	Equipment	Salt	Motorized Herding and Gathering	Salt Amount	Season	Proposal	Comments
			Frequency of Use (days/year)					
Owyhee River Wilderness								
Petan Co.	Garat 584	pickup	56	N/A	incomplete	incomplete	N/A	Big Hole Res.
Petan Co.	Garat 584	pickup	56	N/A	incomplete	incomplete	N/A	Hidden Res.
Petan Co.	Garat 584	pickup	56	N/A	incomplete	incomplete	N/A	Res. 2A In-addition salting continues past the fence to the end of the road
Petan Co.	Garat 584	pickup	28	N/A	incomplete	March-Oct.	N/A	Bull Camp Road. Salting for livestock distribution and resource management



Map 1: Piute Creek Fence Improvements Option I

APPENDIX: AUGUST 2014 GRAZING APPLICATION OPTION II

I. APPLICATION TO RENEW PERMIT:

This is an application to renew the Permittee's (Petan Company of Nevada, Inc., "Petan") grazing permit for the Garat Allotment in accordance with the *Administrative Procedure Act*, 5 U.S.C. 558(c) and Public Law 113-76, Section 411.

This grazing application amends and supersedes the previous grazing application modification dated February 12, 2013, including Attachment A to the February 12, 2013 grazing application modification.

II. LINE NOTES:

Lines 1, 4, and 5 reflect a grazing season for cattle in the Garat Allotment of March 15 through September 30.

Line 2 provides management flexibility for strays at the close of the grazing season; not to exceed 250 head from 10/1 to 10/15.

Line 3 provides management flexibility for an average of 25 head of horses through the grazing season within the horse fields located near Stateline Camp and Four Corners Camp. Approximately 15 saddle horses may be kept at one or both of these locations season-long, but not to exceed 75 horses during periods when cattle are being moved between pastures or during branding; not to exceed 177 AUMs.

Line 4 reflects an application to authorize 764 AUMs of the 3,250 AUMs of Voluntary Non-Use prescribed by the 1989 Agreement, which Petan applies to be activated from Year 1 through Year 10 of the renewed grazing permit, or until the next permit renewal decision is issued, whichever is later.

Line 5 reflects an application to authorize 2,487 AUMs of the 3,250 AUMs of Voluntary Non-Use prescribed by the 1989 Agreement, which Petan applies to be activated from Year 4 through Year 10 of the renewed grazing permit, or until the next permit renewal decision is issued, whichever is later. Petan will continue applying for Voluntary Non-Use to the extent of 2,487 AUMs from Year 1 through Year 3.

Lines 1 - 4 total 20,261 AUMs, consistent with an overall stocking rate of 10 acres per AUM upon the 202,618 public acres within the Garat Allotment.

Lines 1 - 5 total 22,748 AUMs, consistent with the 22,750 AUM active permitted use specified by the *Approved Owyhee Resource Management Plan* dated December 30, 1999. Petan's permitted use includes 10,896 Suspended AUMs, for 33,646 AUMs of total permitted use associated with this application for permit renewal.

III. OTHER TERMS AND CONDITIONS:

The following Other Terms and Conditions will apply to the Grazing Permit for the Garat Allotment, in addition to the terms and conditions printed on the face of Form 4130-1 (***Grazing Schedule****: Grazing Application*) and the Standard Terms and Conditions printed on the back (page 2) of Form 4130-1 to which this "Appendix: August 2014 Grazing Application" is affixed:

1. Grazing use will be in accordance with the provisions set forth in the "Appendix: August 2014 Grazing Application" for the Garat Allotment (#00584) dated August 2014, which serves as the functional equivalent of an Allotment Management Plan for the Garat Allotment.

2. Line 2 of the schedule above provides management flexibility for strays at the close of the grazing season; not to exceed 250 head from 10/1 to 10/15.

3. Line 3 of the schedule above provides management flexibility for an average of 25 head of horses through the grazing season within the horse fields located near Stateline Camp and Four Corners Camp. Approximately 15 saddle horses may be kept at one or both of these locations season-long, but not to exceed 75 horses during periods when cattle are being moved between pastures or during branding; not to exceed 177 AUMs.

4. Livestock turnout dates are subject to the following Range Readiness criteria. Range Readiness is defined as that point in time when the soils have firmed after the spring thaw, when squirrel-tail (SIHY) has 2-4 inches new growth, and bluebunch wheatgrass (AGSP) has 4-6 inches new growth. When these parameters are reached, the rangelands in the Garat Allotment are considered ready for livestock use; the plants having achieved a growth stage that enables them to maintain themselves. Pastures with substantial old feed may be used before these limits are reached after mutual agreement with the BLM.

5. Your completed actual use report is due within 15 days of completing your authorized annual grazing use.

6. Salt and/or supplements shall not be placed within one quarter (¼) mile of springs, streams, meadows, aspen stands, playas, or water developments.

7. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.

8. Range improvements must be maintained in accordance with the cooperative agreements or range improvement permits to which you are a signatory or assignee.

9. Petan is authorized to place salt and to access and maintain its range improvements within the Owyhee River Wilderness areas located in the Garat Allotment with motorized vehicles and equipment consistent with the management it practiced in such areas prior to their designation as wilderness[1]. Petan's range improvements within the Owyhee River Wilderness areas located in the Garat Allotment are listed at page 14 of Appendix A[2] of the April 2014 *Owyhee Canyonlands Wilderness and Wild & Scenic Rivers Management Plan and Environmental Assessment* (Wilderness Plan), and are depicted on the map at page 33 of Appendix B[3] of said Wilderness Plan.

10. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.

11. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of $25.00 or 10 percent of the grazing bill, whichever is greater, not to exceed $250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR § 4140.1(b)(1) and shall result in action by the authorized officer under 43 CFR § 4150.1 and § 4160.1.

12. You will be annually billed for your grazing use after-the-fact based upon your "as filed" *Actual Grazing Use Report Form*, or its equivalent.

13. Grazing Strategy: The grazing strategy for the Garat Allotment is presented in Table 2, titled "Table 2: Garat Allotment Grazing Schedule" hereby attached and incorporated by reference. The grazing strategy is also depicted graphically in Figure 1, titled "Figure 1: Garat Allotment Schematic" hereby attached and incorporated by reference. The grazing strategy provides a framework for a grazing system within the Garat Allotment designed to meet Owyhee RMP goals and objectives and conform to Idaho Standards and Guidelines for grazing management, while allowing adjustments due to annual variability in precipitation, forage production, and livestock water availability without placing undo demands and stresses upon BLM or Petan staff and resources.

[1] The equipment type, frequency of access for fence inspection and maintenance (as well as access for reservoir inspection regarding water levels and livestock use), frequency of access for reservoir maintenance, and comments regarding Petan's typical access and use of wilderness improvements prior to wilderness designation are shown in Table 1, titled "Table 1: Wilderness Improvements and Salt Routes, Use Prior to Wilderness Designation" hereby attached and incorporated by reference. Table 1 also shows the equipment type and frequency of use for roads that Petan typically used as salt routes prior to wilderness designation. Table 1 was prepared based upon information shared during cooperative meetings between Petan and the BLM prior to and after the Owyhee River Wilderness was designated, before the Wilderness Plan was finalized.

[2] The footer of the Wilderness Plan mislabels page 14 as Appendix D.

[3] The footer of the Wilderness Plan also mislabels page 33 as Appendix D.

The grazing strategy incorporates the following management guidelines:

- Avoid grazing Preliminary Priority Habitat identified for Sage Grouse in Pastures 1, 2, 4E, 5, and 6 (Dry Lake 1, Dry Lake 2, Kimball East, Big Horse, and Juniper Basin pastures, respectively) more than once every 3 years during the Sage Grouse breeding season (4/16 to 6/15).
- Avoid grazing Pastures 3 and 4W (Forty-Five and Kimball West pastures, respectively) more than twice every 3 years during the critical growing season for bluebunch wheatgrass (5/01 to 6/10).
- Limit average utilization in each pasture each year to no more than 40% through 6/15 (the end of the Sage Grouse breeding season, which is also beyond the critical growing season for bluebunch wheatgrass).
- Limit average utilization in each pasture each year to no more than 50% after 6/15 (after both the Sage Grouse breeding season and the critical growing season for bluebunch wheatgrass).
- Use Pasture 5 (Big Horse) in years when stock water is available to reduce use in other pastures or allow them to be rested from livestock grazing altogether.
- All cattle can move into Pasture 6 (Juniper Basin) as early as 6/16 any year if other pastures lack stock water.
- Allow ten (10) days of flexibility from scheduled use dates for orderly, low-stress movement of cattle between pastures. Pasture moves outside of this ten (10) day flexibility period will require prior notification and approval by an authorized officer of the BLM.
- Management Flexibility for Strays: Not to exceed 250 cattle from 10/1 – 10/15.

14. Grazing use outside of the parameters established herein may be allowed for the Garat Allotment upon prior notification and approval by an authorized officer of the BLM.

15. Petan will cooperate with the Idaho Department of Lands to identify, evaluate, and install range improvement stock wells upon State owned lands associated with Petan's Idaho State Grazing Lease G-6570
Allotment, particularly within the following Idaho State sections:

<u>Highest Priority</u>	T15S R3W, Section 36; T15S R2W, Section 36; and, T16S R2W, Section 16.
<u>High Priority</u>	T14S R2W, Section 16; T15S R3W, Section 16; T15S R1W, Sections 16 & 36; and, T16S R1W, Section 16.
<u>Moderate Priority</u>	T14S R4W, Sections 16 & 36; and, T14S R3W, Section 36.

16. Petan and the BLM will cooperate to evaluate and complete the Piute Creek and Kimball Division fence improvements depicted in Map 1, titled "Map 1: Piute Creek and Kimball Division Fence Improvements" hereby attached and incorporated by reference. These fence projects are range improvements that would improve livestock distribution in the Garat Allotment and increase management flexibility, without

requiring construction of any improvement structures within the Owyhee River Wilderness. As is the case for the fences to be removed by these proposed improvements, maintenance for the new fences will be Petan's responsibility.

The Piute Creek Fence range improvements are a modification of the cross-fence layout in the Piute Creek/Piute Basin area from the improvements that were presented in our June 27, 1997 "Comments to the Draft Owyhee Resource Management Plan and Draft Environmental Impact Statement" to avoid potential delays in approving completing such range improvements in light of the Owyhee River Wilderness that was designated by Congress after Petan's June 27, 1997 fence improvement proposal. The Piute Creek Fence range improvements would create a water lot around Piute Basin Reservoir that would provide access to stock water from both Pasture 2 (the Dry Lake 2 Pasture [or Piute Creek Pasture][4]) and Pasture 3 (the Forty-Five Pasture).

The Kimball Division Fence range improvements are projects that would divide Pasture 4 (the existing Kimball Pasture) into two pastures, Pasture 4W (Kimball West) and Pasture 4E (Kimball East). The Kimball Division Fence range improvements would create a water lot around the stock reservoir at the south end of the division fence to provide access to stock water from Pasture 4W (the new Kimball West Pasture), Pasture 4E (the new Kimball East Pasture), and Pasture 6 (the Juniper Basin Pasture). Likewise, the existing water lot around Petition Reservoir at the north end of the division fence would provide access to stock water from Pasture 4W (the new Kimball West Pasture), Pasture 4E (the new Kimball East Pasture), and Pasture 2 (the Dry Lake 2 Pasture [or Piute Creek Pasture][1]).

17. Petan and the BLM will cooperate to identify and evaluate additional range improvement projects, particularly projects where existing or additional livestock water sources could be restored, improved, or developed to improve livestock distribution within the Garat Allotment. As such projects are identified, Petan and the BLM will cooperatively assess their feasibility and potential to improve livestock distribution within the Garat Allotment. The BLM will provide the necessary environmental and cultural clearances needed to implement such projects[5].

18. Petan recognizes the two existing well locations in the Big Horse Pasture of the Garat Allotment known as *Middle Windmill* and *45 Windmill* as additional range improvement projects that could be completed to provide livestock water to significantly improve livestock distribution in the Big Horse Pasture. These locations have the potential to provide livestock water at each old windmill site, as well as to

[4] The Dry Lake 2 Pasture could be renamed the Piute Creek Pasture after the fence improvements are completed.

[5] Petan and the BLM will cooperate to identify potential funding sources that might be used to implement any agreed upon range improvement projects within the Garat Allotment, including, but not limited to, range betterment funds and Grazing Lands Conservation Initiative project grants. Petan and the BLM will identify all economic contributions, construction responsibilities, and maintenance responsibilities for each party associated with any such projects through Section-4 Range Improvement Permits or Cooperative Agreements.

significant additional acreage in the Big Horse Pasture by means of gravity fed pipelines to lower elevation areas. Petan and the BLM will begin a cooperative process as soon as workloads allow in order to determine what would be required to restore these wells and their associated water delivery structures to a functioning condition, and to develop a pipeline system from one or both sites to provide water to additional acreage downhill from the existing well locations.

19. Pursuant to 43 CFR § 10.4(b), you must notify the BLM Field Manager, by telephone with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR § 10.2) on federal lands. Pursuant to 43 CFR § 10.4(c), you must immediately stop any ongoing activities connected with such discovery and make a reasonable effort to protect the discovered remains or objects.

Table 1: Wilderness Improvements and Salt Routes, Use Prior to Wilderness Designation

RIPS#	PROJECTS	T	R	SEC	SUB	ALLOTMENT	Allotment #	Permittee	Amount in Wilderness	Year built	Equipment Type	Fence	Reservoir	Comments
												Frequency of Use (number of times per year)		.2=5yrs .1=10yrs .067=15yrs .05=20 yrs .04=25yrs .033=30yrs
Owyhee River Wilderness														
Projects in Garat Allotment 584														
300390	Chilly Gulch Reservoir/Crutcher Crossing Res.	13 S.	4 W.	32	NWNW	GARAT	584	Petan Co.	Part	1960 1968	N/A	N/A	N/A	will be excluded w/ bndy change and is no longer Wilderness reservoir
301247	Dry Lake Fence	13 S.	4 W.	34	E1/2	GARAT	584	Petan Co.	All	1966	pickup/ATV	3	N/A	
301247	Dry Lake Fence	14 S.	4 W.	3	E1/2	GARAT	584	Petan Co.	Part	1966	pickup/ATV	3	N/A	
300350	Reservoir 14/ Jackrabbit Res.	14 S.	4 W.	18	NWNW	GARAT	584	Petan Co.	All	1960	pickup/bulldozer	56	0.1	Maintain Res., temp. corral setup, brand cattle with pickup and bulldozer
301127	Garat Reservoir 1	14 S.	4 W.	29	NENW	GARAT	584	Petan Co.	All	1952	N/A	N/A	N/A	will be excluded w/ bndy survey
	Corral in Grassy Ridge	14 S.	4 W.	29	NWNE	GARAT	584	Petan Co.	All		N/A	N/A	N/A	will be excluded w/ bndy survey
300296	Petan Reservoir 2	15 S.	1 W.	23	SWNE	GARAT	584	Petan Co.	Part	1960	N/A	N/A	N/A	will be excluded w/ bndy survey
300328	Reservoir 5/Big Hole Res.	14 S.	3 W.	2	NENE	GARAT	584	Petan Co.	All	1960	pickup/bulldozer	56	0.1	
300845	Beta Reservoir 9/ Hidden Res.	14 S.	2 W.	12	NESW	GARAT	584	Petan Co.	All	1963	pickup/bulldozer	56	0.1	
	Unnamed Reservoir/Little Hidden Res.	14 S.	2 W.	11	SESE	GARAT	584	Petan Co.	All		pickup/bulldozer	56	0.1	
300838	Kimball Basin Reservoir/Garat Res.	14 S.	2 W.	23	SWNE	GARAT	584	Petan Co.	Part	1963	N/A	N/A	N/A	will be excluded w/ bndy survey
300325	Reservoir 2A	14 S.	2 W.	7	NESE	GARAT	584	Petan Co.	All	1960	pickup/bulldozer	56	0.1	
300096	Petan Piute Basin Fence	14 S.	2 W.	10	WSE	GARAT	584	Petan Co.	Part	1960	pickup	4	N/A	
300364	Reservoir 21 (Coyote Hole on Topo)	15 S.	4 W.	3	SESW	GARAT	584	Petan Co.	Part	1960	N/A	N/A	N/A	will be excluded w/ bndy survey
305045	Middle Well	16 S.	3 W.	9	NWNW	GARAT	584	Petan Co.	All	1960	N/A	N/A	N/A	will be excluded w/ bndy survey
305046	Stateline Windmill (South Well)	16 S.	3 W.	26	SESESE	GARAT	584	Petan Co.	All	1960	N/A	N/A	N/A	will be excluded w/ bndy survey
300301	Petan Land & Cattle Co. Fence (ID/NV boundary & pastures)	16 S.	1 W.	23	Multiple	GARAT/45	584/629	Petan Co.	Part	1944	N/A	N/A	N/A	will be excluded w/ bndy survey Access will continue only on Nevada side
0411	Big Bend Reservoir/Chilly Gulch Res.	13 S.	4 W.	28	NESW	GARAT	584	Petan Co.	All		N/A	N/A	N/A	Will be part of Cherry Stem and Non Wilderness

0068	Sewell Fence	14 S.	2 W.	5, 6	N1/2	GARAT	584	Petan Co.	All		pickup	4	N/A	
	Division Fence by 45 Ranch	14 S.	4 W.	19	NE	Garat	584	Petan Co.	Part		pickup/ATV	3	N/A	
Sec 4 TGA	Dennis Swisher Fence	13 S.	4 W.	30, 31		Garat	584	Petan Co.	Part		N/A	N/A	N/A	Not currently maintaining If fence exists would be same as Dry Lake Fence
	Division Fence (Coyote Hole)	15 S.	4 W.	22, 23, 24	N1/2	Garat	584	Petan Co.	Part		pickup/ATV	3	N/A	
	Gap Fence at Garat Crossing	14 S.	1 W.	19	SWSWSW	GARAT	584	Petan Co.	All		N/A	N/A	N/A	Non motorized equiptment for repair/maintenace within wilderness
	Division Fence by Duck Valley	15 S.	1 W.	24	S1/2	GARAT	584	Petan Co.	Part		N/A	N/A	N/A	Not within Wilderness Accessed outside of Wilderness
	Wiley Ranch Access Gap Fence	14 S.	2 W.	2	SESW	GARAT	584	Petan Co.	All		pickup/ATV	3	N/A	
	Boundary Fence (Duck Valley/BLM)	15 S.	1 W.	24	E1/2	GARAT	584	Petan Co.	Part		pickup/ATV	35	N/A	

 = Table entries that are not applicable because the improvements are not in the wilderness.

