

Appendix I

Prescribed Fire In Indian Meadows Allotment (#0520)

1. Juniper Management

This project would reintroduce the natural role of fire on public, state, and private lands in the Indian Meadows allotment. These burns would be a cooperative effort with Idaho Department of Lands (IDL) and would be done in conjunction with burns on the State Endowment Lands. Cooperative burns with IDL on this allotment would allow minimal use of surface disturbing equipment by establishing fire lines based on topography, other natural features, and existing roads instead of along artificial ownership boundaries. These cooperative efforts also make prescribed burns more cost effective.

A. Objectives of the Proposed Juniper Management Projects

- A. Maintain aspen, mountain shrub, mountain big sagebrush/bitterbrush-bunchgrass communities and low sagebrush/bunchgrass communities by controlling juniper with prescribed fire on approximately 60% of the 4,744 acres within pasture 5 (Noon Creek).
- B. Improve herbaceous components within mountain big sagebrush/mountain shrub/juniper dominated communities with prescribed fire on approximately 50% of the 1,442 acres of public lands within the pasture 1 (Williams Creek).
- C. Maintain watershed function, stability, and reduce accelerated erosion by maintaining and increasing shrub and diverse herbaceous plant communities, which provide cover and litter needed to protect the soil.
- D. Restore suitability of mountain big sagebrush/bitterbrush-bunchgrass communities as sage grouse nesting habitat.
- E. Improve wildlife habitat for sage grouse, elk, mule deer, antelope, migratory birds, small mammals, amphibians, and reptiles by creating and maintaining vegetative mosaics. These seral stages would maintain various habitats to meet the forage and cover requirements for these species.

B. Treatment Units

Indian Meadows Allotment (#520) – Pastures 1 (Williams Creek) and 5 (Noon Creek), which consists of approximately 6,186 acres of public land. Also incorporated within the prescribed fire parameters is approximately 6,160 acres of IDL lands.

Pasture 1

The vegetation is dominated by dense, mid to late seral mountain big sagebrush and juniper. There are also communities of dense bittercherry and ceanothus; and scattered patches of

mountain mahogany located primarily within rocky outcrops. Currently, perennial grasses still occur within the understory. However, they are sparse and in low numbers due to dense stands of sagebrush and juniper.

Pasture 5

Most of the pasture is contained in the North Fork Wilderness Study Area. The vegetation is dominated by dense, mid to late seral juniper. The east half of the pasture still contains an abundance of aspen, bittercherry, ceanothus, and some mountain mahogany. Perennial grasses still occur in the understory, however they are sparse and are suppressed by the juniper competition. The west half of the pasture consists of rocky shallow soils dominated by seral juniper with sparse grass understory.

With the advanced encroachment stage of the juniper and the sparse understory, it is estimated that approximately 20% of the juniper would burn at any one time. Therefore, a number of separate burns may be needed in order to reduce juniper by 60% on these pastures.

An allowable burn area (See Map 3) would be established outside the project area to act as a buffer in the event the fire burns outside the project area. The allowable burn area is similar vegetatively to the project area, and would respond in the same way if it was burned. BLM does not intend to burn in this area. If fire escaped into the allowable burn area, the fire would be suppressed there. Burning operations could then continue in the project area. However, if the fire burned outside the allowable burn area, it would be considered an escaped fire situation. Burning operations would have to be terminated for the rest of the day, and all resources on the site would be diverted to suppressing the fire.

C. Prescribed Burn Operating Procedures:

1. The burns would be ignited by helicopter and by ground ignitions.
2. No graders, dozers, or other surface disturbing equipment would be used on public land to implement the burn.
3. Methods used to keep the fire contained in the proposed burn perimeter and to achieve landscape mosaic burns could include, but are not limited to, the following:
 - Using topographical features, trails and sparse vegetation to control the scope of the fire
 - Roads and rock out crops would be used when possible to establish burn perimeters
 - Some hand-line work may be used to create burn perimeters where no other features exist
 - Burning during September or October when the burning period is typically shorter
 - Burning later in the day, which uses night time humidity to extinguish the fire
 - Burning black lines at night to control boundaries of daytime ignition
 - Using weather forecasts, on-site weather readings, as well as monitoring fuel moisture on site to determine when to initiate ignition procedures.

4. Fire engines and ATVs would be used to control the black lines, requiring some off-road travel by these vehicles. Travel would be restricted to existing roads when possible. No off-road travel would occur within the WSA.
5. The under-carriage of all vehicles involved in the prescribed burn would be cleaned before traveling to the project area to reduce the likelihood of introducing noxious weed seed.

D. Pre and Post Treatment Livestock Grazing Management:

Livestock management is an integral part of the long-term success of this project.

