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April 2, 2007

Mr. Terry Lee Smith, Project Manager
Bureau of Land Management
Pocatello Field Office
4350 Cliffs Drive
Pocatello, Idaho 83204-2105

Re: Draft Pocatello RMP and EIS

Dear Mr. Smith:

Western Watersheds Project (WWP) Utah/SE Idaho Office is submitting these comments on BLM's Draft RMP/EIS (RMP). Additional comments will be submitted by WWP's Biodiversity Coordinator/Boise Office. WWP previously submitted scoping comments dated April 27, 2003 (Appendix 1). In addition, WWP submitted a detailed review of livestock grazing management science to the Pocatello Field Office dated April 22, 2004 (Appendix 2). This latter analysis was prepared to inform BLM planning and management actions related to livestock grazing. The comments and analysis in both of these documents are incorporated into these comments. In addition, we incorporate by reference comments on the Draft RMP/EIS by the Greater Yellowstone Coalition and the Sierra Club.

WWP is a 501c3 non-profit corporation whose mission is to protect and restore western watersheds and wildlife habitat. Our members use public lands in the Pocatello Resource Area for recreation, research, wildlife viewing and spiritual renewal. These lands have extremely high intrinsic values and we strive for their protection and ecologically sound management.

The Draft RMP and all its alternatives defy these goals and our mission by largely ignoring ecological and range science and failing to provide a proper analysis of current conditions or alternatives. It has not provided a reasonable range of alternatives as we are forced to choose between different levels of disposal and degradation, rather than restoration. Restoration is somehow equated to manipulation rather than addressing root causes of ecosystem dysfunction, most notably, livestock grazing which is the most ubiquitous use across the Pocatello Resource Area, proposed to occupy over 90% of public lands under all alternatives. FLPMA states in Section 4100.0-2, *"The objectives of these regulations are to promote healthy sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to properly functioning condition...."* (Emphasis added).

The RMP does not provide adequate guidance in the form of enforceable standards for such things as road density, livestock grazing, timber harvest and other extractive uses which impact watersheds and wildlife. It projects massive vegetation

manipulation without specifying how the sensitive native grasses and forbs are to be restored or shrub/herbaceous structure and function to be restored or maintained.

Instead, the RMP cites general guidance such as the Idaho Fundamentals of Rangeland Health, which are so generic as to be unenforceable and also lack scientific validation, or it uses a model based on broad assumptions which manipulate gross acreages based on treatments or surface disturbing activities, yet does not address how these activities will actually restore these ecosystems or protect sensitive areas such as erodible soils and native plant communities. The failure of the modeling approach to actually address the full range of structural and functional attributes of these plant and animal communities is the underpinning of the RMP analysis, yet it leaves many unanswered questions as to the ultimate fate of these lands and their native plants and animals. These failures invalidate the analysis of impacts in Chapter 4.

"The plan provides objectives, land use allocations, and management direction to maintain, improve, or restore resource conditions and provide for the economic needs of local communities over the long term." (RMP). Nowhere does the RMP analyze the effectiveness or results of its current Management Plans, their various standards or guidance at achieving restoration, which would be a test of its ability to improve habitats, watersheds and water quality. It's as if history ceased to exist and there is no accounting for the success or failure of past management, using that experience to guide proposed management in this current RMP.

The RMP failed to address livestock grazing as a Need for Change topic, yet livestock grazing and its well known ecological damage and conflicts with other uses, affects topics such as Vegetation, Special Status Species, Fire Management and Special Designations such as RNAs, ACECs and WSAs. This omission is a critical failure and largely invalidates the analysis in the RMP due to livestock occupancy and impacts on over 90% of these BLM lands.

BLM, while describing increases in all uses under its Preferred Alternative B, cannot possibly *"accelerate restoration"* as FLPMA requires or meet its described management objectives. Some of these objectives are:

- *"maintain or improve big game seasonal habitat" (Objective CA-FW-1.1);*
- *"maintain or improve native and desired non-native species habitat and the connectivity among habitats" (Obj CA-FW-2.1);*
- *"incorporate resource protections to minimize soil loss when the long-term health of soil function and productivity is at risk" (Obj CA-SW-1.1);*
- *"manage public land activities to maintain or contribute to the long term improvement of surface and ground water quality" (Obj CA-SW-2.1);*
- *"maintain and protect paleontological resources for their educational and scientific benefits (Obj CA-PR-1.1);*
- *"conserve, inventory and monitor special species habitats (Obj. CA-SS-1.1);*
- *"maintain or improve the qulity of listed species habitat to support species recovery and the benefit of those species (Obj CA-SS-1.2);*
- *"maintain or improve the quality of Sensitive species habitat by managing pulic lands activities to benefit those species."* (Obj CA-SS-1.3).

There is no analysis to show how generic guidelines such as those in the RMP, which do not address or control use levels on specific habitat attributes, can meet these objectives while BLM disposes of large acreages of public lands, allows increasing OHV use with no demonstration of enforcement ability, increases use of prescribed fire and mechanical treatments, proposes more water developments for livestock, increases acres available for livestock use so that over 90% of BLM lands are grazed, while also ignoring livestock capability and stocking rate considerations, and allowing more mining and surface disturbance.

The alternatives, including the Preferred Alternative, do not balance resource uses as envisioned in FLPMA and the Multiple Use and Sustained Yield Act. IBLA Judge Rampton, in the Comb Wash case, ruled that BLM violated the "balancing" provisions of FLPMA by not making a reasoned or rational analysis of the appropriateness of livestock grazing in consideration of other values, instead continuing grazing as a matter of course[1]. Since that ruling, livestock were excluded from five sensitive canyons to protect archeological and ecological values, resulting in recovery of willows and cottonwoods[2].

In the following paragraphs, we address specific issues where we identify inadequacies in the RMP based on BLM's Land Use Planning Handbook (Handbook)[3] and NEPA requirements for a detailed and integrated analysis, i.e. a "hard look", or requirements of FLPMA. Appendices are provided as referenced.

1. Failure to Conduct Capability and Suitability Analysis for Livestock Grazing

Handbook Appendix C requires that lands available or not available for livestock grazing be determined by considering: other uses for the land; terrain characteristics; soil, vegetation and watershed characteristics; the presence of undesirable vegetation, including significant invasive weed infestations; and the presence of other resources that may require special management or protection, such as special status species, special recreation management areas (SRMAs), or ACECs.

The RMP merely presents livestock grazing as a given with little difference in AUMs between alternatives. Assuming livestock grazing must remain constant and universal across over 90% of the resource area in all alternatives without analysis of land capability and suitability, forage capacity and stocking rate is not a reasonable range of alternatives.

The RMP associates itself in management terms with the adjoining Caribou National Forest which has capability and suitability criteria that were originally established following the 1960 Multiple Use and Sustained Yield Act and published in the Forest Service Region IV Handbook in 1964[4]. That handbook laid out a systematic protocol

[1] Feller, Joseph M. 1996. The Comb Wash Case: The Rule of Law Comes to the Public Rangelands. Public Land & Resources Law Review: Volume 17:25-54.
[2] John Carter on-site inspections.
[3] U.S. Department of Interior Bureau of Land Management. Land Use Planning Handbook H-1601-1.
[4] USDA Forest Service. 1964. R-4 Range Analysis Handbook.

for determining which lands were biologically and physically capable of being grazed while containing protective criteria for erodible soils and plant communities. The Caribou National Forest uses that protocol, modified only in terms of required forage production levels for livestock grazing. A copy of the Caribou National Forest publication containing its current capability and suitability criteria is included as Appendix 3. A discussion of current science on capability is provided in Appendix 2 and in the following paragraphs.

Criteria for cattle differ in some respects from sheep and those differences are laid out in Appendix 2. An outline summary for cattle is provided below:

- Slope <30% (note that even for slopes < 30%, reductions in stocking capacity must be made due to the propensity of cattle to linger in areas of lower slope. Suggested reductions are provided in Appendix 2. Studies show that cattle spend most of their time in areas with slope < 10%[5].
- Distance to water < 1 mile
- Forage production > 200 lb/acre
- Soil Erosion Hazard moderately high to high
- Ground cover >60%

With current GIS technology, availability of soil surveys, and vegetation type information, developing a capability analysis is a relatively simple task. While the RMP proposes to graze over 90% of BLM lands in its preferred alternative, it has not shown that the PFO Area contains 90% capable lands. An example of the consequences of forcing livestock to graze in lands with steep slopes and little land that is of low topographic relief is exemplified by the Pleasantview Allotment. Appendix 4 provides maps and photos documenting conditions in that allotment which is characterized by steep slopes, narrow valley floors and erodible soils. Water developments have been places at numerous locations in this allotment, including on the tops of steep ridges and in narrow valleys, causing cattle and sheep to graze and trample the steep slopes and erodible soils. Noxious weeds and non-palatable increasers dominate valley floors. Aspen, maple and conifer understory is denuded and eroding and aspen are not regenerating as the photos show. Utilization rates are excessive when compared to potential production of forage based on the NRCS Soil Survey for Oneida County, Idaho (Table 1).

Table 1. Valley Bottom Utilization in 2006, Pleasantview Allotment.

Plot Description	Residual Forage 8/9/06 lbs/acre	Oneida Soil Survey Production Average Year lb/acre	Utilization as percent of Average Year Production
Sublette WP 279	29.64	1544	98.1%
N Canyon WP 308	82.08	1109	92.6%
N Canyon WP 311	16.72	1109	98.5%

[5] Pinchak, William E., Michael A. Smith, Richard H. Hart, and James W. Waggoner, Jr. 1991. Beef cattle distribution patterns on foothill range. Journal of Range Management 44(3):267-275.

Analysis of Forest Service capability criteria as applied to the Bear River Range, using Forest Service ground cover values for current conditions and the Forest Service 60% ground cover criteria for determining capability showed that this criteria is not sufficiently protective. Comparisons of erosion showed that at this criteria, grazing the entire watershed without determining capable acres would result in erosion rates of 13 – 15 times natural rates. Grazing capable acres under these criteria reduced that erosion to a range of 1.3 – 2.9 times natural[6]. The RMP claims erosion is limited to 5 tons/acre, but provides no analysis or demonstration that this is true.

Without balancing the livestock AUMs with the physical and biological limitation of the land, BLM has avoided the most basic scientific principles which are aimed at providing for sustainable use without impairment. As a result of having no capability determination, combined with a realistic forage capacity determination, BLM cannot assure that sufficient forage exists to support the proposed livestock numbers and ignores the forage and habitat needs of wildlife and the need for nutrient cycling and soil protection provided by retaining plant matter to hold the soil and add nutrients.

2. Failure to establish a sustainable livestock stocking rate.

BLM, in all its alternatives has proposed grazing over 90% of the Resource Area, has not determined the available forage on the allotments and adjusted stocking rates within that forage capacity. The Forest Service Region IV Handbook described earlier prescribed the methodology for arriving at stocking rates based on the amount of capable acres, the production of forage in the plant communities on those capable acres and systematic monitoring of utilization. A review of range science studies contained in Appendix 2 shows that forage for livestock should be allocated at conservative levels of about 25 - 30% utilization. This is necessary so that overgrazing does not place palatable, or preferred native species at risk of decline, prevents over grazing in dry years and provides forage and habitat for wildlife and watershed protection. As can be seen in the Pleasantview example above, failure to adjust for topographic, soil and other limitation and apply conservative use principles has lead to severely degraded conditions including soil erosion, loss of native forage species and infestations of noxious weeds and invasives.

Likewise, the RMP does not lay out any strategy for drought. Weather records demonstrate that drought occurs over 25% of the time in the Pocatello area and dry years occur over 50% of the time. During these adverse precipitation conditions, forage production is reduced (Appendix 2), yet the RMP does not analyze actual use by livestock over the past planning period in relation to precipitation to demonstrate that it has employed management guidance or drought standards that de-stock allotments in proportion to the reduction in forage production. In a review of drought effects and management, a Prescott National Forest biologist has shown the need for de-stocking and rest to maintain plant communities during dry and drought conditions and the

[6] Judi Brawer, Amy Haak, John Carter, and Matt Mayfield. 2006. Spatial Analysis of Forest Service Capability Criteria for Watershed Management and Soil Conservation. Presentation given at the International Conference of the Soil and Water Conservation Society, Keystone, Colorado.

irreversible loss of soil that can occur[7,8]. Without specification of grazing regimes to allow for below normal and drought conditions, sensitive species of native grass such as Idaho fescue, bluebunch wheatgrass and others can lose vigor, productivity and be lost over time unless proper stocking and rest are employed to maintain these plants. Failure to do so is in violation of the impairment provision of FLPMA. Research has provided guidance on this matter.

Grazing and rest requirements for key species of grass can be critical. Native cool-season perennial bunchgrasses can be very sensitive to defoliation and growing season use. For example, Anderson (1991)[9] stated in regards to bluebunch wheatgrass, *"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. … Defoliation to very short stubble heights during the boot stage has been reported to essentially eliminate plants within as few as three years. … Vigor recovery has been found to require most of a decade, even with complete protection from grazing."* The author went on to describe experiments in which a single clipping of the grass during the growing season produced 43% less herbage and 95% fewer flower stalks the following year than unclipped plants. Under a deferred system in eastern Oregon, it was reported that bluebunch wheatgrass could not be maintained at 30 – 40% use in the boot stage (early June). A one time removal of 50% of the shoot system during active growth may require six years' rest even in an area with 17" precipitation.[10] Anderson (1991) also makes the point regarding bluebunch wheatgrass that, *"The belief that range improvement will occur after one or two years of rest following a single season of more than 'light' use during the growing season is erroneous."* Mueggler (1975) also determined that Idaho fescue of moderately low vigor required 3 years of rest for recovery and that plants of bluebunch wheatgrass and Idaho fescue in very low vigor may require 8 years and 6 years of rest, respectively for recovery. BLM failed to consider the recovery, growth and maintenance requirements for these sensitive native grasses.

An example of this is found in Appendix 5, a report on utilization monitoring in the 1st and 2nd Hollows and Paris Canyon Allotments in SE Idaho. These allotments lack any permit term and condition requiring control of utilization to prevent overgrazing and loss of key native grasses and forbs. Table 2 shows the results of paired plots clipped within these two allotments and adjacent land that is ungrazed. Plots were compared in similar plant communities.