Salting, Motorized Herding and Proposals

Permittee	Allotment	Equipment	Salt	Motorized Herding and Gathering	Salt Amount	Season	Proposal	Comments
			Frequency of Use (days/year)					
Owyhee River Wilderness								
Petan Co.	Garat 584	pickup	56	N/A	incomplete	incomplete	N/A	Big Hole Res.
Petan Co.	Garat 584	pickup	56	N/A	incomplete	incomplete	N/A	Hidden Res.
Petan Co.	Garat 584	pickup	56	N/A	incomplete	incomplete	N/A	Res. 2A In-addition salting continues past the fence to the end of the road
Petan Co.	Garat 584	pickup	28	N/A	incomplete	March-Oct.	N/A	Bull Camp Road. Salting for livestock distribution and resource management

Table 2: Garat Allotment Grazing Schedule

August 2014 Grazing Application: Option II

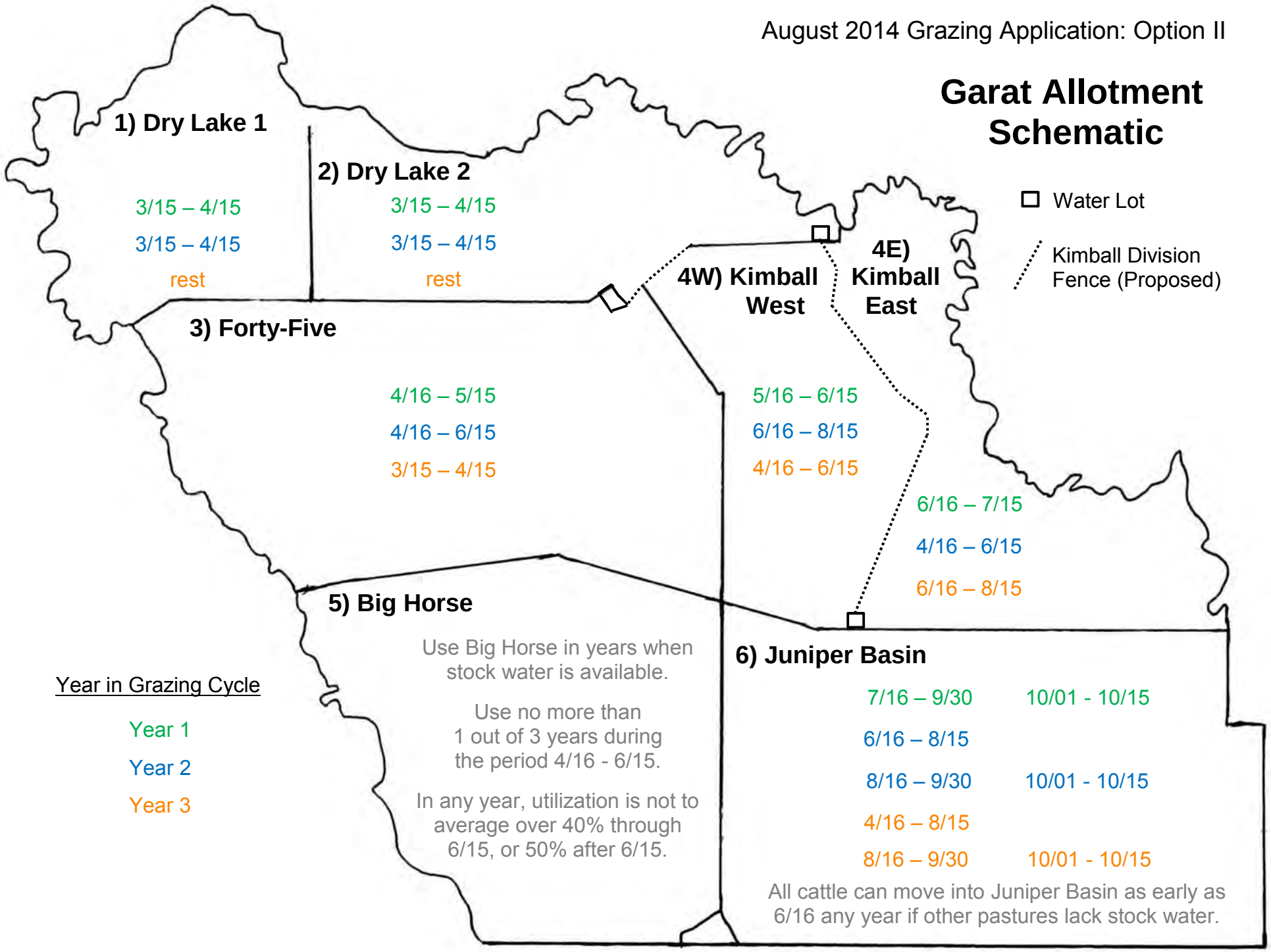
Grazing Cycle / Pasture	Year 1	Year 2	Year 3
1 & 2 Dry Lake 1 & 2	3/15 - 4/15	3/15 - 4/15	rest
3 Forty-Five	4/16 - 5/15	4/16 - 6/15	3/15 - 4/15
4W Kimball West	5/16 - 6/15	6/16 - 8/15	4/16 - 6/15
4E Kimball East	6/16 - 7/15	4/16 - 6/15	6/16 - 8/15
5 Big Horse	Use Big Horse in years when stock water is available. Use no more than 1 out of 3 years during the period 4/16 - 6/15. In any year, utilization is not to average over 40% through 6/15, or 50% after 6/15.		
6 Juniper Basin*	7/16 - 9/30 10/01 - 10/15	6/16 - 8/15 8/16 - 9/30 10/01 - 10/15	4/16 - 8/15 8/16 - 9/30 10/01 - 10/15

* All cattle can move into Juniper Basin as early as 6/16 any year if other pastures lack stock water.

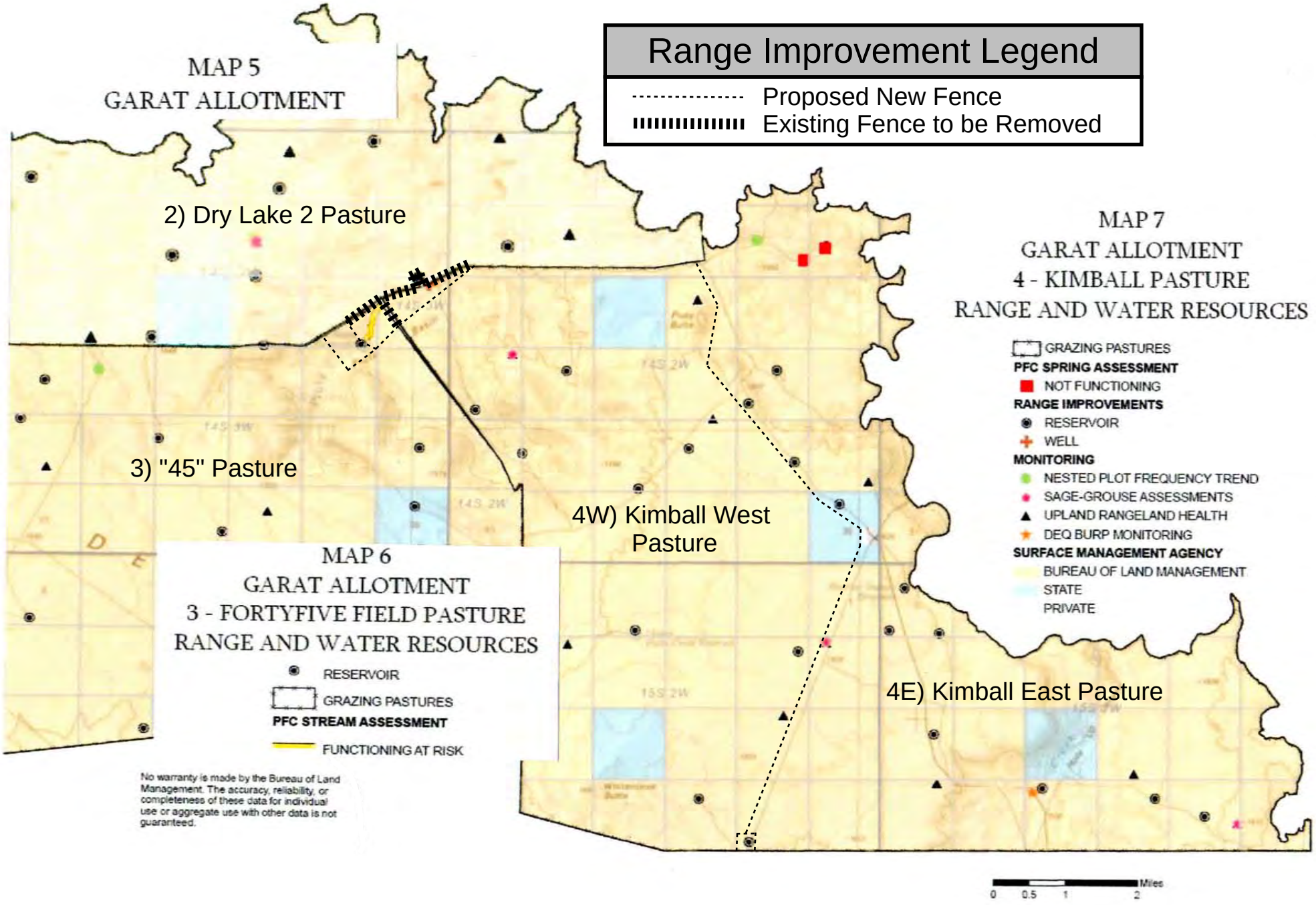
Prepared by Western Range Service: August 20, 2014

August 2014 Grazing Application: Option II

Garat Allotment Schematic



Prepared by Western Range Service: August 20, 2014



Map 1: Piute Creek and Kimball Division Fence Improvements Option II

DETERMINATION

and
Conforming with Guidelines for Livestock Grazing Management

Resource Area: **Owyhee Field Office**

Watershed Name/Number**:** **Upper Owyhee (17050104)**
South Fork Owyhee (170505)

Grazing Allotment Name/Number: **Garat (0584)**

Public Land (acres): **202,618**

Streams on Public Land (miles): **0 miles perennial; 651.65 miles intermittent and ephemeral**; **4.0 miles of stream assessed for condition**

Date(s) of Rangeland Health Assessment and Evaluation Report: **July 2014**

Name of Permittee(s): **Petan Company of Nevada, Inc. / 1101449**

Assessment Participants (Name & Discipline or Interest):

Jake Vialpando – Project Manager
Carmela Leavitt – Rangeland Management Specialist
Steve Christensen-Rangeland Management Specialist
Susan Filkins – Natural Resource Specialist
Jason Sutter – Wildlife Biologist
Jim Priest - Wildlife Biologist
Ammon Wilhelm – Wildlife Biologist
Gina Rone - Soils
Bonnie Claridge - Fisheries Biologist
Jessica Gottlieb – Writer/Editor

Overview

The BLM developed a Rangeland Health Assessment and Evaluation Report for the Garat allotment, dated January 2012. In addition, the Field Office Manager signed the Determination for Achieving Standards for Rangeland Health and Conforming with Guidelines for Livestock Grazing Management for the Garat allotment on August 28, 2012. The determination was made available to the public for comment, along with the preliminary Environmental Assessment for the Owyhee River Group 1 allotments, in September 2012. In March 2013, the BLM issued a Final Decision to renew the permit for livestock grazing in the Garat allotment. The Office of Hearings and Appeals remanded that decision and associated supporting documentation in February 2014, to allow the BLM to supplement the Environmental Assessment and issue a new decision. Subsequently, the BLM decided to use the opportunity to revisit and supplement information related to riparian areas and the assessment of Standard 2. Thus, the BLM interdisciplinary team updated the riparian information and modified the Rangeland Health Assessment and Evaluation Report that required direct adjustments to this document under Standard 2 and indirect adjustments under other related standards. This 2014 Determination for Achieving Standards for Rangeland Health and Conforming with Guidelines for Livestock Grazing Management for the Garat allotment supersedes and replaces the one signed August 28, 2012.

Standard 1 (Watersheds)

Watersheds provide for the proper infiltration, retention, and release of water appropriate to soil type, vegetation, climate, and landform to provide for proper nutrient cycling, hydrologic cycling and energy flow.

Standard

- □ Standard does not apply
- □ Meeting the Standard
- □ Not Meeting the Standard, Livestock grazing management practices are significant factors
- □ Not Meeting the Standard; Making significant progress toward
- ■ Not Meeting the Standard; Livestock grazing management practices are **not** significant factors

- ■ Conforms with Guidelines for Livestock Grazing Management
- □ Does not conform with Guidelines for Livestock Grazing Management; Guideline No(s).__

Rationale:

Assessments of rangeland health completed in the January 2012 Rangeland Health Assessment and Evaluation Report (USDI BLM 2012) reveal that watershed standards are not being met in pastures 1, 3, and 6, as well as in other localized areas of the Garat allotment. Impacts from absence or presence of fire and historic grazing management are the main causes and have resulted in departures from expected conditions in the plant community, which adversely affects soil and hydrologic function.

The 2012 Garat evaluation report identifies that the sagebrush steppe vegetation communities currently present vary from reference site potential, as sagebrush dominates and deep-rooted bunchgrass species are underrepresented. With a decrease in vegetative cover, runoff and erosion become more common and adversely impact watershed function and nutrient cycling. The plant community composition and distribution may remain static or move further away from reference conditions. These conclusions of a departure from ecological site potential (USDA NRCS 2010) were reached through the RHA and Evaluation (USDI BLM 2012) and suggest little current improvement from static or declining conditions, resulting in a moderate rating of soil/site stability and hydrologic function in pasture 3 and, to a lesser extent, in pasture 1. This decrease in watershed function contributed to a finding that Standard 1 was not being met in pastures 1 and 3.

Degraded watershed function from changes in biotic integrity is especially apparent in water flow patterns, pedestals, and bare ground that show departures from reference conditions when associated with Loamy 10-13” sites. Since the majority (52 percent) of

monitoring in the Garat allotment occurred on loamy sites, the increased presence of degraded soils found at many locations could be more prevalent.

Sediment movement may be relatively short to non-existent on flat terrain but is of greater significance where slopes promote transport over longer distances that are not disrupted by vegetation, gravel, litter, or biotic crusts. Despite the presence of large and relatively flat plateaus in the Garat allotment, steep slopes can be found where abrupt rims give way to below-lying basins, such as in the northeast portions of Forty-five Field, the northern part of Kimball, the eastern half of Big Horse Basin, and through the central part of Juniper Basin. Slopes average 0 to 15+ percent across the plateaus and intermediate slopes but can be 20 to 50+ percent on the breaklands below the rim.

Ground cover data exhibits a downward or static trend in basal vegetation, total vegetation, and biological crusts, along with static or increasing canopy cover-representing shrubs, increased litter, and a reduction in bare ground. When litter is increasing, as can be expected with the abundant presence of mature sagebrush, bare soils often decline and are masked by abundant material. However, bare ground may increase again over time with plant mortality and decadence, especially in mature sagebrush communities, which is the case in pasture 3 and, at a more reduced rate, in pasture 1. With decreased litter and increased bare ground, the potential detachment of soil particles due to a lack of protective cover can contribute to increased erosion. This was noted as being observed at the 2003 RHFA sites (USDI BLM 2012).

Where fire occurred in the last 30 years and subsequent livestock grazing management did not provide opportunity for recovery of vegetation immediately following the fires (see maps in USDI BLM 2012), localized areas are degraded and many sites that burned in the mid-1980s have not recovered. This is apparent in pastures 4 and 6, where soil and hydrologic function are compromised due to a lack of plant diversity, a reduced shrub component, and a departure from ecological potential in the structural functional groups, along with dominance of annual and small perennial grasses.

In pasture 6, the most notable departure from reference conditions is due to invasive plants. Five of the eight sites that did not meet the standard for exotic plant communities are dominated by annual species and occur within the old fire perimeters. Three ground cover trend sites show predominantly static or decreasing conditions for basal vegetation, microbiotic crusts, non-persistent litter, total vegetation, and canopy cover. Although annuals provide spring forage for livestock and cover for watershed protection by effectively reducing raindrop energy, the presence of annuals affect the biological, chemical, and physical aspects of soils and long-term (more than 30 years) rangeland health.

Invasive annuals modify the ecosystem attributes of soil temperature and soil water distribution, provide less root mass and soil stability than perennial bunchgrasses, reduce the diversity and cover of microbiotic crusts over time, promote loss of native plants, and adversely alter fire intervals and impacts (Pellant 1996). The extremely

flammable conditions associated with standing dead cheatgrass have the potential to worsen watershed conditions if vegetation is removed by wildfire. The resulting combination of water erosion on unprotected steeper ground and deflating wind erosion could promote soil surface loss and degradation and reduce soil productivity that would add to the already deteriorated conditions. This dominance of annuals and its adverse effects on watershed function contributed to a finding of not meeting the Standard in pasture 6.

Alterations of soils occur due to livestock trampling and hoof action when soils are wet in the spring, particularly in pastures 1, 2, 3, and 4. In addition, heavy livestock use surrounding reservoirs such as Juniper Reservoir and Piute Reservoir, water developments, and salting areas, results in localized compaction, increased bare ground, and removal of vegetation. On the Garat allotment, these developed areas make up less than 2 percent of the allotment and effects of livestock trampling and hoof action on watershed functionality generally decline with distance away from water developments.

Vegetation is the primary factor that influences the spatial and temporal variability of soil and watershed processes in the Garat allotment. Departures from ecological site potential result from historic grazing and fire history and influence proper nutrient cycling, hydrologic cycling, and energy flow at various levels. As vegetative conditions change, so do infiltration, runoff, and erosion. An improvement in biotic integrity (Standard 4) is therefore a major factor that contributes to the satisfactory maintenance of watershed condition over the long term.

Information Sources:

Blaisdell, J.P., R.B. Murray, and E.D. McArthur. 1982. Managing inter-mountain rangelands-sagebrush-grass ranges. Gen. Tech. Rep. USDA FS, INT-134, 46 p.

Daddy, F., M.J. Trlica, and C.D. Bonham. 2006. Vegetation and soil water differences among big sagebrush communities with different grazing histories. Southwestern Naturalist, 33(4):413-424.

Pellant, M. 1996. Cheatgrass: the invader that won the West. Interior Columbia Basin Ecosystem Management Project, BLM ID State Office, white paper. 23 p.

USDI BLM. 2012. Rangeland Health Assessment and Evaluation Report; Achieving the Idaho Standards for Rangeland Health; Garat allotment (0584). BLM Idaho State Office. Boise, Idaho. 90p.

USDA NRCS. 2010. Ecological Site Descriptions (Draft). Available from the Idaho State Office of BLM, Boise ID or the Idaho State Office of NRCS, Boise ID.

Standard 2 (Riparian Areas and Wetlands)

Riparian-wetland areas are in properly functioning condition appropriate to soil type, climate, geology, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Standard

- □ Standard does not apply
- □ Meeting the Standard
- ■ Not meeting the Standard, Livestock grazing management practices are significant factors
- □ Not Meeting the Standard; Making significant progress toward meeting
- □ Not meeting the Standard; Livestock grazing management practices are **not** significant factors

Guidelines

- □ Conforms with Guidelines for Livestock Grazing Management
- ■ Does not conform with Guidelines for Livestock Grazing Management; Guideline No(s). 4, 5

Rationale:

Standard 2 is not being met in pastures 2-4 in the Garat allotment. The most recent PFC assessments (2014) identify that the riparian reaches of Piute Creek that occur within pastures 2-4 are functional-at risk (FAR). A stock reservoir at the headwaters, a well, and prolonged drought have influenced the system, and impacts to the hydric segments of stream from the mechanical damage from livestock have compounded these effects. The water table is being lowered, which affects the presence and composition of riparian plant species. The system has transitioned to species that are more tolerant of drier conditions, and the reach primarily contains one hydric species of *Juncus,* with upland species occurring in the riparian zone. The creek occurs in a low-gradient valley bottom, and over the long term, the extent of the wetland area is diminishing. In the short term, the wet meadow areas appear stable, but they are not at their full potential. Scouring, bare ground, and erosion are occurring as a result of discontinuous cover of essential deep-rooted riparian plants which would dissipate energy and protect against vulnerabilities.

Current livestock grazing management practices are significant causal factors for not meeting Standard 2. Residual vegetation has not been sufficient to maintain or improve riparian-wetland function, and the recent grazing schedule has not allowed for rest or deferment years. Recent actual use data indicate that pastures 2-4 have been used primarily during the spring and summer months, with sporadic rest occurring in pastures 2 and 3 since 2005. Many of the short- and long-term impacts identified in the PFC assessments are attributable to livestock. In particular, mechanical damage and removal of hydric vegetation are directly linked to current livestock use. Therefore,

current livestock grazing management practices do not conform with the Idaho Guidelines for Livestock Grazing Management applicable to Standard 2.

Information Sources:

USDA Farm Services Agency. 2011. NAIP Aerial Imagery: http://www.fsa.usda.gov/FSA/apfoapp?area=home&subject=prog&topic=nai

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USDI Bureau of Land Management. 2007. Technical Bulletin 2007-2 BLM/ID/GI-07+1150 – Lentic Riparian-Wetland Area Prioritization Guide: A Process for Evaluating Management & Restoration Priorities for Non-Riverine Systems.

