



United States Department of Agriculture
Forest Service

East Walker Landscape Habitat Improvement Environmental Assessment

Bridgeport Ranger District, Humboldt-Toiyabe National Forest
Lyon and Mineral Counties, Nevada



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*Photo Description: East Walker Landscape Habitat Improvement Project—Phase 1 piñon-juniper encroachment into a sagebrush ecosystem. Photo credit: Joanne Lowden.

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Introduction

The Bridgeport Ranger District is proposing to remove singleleaf piñon pine (*Pinus monophylla*), hereafter referred to as piñon, and juniper (*Juniperus* spp. primarily *Juniperus osteosperma*) trees encroaching into sagebrush ecosystems and riparian areas to maintain, improve, or restore the quality of Bi-State sage-grouse (*Centrocercus urophasianus*) habitat on National Forest System (NFS) lands in Lyon and Mineral Counties, Nevada. The 7 proposed treatment units include approximately 29,300 acres. These actions are proposed to be implemented on the Bridgeport Ranger District of the Humboldt-Toiyabe National Forest.

These actions are being proposed to reverse the decline of Bi-State sage-grouse populations and help preclude the species from being listed as Threatened under the Endangered Species Act of 1973 (ESA). The greater sage-grouse is a Candidate for protection under the ESA. Sage-grouse on the Bridgeport Ranger District are part of a distinct population segment (DPS) of the greater sage-grouse. This DPS, called the Bi-State population, was given a higher priority for listing than the greater sage-grouse as a whole due to the presence of more immediate and severe threats. The U.S. Fish and Wildlife Service (USFWS) proposed to list the Bi-State population as Threatened in October 2013.

This project is subject to 36 CRF 218 subparts A and B. Subparts A and B establish provisions for a pre-decisional objection process. This objection process is the sole means by which administrative review of qualifying projects may occur. The East Walker Landscape Habitat Improvement project (East Walker project) would implement a land management plan that is not authorized under the Healthy Forest Restoration Act.

This environmental assessment (EA) was prepared to determine whether the proposed action or alternatives to it would significantly affect the quality of the human environment and require preparation of an environmental impact statement. By preparing this EA, we are fulfilling agency policy and direction to comply with the National Environmental Policy Act (NEPA). For more details of the proposed action, see the “Proposed Action and Alternatives” section of this document.

Proposed Project Location

The project area is located approximately 15 miles north of Bridgeport, CA (Figure 1) and includes Bi-State sage-grouse habitat within the Desert Creek-Fales and Mount Grant Population Management Units (PMUs) (Figure 2) in the state of Nevada. .

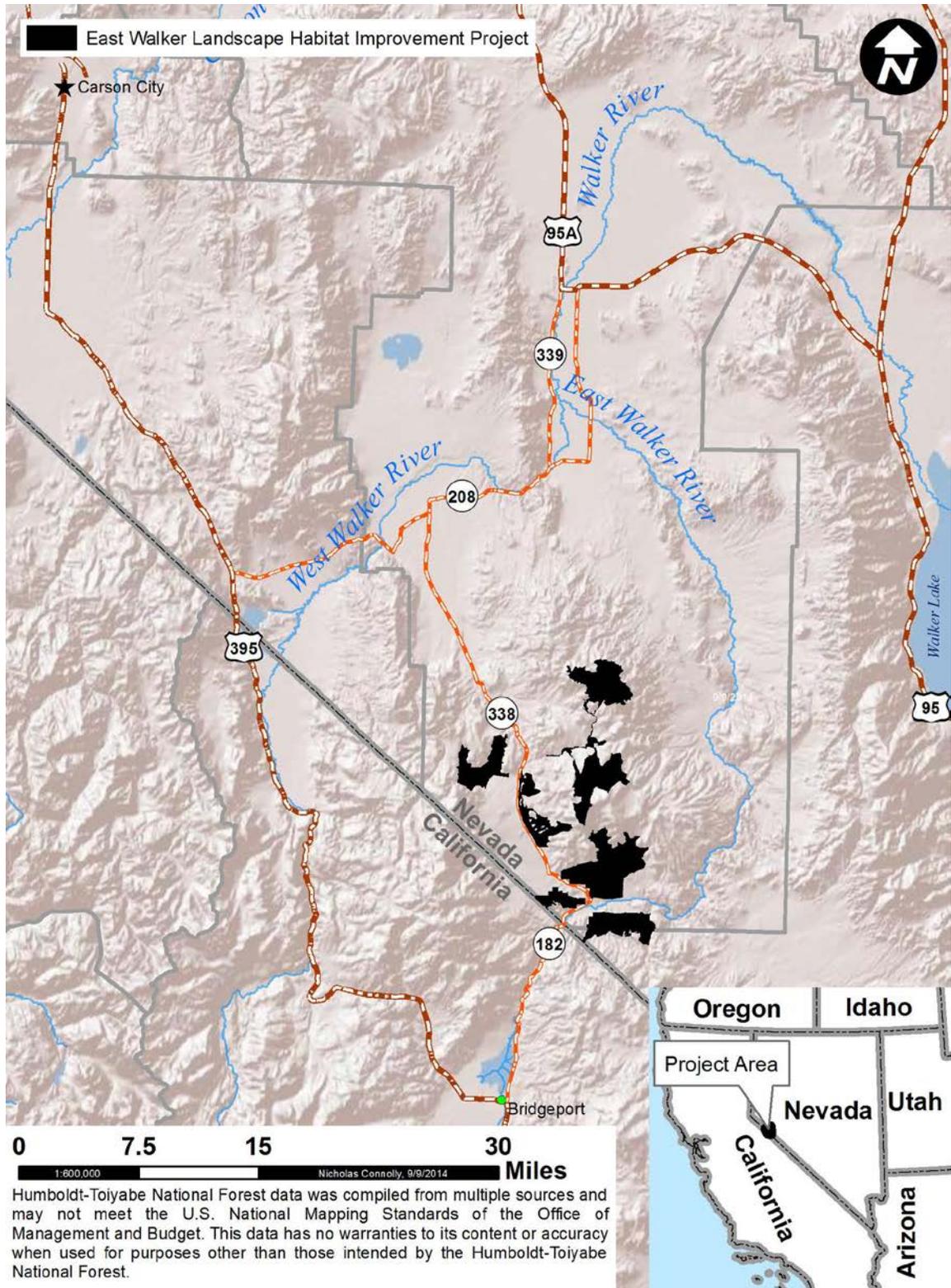


Figure 1. Vicinity map

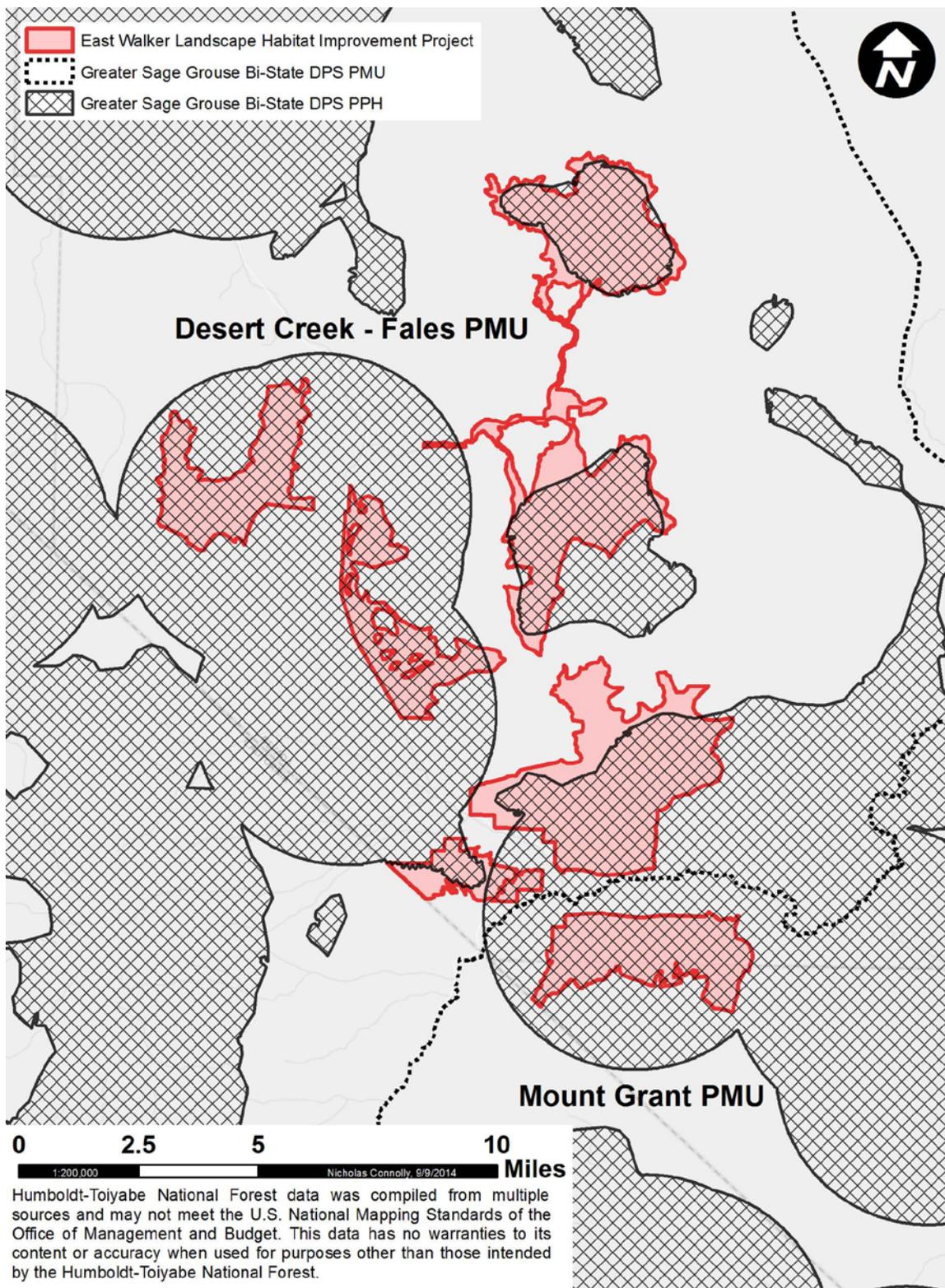


Figure 2. Bi-State sage-grouse habitat and population management unit (PMU) map

Need for the Proposal

The need for the East Walker project is to meet the standards for sage-grouse habitats as identified in the Toiyabe National Forest Land and Resource Management Plan (Forest Plan) (USDA Forest Service 1986) and address priority conservation strategies for Bi-State sage-grouse as defined in the Bi-State Action Plan (BTACNC 2012a).

The East Walker project is a critical part of a comprehensive interagency strategy to provide for the long-term conservation of the Bi-State sage-grouse and its habitat through the implementation of a framework of habitat improvement treatments, administrative actions, monitoring, and research actions. The Bi-State Action Plan (BTACNC 2012a) documents the comprehensive set of strategies and actions needed to achieve the effective long-term conservation of Bi-State sage-grouse and its habitat. The Bi-State Action Plan also identifies major threats to the Bi-State sage-grouse within the project area; the East Walker project addresses these major threats (BTACNC 2012a). This project will contribute to the overall objectives of reversing the downward trend of this species and eliminate the need to list this species as threatened under the ESA.

