**Red Ryder Alternative Forest Treatment Actions**

**Alternative Actions to Conserve, Enhance, Restore Natural Vegetation Communities, Native Biota, Ecological Processes and Forest Resiliency**

It is our observation that the forest environment here is highly complex, and that there is a mixture of vegetation community types and age classes. Insect mortality of some stands may have helped to increase site diversity and “patchiness”/mosaics – which the Forest appears to consider a desired state in the Forest plan.

Thus, it seems that the radical clearcutting, extensive risky burning and other expensive proposed treatments will actually make the Forest more uniform, and less diverse, and may actually increase fire risk. The treatments will create hotter, drier, windier sites with a longer fire season. Removing woody vegetation is likely to result in increased ATV or vehicle or other human use that results in increased human0-caused fires.

In this process, Alternative actions must be designed to:

1. Protect remaining relatively intact riparian, mountain shrub, sagebrush, mountain mahogany, aspen, conifer and other native vegetation communities and the habitat values they provide. Maintenance and expansion of mature and old growth vegetation communities is a high priority, given their relative scarcity in the landscape and important values for biodiversity, migratory birds, sensitive species, watershed protection, buffering lands from the adverse effects of climate change and providing natural resiliency. They are also vital for a wealth of recreational uses and enjoyment by the public. What are the areas of mature and old growth vegetation communities present in the project area, and the surrounding landscape? Where are all existing early successional communities? What data has the agency relied upon to determine community composition?
2. Aid passive restoration of lands that are “at risk” of weed invasion and/or suffering various forms of degradation or health problems, or are facing losses of native plant and animal species. Passive restoration allows natural processes to take place (such as keeping insect insect-killed trees in situ to provide shade, nutrients, and carbon sequestration through natural decomposition of dead and dying trees on the forest). This will help buffer effects of climate change stress and natural and other disturbances. Seinfeld et al. 2006 describes how deforestation/clearing trees and also grazing promote desertification and climate stress. Beschta et al. 2012 describe how grazing disturbance amplifies the adverse effects of climate stress. The agency must act to manage lands as an important stronghold for native terrestrial and aquatic species, vital source of water, biodiversity, and a recreational treasure for the public in this landscape that is heavily used for recreation.
3. Provide for careful and targeted active restoration focused on removal/reduction in disturbance activities. Active restoration specifically includes the removal of harmful livestock facilities (and often linked roads), existing roads (such as those from past treatment, logging or other projects), and ATV trails that are causing ecological problems, or other developments that may be damaging important, sensitive and imperiled species habitats, species populations, and watersheds and adversely impacting ecological processes.

Livestock facilities concentrate livestock and foster sites for weed in infestation and then outward spread by livestock. Actions include systematic inventory of human developments exerting unnatural impacts. Thus. Actions like removal of harmful fences and water developments (wells, pipelines, troughs, water haul sites), salt/supplement sites, sheep camp sites, and associated roading or other disturbance must be considered. Sites of more intensive livestock disturbance (and often associated motorized activity) serve as epicenters for initial weed invasion and then subsequent outward spread – including by livestock as weed vectors, and in the trampling and other soil disturbance livestock cause across arid landscapes. The concentrated disturbance at these sites promotes degradation and weeds. The spread of weeds outward from these sites incrementally eats away at the fabric of the ecosystem. It degrades crucial habitat components required by wildlife and aquatic biota whose habitat is destroyed by pollution, sediment, livestock waste, loss of water-holding potential, etc.

Examples of active revegetation restoration: Restoration of important seasonal wildlife habitats and/or stream corridors where habitats are altered and degraded by grazing, fire, roading, treatments, logging. Planting native woody vegetation to help anchor plant communities, stabilize watersheds, reduce weed threats, and buffer climate change stress will provide help moderate site conditions, provide coloing shade, moderate wind and potentially shorten the fire season on specific sites.

Re-forestation/re-planting of sites with poor recovery from past logging, treatments or fires must be given high priority. Providing protective shading vegetation will help keep moisture on the mountain longer, stabilize watersheds, and re-connect fragmented habitats. Where are all such sites with poor recovery? Where are all areas of past logging/treatment log decks, skid trails, burn piles etc.in this landscape? These sites are often bare and weedy for decades. They often result in persistent openings in forested cover.

1. Provide for active restoration of intermediate wheatgrass or other seeded exotics, or cheatgrass or other weedy species areas. Understories must be protected from undergoing further weed expansion. Under no circumstances undertake any more cutting, burning, or purposeful destruction of mature and old growth native vegetation. A full analysis and mapping of all areas where past seeding, vegetation “treatments”, logging/thinning etc. have taken place must be provided. This includes analysis of the ecological consequences of past projects – including those undertaken many decades ago where the agency often overtly stated “treatments” were for livestock forage, or for logging.

