USDI, Bureau of Land Management
Andrews Resource Area, Burns District

DECISION RECORD

Pueblo Mountain Pilot Project
Environmental Assessment
DOI-BLM-ORWA-B060-2018-0010-EA

BACKGROUND

The Pueblo Mountain Pilot Project Environmental Assessment (EA) (DOI-BLM-ORWA-B060-2018-0010-EA) analyzed options and issues identified by a diverse group of individuals (Harney County Wildfire Collaborative) brought together by the High Desert Partnership[1] to address fire suppression, fire prevention, and restoration on a landscape scale. The Pueblo Mountain area was selected for a 26,400-acre pilot project effort based on a variety of issues such as sage-grouse habitat, wildlife distribution, current vegetation, fire risk probability, effects of elevation, summary of fuels/vegetation and fire risk, weather/climate impacts, past fires, accessibility, response times, availability of water, grazing history, and wilderness study area (WSA) implications. This prevention project provides an opportunity to test and evaluate the effectiveness of each project and/or tool in preventing large "mega-fires".[2]

COMPLIANCE

The alternatives are in conformance with the Andrews Management Unit (AMU) Resource Management Plan/Record of Decision (RMP/ROD) (2005), as amended by the Oregon Greater Sage-Grouse (GRSG) Approved RMP Amendment (ARMPA) (2015), which currently guides the management of public lands within the AMU. Appendix A outlines goals, objectives, and management actions from both RMPs specific to this EA.

The attached EA is tiered to the Steens Mountain Cooperative Management and Protection Area/Andrews Management Unit (CMPA/AMU) Proposed Resource Management Plan and Final Environmental Impact Statement (PRMP/FEIS) and relevant information contained therein is incorporated by reference. The selected action was designed to conform to the following documents, which direct and provide the framework for management of BLM lands within Burns District:

[1] High Desert Partnership is a non-profit organization that exists to cultivate collaboration, and support and strengthen diverse partners engaged in solving complex issues to advance healthy ecosystems, economic well-being, and social vitality to ensure a thriving and resilient community.

[2] The Harney County Wildfire Collaborative uses this term to describe large, high-intensity wildfires: generally speaking, fires over 100,000 acres.

- National Environmental Policy Act (NEPA) (42 U.S.C. 4320–4347), 1970
- Federal Land Policy and Management Act (FLPMA) (43 U.S.C. 1701), 1976
- Maintenance of Range, Wildlife, and Wild Horse Improvements in WSAs in the Burns District (EA OR-020-05-080), 2005
- Integrated Invasive Plant Management for the Burns District EA/Decision Record (DR) (DOI-BLM-OR-B000-2011-0041-EA), 2015
- BLM Manual 6330, Management of Wilderness Study Areas, 2012 (See Rationale Section below)
- State, local, and Tribal laws, regulations, and land use plans
- All other Federal laws that are relevant to this document, even if not specifically identified

DECISION

Having considered the proposed action and no action alternative and associated impacts and based on analysis in EA DOI-BLM-ORWA-B060-2018-0010-EA, it is my decision to implement the proposed action by applying invasive annual grass treatments, changing the fuel structure and continuity, and adding water developments. Additionally, a finding of no significant impact (FONSI) found the proposed action analyzed in DOI-BLM-ORWA-B060-2018-0010-EA did not constitute a major Federal action that will adversely impact the quality of the human environment. Therefore, an environmental impact statement is unnecessary and will not be prepared.

The selected action consists of several types of tools to be applied at different locations within the 26,400-acre pilot project area (see attached maps) to attain desired conditions. Much of the work will focus on transitioning vegetation in close proximity to the road (see attached Vegetation Treatments Map) to state B[3] conditions, which are composed predominantly of native perennial grasses. Native perennial grass fuels retain fuel moisture for longer into the growing season than exotic annual grasses, making them less susceptible to ignition, and fuel continuity is generally much less in native perennial bunchgrass plant communities as compared to annual grass communities, reducing the ability of fire to spread. Additionally, grass fuels produce much less energy during combustion than shrub fuels, making fires in grass fuel types easier to safely control. Transitioning to state B will create a linear corridor needed for fire operations personnel to safely control movement of large wildfires.

Invasive Annual Grass Treatment

In the southeastern section of the project area, current conditions largely reflect states C and D. The intent of transitioning to the desired condition of state B will be accomplished using a variety of tools and techniques, discussed below, that are focused on removing

[3] "State" refers to generalized plant species composition and plant community structure. State "A" contains a mix of shrubs and perennial grasses that generally reflects the production potential of a site. State "B" is comprised largely of perennial bunchgrasses with reduced shrub presence. State "C" is made up of a shrub overstory with an abundant exotic annual grass/forb presence and reduced numbers of perennial bunchgrasses in the understory. State "D" is comprised mainly of exotic annual grasses and forbs.

annual grasses, minimizing the presence of shrubs, and increasing desired perennial bunchgrasses. Prescribed fire on approximately 1,072 acres will prepare the site for seeding (see attached Vegetation Treatment Map). Control lines will be established in preparation for the prescribed burn by removing a perimeter (15–30 feet wide) of the overstory vegetation utilizing mechanical methods (brush beater, chainsaws, or similar equipment). The width of these control lines will vary based on the height of the surrounding vegetation (taller vegetation will require wider control lines). Prior to/during the ignition of the prescribed burn, these control lines will be supplemented with commonly used treatments that may include: wet lines, foam lines (Silvex), and black lining along the perimeter. Ground-based ignition will take place in the fall in accordance with the prescribed burn plan. All details related to effectively carrying out the prescribed fire will be addressed in the prescribed burn plan (a standard for any prescribed fire done on agency land) and as directed in the Prescribed Fire Planning and Implementation Procedures Guide (United States Department of Agriculture (USDA) and United States Department of the Interior (USDI) 2014). This plan will assess conditions onsite and desired range of weather conditions, and predict the resultant fire behavior. This plan outlines resources needed to effectively and safely carry out and hold the prescribed burn under the determined range of weather conditions and the associated fire behavior.

Following the prescribed burn, the area will be treated for annual invasive plants following the District's vegetation management decision[4] and seeded aerially, mechanically drilled, or hand spread with a native seed mix determined by ecological site descriptions at a rate of no less than 12 pounds per acre. Every effort will be made to procure native seeds grown locally. If mechanically drilled, a horseshoe-shaped chain, box blade, cat tracker, or some other type of mechanical cultipacker[5] will be pulled behind the tractor to cover the seeds while minimizing appearance of drill rows. A cultipacker may also be used to help bury the seed following aerial seeding. In this treatment area, normal grazing operations will cease for two growing seasons within Oregon End Winter Pasture or until the density of perennial plants is 3–5 plants per meter squared at plot sites and plants have established root systems that can tolerate grazing and will not be pulled out of the ground by livestock, to allow seeded species to establish. (See the Adaptive Management Section below.) Plots will be established randomly following seeding.

Once perennials are dominating the site per ecological site descriptions within the prescribed fire treatment area, sagebrush seedlings will be planted in islands outside the mowed road buffer area (50–100 meters).

Change to Fuel Structure and Continuity

Conditions in the northwest section of the project area are largely reflective of state A; minimal annual grass presence and a sagebrush overstory with a perennial bunchgrass understory. In this area, transition to the desired condition of state B will be accomplished

[4] Integrated Invasive Plant Management for the Burns District EA/Decision Record (DR) (DOI-BLM-OR-B000-2011-0041-EA), 2015
[5] A cultipacker is a piece of agricultural equipment that crushes dirt clods, removes air pockets, and presses down small stones, forming a smooth, firm seedbed. Where seed has been broadcast, the roller gently firms the soil around the seeds, ensuring shallow seed placement and excellent seed-to-soil contact.

by removing shrub canopy along the road on each side for a width of approximately 50 meters or 164 feet and for a distance of approximately 9.5 miles. Shrub canopy removal will then be feathered into the landscape another 50 meters or 164 feet. In other words, the further away from the road, the less shrubs will be removed. Shrub canopy removal will be conducted by motorized/mechanized equipment, by hand, or a combination of both. Determination of tool (motorized or by hand) will be based on factors such as amount of shrubs, slope, rock, and other site conditions. If motorized/mechanized equipment is used, shrub canopy removal will occur during the winter to reduce impacts to soils. The area will be checked yearly, and brush canopy removal will reoccur once shrub height reaches one foot.

Following shrub canopy removal, the area will be treated for annual invasive plants following the District's vegetation management decision and seeded as necessary as described above.

Water Developments

A well, pipeline, trough, and gap fence will be located in the northwest section of the project area on regular BLM Burns District lands (outside Hawk Mountain WSA) administered as part of a Lakeview District BLM Allotment (Beaty Butte) (see Water Developments Map). Water will be piped approximately 500 yards east to a fence line. A 30-foot diameter bottomless trough will be placed adjacent to the fence separating regular BLM-administered lands from Hawk Mountain WSA. A water gap fence will be built no larger than 300' x 300' around the trough to supply water to the Oregon End Winter Pasture of Pueblo-Lone Mountain and Beaty Butte Allotments. Approximately 440' of existing fence will be removed to provide access to the trough. This gap fence will be constructed outside WSA (see Water Developments Map).

In addition, 3 miles of pipeline from the new well to an 8' x 12' trough will be buried within the road or within the existing disturbance area of the road (outside WSA). Three miles of pipe will also be buried from the existing Long Draw Well in the southeastern portion of the project area to a new 8' x 12' trough within the disturbance area of the road (outside WSA).

The new well will be drilled with a drilling rig requiring a level 50' x 50' well pad. Any needed materials (rocks or soil for maintenance or construction activities) will be hauled in with a dump truck. The entire disturbed area will be seeded with a BLM-approved native seed mix to increase the rate of recovery.

The new wellhead and power source will be fenced, following BLM standards for a four-strand barbed wire fence or a low visibility wood fence, to protect it from damage caused by livestock and large wildlife species. The fence will be no more than 1,000 feet in total length. The fence exclosure will be the minimum needed to provide adequate protection.

Following seeding and rehabilitation of the disturbed site, the permanent footprint will be no more than 30' x 30' at the well location. The well will be cased and sealed to prevent

cave-ins and contamination, all State of Oregon water well drilling regulations will be adhered to, and a safety device will be installed on any new power source(s) to prevent electrocution of raptors.

Solar power, fuel-type generators, or any combination of these will be used to power the pump for the well, in order to ensure the well can continue to operate under differing conditions to aid in fire suppression activities, decrease response time, and limit fire size. Specific design and size of the power source will be dependent upon the depth of the well, as will pump size.

Panels for solar energy will be installed using a backhoe. Poles will be 8” in diameter and concreted in the ground; solar panels will be mounted upon the poles and include perch deterrents. Pole height will be as low as possible, clearing vegetation while allowing for proper functioning. Solar panels vary in size from 16” to 40” in length by 40” to 70” in width. Reduced glare solar panels will be used. Solar panels will only be utilized if the well has adequate water production.

Fuel-powered generators will be 5,000 kilowatts or smaller. Generators will be placed near the wellhead, possibly on a trailer in order to allow the generator to be removed from the site when not in use. Generators will be expected to run 4 to 16 hours a day depending on water consumption and may be audible up to one-quarter mile under some conditions. Technology is now available to use satellites to start, stop, and notify when problems arise with the generators. Timers are also available to control times when generators operate.

A trench will be dug for the pipelines no deeper than 36 inches and approximately 3 inches wide using a steel-tracked crawler (bulldozer) with ripper. A 2-inch black plastic (polyethylene) pipe will then be placed in the trench. In some areas, it may not be possible to trench in the pipeline due to a rock layer. In these areas, a portion of the black plastic pipe may lay directly on the ground or just beneath the ground’s surface. Valve covers and vents will be placed as needed, but will not be more than 1-foot above ground level and will consist of a vertical piece of culvert with a lid.

Troughs will be placed within the existing road disturbance area; painted to blend into the existing landscape; and installed using a backhoe, dump truck, pickup, and manual labor.

The wells will be turned on each year from June 30 to September 30 for use by firefighting personnel and November 1 to March 1 to control livestock movement. Each trough will have a float and bird escape ramp. The well design will include specifications to regulate the water level in the 30’ bottomless trough to reduce any potential overflow.

Livestock grazing will continue under the existing permit. There will be no changes to the terms and conditions of the permit, no increase or decrease of animal unit months (AUM), no change to the season of use, nor change in livestock class. Current permit is 51 cattle from November 1 through February 28 for a total of 201 AUMs within Oregon End Winter Pasture #16 of the Pueblo-Lone Mountain Allotment.

Implementation activities will generally occur between August 1 and February 1.

A. Project Design Elements/Required Design Features

1. Project Design Elements (PDE)

The PDEs were developed to aid in meeting the purpose and need for action while minimizing impacts to natural resources. These PDEs are nonexclusive and are subject to modification based on site-specific terrain characteristics (topography and vegetation). Exact, on-the-ground locations of any proposed action will be determined (following clearances) by BLM personnel prior to actual implementation.

- Project areas will be surveyed for cultural values prior to implementation. Where cultural sites are found, their condition and National Register of Historic Places (NRHP) eligibility will be evaluated. If sites are determined to be NRHP eligible and under threat of damage, mitigation measures to protect cultural materials will be determined. Mitigation plans will be developed in consultation with the Oregon State Historic Preservation Office, as necessary. Mitigation measures can include protective fencing, surface collection and mapping of artifacts, subsurface testing, and complete data recovery (full-scale excavation).
- The known site eligible for NRHP will be avoided during the prescribed fire treatment by creating a containment line around the site.
- Mowers will be set high enough to avoid pulling shrubs out of the ground and disturbing possible buried archaeological material.
- Seeding by hand will occur within any archaeological site boundary.
- Project areas will be surveyed for invasive plants and noxious weed populations prior to implementation. Weed populations identified in or adjacent to the project area will be treated using the most appropriate methods, in accordance with the 2015 Integrated Invasive Plant Management for the Burns District EA/DR (DOI-BLM-OR-B000-2011-0041-EA DR).
- Project areas will be surveyed for special status species (SSS) plants prior to implementation. SSS plant sites will be avoided.
- No implementation activities will occur March 1 through June 30, during GRSG breeding season. Annual maintenance will still be allowed to occur during this period (refer to Oregon GRSG ARMPA, Appendix C, Required Design Feature (RDF) 19).
- The risk of noxious weed and invasive plant introduction will be minimized by ensuring all equipment (including all machinery, all-terrain vehicles (ATV/UTV), and pickup trucks) is cleaned prior to entry to the sites, minimizing disturbance activities, and completing

follow up monitoring to prevent new noxious weed establishment (refer to Oregon GRSG ARMPA, Appendix C, RDF 11). Should invasive plants or noxious weeds be found, appropriate control treatments will be performed in conformance with the 2015 Integrated Invasive Plant Management for the Burns District EA/DR (DOI-BLM-OR-B000-2011-0041-EA DR) or subsequent decision.

- Any rock or fill brought in will be from certified weed-free pits.
- Troughs would be painted to blend in with the surrounding landscape.

2. *Required Design Features (RDF)*

The RDFs are required under the Oregon GRSG ARMPA, Appendix C, for certain activities in all sage-grouse habitat. The RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts.

Common to All

RDF 6 - Mark needed fences with anti-strike markers if they pose a threat to the GRSG.
RDF 11 - Power wash all vehicles and equipment involved in land and resource management activities prior to allowing them to enter the project area to minimize the introduction and spread of invasive plant species.
RDF 12 - Use native plant species, locally sourced where available.
RDF 13 - Ensure proposed sagebrush treatments are planned with interdisciplinary input from the BLM or State wildlife agency biologist and promote use by GRSG.
RDF 15 - Focus restoration outward from existing intact habitat.
RDF 18 - Minimize unnecessary cross-country travel during field and fire operations in GRSG habitat.
RDF 19 - There will be no disruptive activities 2 hours before sunset to 2 hours after sunrise from March 1 through June 30 within 1.0 mile of the perimeter of occupied leks, unless brief occupancy is essential for routine ranch activities.

Vegetation and Fuels Management

RDF 1 – Where applicable, design treatment objectives to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns that most benefit GRSG habitat.
RDF 2 – Design burn prescriptions to limit fire spread; target individual sagebrush plants or small patches of sagebrush with at least 50 percent dead crown; ensure burn patches are well distributed through the treatment block; warm-dry sagebrush, do not count burn patches of less than 0.25 acre toward the maximum allowed stand replacement area.
RDF 3 – Use burning prescriptions that minimize undesirable effects on vegetation or soils.
RDF 4 – Use native plant species.