This data shows that wet meadows and upland habitats are threatened with loss of productivity and impairment by these levels of use, which are not sustainable (Appendix 2). The failure of BLM in its RMP to analyze utilization, stocking rates and precipitation is a failure to meet NEPA requirements for analysis. The failure to provide sustainable utilization rates for upland and riparian area herbaceous

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[7] Staab, Cara. 1996. Effects of Drought on Rangelands. Prescott National Forest Publication.
[8] Thurow, Thomas and Charles A. Taylor, Jr. 1999. Viewpoint: The Role of Drought in Range Management. Journal of Range Management 52:413-419.
[9] Anderson, Loren D. 1991. Bluebunch wheatgrass defoliation, effects and recovery – A Review. BLM Technical Bulletin 91-2, Bureau of Land Management, Idaho State Office.
[10] Mueggler, W.F. 1975. Rate and pattern of vigor recovery in Idaho fescue and Bluebunch wheatgrass. Journal of Range Management 28(3):198-204.

vegetation, aspen suckers and riparian shrubs and incorporate those into grazing permits as terms and conditions leaves management uncontrolled and subject to bias, violating FLPMA. The photos in Appendix 5 show the results to aspen of this lack of control. This will be discussed further later in these comments. As across BLM lands, water developments on Pleasantview have not "evened out" distribution, but instead have worsened weed infestations and loss of native plants including aspen by concentrating livestock in non-capable or sensitive areas.

Table 2. Plot Clippings in 1st and 2nd Hollows, Paris Canyon Allotments, SE Idaho.

Location	Residual Grass lb/acre	Grass Utilization %	Comment
Sagebrush Plots			
1st & 2nd Hollows Allotment Waypoint 366	77.0	74.8%	Paired with Wpt 370
1st & 2nd Hollows Allotment Waypoint 368	32.8	89.3%	Paired with Wpt 370
Paris Canyon Allotment Waypoint 371	88.5	37.3%	Paired with Wpt 372
Carter Property Waypoint 370	305.4		
Carter Property Waypoint 372	141.1		
Semi-wet Meadow Plots			
1st & 2nd Hollows Allotment Waypoint 367	39.4	94.6%	Paired with Wpt 369
Paris Canyon Allotment Waypoint 373	66.4	90.9%	Paired with Wpt 369
Carter Property Waypoint 369	731.3		

3. Failure to update forage consumption rates for livestock.

The RMP simply states that an AUM is 800 lbs of forage consumption per month. There is no discussion of the basis for this claim, nor any research into current livestock weights and forage consumption rates. Nor has the RMP analyzed the current and potentially available forage to satisfy the forage consumption by the number of livestock it currently permits or proposes to permit.

The Society for Range Management (SRM) in 1974 defined an Animal Unit *"to be one mature (1000 lb.) cow or the equivalent based upon average daily forage consumption of 26 lbs. dry matter per day."*[11]. SRM also defined an Animal Unit Month as *"The amount of feed or forage required by an animal-unit for one month."* NRCS defined the forage demand for a 1,000 pound cow as 26 pounds of oven-dry weight or 30 pounds air-dry weight of forage per day[12]. It is important to ensure that forage consumption rates by livestock are based on the size of animals present on the allotment and a reasoned estimate of their daily consumption rates. The following analysis provides some background and justifies a more current forage consumption rate for cow/calf pairs. It is BLM's obligatoin to ensure this forage is accurately accounted for as this is its fiduciary duty to the American People. Undercounting forage consumption by

[11] Society for Range Management. 1974. Glossary of terms used in range management.
[12] USDA. 1997. National Range and Pasture Handbook.

livestock results in undercharging for that forage. This is potentially defrauding the American People under the False Claims Act[13]

The University of Nevada Agricultural Experiment Station published a report on cattle production in 1943[14] (Brennan and Harris, 1943). That report analyzed 14 years of ranch operation for eleven ranches in northeastern Nevada. At that time, a mature cow was considered one unit and a branded calf or weaner as ½ cow unit, for a combined total of 1.5 cow units per cow/calf pair. Bulls were considered 1.5 cow units. For the period 1938 – 1940, the average turnoff weight (when they left the range) of mature cows was 959 pounds, calves were 381 pounds and bulls were 1222 pounds. This means that in the 1930's, a cow/calf pair was 1340 pounds. With breeding, supplements and hormones, weights have increased over time, for example, Anderson et al (ca 2000) calculated a 35% increase in dressed weights per animal between 1975 and 1995[15].

USDA market statistics[16] give the average weights of slaughter cattle for the week ending August 14, 2004 as 1251 pounds. The estimate for the same week in 2005 for slaughter cattle average weight was 1260 pounds. The USDA National Agricultural Statistics Service data for average live weight of cattle slaughtered in 2004 was 1242 pounds compared to 1187 pounds in 1995, or an increase of nearly 8.5% in those 10 years[17]. The Livestock Monitor is a newsletter produced by the North Dakota State University Extension Service Livestock Marketing Information Center in cooperation with USDA State Extension Services[18]. The Livestock Monitor shows for the week ending August 6, 2005, live weights of slaughter cattle averaged 1258 pounds.

The potential weights of mature cows can be even larger than these numbers. For example, NRCS in its National Range and Pasture Handbook, referenced above, defines body condition scores. A body condition score of 6 which is described as *"Good, smooth appearance throughout. Some fat deposits in brisket and over the tailhead. Ribs covered and back appears rounded."* This body condition score relates to a pregnancy percentage of 88%, which is important as a goal for cow/calf operations as dry cows are usually culled and replaced and the weight gain of calves is important for income. According to Dr. Larry W. Olson, Extension Animal Scientist at Clemson University, a medium frame cow in body condition score 6 could easily weigh 1300 – 1400 pounds[19].

Holechek et al (2001) summarized the weaning weights of calves grazed on various types of rangelands at different stocking rates[20]. The data for the period since 1990 produced an average weaning weight of 430 pounds and a range of 382 – 475 pounds.

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[13] Title 18 USC Section 1001.

[14] Brennan, C.A. and Fred B. Harris. 1943. Fourteen Years Cattle Production and Ranch Earning Power in Northeastern Nevada 1928 to 1941. University of Nevada Agricultural Experiment Station, Reno, Nevada.

[15] http://agecon.uwyo.edu/RiskMgt/marketrisk/TheCattleCycle.pdf

[16] http://www.ams.usda.gov/mnreports/SJ_LS712.txt

[17] http://www.usda.gov/nass/pubs/agr05/acro05.htm

[18] http://www.ag.ndsu.nodak.edu/aginfo/lsmkt/monitor.htm

[19] Email correspondence with Dr. Olson dated 8/18/05.

[20] Holechek, Jerry L., Rex D. Pieper and Carlton H. Herbel. 2001.Range Management: Principles and Practices, Fourth Edition. Prentice-Hall, New Jersey. 587p

Ray et al (2004) gave a weaning weight of 480 pounds for calves. Using the current market statistics for slaughter cattle at about 1250 pounds and assuming a calf weight of 300 pounds to allow for weight gain during the grazing season, an estimate for the average weight of a cow/calf pair during the grazing season of 1,500 pounds seems reasonable.

As pointed out above, the NRCS used 26 lbs/day of oven dry weight for a 1,000 pound cow and stated this was equivalent to 30 pounds per day air-dry weight. The NRCS Range and Pasture Handbook value of 30 pounds air-dry weight would be 3% of body weight for a 1,000 pound cow. Applying this to the estimate of a current weight of 1,500 pounds for a cow/calf pair, the daily forage consumption would be 45 lbs of air-dry forage per day, or for a month (30.4 days), 1368 pounds of forage per AUM.

The forage needs for domestic sheep must also be determined. Based on current USDA published weights for ewes and lambs, adult domestic sheep weigh from 165 to 440 pounds,[21] and lambs about 129 pounds.[22] A low-end estimate of the weights of a sheep and two lambs grazing on these allotments would be 400 pounds (200 pounds for the ewe and 100 pounds each for two lambs). The forage consumption rate for sheep given in the 1964 R4 Range Analysis Handbook cited above was 3.3% of body weight per day consumed as air dry forage weight. Using these estimated weights of mature sheep (ewes) and lambs with two lambs per ewe and a total weight of 400 pounds would result in forage consumption of 13.2 pounds per day for each mature sheep with two lambs, or 6.6 pounds per day for a mature ewe weighing 200 pounds. Forage consumption rates must be calculated based on the current weights and consumption rates of livestock in order to provide the forage needed for wildlife, plant community sustainability and watershed protection and to ensure the public trust is not violated by undercharging for the actual weights of cattle and calves grazed.

The RMP Preferred Alternative proposes to graze 87,800 AUMs. However, that is based on an AUM equivalent to 800 lbs of forage per month. The most current information, reviewed above shows that number to be 1368 lbs/month per AUM. Therefore, if sufficient forage were available to satisfy all needs, the numbers of livestock grazed should be reduced to account for the increases in weight and correct the erroneous assumption that 800 lbs/month is an accurate consumption figure. Using the ratio between the RMP forage amount per AUM divided by the correct figure above, gives a needed reduction in permitted numbers and or seasons of 42% to account for the RMP underestated forage consumption, without accounting for wildlife, plant and watershed needs.

4. Failure to allocate and ensure forage and habitat for wildlife.

The RMP does not calculate the amount of forage and residual plant matter needed for wildlife, plant community and watershed protection while it assumes continuing to graze these large numbers of livestock allows forage to exist for big game and other species. The RMP notes that mule deer populations are declining, yet offers no criteria for assuring that forage and habitat is provided for deer and other wildlife species year-round. The only criteria offered is an allocation of 80% of annual shrub growth

[21] http://www.wildlifeprairiestatepark.org/animalpages/domestic_sheep.htm
[22] http://www.usda.gov/nass/pubs/agr04/04_ch7.pdf

for wildlife in winter range. No criteria is offered for spring, summer and fall forage needs, which are not predominantly shrubs, but herbaceous vegetation. No evidence of past monitoring or compliance with any of the suggested criteria for wildlife is included in the RMP or combined in an analysis of wildlife populations or habitat quality to ascertain the role past management of BLM lands has had on these attributes.

For illustration purposes, using the RMP value of an AUM = 800 lbs of forage per month, then the forage needed to satisfy the 87,800 AUM livestock demand would be 70,240,000 lbs/year. (Of course, if permitted numbers were adjusted to take into account the actual forage consumption based on best available information, that demand would be nearly half again as large.) However, using forage consumption rates for mule deer of 3 lbs/day and for elk of 14 lbs/day air dry matter[16], the forage consumed by livestock on the PFA Area would provide forage for 64,000 deer or 13,745 elk annually. The failure of the RMP to provide this analysis or any specific utilization criteria and monitoring means that livestock use and displacement of deer and elk will continue to occur below the radar screen. Decades-old research described below has documented the role of livestock on deer, elk and their habitat.

The RMP does not reveal the inherent conflicts between livestock and wildlife. While it calls for seasonal habitat restriction on fawning habitat and winter range closures, it does not account for the effects of its failure to accommodate deer and elk during spring, summer and fall. Heavy grazing of mule deer winter range has resulted in a serious reduction or near elimination of the perennial grasses and perennial forbs. This lack of perennial grasses and forbs creates a serious forage deficiency in early spring and summer when deer prefer the new grasses and then shift to forbs. It is in winter they rely more on shrubs, including sagebrush. During fawn rearing, the combination of inadequate forage on overgrazed spring range coupled with poor winter range is responsible for heavy fawn mortality. The depletion of herbaceous species on summer range by livestock limits reproduction in does[23].

Hiding cover for fawns decreased more rapidly when cattle were present. This subjects fawns to higher predation rates. When no cattle were present, deer selected more meadow-riparian habitat. When cattle were present, deer selected home ranges with less meadow-riparian habitat. With heavy stocking, deer moved into montane shrub habitat. They also increased the size of their home ranges in the presence of cattle. While preferring aspen groves when not grazed by cattle, their use fell significantly when cattle were present[24]. In the absence of livestock, deer preferred meadow-riparian habitat. During moderate livestock grazing, deer moved into montane shrub habitat and used aspen habitat only when no cattle were present[25]. Habitat shifts in deer and elk populations occur, placing stress on these wildlife populations[26].

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[23] Julander, Odell. 1962. Range management in relation to mule deer habitat and herd productivity in Utah. Journal of Range Management 15(5):278-281.
[24] Pearce, Richard. 1988. Where deer and cattle roam. Forest Research West, Forestry Sciences Laboratory, Fresno, California.
[25] Loft, Eric R., John W. Menke and John G. Kie. 1991. Habitat shifts by mule deer: the influence of cattle grazing. Journal of Wildlife Management. 55(1):16-26.
[26] Kie, John G. 1996. The effects of cattle grazing on optimal foraging in mule deer (Odocoileus hemionus). Forest Ecology and Management 88:131-138.

5. Failure to analyze impacts of past management, propose management and monitoring criteria on migrant birds, sage grouse, sharptail grouse, goshawk and pygmy rabbits.

The RMP, in its Preferred Alternative adopts guidelines for sage grouse from Connelly et al (2000) of 15 – 25% sagebrush cover, 15% grass cover, 10% forb cover and massive vegetation treatment projects. There is no specificity as regards to what the potential characteristics of preferred habitats for these species might be and there is no provision of a systematic monitoring program to ensure that any guidelines will be enforced. There is no description of the values of intact sagebrush ecosystems and what amounts of grass, forbs and sagebrush cover occur in ungrazed and undisturbed habitats. The assumption that sagebrush canopy limits herbaceous vegetation ignores the role of livestock in eliminating the herbaceous vegetation in the shrub innerspaces, so most treatments are really aimed at eliminating sagebrush that might protect some native grasses with its canopy by blocking livestock access. Dr. Bruce Welch, recently retired from the Rocky Mountain Research Station has published two research documents debunking myths regarding sagebrush and providing great insight into the potential that exists for undisturbed sagebrush communities[27, 28]. In studies of ungrazed areas in southern Idaho, he found big sagebrush canopy cover ranging up to 34% with corresponding grass canopy of 58%. As regards the relationship between sagebrush canopy, grass and forbs, he found no indication that increasing sagebrush canopy reduced grass or forb canopy. Average values for these taken from his research follow:

- Sagebrush canopy range 17 – 46%, mean = 27.97%
- Grass canopy range 22 – 79%, mean = 51.59%
- Forb canopy range 11 – 79%, mean = 34.10%

Sage Grouse Habitat Requirements: Several authors have reviewed and documented the biology and habitat requirements for sage grouse during their various life stages. These life stages include leks or breeding, nesting, brood-rearing and wintering.