As described in more detail in the section below titled, “Bi-State Sage-Grouse,” the 2013 listing proposal identifies the encroachment of piñon and juniper, wildfires and an altered fire regime, and predation as threats in the Desert Creek-Fales and Mount Grant PMUs (USDI Fish and Wildlife Service 2013). The East Walker project would address these threats and contribute to the effective conservation of the species and its habitats through the following:

- Reducing piñon-juniper encroachment into sagebrush ecosystems and riparian areas in the project area
- Reducing piñon-juniper stand conversion to Phase 3 density stands
- Maintaining, improving, or restoring habitat quality for Bi-State sage-grouse and other sagebrush-obligate and sagebrush-associated species
- Increasing sagebrush habitat connectivity
- Reducing sage-grouse predation
- Reducing the risk of high-severity wildfire

Piñon-Juniper Encroachment

Since the mid-1800s, the cover, density, and mean age of piñon and juniper have increased across the Great Basin at the expense of ecosystems dominated by sagebrush (*Artemisia tridentata*) and other native shrubs, grasses, and forbs. Higher woody fuel loads and associated changes in stand structure have altered fire behavior, resulting in a trend away from relatively moderate fires towards infrequent, but high-severity fires. High-severity fires can increase the susceptibility of low- to mid-elevation woodlands to cheatgrass (*Bromus tectorum*) and other invasive nonnative species. Piñon-juniper expansion has replaced shrub-steppe vegetation, leading to increases in hazardous woody fuels, losses of sagebrush habitats for wildlife, decreases in species diversity, reduction or loss of seed banks, decreases in aquifer recharge, and increases in soil erosion rates (Koniak and Everett 1982, Wilcox and Breshears 1994, Davenport et al. 1998, West 1999, Miller et al. 2000). Recent assessments of the project area show that this encroachment is occurring within and adjacent to the project area (BTACNC 2012a).

Piñon-juniper stands can be classified into phases (Table 1) based on density and vegetation influence on ecological processes. All of these phases are present within the project area (Table 2). One of the main concerns with piñon-juniper encroachment on the Bridgeport Ranger District is the conversion of Phase 1 and 2 (low and medium canopy closure) to Phase 3 (canopy closure and loss of understory vegetation). Miller et al. (2008) estimate a 2 percent annual conversion rate of piñon-juniper stands to Phase 3 in the Great Basin. As piñon-juniper stands move from Phases 1 and 2 into Phase 3, sagebrush-steppe community restoration becomes more difficult and costly due to loss of understory vegetation and changes in site conditions. Proactive management can provide positive use of piñon-juniper wood fiber while reducing the risk of high-severity wildfires, which reduces the risk of cheatgrass invasion following high-severity fires, prevents conversion to Phase 3 stands, restores sagebrush-steppe communities, and reverses the decline in Bi-State sage-grouse populations.

Table 1. Description of woodland phases and pre-1860 woodlands, adapted from Miller et al. (2000, 2005, 2008)

Type	Description
Shrubland with less than woodland Phase 1 encroachment ^a	A minor number of small trees are widely scattered, but at a density lower than Phase 1 encroachment. Shrubs, grasses, and forbs dominate the vegetation that influences ecological processes (hydrology, nutrient cycles, and energy capture) on the site. See Figure 3.
Woodland succession Phase 1	Small trees are present, but shrubs, grasses, and forbs dominate the vegetation that influences ecological processes (hydrology, nutrient cycles, and energy capture) on the site. See Figure 4.
Woodland succession Phase 2	Trees co-dominate with shrubs, grasses, and forbs. All vegetation layers influence ecological processes. Trees grow fast (have pointed tops), and bigger trees may produce many berries or pine nuts. Late Phase 2 has more fuel, produces more heat during fire, and has weaker understory vegetation for site recovery. See Figure 5.
Woodland succession Phase 3	Trees are the dominant vegetation and the primary plant layer influencing ecological processes on the site. Tree growth slows (tops become rounded) while seed production declines. When tree cover exceeds 60% of the total vegetation cover, most understory vegetation is dying or dead. See Figure 6.
Pre-1860 woodlands ^a	These trees can be identified on the landscape by their flattened, rounded, and or asymmetrical crowns that stand well above the surrounding younger trees (typically shorter with conical crowns that display a pointed tip). See Figure 7.

^a Forest Service descriptions

Table 2. Acres of vegetation type within the project area, data collected as part of the Walker River Watershed project (Broyles 1998)

Vegetation Type	Acres within the Project Area
Shrubland with less than woodland Phase 1 encroachment	6,500
Woodland succession Phase 1	9,900
Woodland succession Phase 2	10,400
Woodland succession Phase 3	2,400
Pre-1860 woodlands	30
Dry lakebed	20
Total	29,250



Figure 3. Shrubland with less than woodland Phase 1 encroachment



Figure 4. Woodland succession Phase 1



Figure 5. Woodland succession Phase 2



Figure 6. Woodland succession Phase 3



Figure 7. Example of pre-1860 single-leaf piñon pine tree, surrounded by younger trees

Bi-State Sage-Grouse

As mentioned above, the USFWS proposed listing the Bi-State population as threatened in October 2013. The significant threats identified in the 2013 listing proposal were infrastructure (e.g., fences, power lines, and roads) (Factors A and E); grazing and rangeland management (Factors A, C, and E); nonnative and native invasive plants (e.g., piñon-juniper encroachment, cheatgrass) (Factors A and E); wildfires and an altered fire regime (Factors A and E); and the small size of the DPS (both the number of individual populations and their size), which increases the risk of extinction (Factor E) (USDI Fish and Wildlife Service 2013). In addition, the listing proposal stated that the small number, size, and isolation of the Bi-State populations may magnify the effects of other less significant impacts that are acting upon the population, including urbanization and habitat conversion, mining, renewable energy development, climate (including drought), overutilization, recreation, disease, and predation (Factors A, B, C, and E) (USDI Fish and Wildlife Service 2013).

The key threat being addressed in this project proposal is piñon-juniper encroachment. This encroachment results in loss and fragmentation of suitable habitat for sage-grouse. Suitable habitat is affected through removal of understory shrubs, grasses, and forbs needed for adult and chick survival; loss and drying of meadow (brood-rearing) habitat; increases in perching opportunities for predators (increased predation rate); sage-grouse avoidance of piñon-juniper stands; and increased risk of high-severity wildfire (BTACNC 2012a). The project also addresses the threats of predation, wildfires and altered fire regimes, and invasive plants.

The Bi-State Action Plan identifies the following conservation goals for the management of sage-grouse in the Bi-State Plan area (BTACNC 2012a):

1. Ensure no net-loss of greater sage-grouse breeding populations in the Bi-State Plan area
2. Maintain and improve sagebrush and associated habitats to provide for the long-term viability of greater sage-grouse populations within the Bi-State Plan area

The following strategies identified within the Bi-State Action Plan address the threat of piñon-juniper encroachment (BTACNC 2012a):

- **Strategy MER4:** Map and quantify the spatial juxtaposition and level of piñon-juniper encroachment that has occurred in relation to known occupied and potential sage-grouse habitat in the Bi-State area. Develop and implement site-specific treatments designed to maintain, improve, or restore key seasonal ranges and habitat connectivity within and among breeding populations based on restoration potential.
- **Strategy HIR1:** Implement habitat improvement and restoration projects designed to ensure the long-term viability of greater sage-grouse populations within the Bi-State Plan area.

The Bi-State Action Plan identifies piñon-juniper encroachment and wildfire as high-level threats for the Desert Creek-Fales and Mount Grant PMUs. The following priority conservation strategies are identified in the Bi-State Action Plan to reduce the threat of piñon-juniper encroachment in these PMUs (BTACNC 2012a):

- **Desert Creek-Fales PMU:** Treat piñon-juniper encroachment in potential nesting and connectivity habitats and around historic springs where spring flow may be restored by tree removal and minimize large-scale habitat loss due to wildfire by implementing fuel reduction treatments.
- **Mount Grant PMU:** Treat piñon-juniper encroachment to increase the availability of nesting habitat, especially at lower elevations and to facilitate connectivity within and between populations, and minimize large-scale habitat loss due to wildfire by implementing fuel reduction treatments.

Approximately 25,470 acres of the proposed treatment areas are within the Desert Creek-Fales PMU; the remaining 3,782 acres are in the Mount Grant PMU (Figure 2). Piñon-juniper treatments are planned within and adjacent to priority sage-grouse habitat to improve habitat quality, prevent conversion to Phase 3 stands, increase connectivity, and reduce risk of wildfire. The proposed treatment areas include 23,762 acres designated as Preliminary Priority Habitat (PPH) for Bi-State sage-grouse (Figure 2). The remaining 5,490 acres in the proposed treatment areas are immediately adjacent to PPH and/or provide connectivity between PPH areas. PPH was identified and designated using a modeling approach based on sage-grouse lek locations and telemetry data (BTACNC 2012b). Several springs are located within the proposed treatment areas, including Gulch spring, Rye Grass spring, Long Doctor spring, Dead Ox spring, and several unnamed springs. Treatments in and around these springs would improve the quality of brood-rearing habitat and improve sage-grouse access to these important areas.

The Forest Plan (USDA Forest Service 1986) identifies sage-grouse as a management indicator species (MIS). MIS are selected to represent the significant ecosystems on the Forest and associated wildlife and fish that depend upon those ecosystems. Improving the quality of sagebrush habitats for sage-grouse would also improve habitat quality for many other sagebrush-obligate and sagebrush-associated wildlife species. Removing piñon-juniper in the project area would assist in meeting the standards for sage-grouse habitats as identified in the Forest Plan: “Maintain 20 percent to 55 percent canopy cover on sage-grouse range; Maintain desirable sagebrush habitat within two miles of leks; Maintain desirable sagebrush habitat on known sage-grouse wintering areas; and Protect critical areas for sage-grouse brood rearing” (USDA Forest Service 1986).

Public Involvement

The opportunity for public participation in the analysis of this project was initiated through publication in the Schedule of Proposed Actions in 2013 and 2014. A Notice of Proposed Action/Scoping Notice was released and the 30-day public scoping period began on April 4, 2013. A letter updating interested parties on the status of the project was mailed on March 5, 2014.

The Forest Service consulted the following, federal, State, and local agencies during the development of this EA:

- U.S. Fish and Wildlife Service
- Nevada Department of Wildlife
- Nevada State Historic Preservation Officer
- Lyon and Mineral Counties, Nevada
- Nevada State Clearinghouse

A list of the public entities contacted is contained in the project record.

Tribal Consultation and Coordination

During this analysis the following tribes were contacted:

- Washoe Tribe of Nevada and California
- Bridgeport Indian Colony
- Yerington Paiute Tribe
- Walker River Paiute Tribe

The opportunity for tribal participation in the analysis of this project began on April 10, 2012, and will continue through the entire analysis process. Continued consultation will also be a part of project implementation through the East Walker Programmatic Agreement (PA). As part of this process, which included field trips, the importance of maintaining traditional pine nut gathering areas was identified and is being considered for exclusion for tribal cultural purposes. (See the *East Walker Cultural Specialist Resource Report* in the project record.)

An informational field trip with members and staff of local tribes was held on September 9, 2014. A councilperson from the Yerington Paiute Tribe attended along with tribal members. The Walker River Paiute tribe sent tribal members and staff. The Bridgeport Indian Colony sent its environmental staff officer.

Issues

Issues were determined through public scoping, tribal coordination, and internal scoping conducted by an Interdisciplinary Team (ID Team) of Forest Service resource specialists.