RDF 5 – Fuel Breaks:

- Incorporate roads and natural fuel breaks.
- Design fuel breaks in areas of high fire frequency to facilitate firefighter safety, reduce the potential acres burned, and reduce the risk to GRSG habitat.
- Use perennial vegetation.
- Incorporate key habitats or important restoration areas in fuel break design.

Livestock Grazing

RDF 3 – Locate new or relocate existing livestock water developments within GRSG habitat to maintain or enhance habitat quality.
RDF 6 – Ensure wildlife accessibility to water and install escape ramps in all new and existing water troughs.
RDF 7 - Construct new livestock facilities such as fences at least 1.2 miles from leks or other important areas of sage-grouse habitat.

Noise

RDF 1 - Limit noise at the perimeter of occupied or pending leks from 2 hours before to 2 hours after sunrise and sunset during the breeding season to less than 10 decibels above ambient sound levels.

B. Monitoring

Please see Appendix B for the monitoring plan.

C. Adaptive Management

Adaptive management is a system of management practices based on clearly identified outcomes and monitoring to determine if management actions are meeting desired outcomes; and, if not, facilitating management changes that will best ensure outcomes are met. Adaptive management recognizes knowledge about natural resource systems is sometimes uncertain and, in this context, adaptive management affords an opportunity for improved understanding. Knowing uncertainties exist in managing for sustainable ecosystems, some changes in management may be authorized, which include, but are not limited to:

- If perennials are not dominating the prescribed burn treatment area per ecological site descriptions after three years, the area would be reseeded with a native seed mix as described under the selected action. If the area is reseeded, normal grazing operations will cease again for two growing seasons within Oregon End Winter Pasture or until the density of perennial plants is 3–5 plants per meter squared at plot sites and plants have established root

systems that can tolerate grazing and will not be pulled out of the ground by livestock to allow seeded species to establish.

- Treatment areas will be sprayed again if the prescribed burn treatment area is still dominated (>50 percent) by invasive annuals.
- If areas treated for reduction in canopy cover are not moving toward state B as outlined in the field guide[6] (see appendix C), the area will be reseeded and/or resprayed as outlined under the selected action.
- If planted sagebrush seedling islands are not making progress toward state A as outlined in the field guide after 10 years, sagebrush seedlings will be replanted, and additional seedlings will be planted in the old Pueblo Fire area.

Rangeland monitoring is a key component of adaptive management. As monitoring indicates changes in management are needed to meet resource objectives, changes will be implemented working with the Collaborative.

Before applying adaptive management actions, factors such as previous year's and current year's climatic conditions, previous year's monitoring of vegetation (native and non-native), and utilization levels will be considered.

COMMENTS RECEIVED

The EA was mailed to interested publics on September 11, 2018, for a 30-day public comment period. A notice was published in the Burns Times Herald announcing the EA's availability and also published to BLM's ePlanning site. Three public comments were received. Responses to comments can be found in appendix F of the EA. On February 11, 2019, a revised EA was sent out for a 15-day public comment period. The BLM received three public comment letters. Please see responses to comments in appendix D to this decision record.

RATIONALE

Implementation of the selected action will provide the Bureau of Land Management (BLM) the opportunity to evaluate the effectiveness of altering the fuel structure and composition; reducing invasive annual grasses; restoring more resistant and resilient early seral native vegetative communities; protecting and enhancing wilderness characteristics; enhancing suppression efforts by reducing shrub cover and facilitating management of fine fuels within an existing road corridor; and increasing the availability of, and access to, water for suppression efforts and fine fuels treatments.

When selecting this pilot project area, several factors were considered including the need to identify the level of fire risk presented at a site; the level of fuel accumulation and probability of that site burning; the ability of the site to allow for management of sage-grouse habitat; and the ability to return to a desired state. The intention is to increase

[6] SAGE SHARE. 2018. Threat-Based Land Management in the Northern Great Basin: A Field Guide. Published though the Eastern Oregon Agricultural Research Center, Burns, OR; contributing organizations include The Nature Conservancy, Oregon State University, USDA-Agricultural Research Service, and the US Fish and Wildlife Service.

resilience and resistance of the site. Other considerations included the availability of infrastructure, the willingness of permittees to participate, and a cost/benefit or risk to working at the site. GIS mapping was used to overlay several factors such as fire risk modeling, Open Range Consulting's All Threats model, WSA history/management, wildlife concerns, vegetative conditions, ecological sites, and sage-grouse priority areas of conservation (PAC) in selecting this pilot project area. The idea was to start at a small scale with little disturbance to test methodologies to increase resilience and resistance.

This decision includes a robust monitoring plan (appendix B) detailing the current and desired condition for each action taken, the metric and method used, and frequency of collecting data (see pages 5 and 6 of the monitoring plan for a summary) to evaluate the effectiveness of implementation. This decision also includes an adaptive management strategy to ensure desired conditions are achieved (see section C above) in the long-term.

On January 2, 2019, the Secretary of the Interior signed Order No. 3372. This Secretarial Order is intended to enhance management of Federal lands by actively managing lands to reduce the risk of catastrophic wildfire and promote the sustainable recovery of damaged lands. Order No. 3372 was prompted by the Executive Order titled "Promoting Active Management of America's Forest, Rangelands, and Other Federal Land to Improve Conditions and Reduce Wildfire Risk." These two orders build upon the principles and priorities for Federal land management, including safe and effective responses to wildfire, promoting fire-adapted communities, and creating resilient landscapes through direct program activities and through strong Federal, State, Tribal and local collaboration.

Secretarial Order 3372 states Bureaus will "incorporate the use of any land and vegetation management techniques that are appropriate for the landscape, produce the desired results of reducing fuel loads, and are supported by the best available science." Practices include, but are not limited to, mowing, linear fuel breaks, biological and chemical treatments, access road maintenance, prescribed fire, removing vegetative material, targeted grazing, and seeding.

Science suggests fuel breaks can be effective at restricting fire size. The Shinneman 2018 paper states the Fuel Treatment Effectiveness Monitoring (FTEM) program has been qualitatively assessing the effectiveness of fuel breaks since 2006. Of the fuel treatments reported by the BLM in Oregon, Idaho, and Nevada, 97 percent of the treatment area was considered to have altered fire behavior, and 95 percent aided in the control of fire (Moriarty 2016). Maestas (2016) describes how fuel breaks can be effective at restricting fire size by stating, "Fuel breaks … can dramatically reduce the spread rate of a flaming front under normal conditions." These papers point out fuel breaks in and of themselves do not necessarily stop a wildfire, but they facilitate fire suppression activities.

There are many examples of how grazing can reduce fire spread (Lauchbaugh 2008). For example, on page 12 of the Lauchbaugh paper, several photos show fenceline contrasts between burned (ungrazed) and unburned (grazed) areas. Their model showed reducing levels of fine fuels, as might be accomplished with livestock grazing, reduced the modeled surface rate of spread and fire line intensity. This paper supports the effects

described in the Wildland Fire Management Section of the EA, which describes how flame lengths will be shorter in a grass fuel model vs. a grass and shrub fuel model (EA, p. 20).

Other recent studies have determined grazing can reduce wildfire risk and severity (Davies et al. 2015, 2016, 2017). Excluding grazing can result in an accumulation of fine fuels that increases the probability of fire-induced mortality of native perennial vegetation, resulting in a substantial post-fire exotic annual grass invasion (Davies et al. 2009, 2016). Proper grazing management can have similar effects to plants as grazing exclusion (Davies et al. 2014) without the increased post-fire risk of exotic annual grass dominance (Davies et al. 2009, 2016).

Davies and others (2015) concluded winter grazing decreased fine fuels and increased fine fuel moisture, which reduced flame height and depth, rate of spread, and area burned. Winter-grazing areas also had lower maximum temperature and heat loading during fires than ungrazed areas, and thereby decreased risk of fire-induce mortality of important herbaceous functional groups.

The BLM acknowledges historical overgrazing on approximately 1,072 acres has created a condition requiring intervention to return the ecosystem to a condition where natural processes can function. In addition, the current season of use is “winter” or “dormant season grazing,” and equates to grazing when plants are dormant (brown). Perennial grasses are very tolerant to grazing when they are brown (Smith et al. 2012). Research has shown winter grazing does not promote exotic plants (Davies et al. 2015), and winter grazing can reduce wildfire size, intensity, and behavior in a shrub-grassland (Davies et al. 2016).

Given proposed restoration treatments, and the goal of transitioning these plant communities away from states C and D, water developments in the northern portion of the pasture will be used to direct livestock use along the road to reduce fine fuels and to reduce grazing pressure in the southern portion of the pasture. Previous research has clearly demonstrated that water can control movement of livestock in large, arid landscapes (Ganskopp 2001).

The approximately 1,072 acres within the 26,400-acre project area have large tracts of dead sagebrush due to an aroga moth infestation, combined with several drought years, and are at an increased fire risk. Invasive annuals are dominant (>50 percent) within these 1,072 acres, and recovery to perennial vegetation is unlikely. Non-native species have also altered the historic fire regime, posing an undue risk to the native ecosystem. Natural successional processes have been disrupted by past human activity (overgrazing) to the extent intervention is necessary in order to return the ecosystem to a condition where natural processes can function. The legacy effects of season-long livestock grazing and an aroga moth outbreak coupled with drought and depleted seedbank are believed to be the contributing factors to degraded site conditions.

Research shows prescribed fire can increase the effectiveness of herbicides by removing litter, thereby increasing the contact between the herbicide and vegetation target. Burning may also increase the site availability, thus promoting establishment of seeded species (Davies 2010).

Chemically spraying and then seeding the area with native seed, taking adaptive management strategies into account, is expected to restore acres to state B in the short term, and, in the long term (25 years), return the burned area (outside the 100-meter buffer) to state A. Sagebrush cover is expected to recolonize (either naturally or through seeding/seedlings) for a net gain of approximately 612 acres of state A sagebrush.

Adding the well and 30' bottomless trough will improve firefighting capabilities. The improvement in suppression capabilities will be most beneficial during initial attack when the primary objective is to stop or slow small-fire growth. The additional water source will reduce the turnaround time required to refill engines and the helicopter bucket and the amount of time the engine, helicopter, and crews are not directly involved in firefighting activities. Currently, outside the existing well, the closest water source sufficient to refill fire engines is 15 miles (approximately a 2- to 3-hour round trip) from the project area.

Wilderness Study Area – Exceptions to the Non-Impairment Standard:

As described under Section 1.6.D.2.d., page 1-15, in BLM Manual 6330 (Management of WSA, 2012), fuel treatments may include thinning or removing vegetation, either mechanically or chemically, in advance of, or as a replacement for, wildland fire (either wildfire or prescribed fire). The goal of fuel treatments is to make conditions possible for natural wildfire to return to the WSA. Implementation of prescribed fire/fuel treatment activities within Rincon WSA meets the exception to the non-impairment criteria by protecting and enhancing wilderness characteristics or values. Fuel treatments may be permitted under the restoration or public safety exceptions to the non-impairment standard when:

A. Wildland fire in the WSA will inevitably cause unacceptable risks to life, property, or natural resources outside the WSA; **or**
B. Natural successional processes have been disrupted by past human activity to the extent that intervention is necessary in order to return the ecosystem to a condition where natural process can function; **or**
C. Non-native species have altered the fire regime so that wildland fires pose an undue risk to the native ecosystem.

Implementing the prescribed fire will meet the exception to the non-impairment standard for all the criteria listed above.

The area to be burned is at an increased fire risk due to large tracts of dead sagebrush killed by an aroga moth infestation, several drought years, and invasive annuals

dominance. Harney County has experienced three large-scale wildfires (Miller Homestead and Holloway fires in 2012 and the Buzzard Complex Fire in 2014, cumulatively burning nearly 1.5 million acres) putting life, property, and natural resources at risk. Minimizing fire size protects scattered private residences east of the project area, sage-grouse habitat, and other resource values within and adjacent to the project area. Rapid detection and rapid response to wildfires are key to suppressing wildfires in this area.

Flame lengths of almost 18 feet produce too much heat for firefighters to attack fires directly. Firefighters must retreat to the next defensible area and either burn out the fuel between the fire line and the main body of the fire (potentially increasing the fire size) or reduce the fuel height prior to the arrival of the flaming front to achieve a flame length allowing for direct attack. Changing fuel structure and continuity along roads (mowing) provides firefighters with a defendable space devoid of heavy fuels accumulations. Shorter flame lengths allow firefighters to employ direct attack strategies because there is less heat produced by shorter flame lengths. The fire's duration will also be reduced. Woody fuels burn longer, generate more heat, and can smolder for hours after the passage of the flaming front. In a natural wildfire event, firefighters are put at greater risk than by a controlled, well-planned prescribed fire.

Mowers will be set high enough to avoid pulling shrubs out of the ground to protect wilderness and possible cultural values by reducing soil disturbance.

Protection to natural resources can also be achieved through a prescribed fire. In the case of cultural resources, in areas of the site where shrubs are more common, wildfire intensity could be great enough to cause spalling of boulders and, therefore, possible damage to petroglyphs. Beyond the potential impact of wildfire, the site is susceptible to illegal surface collection of artifacts. A prescribed fire will avoid these areas.

Greater Sage-Grouse are a special status species (SSS) and U.S. Fish and Wildlife Service has listed the species as "warranted, but precluded" under the Endangered Species Act. Two of the major threats to sage-grouse are potential impacts of wildfire and loss of native habitat to invasive species. Greater Sage-Grouse habitat within the 4-mile project buffer (Oregon GRSG ARMPA 2015) is mainly general habitat management area (GHMA), with 5,950 acres of the Pueblos/South Steens Priority Area for Conservation (PAC) that is also a sagebrush focal area (SFA) and priority habitat management area (PHMA) included in the north end of the project buffer. The project area lies within a large (approximately 250,000 acres) expanse of relatively intact sagebrush including a sagebrush focal area (SFA) to the north providing a wealth of ecosystem services. As such, sagebrush protection is vital to the success of GRSG.

Secretarial Order No. 3336 calls for protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem, and in particular, GRSG habitat. Sage-grouse are a special feature of the WSAs; therefore, this project will help to protect their natural habitat, thereby, enhancing wilderness special features.

Foster and others (2018, page 12) state, “The acute and generalized reductions in sage-grouse nest and adult survival we observed following the Holloway fire suggest that fire suppression (e.g. fuel breaks, direct attack) to maintain patches of intact sage-grouse habitat may be the most important management activity currently available to managers of fire-prone landscapes. Suppression efforts in sage-grouse habitat are likely to be most beneficial if focused on limiting fire within intact sage-grouse nesting habitat, particularly in ecosystems where recovery and resilience after disturbance may be low. In addition, suppression efforts that are not limited to suppressing fire spread but also extend to the suppression of interior fire and the protection of interior habitat islands whenever possible are likely to be the most effective at preserving sage-grouse habitat.”

The BLM may utilize prescribed fire in WSAs where the natural role of fire cannot be returned solely by reliance on wildfires or where relying on wildfires might create unacceptable risks to life, property, or natural resources outside the WSA (BLM Manual 6330, page 1-15). The ecosystem where the project is proposed typically experiences a fire once every 50 to 75 years (Miller and Rose 1999). There has not been a large wildfire within the project area for the last 50 years. Experience indicates as time increases from the last fire, the chance of a fire occurring increases. This is an oversimplification of the system, but the legacy effects of past management have created a large area with continuous fine and woody fuels. If a wildfire does start in the area of the proposed project, there are few to no opportunities to minimize fire size. Minimizing fire size protects scattered private residences east of the project area, sage-grouse habitat, and other resource values within and adjacent to the project area as described above.

Manipulation of vegetation through management-ignited fire, chemical application, mechanical treatment, or human controlled biological means is allowed where it meets the non-impairment standard or one of the exceptions. Implementation of mowing, seeding with native seed, and chemical treatments (under the Integrated Invasive Plant Management for the Burns District EA/DR (DOI-BLM-OR-B000-2011-0041-EA), 2015) in WSA will meet the exceptions to the non-impairment standard by protecting and enhancing wilderness values.