Braun et al (1977)[29] in their review found that leks or breeding sites were generally open areas surrounded by sagebrush and that nesting areas appeared to occur within a few kilometers of the lek sites. The maximum distance between leks and nesting sites reported was 12.9 km, with 59% being within 3.2 km. Successful nest sites had significantly greater sagebrush canopy cover (27%) as opposed to unsuccessful sites at 20%. An important component of the nesting sites is also the cover provided by herbaceous vegetation, particularly grasses. Connelly et al (2000)[30] reported a range

[27] Welch, Bruce L. 2005. Big Sagebrush: A Sea Fragmented into Lakes, Ponds and Puddles. USDA Forest Service Rocky Mountain Research Station RMRS-GTR-144.
[28] Welch, Bruce L. and Craig Criddle. 2003. Countering Misinformation Concerning Big Sagebrush. USDA Forest Service Rocky Mountain Research Station RMRS-RP-40.
[29] Braun, Clait E., Tim Britt and Richard O. Wallestad. 1977. Guidelines for maintenance of sage grouse habitats. Wildlife Society Bulletin 5(3):99-105.
[30] Connelly, John W., Michael A. Schroeder, Alan R. Sands, and Clait Braun. 2000. Guidelines to manage sage grouse populations and their habitats. Wildlife Society Bulletin 28(4):967-985.

of grass height at nest sites between 14 – 34 inches and a mean of 20 inches with canopy cover of grasses ranging from 4 to 51% with a mean of 16%. During brood-rearing, grouse with chicks preferred more open sagebrush uplands at about 10% - 14% canopy, while loafing of adults occurred in stands with 30% canopy. Beginning in June and during mid-late summer, broods moved to more mesic sites such as meadows. Hockett (2002) stressed the importance of riparian and wet meadow sites during summer and fall. Wintering sites were reported to have greater than 20% sagebrush canopy cover.

Connelly et al (2000) summarized some general characteristics of sage grouse habitat in the following table

	Breeding		Brood-rearing		Winter[e]	
	Height (cm)	Canopy (%)	Height (cm)	Canopy (%)	Height (cm)	Canopy (%)
Mesic sites[a]						
Sagebrush	40–80	15–25	40–80	10–25	25–35	10–30
Grass–forb	>18[c]	≥25[d]	variable	>15	N/A	N/A
Arid sites[a]						
Sagebrush	30–80	15–25	40–80	10–25	25–35	10–30
Grass/forb	>18[c]	≥15	variable	>15	N/A	N/A
Area[b]	>80		>40		>80	

The sagebrush canopy characteristic for breeding habitats is reported as a broad range, but it is important to remember that successful nests occur in areas with canopy cover at the high end of the range or higher as cited above, so to set criteria in the RMP for ranges of sagebrush, grass or forb canopy less than optimum to justify vegetation treatments in order to increase access to livestock forage while degrading sage grouse habitat is in opposition to the objective of maintaining or improving habitat for special status species.

Diets of sage grouse vary through the year and by age. Sage grouse depend entirely on sagebrush from October through April. In May, they shift to a forb-dominated diet (20 – 60%) with the remainder being mostly sagebrush. They shift back to sagebrush during September. Chicks begin life depending heavily on insects at about 60%, then shift to a forb dominated diet with about 15% sagebrush during the second month.

Braun et al (1977), Welch et al (1990)[31], Connelly et al (2000) report that spraying, burning and mechanical treatments of sagebrush resulted in declines of sage grouse. Other activities such as construction of roads, power lines, fences, reservoirs, ranches, farms and housing developments have resulted in sage grouse habitat fragmentation and loss. Structures such as fences and power lines provide perch sites for raptors that prey on sage grouse and also result in injury or death when grouse collide with these. RMP proposals for massive vegetation treatments, power lines, land disposals and other habitat fragmenting activities across most of the Pocatello Resource Area

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[31] Welch, Bruce L., Fred J. Wagstaff and Richard L. Williams. 1990. Sage grouse status and recovery plan for Strawberry Valley, Utah. USDA Forest Service Intermountain Research Station Research Paper INT-430

must be recognized in their outcomes which are counter to the objective of maintaining and improving habitat for sage grouse. Also ignored is the research showing that sage grouse have high seasonal fidelity to seasonal ranges and females return to the same area to nest each year[32].

Beck and Mitchell (2000) and Hockett (2002) reviewed the effects of livestock grazing on sage grouse. Livestock, by consuming herbaceous vegetation and reducing grass cover needed to conceal grouse nests from predation, reduce grouse production. Ground squirrels favored by high levels of grazing, combined with drought conditions account for significant nest predation. The depletion of forbs and loss of associated insects can directly impact chick survival [28,33]. Mattise (1995)[34] noted that *"we have poor strategies for protecting important brood rearing habitat during severe drought conditions. Riparian areas, springs and seeps are not being managed to provide vegetative recovery and enhancement."*

Rich (1985)[35] reviewed historical studies of sage grouse populations from 32 years of monitoring in southern Idaho and northwestern Utah. He concluded that sage grouse experience cyclic population patterns with 10 year highs. Mitchell and Maxfield (2001) analyzed results of lek counts in Utah from 1967 through 2000. They found a decreasing trend in numbers of males per lek site, and their data clearly shows a 10 year cycle of peaks and valleys[36]. The last valley was found in 1996 with an uptrend through 2000. It is important to reflect on these possible trends when analyzing results for short periods. Rich (1985)[31] states, *"evaluations of grouse population responses to habitat changes are critically dependent on understanding the long-term population dynamics of the species, especially where such evaluations may be done over a period of a few years."* He concludes that *"Ten years data may be required to even begin an adequate definition of just the breeding habitat of a population."*

The RMP has analyzed little of this research, nor has it recognized the harmful role of vegetation treatments or habitat manipulations on sage grouse and other special status species. While citing Connelly et al (2000) as regards structural attributes, the RMP merely defers any other criteria or considerations to some undefined consultation process with others without fully reviewing the known science and laying out specific constraints to ensure consistent approaches are taken across the Resource Area. The following bullet points are extracted from the publications by Braun, Connelly and Welch cited above:

- Sagebrush eradication should not be practiced. Treatments can be used to thin dense sagebrush stands to a range of sagebrush cover from 15% to 25%. Burns

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[32] Hockett, Glenn A. 2002. Livestock impacts on the herbaceous components of sage grouse habitat: a review. Intermountain Journal of Science 8(2):105-114.
[33] Beck, Jeffrey L. and Dean L. Mitchell. 2000. Influences of livestock grazing on sage grouse habitat. Wildlife Society Bulletin 28(4):993-1002.
[34] Mattise, Samuel N. 1995. Sage grouse in Idaho: Forum '94. Idaho BLM Technical Bulletin 95-15. 10p.
[35] Rich, Terrell. 1985. Sage grouse population fluctuations: evidence for a 10-year cycle. Idaho BLM Technical Bulletin 85-1. 20p.
[36] Maxfield, Brian D. and Dean L. Mitchell. 2001. Sage grouse in Utah. Utah Division of Wildlife Resources. 10p.

should be avoided in xeric Wyoming big sagebrush habitats). Only small burns to create mosaics in mountain big sagebrush should be contemplated and these are considered experimental.

- Rehabilitation following wildfire or other disturbances should focus on re-establishing sagebrush and native herbaceous plants. Annual grass establishment following fire is detrimental. Grazing should not be allowed on seeded areas until plant recruitment has occurred.
- Range seedings should focus on establishing forbs, native grasses and sagebrush. Monoculture seedings of crested wheatgrass and other non-natives are discouraged.
- Applying insecticides to summer habitat is not recommended.
- Livestock use around water sources and wet meadows in brood rearing areas should be regulated through fencing or other management to restrict overuse.
- Grazing practices should be adjusted to maintain residual grass growth essential for nest concealment and then delay grazing the same areas until after nesting.
- Plot sage grouse use areas including leks, nesting areas, wintering sites, meadows and summer range or brooding areas on maps.
- No sagebrush will be treated or removed until a comprehensive plan has been formulated for management of the area.
- Sagebrush control projects will include provisions for long-term quantitative measurement of vegetation before and after to determine effects on habitat and whether objectives were met.
- No sagebrush control projects will be done on areas where live cover is less than 20%, on steep slopes or upper slopes with skeletal soils where big sagebrush is less than 30 cm.
- No sagebrush control should occur along streams, meadows or intermittent drainages. A 100 meter strip of live sagebrush should be left on each edge of meadows and drainages.
- When sagebrush control is found to be unavoidable, treatment measures should be applied in irregular patterns using topography and other ecological considerations. Widths of treated and untreated areas can vary except treated areas will not be wider than 30 meters and untreated areas will be at least as wide.
- Manage breeding habitats to support 15 – 25% canopy cover of big sagebrush, perennial herbaceous cover ≥18 cm in height with ≥ 15% canopy cover of grasses and ≥ 10% canopy cover of forbs.
- Most recently, Braun, Connelly and Shroeder (2005)[37] have published more specific information defining seasonal habitat needs of sage grouse and Clait Braun has published detailed management recommendations including livestock grazing utilization levels and management[38].

[37] Braun, Clait E., John W. Connelly, and Michael A. Shroeder. 2005. Seasonal Habitat Requirements for Sage Grouse, Summer, Fall and Winter. USDA RMRS-P-38.
[38] Braun, Clait E. 2006. A Blueprint for Sage Grouse Conservation and Recovery. Grouse, Inc. May, 2006.

Partners in Flight (Paige and Ritter, 1999)[39] provide management recommendations for sage grouse and migratory birds obligate to sagebrush-steppe. These include:

- Identify and protect those habitats that still have a thriving community of native understory and sagebrush plants.
- Maintain large, continuous blocks of unfragmented habitat
- Maintain seeps, springs, wet meadows and riparian vegetation in a healthy state
- Avoid practices that convert sagebrush to non-native grassland or farm land.
- Maintain stands of sagebrush for a balance between shrub and perennial grass cover.
- In large disturbed areas, sagebrush and perennial grasses may need to be reseeded to shorten recovery time.
- To maintain bluebunch wheatgrass vigor, avoid grazing during the growing season until plants begin to cure. Bluebunch wheatgrass is especially sensitive to heavy grazing during the growing season. Recovery of these plants following heavy grazing during a single spring can require 8 years under the best management and environmental conditions.
- Grazing plans will depend on the current condition and plant composition of the area. Defer grazing until after crucial growth periods. Note that in the presence of cheatgrass, deferred grazing can favor the cheatgrass.
- For sage grouse maintain average grass height of at least 18 cm in May and early June. Sharp-tailed grouse require 20 cm.
- Consider livestock exclusion from heavily damaged areas, particularly wet sites.
- Livestock concentrations around water developments can increase cowbird parasitism.
- Use fences with smooth top and bottom wires for exclosures around wet sites.

Miller and Eddleman (2000)[40] also provide an excellent review of sage grouse ecology, habitat and management. They emphasize that sage grouse habitat management plans must take into account landscape heterogeneity, site potential, site condition and habitat needs of sage grouse during different parts of their life cycle (breeding, nesting, brood rearing, wintering). They also stress the importance of accurate resource inventories and assessments before making management decisions as to when and how each community across the landscape should be managed. Grazing management plans must identify potential conflicts between sage grouse and livestock.

Migrant Birds: Woodyard et al (2003) conducted bird censuses along an elevational gradient in east-central Nevada. These censuses were conducted in study plots monitored in 1981 and 1982 by Dean E. Medin and found fewer species and total

[39] Page, Christine and Sharon A. Ritter. 1999. Birds in a Sagebrush Sea: Managing Sagebrush Habitats for Bird Communities. Partners in Flight, Western Working Group. 47p.

[40] Miller, Richard F. and Lee L. Eddleman. 2000. Spatial and Temporal Changes of Sage Grouse Habitat in the Sagebrush Biome. Oregon State University Agricultural Experiment Station Technical Bulletin 151. 35p

numbers of birds (62% less)[41]. Parrish et al (2002)[42] also describe the declines in these birds due to a variety of factors relating to habitat. They provide descriptions of the birds in Utah most in need of conservation and describe their habitat requirements, threats and management considerations. They discuss habitats most in need of conservation. Habitats such as shrub-steppe occurring in the Pocatello Resource Area are described as in need of protection. Medin et al (2000) provide a discussion of bird-habitat relationships for the Great Basin that provide insight into the habitats that occur in the Pocatello Resource Area and their relationships to these birds. Many of these birds are dependent on riparian areas[43].

Paige and Ritter (1999) cite population declines of 63% and 70% in shrub dependent and grassland bird species during the last 30 years across the U.S. In the Intermountain West, more than 50% of shrub- and grassland species show downward trends with sagebrush steppe as the highest priority for conservation based on trends for habitat and bird populations[35]. They provide detailed descriptions of the history, characteristics and management of these systems with management recommendations. They note that cattle grazing in sagebrush steppe first select grasses and forbs and avoid browsing on sagebrush. In addition, even light grazing can put pressure on the herbaceous plants favored by livestock and intensive spring grazing prevents bunchgrasses from reproducing, eventually eliminating the palatable native bunchgrasses. They also discuss the response time for recovery of these systems and parasitism by cowbirds, a significant factor in decline of songbirds in some areas.

Taylor (1986) evaluated the effects of cattle grazing on birds nesting in riparian habitats[44]. He found that increased grazing resulted in decreases shrub volume and density and decreased bird abundance. *"The longer the time since a transect was last grazed correlated significantly with increases in bird abundance, shrub volume and shrub height".* Bird species decreased with increased grazing, bird counts were 5 to 7 times higher on an area ungrazed since 1940 than on 2 areas grazed annually until 1980 and 11 to 13 times higher on a transect that was severely disturbed.

Krueper et al (2003) studied the changes in vegetation and breeding birds in the San Pedro River, Arizona following removal of cattle in 1987[45]. Birds were monitored for five years. Mean numbers detected along riparian transects increased by 23% per year or from 103/km in 1986 to 221/km in 1992. Earnst et al (2004) compared

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[41] Woodyard, John, Melissa Renfro, Bruce L. Welch and Kristina Heister. 2003. A 20-year recount of bird populations along a Great Basin elevational gradient. USDA Forest Service Rocky Mountain Research Station Research Paper RMRS-RP-43.
[42] Parrish, Jimmie R., Frank Howe and Russell Norvell. 2002. Utah Partners in Flight Avian Conservation Strategy Version 2.0. Utah Division of Wildlife Publication No. 02-27. 305p.
[43] Medin, Dean E., Bruce L. Welch and Warren P. Clary. 2000. Bird habitat relationships along a Great Basin elevational gradient. USDA Forest Service Rocky Mountain Research Station Research Paper RMRS-RP-23. 22p.

[44] Taylor, Daniel M. 1986. Effects of cattle grazing on passerine birds nesting in riparian habitat. Journal of Range Management 39(3):254-258.
[45] Krueper, David, Jonathan Bart and Terrell D. Rich. 2003. Response of vegetation and breeding birds to the removal of cattle on the San Pedro River, Arizona (U.S.A.). Conservation Biology 17(2):607-615.

songbird abundance in 2000-2001 to that in 1991-1993, following cattle removal from the Sheldon National Wildlife Refuge in 1990[46]. Of 51 species for which abundances were sufficient to calculate changes, 71% exhibited a positive trend. Detections of ground/low cup and high cup nesting species, ground/understory foraging species, aerial and overstory foraging species increased significantly.

Rich (2002) evaluated the ability of riparian PFC assessments as employed by BLM and noted that they lacked the ability to incorporate assessment of land breeding bird communities[47]. He constructed a list of riparian-obligate birds that should occur on the site during the breeding season and used that to score the site based on the percent of those occurring there.