Key Issues

The following key issues were identified:

- Water—The project may cause increased sedimentation to reach water sources and impact water quality.
- Soils—Project activities may adversely impact soil quality through off-road travel, skidding of timber, and pile burning. Soil quality impacts would lead to increased soil compaction and increased soil loss through erosion.
- Vegetation, including special status species, wetland/riparian vegetation—The project may disturb native vegetation.
- Noxious weeds—Noxious weeds and invasive species may be spread from ground-disturbing activities.
- Wildlife (including Forest Service sensitive species, migratory birds, and MIS)—The project may impact existing wildlife habitat and populations through ground disturbance and displacement.
- Recreation—The project may impact the potential use of the area by recreationists.
- Cultural resources—The project may impact existing cultural resources in the area through ground disturbance.
- Tribal Practices—The project may impact the ability of local tribes to practice activities within the project area, including the gathering of pine nuts in traditional use areas.
- Inventoried Roadless Areas (IRAs)—Project activities may impact the quality of IRAs that fall within the project area.
- Fire and Fuels—Proposed treatments are expected to reduce surface, ladder, and crown fuels thus reducing flame lengths, rate of spread, and crown-fire risk. This would allow firefighters greater safety and success when protecting important natural resources. By treating encroaching piñon-juniper, sagebrush systems will be more resilient and expand.

Non-Key Issues

The following issues were identified during the scoping process; review by the Forest Service ID Team has identified these as non-key issues and, therefore, they will not be addressed in detail in the analysis:

- Land status and land use (roads/rights of way, grazing, trails, utility corridors and distribution, communications systems)—Impacts to permitted livestock grazing would be expected to be minimal, and no impacts to any other land use would occur.
- Geology, mineral resources, and energy—Project activities would not impact any of these resources or uses.
- Air quality—Burning is limited to pile burning, which is expected to only have minor impacts on air quality due to the minimal amount of emissions produced.
- Threatened or Endangered plant and wildlife species—No Threatened or Endangered plant and wildlife species occur within the project area; therefore, project activities would not impact these species.

- Economic base—Project activities could have minor impacts on the economic base of the local counties, but any impact would be small and would occur over time.
- Labor force composition and availability—The project could have minor impacts on the labor force composition and availability, but any impact would be small and would occur over time.
- Plans and programs of other agencies—The project is not expected to have any impact on plans and programs of other agencies.
- Public health and safety—Public health and safety would be provided for through design features that would minimize impacts.
- Climate change—Because of the small scale of the project, no measurable impacts to regional climate change processes are predicted.
- Parks and prime farmlands—No parks or prime farmland occur within or adjacent to the project area; therefore, the project would not impact these resources.
- Wetlands—A minor amount of wetlands, primarily associated with springs and riparian areas, are scattered across the project area. Project design features would minimize the impacts to wetlands and, over time, wetlands would be expected to benefit from the piñon-juniper removal.
- Environmental Justice—Environmental Justice effects were considered in compliance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations. The East Walker project was analyzed to determine if minority and/or low-income populations would experience disproportionately high adverse effects due to project implementation. No disproportionately high adverse impacts were identified.
- Proposed Wovoka Wilderness - The proposed project does not occur within a designated wilderness. A portion of the project area, approximately 7200 acres, is currently proposed for wilderness designation as part of the Wovoka Wilderness Bill. If Congress designates this area as wilderness, treatments areas within the wilderness will be dropped. No treatments will occur within the proposed wilderness prior to designation.
- Biotic soil crusts—Although biological crust organisms are present in most ecosystems, they are primarily found in arid and semi-arid areas that have low herbaceous plant cover, low frequency and intensity of disturbance, and a cover consisting primarily of native vegetation. The soil crust in the project has likely been impacted by historic and current grazing.
- The East Fork of the Walker River was evaluated for Wild and Scenic River designation as part of the Humboldt-Toiyabe Forest Plan Revision process—The Wild and Scenic River Eligibility Report (USDA Forest Service 2005b) identified the East Walker River as being eligible for Wild and Scenic River status based on the trout fishing opportunities. Although not currently designated as a Wild and Scenic River, treatments within 0.25 miles of the East Walker River would be done in a manner to protect the wild and scenic character of the river corridor and “limited to removal incidental to primitive recreation such as trail management” (USDA Forest Service 1986, pp. IV-114 and IV-119).

Proposed Action and Alternatives

Proposed Action

The Forest Service is proposing to remove piñon and juniper trees to improve sage-grouse habitat. To accomplish this the Forest Service proposes to use a combination of mechanical methods, hand methods, and pile burning within the 7 treatment units that cover approximately 29,300 acres (Figure 8). Treatments are planned to occur over a 5- to 10-year period. Treatment methods are described below. Total acres treated within each proposed treatment unit would vary based on mechanized avoidance of areas with greater than 35 percent slope, avoidance of areas that sage-grouse do not use and likely will never use (often indicated by the presence of pre-1860 trees), and potential avoidance of areas such as cultural sites and areas where sensitive plants occur. Additional information on the 7 treatment units can be found within the project record.

The following are the proposed treatment methods:

- **Mechanized Removal**—Trees would be ground using wheeled or tracked mastication vehicles. Complete removal of all trees or thinning (select trees would be ground) may occur within an area. Masticated material would be spread and left onsite to decompose naturally. Mastication would primarily be used in areas with less than 35 percent slope.
- **Hand Felling / Lop and Scatter**—Hand crews would use chainsaws and/or hand tools to fell trees and lop limbs from trees. Slash would be scattered to within 18 inches of the ground in natural openings to facilitate decomposition.
- **Wood Fiber Removal**—Mechanized equipment or hand felling would be used to cut trees. Trees and slash may be removed through personal use fuelwood removal permits, commercial fuelwood or wood fiber contracts, and/or stewardship contracts or agreements. A portable pyrolysis unit may also be brought on site to produce bio-char. Slash (woody debris) may also be left onsite and would be lopped and scattered, chipped, or piled and burned under favorable conditions once the slash has cured. Wood fiber removal may occur in any proposed treatment areas where existing road access is adequate or slopes allow for off-road travel.
- **Pile Burn**—Hand crews would use chainsaws and/or hand tools to fell trees within the treatment unit. Slash, and possibly whole trees (bucked up), would be piled. Pile diameter would be between 6 and 10 feet. Wherever possible, piles would be constructed on top of cut stumps and in openings created by removing larger trees. Piles would be burned under favorable conditions once the slash has cured.

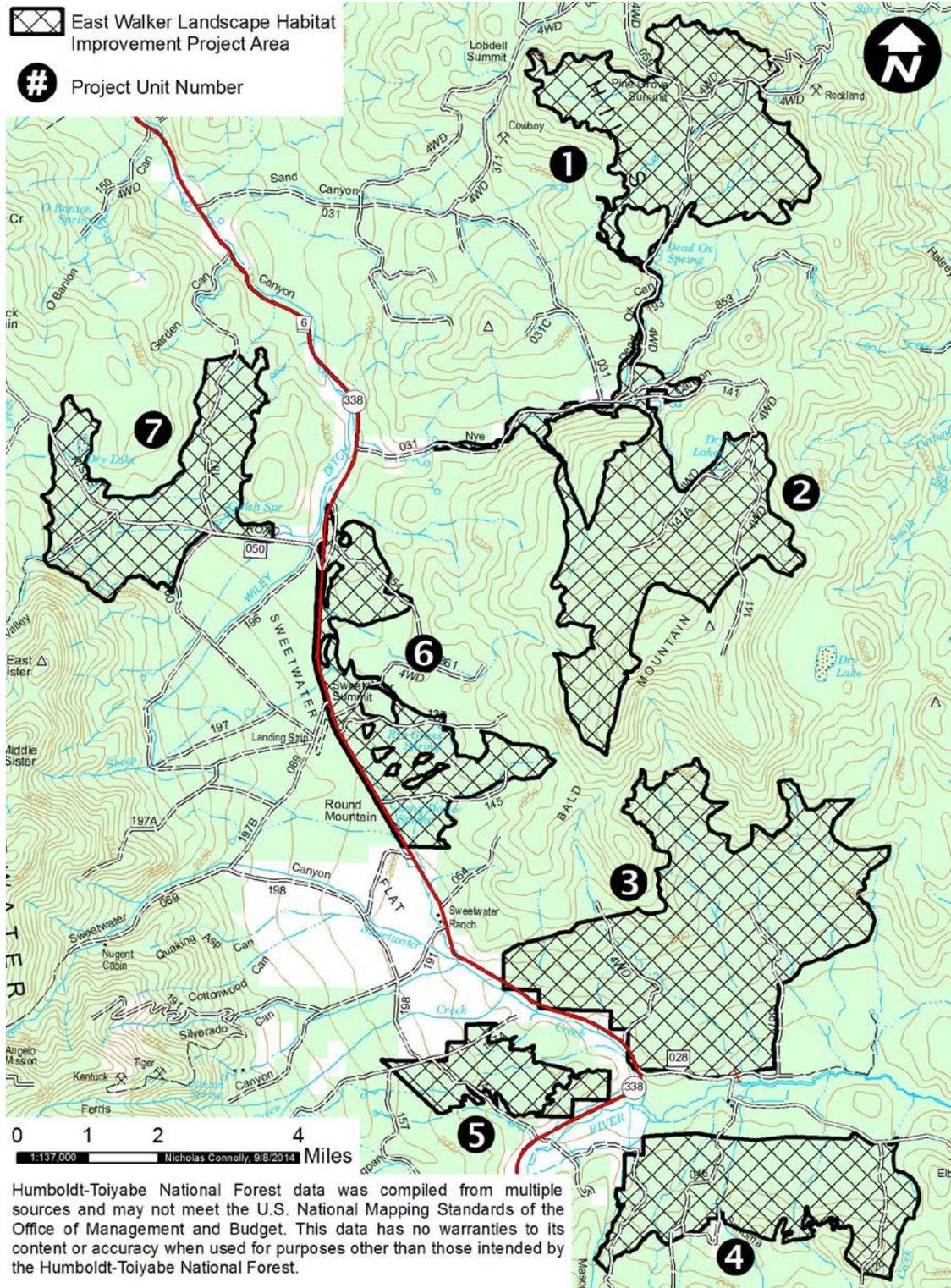


Figure 8. The seven treatment units proposed for the East Walker project

Any of the proposed treatment methods may be used in any unit, depending on site specific conditions:

- **Shrubland with less than woodland Phase 1 encroachment areas:** Treatments in these areas (approximately 6,500 acres [Table 3]) would concentrate on removing widely scattered piñon-juniper, with trees ranging from seedlings to mature trees. The piñon-juniper is primarily encroaching from drainage bottoms and washes (areas where young trees are typically concentrated as they move down into sagebrush-dominated ecosystems). Hand felling/Lop and Scatter would be the predominate method used in these areas.
- **Woodland succession Phase 1 stands:** Phase 1 stands cover approximately 9,900 acres of the project area (Table 3). Hand felling/Lop and Scatter would be the predominate method used in these areas.
- **Woodland succession Phase 2 stands:** Phase 2 stands cover approximately 10,400 acres (Table 3). Because of the tree density, mechanical treatments would be the predominant method used in these areas.
- **Woodland succession Phase 3 stands:** Phase 3 stands, approximately 2,400 acres (Table 3), would be treated as necessary to increase habitat connectivity for sage-grouse and improve the condition of and access to springs and riparian areas. When Phase 3 stands are treated, post-treatment seeding and monitoring would occur to promote the recovery of desirable understory vegetation. Any treatment methods may be used in Phase III stands.
- **Pre-1860 woodland stands:** These stands cover approximately 30 acres of the project area (Table 3). These stands and isolated trees may be treated to meet the overall Bi-State sage-grouse habitat goals of the project. Any treatment methods may be used in these stands.

The project area also contains approximately 5 acres of aspen (*Populus spp.*); treatments would occur in these areas to remove encroaching piñon and juniper, but aspen would not be removed.