USDI Bureau of Land Management. 1998. Technical Reference 1737-15 - A user guide to assess proper functioning condition and support science for lotic areas: ftp://ftp.blm.gov/pub/nstc/techrefs/Final%20TR%201737-15.pdf

USDI Bureau of Land Management. 1998. Technical Reference 1737-11 - Process for assessing proper functioning condition for lentic riparian-wetland areas: ftp://ftp.blm.gov/pub/nstc/techrefs/Final%20TR%201737-11.pdf

USDI U.S. Geological Survey. National Hydrologic Dataset (NHD), Earth Science Information Center: http://nhd.usgs.gov/data.html

Stream channels and floodplains are properly functioning relative to the geomorphology (e.g., gradient, size shape, roughness, confinement, and sinuosity) and climate to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Standard

- ■ Standard does not apply
- □ Meeting the Standard
- □ Not meeting the Standard, Livestock grazing management practices are significant factors
- □ Not meeting the Standard; Making significant progress toward meeting
- □ Not meeting the Standard; Livestock grazing management practices are **not** significant factors

Guidelines

- □ Conforms with Guidelines for Livestock Grazing Management
- □ Does not conform with Guidelines for Livestock Grazing Management; Guideline No(s).___

Rationale:

Standard 3 does not apply in this allotment. Although Piute Creek has depositional features indicative of past surface water and flow, the system's water currently is being supplied by the water table and subsurface seasonal springs. Surface flow is limited to annual run-off and precipitation events that are not intercepted and/or moderated by Piute Basin Reservoir. There is a lack of a stream channel with a discernable bed and bank morphology. Thus, three reaches of Piute Creek were assessed with BLM's Technical Reference 1737-16 *A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lentic Areas.* Piute Creek traverses a low-gradient valley bottom and was classified as a subsurface low-gradient meadow (Weixelman et al., 2011).

Standard 4 (Native Plant Communities)

Healthy, productive, and diverse native animal habitat and populations of native plants are maintained or promoted as appropriate to soil type, climate, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Standard

- □ Meeting the Standard
- ■ Not meeting the Standard, Livestock grazing management practices are significant factors
- □ Not meeting the Standard; Making significant progress toward
- □ Not meeting the Standard; Livestock grazing management practices are **not** significant factors

Guidelines

- □ Conforms with Guidelines for Livestock Grazing Management
- ■ Does not conform with Guidelines for Livestock Grazing Management; Guideline No(s). 4

Guideline 4: Implement grazing management practices that provide periodic rest or deferment during critical growth stages to allow sufficient regrowth to achieve and maintain healthy, properly functioning conditions, including good plant vigor and adequate vegetative cover appropriate to site potential.

Rationale:

The Rangeland Health Assessment and Evaluation Report completed in January 2012 (USDI BLM, 2012) for the Garat allotment concluded that the standard for Native Plant Communities is not being met. Rangeland health assessments at a majority of sites identified a slight-to-moderate or less departure from healthy biotic integrity. However, in many areas, the plant communities have shifted due to historic livestock grazing

practices and altered fire return intervals from what is expected at site potential. A summary of rangeland health field assessment data for pastures 3 (Forty-five Field), 5 (Big Horse), and 6 (Juniper Basin) identifies that this vegetation shift away from a co-dominance of deep-rooted perennial bunchgrasses to a greater dominance of sagebrush species or shallow-rooted bunchgrasses, resulted in a moderate departure from healthy biotic integrity and contributed to a finding of not meeting the rangeland health standard for Native Plant Communities in these pastures. Rangeland health field assessments for pastures 1 (Dry Lake), 2 (Piute), and 4 (Kimball) identify less departure (none to slight; slight to moderate) from the site potential biotic integrity.

Rangeland health field assessments completed in the easternmost portion of pasture 5 and the northern portion of Pasture 6 identify that exotic annual grass species are present in higher-than-expected amounts. This dominance of annual grasses contributed to an additional conclusion of not meeting Standard 4 within those portions of pastures 5 and 6. The cause for not meeting Standard 4 at locations dominated by annual species is past fire and historic grazing treatments implemented within a few years following historic fires.

Trend monitoring data for the majority of the allotment (pastures 1, 2, 3, 5 and 6) show no apparent or static trend. However, data from the two trend plots in pasture 4 identify a consistent downward trend in the frequency of bluebunch wheatgrass and Idaho fescue between 2003 and 2009. Both species are identified as dominant bunchgrass species at ecological site potential. This decrease in desirable perennial bunchgrass species contributes to a finding that Standard 4 is not met in pasture 4. Consistent livestock grazing in this pasture during the active growing season for native perennial grasses[1] has occurred in recent years. Resting this pasture from grazing for an entire year has only occurred in 2 years (2004 and 1995) during the past two decades, and deferment of grazing until after the active growing season has not occurred during that same period, resulting in little opportunity for recovery of perennial herbaceous species vigor from repeated growing-season use. Therefore, current livestock grazing management practices (lack of periodic rest and/or deferment from livestock grazing) is identified as a significant causal factor for not meeting Standard 4 within pasture 4.

State-and-transition models have been defined within ecological site descriptions for a number of low sagebrush/bunchgrass and big sagebrush/bunchgrass vegetation communities (USDA NRCS 2010). These models identify a reference plant community with a co-dominance by deep-rooted perennial grasses (e.g., bluebunch wheatgrass, Idaho fescue, and Thurber's needlegrass) and sagebrush. These models also identify possible vegetation change from reference site potential to a greater dominance by sagebrush and shallow-rooted bunchgrasses (e.g., Sandberg bluegrass and squirreltail) or annual herbaceous species. Factors that can lead to this shift include fire history, improper grazing management, or a combination of both. In addition, the state-and-

[1] The active growing season for bluebunch wheatgrass and Idaho fescue within vegetation communities of Garat allotment is May to mid-July, a period when decreasing soil moisture does not provide opportunity for regrowth before the dormant period.

transition models for a number of low sagebrush/bunchgrass and big sagebrush/bunchgrass vegetation communities identify that dominance by deep-rooted perennial bunchgrasses can be enhanced and maintained with proper grazing management. The presence of sagebrush in the shrub layer of the reference state vegetation community is dependent on the time since the most recent fire and the individual sagebrush species present. As a result, a number of phases of the reference state for low sagebrush or big sagebrush vegetation communities can be expressed through the vegetation composition. The expressed vegetation composition is an indicator of past disturbances, including fire and grazing practices, and is in a dynamic equilibrium. Additionally, the current phases of the potential reference community have potential to change as a result of future disturbances or removal of disturbances. The state-and-transition models further identify that following frequent or combined disturbances, a transition to a different vegetation community can be crossed, resulting in a new state. Return to the reference state, once the new state is created, requires large inputs, such as mechanical vegetation manipulation. Return to the reference vegetation community requires more than passive removal of the disturbance that led to the new state or restoration of natural disturbance regimes which have been absent.

Ecological site descriptions and associated state-and-transition models for low sagebrush and big sagebrush ecological sites present in Garat allotment are consistent with those identified in the preceding paragraph. The 2012 Rangeland Health Assessment and Evaluation Report for the Garat allotment identifies that in many areas dominated by native plant communities, the sagebrush component is greater than expected in terms of cover, while relative abundance of deep-rooted bunchgrasses has decreased correspondingly. Shrub mortality and decadence are common at sites throughout the allotment that have not burned within the last several decades. This shift from the reference vegetation composition contributed to the recorded departure from the functional-structural groups and reduced plant vigor, which are the dominant factors contributing to departure of biotic integrity of these sites from potential or desired conditions.

In addition, the 2012 evaluation report for the Garat allotment identifies that many of the sagebrush steppe vegetation communities present are in a phase of the reference conditions exhibited by the herbaceous components of vegetation functional-structural groups that vary from the reference site potential. Vegetation communities include an underrepresentation of dominant deep-rooted bunchgrass species for the sites. At the same time, the representation of Sandberg bluegrass in vegetation communities is higher than the minor component described in the reference site potential of the ecological site descriptions.

Herbaceous and shrub species departures from ecological site potential are a result of historic livestock grazing and fire history. A review of state-and-transition models presented in applicable ecological site descriptions for the Garat allotment do not indicate that the transition to a state other than the dynamic reference communities has been crossed in most of the allotment that currently supports native perennial species.

Those portions of pastures 5 and 6 dominated by non-native annual species have transitioned to a state that will require vegetation manipulation to control annual species and establish perennial species.

Recorded livestock utilization levels, averaged within each of the pastures from 1979 to 2011, have been light on key forage plant species (22 to 31 percent). These utilization levels are appropriate to allow for maintenance of perennial plant communities capable of facilitating proper nutrient cycling, hydrologic cycling, and energy flow (Holochek, et al. 1999). Light utilization levels also allow trend toward desired vegetation conditions. Reported livestock distribution does include grazing intensity concentrated adjacent to water troughs, dirt tanks, salting sites, Piute Creek and Juniper Reservoir. Utilization is higher in these areas and decreases farther away from areas of livestock concentration. Recent recorded livestock utilization does not appear to be a significant factor in failure to meet the standard for Native Plant Communities within the allotment as a whole or within any one pasture.

However, livestock management practices are not providing adequate rest or deferment from livestock grazing use during the active growing season, especially within pasture 4 where downward trend in frequency of deep-rooted bunchgrass species was recorded. Implementation of a rest-rotation grazing schedule for four of the six pastures in the allotment planned in the 1989 agreement, and recent implementation of rest in less than the planned 1-of-3-years cycle, does not provide adequate opportunity for recovery of plant health and vigor following repeat years of active growing season use. A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season and providing at least 2 years of deferment or rest for every year of active growing season use (Stoddart, 1946), (Blaisdell & Pechanec, 1949) (Mueggler, 1972) (Mueggler, 1975) (Anderson, 1991) (Miller, Seufert, & Haferkamp, 1994) (USDA NRCS, 2012).

In summary, healthy, productive, and diverse populations of native plants are maintained at an adequate level within pastures 1 and 2 to meet the standard for Native Vegetation Communities, even though vegetation communities with a full complement of dominant grasses and shrubs consistent with the reference phase of the site potential are not present. Proper nutrient cycling, hydrologic cycling, and energy flow are provided by current vegetation within these pastures. Standards for Native Vegetation Communities are not met within pastures 3, 5, and 6 where the departure of biotic indicators from site potential is moderate, portions of pastures 5 and 6 dominated by annual species, and pasture 4 where downward trend in frequency of desirable deep-rooted bunchgrass species is recorded. Failure to meet the standard for Native Vegetation Communities in pastures 3, 5, and 6 is attributed to historic grazing management practices and fire history, while failure to meet the standard in pasture 4 is attributed to current livestock grazing management practices.

Information Sources:

Anderson, Loren D. 1991. Bluebunch wheatgrass Defoliation; Effects & Recovery. USDI Bureau of Land Management Technical Bulletin 91-2. Salmon, Idaho. 10p.

Blaisdell, James B., Joseph F. Pechanec. 1949. Effects of herbage removal at various dates on vigor of bluebunch wheatgrass and arrowleaf balsamroot. Ecology 30: 298-305.

Holechek, Jerry L., Hilton Gomez, Francisco Molinar, and Dee Galt. 1999. Grazing studies: what we've learned. Rangelands. 21(2): 12-16.

Miller, Richard F., Jamie M. Seufert, Marshall R. Haferkamp. 1994. Management of bluebunch wheatgrass (Agropyron spicatum): a review. Oregon State University Agricultural Experiment Station. Station Bulletin 669. Corvallis, Oregon. 39p.

Mueggler, W.F. 1972. Influence of competition on the response of bluebunch wheatgrass to clipping. Journal of Range Management 25:88-92.

Mueggler, W.F. 1975. Rate and pattern of vigor recovery in Idaho fescue and bluebunch wheatgrass. Journal of Range Management 28(3) p.198-204.

Stoddart, L.A., 1946. Some physical and chemical responses of Agropyron spicatum to herbage removal at various seasons. Utah State Agricultural Experiment Station Bulletin #324. 24p.

USDI BLM. 1999. Proposed Owyhee resource management plan and final environmental impact statement. Boise Field Office Bureau of Land Management. Boise, Idaho.

USDI BLM. 2012. Rangeland Health Assessment and Evaluation Report; Achieving the Idaho Standards for Rangeland Health; Garat allotment (0584). BLM Idaho State Office. Boise, Idaho. 90p.

USDA NRCS 2012. Plant fact sheet; bluebunch wheatgrass. Web page accessed 2/14/2012: (USDI BLM, 2012)

USDA NRCS. 2010. Ecological Site Descriptions (Draft). Available from the Idaho State Office of BLM, Boise ID or the Idaho State Office of NRCS, Boise ID.

Vavra, Martin, William A. Laycock, and Rex D. Pieper. 1994. Ecological Implications of Livestock Herbivory in the West. Society for Range Management. Denver, Colorado. 297p.

Standard 5 (Seedings)

Rangelands seeded with mixtures, including predominately non-native plants, are functioning to maintain life form diversity, production, native animal habitat, nutrient cycling, energy flow, and the hydrologic cycle.

Standard

- ■ Standard does not apply
- □ Meeting the Standard
- □ Not meeting the Standard, Livestock grazing management practices are significant factors
- □ Not meeting the Standard; Making significant progress toward
- □ Not meeting the Standard; Livestock grazing management practices are **not** significant factors

Guidelines

- □ Conforms with Guidelines for Livestock Grazing Management
- □ Does not conform with Guidelines for Livestock Grazing Management; Guideline No(s).___

Rationale:

Although there are some small inclusions of seeded areas within the Garat allotment, the presence of these seeded communities has been identified as an insignificant portion of the allotment. Seedings do not dominate vegetation communities and have been incorporated into discussions under Standard 4 – Native Plant Communities.

Standard 6 (Exotic Plant Communities, Other than Seedings)

Exotic plant communities, other than seedings, will meet minimum requirements of soil stability and maintenance of existing native and seeded plants. These communities will be rehabilitated to perennial communities when feasible cost effective methods are developed.

Standard

- ■ Standard does not apply
- □ Meeting the Standard

- □ Not meeting the Standard; Making significant progress toward
- □ Not meeting the Standard; Livestock grazing management practices are **not** significant factors

Guidelines

- □ Conforms with Guidelines for Livestock Grazing Management

□ Does not conform with Guidelines for Livestock Grazing Management; Guideline No(s).___

Rationale:

The presence of exotic plant communities has been identified within the Garat allotment, with the occurrence of cheatgrass and other invasive species. However, as is discussed under Standard 4 – Native Plant Communities in the Rangeland Health Assessment and Evaluation Report completed in January 2012 (USDI BLM, 2012) for the Garat allotment, current available information shows their potential for expansion to dominate vegetation communities is limited.

Standard 7 (Water Quality)

Surface and ground water on public lands comply with the Idaho Water Quality Standards.

Standard

□ Standard does not apply
■ Meeting the Standard
□ Not meeting the Standard, Livestock grazing management practices are significant factors
□ Not meeting the Standard; Making significant progress toward
□ Not meeting the Standard; Livestock grazing management practices are **not** significant factors

Guidelines

■ Conforms with Guidelines for Livestock Grazing Management
□ Does not conform with Guidelines for Livestock Grazing Management; Guideline No(s).___

Rationale:

The Idaho Department of Environmental Quality (IDEQ) is the state agency tasked with implementing the federal Clean Water Act. IDEQ sets the state's standards through the integrated report and beneficial use process. Idaho BLM is expected to implement grazing practices that make progress toward achieving proper functioning condition and satisfactory riparian condition on stream segments listed as water quality limited in the current IDEQ 303(d) list.

Juniper Basin Reservoir falls within the Upper Owyhee watershed that was assigned cold water aquatic life and primary and secondary recreation contact beneficial uses. The reservoir is currently not supporting the beneficial use. However, the reservoir was created for irrigation water storage, rather than cold water biota or recreational use. In

June 2009, IDEQ prepared a 5-year review for the watershed that the Garat allotment falls in (Upper Owyhee), and stated, “It is unclear how appropriate the beneficial use assigned to Juniper Reservoir is…”

Juniper Reservoir was not assessed by the BLM for functional condition; however, field visits in 2011indicated there was heavy livestock use surrounding the reservoir and there were impacts associated with the use of riparian vegetation and trampling adjacent to the water body. As expected, distribution of grazing is concentrated adjacent to reservoirs and utilization is higher in these areas but decreases farther away from water sources.

Information Sources:

Idaho Department of Environmental Quality. December 1999. South Fork Owyhee Watershed Subbasin Assessment and Total Maximum Daily Load. http://www.deq.idaho.gov/media/455393-_water_data_reports_surface_water_tmdls_owyhee_river_sf_owyhee_river_sf_entire.pdf

Idaho Department of Environmental Quality. January 2003. Upper Owyhee Watershed Subbasin Assessment and Total Maximum Daily Load Owyhee County, Idaho. http://www.deq.idaho.gov/media/455421_water_data_reports_surface_water_tmdls_owyhee_watershed_upper_owyhee_watershed_upper_entire.pdf

Idaho Department of Environmental Quality. 2009. Upper Owyhee Watershed Five Year Review. http://www.deq.idaho.gov/media/455477_water_data_reports_surface_water_tmdls_owyhee_watershed_upper_owyhee_watershed_upper_five_year_review_0609.pdf

Idaho Department of Environmental Quality. 2011. Idaho’s 2010 Integrate Report. http://www.deq.idaho.gov/media/458038-integrated_report_2010_final_entire.pdf

http://www.deq.idaho.gov/media/851939-owyhee-river-watershed-tmdl-addendum-0612.pdf

USDI Bureau of Land Management. 1999. Owyhee Resource Management Plan. Available at the Owyhee Field Office, Marsing, Idaho.

Standard 8 (Threatened and Endangered Plants and Animals)

Habitats are suitable to maintain viable populations of threatened and endangered, sensitive, and other special status species.

Standard

□ Standard does not apply
□ Meeting the Standard
■ Not meeting the Standard, Livestock grazing management practices are significant factors
□ Not meeting the Standard; Making significant progress toward
□ Not meeting the Standard; Livestock grazing management practices are **not** significant factors

Guidelines

□ Conforms with Guidelines for Livestock Grazing Management
■ Does not conform with Guidelines for Livestock Grazing Management; Guideline No(s). 4, 8, 9, 12, 20__

Plants

The available information for special status plants indicates Standard 8 is not being met for Davis' peppergrass as discussed below. However, Standard 8 is being met for rattlesnake stickseed, inch-high lupine, Newberry's milkvetch, and stream orchid. Threats to Davis' peppergrass are associated with livestock grazing impacts such as concentration, trampling, and soil disturbance. The playa habitat in which this plant inhabits is easily damaged due to the types of soils. Playas where Davis' peppergrass occurs are in hard clay bottoms on volcanic plains that get inundated with water during spring seasons. After the spring, the playas dry and become cracked and solid, similar to concrete. These aridisols have low organic matter content, a layer of pebbles on the surface of the ground, and a subsurface zone where salts have accumulated to form a hard or cemented layer (Owyhee Watershed Council and Scientific Ecological Services). This special status plant in the Garat allotment is found in pasture 5, where a spring rest/rotation grazing regime was prescribed in 1993. Davis' peppergrass would benefit from a grazing rotation that includes grazing outside of spring or winter seasons to provide some protection to the playa habitat when playas are desirable to livestock due to water inundation and wet soils that can be easily damaged. Placement of livestock reservoirs and salt away from playas inhabited by Davis' peppergrass can decrease the amount of livestock activity in the vicinity. However, for the reasons identified, , Standard 8 is not being met.

Information Sources:

(Shock, Candace B., Myrtle P. Shock, Byron M. Shock and Clinton C. Shock 2011) *Upper Owyhee Watershed Assessment.* Prepared for the Owyhee Watershed Council, prepared by Scientific Ecological Services. Accessible online, http://www.shockfamily.net/UpperOwyhee/upperowyheeindex.html

Wildlife

Habitat conditions for sage-grouse and other sagebrush-obligate species on the Garat allotment are the result of a combination of man-made and natural forces (i.e., livestock management, wildfire, and natural progression) on the plant community over time. The strategy for assessing/evaluating Standard 8, in the Rangeland Health Assessment & Evaluation Report (RHA&ER), is to "apply a landscape-level approach focused on habitat values required by sage-grouse." These habitat values would largely provide habitat characteristics illustrated by the *Sage-grouse Breeding Habitat Suitability Indicators* identified in the RHA&ER. The following paragraphs provide rationale for concluding that the Garat allotment is "Not Meeting Standards and that Current Livestock grazing management practices are Significant Factors" for Standard 8 of the *Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management*.

Livestock grazing (historic and current), fire, and land management practices have all contributed to present-day conditions. In general, key habitat components for sage-grouse include an adequate canopy cover of tall grasses and medium-height shrubs for nesting, abundant forbs and insects for brood-rearing, and the availability of herbaceous riparian species for late growing-season foraging (Garat RHA&ER). Of primary concern is the ability of the sagebrush vegetation community to provide habitat structure (overstory/understory interface) and function (nesting, security, and foraging cover) for effective sage-grouse habitat.

