Draft Assessment
Forest Plan Revision

Designated Areas Report

Prepared by:
Mandy DeCroo, Recreation Management Specialist
Maura Laverty Rangeland Management Specialist

Contributions by:
Shane Dittlinger, Umatilla NF Recreation Program Manager
Sabrina Smits, Wallowa-Whitman NF Botanist
Amarina Wuenschel, Blue Mountains Area Ecologist
Susan Geer, Wallowa-Whitman NF Botanist
Amanda Hardman, Malheur NF Botanist
Kayla Saager, Umatilla NF Botanist
Susan Theis, Umatilla NF Botanist
Holly Harris, Wildlife Biologist, Pacific Planning Service Group
Jessica Brunson, Malheur NF Botany Program Manager
Michael Spicer, Malheur NF Wild Horse & Burro Program Manager
Michael Wisdom, Lead Scientist Starkey Experimental Forest & Range
Mary Rowland, Emeritus Scientist Starkey Experimental Forest & Range
Dean Schlichting, Environmental Coordinator, Pacific Planning Service Group

for:
Malheur, Umatilla, and Wallowa-Whitman National Forests

February 6, 2024

Designated Areas

A designated area, as defined in 36 CFR 291.19, is an area or feature identified and managed to maintain its unique special character or purpose. Some categories of designated areas may be designated only by statute and some categories may be established administratively in the land management planning process or by other administrative processes of the Federal executive branch. Examples of statutorily designated areas are national heritage areas, national recreational areas, national scenic trails, wild and scenic rivers, wilderness areas, and wilderness study areas. Examples of administratively designated areas are experimental forests, research natural areas, scenic byways, botanical areas, and significant caves.

Designated Wilderness

Introduction

Designated wilderness areas are congressionally designated and established through a formal act of Congress. Through legislation, Congress has designated several areas that are unique for their special characteristics and the opportunities they offer. Congressional designation provides specific management direction for these areas.

As part of the plan revision process, the agency is required to identify and evaluate all lands that may be suitable for inclusion in the National Wilderness Preservation System and determine whether to recommend any such lands for wilderness designation under 36 CFR 219.7 (c)(2) following the process outlined in FSH 1909.12 CH 70 (2015).

Four distinct qualities are used to assess wilderness character and represent a combination of attributes that define and describe the character of wilderness.

Natural: Wilderness ecological systems are substantially free from the effects of modern civilization. This quality is degraded by many things, such as loss of indigenous species, occurrence of nonindigenous species, alteration of ecological processes such as water flow and fire regimes, effects of climate change, loss of dark skies, and occurrence of artificial sounds. It is preserved or improved, for example, by controlling or removing nonindigenous species or restoring ecological processes.

Undeveloped: Wilderness retains its primeval character and influence and is essentially without permanent improvement or modern human occupation. This quality is influenced by "Section 4c prohibited uses," that is, the presence of modern structures, installations, habitations, and use of motor vehicles, motorized equipment, or mechanical transport. The removal of structures and the absence of prohibited uses preserve or improve this quality. In contrast, the presence of structures and prohibited uses degrades this quality, whether by the agency for administrative purposes, by others authorized by the agency, or when there are unauthorized uses.

Untrammeled: Wilderness is essentially unhindered and free from the actions of modern human control or manipulation. This quality is influenced by any activity or action that controls or manipulates the components or processes of ecological systems inside the wilderness. Management actions that are not taken support or preserve the untrammeled quality, while actions that are taken degrade this quality, even when these actions are taken to protect resources, such as spraying herbicides to eradicate or control nonindigenous species or reducing fuels accumulated from decades of fire exclusion.

Solitude or a primitive and unconfined type of recreation: Wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation. This quality is primarily about the opportunity for people to experience wilderness and is influenced by settings that affect this opportunity. It is preserved or improved by management actions that reduce visitor encounters and signs of modern civilization inside the wilderness. In contrast, this quality is degraded by agency-provided recreation facilities, management restrictions on visitor behavior, and actions that increase visitor encounters.

In addition to these four qualities, there may be a fifth quality, called "other features", based on the last clause of Section 2c in the 1964 Wilderness Act, that a wilderness "many also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." Unlike the preceding four qualities that apply to every wilderness, this fifth quality is unique to an individual wilderness based on the features that are inside that wilderness. These features typically occur only in specific locations within a wilderness and include cultural resources, historical sites, paleontological sites, or any feature not in one of the other four qualities that has scientific, educational, scenic, or historical value.

Current Forest Plan Direction

The Blue Mountains national forests currently manage nearly 1 million acres of wilderness distributed across 7 designated wildernesses. The Hells Canyon Wilderness, consisting of 217,927 acres, is "nested" within the larger Hells Canyon National Recreation Area (HCNRA). The HCNRA Comprehensive Management Plan was updated and approved in 2003 and will be carried forward in its entirety. The HCNRA Comprehensive Management Plan is the portion of the Wallowa-Whitman National Forest Land and Resource Management Plan that guides management of the Hells Canyon National Recreation Area. Designated wilderness on the Blue Mountains national forests includes 759,666 acres in six wilderness areas, not including the Hells Canyon Wilderness.

Designated wilderness is governed by the terms of the Wilderness Act and other specific legislation, directing management activities within wilderness and reducing human impacts and influences to desired levels. These regulations are designed to protect the qualities of wilderness character.

Current 1990 forest plan direction provides opportunity for solitude, physical and mental challenge, primitive recreation experiences, education, and research. Wilderness characteristics should be maintained so ecosystems are unaffected by human influences and plants and animals develop and

respond to natural forces. Natural ecological succession, including wildfire, will be allowed to occur without endangering adjacent lands. In wilderness areas, protection of wilderness resources will be the primary criterion used to resolve conflict between resource areas. The use of motorized and mechanized equipment is prohibited in wilderness areas. Exceptions can be permitted with Forest Supervisor's approval for emergencies involving life, health, and safety. The Regional Forester must approve all other use of motorized equipment in wilderness areas. Wilderness will be managed to prevent degradation. Conditions will be improved in situations where natural processes are not operating freely, or where values for which the wildernesses were created are impaired.

Existing Conditions

The following six wilderness areas are solely managed by the Blue Mountains national forests:

Eagle Cap Wilderness – This is Oregon's largest wilderness encompassing 350,461 acres in the heart of the Wallowa Mountains in the Wallowa-Whitman National Forest in Wallowa County, Oregon. Approximately 534 miles of trails provides access to this area. This vast region has roughly 60 high alpine lakes, which are surrounded by open meadows, bare granite peaks and ridges, and classic U-shaped glacial valleys thickly forested in their lower sections and rising to scattered stands of alpine timber. Elevations range from roughly 5,000 feet to 9,845 feet on Matterhorn Peak located centrally within the wilderness area. Many fish species can be found over 37 miles of streams.

Monument Rock Wilderness – This 19,650-acre wilderness is shared by the Malheur (12,620 acres) and Wallowa-Whitman (7,030 acres) National Forests in Baker and Grant Counties. The area ranges from 5,200 feet in the lower regions to the 7,815-foot peak of Table Rock. The season of highest visitation generally runs from June into November. The area receives 40 inches of annual precipitation and summer brings hot days and chilly nights. Hunting is the most popular activity, with hiking and backpacking increasing in popularity.