Table 3. Acres by vegetation type/other type for each unit

Unit	Less than Phase 1 Encroachment	Phase 1	Phase 2	Phase 3	Pre-1860 woodland stands	Dry Lake Bed
1	99	3,905	567	5	0	0
2	1,837	2,389	389	629	0	0
3	2,302	1,279	3,514	670	0	0
4	1,609	80	2,093	0	0	0
5	140	363	866	0	0	0
6	26	854	2,176	0	0	0
7	447	1,029	773	1132	27	21
Total	6,489	9,899	10,379	2,437	27	21

Maintenance of the treatments areas would be done as needed using hand tools once initial treatments have been completed.

Design Features

General

- No permanent or temporary roads would be constructed.
- Treatments within the project area may require vehicles to travel off designated motorized travel routes if specifically authorized. Following completion of mechanical treatments, any skid trails or locations used by vehicles off of established roads would be blocked and reclaimed to ensure that unauthorized roads and or trails do not develop. Any off road travel would be done in accordance with the District's travel management program.
- Area closures may be implemented to provide for public safety during treatment operations.

Water and Soils

- Generally, ground-based equipment would operate on slopes less than 35 percent (30 percent on decomposed granite soils). Ground-based operations may occur on steeper slopes if ground conditions allow. Exceptions would be designed on a unit-by-unit basis only after soil stability, soil rock content, and the location of the steep slope in relation to the remaining portions of the treatment unit have been determined by the Forest Service to be appropriate.
- No trees would be removed where they provide stream bank stability.
- Ground-based equipment, including pickups, must use designated stream crossings.
- Pile burning would be minimized in riparian areas (ecosystems that occur along watercourses or water bodies that have unique soil and plant characteristics) and in or near meadows and aspen stands.
- Motorized equipment, including masticators, would not be used when soils are saturated.
- To mitigate ground disturbance during mastication, track equipment operators would avoid making abundant sharp right angle turns. Instead, a gentle curved pattern with the least amount of sharp angles would be used during implementation to reduce ground disturbance. Different routes would be used to avoid creating the appearance of trails. Debris would be spread and berms shoveled down to retain a natural appearance.
- Skid trails would be designated on ground-based skidding units and rehabilitated after use. Rehabilitation may include constructing waterbars. Multiple pass skid trails would be located a minimum of 100 feet apart except where they converge at landings. Newly constructed landings would also be rehabilitated after use.

Vegetation

- A native species seed mix appropriate for the site and collected locally, when possible, may be used if native recruitment is less than desired following treatment. Planting of bare root or containerized stock may also occur. Seeding and planting may be used immediately following treatment in areas where native recruitment is anticipated to be less than desired. Seeds would be certified "weed free" and seeding would occur through hand, mechanical, or aerial application.
- No livestock grazing would occur for 2 years after seeding or planting.

- If increased bark beetle–related piñon mortality is identified in adjacent residual stands, the following additional mitigation to control the spread of piñon engraver bark beetle (*Ips confusus*) may be implemented:
 - ◆ Piñon cutting or mastication would be restricted from January 1 through August 15
 - ◆ Piñon trees that are cut but left onsite with boles greater than 4 inches diameter at breast height (dbh) would be cut into lengths less than 2 feet
 - ◆ Piñon limbs left onsite would be cut into lengths no greater than 4 feet
 - ◆ Piñon wood to be removed or processed (e.g., bio-char) must be handled within 6 weeks of cutting
 - ◆ Insect traps would be placed within and adjacent to treatment areas

Wildlife

- Treatments would be timed to avoid potential destruction of migratory bird nests or young birds. If treatments were planned during the breeding season (May 15–August 31), a qualified biologist would survey the area prior to treatment to determine if nests are present. If nests or evidence of nesting are observed, a protective buffer would be delineated to prevent destruction or disturbance to nests until they are no longer active.
- When possible, the edge of the treatment units would be feathered to avoid abrupt edges and retain some structural characteristics of the piñon-juniper to shrubland transition zone, which may be important for some migratory bird species.
- No treatments would occur during the sage-grouse breeding, nesting, and early brood-rearing season (March 1–June 30).
- Treatments would not occur in key mule deer areas during the fawning season (June 15–July 15).

Recreation

- The Forest Plan provides management direction to protect the “wild, scenic and/or recreational qualities of the East Walker River” (USDA Forest Service 1986). To provide for this protection, treatments within 0.25 miles of the East Walker River would be done in a manner to protect the wild and scenic character of the river corridor and “limited to removal incidental to primitive recreation such as trail management” (USDA Forest Service 1986, pp. IV-14 and IV-119).

Pile Burning

- All federal, State, and local regulations pertaining to pile burning and smoke management would be followed. A Forest Service (Region 4) burn plan is required to be completed and approved before pile burning is initiated.
- Prior to implementation of pile burning, a news release would be distributed to media contacts and public notification would occur to advise the local community of the pile burning and any temporary road closures.
- Roads within the project area may be closed to the public for the brief time that pile burning operations are in progress.

Sensitive and Rare Plants

- A sensitive plant survey would be conducted in areas identified as suitable sensitive species habitat prior to treatment. If sensitive plants are found, the area would be flagged and mitigated or avoided to achieve long-term persistence.
- Vehicle parking and crew staging areas would be kept out of occupied Bodie Hills draba (*Cusickiella quadricostata*) and mono phacelia (*Phacelia monoensis*) habitat.
- Tree removal would be conducted within the Lavin's egg vetch (*Astragalus oophorus* var. *lavinii*) population in the southern treatment unit so as to sustain this population. Mitigation may include flagging individual plants so that crews can avoid them. All cut trees and slash would be removed from the site. No pile burning would occur on the site.

Noxious and Invasive Weeds

- As needed, control of noxious weeds and invasive species would be done under the Humboldt-Toiyabe National Forest's approved treatment program.
- Contract equipment used off of existing roads would be washed and inspected prior to entering NFS lands to remove any soil and debris that may harbor noxious weed seeds.
- Known or identified populations of noxious weeds would be treated and/or evaluated prior to implementation of mechanized treatments to determine the risk of spreading these weeds following implementation.
- All seed used for restoration activities would be certified weed free.

Cultural

- The Humboldt-Toiyabe National Forest has developed a PA (Programmatic Agreement) with the Nevada State Historic Preservation Office to formalize the management of cultural resources that may be affected by project activities. The Advisory Council for Historic Preservation was offered the opportunity to participate. The PA is available from the Bridgeport Ranger District.
- Archaeological site inventories would be conducted where project activities may affect National Register of Historic Places (NRHP) characteristics of cultural resources prior to treatment.
- Consultation with tribes and the Nevada State Historic Preservation Office on the adequacy of protection measures for archaeological sites would occur prior to treatment.
- Identified sacred sites and traditional cultural properties would be protected, per consultation with the tribes.
- To protect cultural resources, exclusion areas would be identified where project-specific archaeological surveys have identified cultural resources that could be negatively impacted by the proposed project work. Project activities that affect the NRHP characteristics of cultural resources would not be allowed in areas identified for exclusion without appropriate consultation and mitigation, per the terms of the proposed PA.
- Total avoidance of archaeological sites from ground-disturbing activities may occur. Partial avoidance of archaeological sites may also occur where more sensitive areas within the site may be avoided and activities allowed in less sensitive areas.

- Avoidance measures may include temporary marking of the site and monitoring during treatment activities. Most site markers would be removed after treatment.
- If previously undiscovered archaeological resources are encountered during project implementation, operations within 200 feet would immediately cease and the Bridgeport Ranger District archaeologist would be notified. The project would be modified to avoid impacts to any late discoveries of archaeological resources prior to the resumption of work.
- In order to protect sites, hand clearing of vegetation may be done around known historic wood features within the project area.
- Pile Burning and lop and scatter treatments may be accepted as “No Adverse Effect” under the National Historic Preservation Act and the PA. A “No Adverse Effect” determination allows activities to occur within a site that would not affect the characteristics that make archaeological sites eligible for listing in the NRHP. Some activities (such as pile burning) that may be allowed in archaeological sites under a “No Adverse Effect” determination may cause slight movement of surface artifacts or alterations to surface artifacts such as sooting, discoloration, cracking, or fragmenting.
- Samples of artifacts (especially obsidian artifacts) in the project area may be collected for their scientific value under the terms of the PA.

No Action Alternative

Under the “No Action” alternative, no treatment would be proposed, and conifer encroachment would be expected to continue within the project area.

Alternative Considered but Eliminated from Detailed Analysis

Two other alternatives were reviewed by the Forest Service but were eliminated from detailed analysis.

Selective Hand Cutting

Under this alternative, hand cutting of piñon and juniper trees would occur within the treatment units. Potential treatments would only include lop and scatter and cut material would be left onsite. No pile burning, mechanized removal, fuelwood removal, or seeding/planting would occur. All mature trees would be retained. All treatment areas would be rested from livestock grazing until sufficient height, density, and structural complexity is present to provide for sage-grouse nesting. Livestock use would not be shifted into other allotments during the rest period.

This alternative was considered but eliminated from detailed analysis because it was determined to be ineffective at meeting the need for the project to maintain, enhance, and/or expand Bi-State sage-grouse habitat. Some aspects of this alternative are already incorporated in the proposed action (e.g., hand cutting of piñon and juniper trees would occur within sage-grouse habitat). Removing options such as mechanized removal, chipping, pile burning, and fuelwood removal would mean that all cut material would be left onsite in all cases. In areas with denser trees, such as Phase 2, leaving a large amount of down material onsite would not contribute to recovery of sagebrush ecosystems, which would not improve habitat for Bi-State sage-grouse and would not reduce fire hazard.

Original Proposed Action

The original proposed action was developed in 2013 and sent out for public comment in April 2013. This proposal had 7 units, totaling 34,600 acres. The following treatments were proposed:

- **Lop and Scatter**—Hand crews would use chainsaws and/or hand tools to fell trees and lop limbs from trees. Slash would be scattered to within 18 inches of the ground in natural openings to facilitate decomposition.
- **Cut and Pile Burn**—Hand crews would use chainsaws and/or hand tools to fell trees within the treatment unit. Slash, and possibly whole trees (bucked up), would be piled. Piles would be burned under favorable conditions once the slash has cured.
- **Mastication**—Trees would be ground using wheeled or tracked mastication vehicles. Complete removal of all trees or thinning (select trees would be ground) may occur within an area. Masticated material would be spread and left onsite to decompose naturally.
- **Prescribed Fire**—Prescribed fire treatments may include ground ignition (drip torches and or flares), aerial ignition (helicopter/helitorch and or Plastic Sphere Dispenser [PSD]), and management of naturally occurring wildfires for resource benefits.
- **Commercial and Personal Use Fuelwood Removal**—Personal use fuelwood removal permits and commercial fuelwood contracts would be sold to cut and remove piñon pine and juniper in designated areas. Slash would be lopped and scattered or piled by hand and burned under favorable conditions once the slash has cured.
- **Seeding Native Species**—A native species seed mix appropriate for the site and collected locally when possible may be used if native recruitment is less than desired following treatment. Seeds would be certified “weed free” and seeding would occur through hand, mechanical, or aerial application.

Based on feedback from the public and other agencies, this proposal was modified to include fewer acres. The project area was also enlarged to the north and the units spread out. The use of prescribed fire was limited to only include pile burning. The original proposed action was dropped from detailed consideration due to the similarities between it and the current proposed action.

Environmental Impacts of the Proposed Action and Alternatives

This section summarizes the potential direct and indirect impacts of the proposed action and no action alternative for each impacted resource. Resources that were not impacted or only minimally impacted and therefore not further analyzed include climate change, air quality, engineering/transportation, minerals, and range. More detail on the effects of the project can be found in the individual resource specialist's reports in the project record. Following this section is the cumulative impacts section.