1. The burned areas would be closed to livestock grazing the year that it is burned to allow accumulation of the fine fuels needed to carry a fire. In some cases additional pre-burn rest may be needed to accumulate enough fine fuels. This may be necessary during low precipitation years or in areas where advanced juniper encroachment has diminished the under story.
2. Burned areas would then be rested at least two growing seasons following the burn to allow vegetative recovery in accordance with LSRD policy and the Owyhee resource management plan.
3. Livestock AUMs will be temporarily reduced to offset forage reduction resulting from the minimum three growing seasons rest on the burned pastures. Pasture rotations on the rest of the pastures may be temporarily modified to facilitate livestock use through the allotment. (For instance, livestock may enter a useable pasture earlier or later than they normally would since their movement sequence is disrupted by the currently unavailable treated pasture). However, normal rest or deferment on untreated pastures would not be sacrificed to offset lack of forage in treated areas. Instead, livestock use will be temporarily reduced proportional to the amount of forage that is unavailable during the fire rest period. These temporary changes in livestock use would be implemented through a decision.
4. The uplands and riparian areas would be monitored after the two growing seasons of rest from livestock grazing to determine whether adequate vegetative recovery occurred to resume livestock grazing based on monitoring objectives. Additional rest would be implemented if monitoring objectives indicate that adequate recovery has not occurred.

E. Monitoring

Monitoring Objectives:

1. Allow vegetation recovery of the burn to provide for stable watershed conditions by restoring ground cover to at least 80% of the ground cover of similar unburned adjacent sites.
2. Restore perennial grass vigor by resting the burn until the seed stalk production, and vegetative production of the rested burn areas is equal to that of pre-burn conditions.

3. Allow aspen leaders to reach an average height of 4 feet on areas accessible to livestock before the pasture is reopened for livestock grazing.
4. Track the short and long-term reestablishment of sagebrush and bitterbrush on the burned area.

Monitoring Methods:

Sampling sites would be established at various locations in the project area before burning. The sites would be sampled before burning, to obtain baseline data, and on subsequent years following burning, to assess plant recovery, plant reestablishment, and watershed recovery.

The data would be used to determine if the project objectives were met, when livestock can reenter the allotment, and the long-term change in vegetation over time resulting from the management actions. This information would be beneficial in quantifying plant community responses for future prescribed burns. The following vegetative attributes and monitoring methods will apply:

Cover: Point intercept and foliar cover would be recorded to obtain pre- and post-burn ground cover. This method would provide information for assessing soil cover, watershed recovery, and changes in plant cover and community composition following the burn.

Density: One-Hundredth acre shrub density plots would be used to record shrub density before burning and to quantify post-burn shrub reestablishment.

Plant Vigor: Seed stalk and vegetative production would be recorded and compared with unburned sampling sites.

Photo Plots: A 3ft x 3ft plot would be photographed and sketched at each sampling site.

Nested Frequency: Existing nested frequency transects are read every five to ten years. Burn area plots may be read annually for up to three years after the burn. This information would indicate the change in plant species composition resulting from the burn.

Aspen: Measure average aspen leader height before livestock plan to reenter the pasture to determine whether the minimum average 4 foot leader length is achieved.

Riparian shrubs: Monitor visually and with photographs to determine if these species are regenerating. Some mortality of riparian shrubs is expected to occur. If monitoring indicates that species at a given site are not reproducing, seedlings or cuttings would be planted. If necessary, these sites would be protected from grazing until the plants are capable of withstanding browsing.

Noxious weeds: Attention would be given to locate noxious weeds when working in this area. If infestations are found they would be recorded, treated, and monitored, accordingly.

F. Reinstatement of Livestock Grazing:

These data and the Lower Snake River District Range Readiness criteria would be used to determine when livestock grazing can be resumed on the burned areas after the two growing season rest period. If the preponderance of evidence indicates the first three Monitoring Objectives are not being met by the end of the second growing season, the livestock closure period would be extended and monitored annually.

Monitoring Objective No.4 would not be used in determining when livestock grazing can resume. Generally, observations and research has proven that bitterbrush responds favorably to prescribed fire, and has even increased over time, via re-sprouting and new seedlings in this general area (BLM personnel experience and observation; and University of Idaho Research - Bunting, Neuenschwander, and Gruell, 1985). Re-establishment to pre-burn densities may take more than 10 years with or without livestock grazing. Livestock use on bitterbrush occurs primarily in the fall after the perennial grasses have cured out. Under the proposed grazing system livestock use would alternate between spring and fall use, which would favor bitterbrush establishment. Mountain big sagebrush reestablishes rapidly after burning. It is not palatable to livestock and is therefore not affected by livestock grazing.