North Fork John Day Wilderness – This wilderness is located mostly in Grant County (Umatilla National Forest) with a small portion in Umatilla County (Wallowa-Whitman National Forest), Oregon. This 121,352-acre wilderness features rolling bench lands, the majestic Greenhorn Mountains, and the rugged gorge of the North Fork John Day River. Trails serving this area are popular for both hiking and horseback riding and are accessible from early spring to late fall from several trailheads located around its perimeter. The nature of the area provides long-distance trips with significant elevation changes. The wilderness includes four separate units. In addition to the main body of the wilderness, the Baldy Creek Unit lies to the east (on the Wallowa-Whitman National Forest), the Greenhorn Unit lies to the south (bordering the Vinegar Hill-Indian Rock Scenic Area), and the Tower Unit lies just to the north and includes Tower Mountain.

North Fork Umatilla Wilderness – At 20,435 acres, this is one of the smaller wilderness areas in northeast Oregon and is located on the Umatilla National Forest in Union and Umatilla Counties. The area feels much bigger, and visitors find the area peaceful, yet challenging as the wilderness is characterized by varying terrain; elevation ranges from 2,000 to 6,000 feet. Using the low elevation

areas, hikers and equestrians on the 31-mile trail system have ample opportunity for spring hiking and horseback-riding trips. A main attraction is the North Fork Umatilla River.

Strawberry Mountain Wilderness – This 69,350-acre wilderness, located on the Malheur National Forest in Grant County, has over 100 miles of hiking trails crossing through the area dominated by the Strawberry Mountain Range. This area has extremely diverse ecological makeup; five of the seven major life zones in North America can be found here. The land is rugged; elevations range from 4,000 feet to the 9,038-foot summit of Strawberry Mountain.

Wenaha-Tucannon Wilderness – This 177,423-acre wilderness on the Umatilla National Forest is in Wallowa County, Oregon, and Columbia County, Washington. It contains 200 miles of managed trails providing a primitive, unconfined recreation experience. The landscape is rugged, with high basalt ridges separated by deep, steep canyons. Major streams include the Wenaha River, Tucannon River, and Crooked Creek. Elevations range from 2,000 feet at the Wenaha River to 6,400 feet at Oregon Butte.

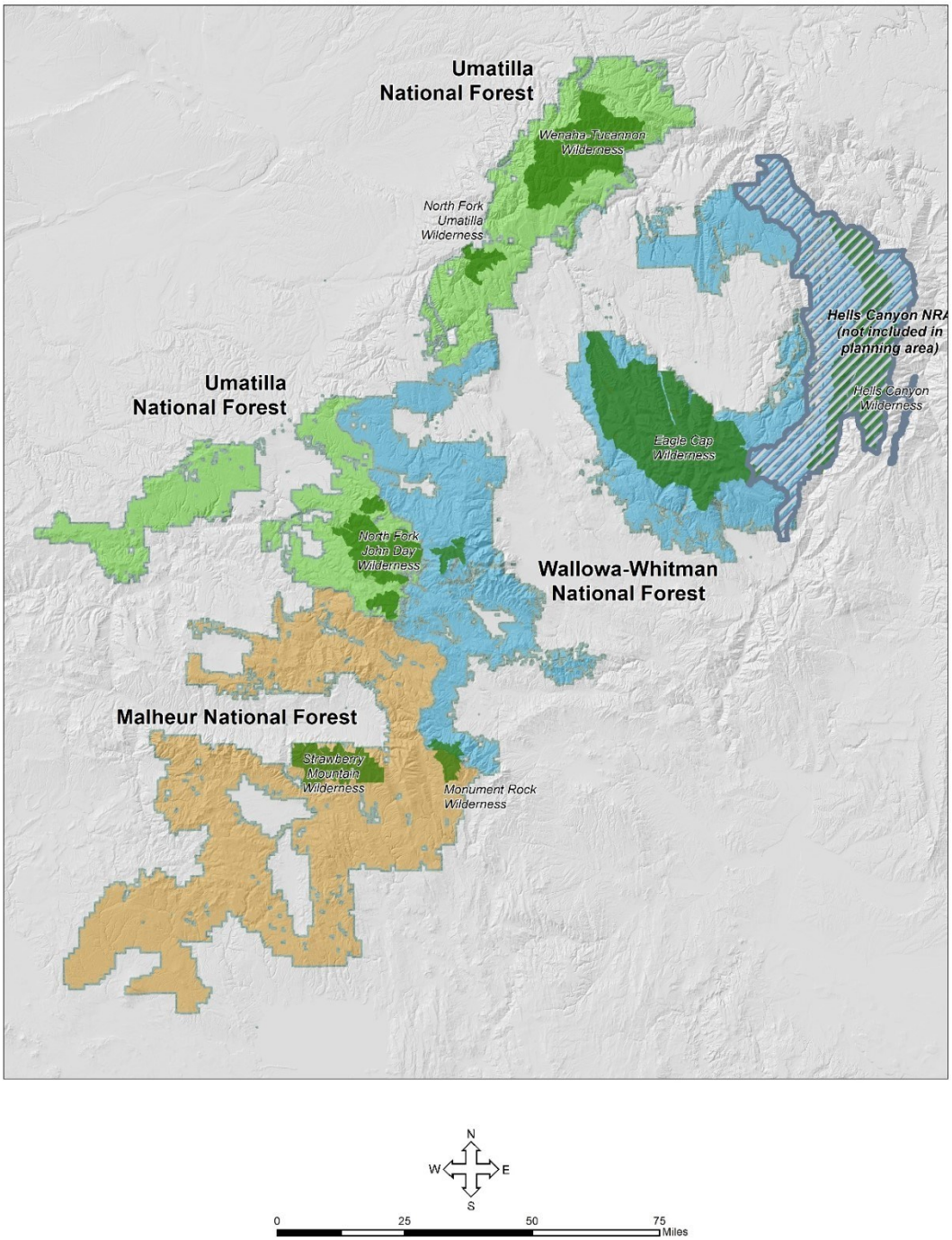


Figure 1. Map of the Wilderness areas within the Blue Mountains planning area.

Within the Malheur National Forest, about 5 percent or 82,000 acres are designated wilderness areas. Within the Umatilla National Forest, about 22 percent, or 304,200 acres are designated wilderness areas. Within the Wallowa-Whitman National Forest, about 24 percent, or 588,700 acres are designated wilderness areas.

There are no preliminary administratively recommended wilderness areas in the 1990 forest plans for the Malheur, Umatilla, or Wallowa-Whitman National Forests.

Key Benefits to People

Wilderness provides social, cultural, economic, scientific, and ecological benefits for present and future generations. Many of America's iconic landscapes include wilderness areas that provide outstanding opportunities for solitude and/or primitive and unconfined recreation. Wilderness landscapes may also contain culturally significant and sacred sites important to Native Americans and historic-era cultural resources that speak to the nation's collective heritage. Communities enjoy and value these lands for hunting and fishing, wildlife watching, hiking, equestrian pursuits, and other non-motorized and non-mechanical uses.