Water

The project is located at the headwaters of the East Walker River and West Walker River. The use of mechanized equipment for timber cutting and harvesting, and the use of pile burning can impact water quality. The direct and indirect effects of these actions could include soil erosion, increased runoff, and sediment delivery to stream channels.

The effects to soil and water from masticating are generally minimal because the equipment operates over vegetation and leaves behind a layer of mulch. The results of a recent study near Lake Tahoe indicate that erosion effects from mastication are slight to insignificant when a layer of woodchip mulch is left on the ground surface (Hatchett et al. 2006). Using other mechanized equipment would be expected to impact water quality to a greater degree than mastication.

Hand thinning trees without the use of equipment would have little impact on water quality because no measurable soil disturbance is created during the work of hand crews.

Pile burning, which concentrates heat on a small area, can affect soil fertility and soil biota. These impacts would then in turn increase the potential for run-off and increased sedimentation entering stream courses. Although the severe heating under the piles is damaging to the soil, only a small percentage of the total area may be affected (USDA Forest Service 2005b). Pile burning in riparian areas would be limited. It is likely that some impacts to water quality would occur from pile burning.

The risk of impacts to water quality would be reduced through implementation of Best Management Practices (BMPs) and applicable project design features to minimize effects on water quality. BMPs are considered the most effective means to control nonpoint source pollution. The Forest Service has developed a handbook of BMPs for water quality management on NFS lands (USDA Forest Service 2012). The purpose of these BMPs is to avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian vegetation. Long-term water quality is expected to be maintained by implementing BMPs and project design features.

If this project is not implemented, the potential for high-severity wildfires would remain. High-severity wildfires can remove much of the vegetation, along with duff and litter, from the forest floor. Wildfires are usually more severe than pile burning and, as a result, they are more likely to significantly affect soil and water quality. Following wildfires, flood peak flows can increase substantially, affecting stream physical conditions, aquatic habitat, and human health and safety (USDA Forest Service 2005b). Soil erosion would likely increase, along with streambank erosion from increased flows, which would affect water quality.

Soil

Numerous soil types occur within the project areas. In general, these soils tend to be coarse gravelly or sandy soil types and are derived from both granitic and basaltic parent material. The direct and indirect effects of the proposed action may include soil disturbance and erosion and soil compaction. Most of the soil disturbance would come from the operation of mechanized equipment in the treatment units. Use of the equipment would lead to the creation of overland travel routes, skid trails, and landings.

Pile burning, which concentrates heat on a small area, would also negatively affect soils. Although the severe heating under the piles is damaging to the soil, only a small percentage of the total area may be affected (USDA Forest Service 2005b). Hand thinning would not have any impact on soils. The effects from mastication equipment are expected to be slight to insignificant because a layer of woodchip mulch is left on the ground surface (Hatchett et al. 2006).

The risk of impacts to soil would be reduced through the implementation of BMPs. BMPs are considered the most effective means to control nonpoint source pollution. The Forest Service has developed a handbook of BMPs for water quality management on NFS lands (USDA Forest Service 2012). The purpose of these BMPs is to avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian vegetation. The proposed action includes applicable project design features to minimize effects on soil quality. Long-term soil quality is expected to be maintained by implementing BMPs and project design features.

If this project is not implemented, the potential for high-severity wildfires would remain. High-severity wildfires can remove much of the vegetation, along with duff and litter from the forest floor. Wildfires are usually more severe than prescribed fire and, as a result, they are more likely to significantly affect soil and water quality. Following wildfires, flood peak flows can increase substantially, affecting stream physical conditions, aquatic habitat, and human health and safety (USDA Forest Service 2005b). Soil erosion would likely increase, along with streambank erosion from increased flows.

Vegetation

The project treatment units are comprised of the vegetation types listed in Table 2.

The project would lead to changes in the quantity, quality, and distribution of piñon-juniper and sagebrush communities within the project area. Within the areas of shrubland with less than woodland Phase 1 encroachment, competition from the piñon and juniper would be mostly removed, which would allow the shrubland to remain the dominant vegetation type.

Within woodland succession Phases 1 and 2, removing the piñon-juniper would allow the shrubland to increase in acreage, and plant vigor would increase. Removing Phase 1 and 2 piñon-juniper would also slow the establishment of Phase 2 stands. The limited cutting within woodland succession Phase 3 would lead to a slight decrease in the acres of these stands. Within the riparian and aspen areas, removing piñon would allow aspen and riparian vegetation to increase in health and vigor by allowing sunlight into these areas.

If this project is not implemented, piñon-juniper stands would continue to expand, mature, and close, as well as continue to encroach into sagebrush systems. The loss of historic sagebrush communities would continue, with reduced structural diversity, understory vegetation, landscape heterogeneity, and wildlife habitat. The risk of larger, stand-replacing wildland fires would also increase with greater densities, resulting in greater competition from annual exotic species. Tree

vigor would continue to be reduced, resulting in increased susceptibility of insect-related mortality and fire risk to pre-settlement trees and stands. The increase in piñon and juniper dominance within Intermountain plant communities can significantly impact soil resources, plant community structure and composition, forage quality and quantity, water and nutrient cycles, wildlife habitat, biodiversity, and fire severity and frequency (Miller and Tausch 2001; Miller et al. 2005).

Wildlife and Aquatic

A *Wildlife Specialist Report*, *Biological Evaluation*, and *Biological Assessment* were prepared for the proposed project. The Wildlife Specialist Report analyzes effects to MIS, migratory birds, and other species of interest. The Biological Evaluation analyzes effects to Forest Service Sensitive species, and the Biological Assessment analyzes effects to federally listed and proposed species. The Biological Assessment was submitted to the USFWS for concurrence as part of informal consultation pursuant to Section 7 of the ESA.

For federally listed and proposed species, a determination of “**may affect but is not likely to adversely affect the species or its critical habitat**” was made for the greater sage-grouse, Bi-State DPS. No other federally listed or proposed species has the potential to occur in the project area.

For Forest Service Sensitive species, determinations of “**may impact individuals, but is not likely to result in a trend toward federal listing or loss of viability for the species**” were made for the following species: spotted bat (*Euderma maculatum*), Townsend’s western big-eared bat (*Corynorhinus townsendii*), pygmy rabbit (*Brachylagus idahoensis*), desert bighorn sheep (*Ovis canadensis nelson*), bald eagle (*Haliaeetus leucocephalus*), and mountain quail (*Oreortyx pictus*). For all other Forest Service Sensitive species, a determination of “**no impact**” was made.

For MIS and other species of interest, determinations of “**may impact individuals**” and “**may affect habitat in the short term, but will not cause populations to trend downward**” were made for the following species: mule deer (*Odocoileus hemionus*), yellow warbler (*Dendroica petechia*), yellow-rumped warbler (*Dendroica coronata*), macroinvertebrates, willow flycatcher (*Empidonax traillii*), pronghorn antelope (*Antilocapra americana*), and migratory birds. For all other MIS and species of interest, a determination of “**no impact**” was made.

Direct effects to wildlife species from proposed treatments may include temporary disturbance from noise and human presence. Project design features associated with the proposed action would minimize disturbance and impacts to wildlife species, and proposed treatments would occur outside of sensitive nesting and breeding seasons. Indirect effects may include changes in the quantity, quality, and distribution of piñon-juniper and sagebrush ecosystems across the landscape. The amount of piñon-juniper habitat would decrease, and the amount of sagebrush habitat would increase. Proposed treatments would benefit sagebrush-obligate and sagebrush-associated species such as the greater sage-grouse, pygmy rabbit, mule deer, and some migratory bird species.

If the project is not implemented, piñon-juniper would continue to encroach into sagebrush habitat, thus causing a continued decline in habitat quality and suitability for sagebrush-obligate and sagebrush-associated species. The risk of high-intensity wildfire would also increase, which could lead to large-scale habitat loss for wildlife species.

Recreation

The proposed East Walker project is located within the Nevada State Highway 338 / California State Highway 182 corridor that bi-sects the Bridgeport Ranger District through a valley between the Sweetwater Range and the Pine Grove Hills. The highway provides access to Bridgeport, California, and semi-primitive and primitive (motorized and non-motorized) recreational opportunities on NFS lands. This vicinity has the highest concentration of designated motorized trails and use; primary activities are off-highway vehicle (OHV) touring, dispersed camping, hunting, hiking, pine nut gathering, and the Bridgeport Christmas tree cutting program. Fuelwood gathering is a significant nonrecreational activity. The area serves as a backyard playground for the nearby communities of Bridgeport, Walker, and Coleville, California, and the Nevada communities of Wellington, Smith Valley, and Yerington. Recreational use is generally widely dispersed; observations by travel management patrols indicate the areas around Risue Canyon and Desert Creek and Sand and Nye canyons receive high concentrations of dispersed camping and OHV use. This trend is also evidenced by the number of dispersed camping sites observed in these areas and their incorporation into the designated road system as part of the Bridgeport Travel Management Record of Decision (USDA Forest Service 2010).

Visitors value this area for its recreational opportunities and high desert scenic qualities. Recreation special use permits exist for two annual motorized recreation special events: Walker All-Terrain Vehicle (ATV) Jamboree and Sierra Traildogs OHV rides. The growing popularity of these events has captured the attention of OHV enthusiasts outside of the local communities who return to further explore this area on their own, which benefits the tourism-based communities of Bridgeport, Walker, and Topaz, California.

Direct and indirect impacts would cause some displacement of recreationists during project activities if people do not want to recreate near active operations. Noise, dust, and increased traffic would be some of the impacts that would cause people to recreate elsewhere. Upon project completion, some recreationists may not use certain areas in the project area because of changes in vegetation. As an example, a dispersed campsite in a piñon-juniper stand may not be used if the surrounding conifer vegetation is cut and replaced with sagebrush. In general, impacts are expected to be minor because only limited operations would be ongoing at any one time, seasonal restrictions for other resources would provide for periods when no activities would occur in any given year, and ample areas away from the activities but within the same general area would be available for recreating.

If the No Action Alternative were to be selected the proposed action would not be implemented and these minor disturbances to the recreating public would not occur.

Inventoried Roadless Areas

Approximately 19,822 acres or 67.8 percent of the project area occurs within IRAs (Table 4). Proposed projects within IRAs are subject to approval by the Regional Office. A complete briefing paper was submitted to the Regional Office for review and approval, and it was determined that the project qualified for an exception to the Roadless Rule under § 294.13 (b) (1):

The cutting, sale, or removal of generally small diameter timber is needed for one of the following purposes and will maintain or improve one or more of the roadless area characteristics as defined in § 294.11. (i) To improve threatened, endangered, proposed, or sensitive species habitat; or (ii) To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects,

within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period.

The following factors were considered in the Regional Office review:

- No new road construction would occur. No temporary road construction would occur.
- The project would improve roughly 29,000 acres of Bi-State sage-grouse habitat, which is a Candidate species proposed for listing as Threatened under the ESA.
- The project would help restore the balance between piñon-juniper and sagebrush ecosystems in the project area that existed prior to 1860 (Miller et al. 2008).

Table 4. Inventoried Roadless Areas (IRAs) present within the project area, the percentage of the IRA included in the project area, and the percentage of the project area within each IRA

Name of IRA	IRA Acres	Project Acres	Percentage of IRA (%)	Percentage of Project Acres (%)
Pine Grove South	79,921	14,195	17.8	48.5
West Walker	5,871	1,939	33.0	6.6
Pine Grove Summit	5,813	1,798	30.9	6.1
Four Mile Hill	15,403	805	5.2	2.8
Sweetwater	20,514	643	3.1	2
Chinese Camp	17,783	311	1.8	2.2
Devil's Gate	9,987	111	1.1	0.4
Wiley	6,695	20	0.3	0.1
TOTAL	161,987	19,822	12.1	67.8

Direct and indirect impacts to these affected IRAs would include a short-term increase in noise and human activity that would detract from the primitive and semi-primitive settings of the IRAs.