There is historical and scientific evidence of the natural vegetative community and processes that existed prior to the effects of industrialized humans. As stated above, approximately 1,072 acres have large tracts of dead sagebrush due to an aroga moth infestation, combined with several drought years, and are at an increased fire risk. Invasive annuals are dominant within these 1,072 acres, and recovery to perennial vegetation is unlikely. Non-native species have also altered the historic fire regime, posing an undue risk to the native ecosystem. Natural successional processes have been disrupted by past human activity (overgrazing) to the extent intervention is necessary in order to return the ecosystem to a condition where natural processes can function.

The existing vegetative states are shown in tables 1–3. Table 4 depicts the ecological sites and the natural vegetative community capability. In other words, what the vegetative community is (tables 1–3) versus what it should be (table 4).

Table 1: Prescribed Fire Area - Current Vegetative Conditions (Excluding 100-Meter (328') Buffer Area North of the Road)

State	Acres
State A	180.76
State B	189.53
State C Shrub/Annual	101.60
State D Annual	417.64
Sparse Vegetation	3.75
Salt Desert Shrub	0.66
Totals	893.94

Table 2: 50 Meter Buffer Area North of Road within Prescribed Fire Perimeter (Current Vegetative Condition)

State	Acres
State A	0
State B	6.84
State C Shrub/Annual	6.18
State D Annual	80.09
Total Acres	**93.11**

Table 3: 50–100 Meter Buffer Area North of Road within Prescribed Fire Perimeter (Current Vegetative Condition)

Class	Acres
State A	0.22
State B	6.65
State C Shrub/Annual	2.88
State D Annual	78.07
Sparse Vegetation	0.22
Total Acres	**88.04**

Table 4: Ecological Sites in the Project Area

Site ID	Site Name	Annual Precipitation (Inches)	Reference Plant Community	Vegetation Composition (%)	Ground Cover (%) Basal and Crown	Acres
R010XY005OR	Loamy bottom	9–16	basin wildrye	90% grasses, 2% forbs, 8% shrubs	90%–100%	149 (fuels reduction along road); 412 (prescribed burn)
R023XY212OR	Loamy	10–12	Wyoming big sagebrush/Thurber's needlegrass-bluebunch wheatgrass	80% grasses, 5% forbs, 15% shrubs	15%–20%	107 (fuels reduction along road)
R023XY214OR	Claypan	10–12	little (low) sagebrush/bluebunch wheatgrass	65% grasses, 10% forbs, 25% shrubs	20%–35%	Outside treatment areas
R023XY220OR	Clayey	10–12	Wyoming big sagebrush/bluebunch wheatgrass	75% grasses, 10% forbs, 15% shrubs	15%–25%	Part of R023XY212OR
R024XY016OR	Loamy	8–10	Wyoming big sagebrush/Thurber's needlegrass/Indian ricegrass	80% grasses, 5% forbs, 15% shrubs	40%–60%	402 (fuels reduction along road); 628 (prescribed burn)
R024XY017OR	Shallow Loam	8–10	Wyoming big sagebrush/Thurber's needlegrass/Indian ricegrass	70% grasses, 5% forbs, 25% shrubs	30%–40%	30 (fuels reduction along road)
R024XY032OR	Arid South Slopes	6–10	Wyoming big sagebrush, purple sage/Indian ricegrass, Thurber's needlegrass	60% grasses, 10% forbs, 30% shrubs	20%–30%	Part of R024XY016OR

Chemically spraying and then seeding the area with native seed, taking adaptive management strategies into account, is expected to restore acres to state B in the short term and, in the long term (25 years), return the burned area (outside the 100 meter buffer) to state A. Sagebrush cover is expected to recolonize (either naturally or through seeding/seedlings) for a net gain of approximately 612 acres of state A sagebrush. Appropriate equipment will be used to ensure optimal conditions for native seed dispersal and coverage while minimizing the appearance of drill rows in seeded areas.

As described above, there is existing research implementation of treatments will bring about the desired result in the long term. Monitoring will occur at frequent intervals and adaptive management strategies will be applied as monitoring dictates. Following the time frame of implementation of the project (25 years), treatments should allow for natural processes to resume and increase resistance and resilience.

Overall, implementation of the project will enhance wilderness values as described above by returning the ecosystem to a condition where natural processes can function including the historic fire regime, converting vegetative states C and D to states A and B, creating a more resistant and resilient landscape, and creating a defensible space for firefighters to work from to reduce fire size, duration, and intensity while lowering the risk to firefighters.

All troughs will be installed outside the WSAs; therefore, the non-impairment criteria does not apply.

Visual Resource Management

The Visual Resource Management (VRM) Category I objectives for installation of the troughs painted to blend into the landscape will be met with a "weak to no change." The troughs will not attract attention from the casual observer.

Although the effects to VRM Category I within the project area will be beyond the "weak to none" level of change for the mowing and seeding treatment, affects under the no action alternative will be more drastic with a landscape fire. As previously stated, the role of natural fire has been disrupted. There is an increased fire risk due to large tracts of dead sagebrush from an aroga moth infestation, several drought years, and invasive annuals dominance creating an accumulation of fine fuels. These factors increase the probability of fire-induced mortality of native perennial vegetation and could result in a substantial post-fire exotic annual grass invasion. In addition, wildfires expose firefighters to greater risk than a prescribed fire and their safety is BLM's utmost concern.

Oregon End/Funnel Canyon Road is a semi-prominent curvilinear two-track road splitting the valley floor and attracts the attention of the casual observer. Mowing and seeding along the road will be apparent for the life of the project (25 years); however, it will not attract new attention as the road is already a prominent linear feature. During certain times of the year, the lighter grasses will blend in with the road. After the life of the project, sagebrush will return and will not attract attention by the casual observer. In the long term, VRM I objectives will be met.

The prescribed fire area will also be noticeable on the landscape immediately following the fire and subsequent seeding/planting; however, after one to two growing seasons, the area will appear natural and meet the VRM I category. Adaptive management strategies will ensure the area recovers to states A and B further enhancing VRM I objectives in the long term by establishing a native vegetative community.

Greater Sage-Grouse Resource Management Plan Amendment Conformance

Please refer to the required design features for the GRSG ARMPA described above under section A.2. These features were incorporated into the selected action to ensure conformance to the GRSG ARMPA. In addition, the following vegetation goals and fire/fuels management objectives will be met.

Vegetation – Goals

- VEG 1: Increase the resistance of GRSG habitat to invasive annual grasses and the resiliency of GRSG habitat to disturbances such as fire and climate change to reduce habitat loss and fragmentation.
- VEG 2: Within GRSG habitat, re-establish sagebrush cover, native grasses, and forbs in areas where they have been reduced below desired levels or lost. Use ecological site descriptions to determine appropriate levels of sagebrush cover and appropriate native grasses and forbs.
- VEG 3: Use integrated vegetation management to control, suppress, and eradicate invasive plant species per BLM Handbook H-1740-2. Apply ecologically based invasive plant management principles in developing responses to invasive plant species.

Fire and Fuels Management (Fire) Objectives

- Objective 1. Manage wildland fire and hazardous fuels to protect, enhance, and restore GRSG habitat.
- Objective 3. Within 4.0 miles of occupied or pending leks, maintain or develop a mosaic of structure and species of sagebrush consistent with site potential and vegetation management objectives.

While there will be some short-term impacts to vegetative condition, long-term results will be an increase of perennial grass and forb cover in the 50 meters adjacent to the road (both north and south) and an increase in perennial grass and forbs in the 50–100 meter buffer area and the entire prescribed fire area.

Approximately 158 acres or 88 percent within the 100-meter buffer is state D and is dominated by cheatgrass. Post treatment is to maintain approximately 136 acres in state B and 44 acres in state A.

The 100 meters directly adjacent to and north of Funnel Canyon-Oregon End Road will be burned; however, in the long term the site will be different with the first 50 meters being maintained as state B, while the second 50 (50–100) meters or 164–328 feet will be a mosaic of states A and B.

Taking adaptive management strategies into account in the short term (up to 10 years), the prescribed burn including seeding is expected to restore these acres to state B and, in the long term (25 years), return the site to state A. Sagebrush cover is expected to recolonize (either naturally or through seeding/seedlings) on all 894 acres in the long term, for a net gain of approximately 612 acres of state A sagebrush. All seeding treatments will be monitored for

successful establishment. If establishment criteria are not met, the area will be reevaluated and adaptive management techniques applied.

No Action Alternative Discussion

I did not select the no action alternative as science has shown change in fuel structure and continuity decreases flame lengths providing for firefighter safety and smaller fires. Reducing invasive annuals (fine fuels) also reduces fire spread helping to return the historic fire regime and restore natural ecological processes.

Resilience can be decreased by disturbances that result in high mortality of native vegetation. These can include frequent or severe wildfires or long and severe droughts. Resistance to invasive annual grasses is particularly important due to the widespread threat of altered fire regimes and risk of conversion to invasive annual grass dominance in low to mid elevation ecosystems. Invasive annual grasses increase the amount and continuity of fine fuels and, in many low to mid elevation areas, are resulting in more frequent and larger wildfires. Deep-rooted perennial grasses are important as they typically recover after fire and are the best competitors with invasive annuals (Chambers, ed. 2016).

The higher the abundance of perennial grasses after fire, the greater the resistance to annual grasses (Chambers et al. 2007; Davies 2008). From previous research, we know that from 20 to 60 percent of perennial bunchgrasses will be killed in wildfire (Boyd et al. 2015). Thus, the starting abundance (i.e. pre-fire) of vegetation is really important to ensuring there are enough perennial grasses post-fire to maintain resistance to annual grass invasion, and anything we can do to promote or maintain pre-fire perennial grass abundance is important to managing the post-fire annual grass threat.

Also, given the difficulties in restoring sagebrush plant communities after fire, preventing fire in this larger landscape is of utmost concern. Rehabilitation from wildfire over this large of a landscape would take decades to restore the plant community to state B and eventually state A. For fire rehabilitation projects, monitoring only lasts a few years, and there are no long-term strategies or funding built into the rehabilitation plans.

There are few human-made or natural features in this area limiting fire spread. Most routes have a strip of vegetation in the center and would be unlikely to stop fire spread under most commonly experienced fire conditions. Without adequate fuel breaks to stop a wildfire, life, property, and natural resources outside the WSA are at risk. Minimizing fire size protects scattered private residences east of the project area, sage-grouse habitat, and other resource values within and adjacent to the project area as described above.

Therefore, the no action alternative does not meet the purpose of altering fuel structure and composition and reducing invasive annual grasses; restoring more resistant and resilient early seral native vegetative communities; protecting and enhancing wilderness characteristics; enhancing suppression efforts by reducing shrub cover and facilitating management of fine fuels

within an existing road corridor; and increasing the availability of, and access to, water for suppression efforts and fine fuels treatments.

The no action alternative will also not meet the need to address the growing threat of large-scale wildfires and the effect they are having on ecological as well as social and economic values of Harney County. Large wildfires pose a threat to priority sage-grouse habitat and the integrity of both the ecosystem and wilderness values as well as of more exposure for wildland firefighters.

APPEAL PROCEDURES

Decision: It is my decision to implement the proposed action with project design elements and required design features as described above.

Appeal Procedure: Within 30 days of receipt of this decision, you have the right to appeal to the Interior Board of Land Appeals, Office of the Secretary, in accordance with regulations at 43 CFR 4.4. An appeal should be in writing and specify the reasons, clearly and concisely, as to why you think the decision is in error. A notice of appeal and/or request for stay electronically transmitted (e.g., email, facsimile, or social media) will not be accepted. A notice of appeal and/or request for stay must be on paper. If an appeal is taken, your notice of appeal must be filed in the Burns District Office at 28910 Highway 20 West, Hines, Oregon 97738. The appellant has the burden of showing that the decision is in error.

A copy of the appeal, statement of reasons, and all other supporting documents should also be sent to the Regional Solicitor, Pacific Northwest Region, U.S. Department of the Interior, 601 SW 2nd Avenue, Suite 1950, Portland, Oregon 97204. If the notice of appeal did not include a statement of reasons for the appeal, it must be sent to the Interior Board of Land Appeals, Office of Hearings and Appeals, 801 North Quincy Street, Arlington, Virginia 22203. It is suggested appeals be sent certified mail, return receipt requested.

The appellant may wish to file a petition for a stay (suspension) of this decision during the time that the appeal is being reviewed by the Board pursuant to Part 4, Subpart B, Section 4.21 of Title 43 CFR; the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay: Except as otherwise provided by law or other pertinent regulation, a petition for a stay of decision pending appeal shall show sufficient justification based on the following standards (43 CFR 4.21(b)).

(1) The relative harm to the parties if the stay is granted or denied,
(2) The likelihood of the appellant's success on the merits,
(3) The likelihood of immediate and irreparable harm if the stay is not granted, and
(4) Whether the public interest favors granting the stay.

As noted above, the petition for stay must be filed in the office of the authorized officer.

A notice of appeal and/or request for stay electronically transmitted (e.g., email, facsimile, or social media) will not be accepted. A notice of appeal and/or request for stay must be on paper.

Authorized Officer:

Signature: _____ Date: 5/22/19

Rhonda Karges
Andrews/Steens Resource Area Field Manager

Bibliography

Foster, L.J., K.M. Dugger, C.A. Hagen, and D.A. Budeau. 2018. Greater Sage-Grouse Vital Rates After Wildfire. Journal of Wildlife Management; DOI: 10.1002/jwmg.21573.

Davies, K.W., C.S. Boyd, J.D. Bates, and A. Hulet. 2015. Winter grazing can reduce wildfire size, intensity and behavior in a shrub-grassland.

Chambers, J.C., ed. 2016. Great Basin Factsheet Series 2016 – Information and tools to restore and conserve Great Basin ecosystems. Great Basin Fire Science Exchange. Reno, Nevada. 79 p.

Appendix A
Conformance to Land Use Plans

Andrews Management Unit Resource Management Plan/Record of Decision (RMP/ROD) (2005)

Rangelands (RMP-30)

Goal 1 – Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles.

Objective 1. Maintain or restore native vegetation communities through sound landscape management practices.

Objective 3. Rehabilitate plant communities that do not have the potential to meet the desired range of conditions (DRC) through management.

Objective 4. Increase species and structural diversity at the plant community and landscape levels in the big sagebrush communities. Provide multiple successional stages within the landscape.

Goal 2 – Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public land.

Objective 1. Manage big sagebrush, quaking aspen, and western juniper plant communities to meet habitat requirements for wildlife.

Objective 2. Manage big sagebrush communities to meet the life history requirements of sagebrush-dependent species.

Special Status Species (SSS) (RMP-34 to 37)

Goals – Maintain, restore, or improve Specialist Status plan populations and animal habitats; manage public land to conserve or contribute to the recovery of threatened or endangered species; and prevent future Endangered Species Act (ESA) listings.

Objective 2. Conserve Special Status animal species and the ecosystems on which they depend.

Objective 3. Manage big sagebrush communities to meet the life history requirements of sagebrush-dependent SSS.

Visual Resources (RMP-43)

Goal – Manage public land actions and activities in a manner consistent with [visual resource management] VRM class objectives.

Objective. Protect, maintain, improve, or restore visual resource values by managing all public land in accordance with the VRM system.

Social and Economic Values (RMP-44)

Goal – Management public land to provide social and economic benefits to local residents, businesses, visitors, and future generations.

Objective 1. Work cooperatively with private and community groups and local government, Burns Paiute tribal, and other tribal governments to provide for customary uses consistent with other resource objectives and to sustain or improve local economies.

Wilderness Study Areas (WSA) – (RMP-74)

Goal – Manage existing WSAs so as not to impair their suitability for preservation as wilderness.

Objective. Manage existing WSAs so as not to impair their suitability for preservation as wilderness.

Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment (GRSG ARMPA) (2015)

Special Status Species (SSS) – Goal SSS 1: Conserve, enhance, and restore the sagebrush ecosystem upon which GRSG populations depend in an effort to maintain and/or increase their abundance and distribution, in cooperation with other conservation partners.

Management Decisions (MD):

- MD SSS-9, page 2-7, Apply buffers and seasonal restrictions to all occupied or pending leks in Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA).
- MD SSS-11, page 2-9, Seasonal avoidance in breeding habitat within four (4) miles of occupied and pending leks from March 1 through June 30; Brood rearing habitat from July 1 to October 31; Winter habitat from November 1–February 28.
- MD SSS-13, page 2-9, All authorized actions in GRSG habitat are subject to required design features (RDF) and best management practices (BMP) in Appendix C (including fence placement, lek buffers, noise restrictions, and installation of anti-strike markers on the fence) and these screening criteria: All disturbance is subject to net conservation gain mitigation to GRSG and its habitat (see Appendix F) in PHMA and GHMA.