The RMP has failed to review the habitat requirements for migrant birds, the effects of livestock grazing at the permitted numbers in combination with all other habitat altering management proposed and provide prescriptions that will assure migrant birds and their habitat improve. Rather, more land disposal, vegetation modifications, preservation of crested wheatgrass seedings, motorized use, and livestock grazing is proposed. All these in concert, based on the research, will result in fewer migrant birds and sage grouse.

Pygmy Rabbits: While acknowledging the pygmy rabbit is in decline throughout the West, the RMP fails to describe current populations or the habitats required by pygmy rabbits. It has not described past management actions that have resulted in this decline and offered corrective actions to restore pygmy rabbits in the Pocatello Resource Area.

Welch (2004, in press)[48] reports his research in which he walked 300 miles in pygmy rabbit habitat, covering areas where pygmy rabbits were previously reported. In 37 stands of big sagebrush in northern Utah, he found 11 pygmy rabbits, with 8 occurring in a single stand of sagebrush. Out of 11 sites previously reported as supporting pygmy rabbits, he found no signs of occupancy with only four sites now having suitable habitat.

Suitable habitat consisted of big sagebrush with ≥ 20% canopy cover and ≥ 22 inches in height. He reported on significant deterioration and loss of habitat for pygmy rabbits through conversion of sagebrush stands to agriculture and treatments designed to improve forage conditions for livestock by reducing sagebrush cover. In his literature review, he provides some additional parameters describing wintering habitat for pygmy rabbits. The research showed the areas of highest winter use were in basin big sagebrush with canopy cover of 51%, compared to areas with moderate use having 42.7% canopy and low use in 38.6% canopy. Diets consist of 99%

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[46] Earnst, Susan L., Jennifer A. Ballard, and David S. Dobkin. 2004. Riparian songbird abundance a decade after cattle removal on Hart Mountain and Sheldon National Wildlife Refuges. USDA Forest Service PSW-GTR-191.

[47] Rich, Terrell D. 2002. Using breeding land birds in the assessment of western riparian systems. Wildlife Society Bulletin 30(4):1128-1139.

[48] Welch, Bruce L. 2004. A Three Hundred Mile Search Afoot for Pygmy Rabbits. USDA Forest Service Rocky Mountain Research Station Research Paper in draft.

sagebrush in winter and 51% during summer with the remainder being herbaceous vegetation. DOI (2001)[49] summarizes additional diet characteristics for pygmy rabbits. In particular, they were reported to rely on 39% grasses such as native Agropyron species and 10% forbs. Other characteristics described in both references include descriptions of soil conditions amenable to burrowing, such as deep soils.

The RMP must research pygmy rabbit habitat requirements and map potential pygmy rabbit habitat, describe its current condition and the causes of that condition. Then, the RMP must provide numeric criteria describing desired conditions of this habitat and place it off limits to surface disturbing activities or surface occupancy and limit livestock grazing by setting conservative utilization levels, providing rest to restore grasses and forbs needed to provide the necessary herbaceous forage during spring, summer and fall, and not impose the minimal sagebrush cover guidelines it has cited for sage grouse.

Northern Goshawk: While noting that goshawk occur in undisturbed forest areas, the RMP places all timber producing areas into active production without considering goshawk or providing criteria to ensure its habitat remains structurally and functionally viable. BLM must review the relevant science for goshawk and provide sufficient criteria for forested habitats to ensure available forage for goshawk prey and habitat for goshawk such as the Forest Service research described in Reynolds et al (1992)[50], which is the adopted guidance for the Wasatch-Cache National Forest in its Utah Northern Goshawk Project Environmental Assessment (USDA 1999)[51] and its Decision Notice (USDA 2001)[52]. This guidance allows only an average of 20% utilization of herbaceous forage species, with no place receiving greater than 40% use in the entire goshawk home range which is 6,000 acres. Structural classes of trees and understory are specified so that timber harvest leaves the required amounts in each of several size classes. This guidance also stresses the importance of maintaining mycorrhizal fungi function in these home ranges. If BLM is to achieve its stated objective for maintaining goshawk populations, it must adopt criteria reflecting the habitat and forage base for goshawk and integrate those into its grazing and timber guidance.

6. Failed to review and analyze the various grazing systems mentioned in the RMP.

As Appendix 2 provides in its detailed review of grazing systems, range science research shows it is stocking rate, not grazing systems that improve range condition

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[49] DOI. 2001. Endangered and Threatened Wildlife and Plants; Emergency Rule to List the Columbia Basin Distinct Population Segment of the Pygmy Rabbit (Brachylagus idahoensis) as Endangered. Federal Register 66(231):59734-59749.

[50] Reynolds, R.T., R.T. Graham, M.H. Reiser, R.L. Bassett, P.L. Kennedy, D.A. Boyce, Jr., G. Goodwin, R. Smith, and E.L. Fisher. 1992. Management Recommendations for the Northern Goshawk in the Southwestern United States. Gen. Tech. Rep. GTR-RM-217, Fort Collins, Colorado. U.S. Department of Agriculture, Rocky Mountain Forest and Range Experiment Station. 90p.

[51] USDA. 1999. Utah Northern Goshawk Project Environmental Assessment. USDA Forest Service Intermountain Region.

[52] USDA. 2001. Utah Northern Goshawk Project Decision Notice: Finding of No Significant Impact, Finding of Non-Significant Amendment. Wasatch-Cache National Forest.

and that use levels must be set to restore degraded conditions and to maintain productivity. That research must be incorporated into an evaluation of grazing systems to be used once proper stocking rates are established thru the analysis of capability and suitability, wildlife forage needs, current livestock forage consumption levels and eliminating conflicts with wildlife and other uses in special designated areas such as ACECs, RNAs, wildlife and recreation management areas. Lacking specific guidance on grazing management and just deferring to the broad, general guidelines in the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (RMP Appendix A) leaves too much to chance, is too subject to bias and cannot ensure the meeting of habitat objectives. The lack of specific terms and conditions regarding grazing systems, utilization, reduced stocking rates must be addressed.

For example, regarding the need for rest, early research by Forest Service research scientists showed that deferment is not rest, and that rest-rotation must incorporate sufficient years of rest to maintain the vigor of native perennial bunchgrasses. These researchers wrote the seminal guidance on rest-rotation grazing[53]. They state, *"While the idea of incorporating rest in grazing management is not new, the concept of longer rest periods than have heretofore recommended, at least for mountain bunchgrass ranges, and of closer correlation of resting and grazing with plant growth requirements, is new."* Some points of interest from the study were that, even with the rest-rotation system, some areas were more heavily used than others as we described earlier, that re-growth was minimal on clipped plants after the seed-in-milk phase and that clipping during active growth reduced total herbage yield during that year. A single season of clipping reduced basal area of forbs and grasses the next year. Four consecutive seasons of clipping at the seed-in-milk phase reduced basal area of Idaho fescue 80%, bottlebrush squirreltail 62%, longspur lupine 91% and wooly wyethia 16%. Two of ten Idaho fescue and 6 of 10 lupine plants were killed. Four years of rest after 4 years of continuous clipping resulted in little or no recovery of original basal areas of the four species. Antelope bitterbrush was browsed at over 80%, corresponding to an Idaho fescue utilization rate of 32% - showing the significance of setting utilization standards on herbaceous species at levels protective of other resources.

As a result of these studies, Hormay and Talbot recommended sufficiently long rest periods to allow recovery to occur. They also recommended permanently marked plots and repeat observations and measurements. Their recommended grazing system for a mixed shrub and forest habitat similar to that found in the BLM Pocatello Resource Area required one year of rest for restoration of plant vigor and two seasons of rest for establishment of reproduction. This would require five yearly treatments:

1. 1st year - graze the range for maximum livestock production
2. 2nd year – rest the range until plant vigor is restored
3. 3rd year – rest the range until seed ripens, then graze for maximum livestock production
4. 4th year – rest for establishment of reproduction

[53] Hormay, A. L. and M. W. Talbot. 1961. Rest-rotation Grazing – A New Management System for Perennial Bunchgrass Ranges. USDA Forest Service Production Research Report No. 51.

5. 5th year – continue rest for establishment of reproduction

It is important to include adequate monitoring of each grazed unit or pasture to determine if these rest periods are sufficient to maintain or restore production.

7. Failure to establish criteria for restoration of fish and wildlife habitat.

The RMP relies on much general language as its criteria for meeting habitat objectives, but ignores its FLPMA mandate for accelerating restoration. It does this by relying on collaboration in the absence of criteria, presuming somehow that deferring to the Idaho Standards for Rangeland Health or PFC assessments for streams will do that. BLM has not analyzed its past management to ascertain how it relates to current condition, instead BLM makes claims about its Rangeland Health Assessments indicating that of 254 allotments that were assessed, ALL are now meeting or moving towards meeting the Idaho rangeland health standards. This is a mind-boggling statement that defies logic when one considers that the 1987 RMP listed 131 allotments in "I" condition with a variety of issues including the need for adjusting stocking rates, protecting highly erodible soils and so forth. There is no analysis of the management of these allotments showing how management was changed so that now ALL of them are meeting or moving towards meeting FRH.

As mentioned, rangeland health assessments are non-quantitative and subject to great bias by selecting non-representative areas for assessment, not comparing conditions to potential or reference sites and not assessing the current condition of the site. A recent FOIA of information for the 1st and 2nd Hollows and Paris Canyon Allotments in SE Idaho showed much of the information was not completed, sites were selected as far as possible from water and upgradient, avoiding the more degraded sites closer to water. No assessment of wet meadows or aspen habitats were made, yet as Appendix 5 shows, the wet meadows are overgrazed, aspen are diseased and lack recruitment. Allowing these conditions to persist is a violation of FLPMA's objective of accelerating restoration and preventing impairment. The following research shows the results of grazing on riparian/wet meadow habitat productivity.

A study of long-term riparian exclosures compared to areas that continue to be grazed showed that after 30 years, willow canopy cover was 8.5 times greater in livestock exclosures than in adjacent grazed riparian areas. Grasses were 4 to 6 times greater in cover within the exclosure than outside. Mean peak standing crop of grasses within the exclosure was 2,410 Kg/Ha, while outside in caged plots, mean peak standing crop was 1,217 Kg/Ha. This loss in productivity in the grazed area occurred at a utilization of 65%, much less than that occurring in the 1st and 2nd Hollows and Paris Canyon Allotments, which are over 90% [54].

Another study of upland and wet meadow communities that had livestock excluded for 9 – 18 years found major differences between the ungrazed communities and those continuing to be grazed. In each case, the area without grazing had greater belowground plant biomass, lower soil bulk density and higher soil pore space. In dry meadows the infiltration rate was 13 times greater than those continuing to be grazed

[54] Schulz, Terri T and Wayne C. Leininger. 1990. Differences in riparian vegetation structure between grazed areas and exclosures. Journal of Range Management 43(4):295-299

and in wet meadows, infiltration of rested areas was 2.33 times greater, yet we are to believe the meadows in the 1st and 2nd Hollows and Paris Canyon Allotments are functioning properly and have suffered no loss of soil pore space and infiltration capability[55].

The RMP is relying on Rangeland Health assessments as its monitoring and control of livestock grazing as well as mined land or other surface disturbed land reclamation activities. This is a flawed strategy as documented in the Interagency Technical Reference which is used for rangeland health assessment[56]. The document describes its intended applications and specifically states it is NOT to be used to:

- Identify the cause of resource problems
- Make grazing and other management decisions
- Monitor land or determine trend
- Independently generate national or regional assessments of rangeland health.

This is a qualitative, not quantitative approach and as such is subject to bias. Even though the 1987 RMP identified significant resource problems, the rangeland health assessments as described, have been used to wipe the slate clean of all past condition assessments. Where are the ecological site inventories, the trend studies, the similarity indices needed to judge condition of the plant communities relative to reference conditions. The technical reference indicates these are needed.

As a matter of fact, the Department of Interior's own analysis shows that conditions have not improved since the Rangeland Reform regulations were placed into effect. As Appendix 2 shows, in spite of over 40 years of developing water and grazing management by BLM, conditions have continued to deteriorate. Table 3 below is reproduced to show the BLM's own national data showing conditions described for the 1995 Rangeland Reform regulations and the 2003 Draft EIS for revising the grazing regulations (both cited in Appendix 2).

Table 1. Comparison in BLM Upland Condition Between RRDEIS (1995) and Current Condition (BLM 2003)

Community Status	RRDEIS	Current DEIS	Change '94 to date
PNC (excellent)	4%	6%	+2%
Late Seral (good)	34%	31%	-3%
Mid Seral (fair)	40%	34%	-6%
Early Seral (poor)	15%	12%	-3%
Unclassified	7%	17%	+10%

[55] Kauffman, J. Boone, Andrea S. Thorpe, and E. N. Jack Brookshire. 2004. Livestock exclusion and belowground ecosystem responses in riparian meadows of eastern Oregon. Ecological Applications 14(6):1671-1679.
[56] Pellant, Mike, David A. Pyke, Patrick Shaver dn Jeffrey E. Herrick. 2000. Interpreting Indicators of Rangeland Health Version 3. U.S. Department of Interior, BLM, USGS and U.S. Department of Agriculture, NRCS, ARCS Technical Reference 1734-6.

Either conditions have remained the same or gotten worse according to this data. That the RMP claims improving conditions based on its rangeland health assessments is puzzling at best.

The RMP claims that, of the 139 miles of streams in the Resource Area, 26% are in PFC, 40% are Functioning at Risk, and 33% are Non Functional. There is no data or analysis showing the current habitat conditions for fish and wildlife in these stream and riparian systems, nor adequate standards for restoring fish habitat including bank condition (undercut banks, eroding banks, bank trampling and others), nor instream habitats (instream cover, canopy, overhanging vegetation).

This total reliance on PFC is flawed because PFC assessments do not account for fish and wildlife habitat condition[57]. Even BLM's own technical manual states that *"Trout habitat conditions would be optimum from mid-seral to late seral. The threshold for any goal is at least PFC because any rating below this would not be sustainable."* [58](emphasis added). The following figures are taken from that manual and illustrate where the PFC state is in relation to habitat for fish.. These figures clearly illustrate that at PFC, fish habitat lacks needed structural attributes such as undercut banks, overhanging vegetation and canopy cover.

In the FOIA referenced above for the 1st and 2nd Hollows Allotment, Sleight Creek was assessed. Sleight Creek was determined to be an ephemeral drainage, yet the PFC assessment ignored that the spring feeding Sleight Creek on BLM land had been dug out and placed into a pipe for a water development, diverting the entire summer stream flow. No assessment was made of watershed conditions leading to dewatering of the upper reaches of the stream, such as soil compaction, loss of ground cover and water storage. The assessment noted that willows were grazed with *"little replacement"* and *"were just hanging on"*. The stream was noted to be downcutting due to heavy cattle use and there were few riparian plants. This PFC assessment was done on July 5, 2001 at the beginning of the grazing season, yet in the six years since these degraded conditions were found, no changes in livestock management were implemented to recover the degraded conditions, which is required by FLPMA and the Idaho Standards for Rangeland Health prior to the next grazing season. Yet the RMP expects the public to accept its management under these same Standards and monitoring methods that lack specificity.