Trends and Drivers

Wilderness areas are acknowledged as a scarce and dwindling resource, requiring humility on behalf of humanity to retain the natural condition of wilderness areas, and to convey an understanding of human and natural history. Wilderness serves as a baseline, demonstrating the functions of healthy ecosystems that can be contrasted with human activities that change our world. Wilderness areas provide a variety of valuable ecosystem services including carbon sequestration, watershed protection and air quality and may contain habitat for numerous threatened and endangered species and other rare biological resources. Managing an area to protect its wilderness character provides unique opportunities and benefits for present and future generations that may otherwise be irreparably lost.

Information Needs

The four step Wilderness Recommendation process will be followed to determine whether to recommend any lands for inclusion in the National Wilderness Preservation System. Direction for completing the process is found in FSH 1909.12 Chapter 70 (2015) and includes Inventory, Evaluation, Analysis and Recommendation.

Key Findings

Designated wilderness accounts for nearly 15 percent of the total land mass (excluding Hells Canyon NRA) in the Blue Mountains national forests. Education and stewardship are critical to the successful management of wilderness areas. More people are seeking solitude and unconfined recreation opportunities and use in wilderness is trending upward. Overcrowding can affect those opportunities. The balance of managing wilderness for the characteristics they were designated for, and other natural resources has effects on the untrammeled nature natural qualities within wilderness creates challenge, opportunity, and sometimes, tension.

Wild and Scenic Rivers

Introduction

Wild and scenic rivers are congressionally designated areas established through a formal act of Congress. Through legislation, Congress has designated several areas that are unique for their special characteristics and the opportunities they offer. Congressional designation provides specific management direction for these areas. Figure 2 displays the existing designated wild and scenic rivers in the Blue Mountains national forests.

The wild and scenic river study process requires deciding a river's eligibility, classification, and suitability. Eligibility and classification represent an inventory of existing conditions. Eligibility is an evaluation of whether a river is free flowing (without major dams, diversions, or channel modifications) and possesses one or more outstandingly remarkable values (ORV). These values should be a unique or exceptional representation for the area studied and must be related to the river or its immediate environment. If found eligible, a river is analyzed as to its current level of development and a preliminary classification determination is made as to whether it should be placed into one of three classes: wild, scenic, or recreational.

FSH 1909.12 CH 80 states that if a systematic inventory of eligible rivers has been completed, the extent of the study process during plan development or revision can be limited to evaluation of any rivers that were not previously evaluated for eligibility and those with changed circumstances. The potential classification of a river found to be eligible is based on the condition of the river and the adjacent lands as they currently exist. The rivers to be studied for eligibility include all rivers named on a standard USGS 7.5-minute quadrangle map.

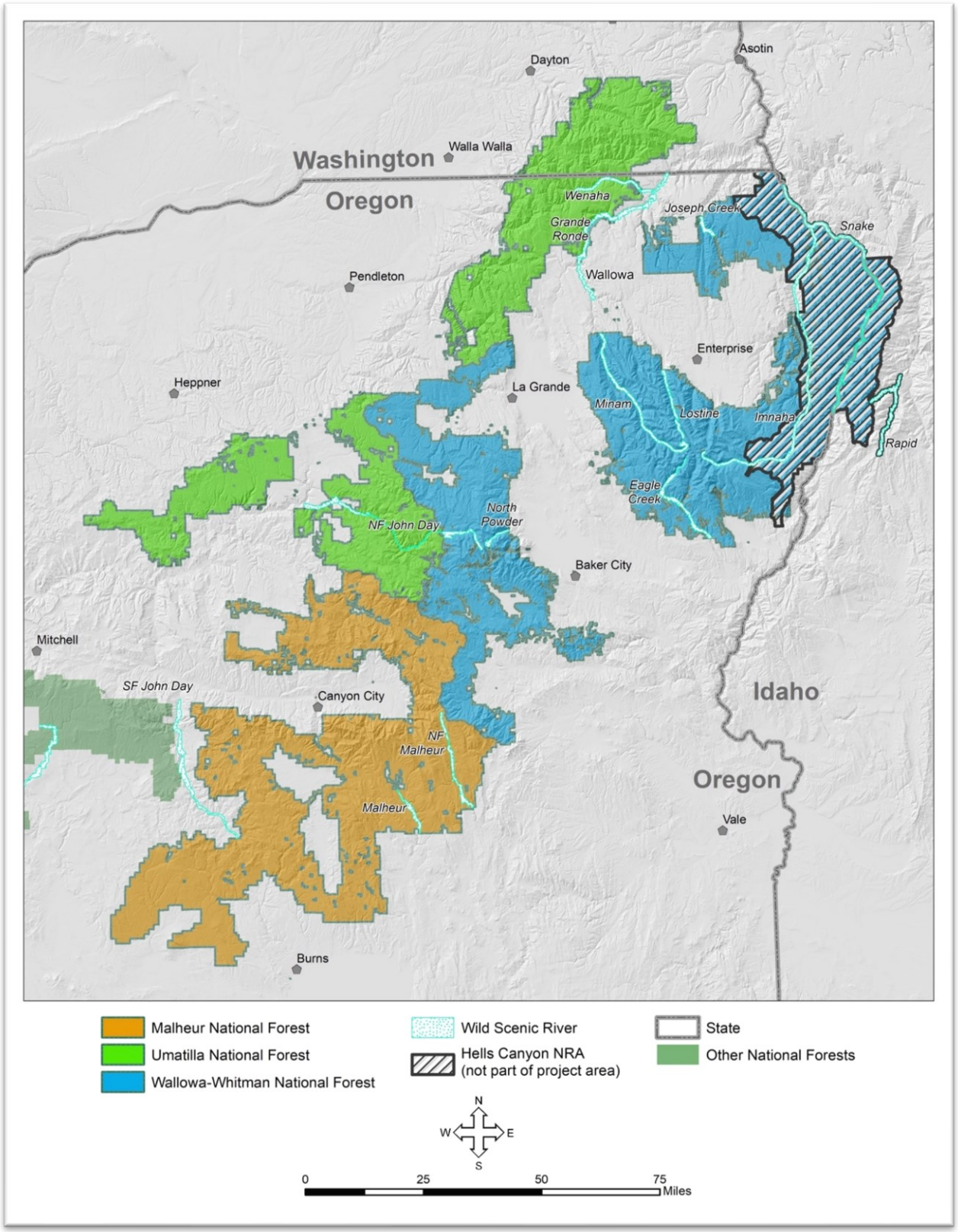


Figure 2. Existing Designated Wild and Scenic Rivers in the Blue Mountains national forests.

As per the Wild and Scenic River Act at 5(d) (1) and Forest Service Manual policy (Forest Service Manual 1924.03) a systematic inventory was completed on the Malheur, Umatilla, and Wallow-Whitman National Forests. Each National Forest's staff examined their rivers and streams for eligibility. A comparison was prepared to compare the selection of rivers identified in the 2010 systematic inventory and all named streams on a USGS 7.5-minute quadrangle map. Any streams missing from the 2010 inventory will be studied and a determination on eligibility will be made. Section 2(b) of the Wild and Scenic Rivers Act specifies and defines these terms as follows:

Wild Rivers: Wild river segments are free of impoundments and are generally inaccessible except by trail and or water trail; the shorelines are essentially natural appearing. Signs of human activity, including structures or evidence of resource use, are minimal. Visitors can interact with a natural environment with minimal sights and sounds of other people.