Vegetation – Goals VEG 1: Increase the resistance of GRSG habitat to invasive annual grasses and the resiliency of GRSG habitat to disturbances such as fire and climate change to reduce habitat loss and fragmentation. VEG 2: Within GRSG habitat, re-establish sagebrush cover, native grasses, and forbs in areas where they have been reduced below desired levels or lost. Use ecological site descriptions to determine appropriate levels of sagebrush cover and appropriate native grasses and forbs. VEG 3: Use integrated vegetation management to control, suppress, and eradicate invasive plant species per BLM Handbook H-1740-2. Apply ecologically based invasive plant management principles in developing responses to invasive plant species.

Management Decisions:

- MD VEG 1: Priority areas for GRSG habitat restoration and maintenance projects are:
    - Sites with a higher probability of success.
    - Seasonal habitats thought to be limiting to GRSG populations.
    - Connectivity corridors between GRSG populations and subpopulations.
    - Following stand-replacing events at least 100 acres in size.
- MD VEG 2: Base species composition, function, and structure of sagebrush communities on ecological site descriptions.
- MD VEG 3: Do not treat sagebrush during nesting and early brood-rearing within 4.0 miles of occupied or pending leks. Conduct pre-treatment lek surveys to determine if the lek is active.
- MD VEG 5: Vegetation management activities that are timing-sensitive for maximum effectiveness can occur during the breeding season within 4.0 miles of occupied or pending leks. Limit operations to no more than 5 days and to the period beginning two

hours after sunrise and ending two hours before sunset during the breeding and early brood rearing period. Conduct pre-treatment surveys for nests and do not damage or destroy identified nests during treatment operations. Conduct operations so as to minimize the risk of accidentally killing chicks.

- MD VEG 6: Use adaptive management principles to provide for persistence of seeded or planted species important to GRSG.
- MD VEG 8: Use native plant materials for restoration and rehabilitation based on availability, adaptive capacity, and probability of successful establishment.
- MD VEG 11: Do not conduct forage enhancement solely for domestic livestock in PHMA.
- MD VEG 12: Adjust discretionary land uses, such as active use for livestock grazing or recreational uses or seasons, as needed to facilitate attainment and persistence of vegetation restoration objectives.
- MD VEG 13: Use provisional and established seed zones identified by the Great Basin Native Plant Project to determine appropriate seed sources for grasses, forbs, and shrubs. Identify sagebrush seed collection areas to provide locally adapted sagebrush seed sources.
- MD VEG 14: Allowable methods for vegetation treatment include mechanical, biological (including targeted grazing), chemical, or wildland fire or combinations of these general treatment categories.
- MD VEG 15: Create mosaics of varying sagebrush density using spot treatments within the treatment area. Sagebrush density shall be equivalent to Classes 1 through 4 in cool-moist sagebrush and Classes 1 through 3 in warm-dry sagebrush. Maximum stand-replacement patch size shall not exceed 25 acres and total stand-replacement patches shall not exceed 15 percent of the treatment block.
- MD VEG 16: Test new potential restoration methods in areas with a sagebrush overstory and an annual grass understory.
- MD VEG 20: In priority treatment areas for invasive annual grasses, apply early detection-rapid response principles.
- MD VEG 21: Allowable methods of invasive plant control include mechanical, chemical, biological (including targeted grazing), or prescribed fire or combinations of these methods. Treat areas that contain cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species.
- MD VEG 24: Wash vehicles and equipment used in field operations prior to use in areas without known infestations of invasive plants. Wash vehicles and equipment used in areas with known infestations prior to use in another area to limit the further spread of invasive species to other locations.

Fire and Fuels Management (Fire) – Objective 1: Manage wildland fire and hazardous fuels to protect, enhance, and restore GRSG habitat. Objective 3: Within 4.0 miles of occupied or pending leks, maintain or develop a mosaic of structure and species of sagebrush consistent with site potential and vegetation management objectives.

Management Decisions:

- MD FIRE 2: Prioritize GRSG habitat commensurate with property values and other habitat to be protected with the goal to restore, enhance, and maintain these areas.

- MD FIRE 3: Within PHMA and GHMA, prioritize fire management activities in order to protect and restore GRSG habitat and reduce the impacts of large wildfires.
- MD FIRE 8: Allow mechanical fire line except where prohibited by other resource direction or where inconsistent with direction for specific land allocations.
- MD FIRE 11: Develop a system of fuel breaks to protect larger intact blocks of GRSG habitat. Locate these fuel breaks along existing roads and rights-of-way (ROW), where possible.
- MD FIRE 12: In GRSG habitat, reduce hazardous fuels created by other management actions, such as establishment of new roads, trails, or ROWs.
- MD FIRE 14: Develop annual treatment and fire management programs in coordination with interagency partners and across jurisdictional boundaries based on priorities identified in the local District Landscape Wildfire and Invasive Species Assessment.
- MD FIRE 16: Implement appropriate fire operations and fuels management RDFs identified in **Appendix C**.
- MD FIRE 18: If prescribed fire is used in GRSG habitat, the NEPA analysis for the Burn Plan will address:
    - why alternative techniques were not selected as a viable option. *See Alternatives Considered but Not Analyzed in Detail.*
    - how GRSG goals and objectives would be met by its use. *See Special Status Species – Wildlife and Upland Vegetation Sections.*
    - how the [conservation objectives team] COT Report objectives would be addressed and met.
        - *Conservation Objective: Implement targeted habitat management and restoration (COT, page 32). Refer to proposed action.*
        - *Conservation Objective: Maintain and restore healthy, native sagebrush plant communities (COT, pages 40 and 42). See Upland Vegetation Section.*
        - *Conservation Objective: Avoid sagebrush removal or manipulation in sage-grouse breeding or wintering habitats (COT, page 44). See purpose and need, proposed action and Special Status Species – Wildlife and Upland Vegetation Sections.*
            - *Exceptions to this can be considered where minor habitat losses are sustained while implementing other habitat improvement or maintenance efforts (e.g., juniper removal) and in areas used as late summer brood habitat. Appropriate regulatory and incentive-based mechanisms must be implemented to preclude sagebrush removal and manipulation for all other purposes.*
    - a risk assessment to address how potential threats to GRSG would be minimized. *See project design elements (PDE) and RDFs under the proposed action.*

Livestock Grazing (LG) – Objective LG 1. Manage livestock grazing to maintain or improve Greater Sage-grouse habitat by achieving Standards for Rangeland Health.

- MD LG 6: Install or retrofit wildlife escape ramps in all livestock water troughs or water storage facilities.

- MD LG 9: Remove, modify or mark fences identified as high risk for collisions, generally within 1.2 miles of occupied or pending leks.
- MD LG 10: Avoid construction of livestock facilities and supplemental feeding of livestock with 1.2 miles of occupied or pending leks in GRSG habitat unless it is part of an approved habitat improvement project or approved by the authorized officer to improve ecological health or to create mosaics in dense sagebrush stands that are needed for optimum GRSG habitat.

Please see PDEs and RDFs for specifications to help minimize and/or mitigate impacts to ensure conformance to land use plans.

Appendix B
Pilot Project Monitoring Plan[1]

Increasing detection and reducing fire response time

Current condition: Casual observations used to detect fires. The area is not accessible by lowboy trailer.

Desired condition: Better fire detection to decrease response time. Maintain roads for access by necessary suppression equipment and decrease response time.

Detection camera
Variables to be tracked by the Bureau of Land Management (BLM) to determine success of the detection camera will include the number of fires detected by the camera and the total number of reported fires in the camera viewshed. These data will be used to calculate percent of fires that were first detected via the camera and, for such fires, the time difference between camera detection and reporting via other means.

Roads
Success of the roads project will be gauged by whether or not it is possible to transport a lowboy trailer into the treated area of the BLOB. Additionally, travel time and feasibility of travel to the BLOB with fire equipment (e.g., lowboy trailer, heavy engine) will be compared before and after road improvement.

Current condition: Only one well exists within the project area.

Desired condition: Decrease helicopter turnaround times and resupply for engines.

Well
Monitoring of the well project will consist of evaluating the impacts of the well on water availability for fire suppression operations and the influence of the well on patterns of fine fuel removal by livestock related to the location of fuel break treatments. Determining availability of water for fire suppression operations will entail measuring the time and distance it takes to refuel a heavy engine and a helicopter pre-well installation vs. post-well installation. This exercise will be as measured from a point on the road in the northern portion of the BLOB. As part of normal grazing management, utilization is currently measured annually following grazing using landscape appearance mapping techniques. These measurements will continue annually post-well installation, and these data will be qualitatively (visually) compared to pre-well installation patterns of fine fuel consumption to determine if the well is increasing fine fuel reduction in the northwest corner of the BLOB, particularly in the vicinity of fuel break treatments.

[1] The goals of this project include: a) using best available knowledge to modify fuel structure composition to increase suppression efficacy and b) documenting the effects of various management practices on changes in fuel structure and composition in a manner sufficient to assist in adaptive management over time. Because of the latter goal, the intensity of data collection and the breadth of methodologies are beyond what would be normally employed on a fuels management project.

Near-road vegetation community

Current condition: Vegetation near the road is largely ecological states C and D in the south portion of the BLOB and ecological state A in the north portion of the BLOB. The term "near-road" refers to a variable treatment width of road-associated vegetation treatments (see Vegetation Treatments Map).

Desired condition: Transition near-road vegetation in the south portion of the BLOB from ecological states C and D to state B. Transition near-road vegetation in the north portion of the BLOB from ecological state A to B.

Near-road vegetation (south)

Near-road vegetation in the southern portion of the BLOB will be treated with fire and pre-emergent herbicide for annual grass control and seeded to native perennial grasses. Pre-treatment data will be collected during the summer of 2018 and post-treatment data collected yearly, for three years following treatment; frequency of monitoring will be re-evaluated after three years. Detailed data will be collected to compare plant community change associated with fuel break treatments against a no action alternative. Four permanent monitoring locations will be established within the area to be treated during summer of 2018. Monitoring locations will parallel the road for 100 meters and extend from the edge of the road to the far edge of the treated area (figure A). Each location will be subdivided into two 50-meter plots (figure A). A "treated" or "control" designation will then be randomly assigned to each plot. Plots designated as "control" will be left untreated (no fire or seeding). Vegetation data collected at these locations will also be used to help describe changes in fuel load characteristics associated with treatment (see "Near-road fuels" section below).

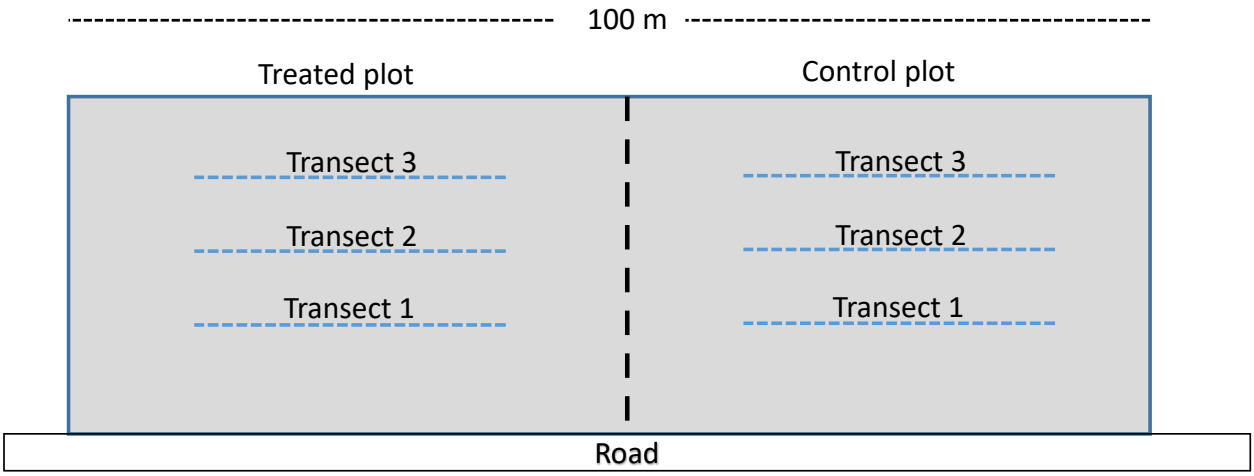

Figure A. Diagram of monitoring location depicting treated and control plots and location of 30-meter long sampling transects.

In each plot, monitoring activities will center on three 30-meter long permanent sampling transects marked with rebar at each end and equally spaced between the road edge and the edge of the treated area. This arrangement will create a data set capable of quantifying differences between treated and control plots as a function of distance from road, which may be of interest

due to pre-existing road effects (e.g., increased annual grass abundance near the road vs. distant from the road).

Abundance (foliar cover) of large perennial bunchgrasses, *Poa*, exotic annual grasses, forbs, and shrubs, and ground cover of litter, bare ground, basal perennial grasses/shrubs, and rock will be determined using line point intercept along the 30-meter sampling transects within each plot. Sampling frequency will be every 1 meter (30 points per transect). Total number of hits for each vegetation or ground cover class within a plot will be divided by the total number of sample points (90) in each plot and the resultant number multiplied by 100 to determine percent cover. Density of shrubs will be estimated by counting shrubs rooted within a 30-meter long and 2-meter wide belt transect centered over each sampling transect. Ground and landscape view photographs will be taken annually at the southern-most end of the middle sampling transect in each plot. Near-road pre-treatment vegetation states (excluding control plots) will be mapped using a combination of visual observations and remotely-sensed data and classed in accordance with the Annual Grass Threat model (see figure A). This assessment will occur 2 years post-treatment and then every 3 years thereafter. Mapped states will be converted to digital form, and these spatial data will be used to document change in plant community state over time.

Near-road vegetation (north)
Methods will be as per "Near-road vegetation (south)" above.

Far-road vegetation
(vegetation within the BLOB but outside of the near-road treatments)

Pre-treatment far-road vegetation will be visually mapped using the Annual Grass Threat model (figure A). This assessment will be repeated every 5 years post treatment. Mapped states will be converted to digital form, and these spatial data will be used to determine change in plant community state over time.

Near-road fuels

Current condition: In the southern portion of the BLOB, near-road fuel loading is characterized by low shrub abundance but significant presence of annual grasses that provide high fuel continuity. In the northern near-road portion of the BLOB, there is relatively high shrub fuel loading but reduced fine fuel continuity; fine fuel loading in this portion of the BLOB is dominated by native perennial bunchgrasses.

Desired condition: In the southern near-road BLOB, reduce fine fuel continuity and increase fuel moisture by transitioning from annual grass to native perennial bunchgrass dominance (i.e., transitioning from states C/D to state B). In the northern near-road BLOB, reduce shrub fuel loading (i.e., transitioning from state A to state B).

Near-road fuels
Pre-treatment fuel loading data will be collected during the summer of 2018, and post-treatment data will be collected at two years post-treatment, and every three years thereafter. These data will be collected by harvesting, drying, and weighing all fuels present within five 1-meter square

quadrants in each plot that are randomly located outside of belt transects that span the permanent sampling transects (figure A). During harvest, fuels will be segregated into live herbaceous, dead herbaceous, and woody fuels. If time and resources allow, it is desirable to collect monthly fine fuel moisture data each year (pre- and post-treatment) from June through August using the protocol described above. Fine fuel continuity estimates will be derived from line point intercept data (See "Near-road vegetation (south)" for line point intercept protocol). All line point hits will be classed as herbaceous vegetation (all grasses and forbs that are alive or dead), shrubs, or fuel gaps. Total number of hits for each fuel class within a plot will be divided by the total number of sample points (90) in each plot and the resultant number multiplied by 100 to determine percent cover of fuel classes. Height of the nearest standing herbaceous or woody plant will be measured at each point (i.e., fuel bed height determination in the following table).

Fine Fuel Consumption

Current condition: Concentrated use near water in the southern portion of the BLOB.

Desired condition: Increase fine fuel reduction across the BLOB; increasing treatment of herbaceous fuels in the northern portion of the fuel break is a priority.

Details of fine fuel reduction monitoring are described under the Well section above.

Visual resources

Current condition: The majority of the BLOB is within Visual Resource Management (VRM) Class I. The proposed well location is within VRM Class II.

Desired condition: VRM Class I's objective is to preserve the existing character of the landscape. The level of change to the landscape characteristics should be very low and must not attract attention. VRM I provides for natural ecological change and for limited management activity.