G. Watershed Protection:

The prescribed fire would be expected to burn with a light fire severity and in a mosaic pattern on the landscape. Some pockets of heavier fuels could burn with a hotter fire severity. If post-burn reconnaissance identifies areas on steep slopes or in steep draws that burned hot, erosion prevention (such as straw bale check dams) would be initiated.

H. Cultural Resources Inventory:

This area has not been systematically surveyed over the full extent of the project area. A cultural inventory to identify historic properties, specifically burnable historic artifacts, structures, or features including historic arborglyphs on aspens and prehistoric rock art, would be completed prior to project implementation. Impacts to historic properties would be avoided or mitigated by recording and determination of significance.

I. Sensitive Species Inventory:

A botanical and wildlife inventory would be conducted of the area. If sensitive plants were found, impacts would be avoided or mitigated. The burn prescription would be tailored to mitigate effects to sensitive animal species.

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Appendix II

Water Quality Restoration Plan for Portions of the

North Fork Middle Fork Owyhee River Sub-Basin (HUC # 17050107): Noon Creek, Noon Creek Tributary, & that portion of the North Fork Owyhee River

Overview

Streams on the Indian Meadows Allotment include the headwater portions of Noon Creek and an unnamed tributary to Noon Creek and the North Fork Owyhee River. Most of the North Fork Owyhee River in the allotment is presently in proper functioning condition, however there is one segment that is functioning at risk. Noon Creek and its tributary are in non-functioning and functioning at risk conditions. All streams are intermittent in the allotment and the upper most reaches have surface flow only in the spring and near spring sites.

In 1996 two water bodies in the Indian Meadows Allotment were classified, by the Environmental Protection Agency (EPA), under 303(d) of the Clean Water Act as water quality limited. These streams were again identified in the draft 1998, 303 (d) list issued by EPA for the following reasons:

1. North Fork Owyhee River - High temperature and excessive bacteria.
2. Noon Creek - Excessive sediment, high temperature, flow modification

Results of monitoring in 1999 by Idaho Department of Environmental Quality (IDEQ) show that existing uses of the North Fork Owyhee River and tributaries include: cold water biota, salmonid spawning and rearing (redband trout), primary contact recreation, secondary contact recreation, and agricultural water supply. Additional uses designated for the North Fork Owyhee River include domestic water supply and special resource waters.

All water bodies are required to meet Idaho water quality standards for designated beneficial uses within the State of Idaho. Section 401 of the Clean Water Act states that in the case of interstate waters where state criteria differ, the more restrictive standard must be met at the border. Oregon included the North Fork Owyhee River on their 1998-303(d) list for high stream temperature.

Stream temperature data from water bodies within the North Fork Owyhee Hydrologic Unit (HUC) show that stream temperatures exceed the current Idaho and Oregon water quality standards for cold water biota, salmonid rearing and salmonid spawning during the designated spawning period, therefore the “North and Middle Fork Subbasin Assessment and Total Maximum Daily Load (TMDL)” document was prepared. Data collected and reviewed during this process did not support the excessive sediment classification; however there can be no increases to the current sediment load that would impair existing uses. This data collection and review process also did not indicate an excess of bacteria in the system, therefore no bacteria

load reduction was proposed. EPA does not require flow alteration to be addressed as a TMDL pollutant therefore flow alteration is not addressed.

All pollutants listed in the 1996 303(d) list are non-point sources originating on public, state or private lands within fourth order hydrologic unit (HUC 17050107) which in part includes the North and Middle Fork Owyhee Rivers and their tributaries in southwest Idaho (see Map WQRP1). They drain generally west from Idaho into Oregon from the South Mountain and Juniper Mountain areas of the Owyhee Mountain range. The streams listed above, in the Indian Meadows grazing allotment, all originate on the south slopes of South Mountain and are used primarily for livestock grazing, fish and wildlife habitat, and some limited hay production on private lands.

All the above listed pollutants, with the exception of flow modification, are the result of (streambank) damage and loss of (streambank) shade due to livestock grazing. Additionally road crossings are a minor source of sediment. (See "North and Middle Fork Owyhee Sub-basin Assessment and Total Maximum Daily Load".)

Recovery goals and objectives

The recovery goal is to comply with the Clean Water Act and Idaho Water Quality Standards for temperature, sediment and bacteria on streams crossing public lands in the Indian Meadows Allotment.

Objectives include: reduce streambank damage; reduce bacteria contamination of the streams; improve herbaceous and woody species diversity, composition, density, vigor, cover, structure and root mass.

The vegetative community needed to meet the standard for temperature is expected to be:

- Woody species density and canopy cover providing 80% or more stream shading.
- A preponderance of late seral hydric herbaceous and woody species along the streambanks.