ALL existing logging, vegetation treatment, fuels, seeding, fire rehab or other projects in and surrounding the project area must be fully inventoried and mapped as part of a valid scoping process.

**Baseline Plant and Animal Species Inventories Are Essential**

Full baseline inventories for all important, sensitive and imperiled species must take place across the vegetation communities of the project area and surrounding lands. The agency must understand what species occupy these lands, and the current status of their habitats, populations and population viability, the degree of habitat fragmentation, where the most important seasonal habitats are, and connectivity between habitats. This is necessary to understand how the proposed projects may alter or destroy prime habitat use areas - lands essential for all species seasonal habitat need, for the ability of animals to move between seasonal habitats and disperse across the landscape. Habitat security needs of wildlife must be fully examined.

The proposed agency actions in many sites will radically alter and destroy prime habitat areas – resulting in habitat loss and substantial habitat deficits for many decades to come (or permanent loss if weeds choke out recovering native species). If the agency treatments proceed as proposed, there will be large-scale loss of mature and old growth stands of vegetation in the project area. Understanding the current status of these communities in the project area and surrounding landscape is essential to develop a reasonable range of alternatives in a new Scoping proposal for this project, and to assess the potential significant adverse cumulative effects of the action.

**No Grazing Alternative and Mitigation Action**

Please fully analyze environmental effects of a No Grazing Alternative to protect watersheds and habitats from invasive species infestation and spread, and to allow rehab and restoration of sites vulnerable to invasive species to take place. This will also alleviate stress on forested vegetation from livestock compacting soils, eating and trampling young plants, and altering the composition of plant communities (including in the aftermath of any treatments). This analysis is essential to set a solid comparative ecological condition and effects baseline and fully understand the significant ecological toll of any continued grazing use, including in hindering potential restoration of sites targeted for various agency treatments. The agency is highly unlikely to adopt this across the landscape due to entrenched agency mindsets and political pressures from public lands ranchers. However, the removal of grazing disturbance must be examined in some land areas (pastures and/or allotments that retain significant native species values but are at risk of weed invasions and/or significant losses from climate strass) while grazing continues at some level in more degraded lands.

Please carefully examine the ecological benefits and economic cost-savings and value of waters, wildlife and wild lands, and the real restoration potential, of lands that do not suffer chronic grazing disturbance. See Ohmart (1996), Earnst et al. (2012), and the robust native wildlife populations at Sheldon and Hart Mountain NWR.

**Removal of Grazing from Sensitive Areas, and Limitations on Any Grazing Use that May Continue**

Please focus on removal of grazing from sizable areas of vital importance for sensitive species conservation in the landscape. Please fairly and honestly overlay values of land areas -such as habitats of sensitive terrestrial and aquatic biota, native raptor species, wintering migratory birds, native predators and big game.

After carefully identifying all of these values based on current site-specific surveys including species surveys and careful assessment of habitat quality and quantity during the appropriate seasons of the year, please determine all the conflicts that exist with imposing livestock disturbance in the area.

Then act to remove or greatly reduce livestock conflicts with species needs for food, cover, space, water and habitat security. The process should develop alternatives (in any areas where grazing occurs) that significantly reduce livestock grazing to levels below actual use in that land area.

This analysis must overcome long-standing entrenched resistance to considering the adverse impacts of livestock grazing disturbance – from the adverse effects of the physical presence of grazing and trampling livestock to the ecological damage to resources that the livestock trampling, grazing, waste deposition, and other disturbance and impacts cause.

A range of alternatives must include actions that remove livestock grazing disturbance and remove a significant portion of the battery of harmful fences, water developments, salt/supplement and other weed spawning sites from large portions of the landscape in important habitats for sensitive and rare species, migratory birds, native predators and other species conservation. This action will provide essential habitat security and will reduce disturbance, degradation and fragmentation. It will reduce fire risk by helping natural processes.

In any areas where grazing might continue, the agency must significantly reduce grazing levels far below the actual use that has been occurring. The agency must honestly apply much more conservative and required measurable mandatory limits on livestock use as triggers for livestock removal from land areas being grazed. This must be coupled with avoidance of any grazing/trailing disturbance during sensitive periods of the year - including during nesting, brooding, birthing, young rearing and wintering periods.

These conservative levels of use must include both riparian and upland trampling standards. Please include specific required measurable standards that protect microbiotic crusts, understory components and shrub structure. These must be incorporated as mandatory measurable Terms and Conditions of grazing permits.

In order to prevent annual exceedances of standards, these standards must serve as triggers for livestock removal from the land area being grazed. The use standards must be mandatory, and be required to be met annually. The agency must commit to annual during and after grazing period timely monitoring, or livestock cannot be grazed. Monitoring sites must be based on use pattern mapping, and must reflect areas that are receiving significant livestock use. It is these areas that are the “weak link” and provide inroads for invasive species and their subsequent inevitable expansion in grazed arid lands. Please provide all use pattern mapping for this current analysis.