Impacts of treatments on visual resources will be monitored using pre- and post-treatment photographs and VRM Contrast Rating Worksheets. Key observation points (KOP) will be established using an interdisciplinary team, and locations will be located at high points along the southeast and northwest corners of the BLOB where the viewshed encompasses a majority of the treatment area. Pre-treatment photographs will be taken during the summer of 2018, and post-treatment photographs will be repeated from these same locations, and at a date within 10 calendar days of initial photographs, at 5-year intervals beginning in the first year following treatment.

Plan element	Current condition	Desired condition	Metric(s)	Method	Frequency
Increasing detection & response time	Casual observations used to detect fires. The area is not accessible by lowboy trailer.	Better fire detection to decrease response time. Maintain roads for access by necessary suppression equipment and decrease response time.			
Detection camera			# fires detected by camera, # fires reported in camera viewshed, # first detected via the camera.		Yearly
Road access			Lowboy access (yes/no)		Once post-treatment
			Travel time (before & after road actions)	Time trials	Once post-treatment
Water access	Only one well exists within the project area.	Decrease helicopter turn-around times and resupply for engines.		GIS map of distance to nearest water dip point (current vs. with new water)	Once post-treatment
Near-road veg community					
Southern fuels	Vegetation near the road is largely ecological states C and D in the south portion of BLOB.	Transition near-road vegetation from ecological states C and D to state B.	Cover of herbaceous and shrubs, density of shrubs, ground cover, photos, state determination	Line point intercept for cover, belt transects for shrub density, visual mapping for state determination	Pre-treatment, post-treatment yearly for three years. State mapping pre-treatment, at 2 years post-treatment, and every 3 years thereafter.
Northern fuels	Vegetation near the road is ecological state A in the north portion of the BLOB.	Transition near-road vegetation from ecological state A to B.	Cover of herbaceous and shrubs, density of shrubs, ground cover, photos, state determination	Line point intercept for cover, belt transects for shrub density, visual mapping for state determination	Pre-treatment, post-treatment yearly for three years. State mapping pre-treatment, at 2 years post-treatment, and every 3 years thereafter.
Far-road veg community			% desirable states (A, B) vs. undesirable states (C,D)	Threat model mapping	Pre-treatment, post-treatment at 5-year intervals.
Near-road fuels	Undesirable fuel conditions (annual grasses, shrubs)	Decrease fuel continuity and fuel moisture by	Fuel moisture, fuel load (by fuel class), continuity via	Line point intercept, height measurements	Fuel load data pre-treatment plus every two

	adjacent to road).	replacing annual grasses with native perennial grasses, decrease woody fuel load by reducing shrub cover adjacent to road, blend shrub reduction into landscape matrix.	vegetation and ground cover sampling, fuel bed height, comparing shrub cover with increasing distance from road		years post-treatment. Fine fuel moisture data at least once per year. Fuel continuity data derived yearly.
Livestock utilization	Utilization is concentrated near water in the southern portion of the BLOB.	Increase dispersion of utilization across the BLOB; increasing utilization of herbaceous fuels in the northern portion of the fuel break is a priority.	Utilization pattern mapping.	Change in utilization from pre- to post-treatment and over time.	Pre-treatment, plus yearly evaluation for each year in which grazing takes place.
Visual resources	VRM classes I and II.	Maintain VRM class.	Before/after photographs, Visual Resource Management Contrast Rating Worksheet		Pre-treatment and every 5 years thereafter.

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Appendix C
THREAT-BASED LAND MANAGEMENT IN THE NORTHERN GREAT BASIN:
A Field Guide

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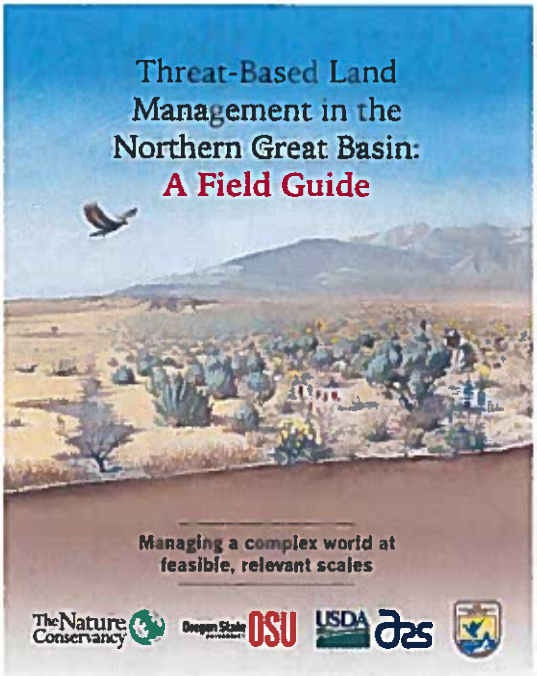
Threat-Based Land Management in the Northern Great Basin: A Field Guide



Managing a complex world at feasible, relevant scales

The Nature Conservancy · Oregon State University · USDA Agricultural Research Service

Before Using this Guide You Should Know

Sagebrush ecosystems in the **Northern Great Basin** face a substantial threat: **fire-invasive** annual grasses and expanding **conifers**. Land managers need to work at large **spatial** scales to address these two ecological threats, but have limited resources to do so.

This guide provides a framework for land managers to efficiently identify, discuss and address landscape-level threats. This guide is a decision-support system. It is not an instruction manual.

With this method, users map established ecological states and estimate future trend. Broad ranges of vegetation and state-and-transition conditions can be mapped with the same state if faced with similar threats. Understanding plant communities and the long time-lapse over time required detailed and repeated monitoring.

This decision-support system directly supports management objectives. Establishing your objectives is the first step to using this guide.

Steps for State Classification and Management

0. Establish your management objectives: Do this before using this guide, all other steps follow from your objectives. Clearly stated objectives will help you make key state and management decisions.

   Management objectives specify the over all desired outcomes achieved by addressing a threat. The Bureau of Land Management provides a good resource to begin writing management objectives - a QR link is at the bottom right of this guide.

1. Familiarize yourself with functional groups. This guide uses plant functional groups and simplified vegetation patterns to identify states.

2. Understand threats and states. Environmental factors drive juniper encroachment and annual grass invasion. The resistance and resilience of a site will change how threats are expressed.

3. Understand states. Use the maps, text, photographs, and illustrations on the back of this guide to understand and differentiate states. Recognize that reality will be more complex than the ideal types in this framework.

4. Choose the appropriate scale and delineate states. Mapping is difficult and subjective. The size of an individual map unit depends on the total scale of your specific landscape and on your management objectives. Choose map units that are large enough to matter, but small enough to manage. There is no perfect answer.

5. Determine apparent trend: Assess the apparent trend of each state as upward, downward, stable or unclear. Consider all factors together. Apparent trend is a snapshot estimate of how the plant community may change in the future.

6. Identify management actions: Assign management actions to each state based on its apparent trend, its goal, to describe how management actions will achieve management objectives.

1 Relevant Ecology

Using functional groups improves monitoring efficiency, helps to observe more and more sampling timing. Functional groups make visually evaluating vegetation state and apparent trend feasible over large areas. We include users from normal groups in our models based on southeastern Oregon, but these groupings may vary across the range of the vast biome.

Large Perennial Bunchgrasses (LPBG) are the glue that holds the western sagebrush steppe together. LPBG root masses bind soil in place, effectively competing with annual grasses and provide forage and habitat for a diverse, key species include Bluebunch wheatgrass, Idaho fescue, needlegrasses and squirreltail.

Small Perennial Bunchgrasses (SPBG) primarily refer to Sandberg's bluegrass, a fine-stalk cool and early-growing species common across the western sagebrush steppe. SPBG can dominate in harsh, shallow and rocky or where heavy continuous grazing has reduced other bunchgrasses. Despite often occurring at high densities, SPBG have shallow root systems and do not compete as effectively with annual grasses.

Annual Forbs (AF) are generally weed-adapted plants with highly variable productivity depending on year and site conditions. Common species include blue-eyed Mary (*Collinsia* sp.), and alyssum (*Alyssum* sp.). Large amounts of AF, especially of introduced species can indicate a degraded community. This category does not include weeds such as yellow star-thistle which should be mapped and managed on a species-specific basis.

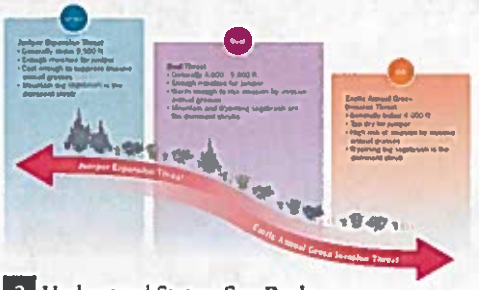
Perennial Forbs (PF) are a large diverse and variable group and are important for wildlife habitat and forage. The same family as well as biomass and persistence are particularly important.

Invasive Annual Grasses (IAG), including cheatgrass, medusahead and ventenata, are species that can fundamentally alter vegetation communities by replacing native grasses. Dramatically increasing the frequency and leading to a loss of bunchgrass and perennial forbs.

Sagebrush includes several species and subspecies. Two subspecies of big sagebrush are the most abundant. It growing and mountain. Identifying subspecies of sagebrush can help understand site potential, resilience and restoration practices. Other shrub species can help identify past land use history and site potential. For example, a high proportion of rabbitbrush may indicate past disturbance or grazing may indicate saline soil conditions.

Conifers include tree species that are encroaching on historically treeless sagebrush steps. Tree cover primarily refers to juniper because western juniper is of major concern in the northern portion of the sagebrush steppe but Utah juniper and pinyon pine are major threats in other regions.

2 Understanding Threats

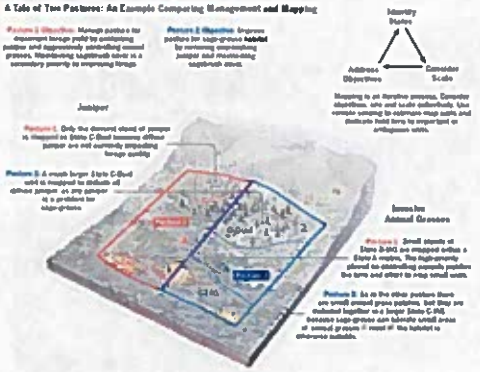


3 Understand States: See Back

4 Choose Map Unit Scale & Delineate States

Now it's time to delineate states. Use the back of this guide to determine states and the examples in the panel to help decide at which scale to map. The appropriate scale for mapping states depends on your management objectives. There is no perfect answer. Map units should be small enough to feasibly manage, and large enough for management to matter in meeting objectives.

A Tale of Two Pastures: An Example Comparing Management and Mapping

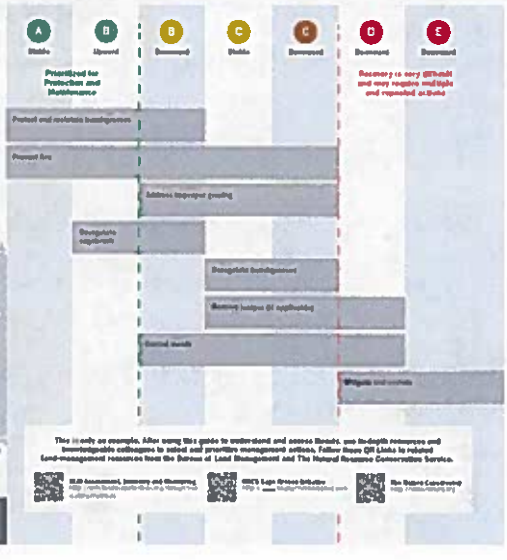


5 Determine Apparent Trend

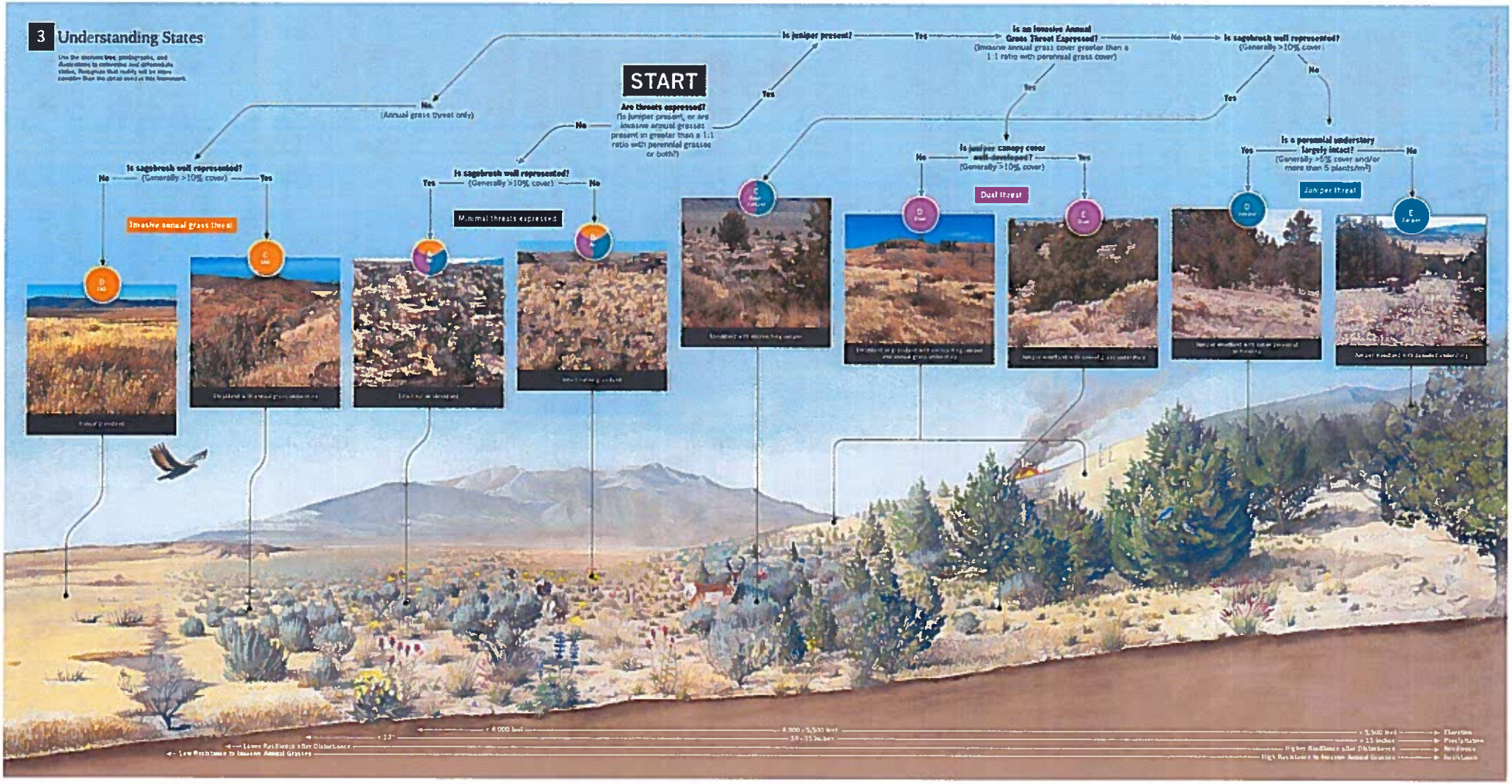
Use these factors collectively to determine the apparent trend of a site. Apparent trend will help you determine what monitoring or actions are needed. If any factors if the trend is Upward, Stable, Downward, or Unclear. Unclear trends will likely require additional monitoring.

6 Management Actions

Select and prioritize management actions for each site based on the state, apparent trend, and management objectives. The example below shows how a user might manage for increasing the resistance and resilience of a site.



This is only an example. Allow using this guide to understand and assess threats, use in-depth resources and knowledgeable colleagues to select and prioritize management actions. Follow these QR Links to related land management resources from the Bureau of Land Management and The Natural Resource Conservation Service.