The 2003/2004 sage-grouse breeding habitat assessments identified at various levels issues in sagebrush community composition, structure, and function in all pastures. Pastures 1 and 2 showed the highest potential for suitable sage-grouse breeding habitat; however, of concern in the overstory is the mixed spreading/columnar growth form of sagebrush that exposes the understory. Although not desirable, the effect of this condition appears to be minimized by the occurrence of suitable grass/forb height and perennial grass canopy cover in the understory.

In pastures 5 and 6, sage-grouse breeding habitat conditions were rated as marginal. A marginal habitat rating suggests that there are specific or a mix of disconnected habitat indicators in vegetation composition, structure, and function that are a concern associated with the limited ability of the overstory/understory to provide nesting and security cover.

On the low end of the spectrum are unsuitable sage-grouse breeding habitat conditions identified at sites in pasture 3, resulting from the combination of marginal sagebrush canopy cover (greater than 25 percent) and growth form in the overstory, in conjunction with unsuitable grass/forb height and perennial grass canopy cover in the understory. An unsuitable average sagebrush canopy cover of less than 10 percent exists in pasture 4 as well. A wildfire in 1985 (followed by no rest from livestock grazing) and

continued grazing in pasture 4 has contributed to the current depressed condition and unsuitable sage-grouse breeding habitat conditions at this site.

A native vegetation community of healthy, productive, and diverse populations of native plants typically provides an adequate composition, structure, and function for effective sage-grouse habitat conditions. Effective sage-grouse habitat is closely related to vegetation community conditions discussed in Standard 4. Because vegetation communities have shifted from the site potential of co-dominance by deep-rooted perennial grasses to a greater dominance by sagebrush species or shallow-rooted bunchgrasses due to historic grazing and fire (in addition to exotic annual grass dominance in portions of pastures 5 and 6), Standard 8 is not being met within pastures 3, 5, and 6. This vegetation progression to shallow-rooted bunchgrasses, although meeting Standard 4 for adequate nutrient cycling, energy cycling, and hydrologic cycling, runs counter to the development of effective sage-grouse habitat conditions.

The downward trend of perennial bunchgrasses in pasture 4 has also led to unsuitable habitat conditions for sage-grouse. In addition to the results of historic grazing and fire, current livestock management is constraining herbaceous vigor and annual production of larger bunchgrasses in the understory, thereby favoring an increased occurrence of smaller bunchgrasses and annuals (see Standard 4). This scenario prevents the allotment from meeting habitat conditions required for sage-grouse; therefore Guidelines 4, 8, 9, 12 of the *Idaho Rangeland Health and Guidelines for Livestock Grazing Management* are not being met.

Late brood-rearing habitat

In summary, pastures 1 and 2 provide the best, but not optimal, conditions for sage-grouse nesting. Pastures 5 and 6 were rated as marginal, and with improved grazing management, may have potential to progress toward a healthier and more desirable sage-grouse habitat conditions. Pastures 3 and 4 have sites that are not meeting the

needs for effective sage-grouse breeding habitat and therefore are not meeting Standard 8 of the Idaho Standards for *Rangeland Health and Guidelines for Livestock Grazing Management*. Any attempts to improve habitat conditions through grazing management or vegetation manipulation will require a long-term strategy. Deferring use during the critical spring herbaceous growing period can advance understory vegetation vigor and production to improve nesting and early-brood rearing habitat conditions.

In portions of the allotment, fences are not constructed to Owyhee RMP standards (Figure WDLF-1, 1999 ORMP, page 133). For example, in some places, the height of the top wire is approximately 60 inches high, which violates the ORMP standards in big-game ranges of 38 to 40 inches, depending on species. Although undocumented in the Garat allotment, management fences are known to contribute to habitat fragmentation, disrupting wildlife movement and sometimes causing wildlife mortalities. Fence standards have been developed by the BLM to mitigate these issues, but the fences in this allotment do not comply with these standards. Therefore, some fences in the Garat allotment are not meeting Guideline 20 of the Idaho Standards for *Rangeland Health and Guidelines for Livestock Grazing Management.*

Determination:

I have determined that Standards 1, 2, 4, and 8 of the Idaho Standards for Rangeland Health are not being met in the Garat allotment. Historic livestock grazing management practices and wildfire have been identified as causal factors toward not meeting Standard 1, while current livestock grazing management practices are significant factors in not meeting Standards 2, 4 and 8. Livestock management practices do not conform with all Idaho Guidelines for Livestock Grazing Management, including 4, 5, 8, 9, 12, and 20.

Owyhee Field Manager

7/8/2014
Date

7.7. Appendix G – Wildlife

Table G-1: Special status wildlife species, status, and occurrence potential within Garat allotment

Common Name	Species	Status (conservation plans)[1]	Occurrence Potential
Columbia Spotted Frog	*Rana luteiventris*	ESA C (SGCN)	Improbable
Greater Sage-grouse	*Centrocercus urophasianus*	ESA C (SGCN/HPBB/BCC)	Present
Golden Eagle	*Aquila chrysaetos*	BGEPA (HPBB/BCC)	Probable
Northern Leopard Frog	*Rana pipiens*	BLM 2 (SGCN)	Not Present
Pygmy Rabbit	*Brachylagus idahoensis*	BLM 2 (SGCN)	Possible
Columbia River Redband Trout	*Oncorhynchus mykiss gibbsi*	BLM 2 (SGCN)	Not Present
Black Tern	*Chlidonias niger*	BLM 3 (SGCN)	Possible
Brewer's Sparrow	*Spizella breweri*	BLM 3 (SGCN/HPBB/BCC)	Probable
California Bighorn Sheep	*Ovis canadensis californiana*	BLM 3 (SGCN)	Present
Calliope Hummingbird	*Stellula calliope*	BLM 3 (HPBB/BCC)	Possible
Common Garter Snake	*Thamnophis sirtalis*	BLM 3	Possible
Ferruginous Hawk	*Buteo regalis*	BLM 3 (SGCN/HPBB/BCC)	Present
Fringed Myotis	*Myotis thysanodes*	BLM 3 (SGCN)	Possible
Lewis' Woodpecker	*Melanerpes lewis*	BLM 3 (SGCN/HPBB/BCC)	Possible
Loggerhead Shrike	*Lanius ludovicianus*	BLM 3 (HPBB/BCC)	Present
Northern Goshawk	*Accipiter gentilis*	BLM 3 (HPBB)	Not Present
Piute Ground Squirrel	*Spermophilus mollis*	BLM 3 (SGCN)	Possible
Prairie Falcon	*Falco mexicanus*	BLM 3 (HPBB)	Present
Sage Sparrow	*Amphispiza belli*	BLM 3 (HPBB/BCC)	Probable
Spotted Bat	*Euderma maculatum*	BLM 3 (SGCN)	Present
Townsend's Big-eared Bat	*Plecotus townsendii*	BLM 3 (SGCN)	Possible
Western Toad	*Bufo boreas*	BLM 3	Possible
Willow Flycatcher	*Empidonax trailii*	BLM 3 (HPBB/BCC)	Possible

Common Name	Species	Status (conservation plans)[1]	Occurrence Potential
Black-throated Sparrow	*Amphispiza bilineata*	BLM 4	Improbable
Dark Kangaroo Mouse	*Microdipodops megacephalus*	BLM 4	Possible
Kit Fox	*Vulpes velox*	BLM 4	Improbable
Little Pocket Mouse	*Perognathus longimembris*	BLM 4	Possible
White-faced Ibis	*Plegadis chihi*	BLM 4 (SGCN/HPBB)	Present
Wyoming Ground Squirrel	*Spermophilus elegans nevadensis*	BLM 4	Possible

[1] Status includes Candidate (ESA C) species listed under the Endangered Species Act (16 U.S.C. § 1531-1544), eagles (BGEPA) protected by the Bald and Golden Eagle Protection Act (16 U.S.C. § 668-668d), and BLM Type 2 (BLM 2), Type 3, (BLM 3), and Type 4 (BLM 4) special status species (USDI BLM, 2003c). Additional designations under state and national conservation plans include Idaho Species of Greatest Conservation Need (SGCN; (IDFG, 2006a)), Idaho Partners in Flight High Priority Breeding Bird (HPBB; (IPIF, 2000)), and U.S. Fish and Wildlife Service Birds of Conservation Concern (BCC; (USDI USFWS, 2008)).
[2] Categories include species presence documented (Present), species likely to occur based on preferred habitat and local species abundance and nearby occurrences within 5 miles (Probable), species may occur based on preferred habitat and/or occurrences within 25 miles (Possible), species not likely to occur based on limited or lack of preferred habitat and/or occurrence over 50 miles (Improbable), and species not present due to lack of habitat (Not Present). Presence of habitat within project area was determined from Idaho Vertebrate Modeling Database (University of Idaho, 2011); Oregon Wildlife Viewer (Oregon State University, 2011); (Yensen & Sherman, 2003); Idaho, Oregon and Nevada BLM unpublished data; and specialist expertise. Habitat descriptions modified from Idaho Vertebrate Modeling Database (University of Idaho, 2011).

Table G-2: Migratory bird species with the potential to occur within Garat allotment

Common Name	Species Name	BLM STATUS[1]	ID SGCN[2]	HPBB[3]	BCC[4]	IWJV[5]	NABCI ID[6]
American Avocet	*Recurvirostra americana*		S3	Y		Y	Y
American Coot	*Fulica americana*						
American Crow	*Corvus brachyrhynchos*						
American Dipper	*Cinclus mexicanus*			Y			Y
American Goldfinch	*Carduelis tristis*						
American Kestrel	*Falco sparvarius*						
American Pipit	*Anthus rubescens*						
American Robin	*Turdus migratorius*						
American Widgeon	*Anas americana*					Y	Y
Ash-throated Flycatcher	*Myiarchus cinerascens*						
Bank Swallow	*Riparia riparia*						
Barn Owl	*Tyto alba*						
Barn Swallow	*Hirundo rustica*						
Barrow's Goldeneye	*Bucephala islandica*		GAME	Y			Y
Belted Kingfisher	*Ceryle alcyon*						
Black Rosy-finch	*Leucosticte atrata*		S3	Y	Y		Y
Black-billed Magpie	*Pica pica*			Y			

Common Name	Species Name	BLM STATUS[1]	ID SGCN[2]	HPBB[3]	BCC[4]	IWJV[5]	NABCI ID[6]
Black-capped Chickadee	*Poecile atricapilla*						
Black-chinned Hummingbird	*Archilochus alexandri*			Y			
Black-crowned Night-Heron	*Nycticorax nycticorax*		S2B				Y
Black-headed Grosbeak	*Pheucticus melanocephalus*						
Black-necked Stilt	*Himantopus mexicanus*		S3	Y		Y	Y
Black-throated Gray Warbler	*Dendroica nigrescens*			Y	Y		
Blue-winged Teal	*Anas discors*						Y
Bobolink	*Dolichonyx oryzivorus*						Y
Bohemian Waxwing	*Bombycilla garrulus*						
Bonaparte's Gull	*Larus phildelphia*						
Brewer's Blackbird	*Euphagus cyanocephalus*	BLM 5					
Broad-tailed Hummingbird	*Selasphorus platycercus*						
Brown Creeper	*Certhia americana*						
Brown-headed Cowbird	*Molothrus ater*						
Bufflehead	*Bucephala albeola*						Y
Bullock's Oriole	*Icterus bullocki*						
Bushtit	*Psaltriparus minimus*						
California Gull	*Larus californicus*		S2B				Y
California Quail	*Callipepla californica*		GAME				
Canada Goose	*Branta canadensis*						Y
Canvasback	*Aythya valisineria*		S2N			Y	Y
Canyon Wren	*Catherpes mexicanus*						
Caspian Tern	*Sterna caspia*		S2B				Y
Cassin's Finch	*Carpodacus cassinnii*	BLM 5				Y	Y
Cassin's Vireo	*Vireo cassinii*						
Cattle Egret	*Bubulcus ibis*		S2B				Y
Cedar Waxwing	*Bombycilla cedrorum*						
Chipping Sparrow	*Spizella passerina*						
Chukar	*Alectoris chukar*		GAME				
Cinnamon Teal	*Anas cyanoptera*		GAME	Y		Y	Y
Clark's Grebe	*Aechmophorus*		S2B			Y	Y

Common Name	Species Name	BLM STATUS[1]	ID SGCN[2]	HPBB[3]	BCC[4]	IWJV[5]	NABCI ID[6]
	clarkii						
Clark's Nutcracker	*Nucifraga columbiana*					Y	Y
Cliff Swallow	*Hirundo pyrrhonota*						
Common Goldeneye	*Bucephala clangula*						Y
Common Loon	*Gavia immer*		S1B			Y	y
Common Merganser	*Mergus merganser*						
Common Nighthawk	*Chordeiles minor*						
Common Poorwill	*Phalaenoptilus nuttallii*						
Common Raven	*Corvus corax*						
Common Yellowthroat	*Geothlypsis trichas*						
Cooper's Hawk	*Accipiter cooperii*						
Cordilleran Flycatcher	*Empidonax occidentalis*	BLM 5					Y
Dark-eyed Junco	*Junco hyemalis*						
Double-crested Cormorant	*Phalacrocorax auritus*						
Downy Woodpecker	*Picoides pubescens*						
Dunlin	*Calidris alpina*						Y
Dusky Flycatcher	*Empidonax oberholseri*			Y		Y	Y
Eared Grebe	*Podiceps nigricollis*				Y	Y	Y
Eastern Kingbird	*Tyrannus tyrannus*						
Forster's Tern	*Sterna forsteri*		S1				Y
Franklin's Gull	*Larus pipixcan*		S2B	Y		Y	Y
Gadwall	*Anas strepera*					Y	Y
Grasshopper Sparrow	*Ammodramus savannarum*	BLM 5	S2B	Y			Y
Gray Flycatcher	*Empidonax wrightii*		N	Y		Y*	
Gray Jay	*Perisoreus canadensis*						
Gray Partridge	*Perdix perdix*		GAME				
Great Blue Heron	*Ardea herodias*						
Great Egret	*Ardea alba*		S1B				
Great Horned Owl	*Bubo virginianus*						
Greater Yellowlegs	*Tringa melanoleuca*						Y
Green-tailed Towhee	*Pipilo chlorurus*	BLM 5			Y	Y	Y
Green-winged Teal	*Anas crecca*						Y
Hairy Woodpecker	*Picoides villosus*						
Hermit Thrush	*Catharus guttatus*						
Hooded Merganser	*Lophodytes*		S2B	Y			

Common Name	Species Name	BLM STATUS[1]	ID SGCN[2]	HPBB[3]	BCC[4]	IWJV[5]	NABCI ID[6]
	cucllatus						
Horned Grebe	*Podiceps auritus*		S1				Y
Horned Lark	*Eremophila alpestris*						
House Finch	*Carpodacus mexicanus*						
House Wren	*Troglodytes aedon*						
Killdeer	*Charadrius vociferus*			Y			Y
Lark Sparrow	*Chondestes grammacus*			Y			
Lazuli Bunting	*Passerina amoena*						Y
Least Sandpiper	*Calidris minutilla*					Y	Y
Lesser Goldfinch	*Carduelis psaltria*		S2				Y
Lesser Scaup	*Aythya affinis*		S3			Y	Y
Lesser Yellowlegs	*Tringa flavipes*						Y
Lincoln's Sparrow	*Melospiza linconlnii*						
Long-billed Curlew	*Numenius americanus*	BLM 5	S2B	Y	Y	Y	Y
Long-billed Dowitcher	*Limnodromus scolopaceus*					Y	Y
Long-eared Owl	*Asio otus*						
MacGillivray's Warbler	*Oporornis tolmiei*			Y			Y
Mallard	*Anas platyrhynchos*					Y	Y
Marbled Godwit	*Limosa fedoa*		S2		Y		Y
Marsh Wren	*Cistothorus palustris*						
Merlin	*Falco comlumbarius*		S2B				
Mountain Bluebird	*Sialia currucoides*					Y	Y
Mourning Dove	*Zenaida macroura*						
Nashville Warbler	*Vermivora ruficapilla*						
Northern Flicker	*Colaptes auratus*						
Northern Harrier	*Circus cyaneus*						
Northern Pintail	*Anas acuta*		S2N			Y	Y
Northern Pygmy-owl	*Glaucidium gnoma*	BLM 5					Y
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*						
Northern Saw-whet Owl	*Aegolius acadicus*						
Northern Shoveler	*Anas clypeata*		S2N			Y	Y
Northern Shrike	*Lanius excubitor*						
Orange-crowned Warbler	*Vermivora celata*						

Common Name	Species Name	BLM STATUS[1]	ID SGCN[2]	HPBB[3]	BCC[4]	IWJV[5]	NABCI ID[6]
Osprey	*Pandion haliaetus*						Y
Pied-billed Grebe	*Podilymbus podiceps*						
Pine Siskin	*Carduelis pinus*						
Red-breasted Nuthatch	*Sitta canadensis*						Y
Red-eyed Vireo	*Vireo olivaceus*						
Redhead	*Aythya americana*		GAME	Y		Y	Y
Red-naped Sapsucker	*Sphyrapicus nuchalis*	BLM 5				Y	
Red-necked Phalarope	*Phalaropus lobatus*					Y	Y
Red-tailed Hawk	*Buteo jamaicensis*						
Red-winged Blackbird	*Aeglaius phoeniceus*						
Ring-billed Gull	*Larus delawarensis*						
Ring-necked Duck	*Aythya collaris*						Y
Rock Wren	*Salpinctes obsoletus*			Y			
Rough-legged Hawk	*Buteo lagopus*						
Ruby-crowned Kinglet	*Regulus calendula*						
Ruddy Duck	*Oxyura jamaicensis*		S2N			Y	Y
Rufous Hummingbird	*Selasphorus rufus*			Y		Y	Y
Sage Thrasher	*Oreoscoptes montanus*	BLM 5		Y	Y	Y	Y
Sandhill Crane	*Grus canadensis*		GAME	Y		Y	Y
Savannah Sparrow	*Passerculus sandwichensis*						
Say's Phoebe	*Sayornis saya*						
Sharp-shinned Hawk	*Accipiter striatus*			Y			
Short-eared Owl	*Asio flammeus*	BLM 5	S4	Y			Y
Snow Bunting	*Plectrophenax nivalis*						
Snow Goose	*Chen caerulescens*						Y
Snowy Egret	*Egretta thula*		S2B			Y	Y
Song Sparrow	*Melospiza melodia*						
Sora	*Porzana carolina*						
Spotted Sandpiper	*Actitis macularia*					Y	Y
Spotted Towhee	*Pipilo maculatus*						
Stellar's Jay	*Cyanocitta stelleri*						
Swainson's Hawk	*Buteo swainsoni*	BLM 5	S3B	Y		Y	Y
Townsend's Solitaire	*Myadestes townsendi*						Y
Townsend's Warbler	*Dendroica*			Y			Y

Common Name	Species Name		ID SGCN[2]	HPBB[3]	BCC[4]	IWJV[5]	NABCI ID[6]
	townsendi						
Tree Swallow	*Tachcineta bicolor*						
Tundra Swan	*Cygnus columbianus*						Y
Turkey Vulture	*Cathartes aura*						
Vaux's Swift	*Chaetura vauxi*						Y
Veery	*Catharus fuscescens*						
Vesper Sparrow	*Pooecetes gramineus*						
Violet-green Swallow	*Tachycineta thalassina*						
Virginia Rail	*Rallus limicola*						
Warbling Vireo	*Vireo gilvus*						
Western Burrowing Owl	*Athene cunicularia*	BLM 5	S2				Y
Western Grebe	*Aechmophorus occidentalis*		S2B	Y		Y	Y
Western Kingbird	*Tyrannus verticalis*						
Western Meadowlark	*Sturnella neglecta*						
Western Sandpiper	*Calidris mauri*					Y	Y
Western Screech-Owl	*Otus kennicotti*						
Western Tanager	*Piranga ludoviciana*			Y			Y
Western Wood-Pewee	*Contopus sordidulus*						
White-crowned Sparrow	*Zonotrichia leucophrys*						
White-headed Woodpecker	*Picoides albolarvatus*		S2	Y	Y	Y	Y
White-throated Swift	*Aeronautes saxatalis*					Y	
Willet	*Catoptrophorus semipalmatus*					Y	Y
Wilson's Phalarope	*Phalaropus tricolor*	BLM 5	S3B			Y	Y
Wilson's Snipe	*Gallinago delicata*						Y
Wilson's Warbler	*Wilsonia pusilla*						
Wood Duck	*Aix sponsa*						Y
Yellow Warbler	*Dendroica petechia*			Y			
Yellow-breasted Chat	*Icteria virens*						
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*					Y*	
Yellow-rumped Warbler	*Dendroica coronata*						

[1]BLM Status includes species on the watch list (BLM 5; (USDI BLM, 2003c)).
[2]ID SGCN includes Idaho Species of Greatest Conservation Need with the following designations: S-State Rank, 1-critically imperiled, 2-imperiled, 3-rare, B-breeding population, N-nonbreeding population, and GAME - game bird (IDFG, 2006a).
[3]HPBB includes Idaho Partners in Flight High Priority Breeding Bird species (IPIF, 2000).
[4]BCC includes U.S. Fish and Wildlife Service Birds of Conservation Concern (USDI USFWS, 2008).