**For any lands that continue to be grazed**:

The use levels that must be applied must leave 9 inches of residual native grass cover across native understory communities. This must be applied to all species of the native perennial grasses and forbs that are present. It must be based on valid monitoring sites, i.e. sites actually used to a considerable degree by livestock. It must not be based on the current tend sites that were often chosen in a process where the ranchers had veto power, and typically represent areas of minimal use. We are concerned that the agency may rely on cherry-picked sites distant from water or less used by livestock where larger statured grasses may remain in otherwise largely depleted landscapes. See Catlin report on many biases in agency monitoring.

Only one grazing disturbance bout (including trailing) can be allowed annually in a land area. Otherwise, “double dipping” – or repeated use of vegetative resources and multiple disturbances to soils, wildlife, watersheds, etc. will occur. Multiple and repeated use periods are harmful to sage-grouse, native vegetation, soils, microbiotic crusts, watersheds, etc. Under repeated grazing bouts in the same year, native vegetation will be rapidly depleted. Plus total livestock forage use may significantly exceed the percentage that is allowed. This is due to plants re-growing between grazing bouts. Trailing should not be allowed back through areas that have been grazed.

All livestock should be moved into, and out of areas, all at once. No stragglers. Do not have multiple herds moved into and out of pastures. This causes even further disturbance to lands the livestock transit through. There should be no repetitive grazing. This also makes it impossible to tally how many livestock are actually being grazed. There must be methods applied to verify stocking numbers and locations/whereabouts of livestock (GPS). This can help ensure that trespass and unauthorized use does not occur, and that livestock stay out of sensitive areas and avoid conflicts with important values.

Typically, a 10-15% upland utilization standard must be put in place. It must be measured at sites that are actually used to a significant degree by livestock. Please do not apply 30% or 40% utilization –because this is greatly inadequate to prove necessary protective vegetative cover. It is inadequate to promote adequate recovery of depleted understories, and to help limit livestock damage to shrub structure. No matter what size grasses may be present, utilization measured by the agency is averaged, or at times a median is used, across the grass plants that are grazed. So typically, when an area “averages”/or “has a median of” 40% utilization, this means that many grass plants are actually being grazed to very harmful levels of 60-80% use – or even > than 100% use if repeated annual grazing bouts occur. With even one time grazing use this severe, grazing livestock can severely harm or kill native bunchgrass plants by removing growing plant parts and depleting scarce root reserves. This also exposes the grass crown to winter freezing damage or summer heat-desiccation. See USDI Technical Bulletin Anderson 1991, Mack and Thompson 1982. Maximizing residual grass cover is crucial for sage-grouse, many other native biota, and watershed protection and stability. Note: Shrubs should not be crushed, thinned, hacked, mowed, chopped and/or poisoned under the excuse of “releasing” grass understories. In areas with depleted understories, aerial seeding of local native ecotypes during favorable moisture years and removal or large-scale reduction in grazing should be focus of understory improvement. In this process, please must actively RESTORE and replant native shrubs and trees to anchor the plant community.

There must be no grazing disturbance during active or critical growing periods for native grasses and forbs. See Anderson BLM Tech. Bull. Besides weakening and/or killing native plants, it is very difficult if not impossible to accurately measure how much use occurs when plants are grazed while actively growing. Please also note that some grasses green up with fall rains, and are actively growing starting in fall and much earlier in spring than agencies typically admit.

The lands contain very erodible soils and steep and rugged terrain. Erosion in wind and water must be sharply limited. WHAT rates are currently taking place due to grazing impacts and disturbance? Please apply an upland trampling standard to limit disturbance to soils, microbiotic crusts, and native plants including seedlings. This must require less than 5% livestock trampling of the area of a square meter monitored at representative typically grazed sites across the pasture.

No areas of a pasture and allotment, including those receiving the most livestock intensive use, should be allowed to receive greater than 10% of the surface area being trampled. Ranchers have horses and herders, and must be required to work to reduce concentrations of livestock. These disturbed sites create epicenters of disturbance where weed invasion starts. Then weeds spread outward due to chronic livestock disturbance. Livestock are vectors, of weed spread, as well – through mud on hoofs, seeds lodged in fur, and in their waste products. Plus manure contains nutrients that promote weeds. See Belsky and Gelbard (2000). All of this exacerbates the adverse effects of climate change. Beshcta et al. 2012, 2014. Please review Comer et al. Great Basin Rapid Ecological Assessment that considered a large number of stresses on arid lands (the circa Interior Columbia assessment was very poor, so we refer you to Comer et al., and also the older Interior Columbia Basin Ecosystem project documents for ecological analysis parameters).