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[57] Stevens, Lawrence E., James C. Catlin, Don Duff, Chad Gourley, and Peter Stacey. 2001. Refining Southwestern Riparian Ecosystem Evaluation: A Review and Test of BLM Proper Functioning Condition Assessment Guidelines. Report submitted to BLM.
[58] U.S. D.O.I. 1993. Riparian Area Management Process for Assessing Proper Functioning Condition. TR-1737-9

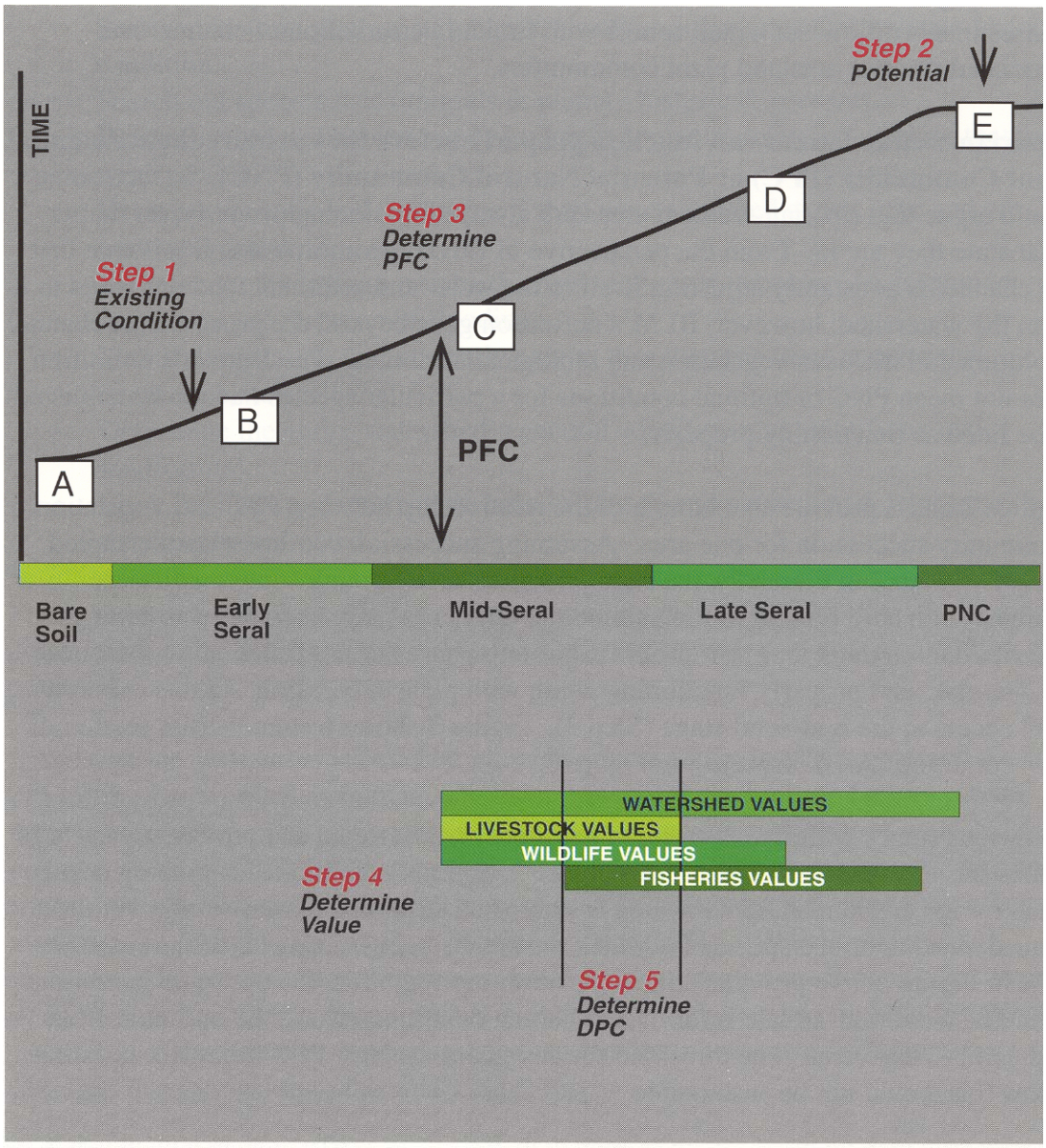

Figure 1. Showing the successional stages of stream recovery.

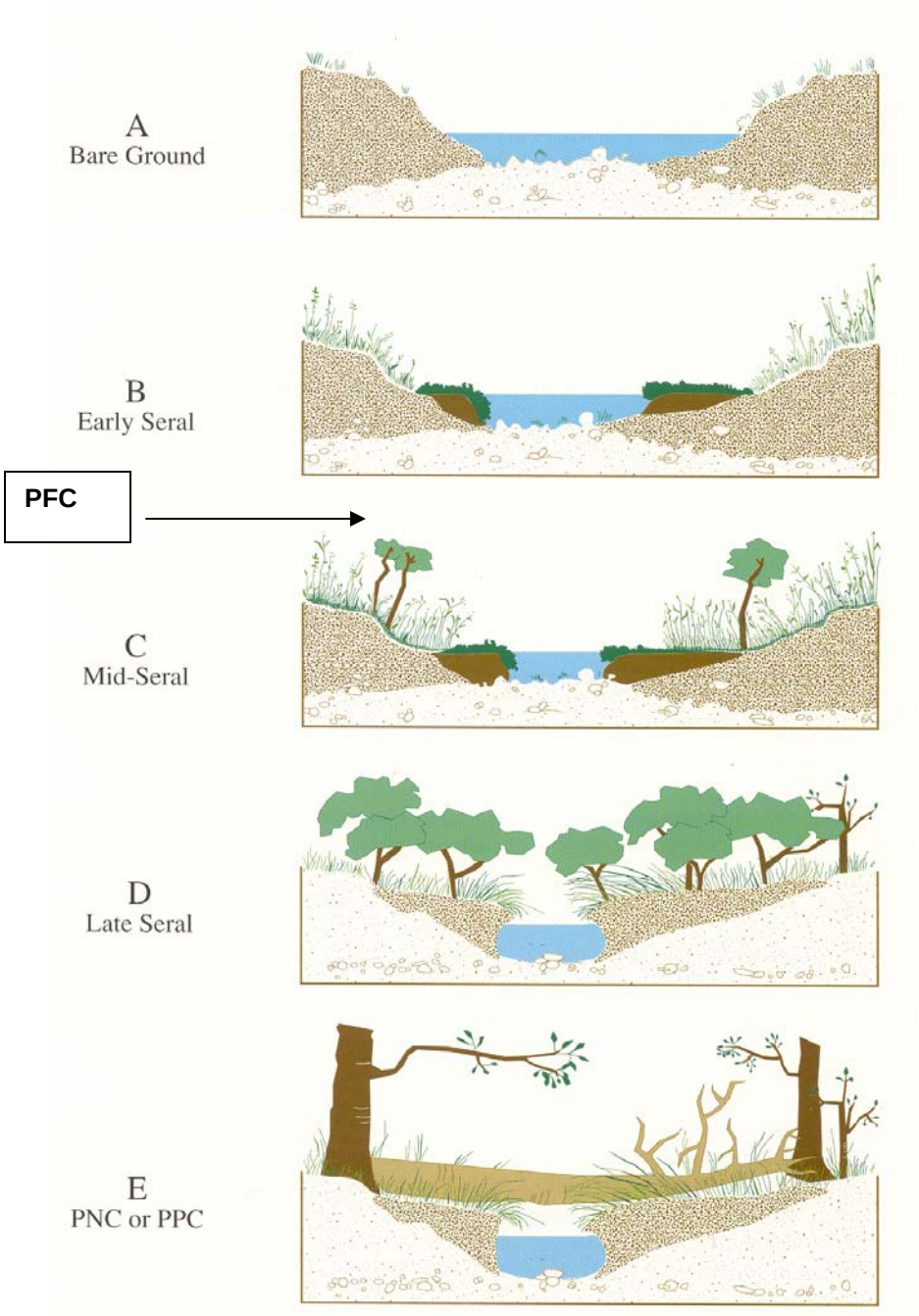

Figure 2. Seral States for Stream Cross-sections. Taken from BLM Technical Manual. PFC position added to original figure.

8. Failure to analyze impacts of water developments and restore lost habitats.

The RMP states that the PFO manages about 300 springs and that "most are developed for livestock use". As described for Sleight Creek above, these developments deprive streams of stream flow needed to sustain aquatic life and fisheries, support wetlands and associated wildlife. They impact riparian areas and uplands over large areas and create "sacrifice areas" that are dominated by weeds or invasives and eroding soils and degrade areas that were in good ecological condition prior to their installation[59].

There is no analysis of the damage to uplands and riparian areas due to these water developments, nor is there any objective or management specified to restore these lost resources. Lowered livestock stocking rates, livestock exclusion, hauling water and other management techniques can be used to eliminate the need for many of these water developments. In fact, a capability analysis of each allotment would show that many of them are in or near areas that are mostly not capable or aspen habitats and these should be removed or decommissioned. Appendix 4 illustrates conditions in the steep topography of the Pleasantview Allotment where water developments have not improved conditions, but instead have allowed large concentrations of livestock to increase erosion, weed infestations and cause loss of native plants and productivity.

9. Failure to analyze impacts of livestock grazing on water quality and implement management to halt this pollution.

The RMP lists 41 water bodies on Idaho's 303D list of impaired waters. A review of the pollutants of concern reveals that livestock-related pollutants such as sediment, nutrients and bacteria are the causes in nearly all cases. Yet, the RMP does not propose any definitive action to correct BLM's contribution to the listing of these water bodies. Under the Fundamentals of Rangeland Health, BLM is required to make management changes in the next year after determinations of degradation, yet BLM has offered no accounting of the actions it has taken since these streams were listed to correct its contribution to their degradation. That livestock are a major source of water pollution is clear. Appendix 6 provides a review of literature regarding livestock and water quality.

While the RMP specifies sediment levels in streams as a criteria for cutthroat trout spawning, but those are incomplete. Idaho DEQ criteria for spawning habitat are for sediment content for the size fraction <6.35 mm to not exceed 27% and for the size fraction <0.85 mm to not exceed 12%.

While the RMP also describes the widths of Riparian Conservation Area buffers to avoid delivery of non-channelized sediment to streams by slope gradient, it does not provide any analysis to show it has provided these buffers. Without utilization and stubble height requirements for livestock grazing, riparian vegetation is annually

[59] Holechek, Jerry L., Rex D. Pieper and Carlton H. Herbel. 2001.Range Management: Principles and Practices, Fourth Edition. Prentice-Hall, New Jersey. 587p

consumed to ground level in cattle allotments. The 1st and 2nd Hollows PfC Assessment shows that riparian use was heavy in only a few days after cattle were allowed on the allotment. Where is the buffer when there is no residual vegetation to capture sediment?

Even with riparian stubble height and utilization standards, use must be controlled so time for regrowth is available so the riparian buffer is able to cope with snowmelt and storm runoff. Grazing riparian areas in late summer, after the peak of the growing season, does not allow time for sufficient regrowth. A study of clipping N. sedge to stubble heights of 2" and 4" during early season, late season and multiple clippings to both heights showed that late season use or 2" stubble height did not allow recovery. Only the 4" early season use achieved the 4" criteria, but did not regrow to meet the 6" criteria by the end of the growing season. This shows that season-long or late season use does not allow sufficient time for re-growth and that 3-4" stubble heights are not effective in protecting riparian vegetation[60].

The RMP ignores any criteria to protect surface waters from fecal pollution from livestock. As noted above, Sleight Creek exhibited high levels of fecal pollution when tested, results were provided to the Pocatello Field Office in 1997, yet no management changes have occurred. In fact, permit requirements for 1 years' rest out of three were eliminated in the last permit in 2002. Retesting of Sleight Creek in July, 2007 showed both Fecal Coliform and E. Coli levels above 2400/100 ml. The Idaho Agricultural Pollution Abatement Plan (IDAPA), which lays out the required BMPs for dealing with animal pollution under the State of Idaho Water Quality Regulations, was ignored in the RMP[61].

Studies have shown that exclusion of livestock is the most effective means of restoring degraded streams[62,63,64]. Reliance on stubble height of greenline species as a monitoring tool is a flawed concept that does not lead to restoration of stream banks or in-stream habitat for fish. Exclosures are a maintenance issue and the cost is excessive. They fragment habitat and entrap wildlife in the fences. The Idaho Agricultural Pollution Abatement Plan recognizes that exclusion of livestock is the only effective means of controlling fecal coliform pollution from livestock. The relationship of livestock, particularly cattle, to stream pollution is widely known. Exclosures will not protect the streams throughout their entire length, nor will they protect streams

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[60] Lile, David F., Kenneth W. Tate, Donald L. Lancaster and Betsy M. Karle. 2003. Stubble height standards for Sierra Nevada meadows can be difficult to meet. California Agriculture, 57(2):60-64.

[61] Idaho Department of Environmental Quality. 2003. Idaho Agricultural Pollution Abatement Plan.

[62] Armour, Carl, Don Duff and Wayne Elmore. 1994. The effects of livestock grazing on western riparian and stream ecosystems. American Fisheries Society Position Statement. Fisheries 19(9):9-12.

[63] Duff, D. A. 1977. Livestock grazing impacts on aquatic habitat in Big Creek, Utah. In: Proceedings of the Workshop on Livestock and Wildlife-Fisheries Relationships in the Great Basin. University of California Agric. Station, Sci. Spec. Publication 3301. Berkeley, California.

[64] GAO. 1988. Some riparian areas restored but widespread improvement will be slow. GAO/RCED-88-105.

from sedimentation and fecal pollution caused by cattle outside the exclosures and within the watersheds.

10. Failure to address livestock impacts to vegetation and allow natural processes.

While the RMP Preferred Alternative lays out "treatments" on over 100,000 acres of sagebrush, aspen and conifer as well as maintaining timber harvest on 45,000 acres, it fails to address the causes of degradation to these habitats. We have addressed sagebrush treatments in the context of sage grouse, migratory birds and pygmy rabbits in a previous section and support allowing natural processes to function.

The RMP only plans on having 5% of vegetation communities in LHC-A at the end of the planning period. This ignores the ability of natural processes to heal if allowed to function. While recovery can be slow, it does occur. Examples of riparian recovery were cited above and the comparison of aspen in the Carter Property after 10 years' rest compared to the 1st and 2nd Hollows and Paris Canyon Allotments shows aspen and its herbaceous understory can begin to initiate recovery if allowed rest from livestock grazing (Appendix 5).