Scenic Rivers: Scenic river segments are free of impoundments; shorelines and viewing areas are largely natural appearing. Some recreation structures, evidence of timber harvest roads, and other evidence of human activity may be present but do not detract from the near natural appearance and scenic qualities of the immediate environment. A variety of water related recreational opportunities are available. The river may be accessible from roads in some places.

Recreational Rivers: Recreational river segments are free of impoundments and are readily accessible from roads. Some major public use facilities, such as developed campgrounds, administrative buildings, bridges, private residences, and commercial businesses, may be within the corridor. Considerable development and timber harvest may have occurred and may be evident near the river. A range of recreational opportunities is available in settings where visitors are likely to share their recreational experience with other individuals or groups.

The final procedural step, a suitability study, provides the basis for determining whether to recommend a river as part of the National System. Rivers authorized for suitability studies by Congress are protected under the Wild and Scenic Rivers Act. These protections last through the suitability study process, including a three-year period following transmittal of the final suitability study report by the President to Congress. The integrity of the identified classification must also be maintained during the protection period.

The identification of a river as eligible through the forest planning process does not trigger any protections under the Wild and Scenic Rivers Act. To manage the river for its potential inclusion into the National System, the administering agency applies existing authorities to protect its free-flowing character, water quality, ORVs, and preliminary or recommenced classification. Rivers identified as eligible are managed to maintain eligibility until suitability is determined.

Current Forest Plan Direction

Designated Rivers:

All river segments that have been designated as part of the Wild and Scenic Rivers System under the authority of the Wild and Scenic Rivers Act, as amended (1968) and the Omnibus Oregon Wild and Scenic River act of 1988 (PL 100-557) have comprehensive river management plans in the Blue Mountains national forests.

Table 1. Designated wild and scenic rivers in the Blue Mountains national forests

River Name	Wild	Scenic	Recreational	Outstandingly Remarkable Values
Malheur NF				
Malheur River	6.7	7.0	0.0	Scenery, geology, wildlife habitat, history
North Fork Malheur River	0.0	25.5	0.0	Scenery, geology, wildlife, fisheries
Totals	6.7	32.5	0.0	
Umatilla NF				
Wenaha River	18.7	2.7	0.15	Recreation, scenery, wildlife, fisheries
Grande Ronde River***	17.4	0.0	1.5	Recreation, fisheries, wildlife
North Fork John Day River***	24.3	10.5	8.9	Scenic, recreation, fisheries, wildlife, cultural
Totals	60.4	13.2	10.55	
Wallowa-Whitman NF				
Eagle Creek	4.5	6.0	18.4	Fish, recreation, scenery, cultural resources, geology/paleontology
Grande Ronde River***	17.4	0.0	1.5	Recreation, fisheries, wildlife
Joseph Creek	8.6	0.0	0.0	Scenic, recreation, geology, fish, water quality, wildlife, cultural resources
Imnaha River	15.0	0.0	0.0	Scenic, recreation, fisheries, wildlife, historic, botanical, cultural resources
Lostine River	5.0	0.0	11.0	Scenic, recreation, fisheries, wildlife, botanical
Minam River	41.9	0.0	0.0	Scenic, recreation, geology, fisheries, wildlife
North Fork John Day River***	3.5	0.0	6.9	Scenic, recreation, fisheries, wildlife, cultural
North Powder River	0.0	6.4	0.0	Recreation, scenery
Totals	95.9	12.4	37.8	

*Mileages in this table are derived from legislative language and/or the most recent figures reported in river plans (or “Comprehensive River Management Plans”).

**Miles within the Hells Canyon National Recreation Area are not included in this table.

*** The Grande Ronde and North Fork John Day rivers are listed above for both the Umatilla and Wallowa-Whitman National Forests as administration is shared. Mileage for the North Fork John Day River is divided within the table to reflect the mileage within and administered by each national forest. The Grande Ronde River is part of the administrative boundary between the Umatilla and Wallowa-Whitman National Forests, and the mileage is displayed equally for each of the National Forests.

Each river's comprehensive river management plan was reviewed for consistency with revised forest plan components, in addition to determining if the comprehensive river management plan direction was protecting the ORVs for each river. The complete review of forest plan components for each river is available in the project record for the 2018 Forest Plan Revision. In addition, where visitor-use management was required to protect ORVs, river managers were consulted to determine if visitation had increased during the life of the comprehensive river management plan. Monitoring records for the 1990 forest plans were consulted for changes in visitation in wild and scenic rivers corridors. No river segments were identified as having increases in visitor use that were impacting ORVs.

Eligible Rivers:

The Blue Mountains national forests created an eligibility inventory as to whether a river is free flowing and possesses one or more ORV(s). The following eligibility criteria were used to foster greater consistency within the agency and other federal river-administering agencies. They are intended to set minimum thresholds to establish ORVs and are illustrative and not all-inclusive: Scenic, Recreational, Geological, Fish, Wildlife, Cultural, and/or Other Values including but not limited to hydrologic, paleontological, ecologic, and botanic resources. The potential classification of a river found to be eligible is based on the condition of the river and the adjacent lands as they currently exist. The Wild and Scenic Rivers Act specifies three classification categories for eligible rivers: wild rivers, scenic rivers, and recreational rivers.

Existing Condition

Across the Blue Mountains national forests, there are 11 rivers designated by Congress as Wild and Scenic Rivers. Of those 11 rivers, 145 miles are classified as wild, 58 miles as scenic, and 47 miles are classified as recreational rivers. See the following table for mileages of existing designated wild and scenic rivers.

Table 2.Eligible wild and scenic rivers for each national forest included in previous study.

River Name	Wild	Scenic	Recreational	Outstandingly Remarkable Values
Malheur NF				
Lake Creek	3.3	0.0	0.0	Scenery, geological, botanical
Umatilla NF				
Bear Creek	4.6	0.0	0.0	Fisheries
Butte-West Fork Creek	13.9	0.0	0.0	Scenery
Desolation Creek	0.0	0.0	21.5	Recreation, botanical
Lookingglass Creek	0.0	7.9	0.0	Hydrological
North Fork Desolation Creek	0.0	0.0	6.8	Botanical
North and South Fork Wenaha River	26.3	0.0	0.0	Scenery, fisheries, botanical
Sheep Creek (in Washington)	0.0	0.0	0.5	Scenery, botanical

South Fork Desolation Creek	0.0	8.9	0.0	Fisheries, botanical
Tucannon River	9.1	4.6	8.7	Recreation, fisheries, cultural, botanical
Totals	**53.9**	**21.4**	**37.5**	
Wallowa-Whitman NF Big Sheep Creek	10.0		39.1	Recreation, fisheries, cultural
Dutch Flat Creek/Van Patton Creek*	5.3	0.0	0.0	Scenery, recreation, geological, hydrological, botanical
East Eagle Creek*	9.0	0.0	6.6	Scenery, recreation, fisheries, geological, cultural
Five Points Creek*	0.0	12.1	0.0	Scenery, fisheries, wildlife
Killamacue/Rock Creek	10.2	8.6	0.0	Scenery, recreation, geologic, botanical
North Fork Catherine Creek	11.1	0.0	2.6	Scenery, recreation, fisheries, wildlife
Swamp Creek	9.2	0.0	7.6	Fisheries, wildlife, cultural
Upper Grande Ronde River	11.7	0.0	18.0	Recreation, fisheries, wildlife, cultural
Totals	**66.5**	**20.7**	**73.9**	
Total All	**123.7**	**42.1**	**111.4**	

* These rivers have been determined suitable in Dutch Flat Creek, Killamacue Creek and Rock Creek Wild and Scenic River Study Report (1996) and Wild and Scenic River Study Report and Final Legislative Environmental Impact Statement for Eight Rivers (1997).