Stocking levels and requirements for active herding must be properly applied so that these standards can be met during every grazing disturbance episode. This all provides for protection of microbiotic crusts, a frontline defense against cheatgrass and other invasive species. See USDI BLM Belnap et al. 2001 BLM Tech Bull, Deines et al. 2007,Ponzetti et al. 2007, Serpe et al. 2007. This will also aid in reducing cheatgrass and other weed invasions and reducing fire risk, as part of an Integrated Vegetation/weed Management Plan

Please also include all management and herding controls necessary to minimize conflicts with native predators.

Belsky and Gelbard 2000, Reisner Dissertation 2010, Reisner et al. 2013, Chuong et al. 2015 demonstrate that grazing causes cheatgrass and other weeds. Summing up following analysis of various grazing scheme contortions, Manier et al. 2013, GRSG *Baseline Ecological Report*, finds that very often grazing systems do not work, and that removal of grazing stress is the most effective for preserving sage-grouse.

At least 6 inches of stubble height must remain on all riparian/spring/meadow area herbaceous species at all times, including drier sites not right on the greenline. This must be applied to all species – not just Nebraska sedge - and during all periods of livestock use. Riparian shrub browse and/or breakage must be limited to 5% of livestock-accessible new growth.

10 years of rest of pastures with damaged riparian resources must be fully considered to jump start recovery, and prevent further degradation.

In lentic, lotic and meadow sites - areas back from the green line must be measured and monitored. Similar standards must be applied in these areas, too. Cross-section monitoring must also take place. Mesic and meadow areas that are not right by the water’s edge are much less likely to regrow – yet are critical for protecting and conserving vital watershed values, and protecting riparian/meadow areas linked to proper aquatic habitat conditions for native biota. Standards and monitoring of this type are essential to provide sage-grouse brood rearing and recovery of habitat components for species. So much surface area of the springs, seeps, meadows, and former floodplains have already been lost. Maximizing protection of what is left is vital.

Agencies have long biased monitoring of impacts by measuring only the thin greenline right by the water’s edge. This is heavily biased to tracking only those species most likely to regrow following heavy grazing rather than the vegetation in the adjacent riparian/meadow area. See for example, Ohmart (1996), Belsky et al. (1999). This must be measured during and at the end of the grazing period. Exceedances during the grazing period must serve as triggers for livestock removal from the pasture.

Please also apply shrub protection standards, and require shrub structural integrity standards. No sagebrush plants or other shrubs and aspen shoots, mountain mahogany, mountain shrub anywhere in the pasture should receive more than 5% breakage, browsing, or other impacts.

All of these standards must be applied as triggers for immediate removal of livestock from the pasture. If the use level is reached, the livestock must be moved out.

If any of these standards are exceeded in any year, livestock reductions in numbers will be put in place  - with reductions of 25-50% for each violation along with more herding and other requirements. If ranchers are unable to meet these standards, they are unable to control their livestock, so the herd size is too large.

If standards are exceeded in multiple years during the term of the permit, livestock grazing must be ended in the pasture.

Please commit to adequately monitoring aquatic habitat conditions, water quality, and water flows on a regular basis. Please include specific standards and recovery thresholds to meet under a specific time-frame for bringing about improvement. The current baseline of flows, and study of the types of springs and streams and their characteristics must be conducted.

Analysis must determine the degree of impairment – from grazing to the watershed, grazing near the riparian sites (riparian and uplands), and from any livestock developments. Please assess risks of further headcutting, flow reductions, etc. if grazing disturbance continues. Full information on flow rates during the seasons of the year must be collected as part of this process. Any existing information (from water rights surveys or previous riparian studies) must be provided. Please factor in the likely stresses from climate change on flows and riparian systems.

No grazing can occur in native fish and amphibian habitats when redds and/or egg masses are present, or if watersheds are unraveling. When and where does this take place across the project area, and what species are impacted?

Please fully document the needs of aquatic and terrestrial species for over-wintering, and the conditions for that the animals face.

Salt and especially supplement will not be used. Livestock trailing to salting/feeding sites - and the impacts of concentrated use at these sites – severely alters and reduces native vegetation. These disturbed sites provide centers for weeds to spread outward from.

Feeding supplement is the same as forage mining. Supplement use has expanded in lands where livestock have so greatly depleted forage that ranchers must resort to artificial “feed” to get the livestock to subsist. Cattle greatly degrade lands surrounding sites where this harmful substance is placed. It may also contain antibiotic like substances or ionophores that enable the cows to eat wood – so they further damage the sagebrush, bitterbrush and other native woody shrubs. Large concentrations of livestock waste, which promotes weeds/invasive species. Belsky and Gelbard (2000). Please determine what compounds may be in any supplements being fed to livestock, as well as pharmaceuticals being used on livestock that may pollute waters, and adversely impact aquatic biota. The agency must assess potential adverse impacts on aquatic biota, wildlife, and human recreational users.