In studies at INEEL in Central Idaho following exclusion of livestock, recovery of perennial grasses was slow, but nevertheless it gradually occurred. Basal area of perennial grasses increased from 0.28% to 5.8% over 25 years[65]. In an update of that research, it was reported that cheatgrass was less competitive and able to establish in areas where native perennial grasses were thriving[66]. In Paragraph 6. above, we cited research showing that years of rest are needed for recovery of vigor for native bunchgrasses that occur in the PFO area. Many allotments in the PFO are in "I" or poor to fair condition. In conditions such as these, it can take 20 to 40 years for bunchgrasses to fully recover from poor to excellent condition under complete rest[67]. As long ago as 1955, it was known that long periods of rest from livestock grazing are needed for recovery. Evanko and Peterson (1955) found that 18 years of livestock exclusion of an area heavily grazed for 50 years resulted in a decrease in unpalatable forbs and shrubs, while grass cover, herbage yield, litter cover and water absorption were greater in the protected areas than in those areas that continued to be grazed[68]. Of course, precipitation and growing season length affect this, but the RMP should address this reality. In the presence of livestock, this recovery is not going to occur.

We are concerned with aspen and conifer and the emphasis on mechanical treatments or in the case of aspen, prescribed fire. We addressed criteria for structural stages and grazing utilization levels in conifer under our discussion of goshawk above. The failure of the RMP to address the causes of conifer invasion of aspen and the role of

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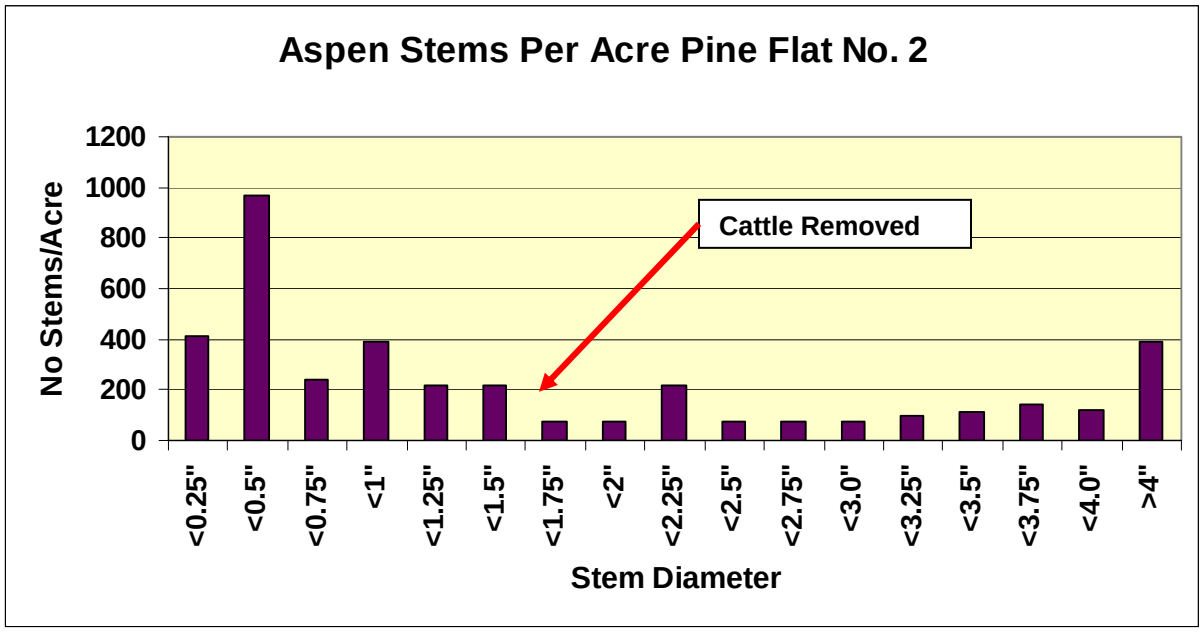
[65] Anderson, Jay E. and Karl L. Holte. 1981. Vegetation development over 25 years without grazing on sagebrush-dominated rangelands in southeastern Idaho. Journal of Range Management 34(1):25-29

[66] Anderson, Jay E. and Richard S. Inouye. 2001. Landscape-scale changes in plant species abundance and biodiversity of a sagebrush steppe over 45 years. Ecological Monographs 71(4):531-556.

[67] McLean, A. and E.W. Tisdale. 1972. Recovery rate of depleted range sites under protection from grazing. Journal of Range Management 25:178-184

[68] Evanko, Anthony B. and Roald A. Peterson. 1955. Comparisons of protected and grazed mountain rangelands in southwestern Arizona. Ecology 36(1):71-82.

livestock in eliminating aspen and accelerating conifer invasion have not been addressed. Research shows that livestock are a major causative factor in creating these degraded conditions. Appendix 5 provides photos of aspen in the Paris Canyon Allotment showing them to be deformed, diseased, lacking recruitment and herbaceous understory. Photos of aspen rested from livestock for 10 years on the adjacent private land show they are healthy and experiencing regular annual recruitment, have a healthy herbaceous understory and the aspen are straight and without disease. The following figure provides data on recruitment of aspen under exclusion by livestock on that private property.



Belsky and Blumenthal (1997)[69] reviewed the literature and showed that livestock grazing plays a key role in removing the herbaceous vegetation from the forest floor and disturbing the soil resulting in accelerated establishment of conifer seedlings. This results in thickets of saplings and a dense forest with a reduced herbaceous component and increased risk of high-intensity fires. This is exactly the condition described in the Region IV PFC Assessment cited earlier.

A study by Kreuger and Winward (1974)[70] showed that forest stands suffered *"retrogression"* when grazed by cattle and big-game, but big-game grazing alone did not result in significant effects. Cattle grazed areas suffered a loss of grasses.

[69] Belsky, A. Joy and Dana M. Blumenthal. 1997. Effects of livestock grazing on stand dynamics and soils in upland forests of the Interior West. Conservation Biology 11(2):315-327.
[70] Kreuger, William C. and A. H. Winward. 1974. Influence of cattle and big-game grazing on understory structure of a Douglas-fir Ponderosa Pine- Kentucky bluegrass community. Journal of Range Management 27(6):450-453.

Zimmerman and Neuenschwander (1984) [71]showed that livestock grazing in Douglas-fir communities in Idaho caused increased tree numbers, decreased production, cover and frequency of major palatable grasses, and altered dominance of shrub and forb species. Grazing resulted in increased accumulation of downed woody fuel in every size class and decreased herbaceous fuels. The consequences were *"fuel distribution and composition were slightly less favorable to frequent surface fires, highly conducive to vertical spreading of fire and potentially more capable of major conflagrations."* They noted these conditions make use of prescribed fire a greater risk to cause high-intensity fires.

Dodge (1972) [72]predicted that this growing fuel accumulation would place forests at higher risk. Rummell (1951)[73] studied densities of trees and herbaceous understory vegetation on ungrazed Meeks Table and grazed Devils Table in Washington. Herbaceous vegetation ranged from 183% to 254% greater on the ungrazed site and had 850 pounds of air-dry herbage per acre compared to 240 pounds per acre in the grazed site. *"While the timbered overstories on the two Tables were similar, Meeks Table had only a very few small trees, but Devils Table had 3291 small trees per acre."* Madany and West (1983)[74] studied grazed and ungrazed Ponderosa pine forest in Zion National Park and found that, *"Heavy grazing by livestock and associated reduction of the herbaceous ground layer promoted the establishment of less palatable tree and shrub seedlings. Fire, however, played an important secondary role in maintaining savanna and woodland communities."* Smith et al (1997)[75] point out that loss of nutrients from logging is principally replaced by soil weathering, but is much less depletive than grazing. Barnes et al (1998)[76] found in studies of grazed and ungrazed woodlots that the highly compacted soils of the heavily grazed woodlot had lower moisture content and much lower infiltration rates than the ungrazed soils. Soil disturbance has far-reaching consequences on forest health, including reduced production and increased susceptibility to disease and insect infestation.

Bartos and Campbell (1998)[77] noted a 60% decline in aspen in the six National Forests in Utah. They state, *"Changes in the abundance of aspen dominated landscapes have occurred over the past 125+ years partly as a result of livestock grazing, wildlife use and a reduction in fires. The historical fire regime was altered in the mid-1800's after European settlement. Fire exclusion resulted from a combination of excessive grazing, timbering, and people extinguishing wildland fires. Grazing removed the fine fuels*

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[71] Zimmerman, G. Thomas and L.F. Neuenschwander. 1984. Livestock grazing influences on community structure, fire intensity and fire frequency within the Douglas-fir/Ninebark habitat type. Journal of Range Management 37(2):104-110.
[72] Dodge, Marvin. 1972. Forest fuel accumulation – a growing problem. Science 177:139-142.
[73] Rummell, Robert S. 1951. Some effects of livestock grazing on Ponderosa pine forest and range in central Washington. Ecology 32(4):594-607.
[74] Madany, Michael H. and Neil E. West. 1983. Livestock grazing-fire regime interactions within montane forests of Zion National Park, Utah. Ecology 64(4):661-667.
[75] Smith, David M., Bruce C. Larson, Matthew J. Kelty and P. Mark S. Ashton. 1997. The Practice of Silviculture: Applied Forest Ecology. John Wiley & Sons, New York. 537p.
[76] Barnes, Burton V., Donald R. Zak, Shirley R. Denton and Stephen H. Spurr. 1998. Forest Ecology. John Wiley & Sons, New York. 774p.
[77] Bartos, Dale L. and Robert B. Campbell, Jr. 1998. Decline of Quaking Aspen in the Interior West – Examples from Utah. Rangelands 20(1):17-24.

which generally carried the fires." In another study, Bartos and Campbell (1998)[78], noted 2.83 inches of water lost when fir forests replace aspen and 7.32 inches lost when spruce replaced aspen, the authors calculated that 250 to 500 acre-feet of water/1,000 acres was lost through transpiration annually, depending on the conifer species replacing aspen. Since about 1.5 million acres of aspen have been converted to conifers in Utah, this translates to an annual loss of water for streamflow and plant production of 375,000 to 750,000 acre-feet per year.

Kay and Bartos (2000)[79] evaluated existing aspen exclosures on the Dixie and Fishlake National Forests in Utah. These were studied to determine the effects of livestock, deer and elk on aspen regeneration and associated vegetation. Five of eight exclosures had three-part construction that provided total exclusion, livestock exclusion and combined use. Aspen within all total exclusion plots successfully regenerated without the influence of fire or other disturbance. Aspen subject to browsing by wildlife (deer) either failed to regenerate successfully or regenerated at stem densities (2498/ha) significantly lower than on total exclusion plots (4,474/ha). On combined use plots, most aspen failed to regenerate successfully or did so at low densities (1,012/ha). Herbivory by ungulates altered understory vegetation. Utilization by deer reduced shrubs and tall palatable forbs and favored growth of grasses. Combined use including livestock reduced native grasses and promoted introduced species and bare soil. The authors conclude that *"communities dominated by old-age or single-age trees appear to be a product of ungulate browsing, not a biological attribute of aspen… . There was no evidence that climatic variation affected aspen regeneration. Observed differences are attributed to varied histories of ungulate herbivory."*

Kay (2001)[80] reported the results of studies of hundreds of aspen clones in the Shoshone, Simpson Park, Diamond, Desatoya and Roberts Mountains on BLM lands in central Nevada. Aspen in these areas are found to be in poor condition and many stands have not successfully regenerated in 100 years or more. Kay observed that where aspen in central Nevada has been protected from grazing, aspen has maintained its position in the vegetation community and, in fact, has actually replaced sagebrush, contrary to the opinion of some that say sagebrush naturally replaces aspen. Exclosure data indicated that herbivory has had a major influence on aspen stem dynamics and understory composition in central Nevada. Most herbivory was from livestock. Pellet counts were used and showed that 59.3% were from domestic sheep, 40.2% from cattle and 0.4% from deer. All aspen stands regenerated in exclosures that excluded cattle but not deer and in canyons closed to livestock. When fallen trees blocked livestock access, aspen were able to regenerate in the protected spaces. Reductions in livestock numbers also resulted in aspen regeneration. Distance to water and slope were also factors that related to aspen regeneration or the lack of

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[78] Bartos, Dale L. and Robert B. Campbell, Jr. 1998. Water depletion and other ecosystem values forfeited when conifer forests displace aspen communities. Rangeland Management and Water Resources of American Water Works Association. May 1998: 427-433.

[79] Kay, Charles E. and Dale L. Bartos. 2000. Ungulate Herbivory on Utah Aspen; Assessment of Long-term Exclosures. Journal of Range Management 53:145-153.

[80] Kay, Charles E. 2001. The Condition and Trend of Aspen Communities on BLM Administered Lands in Central Nevada – with Recommendations for Management. Final Report to Battle Mountain Field Office, Bureau of Land Management. Battle Mountain, Nevada.

regeneration. Cattle use is generally related to distance from water and slope. Steeper slopes or areas further from water receive less use. Aspen stands further from water and on steeper slopes were in better condition than those nearer water or on more gentle slopes, again indicating that grazing by livestock was the operative factor causing declining health of aspen clones. While Kay cites other research indicating that wildlife have impacts on aspen regeneration, he states that in all cases where aspen is protected from livestock, it successfully regenerated and formed multi-aged stands without fire or other disturbance. He concludes by saying, *"The single, stem-aged stands seen in central Nevada and found throughout the West are not a biological attribute of aspen, but a result of excessive ungulate herbivory. … In central Nevada, however, domestic livestock are the predominate (predominant) ungulate herbivore."*

A problem that is not addressed is the role of water developments for livestock in degrading aspen habitats. A recent analysis of aspen in the Bear River Range in the Caribou National Forest shows that over 50 water developments are located in aspen[81]. This is in spite of Forest Service research and management recommendations that recognize and recommend against this practice[82].

The Forest Service in its 1996 assessment of conditions of plant communities in Region IV summarized current conditions and risk factors[83]. The found that 85% of aspen in Region 4 is in mid to late seral stages with approximately 41% in portions of Idaho having succeeded to other vegetation types compared to historical conditions. Exclusion of fire in combination with livestock grazing has contributed to the situation. Livestock grazing over the past 100 years has reduced accumulation of fine fuels (shrubs and herbaceous layers) resulting in a lower fire spread. Aspen regeneration has not been successful due to heavy grazing by domesticated ungulates. The lack of regeneration over large areas increases the risk of conifer succession. Continued heavy browsing by ungulates, especially livestock, will result in habitat degradation for all species found in aspen forests. In conifer forests, they concluded that there is little balance of structural stages in the Region. Historic logging practices have left much slash behind. This, coupled with removal of herbaceous understory vegetation has produced thickets of saplings resulting in ladder vegetation which could make for stand replacing fires. Historically frequent and low intensity ground fires that removed very young saplings are not able to happen because of the removal of the herbaceous understory by livestock grazing and trampling. The continued removal of herbaceous understory and soil disturbance reduces frequent, low intensity fires and increases the amount of conifer regeneration able to succeed and develop ladder fuels within large stands. This overall pattern reduces watershed health and could lead to removal of topsoil by wind and water, thereby having significant negative effects on soil and water quality.