[5]IMJV includes Intermountain West Joint Venture Continentally Important Species. Asterisk denotes that the species is not CIS in Intermountain West Avifaunal Biome.
[6]NABCI includes Continental and Regional Priority Bird Species of Idaho listed by North American Bird Conservation Initiative partners (North American Waterfowl Plan, U.S. Shorebird Conservation Plan, Partners in Flight, Waterbird Conservation for the Americas) under state and national conservation plans.

7.8. Appendix H – Rangeland Ecology / Seasons and Intensities of Grazing Use

Rangeland Vegetation Ecology

Succession is the process of soil and plant community development on an ecological site. Primary succession is the formation process that begins on substrates which have never previously supported any vegetation. Ecological site development associated with soil parent materials, climatic conditions, and the natural range of disturbances with time produces a plant community in dynamic equilibrium. The resulting plant community is referred to as the historic climax plant community or potential natural plant community. The dominant plant species expected are those present within the potential natural plant community for each ecological site (Clements, 1916) (Dyksterhuis, 1949) (National Research Council, 1994).

Retrogression can occur in response to management practices or severe natural climatic events, with species composition of vegetation communities altered from the historic climax or potential plant community. Secondary succession occurs on previously formed soil from which some or all vegetation has been partially or completely removed by a disturbance factor.

Alternate evolution theory has led to ecological concepts that multiple stable-state plant communities can potentially occupy individual ecological sites. These concepts and perspectives are the foundation of state-and-transition models and thresholds. Vegetation evaluation procedures must be able to assess continuous and reversible (the traditional range model posed by Clements) as well as discontinuous and nonreversible vegetation dynamics (the state-and-transition model), because both patterns occur and neither pattern alone provides a complete assessment of vegetation dynamics on all rangelands (Briske, Fuhlendorf, & Smeins, 2005).

A state-and-transition model is used to describe vegetation dynamics and management interactions associated with disturbance within an ecological site. States are relatively stable and resistant to disturbances up to a threshold point. The reference state is defined as the vegetation communities that result through time under natural disturbance regimes. A threshold is the boundary between two states, such that secondary succession does not result in restoration through natural events, such as a simple change in management or removal of a disturbance factor. Active restoration must be accomplished once a threshold is passed in order to return to the reference state. Inputs of management actions necessary to cross the threshold from a new state and return to the state that includes the potential natural community are greater than simple removal of a disturbance factor or restoration of a natural disturbance factor. Examples of management inputs necessary to cross that threshold include mechanical vegetation treatments, herbicide treatments, prescription fire, or a combination of active management inputs. Transition is the trajectory of system change between states.

State-and-transition models have been defined within ecological site descriptions for a number of low sagebrush/bunchgrass and big sagebrush/bunchgrass vegetation communities (USDA NRCS, 2010). These models for ecological sites with a sagebrush shrub component identify the reference plant community with co-dominance by deep-rooted perennial grasses (e.g., bluebunch wheatgrass, Idaho fescue, and Thurber's needlegrass) and sagebrush. These models also identify possible vegetation change from reference site potential to a greater dominance by sagebrush and shallow-rooted bunchgrasses (e.g., Sandberg bluegrass and squirreltail) or annual herbaceous species. Factors that can lead to this shift include altered fire return intervals,

improper grazing management, or a combination of both. In addition, the state-and-transition models note that dominance by deep-rooted perennial bunchgrasses is enhanced and maintained with proper grazing management. The presence of sagebrush in the shrub layer of the reference state is dependent on the time that has passed since the most recent fire and the individual sagebrush species present. As a result, a number of phases of the reference state for low sagebrush or big sagebrush vegetation communities can be expressed through the vegetation composition. The expressed vegetation composition is an indicator of past disturbances, including fire and grazing management practices, and is in a dynamic equilibrium. Additionally, the current phase of the potential reference community has potential to change as a result of future disturbances or removal of disturbances. The state-and-transition models further identify that following frequent or combined disturbances, a transition to a different vegetation community can be crossed, resulting in a new state. State-and-transition models are not precise enough to identify a clear line when some thresholds have been crossed. States which differ from the variability resulting from natural disturbance factors in the reference state are more broadly defined, especially when vegetation change results in a shift between the dominance of species present in the reference state. Other thresholds resulting in states dominated by non-native annual species are more clearly defined. As stated above, both the traditional range model and the state-and-transition model occur and neither pattern alone provides a complete assessment of vegetation dynamics on all rangelands (Briske, Fuhlendorf, & Smeins, 2005).

Miller and Eddleman (2001) identify a number of temporal changes in vegetation composition within the sagebrush biome attributed to livestock grazing, introduction of exotic plants, change in fire regimes, and herbicides. One scenario of change is an increase in the dominance of woody species (shrubs and trees), a decline in fire frequency and a decrease in perennial forbs and grasses. A second scenario is an increase in annual weeds (e.g., cheatgrass), an increase in fire frequency, and a loss of native perennial shrubs, forbs, and grasses. Change that usually occurs with excessive grazing and in the absence of fire within many sagebrush steppe types includes an increase in density and cover of shrubs, annual forbs, and annual grasses, with a corresponding decrease in native perennial grasses and forbs. If Sandberg bluegrass is present in the ecological site, it generally increases with excessive grazing.

Cagney and others (2010) identified grazing influences in a sandy soil ecological site in the 10-to-14-inch precipitation zone in south-central Wyoming. Four plant communities in three states (state-and-transition model) were identified, with the discussion of factors leading to transitions between states and resources values associated with these states. Two described plant communities (bunchgrass; sagebrush/bunchgrass) make up the reference state, with varying amounts of sagebrush resulting from natural disturbance factors, primarily fire. With time alone, Wyoming big sagebrush will advance into the bunchgrass community following fire. With improper grazing management, the rate of sagebrush advancement into the bunchgrass community and the density of sagebrush can be increased. In addition, improper grazing management can result in deep-rooted bunchgrasses (species that dominate the understory in the reference state) being replaced by grazing-resistant grasses (rhizomatous grasses and bluegrass). The replacement of deep-rooted perennial bunchgrass species by rhizomatous grasses and bluegrass result in a second state – a new grazing-resistant and stable plant community. A third possible state is a plant community made up almost entirely of sagebrush with bare ground in the understory and is the result of continued improper grazing management.

Mueggler and Stewart (1980) identify similar vegetation community responses to improper livestock grazing within low sagebrush/bluebunch wheatgrass, low sagebrush/Idaho fescue, and big sagebrush (Wyoming and mountain)/bluebunch wheatgrass habitat types in southwest

Montana. There, an increased dominance by sagebrush and Sandberg bluegrass, among other species, corresponded with the grazing-influenced decrease in the dominate bunchgrass species within each of these habitat types. The authors noted other described sagebrush/bunchgrass habitat types throughout the sagebrush biome, including descriptions for Idaho, Oregon, and Nevada, with species compositions similar to those described in Montana. Although a Wyoming big sagebrush/Sandberg bluegrass habitat type is identified for southern Idaho in a bulletin published by the University of Idaho (1983), this habitat type was restricted to a small area in western Idaho where precipitation is less than seven inches annually. The authors cautioned that this habitat type is difficult to separate from other disturbed Wyoming big sagebrush habitat types on the basis of vegetation alone.

Anderson and Holt (1981) identified a number of studies of vegetal dynamics on exclosures or other protected areas which did not provide clear conclusions regarding the validity of the classical Clements based successional theory. Data from their study of change within heavily grazed Wyoming big sagebrush/bunchgrass sites excluded from grazing for 25 years suggest that many different assemblages of the same species could form relatively stable communities on a given site. The relative abundance of the component species would depend largely on the disturbance history, the nature of past disturbances, and the vegetal composition at the time of disturbance. Any of the relatively stable community assemblages might be considered climax communities. Allington and Valone (2011) identified that with 40 years of livestock exclusion in southeastern Arizona, restoration of soil properties was initiated, grass cover was increased, and native grasses returned, leading to a conclusion that desertification toward a shrubland state had not occurred. Both these studies indicate that the response in vegetation composition to disturbance or removal of disturbance may be a process which occurs over a number of years. In the short term, what may appear to be a different state in the state-and-transition models may be a slow progression between phases, which is dependent on recovery of factors for plant establishment or growth, such as soil properties.

State-and-transition models identified in ecological descriptions for a number of the sagebrush/bunchgrass ecological sites descriptions represented in the Owyhee River Group allotments are similar to the state-and-transition model for the south-central Wyoming site described in Cagney et al. (Cagney, et al., 2010) (USDA NRCS, 2010). Many of the ecological site descriptions for low and big sagebrush sites identify retrogression and secondary succession through phases of the reference state, with varying degrees of dominance by Sandberg bluegrass, squirreltail, and annual grasses resulting from improper grazing management practices. Fire tolerance of these bunchgrass species has less influence on the species composition of these sites following fire. Dominance by deep-rooted perennial bunchgrasses (e.g., bluebunch wheatgrass, Idaho fescue, Thurber's needlegrass) is enhanced and maintained with proper grazing management.

A less productive state dominated by sagebrush in the shrub layer and Sandberg bluegrass, annual grasses, and annual forbs in the herbaceous layer is described in the state-and-transition models for a number of ecological site descriptions for the Owyhee River Group allotments (USDA NRCS, 2010). This plant community develops due to continued improper grazing management and lack of fire. Frequent fire leads to a similar plant community in this state, though lacking sagebrush and often with rabbitbrush, a more fire-tolerant shrub.

Seasons and Intensities of grazing use

The consequences of livestock impacts to vegetation resources and individual plants are related to the season in which livestock graze a vegetation community, as well as the intensity,

duration, and frequency of use in a given year (Reed, Roath, & Bradford, 1999). Long-term consequences from grazing management practices result from the response from the successive years of use a vegetation resource receives. Inappropriate grazing management practices are a process of repeated, selective use of the more desired plant species in a grazing environment. This grazing and regrazing within one growing season or in successive years has profound effects on the individual plants and their ability to compete with other plants for water, minerals, solar energy, and space. Similarly, the consequences of physical impacts associated with livestock grazing can result from a single impacting event or a sequence of impacting events without opportunity for recovery to occur. The result is a loss of productivity and potential death of a select group of plants that are excessively pressured by grazing animals.

A number of authors have identified physiological differences of rangeland plants, primarily grasses, as they relate to their response to grazing defoliation between those that grow in the Great Plains and the Intermountain West (Mack & Thompson, 1982); (Vavra, Laycock, & Pieper, 1994). Caespitose grasses in the Intermountain West, including the majority of perennial bunchgrasses within upland vegetation communities of group 1 allotments, evolved at least in partial response to low selective pressure by large congregating grazing mammals. The dominant caespitose grass within potential vegetation communities of the Owyhee River Group allotments is bluebunch wheatgrass, a species susceptible to repeated grazing. A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season, with a number recommending that at least two years of deferment of grazing use outside the active growing season for every year of active growing season use should be scheduled (Stoddart, 1946); (Blaisdell & Pechanec, 1949); (Mueggler, 1972); (Mueggler, 1975); (Miller, Seufert, & Haferkamp, 1994); (USDA NRCS, 2012). Burkhardt and Sanders (2010) provided the Owyhee Initiative Board of Directors with a science review of management tools appropriate for spring growing season grazing and recommended similar deferment or rest from growing season use. These retired university professors recommended a system of "early-on-early-off or a two to three early-season pasture rotation allowing grazed bunchgrasses to complete their reproductive cycle without grazing interruption at least on alternating years if not every year, based on their review of research and practical experience.

Intensity of grazing use includes a number of potential impacts to a variety of resource values. One aspect of intensity of grazing use is utilization of forage species. Utilization is defined as the proportion or degree of current year's forage production that is consumed or destroyed by animals (USDI BLM, 1999d). For purposes of analysis, slight utilization is generally defined as up to 20 percent, light utilization is from 21 to 40 percent, moderate utilization is defined as 41 to 60 percent, and heavy utilization is defined as 61 to 80 percent. Severe utilization is greater than 81 percent. Generally, the vigor of forage grass species can be sustained with light or moderate utilization, while heavy utilization reduces photosynthetic tissue below levels needed to maintain root reserves, diminishing the vigor of utilized species. However, the timing of grazing use relative to plant phenology and the occurrence of repeat grazing of individual plants combine with utilization levels to affect the health and vigor of key species, as well as changes to vegetation community composition. Moderate utilization during periods when reserves and photosynthesis are limited for initial growth, during regrowth, or during seed formation will impact herbaceous species greater than the same level of utilization during periods when the plant is not actively growing. A review of the literature by Anderson (1991), pertaining to the effects of defoliation and vigor recovery of bluebunch wheatgrass, and research by Ganskopp (1988), pertaining to similar effects to Thurber's needlegrass, revealed a high sensitivity to utilization during the active growing season. Grazing use that occurred when the plant was entering the boot stage, a period early in its seed producing stage of growth, was the period of highest sensitivity. Utilization levels of thirty to forty percent under deferred grazing systems or

one time utilization levels greater than 50 percent during the growing season have been shown to cause significant reductions in vigor and productivity. Time frames necessary for recovery may extend beyond the average 2 to 4-year cycle frequently used in grazing rotations. Researchers have recommended that desert ranges be stocked for around 30 to 35 percent use of forage production in an average year to meet both vegetation management and livestock production objectives (Holechek, Thomas, Molinar, & Galt, 1999).

Forb species tend to not have the ability to regrow following grazing. While grasses tend to have growing points close to the soil surface[1]

Long-term impacts of moderate to heavy utilization are dependent on the individual plant species' ability to maintain health and vigor, recover from impacts, and remain competitive while being utilized by grazing animals. The composition of a vegetation community, as it relates to the relative palatability of different plant species available for grazing, will affect measured utilization and subsequent levels of competition between individual plants. Although stocking rates are usually established to limit utilization to light or moderate levels, factors affecting livestock distribution will cause some areas where animals tend to concentrate to be utilized to a heavy degree, while other areas may remain unused or only slightly used.

The intensity of livestock use will also affect other resource values, including the ability to meet management objectives which relate to standing vegetation material and ground cover remaining after use. As utilization levels are increased, canopy cover of grazed and browsed plants declines. Additionally, deposition of protective plant litter to the soil surface, incorporation of litter into the soil, and the density and distribution of plant roots in the soil profile are decreased. As a result, increased utilization can reduce cover of bare ground by vegetation material and litter, increase puddling of clay soils with raindrop impact, reduce rates of infiltration of precipitation, and reduce permeability and moisture storage of soils. High utilization levels can contribute to increased overland flow of precipitation and snowmelt, soil erosion, siltation of streams, and a decline in surface water quality affecting beneficial uses. All these adverse impacts to soil properties and availability of soil moisture from high levels of utilization result in long-term reduced plant vigor and productivity.

Reed et al (1999) provided a grazing response index based on the frequency of grazing forage plants, intensity of removal of photosynthetically active material, and opportunity to grow prior to grazing or to regrow. Generally, a positive index resulting from grazing less than 7-10 days, removal of less than 40 percent of photosynthetically active material, and most or all of the growing season to grow or regrow is beneficial to the health, structure, and vigor of plants. Conversely, a negative index results from grazing longer than 14 to 20 days, removal of more than 55 percent of photosynthetically active material, and little or no chance to grow or regrow indicating that management practices are harmful.

Winter grazing use (November 1 to March 1) of upland vegetation communities generally is a period of minimum impacts. Upland herbaceous plants are mostly dormant during the winter season of use with the exception of some photosynthesis by new plant growth after fall and winter precipitation and during warming weather trends, primarily on south exposed slopes.

[1] Mack and Thompson (Mack & Thompson, 1982) cited other sources who identified morphologic features of caespitose grasses in the Intermountain West that make them more susceptible to grazing impacts as compared to rhizomatous grasses in the Great Basin.

Forage quality of cured standing herbaceous vegetation is moderate to low, improving when mixed with new growth or browse from palatable shrubs. Light to moderate utilization of standing cured herbaceous vegetation is not detrimental to health and vigor of plants. Light to moderate defoliation of new growth usually is not detrimental to maintenance of health and vigor of herbaceous species since soil moisture will be available for spring and early summer growth, regrowth, and completion of the annual growth cycle prior to soil moisture depletion. Grazing of fall sprouting annual species may reduce competition with desirable perennial herbaceous species during the following growing season. Light to moderate utilization levels will retain adequate standing material and litter for soil protection from wind erosion, rainfall impact, and late winter and spring runoff. Heavy utilization levels will expose the soil surface to these negative impacts, especially on sites with marginal potential to produce a reasonable vegetation cover and in years with limited growth of protective vegetation cover. The potential for repeated grazing of localized areas, resulting in heavy utilization, is present with severe weather conditions and snow accumulation reducing livestock distribution. Negative impacts intensify on palatable shrub species when snow accumulation makes herbaceous species unavailable. Livestock management actions to maintain animal distribution are oftentimes limited by weather and accessibility.

Early spring grazing use (February 1 to May 1) results in additional impacts to vegetation and soil resources as compared to winter use. Table VEGE-1 was developed with data for phenological growth of native perennial grasses within Boise District, as supported by data presented in the Proposed Southeastern Oregon Resource Management Plan and Final Environmental Impact Statement. Table VEGE-1 identifies average dates for initiation of growth, flowering, and seed-ripe for a number of bunchgrass species by elevation. Early growth of herbaceous species, primarily cool season species, occurs with rising soil temperatures. Minimal impacts to plant vigor and health occur with light to moderate utilization of early growth when adequate soil moisture is available for regrowth and completion of the annual growth cycle. Moderate utilization, in years with minimal soil moisture available for regrowth after use, could deplete plant vigor and health, especially during periods of critical growth. Heavy to severe defoliation can expose the soil surface to future erosive forces of wind and water. Use of palatable annual species early in this period may reduce competition with desirable native perennial species when grazing is removed and adequate soil moisture remains to complete growth cycles. Early growth of herbaceous vegetation contains high water content and thus, when combined with leached old growth, has only moderate forage quality, improving after mid-March in most years. The hazard of compaction of wet soils with hoof action of livestock may be present, resulting in a reduction of infiltration and soil moisture holding capacity in fine-textured soils. Opportunities for good livestock distribution are present with more locations of available water and cool air temperature.

Table H-1: Approximate growth stage dates for bunchgrass species[1]

(feet)	Sandberg bluegrass			Squirreltail			Bluebunch wheatgrass			Idaho fescue		
	Initiate growth	**Flowering**	**Seed-ripe**	**Initiate growth**	**Flowering**	**Seed-ripe**	**Initiate growth**	**Flowering**	**Seed-ripe**	**Initiate growth**	**Flowering**	**Seed-ripe**
4,000	March 10	April 15	May 15	March 25	June 1	July 1	March 15	June 15	July 125	April 1	July 1	Aug 1
4,700	April 1	May 5	June 15	March 25	June 1	July 1	March 25	June 25	Aug 15	April 5	July 1	Aug 15
6,000	April 15	June 25	Aug 1	May 1	June 25	Aug 1	April 25	July 15	Aug 15	May 10	July 20	Sept 1

[1] Developed with data for phenological growth of native perennial grasses within Boise District and adapted from Appendix R of the Proposed Southeastern Oregon Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 2001).

Upland growing season grazing use (May 1 to July 1) is the season of greatest impact to native perennial grass species. Upland plants are actively growing, allocating carbohydrates from roots and crowns and from limited photosynthetic surface area to early growth, regrowth, and seed formation. Herbaceous plants are susceptible to defoliation impacts as a result of the depletion of carbohydrates, especially with moderate to heavy utilization, repeated grazing, and/or frequent growing season use. Grass species are especially susceptible to impacts from defoliation during seed formation and seed stalk elongation, due to the high requirement for carbohydrate from remaining plant material and photosynthesis. Opportunities for regrowth and completion of the annual growth cycle after defoliation are limited, especially in years of below average precipitation and soil moisture. Soil compaction from the physical presence of livestock remains a concern with moist soils, especially in areas with shallow and fine-textured soils. Upland shrub species reach maximum growth withdrawing shallow soil moisture early and deeper water reserves as the season progresses. Opportunities for good livestock distribution during the early portion of this season are present with more locations of available water, high palatability of quality forage, and cool air temperature. Repeated use during the growing season can be expected to reduce vigor and health of desirable perennial herbaceous species and lead to trends away from desired future conditions.