The cutting and treatments within IRAs would focus on the “*removal of generally small diameter timber*” as specified in the Roadless Rule. In the long term, the proposed treatments would return the area to a more natural appearing landscape by reducing the amount of encroaching piñon and juniper and restoring the extent of sagebrush plant communities. After project implementation, some evidence of human disturbance, such as cut stumps and scattered woody debris left onsite (masticated, cut, and/or chipped debris), would remain. These alterations would be minimal when the surroundings are viewed as a whole and would dissipate over time.

If this project were not implemented there would be no change to the characteristics of the IRAs.

Fire and Fuels

Fire suppression and reduced fire frequencies have led to relatively uniform late seral vegetation conditions and high fuel loads across the landscape, including within and surrounding the treatment units. These conditions increase the risk for large and high-intensity fires. Piñon-juniper expansion and infilling has created a nearly continuous tree belt in the mid elevations. Once piñon-juniper becomes continuous and shrub and herbaceous species become excluded, low-intensity fires are rare. However, under extreme weather conditions, a crown fire can become established and result in very large and high-intensity fires atypical of these ecological systems. At the lower elevations, annual grasses facilitate rapid fire spread and flashier fire conditions.

Here, fires can establish and spread very quickly under conditions that would not have supported a wildland fire in the past. Several recent fires in adjacent landscapes (Spring Peak Fire 2013, Bison Fire 2012, Ray May Fire 2011, and TRE Fire 2012) are examples of this novel fire behavior.

Proposed treatments are expected to reduce surface, ladder, and crown fuels, thus reducing flame lengths, rate of spread, and crown-fire risk. These reductions would allow firefighters greater safety and success when protecting important natural resources. By treating encroaching piñon-juniper, sagebrush systems will be more resilient and will expand.

If this project is not implemented, fuel conditions would not be altered in a way that would reduce fire behavior and its detrimental effects. Over time, surface fuels would likely increase, trees and shrubs would continue to grow, and the fire hazard in the project area would also increase, which would increase the likelihood of severe wildfire behavior. Many of the proposed treatment areas are highly susceptible to passive crown fire (the torching of small groups of trees) and from possible active crown fire (the vertical and horizontal movement of fire in the tree canopy). Wildfires that escape initial attack are likely to become large and cause damage. Direct suppression tactics would not be as effective on these fires. In the absence of any human-caused or natural disturbance, indirect effects would occur from the continued accumulation of fuels. Fire suppression would become more difficult and more costly as conditions worsen over time, which would increase the likelihood of a crowning wildfire of significant magnitude and intensity that could affect adjacent private lands and firefighter safety. Future wildfire suppression would likely contribute to increased piñon-juniper and shrub cover. As piñon-juniper cover moves closer to or into Phase 3 (late successional; greater than approximately 60 percent cover of piñon or juniper), an ecological threshold may be crossed and the risk of large wildfires and conversion to cheatgrass or invasive species is more likely (Miller et. al. 2008), and the loss of sagebrush systems would continue.

Sensitive and Rare Plants

Potential habitat for several Forest Sensitive plant species occurs within the project area. Species with potential habitat in the project area were evaluated in the *Botanical Resources Report* and the *Biological Evaluation for Botanical Resources* (project record). All other species on the Region 4 Sensitive plant species list do not have potential habitat in the project area, therefore, no impact to those species is expected.

The *Biological Evaluation for Botanical Resources* determined that “**no impact**” is expected from proposed treatments on Lavin’s egg vetch (*Astragalus oophorus* var. *lavinii*) and Bodie Hills rockcress (*Boechea bodiensis*). The proposed project “**may impact individuals but is not likely to lead to a trend toward federal listing or contribute to a loss of viability**” for the following species: upswept moonwort (*Botrychium ascendens*), dainty moonwort (*Botrychium crenulatum*), slender moonwort (*Botrychium lineare*), Bodie Hills draba (*Cusickiella quadricostata*), Shevock’s rockmoss (*Orthotrichum shevockii*), Spjut’s bristle-moss (*Orthotrichum spjutii*), Mono phacelia (*Phacelia monoensis*), William’s combleaf (*Polycytenium williamsiae*), and Masonic Mountain jewel flower (*Streptanthus oliganthus*). The effects of the proposed treatments are expected to be minor and short-lived. Project design features associated with the proposed action would minimize disturbance and impacts to these species. The populations of sensitive plants within the project area should recover quickly from any impacts associated with the proposed action.

If this project is not implemented, the result would be increased cover and density of piñon and juniper within the project area as well as continued encroachment into treeless

sagebrush-dominated habitat. Over time, multiple negative impacts to sensitive plants and their habitat would occur. The potential loss of sagebrush habitats either through piñon-juniper encroachment or conversion to annual grass-dominated communities as a result of severe wildfire are the two major threats to sensitive plants within the project area.

Noxious and Invasive Weeds

No populations of noxious weed species are known to occur in the project area. The project area does contain several undesirable weed species. Implementing the proposed action and the associated design features make it unlikely that noxious weed species would become established within the project area.

Implementing the proposed action would result in an increased risk of expanding the existing populations of undesirable weed species and introducing new weed populations due to the use of vehicles and heavy equipment and the ground disturbance likely to result from the proposed action. However, design features built into the proposed action reduce opportunities for weed spread and establishment. A beneficial effect of the proposed action is the reduced risk of high-severity wildfire, which would subsequently reduce the risk of expanding cheatgrass and other invasive nonnative species.

If this project is not implemented, the risk of introducing new weed populations or spreading existing weed populations and occurrences would not occur from this vegetation project. Changes to weed populations would still occur from existing activities, and the risk of high-severity wildfire would remain.

Cultural

Archaeological resources within the East Walker project area represent up to 12,000 years or more of cultural history. Following Paleo-Indian use of the area, known from isolated projectile points, a widespread and much more common generalized Archaic land use of specialized hunting-and-gathering occurred. As agriculture never became part of the prehistoric economy, this Archaic style continued until late Prehistoric times. Historic Paiute culture is well-established in the late Prehistoric period.

Historic period use of the area began with an exploration phase in the 1840s that included Emigrants passing through to California. Mining began in the 1860s and included the settlements of Bridgeport, Aurora, and Pine Grove, the latter at the north end of the project area.

The majority of the project has not been surveyed for cultural resources. Evidence of early Paleo-Indian, Archaic, and Paiute Indian use includes lithic scatters, projectile points, rock alignments, rock rings, bow stave trees, and prehistoric/protohistoric brush huts. The more recent use by early settlers and immigrants includes cabins, historic corrals, fences, dumps, cement foundations, mine adits, and rock foundations.

Implementing the proposed action would include surveys of areas to be treated. These surveys would identify the majority of, but not all, archaeological sites. The identified sites would be recorded, and protective measures would be adopted, if needed. This work would protect the majority of known sites, but not all archaeological resources would be protected. Isolated objects, isolated artifacts, and some archaeological sites might be affected or destroyed by project activities. Archaeological sites that do not have characteristics that would allow for listing on the NRHP would not receive further management. A small percentage of sites, given the soil types,

sedimentation, and vegetation of the area, would remain undiscovered through project activities. If discovered during project activities, sites would be avoided from project activities pending recording and reporting.

If this project is not implemented, there would be no impact on cultural resources. Over time, cultural resources would continue to be affected by natural conditions and events such as wildfires.

Tribal Practices

The project area and surrounding lands are considered to be the ancestral homeland of the Paiute American Indians. Area tribal members still use the land for hunting; fishing; and gathering forest products (e.g., firewood) and for ceremonial and religious purposes. Medicinal plants are also found in the project area. Consultation with tribes has shown deep tribal concern (via a council resolution, a petition, and emails and in-person conversations) for ancestral graves, cultural foods and medicine, ceremonial locations, and the ability for future generations to carry on cultural traditions. Of particular importance is the gathering of pine nuts. Tribal members continue to harvest pine nuts in the project area as they have done for centuries in western Nevada.

Implementing the proposed action would decrease the acreage of piñon-juniper stands that support the production of pine nuts. The Forest Service would work with local tribal governments to maintain pine nut harvesting in areas used by tribes. Tribes are expected to provide the Forest Service with information regarding areas they would like conserved for pine nut production, with some choice areas being preserved. With specific knowledge of other ceremonial and traditional locations, the Forest Service expects that these locations can be managed for pine nut production. A reduction in the risk of high-intensity wildfire would protect pine nut production.

Since prehistoric and historic grave locations may have been unmarked, these may be disappearing into the landscape. If known or suspected to exist in particular locations, these locations can be protected as well.

If this project is not implemented, there would be no impact on pine nut harvesting in areas traditionally used by local tribal members. Pine nut production would vary in response to natural conditions and events, such as wildfires, drought, and other weather events.

Cumulative Effects

This section summarizes the potential cumulative impacts of the proposed action and no action alternative for each impacted resource. More detail on the effects of the project can be found in the individual resource specialist's reports and supporting documentation found in the project record.

As required under NEPA and the regulations implementing NEPA, this section analyzes potential cumulative effects from past, present, and reasonably foreseeable future actions combined with the proposed action. A cumulative effect is defined as "...the impact which results from the incremental impact of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7).

The following past and present actions were considered in this cumulative effects analysis:

- Recreation
- Grazing
- Mining
- Military training
- Road infrastructure, including use and maintenance
- Fire suppression
- Piñon and juniper removal

The following reasonably foreseeable future actions were considered in this cumulative effects analysis:

- Recreation
- Grazing
- Mining
- Military training
- Existing road infrastructure, including use and maintenance
- Fire suppression
- Piñon and juniper removal projects listed in the 10-year Bi-State Action Plan (BTACNC 2012a)

Water

The cumulative effects study area (CESA) for water resources was delineated as 0.25 miles outside the proposed action treatment boundaries, which consists of approximately 89,000 acres. The amount of increased runoff and sediment delivery to stream channels were identified as the indicators used to estimate cumulative impacts to this resource and to determine whether the proposed action effects would be significant.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and pile burning within treatment areas covering approximately 29,300 acres. The action is expected to increase runoff and sediment delivery to stream channels when fully implemented over the next 5–10 years. The amount of soil disturbance and potential soil erosion would vary depending on the treatment. Some of the treatments proposed, such as mastication and hand-cutting trees and lopping and scattering slash, would lead to a minimal increase in sediment delivery to area streams. Skid trail and landing construction and pile burning may have a greater impact to runoff and sediment delivery.

Past and present actions have increased runoff and sediment delivery to stream channels above natural background levels. However, the amount of runoff and sediment delivery has not been quantified. Reasonably foreseeable future actions are expected to also contribute to both increased runoff and sediment delivery to stream channels above existing background levels within the CESA.

Cumulatively, these actions would increase runoff and sediment delivery to stream channels. The cumulative effect would vary based on the treatment that is implemented and the amount of soil disturbance that occurred from the particular treatment. Actions with minimal effects to the soil resource would likely result in a small cumulative effect to runoff and sediment delivery while other actions may result in a moderate cumulative effect to runoff and sediment delivery. Cumulative effects would be lessened through various means, including using BMPs and operating practices to reduce impacts, reclaiming project disturbances, and phasing in projects over time to limit the amount of disturbance at any one point in time. Overall, impacts to water resources would be expected to range between minor and moderate.