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[81] Carter, John. 2006. Presentation to SE Idaho Aspen Working Group November 25, 2006.
[82] Sheppherd, Wayne D., Paul C. Rogers, David Burton, and Dale L. Bartos. 2006. Ecology, Biodiversity, Management and Restoration of Aspen in the Sierra Nevada. USDA Forest Service RMRS-GTR-178.
[83] USDA. 1996. Intermountain Regional Assessment: Properly Functioning Condition. USDA Forest Service, Region IV, Ogden, Utah.

The RMP must recognize and deal with the cause of plant community dysfunction – livestock grazing – rather than treating symptoms without addressing the grazing issue. Plainly, refusing to consider livestock grazing as a significant issue, while planning massive levels of vegetation treatments provides a setting whereby the vegetation treatments will cause worsening conditions, rather than restoring ecosystem health. Appendix 7 provides WWP's position on aspen management.

11. Failure to fully address impacts of OHVs and limit their impacts to wildlife and non-motorized users.

The RMP merely defers any notice of OHVs until some future date when it claims a Travel Plan will be prepared. Most Travel Plans don't address ecological impacts in any meaningful way and consist of maps without any relation to the situation on the ground. Rather than accepting that motorized use will continue to increase indefinitely, the RMP should recognize the President's call for conservation, his announcement that our reliance on foreign oil is a national security issue and begin phasing down OHV use in favor of less-intensive and habitat destroying uses such as human-powered recreation. The cumulative impacts of OHVs, their illegal trails and habitat destruction as well as their displacement of wildlife call for very low densities of use across the landscape. In fact some National Forests have begun to recognize this use is not consistent with the mission of the Forest Service and have closed their forests to these machines.

NRDC has prepared a voluminous report and annotated bibliography of the ecological impacts of roads[84]. It must be pointed out that many of the impacts of roads stem from the noise and other effects of the motorized traffic using those "roads". Snowmobiles create their own "roads" and can generate a density of these "roads" far exceeding any normal road construction due to their ability to travel across the snow for miles in otherwise undisturbed terrain. BLM and the Forest Service have not been able to demonstrate an ability to enforce rules for use of these toys while allowing their continued presence. They adversely affect wildlife, air and water quality, and other users who seek the enjoyment of nature without the sense of remaining in an urban environment. It is important for BLM to recognize that our society is becoming more crowded and noisy, giving our public lands greater and greater importance as places where members of society can escape the noise of towns and cities, not be subjected to the whine and roar of Snowmobiles, ATVs, Dirt Bikes, Sand Buggies and the like.

The USU Institute for Outdoor Recreation and Tourism has conducted studies showing that nearly 40% of riders admit going off legal trails on their last ride[85]. The Forest Service published a Technical Report in 2005 (RWU – 2905) that recognized there is a lack of evidence that educational programs lead to behavioral changes in motorized users. At a recent public hearing in Utah regarding an ATV ordnance for Mendon, Utah that would permit these users to use city streets, this outlaw attitude, lack of respect for rules and laws by OHV users was clearly revealed. Supporters of the ordnance allowing these machines to use city streets unanimously and readily admitted that they knew existing laws made their use illegal, but they chose to knowingly ignore and disobey those laws. The ordnance was passed and we are

[84] http://www.nrdc.org/land/forests/roads/eotrinx.asp
[85] http://extension.usu.edu/iort/htm/professional

consistently observing violations by these same advocates of the ordnance.[86] The evidence of this outlaw behavior on adjacent Forest Service land and private property is readily observed. Monitoring programs in the Wasatch-Cache National Forest have revealed tremendous numbers of illegal routes and continuing violation of road and trail closures. Neither the BLM nor Forest Service have demonstrated an ability to control or manage these uses. The RMP has proposed subjecting rural communities to this disruption activity that destroys their right to the peaceful use and enjoyment of their own property, homes and yards.

Thirty years ago we could cross country ski and hike in Forests and Public Lands in quiet and solitude, observing wildlife and hearing the sounds of winter, birds, streams and nature in general. This is not the case today as the sounds you hear are engine noises of rapped out snowmobiles, dirt bikes and ATVs which travel for miles, and the smells you smell are hydrocarbons and hazardous air pollutants. These mechanized users mostly use public lands for an obstacle course, a motocross track, speed and amusement, not wildlife-based or quiet recreation. Because of the increased emphasis on motorized recreation, BLM and the Forest Service have decreased the utility of the public lands for wildlife and deprived non-motorized users of the opportunity to enjoy skiing, hiking and camping in the study of nature.

Quiet environments are becoming extremely rare. In a recent study by a professional sound recorder who visited 15 western and Midwestern states, it was found that quiet periods longer than a minute and a half without the sound of motors were difficult to find[87]. Another study pointed out that in 1999, the decibel levels of conversation among Americans had risen to 65 decibels, up 10 decibels from a decade earlier, or a doubling of volume due to elevation of background noise levels[88]. While it is recognized by OSHA and other health officials that exposure to noise of 85 decibels and higher leads to hearing loss, noise at even lower levels can lead to physiological changes in blood pressure, sleep, digestion, and other stress-related disorders. Former U.S. Surgeon General William H. Stewart stated that, *"Calling noise a nuisance is like calling smog an inconvenience."*[89, 90, 91, 92, 93] Loud noise, even within established health guidelines, can lead us to feel tense, angry, frustrated, annoyed and prone to violence in addition to contributing to hearing loss. In the period between 1982 and 2000, the incidence of measurable hearing loss increased by 15 to 60%, depending on the age group. In 1999, the U.S. Census Bureau rated noise as the single biggest neighborhood problem among those surveyed. More than one in ten people cited traffic noise as of concern and nearly half of those said they had considered moving as a way of escaping such noise[94]. The EPA has found that 20% of those surveyed are "highly

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[86] John Carter notes
[87] Richard Laliberte, "The Sound of Silence," *Cooking Light*, March 1999
[88] http://interact.uoregon.edu/MediaLit/WFAE/home/index.html
[89] "How Loud is Your House?," *CBC Marketplace*, Nov. 7, 2001, www.cbc.ca
[90] Howard Frumkin, "Beyond Toxicity: Human Health and the Natural Environment," *American Journal of Preventive Medicine* 20, no. 3 (April 2001): 234–240
[91] Christine Gorman, "Stressed Out Kids;" *Time*, December 25, 2000
[92] Noise Center of the League "Noise & Health Fact Sheet," (New York and Florida: League for the Hard of Hearing), www.lhh.org/noise/facts/health.htm
[93] "Sound, Sight & Solitude" *Leadership Bulletin from Early Childhood Connection* (a publication of the Early Childhood Music and Movement Association) 7, no. 1 (Fall 2001).
[94] Jim Louderback, "A Sound Solution," *USA Weekend*, October 19, 2003

annoyed" when sound levels reach 55 decibels[95]. Federal regulations for highways dictate that if a new or expanded road will yield noise levels of 67 decibels or higher, efforts must be made to bring about a substantial reduction in noise levels. Generally this involves construction of sound barriers[96].

After Zion National Park banned private vehicles and instituted a low pollution shuttle bus system, visitors commented that the absence of RVs with generators running, buses with clouds of diesel fumes and noise were noticeable and that they could now hear birds calling, streams running, and other low-volume sounds of nature that were previously obliterated by "vehicle noise". [97] Noise is a particularly objectionable aspect of Snowmobile, ATV and Dirt Bike use. A Park Service report showed that even "quiet" snowmobiles could be heard more than two miles away, thus affecting a four mile wide area adjacent to travel corridors or use areas[98]. This means that a snowmobile (ATV or Dirt Bike) traveling 50 miles in one day, which they can easily do, can affect an area of 200 square miles. A visitor survey at Grand Teton National Park found that 96% thought snowmobiles had a negative impact on the park because of noise, air pollution and negative effects on wildlife[99].

Sediments come from watershed uses such as roads, OHVs, grazing and logging, and have not been addressed in a comprehensive analysis. No evaluation has been done for the contribution of hazardous pollutants to the air and watersheds where snowmobiles and other OHVs are used. Atmospheric inversions and canyons can trap and hold these hazardous air pollutants and raise exposures to people and wildlife. Those who cross country ski or hike are exposed to these fumes in close proximity while they are breathing hard and deep with the exertion of skiing or hiking. At Yellowstone, many of the Rangers there suffered persistent headaches, dizziness and nausea prior to using gas masks and having oxygen piped into their kiosks[100]. Unfortunately, skiers or hikers cannot have oxygen piped to them and must breathe these fumes.

Fuel and lubricants used in these machines spill on the ground and are carried out in exhaust streams and then deposited into the snow and soils wherever they go. They contain benzene, xylene, toluene, polycyclic aromatic hydrocarbons and other hazardous organic chemicals[101]. As the Montana DEQ states, *"A portion of the air/fuel/lubricant charge escapes directly to the atmosphere with the combustion*

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[95] Environmental Protection Agency, press release, April 2, 1974; see also EPA website, www.epa.gov/history/topics/noise/01.htm.
[96] www.fhwa.dot.gov/environment/htnoise.htm
[97] Lin Alder, "A Park Rediscovers A Surprising Asset," *High Country News*, September 25, 2000.
[98] U.S. Department of the Interior, National Park Service. Winter Use Plans: Supplemental Draft Environmental Impact Statement. Yellowstone and Grand Teton National Parks and John D. Rockefeller, Jr., Memorial Highway. March 29, 2002.
[99] Greater Yellowstone Coordinating Committee. "Greater Yellowstone Winter Visitor Use Management -- Examples of Issues Facing Parks and Forests in the Greater Yellowstone Area." Draft. 1995.
[100] National Park Service, *Winter Use Plan, Final Supplemental Environmental Impact Statement (FEIS) for the Yellowstone and Grand Teton National Parks and the John D. Rockefeller, Jr., Memorial Parkway, Wyoming and Montana* (Intermountain Station: U.S. Department of the Interior, February 2003).
[101] http://deq.mt.gov/CleanSnowmobile/concerns/tyler2000.pdf

products, producing poor fuel economy and releasing high levels of hydrocarbons as air pollutants. This phenomenon is known as "short circuiting." EPA models and emission factors should be used to determine the impacts on the environment and exposures to cross country skiers, hikers and wildlife from these machines. Other information is available showing that noise levels of both two-cycle and four-cycle engines in OHVs reach levels up to 110 dB even in four stroke engines. EPA and the Montana Department of Environmental Quality have provided research on this issue. The EPA[102] and Montana DEQ[103] websites provide links to much of this information and EPA has modeling protocols to allow prediction of emissions from these vehicles[104].

The pollutants emitted by these machines are carcinogenic to humans and highly persistent in the environment, adversely affecting terrestrial and aquatic organisms, including reduced plant productivity, tree mortality and making plants susceptible to disease and pests.[105, 106, 107, 108]. A two stroke engine in a snowmobile or dirt bike can emit more pollution in a single hour than a modern car does in a year. Even though four strokes emit lower amounts of pollutants, they emit more than an automobile. [109]

BLM and the Forest Service actions that allow snowmobiles, ATVs and Dirt Bikes are depriving wildlife such as Canada lynx and other species the opportunity to live in and migrate through these lands. This is all during a time when the President has called for conservation to save energy and a report has just been issued by the International Panel on Climate Change that shows global warming is almost completely related to human activities, especially consumption of fossil fuels and agriculture. The President has called for conservation, yet where is the evidence that the BLM is considering conservation when it allows these machines across the landscape? Continuing to permit these unmanageable and destructive fuel-consuming uses that were not envisioned in the Multiple Use and Sustained Yield Act is counter to our national interest as described by the President and is irresponsible in view of the current state of knowledge regarding climate change and its devastating impacts[110].

There have been numerous publications on the effects of roads on noise, pollution, wildlife and the benefits of roadless areas. Roads increasingly provide vehicle access

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[102] http://www.epa.gov/otaq/recveh.htm
[103] http://deq.mt.gov/CleanSnowmobile/solutions/engine/index.asp
[104] http://www.epa.gov/otaq/ap42.htm
[105] J. P. Giesy, Testimony of John P. Giesy at the Tahoe Regional Planning Hearing on Boating Impacts, February 26, 1997.
[106] J. T. Oris et al., "Toxicity of Ambient Levels of Motorized Watercraft Emissions to Fish and Zooplankton in Lake Tahoe, California/Nevada, USA" Proceedings of the 8th Annual Meeting of the European Society of Environmental Toxicology and Chemistry (SETAC-Europe), April 14–18, 1998 (University of Bordeaux, Bordeaux, France), http://zoology.muohio.edu/oris/TahoePoster.pdf [viewed August 1, 2006].
[107] C. Shaver, D. Morse, and D. O'Leary. 1988. *Air Quality in the National Parks*, report prepared by Energy and Resources Consultants, Inc., NPS Contract No. CX-0001-4-0054 (Washington DC: U.S. Department of the Interior, National Park Service, Air Quality Division, 1998).
[108] M. D. Einarson, "Impacts to South Lake Tahoe Water Supply Wells Resulting from Non-Point Sources of MTBE," prepared for Groundwater Resources Association of California, 2002.
[109] Based on California Air Resources Board Data, January 5, 1999, www.arb.ca.gov.
[110] http://www.eemsonline.co.uk/press_releases/02-02-07?s=wndscl4ow8w4ka2

into more and more remote areas, forcing species like bears, lynx, wolverines, deer, elk or pronghorn all to be eliminated or displaced. Roads and groomed trails provide access to hunters who can use them in summer and winter to kill predators, birds or other mammals for sport. Snowmobiles, with their ability to travel large distances cross-country bring these same impacts along whether there is a groomed trail or not. The ecological effects of roads and/or mechanized use include erosion, air and water pollution, spread of invasive weeds, avoidance of road or machine-affected areas by wildlife and habitat fragmentation[111,112]. When logging, roads and development fragment habitats, breaking large areas into smaller areas, they no longer retain their original functions and begin losing species, including those that are wide-ranging such as bears, lynx and wolverine[113, 114, 115, 116, 117]. Roads have been shown to have thresholds of density above which species begin to decline or be eliminated. This has been reported to generally be 1 mile per square mile, with effects to some large mammals such as bears at a road density of 0.5 miles/square mile.[118, 119] The importance of roadless areas was documented for both small (1,000-5,000 acres) and large (>5,000 acres) roadless areas under consideration in the Clinton roadless area environmental impact statement and for three case study regions (Klamath-Siskiyou, Appalachia/Blue Ridge, and Tongass National Forest) recognized by WWF for global biodiversity importance[120].