Summer grazing use (July 1 to October 31) defers grazing until after the active growing season for most bunchgrass species. A deferred season of use provides for livestock grazing after most of the upland species have reached the growth stage of late seed development and replenished carbohydrate reserves. Most upland plants, including native bunchgrass species, have completed their annual growth cycles and have entered senescence. As a result, upland communities have declining forage quality and lower palatability to wildlife and domestic herbivores after the growing season and during the summer. Livestock will tend to turn to palatable browse species, especially when herbaceous utilization levels become heavy late during this period, to maintain a given level of nutrition when mixed with lower quality herbaceous feeds. With the onset of senescence, native upland vegetation communities are less susceptible to negative impacts of light to moderate defoliation. Heavy to severe defoliation can expose the soil surface to future erosive forces of wind and water. Livestock distribution away from water sources is limited by high ambient temperatures, increasing the need for frequent watering and causing cattle to graze primarily during the evenings and throughout the night, while becoming less active during daylight hours. Localized impacts from defoliation and the physical presence of livestock intensify, especially near water sources and other areas of concentrated activity. Additionally, nutrient concentration will occur in areas of concentrated livestock activity.

Fall grazing use (October 15 to November 30) remains a period of limited impact to upland plant species. Herbaceous upland plants remain senescent with some new growth of annual species and regrowth of perennial bunchgrass species during warming conditions when soil moisture has been replenished by fall precipitation. Upland herbaceous health and vigor is not impaired with light to moderate utilization of cured standing materials. Heavy to severe use may expose soils to erosion from wind and water for an extended period through the initiation of spring growth. Cooler ambient temperatures, with some fall regrowth of upland herbaceous species, may provide for better livestock distribution than during summer. Forage quality of upland herbaceous species remains low, though improving with the initiation of new fall growth. Livestock will retain a percentage of palatable browse species in their diets, when available, to maintain a given level of nutrition by combining it with lower quality herbaceous feeds.

Season-long grazing of a pasture generally begins during the growing season and extends to the end of the period of authorized use, typically into the fall period. Many of the impacts associated with use during the growing season occur with season-long use. Additional impacts occur from localized livestock concentration late in the season as sources of water diminish, as forage quality declines in upland communities, and as ambient temperatures rise. The effects of season-long grazing on species composition are largely dependent on the degree of utilization on the key species. Although the stocking

rates that are generally implemented with season-long grazing are designed to achieve moderate levels of utilization on most areas, factors such as terrain, location of fences and water, and vegetation types available, prevent uniform patterns of grazing. Heavy grazing will inevitably occur in some areas while light utilization will occur in others. A trend away from desired future conditions is expected in areas receiving moderate to heavy utilization on an annual basis, especially when that use occurs during active growing periods.

Exclusion of livestock grazing removes impacts to vegetation resources resulting from authorized use. Defoliation of herbaceous and shrub species is limited to that which occurs from insect and native herbivore use. Except in instances when native herbivore numbers are high, upland utilization levels during the growing season and dormant seasons are light. In any year, small areas of concentrated native herbivore use may have moderate to high utilization levels. Residual standing herbaceous material and litter accumulation is greater than with scheduled use by livestock in any season. Soil protection from rain impact is high, limiting erosion and improving soil structure and infiltration. The initiation of herbaceous growth with warming spring soil temperatures may be slightly delayed due to greater interception of solar radiation by standing and down litter.

Livestock grazing schedules are generally implemented to provide opportunity for unacceptable resource conditions to improve, to maintain resource values which are consistent with management objectives, or to avoid unacceptable impacts to resource values or conflicts between uses of public land resources. Anticipated short and long-term impacts from annual use of a pasture during any one season are presented above. Though some established grazing schedules provide for annual use of a pasture during one specified season, more often the mix of management objectives associated with a given pasture can better be met by varying the season of use over a repeating cycle of two or more years. Multiyear grazing schedules are primarily developed with varied seasons of use through an established rotation to allow desirable vegetation species the opportunity to regain vigor and health for future growth, productivity, and sustainability of resource values. Similarly, opportunities for recovery from grazing impacts to other resources, specific to a season of use, may be provided by varying the season in which livestock graze a pasture. Long-term and cumulative impacts of implementing a grazing scheme will define trend toward future vegetation communities and resource conditions.

Most multiyear grazing schedules can be defined as either a deferred-rotation or rest/rotation schedule. Both types of grazing schedules were designed primarily to promote plant vigor, seed production, seedling establishment, root production, and litter accumulation for herbaceous plants in upland ecosystems. Deferred rotation grazing schedules provide for one or more years of grazing use after seed-set, following one or more years of growing season use. In its simplest form, a deferred rotation grazing schedule within a pasture provides for a 2-year rotation cycle with one year of use during the critical period of plant growth followed by one year of deferment of use until after the growing season. More conservative schedules provide for a higher proportion of deferment than years of use during the period of active growth.

Rest/rotation schedules allow for similar opportunities for recovery with one or more years of the grazing rotation in which no use is scheduled. Caution should be implemented to ensure that higher levels of utilization during periods of use of one pasture while providing rest for another pasture do not preclude meeting management objectives. At moderate utilization levels, either rest/rotation or deferred-rotation grazing systems can allow for adequate recovery of upland herbaceous root growth and associated

carbohydrate storage following the impacts of critical season defoliation. The number of years of rest or deferment necessary to meet vegetation management objectives is dependent on a number of factors including resource conditions, soil and climatic factors, and the intensity of grazing use. With an increase in the proportion of years of rest or deferred use to the number of years of use during the critical season, the opportunity for recovery and maintenance of plant health and vigor is improved. Recovery following heavy use during the active growing season may require a substantial number of rest or deferment years to provide adequate opportunities for recovery of health and vigor, especially when growth conditions are poor or if the vegetation resource is in poor ecological condition.

7.9. Appendix I – Common and Scientific Plant Names

Table I-1: Common and scientific names of plants discussed in the Garat EA

Common Name	Scientific Name
aspen	*Populus tremuloides*
astragalus	*Astragalus spp.*
Indian ricegrass	*Achnatherum hymenoides*
basin wildrye	*Leymus cinereus*
basin big sagebrush	*Artemisia tridentata ssp. tridentata*
balsam root	*Balsamorhiza sagitatta*
bitterbrush	*Purshia tridentata*
bluebunch wheatgrass	*Pseudoroegneria spicata*
broom snakeweed	*Gutierrezia sarothrae*
buckwheat	*Eriogonum spp.*
bud sagebrush	*Picrothamnus desertorum*
bulbous bluegrass	*Poa bulbosa*
Canada thistle	*Cirsium arvense*
ceanothus	*Ceanothus velutinus*
cheatgrass	*Bromus tectorum*
Columbia needlegrass	*Achnatherum nelsonii*
crested wheatgrass	*Agropyron cristatum*
curl-leaf mountain mahogany	*Cercocarpus ledifolius*
currant	*Ribes spp.*
curveseed butterwort (bur buttercup)	*Ceratocephala testiculata*
Davis' peppergrass	*Lepidium davisii*
Fendler threeawn	*Artistida purpurea var. longiseta*
fourwing saltbush	*Atriplex canescens*
green rabbitbrush	*Ericameria teretifolia*
Hooker's balsamroot	*Balsamorhiza hookeri*
Horsemint	*Agastache spp.*
Idaho fescue	*Festuca idahoensis*
inch-high lupine	*Lupinus uncialis*
juniper	Juniperus occidenatlis
longleaf phlox	*Phlox longifolia*
low sagebrush	*Artemisia arbuscula*
lupine	*Lupinus spp.*
medusahead	*Taeniatherum caput-medusae*
mountain ball cactus	*Pediocactus simpsonii*
mountain big sagebrush	*Artemisia tridentata ssp. vaseyana*
mountain brome	*Bromus marginatus*
mountain mahogany	*Cercocarpus ledifolius*
needlegrass	*Achnatherum spp.*
Newberry's milkvetch	*Astragalus newberryi var. castoreus*
Nevada bluegrass	*Poa nevadensis*
onespike danthonia	*Danthonia unispicata*

Common Name	Scientific Name
Penstemon	*Penstemon spp.*
prairie junegrass	*Koeleria macrantha*
rabbitbrush	*Chrysothamnus & Ericameria spp.*
rattlesnake stickseed	*Hackelia ophiobia*
rubber rabbitbrush	*Ericameria nauseosa*
sagebrush	*Artemisia spp.*
sand dropseed	*Sporaobolus crypantdrus*
Sandberg bluegrass	*Poa secunda*
Scotch cottonthistle (Scotch thistle)	*Onopordum acanthium*
serviceberry	*Amelanchier alnifolia*
Slickspot peppergrass	*Lepidium papilliferum*
small burnet	*Sanguisorba minor*
snowberry	*Symphoricarpos oreophilus*
spiny phlox	*Phlox hoodii*
squirreltail	*Elymus elymoides*
Stream orchid	*Epipactis gigantea*
tapertip hawksbeard	*Crepis acuminata*
thinleaf goldenhead	*Pyrrocoma linearis*
thickspike wheatgrass	*Elymus lanceolatus*
Thurber's needlegrass	*Achnatherum thurberianum*
Ute ladies'-tresses	*Spiranthes diluvialis*
wax currant	*Ribes cereum*
Western germander	*Teucrium canadense var. occidentale*
western juniper (juniper)	*Juniperus occidentalis*
whitetop	*Cardaria draba*
Wood's rose	*Rosa woodsii*
willow	*Salix spp.*
ventenata	*Ventenata dubia*
yellow rabbitbrush	*Chrysothamnus viscidiflorus*

7.10. Appendix J – Range Readiness Criteria

SPRING RANGE READINESS CRITERIA

Date:_____ Allotment:_____

Field Office _____ Pasture:_____

Recorded by:_____ UTM/Legal:_____

Plant Species	**Range Readiness Criteria**	**Recorded Condition**				
BRTE (Cheatgrass) with few perennials	3rd leaf stage and 2" green active growth					
BRTE (cheatgrass) (with substantial perennial grass component)	3rd leaf stage and 2" green active growth with old growth, or 4" without old growth					
TACA8 (Medusahead)	Soils must be firm- 3rd leaf stage with at least 2" green active growth					
POSE (Sandberg bluegrass)	Greater than 1" active growth and seed stalks forming					
Wheatgrass seedings	Average 4" active growth with old growth present or 6" active growth without old growth					
ELEL5 (squirreltail)	Average 3-4" active growth with old growth present or 5" active growth without old growth					
PSSP6 (Bluebunch)	4" active growth with old growth present or 6" active growth without old growth					
FEID (Idaho fescue)	3-4" active growth, old growth present, or 5" active growth without old growth					
Soils	Is snow present? (circle) Yes No	Percentage of snow present				
		5 to 20%	20 to 40%	40 to 60%	60 to 80%	80 to 100%
Soils	Observe soil moisture or puddles	None	Few	Mod	Numerous	
	Frost is present (circle)	Yes		No		
Soils	Upland soils and including riparian soils above last high water mark are firm enough to support grazing with little to no pugging/hummocking.	Yes		No		
Slickspot soils (where appropriate)	Slickspots not saturated, i.e., no evidence of puddles, soil within slickspot firm					

Species Dominance and Phenology

Dominant Species		Phenologic Stage
1		
2		
3		

	Forb Species	Phenologic Stage
1		
2		
3		
4		
5		
6		
7		
8		
10		

Phenologic Stages

Stage	**Grasses**	**Forbs**	**Shrub**
1	Early Germination	--	--
2	Mid Vegetative Stage	same	same
3	--	--	--
4	Boot	bud	bud
5	Headed Out	bud	bud
6	Flowering	same	same
7	--	--	--
8	Soft Dough	same	same
9	Cured/Hard Dough	same	same
10	Seed shattered/dormant	same	same

	Grass Species	Phenologic Stage
1		
2		

	Grass Species	Phenologic Stage
3		
4		
5		
6		

	Shrub Species	Phenologic Stage
1		
2		
3		
4		
5		
6		

Comments: _____

_____

Range Readiness – Conclusions & Recommendation: _____

_____

7.11. Appendix K – Explanation of Model

The model used in calculating the ranch-level economic effects of changes in permitted range AUMs implements a partial-budgeting, marginal analysis approach to economic analysis of an agricultural enterprise. The model is based on a series of assumptions related to both market conditions and how the affected ranches might respond to changes in AUMs given those conditions, as outlined below.

The AUMs used as the baseline for comparison in the model are taken from current active AUMs listed in the descriptions of the alternatives. AUMs and months of use for each alternative were plugged into the model to evaluate the economic effects of the increase or decrease in AUMs that would occur if a specific alternative were implemented. Transfers of livestock from one allotment to another by the same owner were treated as internal sales of animals and were evaluated as separate enterprises.

In the analysis, it is assumed that the maximum AUMs permitted in any given month on the allotment serve as the limiting factor in determining the maximum size of the herd from which annual production can be obtained. The total supported number of animal units (AUs) is set by the number of range AUMs divided by the number of months on the allotment. In other words, an allotment with 180 permitted AUMs spread over 6 months would be able to support no more than 30 animal units, and the size of the herd is assumed to be constant throughout the year, regardless of how many months the herd grazes on the allotment being evaluated. Each animal unit is assumed to be equal to one cow-calf pair.

Under each alternative, if the total number of AUs decreases it is assumed that the rancher will sell the excess cattle (either internally within the overall ranch operation, or externally at auction) at a sale weight of 900 pounds and a sale price of $1.10 per pound. It is also assumed that the rancher will invest or save the proceeds from the sale at a rate of return or interest rate of 1 percent. Although under current financial market conditions a rancher might be able to realize a much higher rate of return, 1 percent is a reasonable rate to use under the assumption that ranchers would prefer to put revenue into relatively safe, conservative investments. In the model, the proceeds from selling excess cattle are annualized as a stream of revenue over ten years. This revenue stream is added to the overall net revenue associated with the allotment. The mathematical model includes a provision for evaluating cases in which rather than selling excess animals, a rancher chooses to retain them and feed them elsewhere. Because of limited information and complexities regarding assumptions about the actual business decisions that ranchers might make, this type of case was not included in the completed analyses.

If the total number of AUs increases under an alternative, it is assumed that the rancher will purchase additional cattle under the same conditions as outlined above for excessed cattle. The cost of additional cattle is annualized over ten years as a stream of costs, added to overall operating costs for the allotment.

In the model, it is assumed that ranchers will realize a 92 percent success rate in taking calves to market. In other words, 92 percent of cow-calf pairs will result in a calf being sold at the end of the summer season. Sold animals are equal to total AUs x 0.92. This calculation assumes that bulls are not included in the total number of AUs on range. The model assumes an average calf sale weight of 500 lbs. The market price for calves is an estimate based on recent published Chicago Mercantile Exchange prices for feeder cattle.[2] Since early 2011, prices have ranged from $0.95 per pound up to one short-lived spike at approximately $1.60 per pound with prices mostly remaining below $1.50 per pound but fluctuating between $1.40 and $1.55 since early 2012. Higher short-term price spikes in excess of $1.70 per pound have been observed in regional markets but have not persisted at the national level. To reflect these market conditions, a price of $1.45 per pound was used in the model.

[2] Source: www.theFinancials.com, accessed on February 21, 2013.

The annual herd maintenance costs used in the model are derived from standard national cost figures for grazing on public land[3] and include veterinary bills, anticipated mortality losses, vaccination supplies, etc. On public land, the standard cost of herd maintenance is estimated at $18.54 per AUM.

The annual cost of moving the herd is also derived from the standard national cost figures for grazing on public land and includes the cost of trailing and/or trucking animals between pastures, allotments, and/or ranch headquarters as well as herding costs. It also includes the value of the rancher's time plus all herding-related wages and expenses. Current typical costs for trucking range from $2.50 to $3.00 per mile per truck, regardless of the number of animals in the load. On public land, the standard cost of herd moving is estimated at $14.69 per AUM.

The grazing permit cost used in the model is $1.35 per AUM. Expected annual revenue includes proceeds from calf sales and any revenue stream derived from the sale of excess cattle. Expected annual costs include herd maintenance costs, herd moving costs, "off-allotment" feeding costs, grazing permit costs, and any stream of costs resulting from the purchase of additional cattle. The model does not include ranch operations' fixed costs, costs or returns on land investments, or depreciation. The mathematical model provides the ability to include investments in fixed infrastructure on range allotments as part of the overall economic analysis. In order to make the analysis comparable across allotments, however, infrastructure costs were not included in the completed economic analysis. Total expected annual net revenue in the model equals expected annual revenue minus expected annual costs. Ten-year net revenue equals expected annual net revenue multiplied by 10.

[3] Source: Grazing Costs: What's the Current Situation? Neil Rimbey and L. Allen Torell, University of Idaho, 2011. http://web.cals.uidaho.edu/idahoagbiz/files/2013/01/GrazingCost2011.pdf

7.12 Appendix L – BLM's response to comments on the Preliminary Garat Allotment Permit Renewal EA

BLM issued a preliminary environmental assessment (EA) for grazing permit renewal within the Garat Allotment (DOI-BLM-ID-B030-2014-0015-EA) to the public on October 8, 2014. The agency requested that comments on the EA be submitted no later than November 6, 2014. The comment period was extended five days at the request of the public.

Comment submissions were received from the Idaho Department of Environmental Quality, Western Watersheds Project, The Idaho Cattleman's Association, and Petan Company of Nevada. The comments received in submissions are summarized in the following table, along with the BLM responses.