The 2012 Planning Rule requires that, when developing a plan or plan revision, the Responsible Official shall:

> *"Identify the eligibility of rivers for inclusion in the National Wild and Scenic Rivers System, unless a systematic inventory has been previously completed and documented, and there are no changed circumstances that warrant additional review." (36 CFR sec. 219.7(c)(2)(vi)).*

Since a systematic inventory of eligible rivers was completed, the extent of the study process during plan revision will be limited to evaluation of any rivers that were not previously evaluated for eligibility and those with changed circumstances. The rivers to be studied for eligibility include all rivers named on a standard U.S. Geological Survey 7.5-minute USGS quadrangle map.

Key Benefits to People

Wild and scenic rivers provide numerous benefits to people. They are a source of clean drinking water and flood protection by nourishing floodplain habitat. They help control invasive species and provide important habitat to countless species of fish, birds, and other animals. River recreation provides economic benefit to surrounding communities by providing river related jobs and monetary spending from visitors. Wild and scenic rivers are home to some of the most vibrant wildlife populations.

Trends and Drivers

The eligible rivers with potential classification of recreational are used for recreational purposes. The draw of recreationists to water to experience challenge, view scenery, relax, fish or any combination of lifestyle and recreation purpose is worth noting. Most of the eligible rivers are remote and access is restricted to non-motorized means. Lower flows caused by climate change could impact rivers with potential classification of scenic could be impacted. Any rivers with changed circumstances will be re-evaluated for eligibility.

Information Needs

Determination of eligibility of all missing streams and stream segments identified in the comparison conducted between 2010 systematic inventory and named streams on a USGS 7.5-minute quadrangle map will be made by applying the criteria in sections 1(b) and 2(b) of the Wild and Scenic Rivers Act. These criteria are further described in the USDA and USDI "Guidelines for Eligibility, Classification and Management of River Areas" dated September 7, 1982 (USDA-USDI Guidelines). The USDA-USDI Guidelines are included in FSH 1909.12, Zero code.

Key Findings

The wilderness recommendation and wild and scenic eligibility and suitability determination are stand-alone processes that will meet all current law, policy, and regulation. Only rivers that were not included in the previous study, or those with changed circumstances will be evaluated.

The criteria and methodology will primarily use existing information, but site-specific information gaps could be identified. There is ongoing data collection and verification on the Blue Mountains national forests that will help inform individual areas characteristics.

Inventoried Roadless Areas

Introduction

The approximate 5.5 million acres within the Blue Mountain national forests contain a large component of roadless and unroaded land. An inventory of roadless lands has been maintained since the early 1970s. The current inventory was displayed most recently in the 2001 Roadless Final Rule (36 CFR 294) (US Forest Service 2001). The following maps display the current roadless inventories of the Malheur, Umatilla and Wallowa-Whitman National Forests.

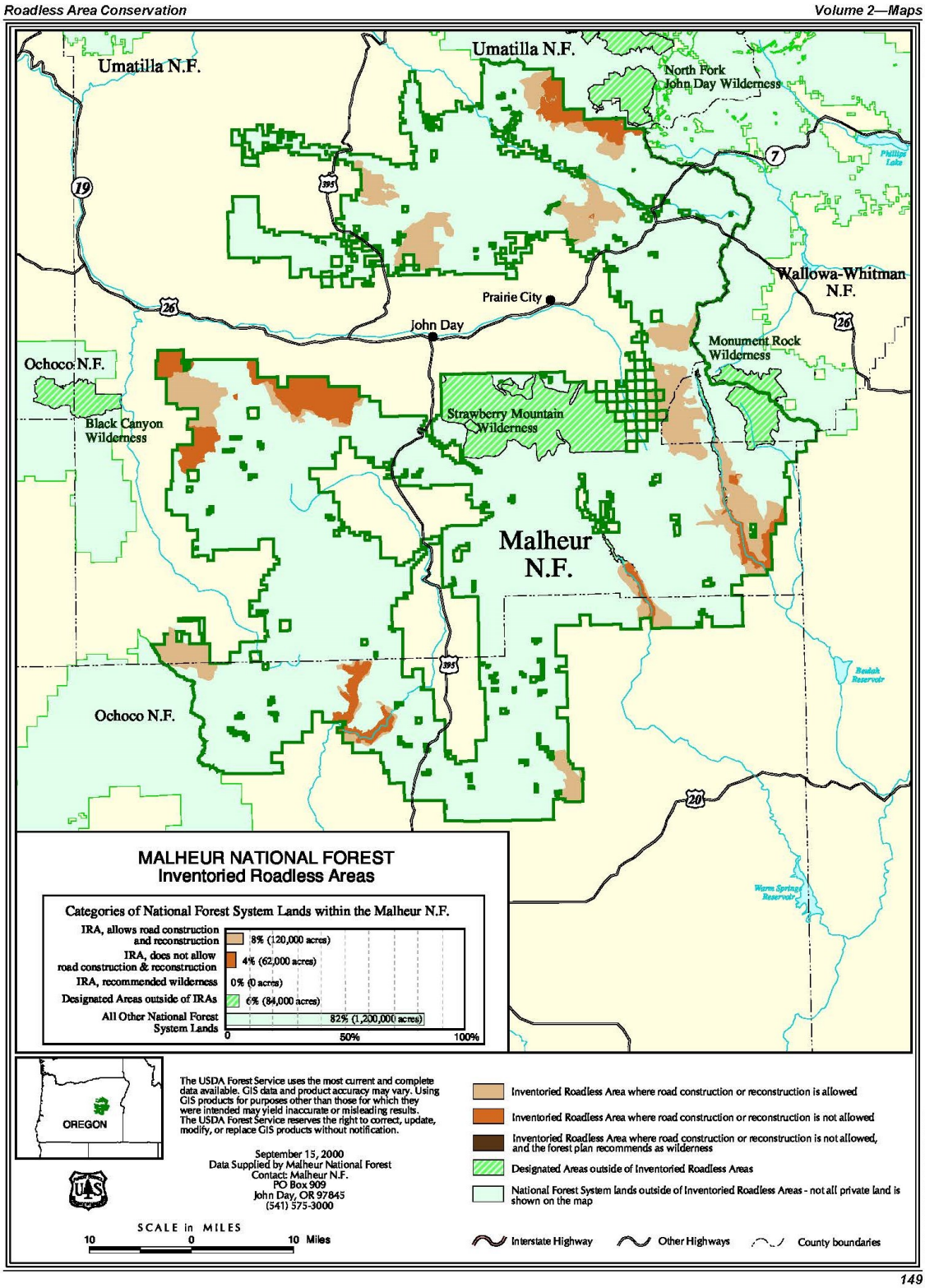


Figure 3. Map of the inventoried Roadless Areas on the Malheur national forest.