*Seasons of Use*

No grazing or trailing will be allowed in wildlife habitats during nesting, birthing, young rearing periods. This period is March 1 through July 1 or later. With native raptors like golden eagle the period may be considerably earlier. This must be applied to all habitats, and to protect nesting migratory birds as well, or animals with young in burrows, raptors sensitive to human disturbance, etc. These habitats must be fully identified as part of the current process. Every effort must also be made to avoid grazing areas critical for nesting, birthing, brood rearing, fawning, calving, rearing young and wintering.

There must be no grazing disturbance in important and rare aquatic species habitats during periods when spawning takes place and redds are present. What are the affected species, what are these important times, and how can such disturbance be avoided?

No grazing will be allowed in big game and other important habitat during winter periods, to prevent stress, disturbance and displacement. This must be applied to all sagebrush habitats potentially used by grouse and/or wintering big game. These habitats must be fully identified as part of the current process. This protects birds, wildlife and native predators from disturbance and displacement by livestock management activities.

In all instances of avoidance, livestock use must not be shifted and intensified into other fragile sites or vegetation communities, or other rare species impacted. Reductions, not shifted use, must be employed.

This serves to reduce and minimize livestock subsidies predators. It reduces the presence of livestock that disturb and displace animals, and alter habitat during reproductive periods for native biota.

Similar avoidances must be applied for all aspects of this proposal including the use of the road network to access the sites.

**Restoration Actions to Protect Lands from Further Irreparable Harm**

*Restoration Actions – Both Active and Passive*

For Passive Restoration actions, please carefully analyze all of the following:

Removal, or very significant reduction, of livestock grazing use to levels far below actual use.

Removal, or very significant reduction, in the livestock facility footprint due to an array of adverse impacts including habitat fragmentation, weed infestation, mesopredators and nest and egg predator attractants, West Nile virus mosquito habitat, etc. This will help reduce predation, injury and mortality and diseases like West Nile virus. It also will help heal damaged lands and promote habitat security, as facilities are often the cause of de facto roading. Thus, this helps prevent invasive species through limiting disturbance and providing opportunities for road closure – and thus a reduction in road conduits for invasive species spread.

Removal, or very significant reduction in the livestock management disturbance footprint on the landscape. Road closures to protect species (such as big game winter range and nesting/young rearing season closures) must apply to ranchers, too. Full analysis of the adverse footprint of the existing road network on watersheds and sensitive species must take place.

Removal, of livestock grazing associated disturbances must occur so that the composition, function and structure of the components of the native ecosystem can recover before weeds choke out remaining understories, and aid in resiliency of natural community processes. Road closures and/or greatly limiting road blading disturbances helps to prevent weed invasion and outward spread by livestock into disturbed grazed sites so that natural recovery may occur.

With all springs and meadows, please detail the current ecological conditions, and site characteristics – such as location in fragile headwaters, the type of spring, water flows during low flow periods, and catalogue any changes in flows or conditions over time with use of comparative water survey, aquatic studies, or other information. See Sada et al. 2001, BLM Tech. Bull., and Sada et al. 2016, for example discussing degradation and threats to springs and seeps in the West Please assess the ecological condition of all springs, seeps, meadows, etc. so the ability of the system to withstand project disturbance can be understood.

How is livestock grazing or past treatments or high recreational use impacting each of these areas? Where have flows been lost and to what degree? What levels of bank slumping, head-cutting and other erosion is taking place? What types of springs are present? Are springs and stream headwaters dependent on snowmelt? How would proposed treatments affect snow melt? For example, burning or deforestation clears shading vegetation and may make watersheds more vulnerable to rapid runoff and erosional events, and t earlier snowmelt and site drying – thus prolonging the fire season. Further, clearing woody vegetation results in easier human access (and potential human-caused fires).

Active restoration: Removal of fences: to reduce avian mortality; to reduce intensive disturbance zones; to reduce predator travel corridors; to reduce nest predator perches; to reduce brood parasite perches; to reduce habitat fragmentation. Please calculate the current fence density, and the map and thoroughly analyze the configuration of fences in relation to all sensitive species seasonal habitats.

Active restoration: Removal of livestock water troughs (including haul sites), pipelines, spring developments and wells to reduce livestock disturbance to surrounding soils, microbiotic crusts, and native vegetation and to promote the health and passive recovery of all components of the ecosystem. A full assessment of the volume of water removed and al impacts of developments, on perennial flows and ground and surface waters must be provided. Baseline studies of magnitude of changes in water flows, aquifer depletion, etc. must be provided as a baseline for understanding trajectories of water loss and depletion.

Active restoration: Where possible without further damage to springs/water sources, remove water line piping and maximize surface water at spring/stream sources supporting diverse riparian and meadow vegetation, i.e. try to bring the spring system back to as natural a state as possible by reducing water removal form the spring site/source. Putting water back on the ground at the spring source helps expand wetted area capable of providing mesic vegetation.