In general roadless areas in these exceptionally diverse regions were found to provide many ecological benefits compared to roaded landscapes, including: relatively high levels of intact late-seral/old-growth forests; essential habitat for many species of conservation concern; buffer areas from exotic species invasions and edge effects; landscape and regional connectivity; areas most likely to have fire regimes operating within natural bounds; essential habitat for species key to the recovery of forests following disturbance such as herbaceous plants, lichens, and mycorrhizal fungi; habitat refugia for threatened species and those with restricted distributions such as

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[111] T. W. Clark, P. C. Paquet, and A. P. Curlee. 1996. Large Carnivore Conservation in the Rocky Mountains of the United States and Canada," Conservation Biology 10: 936–939.
[112] Trombulak, S. C. & C. A. Frissell. 2000. The ecological effects of roads on terrestrial and aquatic communities: a review. Conservation Biology 14:18-30
[113] D. A. Saunders, R. J. Hobbs, and C. R. Margules. 1991."Biological Consequences of Ecosystem Fragmentation: A Review," Conservation Biology 5 (1991): 18-32.
[114] Hitt, N.P. and C.A. Frissell. 1999. Wilderness in a landscape context: a quantitative approach to ranking Aquatic Diversity Areas in western Montana. Presented at the Wilderness Science Conference, Missoula, MT, May 23-27, 1999.
[115] The Importance of Roadless Areas to Idaho's Fish, Widllife, Hunting & Angling. 2004. Trout Unlimited. http://www.tu.org/atf/cf/%7B0D18ECB7-7347-445B-A38E-65B282BBBD8A%7D/Roadless_Idaho.pdf
[116] J. R. Strittholt and D. A. DellaSala, Importance of Roadless Areas in Biodiversity Conservation in Forested Ecosystems: A Case Study-Klamath-Siskiyou Ecoregion, U.S.A. 2001. Conservation Biology 15 (6): 1742-1754.
[117] G. E. Heilman, Jr., J. R. Strittholt, N. C. Slosser, and D. A. DellaSala. 2002. Forest Fragmentation of the Conterminous United States: Assessing Forest Intactness Through Road Density and Spatial Characteristics. Bioscience 52 (5): 411-422.
[118] R. P. Thiel. 1985. Relationship Between Road Densities and Wolf Habitat Suitability in Wisconsin. American Midland Naturalist 113: 404-407.
[119] L. D. Mech, S. H. Fritts, G. L. Radde, and W. J. Paul. 1988. Wolf Distribution and Road Density in Minnesota. Wildlife Society Bulletin 16: 85-87.
[120] http://www.worldwildlife.org/wildplaces/kla/pubs/exec_sum.pdf

endemics; aquatic strongholds for salmonids; undisturbed habitats for mollusks and amphibians; remaining pockets of old-growth forests; overwintering habitat for resident birds and ungulates; and dispersal "stepping stones" for wildlife movement across fragmented landscapes.[121, 122]

Other impacts to soils and vegetation include findings that soils under snow compacted by snowmobiles was colder than unpacked snow, leading to a decrease in soil bacteria, which can affect seed vernalization, seed dispersal, spring germination and changes in plant species distribution, density and productivity[123]. If snow cover is limited, then snowmobiles can impact small trees and shrubs causing damage, deformities and a decline in vigor or death[124].

Road densities occurring in the PFO have not been analyzed nor have their effects on wildlife been analyzed. Researchers, including those with the Forest Service have documented the effects of roads and OHVs on wildlife and the benefits of roadless areas. For example, Gilbert[125], Noss[126] and Wisdom et al[127] describe the detrimental effects of road density and human activity on large mammals causing large displacements away from roads and mechanized activity.

Noise itself has detrimental effects to wildlife, creating stress, loss of hearing, and early emergence from hibernation resulting in death.[128, 129] Scientists studying coyotes have determined that coyote use of packed trails or roads allows them access that would be otherwise difficult or impossible into areas that are habitat for Canada lynx, where they prey on snowshoe hares which are preferred by lynx, a threatened species as well as goshawk, a BLM sensitive species[130]. An evaluation of all these interrelated effects

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[121] R. L. DeVelice and J. R. Martin, "Assessing the Extent to Which Roadless Areas Complement the Conservation of Biological Diversity," Ecological Applications 11, no. 4 (2001): 1008-1018

[122] C. Loucks, N. Brown, A. Loucks, and K. Cesareo, "USDA Forest Service Roadless Areas: Potential Biodiversity Conservation Reserves," Conservation Ecology 7, no. 2 (2003): 5, http://www.consecol.org/vol7/iss2/art5/.

[123] W. J. Wanek, "Snowmobiling Impact on Vegetation, Temperatures and Soil Microbes," in *Snowmobile and Off-Road Vehicle Research Symposium Proceedings*, Technical Report No. 8 (Department of Park and Recreation Resources, Michigan State University, Lansing, MI, 1971), 117–130.

[124] W. J. Wanek and L. H. Schumacher. "A Continuing Study of the Ecological Impact of Snowmobiling in Northern Minnesota," final report (Center for Environmental Studies, Bemidji State College, Bemidji, MN, 1975).

[125] Gilbert, Barrie K. 2003. Motorized Access on Montana's Rocky Mountain Front. A Synthesis of Scientific Literature and Recommendations for use in Revision of the Travel Plan for the Rocky Mountain Division.

[126] http://www.wildlandscpr.org/resourcelibrary/reports/ecoleffectsroads.html

[127] Wisdom, M. J., H. K. Preisler, N. J. Cimon, B. K. Johnson. 2004. Effects of Off-Road Recreation on Mule Deer and Elk. Transactions of the North American Wildlife and Natural Resource Conference 69: in press.

[128] A. Anthony and E. Ackerman, "Biological Effects of Noise in Vertebrate Animals," Technical Report 57-647, Wright Air Development Center, Wright-Patterson Air Force Base, OH, 1957

[129] B, H. Brattstrom and M. C. Bondello, "Effects of Off-Road Vehicle Noise on Desert Vertebrates," in *Environmental Effects of Off -Road Vehicles: Impacts and Management in Arid Regions*, eds. R. H. Webb and H. G. Wilshire (New York: Springer-Verlag, 1983).

[130] Dr. Barrie Gilbert, personal communication

on these predators, their prey and habitat requirements must be included along with addressing the noise, pollution, watershed damage, conflict with non-motorized users, road/trail densities and enforcement capability. Based on the research, the only effective means of control is closure of large areas to their use and limiting them to major roads, eliminating cross-country travel in areas where they are used. Total elimination of this activity is the most appropriate in this time of rising fuel and food costs related to energy costs and when conservation is critical.

12. Economic Analysis biased and flawed.

The RMP has pandered to "lifestyles" for ranchers while ignoring the actual contribution of the livestock grazed on the PFO to the local and regional economy. The Fish and Wildlife Service publishes reports on the value of wildlife-associated recreation that shows values of hundreds of millions of dollars to billions of dollars of revenue related to hunting, fishing and wildlife watching in each western state[131]. In addition, the cost of polluted water, loss of watershed storage due to soil compaction and loss of herbaceous cover are not counted in the costs of livestock grazing. As the reference below shows, in actuality, rural communities as well as livestock permittees depend on other sources of income. Laws require that public lands be administered in the long-term interests of the American people and not a handful of stockmen, who are permittees, on the public lands.

Livestock permittees are a small minority of livestock producers in the eleven western states and are insignificant in their numbers or their economic contribution to the States, their local and regional economies. Their numbers and contribution pale in comparison to the natural values of our public lands. Dr. Thomas Power, Chairman of the University of Montana's Economics Department, in Wuerthner and Matteson (2002)[132] points out the minimal economic contribution of federal public lands livestock grazing to local, state and regional economies in the West. That reference can be found on-line at:

http://www.publiclandsranching.org/htmlres/PDF/wr_TAKING_STOCK.pdf

Dr. Power also points out that the majority of public lands livestock producers depend on non-agricultural sectors of these local, state and regional economies for employment, not livestock production. It is not in the public's interest to blindly continue livestock grazing at unsustainable stocking levels in order to provide a short-term benefit to this small minority, while ignoring the values displaced by livestock grazing.

Dr. Power shows that *"Livestock grazing on federal lands is generally unimportant to local economies and even less so to state and regional economies. In terms of income and numbers of jobs provided, the contribution of federal lands grazing is less than 0.1%*

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[131] U.S. Department of Interior, U.S. Fish and Wildlife Service, U.S. Department of Commerce and U. S. Census Bureau. 2002. 2001 National Survey of Fishing, Hunting and Wildlife-Watching Associated Recreation. 170 p.

[132] Wuerthner, George and Mollie Matteson. 2002. Welfare ranching: the subsidized destruction of the west. Island Press.

across the West. Farm and ranch operations are increasingly reliant on non-farm income sources to be financially feasible, while livestock grazing competes with other uses of public lands – such as clean water, recreation, wildlife habitat – that contribute to the ongoing vitality of western economies."

In his analysis of the economies of individual rural counties, Dr. Power showed that federal lands grazing does not contribute significantly to those economies across the west. In fact, given the high percentage of ranching families that have jobs, either full or part time outside the ranch (60 – 70%), it is ranchers that depend on the other economic sectors for their ability to persist, not federal grazing. Dr. Power states, *"It is not that towns depend on agriculture, but that agriculture increasingly depends on the vitality of urban and nonagricultural rural economies to provide the nonfarm income that keeps farm operations alive."*

Dr. Power states that claims about the relative importance of federal grazing to the economies of western states can be analyzed by answering these questions:

1. "What portion of the value produced by cattle and sheep operations is associated with feed used?
2. What portion of the feed for those cattle and sheep operations comes from grazing on federal lands?
3. What portion of the total agricultural activity involves raising cattle and sheep?
4. What part of the total economy is represented by agriculture."

The PFO RMP Economic analyses should include consideration of this information and the following:

- costs of administration
- costs of installation and maintenance of range improvements borne by the BLM and/or funded by county range improvement funds
- grazing fees collected and their distribution to various entities
- grazing fees collected and net return to the Forest Service and the American people, and separate out the dollars returned to grazing permittees and local counties.
- value of livestock grazing gross revenue to the permittee at current market rates
- value of wildlife-associated recreation (DOI 2002)
- loss in value of wildlife associated recreation to livestock grazing by using equivalent AUMS consumed by livestock as applied to wildlife needs (AUMs) and economic benefits
- cost of soil erosion and loss of groundwater recharge and streamflow
- cost of water pollution
- the net contribution of the individual livestock operations under consideration to the county and regional economy
- compare the individual livestock operation in dollars and jobs to the local, state and regional economy and report what percentage this allotment comprises of this total

- compare these various economic values with other economic and employment sectors at those local,state and regional levels.

13. Failure to protect ACECs, RNAs, WSAs.

While the RMP does close some of these areas to grazing or OHVs, it continues to allow these uses in others. It is not consistent to set aside areas for protection or as reference areas then allow these disturbing and degrading activities to continue. There is no analysis of the current condition of WSA's, ACECs or RNAs and whether their quality is being degraded by OHVs and/or livestock grazing or other extractive uses. The RMP must include a provision allowing waived grazing permits be put into non-use for watershed protection. Such a clause exists in the 1999 Challis RMP and the Prinedale RMP in Oregon.

14. Failure to address antiquated "open range" issue.

The RMP has failed to even mention this egregious practice, whereby BLM defers to state open range laws, claiming that it is the duty of adjoining private landowners to build and maintain fences to keep livestock that are permitted on public lands from entering their property. We are no longer living in the days of settlement when rural areas were dominantly agricultural. It is time for BLM to correct this long term injustice and unfair property tax on private land owners adjacent to public lands by requiring livestock lessees or permittees to build and maintain boundary fences as a permit term and condition. Federal law has supremacy over State law, so BLM can set this requirement into permits as terms and conditions, in fact must do so in order to maintain management of the timing and utilizatoin of livestock grazing on public lands. BLM is not being a good neighbor in the local communities in which BLM lands are located by placing this burden on their neighbors.

While planning to dispose of up to 50,000 acres of BLM land, it appears BLM intends to dispose of most small, isolated parcels bounded or included within private land boundaries. This loss directly affects sage grouse and other species habitats that are present on those lands. The RMP has not provided any analysis to demonstrate it has controlled use on small allotments surrounded by private land, or in fact, whether any of these parcels are just allowed to be used by the landowner without permits, utilization standards, seasons of use, monitoring or charges for use.

The RMP must provide analysis and criteria such as permit terms and conditions for these small parcels and require all livestock owners to assume responsibility for controlling their livestock whether grazing BLM land under lease or permit, or whether trespassing or engaging in unsustainable grazing practices on small parcels of BLM adjoining or enclosed within their private land.

Conclusion: The Pocatello RMP/EIS is fatally flawed in that it lacks meaningful, enforceable ecological analysis and criteria. This failure leaves the public with no confidence that BLM's mandate for accelerated restoration, sustainable management and protection of values will be met. We believe the process has been biased and the RMP will perpetuate a process that will continue to be open to bias and misinformation. Recent reports by the Interior Departments' Inspector General regarding Endangered Species Act listings show political manipulation and

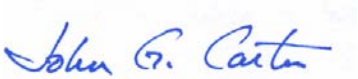
abandonment of objective science. Similarly, during the recent preparation of BLM's revised grazing regulations, BLM scientists spoke out about their science being suppressed or altered to change the meaning of their conclusions. BLM must restore integrity to the process and demonstrate an ability to enforce, monitor and manage uses, otherwise those activities that can't be monitored or managed must be ended.

Prior to issuing the Final EIS, RMP and ROD the preparers should review the Standards of Ethical Conduct for Federal Employees[133] that are based on Executive Order 12674, as amended by Executive Order 12731. In particular, three of the broad principles I believe apply here are:

> *"(1) Public service is a public trust, requiring employees to place loyalty to the Constitution, the laws and ethical principles above private gain.*
>
> *(5) Employees shall put forth honest effort in the performance of their duties.*
>
> *(8) Employees shall act impartially and not give preferential treatment to any private organization or individual."*

I bring this up because, after 20 years of working on livestock grazing issues on public lands and, with other WWP staff, having reviewed EAs and EISs on hundreds of grazing allotments, it is my belief that these documents are used to justify decisions that are already made and basically constitute a "shell game" in which evident degradation by livestock is explained away in every case due to some other cause even though livestock grazing is widely recognized in the scientific literature as a cause of degradation to riparian areas, water quality, plant communities, soils and wildlife. I cannot recall a single instance in all these cases, no matter how serious the environmental degradation, when the agency (Forest Service or BLM) performed an objective, science-based monitoring and analysis process directed at making an objective and logical decision concerning livestock grazing. Invariably, the decisions arrived at thru these NEPA documents have amounted to a continuation of the status quo with at best, cosmetic changes that make little or no difference on the ground. It is time for BLM to demonstrate to the public that it has engaged in an honest, objective process in order to restore the public trust.

Yours truly,



John G. Carter, PhD
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[133] http://www.usdoj.gov/jmd/ethics/generalf.htm