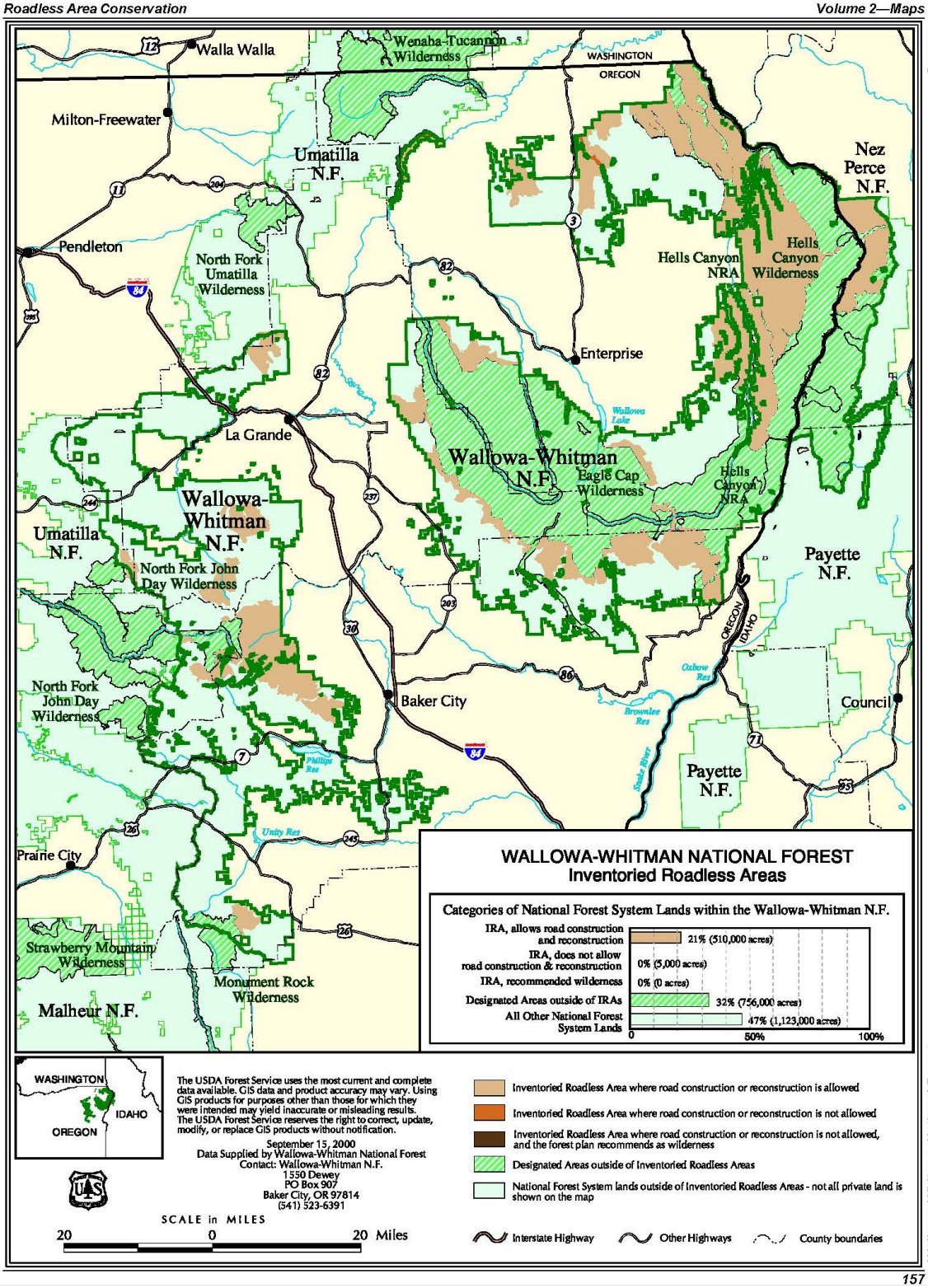
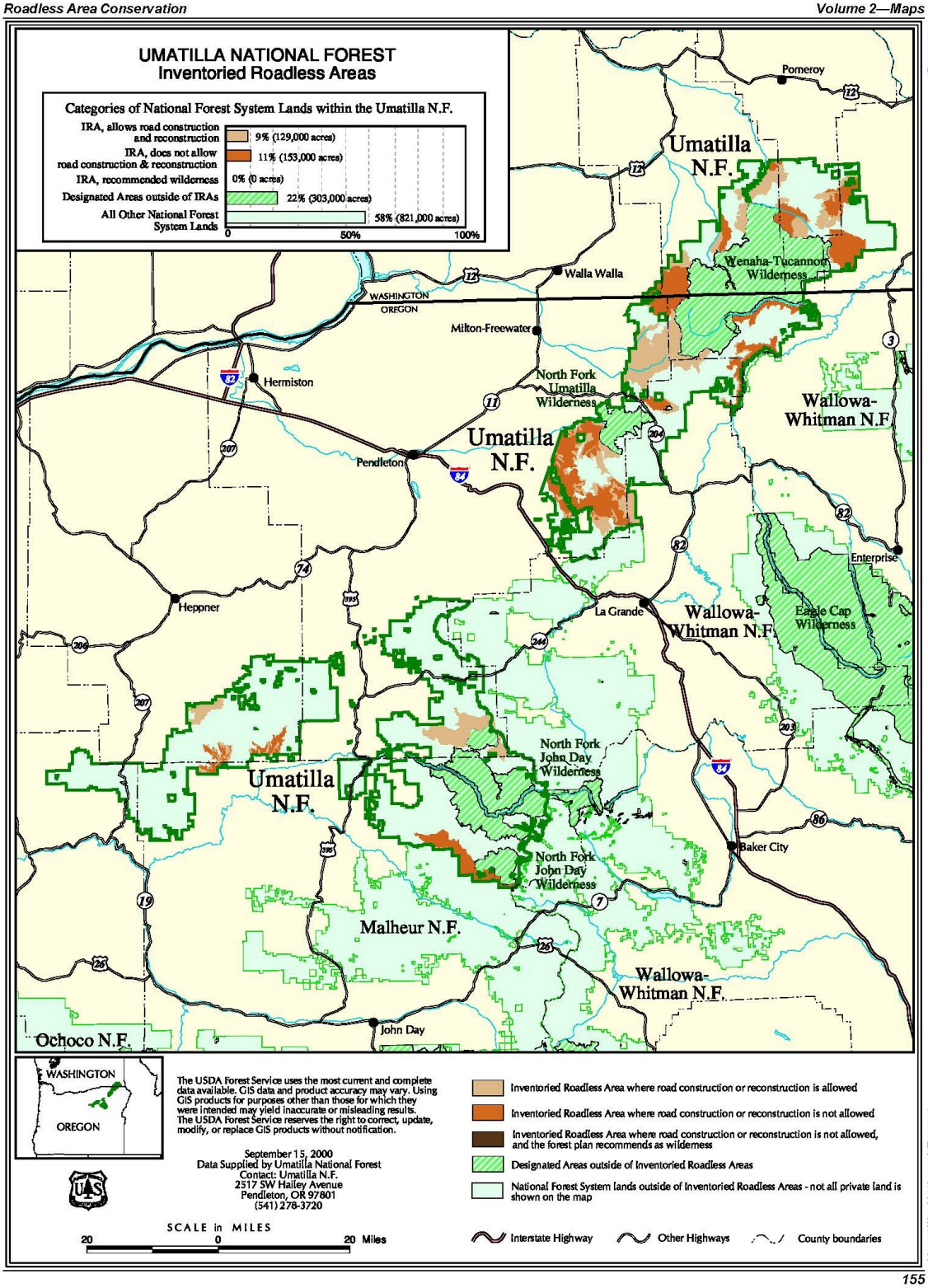


Figure 4. Map of the inventoried Roadless Areas on the Wallowa Whitman national forest.