Promote natural healing and re-vegetation of headcuts to the maximum extent possible by limiting disturbance throughout the watershed. Do not merely dump rocks and boulders into headcuts – as this often destroys the potential for any real natural recovery of meadow systems. It often leaves dying riparian areas permanently cut off from former riparian/mesic zones. At times, a combination of methods may need to be used but simply plugging headcuts without providing for the ability of natural riparian/meadow recovery and natural water flow channels to some degree is not acceptable. At times, some structures or armoring may be used. But this cannot be divorced from integrated watershed recovery. Minimize digging in any site due to likely cultural resources conflicts as well as risk of making matters worse by puncturing clay layers where water seeps out, or creating new areas of weak soils that will erode in runoff events.

Active restoration may also require seeding with local native ecotypes in areas of more livestock intensive use/weedlands caused by livestock concentrations. This should not result in removal of shrubs.

Active planting of forested vegetation and shrubs help to minimize weed expansion risk, and helps to moderate site conditions by trapping snow, shading ground surfaces slowing snowmelt and runoff and providing for shorter fire seasons, protects soil surfaces, minimizes disturbance to microbiotic crusts, and provides safe sites for establishment of native understory species.

Benefits of these above actions must be planned in concert with changes, reductions, and/or significant rest from grazing to promote: Recovery of composition, function and structure of ecosystem components; Removal of disturbance epicenters of weed infestation and spread; Removal of facilities and conditions promoting West Nile virus. Note: Rest means a 5-10 year period, or longer. Rest-rotation systems have been big failures, and do not provide sufficient rest for recovery of lands facing multiple weed and climate change threats. They may also be quite harmful as many animals return the next year to areas where they successfully hatched nests and/or reared young, and experienced animals often have greater success.

Other benefits of proposed actions: Prevent migratory bird, bat and small animal deaths from drowning. Promote recreational uses and human health as these areas resemble stinking vile cesspools, and harbor water-borne and airborne bacteria (including when surrounding dust and dung are stirred up by livestock). Benefits also include cleaner non-polluted water, reduction in potential hoof-pocked riparian margin sites that serve as breeding areas for West Nile mosquitoes. Promote persistence of perennial surface water flows. Buffer natural systems from adverse impacts of desertification and climate change. Promote integrated weed control through reducing or eliminating prime weed invasion sites.

Active restoration: Ripping/recontouring of roads and planting with native local ecotypes of shrubs and grasses. Many roads on wild public lands were unplanned, and simply were driven in as livestock facilities and salting/supplement feeding proliferated. With rollbacks in the infrastructure footprint many of these can be removed and rehabbed to limit weed spread and provide greater habitat security.

*Exotic Seeding Removal/Restoration*

Active restoration of exotic seedings to minimize invasive species problems in an Integrated way must be conducted through:

* Inter-seeding of sagebrush or other woody vegetation and forbs.
* Removal of exotics and planting of native understory species with techniques minimizing use of herbicides

Active restoration of cheatgrass/weed infestation areas without loss of existing shrub cover to the maximum extent possible. See Prevey et al. 2009 describing sagebrush/shrubs anchoring the plant community.

In all cases if any seeding occurs – as part of the current process or in future fire rehab - local native plant ecotype seeds and seedlings must be required to be used.

By far the cheapest and most cost-effective method to recover and restore plant communities is to remove livestock grazing and trampling disturbance from those communities that have not yet undergone significant weed invasion. These communities will be buffered to help limit weed infestations. This will also maximize site resiliency if fires occur. Understories will be in better condition and more readily able to heal. It is unrealistic to think that the agency can prevent wild land fires. So-called “fuelbreak” methods often proposed by the agencies often have very significant adverse impacts and are ineffective.

Adverse impacts of frequently proposed fuels treatments or fuelbreaks range from agencies planting aggressive weedy species to promoting more cheatgrass/weeds through removal of protective shrubs that shade and cool the ground. This then results in a hotter, drier, more fire-prone and more weed-prone site with a longer fire season. Cleared areas also invite OHV and other vehicle use. Human-caused catalytic converter and other fires are a growing threat.

We are very concerned about the agency use of various models (such as FRCC, other Fuels models, Ecosites, HRV, etc.) as justification for radical site disturbance and simplification or destruction of mature and/or old growth native vegetation communities. The “disturbance” intervals, fuels paradigms, and the scientific studies these are based on all must be detailed. Full review of available scientific information that may run counter to the typically short disturbance intervals used in much current agency modeling must be fully considered in developing alternatives and in assessment of all direct indirect and cumulative effects, and mitigation.

We are very concerned about agency reliance on complex “State and Transition” models, and other elements of the flawed NRCS Ecosites currently in vogue. These are speculative, often based on the erroneous fire and disturbance intervals as inputs, and are used to justify destruction of native communities to try to obtain some “ideal” state. Minimizing disturbance to promote natural recovery is critical. That involves maximizing, not reducing or fragmenting, native vegetation communities.