Soil

The CESA for soil resources was delineated as 0.25 miles outside the proposed action treatment boundaries, which consists of approximately 89,000 acres. The amount of soil disturbance was identified as the indicator used to estimate cumulative impacts to this resource and to determine whether the proposed action effects would be significant.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and (pile burning within treatment areas covering approximately 29,300 acres. This action is expected create additional soil disturbance when fully implemented over the next 5–10 years. The amount of soil disturbance varies depending on the treatment. Some of the treatments proposed, such as mastication and hand-cutting trees and lopping and scattering slash, would have minimal impacts to soil. Skid trail and landing construction and pile burning may have a greater impact to soils.

Past and present actions have contributed to increased levels of soil disturbance above natural background levels. However, the amount of soil disturbance has not been quantified. Reasonably foreseeable future actions are expected to also contribute to increased levels of soil disturbance in the CESA.

Cumulatively, these actions would increase soil disturbance. The cumulative effect would vary based on the treatment that is implemented and the amount of soil disturbance that occurred from the particular treatment. Actions with minimal effects to the soil resource would likely result in a small cumulative effect while actions with greater effects may result in a moderate cumulative effect. Cumulative effects would be lessened through various means, including using BMPs and operating practices to reduce impacts, reclaiming project disturbances, and phasing in projects over time to limit the amount of disturbance at any one point in time. Overall, impacts to soil resources would be expected to range between minor and moderate.

Vegetation

The CESA for vegetation resources was delineated as the mapped acres of piñon-juniper vegetation type with greater than 10 percent cover across the entire Bridgeport Ranger District. Approximately 302,000 acres of piñon-juniper with greater than 10 percent cover have been mapped (USDA, Forest Service, 2005a); additional acres of piñon-juniper with less than 10 percent cover also occur on the Bridgeport Ranger District. The change in acres was identified as the indicator used to estimate cumulative impacts to this resource and whether proposed action effects would be significant.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and pile burning within treatment areas covering approximately

29,300 acres. Direct and indirect effects within the sagebrush areas include expanded areas of sagebrush vegetation due to the removal of piñon-juniper competition. Aspen and riparian vegetation health and vigor would increase by allowing sunlight into the aspen stands by removing piñon pine and juniper.

Some of the past and present actions, such as fire suppression, have likely increased the acres of piñon-juniper. Other actions across the Bridgeport Ranger District have removed an undetermined amount of piñon-juniper over the past 10 years—the Long Doctor, China Camp, and Sweetwater projects have removed or will remove approximately 400 acres of piñon-juniper with greater than 10 percent cover.

Reasonably foreseeable future actions would have varying impacts on the vegetation in the CESA. Some actions, including projects listed in the 10-year Bi-State Action Plan (BTACNC 2012a), are designed to reduce the acres of piñon-juniper over time. Future fire suppression efforts would likely continue to contribute to an increase in the acreage of piñon-juniper stands.

Cumulatively, these actions have increased the acres of piñon-juniper over the past 100 years, but implementing the proposed action and future projects listed in the Bi-State Action Plan (BTACNC 2012a) would reduce piñon-juniper cover. It is expected that the Bridgeport Ranger District would still support sufficient piñon-juniper woodlands to meet social and ecological needs. Social needs of forest users include piñon pine nut harvesting, firewood collection, and recreation. Ecological needs include providing habitat and food sources for wildlife species and soil retention.

Wildlife and Aquatic

The CESA area for fish and wildlife resources was delineated as 0.25 miles outside the proposed action treatment boundaries, which consists of approximately 89,000 acres. The estimated long-term persistence of Threatened, Endangered, Sensitive, and Forest Plan MIS fish and wildlife species was identified as the indicator used to estimate whether proposed action effects would be significant. Consistency with the Migratory Bird Treaty Act was also an indicator of whether or not significant effects would occur.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and (pile burning within treatment areas covering approximately 29,300 acres. This project would improve, enhance, expand, and protect Bi-state sage-grouse habitat, prevent conversion to piñon and juniper Phase 3 stands, increase habitat connectivity, and reduce the risk of high-severity wildfire, which can increase the susceptibility of low- to mid-elevation woodlands to cheatgrass and other invasive nonnative species.

Past and present actions that have impacted or continue to impact these species are listed above. These actions have contributed to short-term disturbances, fragmentation, and long-term piñon and juniper dominance where piñon and juniper treatments are not occurring.

Reasonably foreseeable future actions are also listed above. It is expected that these actions could contribute to short-term disturbances; existing fragmentation; and increased long-term piñon and juniper dominance, fire hazard, and annual grass dominance. Where piñon and juniper treatments are implemented, piñon and juniper dominance and long-term fire hazard would be reduced.

Cumulatively, these actions contribute to short-term disturbances, existing fragmentation, and long-term piñon and juniper dominance. Where piñon and juniper treatments occur, piñon and juniper dominance and long-term fire hazard are reduced. Of the 89,000-acre CESA, 59,700 acres (42,100 acres of piñon-juniper) would remain untreated to provide adequate refuge for local species during piñon-juniper treatments. No changes in current uses are expected as a result of this project.

Piñon-juniper treatments would restore approximately 50 percent of the existing piñon-juniper in the CESA to a sagebrush ecosystem, thus reducing fire hazard and the risk of annual grass invasion and increasing the resilience of the landscape while maintaining or enhancing the long-term persistence of those fish and wildlife species (including Bi-State sage-grouse) now occurring in this area.

Recreation

The CESA for recreational resources was delineated as 0.25 miles outside the proposed action treatment boundaries and consists of approximately 89,000 acres. The degree of displacement to recreationists was identified as the indicator used to estimate cumulative impacts to this resource and to determine whether the proposed action effects would be significant.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and pile burning within treatment areas covering approximately 29,300 acres. Direct and indirect impacts would cause some displacement of recreationists during project activities if people do not want to recreate near active operations. Upon project completion, some recreationists may not use certain areas in the project area because of the change in vegetation. As an example, a dispersed campsite in a piñon-juniper stand may not be used if the surrounding conifer vegetation is cut and replaced with sagebrush.

Past and present actions may have contributed to some displacement of recreationists within the CESA. Reasonably foreseeable future actions are expected to contribute to the displacement of some recreationists over time.

Cumulatively, these actions would displace an undetermined number of recreationists due to changes from piñon and juniper to sagebrush in the viewshed. Overall, the NFS road system would not change and the amount of displacement is expected to be minor given the amount of land within the CESA that would not be affected by the actions, and considering that many recreationists have become or would become accustomed to ongoing activities and would not be displaced.

Inventoried Roadless Areas

The CESA for IRA resources was delineated as the 8 IRAs affected by the proposed action. Change in the primitive and semi-primitive setting and landscape character and integrity were the two indicators selected to estimate cumulative impacts to this resource and to determine whether the proposed action effects would be significant.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and pile burning within treatment areas covering approximately 29,300 acres. Direct and indirect impacts to these affected IRAs would include a short-term increase in noise and human activity that would detract from the primitive and semi-primitive settings of the IRAs.

The proposed treatments would return the area to a more natural appearing landscape by reducing the amount of encroaching piñon and juniper and by restoring the extent of sagebrush plant communities. After project implementation, evidence of human disturbance, including cut stumps and scattered woody debris left onsite (masticated, cut, and/or chipped) would remain. These alterations would be minimal when the surroundings are viewed as a whole and would dissipate over time.

Past and present actions have contributed to a decrease in the primitive and semi-primitive nature within the CESA. Many of these actions have also altered the landscape as manmade improvements, including roads, fences, and dispersed campsites, have created features that appear unnatural.

Reasonably foreseeable future actions would likely contribute to a decrease in the primitive and semi-primitive nature within the CESA. Many of these actions would also alter the landscape so that manmade improvements or project impacts that created features that appeared unnatural in the short term, would better resemble natural conditions that existed prior to 1860 in the long term.

Cumulatively, these actions would decrease the primitive and semi-primitive nature within the CESA in the short term. Some projects would also increase the number of short-term unnatural features. However, given the emphasis on restoring ecosystem balance, the area would appear more natural looking in the long term. Overall, the short-term change to the roadless character of the 8 IRAs should be minor given the amount of acreage within the IRAs that would remain unaffected, and the overall undeveloped long-term character would better resemble natural conditions that existed prior to 1860.

Fire and Fuels

The CESA for fire and fuels was delineated as the mapped acres of piñon-juniper vegetation type with greater than 10 percent cover across the entire Bridgeport Ranger District. Approximately 302,000 acres of piñon-juniper with greater than 10 percent cover (CALVEG 2005) have been mapped; additional acres of piñon-juniper with less than 10 percent cover also occur on the Bridgeport Ranger District. The change in the conversion of acres to Phase 3 woodland stands was identified as the indicator used to estimate cumulative impacts to this issue and whether proposed action effects would be significant.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and pile burning within treatment areas covering approximately 29,300 acres. Proposed treatments would treat up to approximately 10,400 acres of Phase 2 woodlands; treated acres would then not be able to convert to Phase 3 stands. The project would also treat 9,900 acres of Phase 1 woodlands, which would then not be able to convert to Phase 2 stands and eventually Phase 3 stands.

Some past and present actions that have impacted or continue to impact the increased conversion of piñon-juniper to Phase 3 stands are fire suppression efforts and livestock grazing. However, the acres converted cannot be quantified. Other actions, including the Long Doctor, China Camp, and Sweetwater projects, have decreased conversion in some areas. These projects have removed or will remove approximately 400 acres of piñon-juniper with greater than 10 percent cover (USDA, Forest Service. 2005a)

Some of the reasonably foreseeable future actions, such as fire suppression, would likely continue to increase Phase 3 conversion. Other actions, including projects listed in the 10-year Bi-state Action Plan (BTACNC 2012a), are designed to reduce the amount of piñon-juniper that are converted to Phase 3 stands over time.

Cumulatively, these actions have increased acres of piñon-juniper over the past 100 years and an increase in acres of Phase 3 piñon-juniper stands. Implementing the proposed action and Bi-State Action Plan (BTACNC 2012a) projects would slow the conversion of piñon-juniper to Phase 2 and 3 stands. Overall, the rate of change in the conversion of Phase 1 and 2 stands to Phase 3 stands would decrease and move closer to the expected natural stand composition.

Slowing the conversion of Phase 1 and 2 stands to Phase 3 stands would reduce fuel loading and improve the health and resiliency of both sagebrush and piñon-juniper communities at a landscape scale. Improved resiliency of vegetation communities would limit the future potential of high-severity, stand-replacing fires and the negative impacts from such fires.

Sensitive and Rare Plants

The CESA for sensitive and rare plant resources was delineated as 0.25 miles outside the proposed action treatment boundaries, which consists of approximately 89,000 acres. The estimated persistence of rare and sensitive plant species was identified as an indicator used to estimate whether proposed action effects would be significant.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and (pile burning within treatment areas covering approximately 29,300 acres. While some individual plants may be impacted, all populations of rare plants are expected to continue to persist within the project area. Restoring sagebrush habitat may also improve conditions for species found in this habitat type.

Past and present actions have contributed to short-term disturbances, fragmentation, and long-term piñon and juniper dominance where piñon and juniper treatments are not occurring. Many of these disturbances occurred without rare plant surveys and without good baseline data, so whether any rare plant individuals or populations were impacted or are still being impacted is unknown. Given the scattered nature of disturbances within the CESA and the amount of land that has not been impacted, the level of disturbance to rare plants is assumed to be minimal and all species present prior to 1870 are considered to be present and persistent today.