3 Understanding States
START
Are threats expressed?
(Is juniper present, or are invasive annual grasses present in greater than a 1:1 ratio with perennial grasses or both?)
Is juniper present?
Yes
No
(Annual grass threat only)
Is an Invasive Annual Grass Threat Expressed?
(Invasive annual grass cover greater than a 1:1 ratio with perennial grass cover)
Is sagebrush well represented?
(Generally >10% cover)
Is sagebrush well represented?
(Generally >10% cover)
Is juniper canopy cover well-developed?
(Generally >10% cover)
Is a perennial understory largely intact?
(Generally >5% cover and/or more than 5 plants/m²)
Invasive annual grass threat
Minimal threats expressed
Dual threat
Juniper threat
< 4,000 feet
4,000 - 5,500 feet
> 5,500 feet
Elevation
< 13"
13 - 15 inches
> 15 inches
Precipitation
Lower Resilience after Disturbance
Higher Resilience after Disturbance
Resilience
Low Resistance to Invasive Annual Grasses
High Resistance to Invasive Annual Grasses
Resistance

Appendix D
Responses to Comments on the February 6, 2019 EA

	Comment	Response[8]
1	There is no empirical evidence that a fuel break will stop a large-scale wildfire in the face of high winds or temperatures. The best available information suggests that fuel break efficacy in such conditions is low, or at best, unknown (Shinneman, et al. 2018, 70).	Please refer to #11 in appendix F of the EA, page 61. Maestas and others (2016) and Shinneman (2018) point out that fuel breaks in and of themselves do not necessarily stop a wildfire, but they facilitate fire suppression activities. Also refer to page 19 of the EA, "…the change in fuels would reduce flame length and the amount of heat directly adjacent to the flaming front." Table 3 of the EA on page 20 shows flame length estimates at various wind speeds for grass and grass/shrub fuel types. Also on page 20, "Shifting from a woody and grass fuel to a grass fuel would also help to increase the success of suppression." Shinneman, and others (2018), page 26, "In short, anecdotal evidence, sporadic project monitoring, and limited record-keeping indicate that fuel treatments do accomplish their intended goals under certain conditions."
2	The purpose and need statement in the EA is overly narrow and fails to recognize the uncertainty associated with fire ignitions and weather.	See #3 in Appendix F, Response to Comments, of the EA (page 59). Also, see page 1 of the EA. The purpose ***is to test*** decreasing the potential for and impacts of large-scale wildfires (emphasis added). The need is based on the growing threat of large-scale wildfires and the effect they are having on ecological as well as social and economic values. Page 19 of the EA states the difficulty of predicting locations of future fires. However, pages 18 and 19 of the EA address fire ignition sources, weather systems/conditions, fire threat, fire regimes, on-the-ground conditions, and experience. "The type of ecosystem where the project is proposed typically experiences a fire once every 50 to 75 years. There has not been a large wildfire within the project area for the last 50 years." (EA at 19).
3	Based on the purpose and need statement, the EA fails to reasonably consider a full range of alternatives to accomplish the purposes and address the need for action.	See #3 in Appendix F, Response to Comments, of the EA (page 59). The no action alternative and proposed action (pp. 9–16) were thoroughly analyzed in the EA. Alternatives Considered but Eliminated from Further Analysis (one of which was a no grazing alternative) can be found on page 17. Furthermore, no other alternatives were

[8] All references to the EA are the February 6, 2019 version unless otherwise noted.

		provided during the wildfire collaborative meetings or during public comment periods (September 2018 and February 2019).
4	An alternative should include removing grazing from some or all of the project area in order to establish a scientific control for the only major disturbance factor in the project area.	See #3 in Appendix F, Response to Comments, of the EA (p. 59). Also, please see page 17 of the EA. A no grazing alternative was considered. The proposed action of the EA has also been changed to clarify normal grazing operations would cease within Oregon End Winter Pasture (partial removal) for two growing seasons or until objectives are met as well as table 2 on page 5. In addition, scientific controls were included in the monitoring plan. Please refer to appendix C, pages 49 and 50, near-road vegetation (south and north). "Four permanent monitoring locations will be established within the area to be treated during summer of 2018." "Each location will be subdivided into two 50-meter plots (figure A). A 'treated' or 'control' designation will then be randomly assigned to each plot. Plots designated as 'control' will be left untreated." The monitoring plan (appendix C, pages 50 and 51) states monitoring will occur before treatment, two years after treatment (livestock would be absent from this area as described above – partial removal), and every three years thereafter.
5	The EA ignores the potential for livestock grazing to alter the composition of plant species in the area and exacerbate invasive species. Such an increase in invasive species would increase fire risk rather than decreasing it.	See the monitoring plan in appendix C. This plan outlines the desired condition for each element of implementation. If desired conditions are not achieved, adaptive management as described on page 16 of the EA would apply. In addition, please see page 17 of the EA describing the current season of use is winter and equates to grazing when plants are dormant. It further states, "Research has shown winter grazing does not promote exotic plants (Davies 2015)…"
6	The EA doesn't satisfy NEPA's requirement that BLM must analyze all reasonable alternatives. Instead the NEPA process has been abrogated by prior discussion and decisions. It is this combination of decision-making outside the NEPA process and lack of reasonable alternatives that causes the EA to become a "pre-ordained" decision.	Please see Response to Comment #3 above regarding range of alternatives. Also, no decisions were made regarding implementation of any alternatives during development. As stated on page 17 of the EA, the Wildfire Collaborative discussed, negotiated, and developed the proposed action to address different perspectives and issues. The group discussed tools to meet the purpose and need while trying to ensure the best possible outcome in the long term. The BLM considered and summarized the information discussed; considered existing science; and relied on specialists to develop alternatives that would meet the purpose and need and have a chance of success if implemented. EAs are not decision-making documents.
7	It is not permissible to paint the no action	Please see Response to Comment #3 above regarding range of alternatives. The no

	alternative as entirely negative in order to leave only one true alternative as the only viable path forward. The EA must present a range of viable alternatives and provide a reasonable disclosure and comparison of the effects of those alternatives.	action alternative is considered and analyzed to provide a baseline for comparison of the effects of other alternatives. The no action alternative is discussed under Wildland Fire Management on page 19, Upland Vegetation on page 23, SSS-Wildlife can be found on page 27, Visual Resources on page 29, Wilderness Study Areas (WSA) analysis on page 34, and Cultural Resources can be found on page 37. The Wildland Fire Management section primarily outlines suppression techniques and effects. Upland Vegetation states there would be no manipulation and/or treatment of vegetation, weed spraying may occur under a previous decision, and water developments would not be available for fire suppression or to control livestock movement. The SSS-Wildlife section states effects of current management would be the same as occur presently and vulnerable to large wildfires and how wildfires reduce habitat for sage-grouse. This section goes on to say there would be no effect on golden eagles. There would be no direct effects on Visual Resources. This section describes suppression and wildfire affects to the landscape character. The WSA section outlines the activities to continue under the no action such as weed spraying and maintenance activities. The WSA also discusses the natural fire regime and consequences of a wildfire. Effects to cultural resources are spalling from wildfire intensity, illegal surface collection, and off-road vehicle traffic, and road maintenance.
8	Request BLM ensure the Harney County Wildfire Collaborative is fully compliant with all relevant laws, regulations and policies regarding public participation under the Federal Advisory Committee Act.	This comment is outside the scope of the EA. However, the Harney County Wildfire Collaborative is convened by the High Desert Partnership, a non-profit organization that exists to cultivate collaboration and support and strengthen diverse partners engaged in solving complex issues to advance healthy ecosystem, economic well-being, and social vitality to ensure a thriving and resilient community (EA at page 1, footnote).
9	The EA does not make clear what the existing maintenance level of the roads in the project area are according to the AMU RMP. The EA is unclear about whether maintaining the Funnel Canyon/Oregon End Road at a Maintenance Level 3 is an action common to both alternatives.	Please refer to table 2 of the EA, page 7. As stated, road maintenance is part of implementation of the resource management plan/record of decision (RMP/ROD). As such, it is only described under the no action alternative as an activity that may occur regardless of the outcome of the EA. In addition, the no action alternative (EA at page 9) explains the Funnel Canyon/Oregon End Road is a Maintenance Level 3. The RMP, Appendix M-2, provides a description of level 3 roads. In summary, level 3 roads are natural or have an aggregate surface, a defined cross section with drainage structures and grading will be conducted to provide a reasonable level of riding comfort at prudent

		speeds. No new analysis or decision is required to implement this action. Pages 17, 29, and 33 of the EA also list road maintenance as a reasonably foreseeable future action for the project area.
10	The EA is unclear about how that maintenance level is not being met by current road conditions and does not detail the road maintenance actions that would be conducted whether or not they are directly connected with the project. The EA must provide additional, detailed information to inform the public of all project activities and connected actions and to demonstrate the transportation and access aspect of the EA's purpose and need will, in fact, be met.	Please refer to Response to Comment #9 regarding road maintenance. Actions are connected if they automatically trigger other actions that may require an environmental impact statement (EIS); cannot or will not proceed unless other actions are taken previously or simultaneously; or if the actions are interdependent parts of a larger action and depend upon the larger action for their justification (40 CFR 1508.25 (a)(i, ii, iii)). None of the criteria apply to consider road maintenance as a connected action. The decision to maintain the road was made in the RMP/ROD where significant effects were analyzed. Although having the road maintained prior to implementing an action would provide better access, it does not need to occur previously or simultaneously. Finally, the actions are not interdependent parts of a larger action. All aspects of the project proposal can occur without road maintenance. Road maintenance can also occur with implementation of the proposed action or no action alternatives. Regarding the purpose and need, the no action alternative addresses the purpose of improving firefighter equipment access and the need for access (EA at pages 1–3).
11	What is conspicuously absent from the EA and its analysis of effects to the WSAs is the required analysis of the project's conformance with the WSA non-impairment standard. The BLM Manual 6330 is clear that all proposals within WSAs must meet this standard or one of the pre-defined exceptions to that standard.	The purpose of preparing an EA is to analyze affects to resources. Neither the EA nor the FONSI is a decision-making document. Decisions regarding proposed actions analyzed in an EA are documented in accordance with program-specific requirements. The decision for the subject EA will include a determination as to whether or not the selected activities are in conformance with the non-impairment standard or one of the exceptions. Also refer to Appendix B of the EA, BLM Manual 6330.
12	The EA incorrectly interprets what constitutes naturalness. The EA states that naturalness is impaired by surface disturbances or installations that are substantially noticeable.	The commenter is confusing the definition of the terms "*substantially unnoticeable*" v. "*naturalness.*" The commenter is correct that "*substantially unnoticeable*" is defined as either so insignificant as to be only a very minor feature of the overall area, or not distinctly recognizable by the average visitor as being made or caused by humans. (BLM Manual 6330, Glossary, page 3). "*Naturalness,*" however, is described as an area that "generally appears to have been affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable." (BLM Manual 6330, pp. 1–44).

13	The presence or absence of cheatgrass or other grass species is substantially **un**noticeable to the average visitor. (emphasis in original) BLM guidance makes clear naturalness and the underlying natural ecological condition is to be considered as though by the average visitor, not a trained biologist. That same guidance indicates that the presence of non-native species does not disqualify an area unless they are so pervasive as to create a total lack of natural ecosystem function. (BLM. Wilderness Characteristics Guidance for the BLM. Training Module II.D. Inventory Procedures – Naturalness.)	Please see Response to Comment #12 above. Cheatgrass invasion is an issue across the west. The BLM would argue that the average visitor is familiar with the issue of cheatgrass and can identify the annual grass, especially if they walk through it. Regardless, cheatgrass is a non-native species, and its invasion is a result of modern civilization. Therefore, regardless if the average visitor notices it, cheatgrass dominance diminishes naturalness. The commenter references the wilderness characteristics inventory procedures. Inventorying lands for wilderness characteristics is different than managing an area designated as WSA. Manual 6330 provides guidance in managing WSAs. The only place in the 6330 manual addressing the "average visitor" is in the glossary, page 3. The definition can be found in Response to Comment #12 above.
14	Cheatgrass has already populated the area. The EA ignores the reality that cheatgrass has already populated the project area, would populate the area after a fire of any size or intensity, and would also populate the project area in response to surface disturbing activities associated with the project.	See EA pages 21–24 under Upland Vegetation for a description of the plant communities within the project area including acres of cheatgrass. The proposed action and adaptive management sections address cheatgrass (pp. 9–16), including project design features/required design features to minimize further introduction of cheatgrass. Table 2 of the EA under Noxious Weeds estimates 20% of the project area contains cheatgrass. EA pages 34, 37, and 43 also discuss cheatgrass. The BLM acknowledges that cheatgrass is present in the project area. However, wildfires often exacerbate cheatgrass dominance. The EA points out that cheatgrass would be expected to dominate the project area if a wildfire were to occur (p. 34). The commenter is correct in that cheatgrass would be present regardless of the alternative; however, the level and dominance of cheatgrass across the project area would not be the same under the different alternatives. The vegetation section of the EA has been updated (EA at pages 22 and 23) to include more information on invasive annuals such as cheatgrass.
15	The EA's flawed presumption is that there is a high probability that cheatgrass could or would so completely dominate the project area that the average visitor would find it	See Responses to Comments 12, 13, and 14 above. Also refer to the EA at page 34. The EA states, "However, in the event of a 'mega-fire,' invasive annuals ***could*** quickly populate the burned area after the event." (Emphasis added). "Cheatgrass is expected to be the dominant invasive plant. The monoculture of cheatgrass replacing diverse native

	noticeable.	plant communities would diminish ***naturalness*** in the WSA. Once cheatgrass is established throughout the unit, naturalness would be diminished." (Emphasis added). The following was added to the WSA section of the EA (pp. 34 and 35), "Conversion to a monoculture of cheatgrass would likely require multiple fires as the seed source for exotic annual grasses is present throughout the project area. Each successive fire would progressively decrease the abundance of perennial bunchgrasses and thus increase the abundance of annual grasses."
16	A scenario leading to a complete monoculture of cheatgrass and total lack of natural ecosystem function is unlikely, or at least unpredictable, under any fire severity or extent that might occur in the project area. Most likely fire would have variable severity resulting in equally varying post-fire vegetation including cheatgrass, native grass species and shrubs.	See Responses to Comments #14 and #15 above. The analysis does not discuss a scenario leading to a ***complete*** monoculture. It states cheatgrass is expected to be the dominant invasive plant and a monoculture of cheatgrass would diminish naturalness. The EA under Upland Vegetation and WSA sections has been updated to clarify a conversion to cheatgrass would likely require multiple fires.
17	Cheatgrass infestation in the project area has not caused a total lack of natural ecosystem function thus far and would be unlikely to meet that criteria even in the event of a 'mega-fire' or other disturbance.	Thank you for your opinion. Please refer to Responses to Comments #14 and #15 above regarding cheatgrass presence and conversion of perennial grasses to cheatgrass. Cheatgrass is present throughout the project area. The proposed treatment area has portions where cheatgrass is the most common grass species. Native perennial bunchgrasses, such as Thurber's needlegrass, bottlebrush squirreltail, bluebunch wheatgrass, and Sandberg's bluegrass, are difficult to find when walking through the proposed treatment area. Chambers and others (2014) noted that warm, dry habitats similar to the proposed project area are converted to primarily invasive annuals following disturbances, like fire. Once the conversion occurs, the habitat will remain dominated by cheatgrass and resist reestablishment of native plants unless land managers apply treatments to change conditions. Cheatgrass dominance creates a continuous fuel bed and increases the risk of fire not only by facilitating spread through continuous fuels, but also by lengthening the period of the year where dry fuels are available (Pilliod et al. 2017).
18	The EA cannot rely upon diminished	Please see Responses to Comments #11, #14, #15, and #17 above regarding decisions

	naturalness caused by fire and cheatgrass establishment in order to support the application of the enhancement exception to the WSA non-impairment standard.	and cheatgrass presence and establishment.
19	The EA should eliminate consideration of species found after a fire or other disturbance and consider only those impacts that might be substantially noticeable to the average visitor.	Please see Responses to Comments #12 and #13 above regarding cheatgrass and if it is substantially noticeable to the average visitore
20	The EA should assess whether a fire or other disturbance could impact "outstanding opportunities for solitude or a primitive and unconfined type of recreation" and, if so, the EA should characterize the likely duration and intensity of those impacts.	The criteria is outstanding opportunities for solitude ***or*** a primitive and unconfined type of recreation (emphasis added). The no action alternative discusses affects to recreation opportunities on page 34. Solitude is described for each WSA on pages 32 and 33 of the EA. Opportunities for solitude are based on topographic features, such as mountainous terrain and unit size, as well as vegetation screening. A fire would not affect solitude except during suppression activities. Also see Response to Comment #24 below regarding issues. See pages 35 and 36 of the EA describing affects to solitude and primitive and unconfined recreation under the proposed action.
21	This statement is vague, "Placement of troughs along the road's edge would also create some disturbance in the WSA."	The EA on page 36 has been clarified to address this comment. The following was added, "The direct installation disturbance area of an 8' x 12' trough would be approximately 12' x 16'. Outside the trough location, the road edges would be mowed as described under the proposed action, and the effects would be as described above although more trampling and grazing of vegetation is expected. Effects outside the 100-meter vegetative treatment area are expected to be similar to those affects already occurring from grazing."
22	The EA fails to clarify what new disturbance would be created within the WSAs or to explain how such disturbance would meet the non-impairment standard or one of the exceptions.	Please see Responses to Comments #11 above regarding decisions, #14 regarding disturbance, and #21 regarding disturbance from troughs.
23	The EA must ensure that all grazing	The troughs are proposed within the existing road disturbance area; therefore, the