Do not rely solely on Ecosites- as these are often fraught with range biases. Especially do not rely on them to destroy native plants to meet some kind of ideal site. If native plants are present, be very glad, and protect and nurture them. Do not chop, mow, hack, rotabeat, aerate, herbicide, burn with napalm and drip torches, etc.

Only careful, targeted, well-studied site-specific highly selective hand cutting of individually marked trees in areas specifically and honestly identified as in need of restoration should occur. Ecosite/NRCS “reference” or other reference sites the agency may be using must be fully identified, as well as any studies of disturbance intervals. A map of any claimed reference sites must be provided so that the public can understand and verify the validity of claims being made about native vegetation communities and ecological conditions.

All existing exclosures in the area or lands closed to grazing must be identified and ecological conditions studied to provide insight into adverse grazing impacts. If past trespass has taken place, this must be disclosed.

Short and long-term monitoring sites must be established based on site visits with all Interested parties. These sites must represent areas receiving significant amounts of livestock use, and not the limited use “trend” sites.

All of these actions must be fully considered and applied to protect the values of the ecosystem. Agencies frequently attribute problems with lands and waters to historic grazing – ignoring that the current chronic grazing disturbance incrementally eats away at the remnants. Grazing prevents or greatly slows “recovery” following treatments, and is a significant cause of many conditions the agency finds to be problematic when justifying large-scale treatments. Even if one were to believe that “historic” grazing caused so many problems one sees on public lands, there are now scientifically recognized new threats – climate change stress, invasive species, depleted and fragmented habitats from past treatment, logging, pile burning, prescribed or other fire, etc. Continued grazing and trampling depletion and disturbance amplify these threats. Grazing causes and/or exacerbates other “threats” that the agency often relies on to brush problems away – like cheatgrass and fire.

Please apply criteria that determine if damaged areas -such as springs, seeps, intermittent drainages, damaged headcutting streams, or uplands highly vulnerable to weed spread and other areas can withstand any continued grazing disturbance. Mitigation by avoidance must be conducted – and it must involve pulling livestock use back to existing pastures, not carving the landscape up into even more pastures.

If wildfires occur, removal of livestock for a minimum of 10 years must be required. Specific recovery criteria for native grasses, forbs, shrubs and microbiotic crusts must be applied and attained before grazing can again resume. Following any fires, re-seeding rehab will only use native species, will use local native ecotypes, and will mimic natural spacing patterns – i.e. dense wheat field like seedings of tall coarse cultivars will not occur. Following any fires, rehab will not result in building temporary or other fences. Instead, grazing will be removed from the pasture and/or allotment in order to provide undisturbed habitat and buffer conditions for species just suffering new habitat loss.

**Hold Harmless, Removal of Dead Livestock and Other Prudent Measures to Limit Predation** **and Minimize Predator Conflicts.**

The agency must require that permittees accept predator losses as a cost of doing business, i.e. abide by a hold harmless policy.

No livestock grazing, trailing or associated activity during the breeding, nesting/birthing and young rearing season for native wildlife should take place. These sites must be identified, and use avoided.

Dead livestock must be removed from public lands where in any way feasible.

No calving/lambing operations can be allowed on public lands. This will help control mesopredators.

No temporary water haul sites can be allowed, and no artificial water sites including from pipelines can be allowed during breeding season (includes nesting and early brood rearing for GRSG and migratory birds and young rearing period for other native wildlife).

No sheep camps in or near any sensitive habitats Sheep camp sites must be sharply limited, and identified in advance. One-time intensive cattle or sheep concentration can destroy native vegetation and promote weed proliferation.

The full public lands grazing disturbance footprint of operations must be fully examined.

**Capability, Suitability, Sustainability Analyses**

The agency should conduct a current capability and suitability analysis of the affected lands. Baseline mapping and analysis data must be provided that shows how the existing capability and suitability was determined.

When, where and how were the existing capability and suitability studies conducted? What is the data and scientific studies that were used in this analysis? How current is this information/ How was climate change stress factored in? Susceptibility to exotic species expansion?

We are very concerned that lands found in the past to be suitable for grazing use may no longer be suitable if sustainability of sensitive species is jeopardized, or the ability of the lands to buffer climate change effects is compromised.

We are very concerned that treatments that cut, log, chop, burn or otherwise treat woody vegetation may provide livestock or ATVs access to areas that previously were less used or less accessible.

This may result in new and expanded ecological harms through both treatments and livestock access to remnant better condition sites or areas that may be vital refugia for rare native species. This may also result in livestock trailing acres or through and grazing in, areas that are not capable of supporting livestock use –significantly aggravating soil erosion, water pollution, and other impacts/

We request that the agency conduct a current capability and suitability analysis, fully taking into account climate stress, lowered site resiliency from climate stress, potential lowered site resiliency from treatment disturbance effects, and other stressors.