155

Figure 5. Map of the inventoried Roadless Areas on the Umatilla national forest.

The original inventory of roadless lands took place in the early 1970s during the RARE (Roadless Area Evaluation and Review) evaluations. RARE was abandoned following a judicial ruling that the agency failed to comply with NEPA and the agency began a second review (RARE II) in the late 1970s. The US Court of Appeals for the Ninth Circuit found the agency again failed to comply with NEPA and RARE II, like RARE I was abandoned.

In 2001 the USDA Forest Service issued regulations (36 CFR 294) governing inventoried roadless areas (IRAs) with the intent to provide lasting protection for IRAs within the National Forest System in the context of multiple-use management. Management for these areas and the prohibitions that apply to these areas are found within the Rule. The 2001 Roadless Rule defines IRAs as "areas identified in a set of inventoried roadless area maps, contained in the Forest Service Roadless Area Conservation, Final Environmental Impact Statement, Volume 2, dated November 2000, and any subsequent update or revision of those maps." The prohibitions and restrictions established in this subpart are not subject to reconsideration, revision, or rescission in subsequent project decisions or land and resource management plan amendments or revisions undertaken pursuant to 36 CFR part 219.

Existing Condition

The 2001 Roadless Rule designated 72 Inventoried Roadless Areas within the Blue Mountains national forests. All inventoried roadless area boundaries and acreages within the Blue Mountain national forests were established as part of the 2001 Roadless Rule and cannot be modified in a forest plan revision effort.

Approximately 977,020 acres are within inventoried roadless areas within the plan area for the three Blue Mountain national forests. These areas constitute approximately 18 percent of the entire lands administered by these national forests. The following tables identify each roadless area, acres, and its location within the planning area.

Table 3. Malheur National Forest Inventoried roadless areas under 2001 Roadless Rule.

Malheur National Forest			
Aldrich Mountain	4,923.92	Jumpoff Joe	3,889.69
Baldy Mountain	6,413.11	Malheur River	7,281.76
Cedar Grove	113.99	Mcclellan Mountain	21,164.70
Dixie Butte	12,190.51	Myrtle Silvies	11,678.74
Dry Cabin	12,272.23	Nipple Butte	11,353.79
Flag Creek	7,716.44	North Fork Malheur	18,065.70
Fox Creek	5,845.85	Pine Creek	5,436.41
Glacier Mountain	20,661.09	Shaketable	6,762.59
Greenhorn Mountain	15,928.21	Silver Creek	7,949.16
Utley Butte	9,697.93	**Total**	**189,345.80**

Table 4. Umatilla National Forest Inventoried roadless areas under 2001 Roadless Rule.

Umatilla National Forest			
Asotin Creek	16,416.55	North Mount Emily	4,394.30
East Tower	3,641.59	Potamus	5,381.75
Grande Ronde	12,297.32	Skookum	7,625.87
Greenhorn Mountain	11,183.45	South Fork - Tower	16,561.88
Hellhole	58,974.02	Spangler	5,933.56
Horseshoe Ridge	5,957.19	Texas Butte	6,850.16
Jaussaud Corral	5,535.35	Tower	51.93
Jumpoff Joe	5,515.45	Upper Tucannon	12,485.48
Lookingglass	4,850.53	W - T Three	1,697.69
Meadow Creek	4,879.56	Walla Walla River	34,339.33
Mill Creek Watershed	24,362.39	Wenatchee Creek	15,299.87
Mt. Emily	3.28	Willow Springs	10,386.19
		Total	**274,624.70**

Table 5. Wallowa Whitman National Forest Inventoried roadless areas under 2001 Roadless Rule.

Wallowa-Whitman National Forest			
Baldy Mountain	2.87	Lick Creek	1,956.27
Beaver Creek	12,961.29	Little Creek	2,813.78
Big Canyon Id	14,098.63	Little Eagle Meadows	6,957.43
Boulder Park	12,129.96	Little Sheep	5,238.38
Buckhorn	17,073.20	Lord Flat Somers Point	67,594.90
Castle Ridge	8,369.41	Marble Point	6,872.51
Cook Ridge	19,617.52	Monument Rock	5,747.17
Deadhorse	10,527.00	Mountain Sheep	19,435.57
Dunns Bluff	717.63	Mt. Emily	8,416.70
East Tower	3,884.28	North Mount Emily	752.12
Grande Ronde	5,611.10	Reservoir	13,633.98
Greenhorn Mountain	133.22	Sheep Divide	16,069.91
Hellhole	0.74	Snake River	30,958.62
Homestead	5,789.65	South Fork - Tower	0.55
Huckleberry	11,233.59	Tope Creek	9,219.70
Hurricane Creek	1,568.19	Tower	0.01
Imnaha Face	29,346.07	Twin Mountain	58,391.54
Joseph Canyon	24,223.07	Upper Catherine Creek	6,446.23
Klopton Creek-Corral Creek Id	21,302.11	Upper Grande Ronde	11,722.88
Lake Fork	21,936.06	Wildhorse	20,294.85
		Total	**513,048.70**

Key Benefits to People

The large acreages of roadless public lands in the Blue Mountains hold special values for many people. The expanses of land are home to many plant and animal species, clean water, fisheries, outstanding primitive recreation opportunities and other unique features. As urbanization and population increase, technology advances and modification of the landscape become more the norm, people feel the need to maintain the integrity of these wild lands.

Information Needs

No existing information needs identified.

Key Findings

Inventoried Roadless Areas were identified in the 2001 Roadless Rule and cannot be modified within a forest plan revision. Many designated areas overlap with IRA boundaries. When a new wilderness recommendation inventory is conducted, all lands, including IRAs will be identified and evaluated for their potential inclusion in the National Wilderness Preservation System.

Research Natural Areas

Introduction

Research natural areas are natural areas established by Federal agencies. For the Blue Mountains national forests, the Pacific Northwest Research Natural Area Committee oversees the criteria and process for designating and managing these areas in conjunction with the Natural Heritage Programs of the states of Oregon and Washington.

Research natural areas form a network of ecological reserves established for research and education purposes and for the maintenance of biodiversity. They are established to conserve unique ecological communities and are intended to promote and protect natural diversity. Research natural areas typify important vegetative, aquatic, and geological types, as well as other natural situations that have special and unique characteristics of scientific interest and importance.

Research, study, observation, monitoring, and educational activities that are nondestructive and nonmanipulative are generally allowed within research natural areas. While research natural areas are generally unsuitable for livestock grazing, some incidental use by livestock could occur within these areas as administrative boundaries are typically not fenced. Research Natural Areas are not suitable for timber production.

Current Forest Plan Direction

The objectives of establishing RNAs are critical to understanding their importance in forest planning. As stated by the Federal Committee on Research Natural Areas (1968) they are: (1) preservation of examples of all significant natural ecosystems for comparison with those influenced by man, (2) provision of educational and research areas for ecological and environmental studies, and (3) preservation of gene pools for threatened and endangered plants and animals.