Table L-1: Comments and responses for the Garat draft EA

Commenter	Comment Number	Comment Text	Comment Response
DEQ	n/a	n/a	DEQ submitted a generic letter that provides general guidance about resources and regulations that might be impacted by various construction projects. No substantive or site specific comments were provided.
Western Watersheds Project submitted comments via email on November 10, 2014. These comments were specific to the Garat allotment permit renewal EA. The individual comments and the BLM responses follow below.			
WWP	1 –	BLM must prepare an EIS.	The BLM published a Final EIS (DOI-BLM-ID-B030-2012-0014-EIS) on October 4, 2013, that analyzed the renewal of grazing permits on twenty-five allotments (known as Group 2) in the Jump Creek, Succor Creek, and Cow Creek watershed areas in the northern part of the Owyhee Field Office. This EIS defined Cumulative Impacts Analysis Areas (CIAAs) for social and economic effects and for the Owyhee subpopulation area, including, but not limited to sage-grouse habitat. The BLM subsequently prepared the Garat EA. When the CIAA was defined, the boundary was the same as the Group 2 EIS CIAA boundaries. The BLM found that the geographic boundary beyond which impacts to resources and habitat would no longer be measurable is the same for all groups. The rationale for establishing these boundaries is found in the Garat EA where cumulative effects analysis for each resource begins; the cumulative effects analysis that resulted from the EIS did not

Commenter	Comment Number	Comment Text	Comment Response
			unveil any effects not also recognized in the cumulative effects analyses in the Garat EA.
WWP	2 –	EA suffers from a profound lack of baseline information on sensitive and important species habitat, populations, areas of actually occupied habitat, threats, etc.	BLM used the best available data for its analysis of habitat conditions within the Garat allotment. See the Garat RHA and the references cited in the PEA.
WWP	3 –	BLM Failed to analyze any alternative other than NO Grazing which significantly reduced the adverse facility footprint that exists at present.	The PEA analyzed 5 alternatives in detail and considered several additional alternatives but did not analyze them in detail (Section 2). This represents an adequate range of alternatives.
WWP	4 –	Watersheds are not evaluated to actually include the drainage networks.	Correct, the lotic and lentic PFC assessments are assessed as reaches that were stratified based on TR 1737-15 and 1737-16.
WWP	5 –	FRH sites are selected to purposefully avoid and omit areas of more intensive livestock use. Supposedly randomly chosen FRH sites are biased towards more pure and ideal vegetation sites.	Evaluators followed the guidance contained in Technical Reference 1734-6 to select sites that were representative.
WWP	6 –	The Owyhee FRH processes relied on the greatly flawed and often draft NRCS ecosites that were developed by range consultants and some NRCS personnel. BLM did not verify or vet the sites used in analysis.	The NRCS ecological site descriptions represent the best available data and are updated as new data is received. The use of them is part of the guidance contained in technical reference 1734-6.
WWP	7 –	BLM must redo the FRH process as part of an EIS, so that it is based on the current best available data – and that includes close attention to Belsky and Gelbard and Reisner Dissertation and Reisner et al 2013 concerning cattle grazing causing cheatgrass expansion and invisibility of sage communities.	The PEA identified the need to prevent the introduction and spread of noxious and invasive weeds as an issue (Section 1.6.3). The PEA discussed the influence of Invasive weeds on wildfire (section 2.6.7). The PEA identified the role of livestock on the spread and establishment of invasive weeds (Section 3.3.2.1) additionally the PEA analyzed how each alternative would affect the spread and establishment of invasive weeds (Sections 3.3.2.1, 3.3.2.2, 3.3.2.3, 3.3.2.4, and 3.3.2.5). The Reisner paper is cited in section 3.4.1.1
WWP	8 –	BLM must identify all areas that are	BLM used site specific assessments to inform them of the

Commenter	Comment Number	Comment Text	Comment Response
		vulnerable and/or at risk and minimize disturbance including foregoing grazing in the northern pastures which are part of the nesting and brood rearing habitat for the lek complexes right across the river in CHL. BLM must provide current 2014 mapping for cheatgrass, including various percentages.	existing conditions on the allotment (RHA). The potential impacts to the vegetative community and wildlife habitat from the various grazing management alternatives are analyzed in the PEA (section 3).
WWP	9 –	BLM must also identify restoration needs, and stock lands accordingly. BLM must adopt at a minimum a 5-10 year rest period following any restoration efforts.	The RHA identified issues on the allotment that are causing it to not meet the Idaho Standards for Rangeland Health. The EA analyzed 5 alternatives including one with a stocking rate adjustment and one with no grazing for 10 years (Section 2).
WWP	10 –	In essence, BLM must conduct a capability, sustainability and carrying capacity analyses for wildlife species, as well as a risk assessment.	BLM assessed the condition of the habitats within the Garat allotment in the RHA using HAF data, trend data, PFC data, and interpreting indicators of rangeland health assessments. Together with species occurrence data, ecological site data, livestock grazing data, and available research articles, this data informs the BLM of the conditions for wildlife habitat on the allotment. The PEA analyzes the impacts of the current livestock management and the other alternatives. This is essentially the risk assessment.
WWP	11 -	BLM must assess a reasonable range of alternatives in light of current ecological science…	It is unclear what the commenter considers “reasonable.” Each allotment was assessed and evaluated and determinations were generated to summarize current conditions and identify casual factors for not meeting rangeland health standards and guide. A range of Alternatives in the EA were further developed and an impact analysis was conducted to consider the direct, indirect, and cumulative effects of livestock grazing on focal species and their habitat to the pasture level and within the greater cumulative effects analysis area. Based on the current condition of the allotment and the level of progress required to meet range health standards and guidelines, an appropriate alternative was selected that modified grazing systems intended to maintain and improve upland/riparian composition and habitat structure and function for all wildlife largely based on the needs of selected focal species.

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WWP	12 -	Where are sagebrush and TES species habitats in better condition?	This information is identified in the RHA under standards 1, 2, 3, 4 and 8.
WWP	13 –	Where are areas of higher habitat quality and quantity across the landscape, and that are currently occupied by pygmy rabbit, GRSG breeding habitat, loggerhead shrike, and other imperiled species?	This information is identified in the RHA under standards 1, 2, 3, 4, and 8. As identified in the PEA in section 3.7 current occurrence and population data for most species within the Garat allotment are not available.
WWP	14 –	What measures are necessary to prevent cheatgrass (and now medusahead coming from Duck Valley) from choking the understories? What level of grazing, if any, can these lands withstand?	The current conditions for invasive weeds and how they will be influenced by the various livestock management alternatives are described in section 3.3 of the EA.
WWP	15 –	The grossly inflated stocking far above actual use series of alternatives certainly are not “reasonable”.	The PEA analyzed 5 alternatives in detail (section 2). The alternatives ranged from the status quo, to increasing the stocking rate, to decreasing the stocking rate, to removing livestock completely.
WWP	16 –	There was a shocking lack of sensitive species, migratory bird, and big game species data in the Group One EA. Now in this parallel flawed EA, there is no data on nearly all sensitive species, and all the direct, indirect and cumulative impacts and threats to their habitat.	BLM used the best available information to analyze the effects of the proposed alternatives on wildlife and special status species habitats within the Garat allotment. Habitat data and the associated analysis of impacts are located in the RHA (Standards 1, 2, 3, 4, and 8) and the PEA (Section 3.7) respectively.
WWP	17 –	BLM must also assess the potential for severe cheatgrass spread and risk if it imposes a disastrous series of so-called “fuelbreaks” – which create prime sites for weed expansion – as destruction of the sage results in hot, dry, open sites where livestock congregate.	As identified in section 3.4.3, the tri-state fuel break project is still in the early stages of development and further analysis is this EA would be speculative.
WWP	18 –	BLM must unearth its own existing	In the PEA, BLM analyzed the impacts of the proposed

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		pygmy rabbit information and all other wildlife data over the years from its files, and actually develop a plan based on conserving, enhancing and restoring these habitats – not continuing to graze nearly every acre so the whole landscape goes to cheatgrass – as is the highly likely foreseeable outcome of this worsened 2014 EA process.	alternatives on habitats of shrub steppe associated species that occur on the Garat allotment and identified which alternatives would allow for wildlife habitat improvement (section 3.7.2)
WWP	19 –	BLM must rely on science for sage-bunchgrass systems – not the sole Wyoming Cagney info that includes considerable areas with rhizomatous grasses. See Mack and Thompson 1982, describing how rhizomatous grasses regrow after grazing, but bunchgrasses do not.	BLM relied on the best available science (see section 6 works cited).
WWP	20 –	BLM must fully assess the information about failures of rotational systems to improve GRSG habitats.	No supporting information was provided with this comment that would allow the requested assessment.
WWP	21 -	BLM must fully consider removing livestock grazing from the northern pastures.	
WWP	22 –	BLM must fully incorporate the grazing science review and critique in the Manier et al. 2013 report,	The grazing portion of the Manier et al. 2013 report appears to be in line with the general impacts of grazing on sage grouse habitat that is reported in the PEA (Section 3.7). Additionally the PEA relies on site specific habitat assessments and other data that are used to inform BLM on the current condition of sage-grouse habitat on the Garat allotment (RHA Standards 1, 2, 3, 4, and 8).
WWP	23 –	BLM must fully consider designating an ACEC that includes all the Group One EA and surrounding lands.	The BLM's Purpose and Need does not accommodate landscape-level restoration projects or designations of special management areas such as ACECs. There are specific needs and specific

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			purposes for this agency action and these are clearly defined in the Purpose and Need statement in section 1.4 of the EA. If alternatives are proposed that do not satisfy the agency's purpose and need, the BLM will likely consider them, but is not obligated to implement them.
WWP	24 –	Added to the Manier grazing system summary should be an evaluation of grazing damage to microbiotic crusts, and this trampling damage promoting invasive weeds.	Also see comment 22 on Manier et al. 2013. PEA: Section 3.4 - Upland Watersheds & Soils - discusses biological soil crusts (BSC) in the existing conditions portion of the Affected Environment Section 3.4.1; further discussions in section 3.4.1.1 include specific segments on “Biological Soil Crusts” and “Physical Impacts”. Trampling damage in relation to BSC and weeds can also be found in the introduction of Section 3.4.1.1 and its summaries on “Soils and Invasive Plants” and “Soil and Vegetative Cover”. Furthermore, livestock and its association with weeds are addressed under each alternative in sections 3.4.2.1, 3.4.2.2, 3.4.2.3, 3.4.2.4, 3.4.2.5. PEA Section 3.7 – Wildlife - addresses livestock disturbance on cover and the establishment of weeds in sections 3.7.2.1 and 3.7.2.2. PEA Section 3.3 – Rangeland Vegetation - includes the analysis of grazing and its effects on noxious weeds and invasive plants. Specifics can be found in Section 3.3.2.1, 3.3.2.2, 3.3.2.3, 3.3.2.4, 3.3.2.5. 2014 RHA: also see Standards 1, 4, and 8.
Western Watersheds Project submitted additional comments via 3 additional emails on November 11, 2014. The first was a letter that had been previously submitted to the BLM on April 22, 2012. This letter described many features that WWP would like to see in alternatives for the permit renewal process for the group 1 allotments of the Owyhee 68. BLM considered the alternative from WWP and decided not to analyze it in detail for the reasons described in section XXX of the Garat PEA. The second email contained a comment letter from WWP that had been previously sent to the BLM on October 22, 2012. This letter contained comments to the Group 1 PEA and only small portions of the letter directly address the Garat allotment. Essentially the comment letter stated that BLM used poor, wrong, cherry-picked, or outdated data and came to conclusions that were biased to make the allotments appear in better condition than reality. BLM responded to this letter in Appendix N of the group 1 EA. The vast majority of the substantive comments in this letter were also presented in the initial comments submitted by WWP and answered above. The third email contained a protest letter that WWP had previously submitted to BLM on March 6, 2012 for the Group 1 allotments proposed			

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decisions. This letter again had very little directly addressing the Garat allotment but essentially repeated the claims from their comment letter for the group 1 EA. This protest letter was addressed in the Final decision for the Garat allotment as part of the group 1 permit renewal process. Since the BLM had already responded to these comments for the Garat allotment, and those responses are still valid, BLM is not responding to these old comment letters in this document. Additionally the comments addressed directly to the Garat allotment 2014 permit renewal process are answered above.			
The Idaho Cattle Association (ICA), Public Lands Council (PLC), Owyhee Cattleman's Association (OCA), National Cattleman's Beef Association (NCBA, and Idaho Farm Bureau Federation (IFBF) submitted one joint comment letter on November 11, 2014. Responses to each comment are found below.			
ICA	1	Accordingly BLM should withdraw the 2014 Determination to allow BLM more time to conduct an appropriate and adequate analysis of the permittee's application- including the use of appropriate range improvement projects that may address the concerns of the BLM and allow the permittees to continue their operations.	The Garat Allotment 2014 Determination was signed July 8, 2014. Upon determining that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform with the guidelines, the authorized officer shall take appropriate acti0on as soon as practicable, but not late than the start of the grazing season. The purpose of the action is to consider the renewal of the permit to graze livestock within the Garat allotment with the existing infrastructure and in a manner that provides for livestock grazing opportunities on public lands where consistent with meeting management objectives, including the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management. Rationale for considering, but not analyzing in detail new rangeland projects is provided in the EA under section 2.6.3.
ICA	2	The BLM must consider range improvement projects.	New range improvement projects were outside of the Purpose and Need for this action. See draft EA at 1.4 Additionally BLM did consider new range improvement projects but not in detail. See draft EA at 2.6.3
ICA	3	BLM has unreasonably constricted the purpose and need of the Garat analysis by	There are specific needs and specific purposes for this agency action and these are clearly defined in the Purpose and Need

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		limiting its analysis to existing infrastructure.	statement in section 1.4 of the EA. BLM has the prerogative to define the purpose and need as appropriate for the agency action. Also, please see the response to comment Petan-2.
ICA	4	BLM must adequately Consider the Economic Impacts of any grazing reductions.	This comment is vague, and it is unclear what the commenter considers adequate. BLM fully considered the economic impacts of five alternatives in the Garat EA, using the same process that was deemed sufficient by the judge in the Castlehead-Lambert and Swisher cases.
ICA	5	BLM must take a hard look at the impact of reduced grazing on wildfire management.	The EA considered livestock grazing and wildfire management, but did not analyze in detail. See section 2.6.7.
ICA	6	The Garat PEA is devoid of any record of consultation with the BLM wildland firefighters or the National Interagency Fire Center about the remoteness of the area involved and the ability to fight fires in these areas.	The purpose of this action is to renew grazing permits with appropriate terms and conditions to meet or make progress towards Idaho Standards for Rangeland Health and Owyhee RMP Objectives. Wildfire fuels management and suppression alternatives are outside the scope of this process and are considered in separate management efforts. Section 2.6.7 of the EA was well vetted within BLM, including review by the Idaho State Office Fuels Lead.
ICA	7	Any Decision issued in this matter must consider that the BLM's FRH determination evidences that some pastures within the Garat allotment are meeting applicable standards. As such, it would be inappropriate to reduce grazing or impose other obligations on those pastures in an effort to meet standards on other pastures within the allotment.	Livestock grazing management on public lands is administered within the allotment land unit. Actions implemented to address an issue one place in an allotment at times results in actions occurring at other locations within the allotment. Terms and conditions of grazing permits address livestock management practices for the allotment. In addition, BLM has discretion to apply terms and conditions to grazing permits that would allow for attainment of Idaho Standards for rangeland health and attainment of the Owyhee RMP objectives or to ensure maintenance of those communities that are currently achieving those standards or RMP objectives.

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			BLM also has discretion to protect and enhance vegetative communities for wildlife and special status species. This includes areas that may be meeting Idaho Standards for Rangeland Health.
ICA	8	Furthermore BLM fails to provide any analysis or justification for its decision to reduce grazing on pastures in order to improve conditions that are not even impacted by grazing.	Please see the response to the ICA comment #7. BLM has not made a decision in this document it has merely described the conditions on the Garat allotment, identified which standards are being achieved and analyzed the impacts of a range of alternatives to determine which of these would allow for achievement of Standards and RMP objectives on the Garat allotment. When a decision is made, appropriate rationale will be provided for the terms and conditions applied to the permit authorizing grazing on the Garat allotment.
ICA	9	The BLM must consult with permittees about any reductions in AUMs. There is no information in the Garat PEA that the BLM has conducted the required consultation or made any reasonable attempt to consult with the permittees on the potential for reduced grazing, such actions violate these regulations. The NEPA process does not meet the consultation process required under the regulations. This is particularly the case here, where BLM has again overlooked the actual economic harm to the permittee and put off any meaningful discussion of range improvements – all matters that may have mitigated any perceived need for grazing reductions.	Please see the response to comment ICA #8. BLM has and continues to consult with the Permittee throughout this permit renewal process. See section 1.61 and section 4 of the EA for a list of dates when BLM consulted with the Permittee about the permit renewal process for the Garat Allotment.
ICA	10	Furthermore, 43 C.F.R. 4110.3-2, requires that monitoring or field observations must	Please see the response to comment ICA #8.

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		support the proposed reductions in permitted use. Reliance on generalized information and delaying meaningful analysis would violate this mandate.	The 2014 Rangeland Health determination found that the Garat allotment was not meeting Standards 2, 4, and 8 and that current livestock management practices were causal factors. These findings were based on the data and analysis contained in the 2014 Rangeland Health Assessment. In addition, the EA analyzes 5 alternatives, relying on monitoring and field observation data.
Petan Company of Nevada, INC. submitted comments on the Garat PEA on November 13, 2014 responses to these comments are found below.			
Petan	1 pg 2	BLM relies on policy statements that do not have the full force and effect of law. … As such BLM's reliance on IM 2012-043 provides no legal foundation for the agency's refusal to consider range improvement projects in detail due to hypothesized future land use plan amendments related to sage-grouse.	The purpose of the action is to consider the renewal of the permit to graze livestock within the Garat allotment with the existing infrastructure and in a manner that provides for livestock grazing opportunities on public lands where consistent with meeting management objectives, including the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management. Rationale for considering, but not analyzing in detail new rangeland projects is provided in the EA under section 2.6.3. Guidance provided in IM 2012-043 is but one portion of the information considered when the decision was made to limit permit renewal to not include new infrastructure.
Petan	2 pg 3	The EA is inherently invalid because its purpose and need define away the BLM's procedural duty to at least consider range improvement projects, thereby violating NEPA and the February 13, 2014 ALJ Order.	When BLM needs to take an action that may affect the environment, it starts by defining the purpose and need for action. According to regulations outlined by the Council for Environmental Quality, the purpose and need must "briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." The purpose and need for action focuses the agency's efforts on a particular task, and therefore it determines the scope and focus of the project, as well as the sideboards of the alternatives analysis. Once an agency outlines the purpose and need, it need only consider alternatives that would meet the purpose and need.

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			When formulating the purpose and need for action for the Garat Allotment EA, BLM considered a number of factors. On the one hand, it considered the requests of the permittee to implement new range improvements and the fact that range improvements are one tool available to BLM to manage rangelands. On the other hand, BLM considered that many range improvements had already been implemented on the Garat allotment, and that the plain language of the 1999 Owyhee RMP counsels against new range improvements whenever possible. BLM also considered that much of the Garat allotment overlapped with important sage-grouse habitat. This was important because the ongoing sage-grouse RMP Amendment process for Idaho and Southwest Montana is considering RMP amendments that would significantly restrict and/or preclude new infrastructure to protect sage grouse. The ongoing sage-grouse RMP Amendment process was a critical consideration, because BLM recognized that a decision to implement new range improvements on the Garat allotment would likely undermine alternatives being considered by the BLM Idaho State Director and Department of the Interior as part of the national RMP amendment process. BLM did not want to take implementation action that undercut important ongoing sage-grouse conservation objectives. In addition, the BLM considered other factors identified in section 2.6.3 of the preliminary EA when formulating the purpose and need for action for the Garat Allotment EA. Based on those factors, BLM decided to narrow the purpose and need of the permit renewal process to preclude consideration of new infrastructure and range improvements.
Petan	3 pg 4	BLM erroneously relies on pre-decisional conclusions to provide an impermissible post-hoc rationalization. … Accordingly, BLM's reliance on pre-decisional conclusions to not contemplate any range improvements violates NEPA.	The BLM did not rely on "pre-decisional" conclusions when it developed the purpose and need for the Garat Allotment EA. Please see the response to comment Petan-2 above. In addition, BLM did consider, but did not analyze in detail, the project proposals included in the application for permit renewal received from the permittee.

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Petan	4 pg 4	BLM erroneously asserts that any proposed range improvements must directly facilitate improving grazing management practices in order to warrant consideration under NEPA.	In response to the comment received, BLM removed the word "directly from the bullet in section 2.6.3 of the EA regarding the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management.
Petan	5 pg 6	BLM has no authority to temporarily defer its NEPA analysis out of a hypothetical concern over the 2015 Sage Grouse EIS.	Please see the response to comment Petan-2 above and also section 2.6.3 of the EA.
Petan	6 pg 7	BLM's economic analysis is invalid because it does not refute or otherwise address the erroneous socio-economic analysis put forth in Appendix O to the EA.	BLM fully considered the economic impacts of five alternatives in the Garat EA, using the same process that was deemed sufficient by the judge in the Castlehead-Lambert and Swisher cases. BLM has not been provided with any information showing that the Appendix K – Explanation of Model analysis in the preliminary EA was erroneous. Furthermore, BLM does not need to either confirm or refute the analysis in Appendix K, because the analysis in the Garat EA, which incorporates changes made to AUMs in the Owyhee 68 Groups 2 through 6, replaces the analysis for the Garat allotment and Appendix O in the Group 1 EA.
Petan	7 pg 8	The EA is not based on the appropriate land use plan. … The proposed Constraints set forth in the EA are inconsistent with the applicable land use plan.	While the record of decision at page ii of the Owyhee Resource Management Plan states it replaces the BLM's existing land management guidance for the Owyhee Resource Area contained in the Owyhee MFP, it remains silent regarding also replacing the Bruneau MFP for that portion of the Owyhee Field Office south of the Owyhee River. Because the Owyhee Resource Management Plan Environmental Impact Statement and the maps contained within the Owyhee Resource Management Plan clearly include the Garat Allotment, the Owyhee Resource Management Plan also replaced the portion of the Bruneau MFP that was the land use plan for lands within the Garat Allotment.
Petan	8 pg 9	BLM's refusal to consider range improvement projects violates the Owyhee RMP.	Please see the response to comment Petan-2 above and also section 2.6.3 of the EA.