All of this information and analysis is necessary to determine what level of continued livestock use, or imposition of treatment disturbance stress, if any, is able to be applied and not impact sustainability of resources (soils, native vegetation, water flows, watershed processes, sensitive species habitats, etc.).

**Herbicide Use Concerns**

The project disturbance is highly likely to result in an expansion of herbicide use over significantly increased land areas, involving many kinds of toxic and polluting chemicals. These substances will be infiltrating and drifting into: air, soils, water (water in small springs and streams that is vital for aquatic biota and waters used by recreationalists), native pollinator habitat, wildlife water sources, aquatic species habitats), non-target vegetation, habitats of rare plants and animals and bodies of important and sensitive animals. There will now be more even more toxic chemicals and their polluting active ingredients, adjuvants, breakdown products and degradates in the Forest environment. The chemicals may also potentially be used in combination, or in overlapping areas in a manner that has never been adequately assessed.

What are the risk assessments, and environmental analyses that the Forest relies upon for the use of herbicides in this landscape? Much BLM and the USFS chemical use relies on risk assessments primarily from a long out-dated BLM Vegetation EIS from 2007. Since the EIS was prepared, there is new scientific information on adverse and polluting effects of many these chemicals. It is also increasingly recognized that these chemicals have an adverse effect on human health, so extensive chemical use in the aftermath of treatments threatens recreational users, especially those that may have chemical sensitivities.

What types and amounts of chemical herbicides have been used in the past in this landscape Forest? Where? How have they been applied? When, where and how has drift occurred? What have the effects been on non-target species? How has this been monitored? When, where and how much of each chemical has been used in the past? How does livestock grazing disturbance, and the road network, or recreational uses, contribute to the use of chemical herbicides? We are very concerned that although the Forest on paper claims to practice integrated weed/vegetation management, agency treatments rely overwhelmingly on herbicide applications without strong preventative actions and precautionary controls on disturbances that foster weed infestation and spread. This is a critical concern across the project area, because of the high levels of livestock grazing taking place with few to no mandatory actions to limit weed spread – plus the existing proliferation of roads and often high levels of recreational activities in many areas.

Differing allocations and provisions of the Forest Plan are often internally at odds with one another. The ramifications of inflicting large-scale ecological disturbance may be at odds with other promised management for watersheds, sensitive wildlife, recreation, protection of cultural sites, etc. to be achieved. Often, elements of the Plan do not adequately address climate change stress on ecological systems, making the uncertainty of the effects of the proposed project disturbances even greater.

We are concerned that the agency does not follow effective integrated weed prevention, or adequately assess and mitigate the adverse effects of what is largely a “Spray and Walk Away” approach. For example, livestock are herded routinely from weed infested areas onto public lands without preventative quarantining or other measures. Livestock are turned out on lands with known weed infestations. Now proposed “Treatments” may take place in areas with known infestations highly likely to expand with added disturbances.

The project will be very expensive, and use chemicals with high potential for drift and contamination of soil and water, and harms to habitats and populations of important, rare and TES species as well as damage to scenic wild lands areas. HOW expensive will the battery of proposed treatments be?

**Zoological Area Designation**

Please consider designation of Zoological Areas and/or RNAs as part of this project, to protect important rare species habitats and watersheds from invasive exotic species and the disturbances (grazing/facilities, logging, vegetation treatments) that cause them.

**Additional Integrated Invasive Species Alternative and Mitigation Actions**

Livestock should be quarantined before being turned out on the Forest if they are coming from areas of known weed infestations on BLM, state on private lands. Permittees should be required to certify livestock have not recently been grazed in areas with known infestations.

Areas with known weed infestations of concern must be identified, and livestock grazing pulled back, at a minimum to existing pasture boundaries to avoid expanded disturbance and weed spread.

Restoration of these infested sites must be undertaken, and native species established, before grazing is again imposed.

**Treatments**

In any vegetation treatments, maximize retention of native woody vegetation to moderate site conditions, anchor the plant community, provide cooler moister sites more resistant to cheatgrass and other flammable annual grass invasive species spread. Selective hand cutting should be used in any woody vegetation treatments, and woody material should be left on site to help stabilize soil, replenish nutrients, help retain moisture on site, and generally moderate site conditions in the face of climate change stress. Removal of wood and/or biomass reduces the ability of the land to buffer climate change effects, absorb carbon dioxide, and the ability to stabilize soil, replenish nutrients, help retain moisture on site, and generally moderate site conditions in the face of climate change stress.

The agency should rely on natural wildfire ignitions, and not undertake artificial and often unnatural prescribed fire. We have frequently observed how “prescribed” fire is accompanied by intensive disturbance, but often many problems arise. Sites where targeted communities such as PJ are claimed to naturally occur (such as rocky outcrops) end up getting burned with napalm dropped from helicopters, for example. Stands of old growth or mature forested vegetation of all types ends up “accidentally” getting treated/burned.

Please contact us if you have any questions, or need any clarification of our concerns and alternative ideas.