	development installation activity and disturbance take place entirely outside both the WSAs. (Underlining in original).	installations would occur outside the WSAs. Also, refer to Responses to Comments #11 above regarding decisions, #14 regarding disturbance, and #21 regarding disturbance from troughs.
24	The EA does not appropriately consider impacts to lands with wilderness characteristics or include the required analysis of effects to this resource. The issue for analysis is whether or not the proposed activities could have a potentially significant impact on lands with wilderness characteristics.	Appendix F, Response to Comments, of the EA #1 (p. 59) addresses this issue. In addition, please refer to page 8 of the EA. The CEQ regulations provide many references to "issues" at 40 CFR 1501.7(a)(2), 1501.7(a)(3), 1502.1, and 1502.2(b). The CEQ explains that only significant issues must be the focus of the environmental document. Significant issues are those related to significant or potentially significant effects. An issue is more than just a position statement, such as disagreement with grazing on public lands. The BLM found the project proposals in lands with wilderness characteristics (LWC) did not constitute a significant issue as the inventory would not change. The BLM explains the new developments are along an existing road and fence. The total disturbance is estimated to be 33 acres, 0.0004 percent of the combined acreage. The commenter fails to provide any information that could potentially impact LWCs significantly.
25	The EA must disclose and analyze the direct and indirect effects of the proposed action on the quality of the human environment, in this case LWC resources. The EA does not provide the reader with an analysis of whether or how the proposed action would impact LWC.	Please see Response to Comment #24 above regarding issues.
26	In ONDA v. BLM, the Ninth Circuit noted that roadlessness requires study under NEPA.	Please see Response to Comment #24 above and Appendix F #2 (p. 59), regarding BLM's response to roadlessness. The commenter does not provide a citation to which the ONDA v. BLM case is referenced. In the case against the Burns District BLM office (No. 08-35942, D.C. No. 6:06-cv-0024-AA), the Ninth Circuit found "BLM satisfied NEPA by taking a 'hard look' at the RMP's effect on wilderness resources." There is no mention of "roadlessness."
27	The EA does not conclude the proposed actions conform with the VRM Class I objective. Either the EA must demonstrate that the project can conform with VRM land use	Please see Response to Comment #11 above regarding decisions. On pages 13, 30, and 31 of the EA, BLM provided design features to help meet the visual resource management (VRM) objectives, stating troughs would be painted to blend into the existing landscape (also a PDE), feathering of the mowing treatment would reduce the

	allocations and objectives or the project must be modified.	contrast, and contrasts would lessen over time. The VRM section of the EA has been updated to clarify effects (See EA at pp. 30–31).
28	Native seed must be utilized.	Native seed would be utilized. Appendix F, Response to Comments, of the EA #6 (p. 60) addresses this issue. Also see page 10 of the EA. "Following the prescribed burn, the area would be treated for annual invasive plants, following the District's vegetation management decision, and seeded aerially, mechanically drilled, or hand spread with ***a native seed*** mix determined by ecological site descriptions at a rate of no less than 12 pounds per acre." (Emphasis added). The EA at page 15 states, "RDF 12 – Use native plant species, locally sourced, where available." Page 16 states, under Adaptive Management, "If perennials are not dominating the prescribed burn treatment area per ecological site descriptions after three years, the area would be reseeded with native seed mix as described under the proposed action." In appendix A page 43, "MD VEG 8: Use native plant materials…." Appendix B page 46, "Reseeding or planting of native species may be done following weed treatments where natural seeding is not adequate and to prevent non-native vegetation from becoming dominant." In addition, page 12 of the EA was changed to: "Following shrub canopy removal, the area would be treated for annual invasive plants following the District's vegetation management decision and seeded as necessary with native seed as described above."
29	BLM should prepare an EIS to assess all direct, indirect and cumulative effects.	An EIS is only prepared if the effects are expected to be significant and are not fully covered in an existing EIS. Significant, as used in the NEPA, requires consideration of both context and intensity (40 CFR 1508.27). The FONSI addressed context and intensity, and no significant effects were identified.
30	Please provide full and detailed current ecological analysis of the conditions of the public lands.	Please refer to pages 21 and 22 of the EA in the Upland Vegetation section. Table 4 lists the ecological sites within the project area along with vegetation composition and number of acres. Table 5 in the EA further describes current vegetative states found throughout the project area.
31	What has actual use been in areas targeted for water in troughs? What monitoring data has BLM collected in the past decades?	As stated on page 13 of the EA, "Current permit is 51 cattle from November 1 through February 28 for a total of 201 AUMs." The RMP/ROD, page RMP-54, states, "…the utilization levels … will not exceed …. 50 percent on native herbaceous forage plants, on a pasture average basis…." Actual use is recorded for the entire pasture and is not captured site-specifically. In addition, not all background information is required to be

		part of the National Environmental Policy Act (NEPA) document (40 CFR 1502.1). Background documentation and narrative information explaining the current management, such as fundamentals of rangeland health (FRH) and utilization data, is available at the Burns BLM District Office in Hines, Oregon. Grazing permits and other documents explaining and governing grazing permits can also be generated from the public BLM Rangeland Administration System (RAS) website.
32	Where are all the current FRH assessments for the affected lands?	Appendix F, Response to Comments, of the EA #14 (p. 63) addresses this issue. Please refer to the EA, page 17. Also see Response to Comment #31 above.
33	Current permit is 51 cattle from November 1 to February 28. Is the current permit for the pasture or the allotment?	The permit is for the Pueblo Lone Mountain Allotment. The specified timeframe and number of cattle are for Oregon End Winter Pasture #16 within the allotment. The EA has been updated to address this question on page 13.
34	The cow use of the troughs will extend outward over time spreading weeds, destroying naturalness, creating an ugly new visual scar, etc.	Appendix F, Responses to Comments, of the EA #14, #16, and #17 (pp. 63–65) address this issue. Also see the proposed action page 11, "…the area would be treated for annual invasive plants…" Also refer to the adaptive management section, page 16, "If areas treated for reduction in canopy cover are not moving toward State B…, the area would be reseeded and/or resprayed…." Disturbance areas are addressed under Upland Vegetation, page 25, "Proposed water development effects to Oregon End Winter Pasture account for approximately 0.32 percent of the pasture. These percentages could actually be lower as two of the troughs would be placed along the road, lessening impacts to vegetation, and winter grazing reduces the amount of time livestock spend around troughs, lessening impacts." Also refer to Responses to Comments #12, #14, #15, #16, and #17 above regarding naturalness and cheatgrass.
35	Where will livestock use be shifted to while the burned area is being seeded and otherwise "treated"?	Livestock would be shifted to one of the other pastures (Pueblo Ridge or Desert Pasture) within Pueblo Lone Mountain Allotment. The AUMs for the entire Pueblo Lone Mountain Allotment would not change.
36	Terminate all AUMs for this site and cease grazing it to protect the public investment in the "treatment".	See Responses to Comments #4, #5, and #35 above regarding removal of livestock and partial removal. Also refer to page 17 of the EA where a no grazing alternative was considered but eliminated from further analysis.
37	BLM claims "no other sensitive species" besides sage-grouse are present. What about pygmy rabbits and native raptors? BLM	Please refer to Table 1, page 7, BLM Special Status Species and Habitat. See page 6, Migratory Birds, and page 8, Wildlife. The BLM acknowledges effects to migratory birds and wildlife; however, the amount of habitat change would be within the normal

	frequently ignores many species that are present.	range of variation and would not affect population levels over time. Small mammals would lose some habitat, and populations would probably decrease after treatments occur but would recover over time. Also, see Response to Comment #24 above regarding "issues." Surveys were conducted in 2001 for pygmy rabbits in the project area. No pygmy rabbits or burrows were found. According to BLM's GIS data, the nearest known burrow for pygmy rabbits is about 8.5 miles west of the proposed new well. There are quite a few burrows about 10.5 miles to the west. No pygmy rabbits were observed at the time of the survey but indication is the burrows were occupied. The nearest observation of a pygmy rabbit is about 12 miles to the west. Golden eagles are discussed on page 26.
38	What adverse impacts is grazing having on sage-grouse?	Page 27 of the EA address affects to sage-grouse under the no action alternative. As stated on page 13 of the EA, "There would be no changes to the terms and conditions of the permit, no increase or decrease of AUMs, no change to the season of use, and no change in livestock class." Rangeland Health Assessment, Standard 5 - Federal Threatened and Endangered Species, Federal Proposed, Federal candidates and other special status species, including sage-grouse, was achieved.
39	Why isn't BLM considering water from other sources?	There is only one trough within the project area providing reliable water. See page 2 of the EA under Purpose and Need. There are no live streams within the project area. One spring exists within Rincon WSA; however, it would not supply enough reliable water consistently.
40	The BLM will inflict ecologically harmful deleterious levels of cattle grazing, trampling and browse use in any areas claimed to be grazed for "fuels" suppression. (Belsky and Gelbard 2000)	Please see Responses to Comments #31 and #38. Also refer to the Purpose and Need on pages 1 and 2. The commenter does not provide a specific citation to Belsky and Gelbard 2000, so it is difficult to respond to the comment.
41	Climate change stress exacerbates the adverse effects of grazing and increases risk of hazardous flammable cheatgrass fuels (Beschta et al. 2012)	Please see Response to Comments in Appendix F, #22 (p. 67) regarding the Beschta paper. Also refer to Responses to Comments #5 and #24 above regarding grazing when grass is dormant and issue identification. One of the purposes of the project is to reduce invasive annual grasses and transition plant communities from states C and D to A and B (pp. 1–3 of the EA). Refer to figure 1, page 3 of the EA, regarding Vegetative State and Transitions. The definition of "state" is found on page 2 as a footnote. Page 9

		addresses native versus annual grasses, reducing the ability of fire to spread, and increasing desired perennial bunchgrasses. Also refer to the Purpose and Need, pages 1–3, pages 18–21 (Wildland Fire Management), and 21–24 (Upland Vegetation). The prescribed burn area is to return the area to state A over the long term except for the area along the road. The state goal along the road is state B.
42	The EA is devoid of any current carrying capacity, capability, actual use or other analysis so that the effects of the project in intensifying stocking can be understood.	43 CFR 4130.3-1(a) does not require BLM to establish a carrying capacity. It does require BLM to "specify the kind and number of livestock, the period(s) of use, the allotment(s) to be used, and the amount of use, in animal unit months, for every grazing permit or lease." Please see Responses to Comments regarding grazing when grass is dormant (#5), actual use (#31), and no increase to AUMs (#38).
43	BLM has failed to consider a suitable range of alternatives and mitigation actions.	Please see Response to Comments #3 above. Project design elements/required design features (or mitigation) are built into the proposed action. See pages 13–16.
44	There are highly likely to be permanent losses of sustainability of soils, vegetation, microbiotic crusts, native plant communities and native biota.	Thank you for your opinion. Please refer to table 1 in the EA regarding soils and biological soil crusts. Effects to Upland Vegetation, including native plant communities, as well as habitat for sage-grouse can be found on pages 23–26 and 26–28 of the EA, respectively.
45	BLM failed to consider an Alternative and Mitigation Actions of significantly reducing livestock numbers and removing a portion of the existing harmful facility infrastructure along with more conservative mandatory measurable use levels, coupled with careful and targeted restoration of native vegetation including smaller statured native Poa and other species in any "fuels" break.	Please see Responses to Comments #3, #4, #35, and #38 regarding alternatives, mitigation, and livestock grazing. The proposed action has a component of restoration, described on pages 9–11 and includes planting of native seed. See Response to Comments #21 above regarding troughs. Water developments are addressed under Purpose and Need; therefore, removing the one existing water infrastructure would not meet the purpose and need.
46	BLM must consider a full suite of alternatives, including alternatives that restore current cattle-damaged lands and a whole series of sagebrush destruction and "fuels" projects BLM has already carried out.	See Response to Comments #3 above. The BLM is unaware of any sagebrush destruction and "fuels" projects within the Pueblo-Lone Mountain area other than areas previously burned by wildfire or in the case of Rincon Seeding, which was established in 1953 and maintained in 2003. The environmental consequences for SSS (p. 26 of the EA) provides a list of past fires, seedings, and brush-beating activities.
47	Recovering and restoring sagebrush in mowed	Thank you for your opinion. Please see Response to Comments #46 above.

	areas and/or the grossly cow-abused crested wheatgrass seedings in the allotment should be the first and foremost action BLM takes.	
48	BLM has not taken a hard look at whether the action will actually reduce the frequency, intensity and severity of fires. BLM provides no science-based look at whether the project may instead increase fire frequency, intensity and severity.	Refer to Response to Comments #1. The commenter does not suggest any science supporting the claim the project may instead increase fire frequency, intensity, and severity.
49	There is no baseline provided of the existing plant community, carrying capacity, or other essential data.	Please see Response to Comments #30 regarding upland vegetation and #42, above, regarding carrying capacity.
50	There is no data provided of the amount of existing crested wheat seedings, sage mowing and other destruction of native plant communities already taken place in the Beattys Butte and Pueblo-Lone Mountain area.	See Response to Comments #46 above.
50	The locations and acreages of native vegetation communities are not adequately revealed.	See Response to Comments #30 regarding vegetation communities.
51	There is not specific information and sideboards on fuel amounts that will trigger (or not trigger) grazing, or the levels of grazing that will take place.	See Responses to Comments #31 and #38 above regarding grazing and AUMs.
52	Where are sage-grouse leks located?	Data regarding sage-grouse leks belongs to Oregon Department of Fish and Wildlife. General lek information is described in the EA on page 26.
53	What habitat categories are impacted?	See Response to Comments #30 regarding vegetation communities. Sage-grouse habitat categories are described on page 26 of the EA.
54	Where have triggers been tripped?	The Pueblo/South Steens Priority Area of Conservation has not tripped any triggers for sage-grouse.