Reasonably foreseeable future actions would contribute to short-term disturbances, future fragmentation, and changes in the diversity of plant communities. Some of these actions, including fire suppression work, could lead to increased long-term piñon and juniper dominance. Where piñon and juniper treatments would occur, piñon and juniper dominance and the long-term fire hazard are reduced. These projects may impact rare plants, but the extent of disturbance is not known. Future actions would be constrained by rare plant surveys and mitigation measures to minimize any impacts to plant species that could be affected.

Combined, these actions could cumulatively impact some individual rare plants within the local populations. Restoring sagebrush habitats may also increase the number of rare plants that are found in this habitat. Overall, the loss of populations is not expected and species are expected to persist within the CESA.

Noxious and Invasive Weeds

The CESA for noxious and invasive weeds was delineated as 0.25 miles outside the proposed action treatment boundaries, which consists of approximately 89,000 acres. The risk of establishing new weed populations in the CESA was identified as an indicator used to estimate whether the proposed action effects would be significant.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and (pile burning within treatment areas covering approximately 29,300 acres. The project could introduce new weed populations due to the use of vehicles and heavy equipment and ground disturbance. However, the proposed action would reduce the risk of high-severity wildfire, which can increase the susceptibility of low- to mid-elevation woodlands to cheatgrass and other invasive nonnative species.

Past and present actions have most likely contributed to the establishment of undesirable weed species within the CESA. Some of these past disturbances occurred without surveys of weed sites and without proper mitigation, so what extent past projects have led to increased weed occurrences is unknown. More recent projects have incorporated weed control and mitigation into the project design features so that weed establishment and spread has been minimized. Independent of project-related actions, the District weed program has also been successful in treating weed occurrences within and adjacent to the project area.

Reasonably foreseeable future actions could contribute to weed establishment and spread. Strategic planning of future piñon-juniper removal projects would expand sagebrush habitats and improve the health and resiliency of sagebrush and piñon-juniper communities at a landscape scale. Improved resiliency of vegetation communities would limit the future potential of noxious and invasive weed establishment and spread.

Cumulatively, these actions could contribute to the establishment and spread of noxious weeds within the CESA. Weed prevention, mitigation, and control measures associated with most of the actions would limit the spread and introduction of noxious weeds. Overall, the spread and introduction of weeds would be minor.

Cultural

The CESA for archaeological resources includes lands west of Highway 338 from Sweetwater Summit, north and south for 7 miles, and the East Walker project area itself, which includes approximately 45,000 acres. The CESA was selected because of the presence of similar sage-grouse habitat projects in the north-central Bridgeport Ranger District. The number of significant cultural properties that have or may be subject to unresolved adverse effects was identified as the indicator used to estimate cumulative impacts to this resource and whether proposed action effects would be significant.

In assessing cumulative effects for cultural resources, impacts of actions since 1980 were included. Actions preceding 1980 were not included because archaeological inventory only occurred sporadically, and impacts cannot be assessed for these past actions. Impacts of reasonably foreseeable future actions beyond 2014 are discussed in general terms because project details of future actions are unknown at this time. The sum of impacts from past, present, and reasonably foreseeable future actions is not quantifiable and will only be addressed qualitatively.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and pile burning within treatment areas covering approximately

29,300 acres. The proposed action is designed to avoid most impacts to cultural resources, but some damage and disturbance is likely to occur during project implementation. Given the design features included to protect cultural resources, it is unlikely that any of this damage would result in unresolved adverse effects to significant cultural properties.

Since the 1980s, past and present actions had or will have the potential to impact cultural resources. Many of the projects and activities approved by the Forest Service were subject to cultural surveys that identified cultural sites. Protection of these sites was included in the design features as necessary. Some of the ongoing uses, such as recreation and grazing, are not covered by cultural surveys and disturbance to some cultural sites has likely occurred and may still be occurring annually. As a whole, these past and present actions have disturbed and damaged cultural resources. A portion of this disturbance and damage would result in unresolved adverse effects to significant cultural properties.

The reasonably foreseeable future actions covered above have the potential to impact cultural resources. Some future activities, including recreational use, occur without Forest Service review for cultural resources. Other activities, such as permitted grazing, may have limited cultural review. Lastly, some projects, such as those covered under the Bi-State Action Plan, would be subject to full cultural review by the Forest Service. Therefore, some activities would occur without any impact on cultural resources and other would impact cultural resources. Projects and activities with cultural review would have less of an impact due to protection of known cultural resources. As a whole, these future actions would lead to disturbance and damage to cultural resources over time.

Cumulatively, these actions have disturbed and damaged cultural resources. These effects would not result in adverse effects to the National Register characteristics of National Register listed, eligible or unevaluated cultural resources. This document recognizes that there has been some alteration to cultural resources over the course of several generations from grazing, recreation, timber management and other forest uses.

Tribal Practices

The CESA for Native American traditional resources is the same as that for cultural resources. The ability of tribal members to use the project area for ceremonial and religious purposes and for gathering of pine nuts (referred to as tribal practices) was identified as the indicator used to estimate cumulative impacts to this resource and to determine whether proposed action effects would be significant.

The proposed action is expected to remove piñon and juniper using a combination of mechanical methods, hand methods, and (pile burning within treatment areas covering approximately 29,300 acres. The proposed action provides for continued consultation and coordination with local tribal governments to ensure that tribal practices can continue in the project area. These measures include avoidance of pine nut harvesting areas deemed important to tribal members and the protection of sites used for ceremonial and religious events. The project work is also designed to maintain and improve the health of pine nut stands to allow for continued production.

Past and present actions had or have the potential to impact resources important to local tribal members. As a whole, these past and present actions have not hindered the ability to take part in tribal practices.

The reasonably foreseeable future actions covered above have the potential to impact tribal practices. Through coordination with tribal members and tribal councils, future actions should be managed to allow for tribal practices to continue without disruption.

Cumulatively, these actions would not noticeably impact tribal practices.

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Finding of No Significant Impact

The deciding official is responsible for evaluating the effects of the project relative to the definition of significance established by the Council on Environmental Quality (CEQ) Regulations (40 CFR 1508.13). Based on this evaluation, the deciding official has determined that the proposed action will not have a significant effect on the quality of the human environment. As a result, no environmental impact statement will be prepared. The rationale for this finding follows, organized by sub-section of the CEQ definition of significance cited above.

Context

For the proposed action and alternatives, the context of the environmental effects is based on the environmental analysis in this environmental assessment (EA).

The action is a site-specific action that by itself does not have international, national, region-wide or state-wide importance. Effects are limited to the project area, which includes portions of Sweetwater Flat, Bald Mountain, Nye Canyon, and the Pine Grove Hills.

Intensity

Intensity is a measure of the severity, extent, or quantity of impacts and is based on information from the effects analysis of this EA and the references in the project record. The impacts of this project have been appropriately and thoroughly considered with an analysis that is responsive to concerns and issues raised by the public. The agency has taken a hard look at the environmental effects using relevant scientific information and knowledge of site-specific conditions gained from field visits. The finding of no significant impact is based on the context of the project and intensity of effects using the ten factors identified in 40 CFR 1508.27(b).

Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that, on balance, the effect will be beneficial.

The finding of no significant impact is not biased by the beneficial effects of the action. The beneficial effects of habitat improvement for Bi-State sage-grouse and concurrent benefit of fuels reduction have not been used to balance adverse effects of the treatments. Potential adverse effects were considered when developing the project design features that were incorporated into the proposed action. Project design features are specifically included to minimize or eliminate potential adverse effects from proposed treatments. Effects determinations were made independently from the beneficial effects of the proposed treatment but were made while considering the project design features. A discussion of potential effects is summarized in the “Environmental Impacts of the Proposed Action and Alternatives” section of the EA (p. 21) and resource specialist reports (available in the project record).

The degree to which the proposed action affects public health or safety

No significant impacts to public health and safety were identified. Implementing this project will reduce threats to public health and safety from high-severity wildfire by reducing the intensity of wildfires and their resistance to control by fire suppression efforts. Smoke and air quality effects from pile burning cannot be completely eliminated; however, burn plans addressing public safety and air quality will be completed in cooperation with air quality agencies prior to pile burning.

Unique characteristics of the geographic area such as the proximity to historical or cultural resources, parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

The project would not adversely affect parks, prime farmlands, wetlands, wild and scenic rivers, or other resources considered to have unique characteristics. (See the “Non-key Issues” section on p. 11.)

The degree to which the effects on the quality of the human environment are likely to be highly controversial

The effects on the quality of the human environment are not likely to be highly controversial. The EA process has documented the expected environmental effects of the proposed action in the “Environmental Impacts of the Proposed Action and Alternatives” section (p. 21) and resource specialist reports (available in the project record). The proposed action and associated project design features address the various issues raised by those who commented on the project. The proposed treatments are consistent with the best available science and current direction for improving greater sage-grouse habitat through piñon-juniper removal. While some members of the public are opposed to piñon-juniper removal for habitat improvement, this action is not highly controversial within the scientific context of the National Environmental Policy Act (NEPA).

The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks

The effects analysis indicates the effects are not uncertain and do not involve unique or unknown risk (see the “Environmental Impacts of the Proposed Action and Alternatives” section of the EA [p. 21] and the resource specialist reports located in the project record). The Forest Service has considerable experience with the types of activities being implemented. The effects described in the EA are based on the judgment of experienced resource management professionals using the best available information.

The degree to which the action may establish precedent for future actions with significant effects or represents a decision in principle about a future consideration

The action is not likely to establish a precedent for future actions with significant effects. Future actions will be evaluated through the NEPA process and will stand on their own as to environmental effects and project feasibility.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

Cumulative impacts of this action were discussed in the “Cumulative Effects” section (p. 28) of the EA and within the effects analysis of each resource area (resource specialist reports available in the project file). No cumulatively significant impacts were identified during the effects analysis.

The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

3. The action will have no direct adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in, the National Register of Historic Places. The action will also not cause loss or destruction of significant scientific, cultural, or historical resources. A programmatic agreement between the Humboldt-Toiyabe National Forest and the Nevada State Historic Preservation Office (SHPO) includes methods of consultation between the Forest Service, the SHPO, and area tribes to limit or avoid effects to historic properties (see the “Cultural” section [p. 31] of the EA and the Cultural Resources Specialist Report available in the project record). Design features from the programmatic agreement are included in the project design features associated with the proposed action.

Native American consultation is ongoing in good faith with future efforts directed toward unit-specific implementation. Consultation has occurred with the Washoe Tribe of Nevada and California, Bridgeport Indian Colony, Yerington Paiute Tribe, and Walker River Paiute Tribe.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973

The greater sage-grouse, Bi-State Distinct Population Segment, occurs within the project area. This species was proposed for listing as threatened by the U.S. Fish and Wildlife Service (USFWS) in October 2013. Proposed critical habitat also occurs throughout the project area. Informal consultation with the USFWS pursuant to Section 7 of the Endangered Species Act of 1973 was conducted because a determination of “*may affect but is not likely to adversely affect the species or its critical habitat*” was made (see the “Wildlife and Aquatic” section [p. 23] in the EA and the *Wildlife Specialist Report, Biological Evaluation*, and *Biological Assessment* available in the project record). The action is targeted at improving habitat for the greater sage-grouse, so effects will be mostly beneficial. Project design features were incorporated into the proposed action to minimize any potential effects associated with disturbance, and treatments will occur outside of the breeding season.

Whether the action threatens a violation of federal, State, or local law or requirements imposed for the protection of the environment

The action is in full compliance with all federal, State, and local law requirements imposed for environmental protection. Best Management Practices to protect water quality are included in the project design features of the proposed action (see the “Water” [p. 21] and “Soil” [p. 22] sections of the EA and the *Water and Soils Specialist Report* available in the project record.).

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