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Petan	9 pg 11	The BLM has no authority to reduce permitted use under 43 C.F.R. 4180.2 (c) because the agency's determination is based upon grazing practices and not upon grazing levels.	43 C.F.R. § 4180.2(c) requires that the authorized officer shall take appropriate action … upon determining that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform with the guidelines. Appropriate actions are not limited to any one action, but may include any mix of actions pursuant to subparts 4110, 4120, 4130, and 4160 of 43 C.F.R. § Part 4100. Although the agency's determination for the Garat Allotment is based on grazing management practices, it is not precluded from also adjusting authorized active use when considering related actions that will result in significant progress toward fulfillment of the standards and significant progress toward conformance with the guidelines.
Petan	10 pg 12	BLM violates 43 C.F.R 4180.2(c) Section 4180.2(c) relies upon public land, not allotments. No adverse determination was made as to pastures 1 or 6 on the Garat allotment yet BLM advances change therein.	The determination identified that the Garat allotment failed to meet a number of standards due to current livestock management practices. Mandatory terms and conditions of public land grazing permits include the allotment to be used. As a result, authorization to graze livestock on public land does not occur at the pasture level but at the allotment level. Appropriate actions that will result in significant progress toward fulfillment of the standards and significant progress toward conformance with the guidelines are not limited to only actions at the specific site where standards were not met. Action taken often result in related actions to address grazing management and affect permit terms and conditions in the allotment, as a whole.
Petan	11 pg 13	BLM provides no rational basis for the 2014 BLM determination, as it conflicts with the 2007 BLM determination and as it provides no rational basis for either ignoring or replacing the 2007 BLM determination.	The 2014 rangeland health assessment and evaluation, as well as the 2014 determination, are the current land health documents that identify standards met and livestock management practices that conform to the guidelines. These 2014 documents were developed using the best available data and information at the time they were completed. While information used in earlier equivalent documents is also used in the 2014 documents, additional applicable data and information available since the completion of those earlier documents was also used in 2014. The

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			rationale leading to conclusions in the 2014 rangeland health assessment and evaluation, as well as the 2014 determination, are within each document.
Petan	12 pg 14	BLM errs in not implementing appropriate action under subpart 4120, assuming the 2014 BLM determination controls. … Specifically BLM omits the consideration of any new, modified, and or removed range improvements pursuant to subpart 4120 to meet applicable standards and conform to applicable guidelines. … Section 4180.2(c) does not authorize the BLM to ignore any appropriate action.	While 43 C.F.R. § 4180.2(c) requires BLM to take actions to ensure significant progress is made toward meeting standards, it does not mandate or require any particular action. Appropriate action means implementing actions pursuant to subparts 4110, 4120, 4130, and 4160. BLM's obligation is to ensure significant progress, not to do it in any particular fashion. Also, please see the response to comment Petan-2 above and also section 2.6.3 of the EA.
Petan	13 pg 15	BLM violates 43 C.F.R 4110.3-2. Alternative 4 decreased permitted use without any determination of grazing capacity.	BLM did not violate 43 C.F.R. § 4110.3-2 when it considered and analyzed alternative active use AUMs and livestock numbers that would be authorized under each of the alternatives. Rationale for AUMs and livestock numbers that would be authorized are provided for each of the alternatives in section 2 of the Garat EA.
Petan	14 pg 17	BLM Violates the Taylor Grazing Act. … BLM's unfounded decision to eliminate the concept of suspended use impairs the value of a permittee's livestock operation to the extent that it fails to adequately safeguard the western livestock industry as required by the Taylor Grazing Act and the Supreme Court.	BLM does not violate the concept of suspension as defined in 43 C.F.R. § 4100.0-5. Alternatives considered in the Garat EA that include reductions in active use are consistent with 43 C.F.R. § 4110.3-2 when alternative actions that reduce active use also result in a reduction of permitted use. Considered reductions are not temporary due to drought, fire, or other natural causes, or to facilitate installation, maintenance, or modification of range improvements. Reductions considered in the Garat allotment EA are the result of monitoring or field observations showing grazing use or patterns of use that are not consistent with the provisions of subpart 4180, or grazing use is otherwise causing an unacceptable level or pattern of utilization.
Petan	15 pg 20	BLN violates the Wilderness act because the agency's minimum tools analysis is non-existent.	BLM has included NEPA analysis of various levels of the prohibitions identified in section 4(c) of the Wilderness Act, except as necessary to meet minimum requirements for the

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			administration of the area for the purposes of the Act. Specifically, the completed EA considers and analyzes the use of motor vehicles, motorized equipment, or mechanical transport associated with grazing in wilderness areas. In accordance with the House Report No. 101-405 and the Omnibus Public Lands Act of 2009 that designated wilderness within the Garat allotment, the maintenance of supporting facilities, existing in an area prior to its designation as wilderness is permissible in wilderness. Where practical alternatives do not exist, maintenance or other activities may be accomplished through the occasional use of motorized equipment.
Petan	16 pg 20	The RHA/ER and determination provide no rational basis for the conclusions that current livestock grazing management practices are significant factors in not meeting Standards 2,4, and 8 within portions of the Garat allotment. The lack of any rational basis for such conclusions is discussed in detail in the following comments.	Responses are provided specific to detail provided in the following comments.
Petan	16A pgs 21-24	2014 PFC Assessment for Piute Creek-Standards 2 and 8.	An ID team including members from both the BLM and the interested public convened and agreed to conduct PFC assessments on Piute Creek following protocols in the BLM TR 1737-16 (see the 20140522_PiuteCreek_PFC_AssessSummary). The TR has been implemented on BLM lands since 1999 and is not in debate. The Wiexelman classification key is a separate process BLM is testing for implementation that would allow a wetland classification *prior* to the PFC assessment (described in PEA at section 3.6.2). As your comment points out, a correct classification is necessary to both have a reference as well as to ensure the PFC protocol is applicable to a given site. Proper identification and understanding of the sites altered potential using all and the best information available were performed prior to and during the field visit (see the Group 1 AR for 20+ years of

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			documented information regarding Piute Creek). The ID team that completed the assessment consisted of countless years of experience and expertise in all facets of the indicators (biotic, hydrologic, and erosion/deposition) used to assesses conditions using the PFC assessment.
Petan	16B pg 24	Rangeland Health Field Assessments – Standards 4 and 8	Please see the response to comment Petan-11 above.
Petan	16C pgs 24-27	Trend in Pasture 4 (Kimball) – Standards 4 and 8.	BLM followed protocols for monitoring nested plot frequency trend in accordance with Technical Reference 1734-4 (Sampling Vegetation Attributes). This technical reference identifies advantages and limitations of each sampling method described. The detail of the comment focuses on the limitations of using nested frequency while not considering the advantages and limitations of all methods for monitoring trend provided in the technical reference. The comment has a conclusion that nested plots used in the BLM trend studies result in data from various size plots not being independent samples. If fact, the various size plots allow data analysis from one sampling techniques to be used to monitor vegetation attributes for plants that are common in the population while also obtaining data for species that are less common.. Analysis techniques used by BLM do not use more than one plot size for any one species. The various size plots are analyzed separately, with the smaller size plots effective for monitoring common species and the larger size plots effective for monitoring less commo0n species. The comment also suggests that techniques used by Western Range Services result in independent samples, but fails to identify the population that samples are “randomly” selected from. Rational supporting the conclusions regarding Standard 4 in the

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			rangeland health assessment and the determination regarding Standard 4 for the Garat allotment are provided in the 2014 documents as identified in the response to comment Petan -11.
Petan	16D pg 27	Basal Cover Data – Standard 1	The basal vegetation category includes only perennial vegetation (including shrubs, forbs, and grasses), not annuals. During the time of analysis, three years of basal cover data were included in the when available for 1989, 2003, and 2009. While basal cover contributes to the ground cover analysis, it is only one of several cover types within an even greater set of other available data. As previously stated, basal vegetation analysis included all perennial vegetation. Exhibit II displays basal cover for deep-rooted perennial grasses only and in this form cannot be compared directly. While some upward trend and otherwise primarily static status are encouraging, the 2014 data on basal cover provided in Exhibit II would not change any of the calls.
Petan	16E pg 27	Canopy Cover Data - Standard 8	While call on the two mentioned sites would change depending on which data set was used, the call on the pastures would not change because the pasture calls are based on multiple assessments in each pasture.
Petan	16F pgs 29 – 30	Davis' peppergrass data – Standard 8.	1. As stated in the RHA aerial imagery evidence of livestock congregation at occupied playas combined with actual use data of livestock use during the vulnerable spring period let to a conclusion that the Standard 8 for Sensitive plants was not met BLM 2. BLM used the best available data for its analysis of habitat conditions within the Garat allotment. Together with species occurrence data, ecological site data, livestock grazing data, and available research articles, this data informs the BLM of the conditions for SSPS habitat on the allotment. The PEA analyzes the impacts of the current livestock management and the other alternatives. "Because of the high degree of habitat specificity, narrow range, and numerous threats, Davis' peppergrass is a Category 2 candidate for listing under the ESA (U. S. Fish and Wildlife Service 1990, Bernatas and Moseley

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			Department of Defense Legacy Resource Management Program Report, page 2 1991) 3. BLM provided photographic imagery of the playa in Pasture 5 demonstrating the "Wagon Wheel" effects of livestock trailing and congregation to and in Homer Wells Reservoir West (Page 108, Garat EA, 2014) where livestock congregate. The Mancuso Report addresses density of plants in playas (page 2) and states "Density is usually not even over the entire playa, and plants may be absent from one or more segments of a playa." Showing that even if the playa is large, plants are not located throughout the entire area. 4. Although the referenced parts from the Petan Comments document of the Mancuso report leave you to believe there are no problems sustaining Davis' peppergrass populations in Pasture 5, other parts of the report identify the Davis' population is potentially threaten and would contribute (Table 12, page 18 shows "Broken stems data vs. trampling) to the decline of the species that may contribute to listing under ESA. Even broken stems cause the photosynthetic portion of the plant to be injured and branches to be broken off, which reduces the amount of energy that plants can produce that year and, under prolonged circumstances, could result in the death of the plant, reducing the overall l plant populations (Tuason, 2005, PEA page 107). 5. Mancuso Report further states on page 17, "Cattle use in the form of track, trails, feces, and/or congregation zones was the most widespread playa-wide ground disturbance [in 2010 (Table 20)], a pattern similar to previous monitoring years." (PEA SSPS Table 2, page 104 Effects of livestock grazing on Special Status Plant Species habitats by season of use.)
Petan	16G pg 30	Sage grouse late brood rearing habitat data – Standard 8	See response to comment 16A above.
Petan	16H pgs 30-31	Monitoring Data to determine stocking rates.	The comment is correct in its second paragraph when it states that appropriate stocking rates should be calculated based upon resource trend[]. The rangeland health assessment and evaluation

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			conclude that standards are not met and the determination is that current livestock grazing management practices are significant factors to that failure to meet standards. Because impacts to resources result from a combination of the season, intensity, duration, and frequency of grazing, analysis of the consequences of continuing the current situation concludes that standards and objectives would not be met in the future. And also because the livestock management practices under Alternative 2 differ primarily from those under the current situation by increasing cattle numbers and active use AUMs, analysis of the consequences of implementing Alternative 2 concludes that standards and objectives would not be met in the future. Alternative 3 set limits to the intensity of grazing use and thus results in analysis concluding that standards and objectives would be met in the future. The BLM provided rationale for setting the conservative stocking rate under all sub-alternatives of Alternative 4 for all pastures and at a level similar to the allotment-wide stocking rate for the allotment under the current permit, once appropriate seasons of use were defined that would allow standards and objectives to be met in the future. That process was described under the description of Alternative 4 in section 2.4 of the EA.
Petan	17 pg 31	BLM's resource constraints are invalid.	See below
Petan	17A pg 31-33	Vegetation and soils constraint	The EA at page 22 under the description of Alternative 3 more fully states, "Researchers have identified a need to limit the intensity of grazing use, and a number of sources recommend providing at least 2 years of deferment for each year of active-growing-season use." The list of sources that are referenced to support this statement at various places in the EA and used to

Commenter	Comment Number	Comment Text	Comment Response
			support the proposed actions under Alternative 4 are mis quoted in the comment as follows: Stoddart, 1946: “It was concluded from these studies that the intermountain climate, marked by summer drought is ill suited to perennial grasses for spring grazing, therefore, careful range management is important to maintain production. This management should be founded upon moderated intensity of grazing and upon deferred grazing throughout the entire growing season under a rotation system rather than upon short-time deferment in the spring.” Blaisdell & Pechanec, 1949: “In general all clipping reduced the following year’s herbage and flow stalk production and average leaf height. The reduction due to the first spring clipping was small; the effect became more pronounced from clipping made as the growing season advanced. The greatest reduction resulted from clippings made in late May and early June. The reduction from later clipping was progressively less, and the effect of the late fall clipping was slight. Flower stalk production was impaired more than herbage production, and both were impaired more than leaf height. Wheatgrass was more adversely affected than balsamroot. Lack of soil moisture was the limiting factor preventing regrowth during the latter part of the season.” Mueggler, 1972: “Both the competition and the clipping treatments strikingly affected plant growth the following year. Herbage production and flower stalk numbers decreased with increased levels of competition and intensities of clipping. Under partial competition, unclipped bluebunch wheatgrass produced twice as much herbage and three times as many flower stalks as unclipped plants subjected to full competition. Without competition, unclipped plants produced 6 times more herbage and l 0 times more flower stalks than unclipped plants growing in

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			undisturbed vegetation. Obviously, the production of individual bluebunch wheatgrass plants is greatly suppressed by competition from surrounding vegetation. Reduction of competition alone did not significantly affect either the length of foliage culms or the length of flower stalks." Mueggler, 1975: "The rate and pattern of vigor recovery of protected individual Idaho fescue and bluebunch wheatgrass were studied for 5 years after heavy and extreme clipping. Bluebunch wheatgrass was not only more sensitive to clipping, but recovered vigor more slowly than Idaho fescue. Idaho fescue of moderately low vigor required approximately 3 years and bluebunch wheatgrass a projected 6 years to approach normal vigor. Recovery from very low vigor may take more than 6 years of protection for Idaho fescue and 8 years for blue bunch wheatgrass. Maximum leaf length can be used as a reliable index of Idaho fescue vigor. Flower stalk numbers combined with maximum lengths indicate vigor in bluebunch wheatgrass." Anderson L. D., 1991: "Bluebunce wheatgrass is considered quite sensitive to grazing during the growing season because of its upright stature, slender shoots, early elevation of apical meristems to grazable height (2" (5-cm), a high ratio of reproductive to vegetative shoots and its slow regrowth potential of new leaves. Effects of growing season defoliation injury are well documented: basal area, stem numbers and both root and forage yields are reduced and mortality can be high. A consensus of authorities indicates that bluebunch wheatgrass is most vulnerable to grazing damage during the boot/early flowering stage. Less, but still significant, damage is possible during the remainder of the growing season. Defoliation to very short stubble heights during the boot stage has been reported to essentially eliminate plants within as few as three years. There was agreement that some grazing could occur prior to boot if

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			livestock were removed before apical meristems were vulnerable. Grazing of apical meristems removes most of the actively growing tissue and greatly retards any further growth. The value of retaining a good complement of green leafy material on grazed plants was stressed by many authorities. Vigor recovery timeframes will be compressed or expanded under the influence of wet/dry climatic cycles. Vigor recovery has been found to require most of a decade, even with complete protection from grazing. Competition, both intra- and interspecific, can exert a strong influence on seedling survival and vigor recovery." Miller, Seufert, & Haferkamp, 1994): Agropyron spicatum is considered sensitive to heavy grazing during the growing season because of its upright stature, slender shoots, early elevation of apical meristems to grazing height, and high ratio of reproductive to vegetative shoots (Branson 1956, Harris 1967, Evans and Tisdale 1972). Conflicting results are found in the literature regarding the phenological stage at which A. spicatum is most sensitive to defoliation. This is primarily because of different levels of defoliation and growing conditions after defoliation. Mcllvanie (1942) found A. spicatum is most vulnerable to defoliation during the stage of minimum root-reserves. Clipping at this time delayed normal seasonal replenishment of carbohydrate reserves. Donart and Cook (1970) found more root reserves were utilized for regrowth after early spring defoliation than defoliation during the boot stage, however, clipping intensities were severe (90 percent defoliation). Caldwell et al. (1981) reported the major source of carbon used for regrowth was assimilated after the defoliation event and not before. This emphasizes the importance of green leaf tissue remaining on the grazed plant. Most researchers have found A· spicatum is most sensitive to clipping just before and during the boot stage, which usually occurs in early June (Daubenmire 1940, Stoddart 1946, Blaisdell and Pechanec 1949, Wilson et al. 1966a, Harris 1967,

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			Trlica and Cook 1971, Harris and Goebel 1976). Limited regrowth, after leaf removal at the boot stage, apparently is caused by high temperatures and limited soil moisture during most years (Stoddart 1946, Wilson et al. 1966). Defoliation also appears to suppress rather than stimulate new tiller development (Branson 1956, Caldwell et al. 1981). This may be caused by the late development of axillary buds (Hyder and Sneva 1963a) and allocation of photosynthate to the roots rather than for development of new leaf tissue (Caldwell et al. 1981). Clipping A. spicatum in mid-November and early March did not affect the rate of tiller e-longation in spring (Willms et al. 1980a 1980b). The level of carbohydrates stored at fall quiescence affects the ability of a plant to regrow after defoliation and to complete its annual growth cycle before summer dormancy (Trlica and Cook 1971). USDA NRCS, 2012: “Stands should not be grazed until they have firmly established (usually two growing seasons) and started to flower. Six inches of new growth should be attained in spring before grazing is allowed in established stands. The growing tip of bluebunch wheatgrass is fairly high and stands can easily be overgrazed. Spring grazing should occur no more than one out of three years and no more than 40 percent utilization should occur during rapid growth. Heavy early spring grazing is especially damaging and grazing should be delayed until flowers are halfway emerging from the protecting leaf. No more than 60 percent utilization should occur after seed ripens.” Ganskopp, 1988: Thurber needlegrass (Stipa thurberiant1 Piper) is an important component of both forested and shrub-steppe communities of the Pacific Northwest and Great Basin regions, and little is known of its tolerance to defoliation. A study was conducted on the Squaw Butte Experimental Range to determine the response of containerized Thurber needlegrass to single

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			defoliations (2.5-cm stubble) throughout the growing season. Dates of treatment spanned vegetative through quiescent stages of phenology. Response variables included: summer regrowth, number of reproductive stems, fall growth, and subsequent spring herbage production, change in basal area, and root mass. Vigor of Thurber needlegrass was reduced most by defoliation during the early-boot stage of development. Impacts were successively less severe from vegetative, late-boot, and anthesis treatments, respectively. Cumulative herbage production the year of treatment was reduced from 38 to 64% by defoliation at the early-boot stage. The same treatment reduced subsequent spring growth by 46 to 51% and root mass the next spring by 34 to 45%. Treatment effects were somewhat reduced when temperature and moisture regimes allowed substantial regrowth after defoliation. Defoliation during or after anthesis had little effect on plant response. Managers should be aware that a single defoliation, particularly during the boot stage, can significantly reduce subsequent herbage production and root mass and possibly lower the competitive ability of Thurber needlegrass. These sources support the statement that researchers have identified a need to limit the intensity of grazing use, and a number of sources recommend providing at least 2 years of deferment for each year of active-growing-season use. Although the limitation to no more than one year of growing season use of three years is not expressly stated in many of these sources, most identify the impacts from growing season use and caution against annual use during the growing season. A number of these sources identify an extended number of years necessary for recovery of vigor. Finally, although the NRCS Plant Fact Sheet for bluebunch wheatgrass does not have references listed, it is a well vetted source based on current science and a wealth of professional expertice.
Petan	17B pg	Sage Grouse Constraint 1. The Sage	As described in the RHA and the PEA, Preliminary Priority

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	33-35	grouse constraint fails to conform to the applicable land use plan. 2. There is no nexus between the sage-grouse constraint and various sage grouse conservation recommendations.	Habitat occurs on the Garat allotment and the implementation of the sage grouse constraint helps to ensure compliance with the Owyhee RMP objective SPSS 1 referenced in these comments. The expected impacts of implementing grazing management that follows the identified constraints are described in the PEA (Section 3.7.2).
Petan	17C pg 35	Riparian Constraint	ORMP RIPN Objective 1 applies to all BLM lands within the FO that contain riparian resources. The Bruneau MFP is superseded by the 1999 ORMP. BLM has the discretion to develop alternatives to meet that objective. The impact analysis of the alternatives that contain the constraint are described in the PEA (section 3.6.3.4).

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