55	There is no information on wind direction, road density, topography.	See the Wildland Fire Management Section on page 18 of the EA regarding wind direction. There is only one road through the project area – Funnel Canyon/Oregon End Road (see p. 9 of the EA and maps on pp. 70 and 71). See EA maps at pages 70 and 71 for topographic features. The SSS and WSA sections of the EA, pages 26 and 33, respectively, also address topography.
56	The Murphy Report shows grazing makes almost no difference under the type of weather conditions when wildfires typically burn in the west.	Refer to Appendix F, Response to Comments, #15 (p. 63) regarding targeted grazing. The Lauchbaugh 2008 paper offers many examples on how grazing can reduce fire spread. For example, on page 12 of this paper, several photos show fenceline contrasts between burned (ungrazed) and unburned (grazed) areas. Their model showed that reducing levels of fine fuels, as might be accomplished with livestock grazing, reduced the modeled surface rate of spread and fire line intensity. This paper supports the effects described in the wildland fire management section of the EA, which describes how flame lengths would be shorter in a grass fuel model vs. a grass and shrub fuel model (EA, p. 20).
57	There is no analysis of conflicts of the actions with the RMP protections for WSAs, soils, crusts, riparian areas, water quality and quantity, watersheds, biodiversity, riparian areas, wildlife, native vegetation communities, special status/TES species, big game, migratory birds, cultural resource, paleontological values, cultural values and sites, public health and safety, recreation, air quality, socio-economic values and sustained yield.	Affects to WSAs can be found on pages 34–36; Upland Vegetation on pages 23–26; SSS-Wildlife on pages 26–28; Cultural Resources on pages 37–38; and Wildland Fire Management for firefighter safety on page 20. The RMP, appendix J addresses AUM levels. Please refer to table 2 of the EA for all other issues/resources.
58	BLM has not demonstrated that a pilot project in the Pueblos is needed. Explain why another fuel breaks project could not be studied instead (e.g. Soda Fire, Martin Fire, and “Tri State” project)	Please see Appendix E, Pueblo Project Area Subcommittee Summary, addressing the selection process of this project area. Also refer to the Purpose and Need on pages 1–3 of the EA.
59	The project area boundaries are arbitrary. At	See Response to Comments #58 above.

	the upper (west) end of the project area, the fuel break simply stops at the Lakeview District Boundary.	
60	In firefighting terms, there is no “anchor point”.	Firefighting strategies are outside the scope of the EA. Please refer to the wildland fire management section of the EA, page 20, regarding defendable space for firefighters.
61	There are already natural features that would be at least as effective at stopping or slowing a “mega fire” as a new fuel break.	Refer to the Purpose and Need on pages 1–3 of the EA and page 19. There are limited natural or human-made features within the project area to use as fire lines. In some cases, these features may be more than a mile from the active flaming front.
62	A fuel break would add no additional ability to stop or slow fires on the lower end of the project area. It is difficult to see how BLM could lessen fire risk with prescribed fire because the valley bottom is already nearly devoid of flammable vegetation due to extreme grazing degradation.	Thank you for your opinion. See Response to Comments #41 above regarding tate and transition models. Also refer to the Purpose and Need on pages 1–3 of the EA, the wildland fire management discussion on pages 18–21, and the Upland Vegetation Section describing the affected environment.
63	The series of existing livestock troughs west of the upper (west) side of the project area on the Beatty Butte allotment could be used instead without developing new infrastructure in WSAs. There is no need for additional water troughs in between.	See Appendix F, Response to Comments, #17 (p. 65) and page 2 of the EA. The proposed water development would be used to direct livestock use along the road to reduce fine fuels and reduce grazing pressure in the southern portion of the pasture. The troughs and pipeline would be located outside the WSAs. See page 12 of the EA under Water Developments. Livestock from the project area are not permitted to graze in the Beatty Butte Allotment, and these troughs would not control livestock movement within the Pilot Project area.
64	Development of livestock grazing infrastructure and authorization of livestock grazing on the allotment through the issuance of a grazing permit are “connected actions”.	See Response to Comments #10 above regarding connected actions. In addition, the action does not include issuance of a new permit or any changes to the terms and conditions. See Response to Comments #38.
65	The upper portions of the project area have good quality and relatively intact upland communities. Extending the pipeline and troughs to these areas will only serve to degrade them. The middle and lower elevation	Please refer to the Purpose and Need of the EA at pages 1–3. Also refer to Response to Comments #34 regarding the proposed action and adaptive management. The commenter does not indicate when the photos were taken. The permittee uses supplement tubs during his permitted season of use (November 1 through February 28); therefore, it is assumed the photos were taken during this time period. As such, evidence

	areas of Long Draw where the permittee has placed nutrient tubs, effecting the same type of intensive grazing that BLM is seeking through this pipeline project. (Figures 5-14 and 18-23)	of livestock use would be expected. Please see Response to Comments #5 "Research has shown winter grazing does not promote exotic plants (Davies 2015)…."
66	WSA areas extent to the road's edge and wilderness values would be negatively impacted by new infrastructure and increasing grazing.	See pages 33–36 regarding affects to WSAs. The Funnel Canyon/Oregon End Road divides the Hawk Mountain from Rincon WSA. Where a WSA is bounded by a road, as is the case here, the WSA boundary is the edge of disturbance of that road that existed at the passage of FLPMA. The troughs would be placed within the road disturbance area. Some surface disturbance within the boundary of the WSA would occur as livestock mill around the water trough. This disturbance is limited in time and intensity by the temporary nature of the troughs. Exceptions to the non-impairment standard allow such impairments when there is a clear benefit to the WSA. See Response to Comments #21 regarding trough placement. Also see Response to Comments #36; there would be no increases to the number of AUMs permitted due to the additional water.
67	BLM failed to study the potential impacts to the values of adjacent Sheldon National Wildlife Refuge. BLM needs to study the potential impacts to the Refuge from increased invasive plant species, risk of fire from escaped prescribed burn, and other negative impacts to wildlife.	A cumulative effects analysis area was identified for each resource issued analyzed. See pages 19, 22–23, 26, 29, 33, and 37. Also refer to Responses to Comments #34 and #41 regarding vegetative states and adaptive management to ensure implementation success. On page 10, under the proposed action, is a description of the prescribed fire procedures and requirements.
68	BLM must consider the reasonable alternative of removing livestock grazing from the project area now.	See Appendix F, Response to Comments, #3 (p. 59) of the EA and Responses to Comments #3 and #4 above regarding the purpose and need and a no grazing alternative.
69	It is deeply concerning that BLM proposes to accomplish reduction in invasive plants by increasing the extent of grazing. Intensive grazing surely played the major role in the degradation of these areas to begin with and livestock are one of the major drivers of exotic species invasion. Increased grazing will not	Please refer to appendix F, page 61, to the unnumbered response to comment following Comment/Response No. 10, 14, 15, 16 and 17. Also see Response to Comments #3 and #4 above regarding the purpose and need and a no grazing alternative.

	lead to increased native vegetation. Instead BLM should remove livestock to accomplish this goal. To view the effectiveness of passive restoration through removal of livestock, one only needs to look at a portion of the same valley, directly adjacent to the project area, Sheldon Refuge, where livestock grazing has been removed.	
70	It is remarkable that BLM determined that this area of the allotment meets rangeland health standards. It is clear that livestock grazing is the cause of the severe degradation.	See Response to Comments #32 above regarding rangeland health assessments. Standards for rangeland health and grazing guidelines (S&G) locations were picked within a representative area of the major ecological site(s) within a pasture. Page 2 of the EA acknowledges natural successional processes have been disrupted by past human activity (overgrazing) to the extent intervention is necessary.
71	BLM has not considered impacts to bighorn sheep. There is a risk that bighorn sheep will come into contact with livestock more frequently because of new concentration areas around new water troughs, BLM must consider the likely effects on bighorn sheep from competition for food and spatial competitions with cows (Bissonette and Steinkamp 1996, Garrision et al. 2015, and disease transmission, which may occur from cattle to bighorn sheep (Wolf et al. 2010, Drew et al. 2012, Wolff et al. 2016).	There are several water sources bighorn sheep probably use that cattle use as well across the allotment. There are also three or four wildlife guzzlers on Lone Mountain used by bighorns and other wildlife where livestock are excluded. Oregon Department of Fish and Wildlife (ODFW) has not reported any decline in bighorn sheep in that area. They are part of the Wildfire Collaborative, and this issue was not raised. In addition, in personal communications (R. Klus) with ODFW on Friday, March 1, ODFW has no concerns with bighorn sheep and cattle using the same watering sources.

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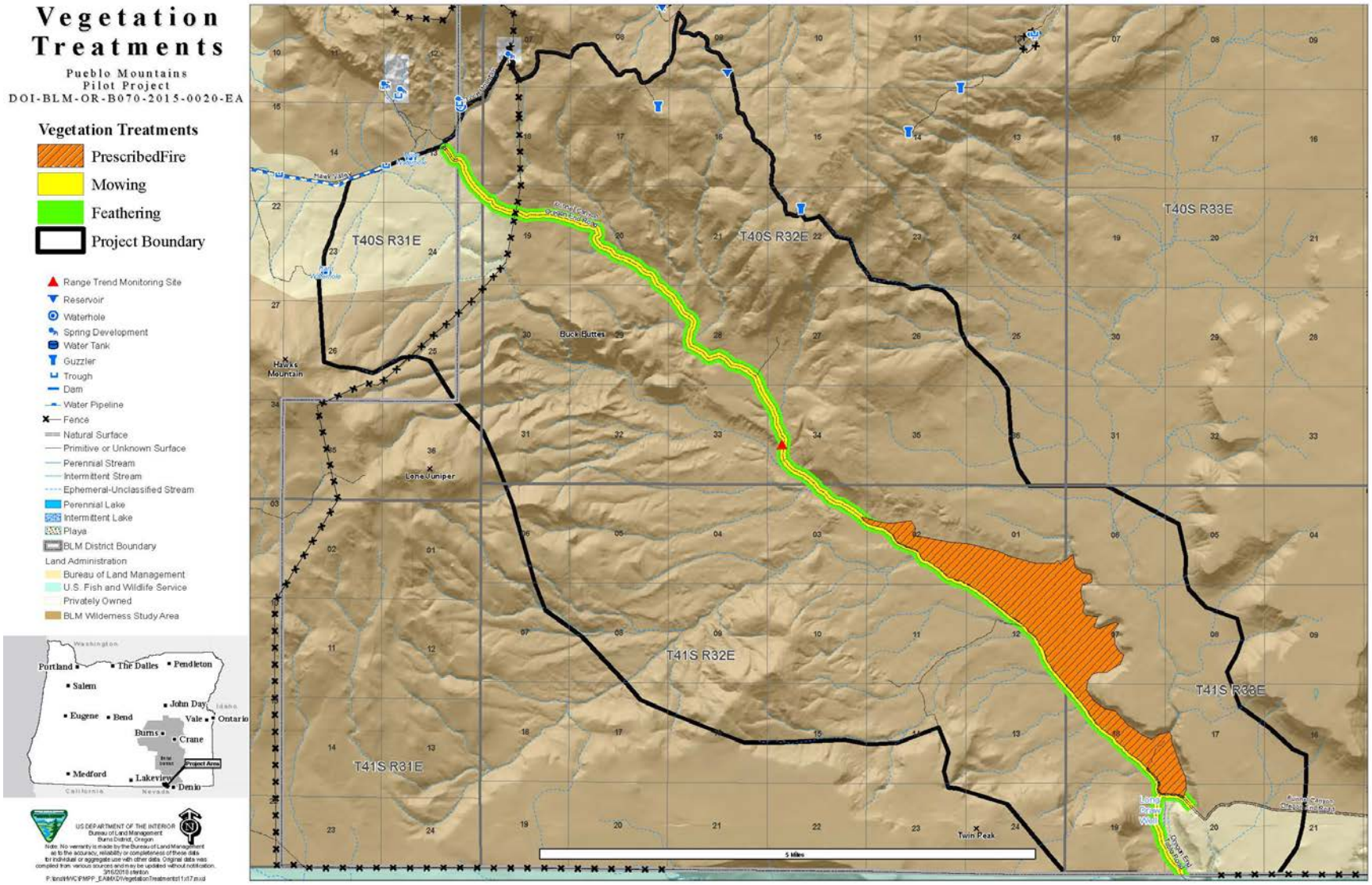
Vegetation Treatments
Pueblo Mountains
Pilot Project
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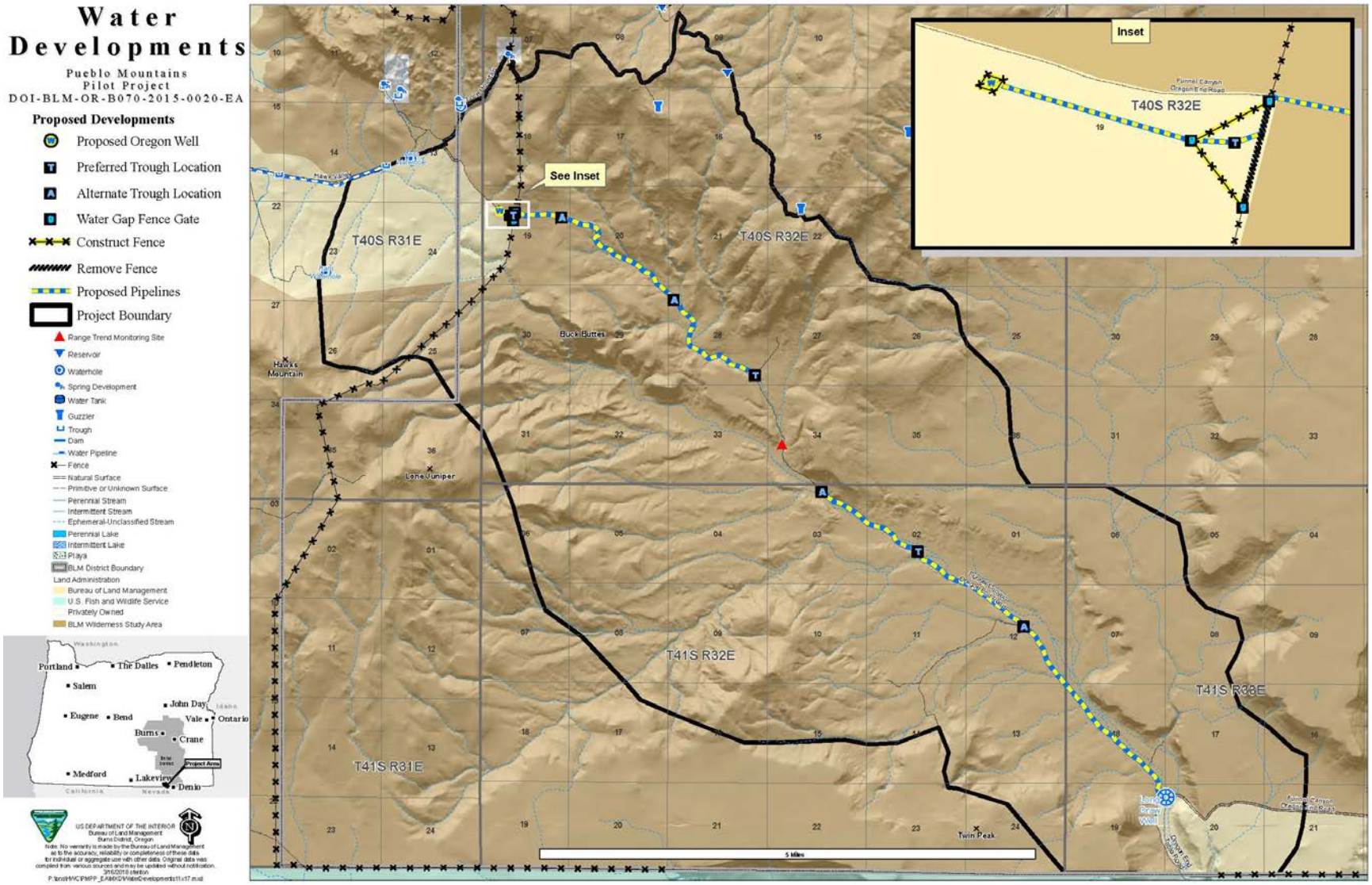
Vegetation Treatments
PrescribedFire
Mowing
Feathering
Project Boundary
Range Trend Monitoring Site
Reservoir
Waterhole
Spring Development
Water Tank
Guzzler
Trough
Dam
Water Pipeline
Fence
Natural Surface
Primitive or Unknown Surface
Perennial Stream
Intermittent Stream
Ephemeral-Unclassified Stream
Perennial Lake
Intermittent Lake
Playa
BLM District Boundary
Land Administration
Bureau of Land Management
U.S. Fish and Wildlife Service
Privately Owned
BLM Wilderness Study Area
Portland
The Dalles
Pendleton
Salem
John Day
Eugene
Bend
Vale
Ontario
Burns
Crane
Medford
Lakeview
Denio
Project Area
T40S R31E
T40S R32E
T40S R33E
T41S R31E
T41S R32E
T41S R33E
Hawks Mountain
Buck Buttes
Lone Juniper
Twin Peak
Long Draw Well
5 Miles


Water Developments
Pueblo Mountains
Pilot Project
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Proposed Developments
Proposed Oregon Well
Preferred Trough Location
Alternate Trough Location
Water Gap Fence Gate
Construct Fence
Remove Fence
Proposed Pipelines
Project Boundary
Range Trend Monitoring Site
Reservoir
Waterhole
Spring Development
Water Tank
Guzzler
Trough
Dam
Water Pipeline
Fence
Natural Surface
Primitive or Unknown Surface
Perennial Stream
Intermittent Stream
Ephemeral-Unclassified Stream
Perennial Lake
Intermittent Lake
Playa
BLM District Boundary
Land Administration
Bureau of Land Management
U.S. Fish and Wildlife Service
Privately Owned
BLM Wilderness Study Area
Portland
The Dalles
Pendleton
Salem
John Day
Eugene
Bend
Vale
Ontario
Burns
Crane
Medford
Lakeview
Denio
Project Area
US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon
See Inset
Inset
T40S R31E
T40S R32E
T41S R31E
T41S R32E
T41S R33E
Hawks Mountain
Buck Buttes
Lone Juniper
Twin Peak
5 Miles