Restoration Plan

Best Management Practices proposed to address the pollutant sources are as follows:

- The Noon Creek pasture would be grazed according to the proposed management described in this EA. Adherence to short term objectives, as described under the proposed alternative, will ensure streams recover.
- Salt and supplement will not be placed within one-quarter mile of springs, streams, meadows, aspen stands, playas, or water developments.

Margin of Safety

How and to what extent the practice or group of practices is likely to reduce the pollutants and result in compliance with the Water Quality Standards.

Grazing the Noon Creek Pasture according to the proposed management will allow for reduced forage utilization in the pasture and less grazing pressure on the streams through rotation and rest. Riparian vegetation will have time to regrow when the pasture is used early and riparian vegetation will be less palatable to livestock and soils more stable in the late fall. Retention of at least 4 inches of stubble height on herbaceous riparian species and 75% of the current years growth of shrubs at the end of the grazing season will result in improved vegetation composition, vigor, cover, structure, density and root mass. Utilization of woody species will be reduced, thus allowing them opportunity for maximum growth during the critical growth period. Improved vegetative conditions will result in improved buffering of erosive forces of high flows and increased filtering of sediment allowing for bank stabilization and aggradation, improved shade, water storage, and riparian expansion. Streambank stability will improve, water infiltration and bank storage will increase, and water quality, and fishery habitat will improve.

Prescribed fire is likely to also increase availability of herbaceous plants in the uplands and will induce livestock to spend more time out of the riparian zone, thus reduce the use of riparian plants and reduce the amount of soil compaction and bank trampling. Rest associated with prescribed fire will also allow time for riparian vegetation to establish and grow.

The narrowing and deepening of the streams associated with bank stabilization and aggradation along with improved stream cover (shade) would reduce water temperature thereby complying with or approaching compliance with the 1999 "North and Middle Fork Owyhee Subbasin Assessment and Total Maximum Daily Load" document and Standard 7 (Water Quality) for Rangeland Health.

Implementation Plan

The grazing system will be implemented beginning in the year 2003.

Greenline transects will be established on Noon Creek and the North Fork Owyhee River in the year 2004. Permanent photo trend sites will be established on Noon Creek, Noon Creek Tributary and the North Fork Owyhee River in 2004.

Estimated Recovery Time

It is expected that a vegetative response to the management changes would be observed in as little as 5 years and full recovery would be expected in 10 to 15 years. Time frames for stream recovery in this area are based on experiences and observations of Ervin Cowley, Idaho BLM Rangeland Management Specialist (Riparian/Water Quality).

Cumulative impacts of past, present, and future management

Past and present management have resulted in degraded stream and riparian conditions, increased streambank erosion and decreased riparian vegetation. It is expected that all streams in the Indian Meadows Allotment will recover under the proposed management system. This allotment, however, represents only a fraction of the BLM acreage within the North Fork Owyhee River hydrologic unit. The proposed improved management will have the greatest effect on streams in the Indian Meadows Allotment and have minor positive impacts on downstream segments below in the Cliffs Allotment. BLM land management throughout the

watershed, however, is incorporating best management practices, which will result in overall improved water quality. Prescribed fire in the allotment should improve overall watershed health and allow for improved livestock distribution away from the streams. Most of the stream reaches in the allotment are located within a Wilderness Study Area, which prohibits spring development and other rangeland management projects, road construction, and off road vehicle use. This type of management, combined with the grazing management, is beneficial for the streams. There is only one road through the area and it is a minor contributor of sediment to Noon Creek. There is one dispersed campsite near the headwaters of Noon Creek that is also a minor contributor of sediment to Noon Creek. Eventually, with the increased cover of deep rooted species such as sedges, rushes and willows, the streambanks will begin to stabilize and channels will deepen and narrow. This will provide for better stream shading and subsequent lowering of stream temperatures, and reduced sediment input.

Monitoring Plan

The greenline transect monitoring method, as described in "Water Quality Monitoring Protocols - Report No. 8, (Protocols for Classifying, Monitoring, and Evaluating Stream/riparian Vegetation on Idaho Rangeland Streams. Idaho Department of Health and Welfare, Division of Environmental Quality, 1992.)", will be the primary monitoring tool.

Greenlines will be established 2004 on Noon Creek and the North Fork Owyhee River and will be re-reading at 5 and 10-year intervals. Photo trend points will be established on Noon Creek and the North Fork Owyhee River in 2004.

Utilization studies for herbaceous and woody species will be conducted in years 2, 4, 7 and 9 of the grazing plan or more frequently if conditions merit additional studies.

Stream temperatures may be monitored at 5-year intervals, or as deemed necessary to gather background data and to determine compliance with Idaho Water Quality Standards.

Functioning Condition Assessments will be conducted at 10 year intervals or when a change in functioning condition is apparent, whichever comes sooner.

All monitoring is subject to future funding and available personnel.