The ecological community will continue to evolve through natural processes. Natural physical, and biological conditions will be maintained, insofar as possible, to preserve the vegetation for which the area was created. Use, except for scientific and educational purposes, will be generally discouraged.

Existing Condition

Malheur NF Research Natural Areas

Established RNAs listed in the 1990 Forest Plan - Canyon Creek (736 acres).

Currently there are four established RNAs – Canyon Creek (736 acres), Dry Mountain (2,260 acres), Dugout Creek (911 acres), and Shaketable (385 acres).

Currently there are five proposed RNAs – Baldy Mountain (3,861 acres), Dixie Butte (335 acres), Silver Creek (802 acres), Stinger Creek (1,664 acres), and Strawberry Mountain (107 acres).

Ochoco NF Research Natural Areas

Established RNAs listed in the 1989 Forest Plan – Dry Mountain (1,187 acres), Silver Creek (844 acres), and Stinger Creek (453 acres).

Umatilla NF Research Natural Areas

Established RNAs listed in the 1990 Forest Plan - Pataha Bunchgrass (67 acres) and Rainbow Creek (570 acres).

Currently there are three established RNAs - Pataha Bunchgrass (67 acres), Rainbow Creek (570 acres), and Wenaha Breaks (1,971 acres) (formerly Elk Flats-Wenaha Breaks).

Currently there are four proposed RNAs – Birch Creek Cove (411 acres), Kahler Creek Butte (84 acres) formally Kelly Creek Butte, Mill Creek (7,424 acres) and Vinegar Hill (424 acres).

Wallowa-Whitman NF Research Natural Areas

Established RNAs listed in the 1990 Forest Plan – Indian Creek

Currently there are five established RNAs – Haystack Rock (418 acres), Horse Pasture Ridge (338 acres), Indian Creek (1,003 acres), Gerald S. Strickler (formally Government Meadow) (190 acres), and Vance Knoll (189 acres).

Currently there are twelve proposed RNAs – Clear Creek Ridge (637 acres), Craig Mountain Lake (172 acres), Glacier Lake (102 acres), Charles Grier Johnson Jr. (formally cougar Meadow) (130 acres), Lake Fork (224 acres), Mount Joseph (705 acres), Nebo (1,697 acres), Point Prominence 365 acres), Standley (742 acres), Sturgill (139 acres), Tenderfoot Basin (891 acres), and West Razz Lake (47 acres).

Key Benefits to People

Research natural areas form a network of ecological reserves for research and education purposes and for the maintenance of biodiversity. The purposes of research natural areas are to: (1) preserve examples of all significant natural ecosystems for comparison with those influenced by man, (2) provide educational and research areas for ecological and environmental studies, and (3) preserve gene pools of typical and endangered plants and animals.

Trends and Drivers

Increased frequency and extent of drought, wildfire, and insect outbreaks will be a major challenge for vegetation management in a changing climate (see “Climate Change Report”). Special habitats (riparian areas, wetlands, groundwater-dependent ecosystems) are uncommon but critical for biodiversity. Controlling non-climate stressors such as non-native plant species is especially important in these habitats, which may see hydrologically mediated effects of climate change in the near future (Peterson and Halofsky, 2017).

Increased temperatures will almost certainly lead to increased area burned by wildfire (USDA 2018). Increased wildfire extent in shrubland and grassland systems will probably cause increased mortality of shrub species and native grasses, as well as increased abundance of non-native species, especially annual grasses (Peterson and Halofsky, 2017).

Increasing air temperature, through its influence on soil moisture, is expected to cause gradual changes in the abundance and distribution of tree, shrub, and grass species throughout the Blue Mountains, with drought-tolerant species becoming more competitive. Ecological disturbance, including wildfire and insect outbreaks, will be the primary facilitator of vegetation change, and future forest landscapes may be dominated by younger age classes and smaller trees. High-elevation forest types will be especially vulnerable to disturbance. Increased abundance and distribution of nonnative plant species will create additional competition for regeneration of native plant species (Peterson and Halofsky, 2017).

Riparian areas and wetlands will be especially vulnerable to higher air temperature, reduced snowpack, and altered hydrology. The primary effects will be decreased establishment, growth, and cover of species such as cottonwood, willow, and aspen, which may be displaced by upland forest species in some locations. However, species that propagate effectively following fire may be more resilient to climate change. Reduced groundwater discharge to groundwater-dependent ecosystems will reduce areas of saturated soil, convert perennial springs to ephemeral springs, eliminate some ephemeral springs, and alter local aquatic flora and fauna (Peterson and Halofsky, 2017).

Information Needs

Complete the inventory to identify the areas which represent the national forest contributions to the RNA system for the Ochoco, Blue, and Wallowa Mountains Province.

Key Findings

Federal agencies identify areas that have unrepresented plant associations or other elements identified in the Oregon or Washington Natural Area Plan. These areas are evaluated by staff, boundaries are proposed, alternatives are examined, and a site and its boundaries are selected through the planning process. An establishment record is created for each research natural area. These reports include the justification for establishment, legal boundary descriptions, maps, distinguishing ecological features, environmental analyses, and management issues and guidelines. Research natural areas become officially established once an establishment record is completed and signed by the regional forester with concurrence from the Forest Service Pacific Northwest Research Station Director.

Starkey Experimental Forest and Range

Introduction

The 27,100-acre Starkey Experimental Forest and Range is the only experimental forest within the Blue Mountains national forests, located in the Wallowa-Whitman National Forest.

It was established to conduct research benefitting and supporting National Forest System management and is managed to support existing and future research projects. Management treatments are generally integrated with ongoing research projects. It is a living laboratory where scientists not only make discoveries but also demonstrate relevant research results for cooperators and stakeholders. It provides opportunities to conduct the innovative research that is required for sound management of future landscapes. Research from the 1940s through the 1980s largely focused on range and grazing management topics of direct relevance to public lands.

The Starkey Project was established in 1987 and consists of long-term studies of ungulates and associated human activities, land uses, and disturbance regimes common to public and private lands in the Western United States. Research during the 1990s and early 2000s was expanded to address three major objectives:

1. Measure the habitat, behavioral, nutritional, energetic, and population responses of elk, mule deer, and cattle to intensively managed forests and rangelands at landscape scales at which management occurs.
2. Gain knowledge of the ecological effects and roles of elk, mule deer, and cattle as they contribute to ecological processes and patterns in managed forests and rangelands as part of disturbance regimes of herbivory and other disturbance processes.
3. Integrate socioeconomic systems studies with foundational ecological research.

These objectives further expanded substantially from 2010 to the present to include wildlife, fisheries, native bee, vegetation, hydrology, and grazing responses to extensive stream and riparian restoration and upland forest fuels reduction. Current research also addresses effects of native carnivore species on ecosystem processes and ungulate prey and the social and economic benefits and effects of hunting and livestock grazing systems. Over 80 partners have been engaged as collaborators or stakeholders in the research during the past 30 years.

The project's scope includes the following research on disturbance regimes and agents common to forests and rangelands of the Western United States:

- Silviculture and timber management
- Fire and fuels
- Elk-deer-cattle interactions
- Ungulate herbivory
- Hunting
- Trail-based recreation
- Roads and traffic
- Insect pests and non-native plants
- Riparian and upland forest restoration
- Threatened salmon recovery
- Social and economic relationships with land management practices

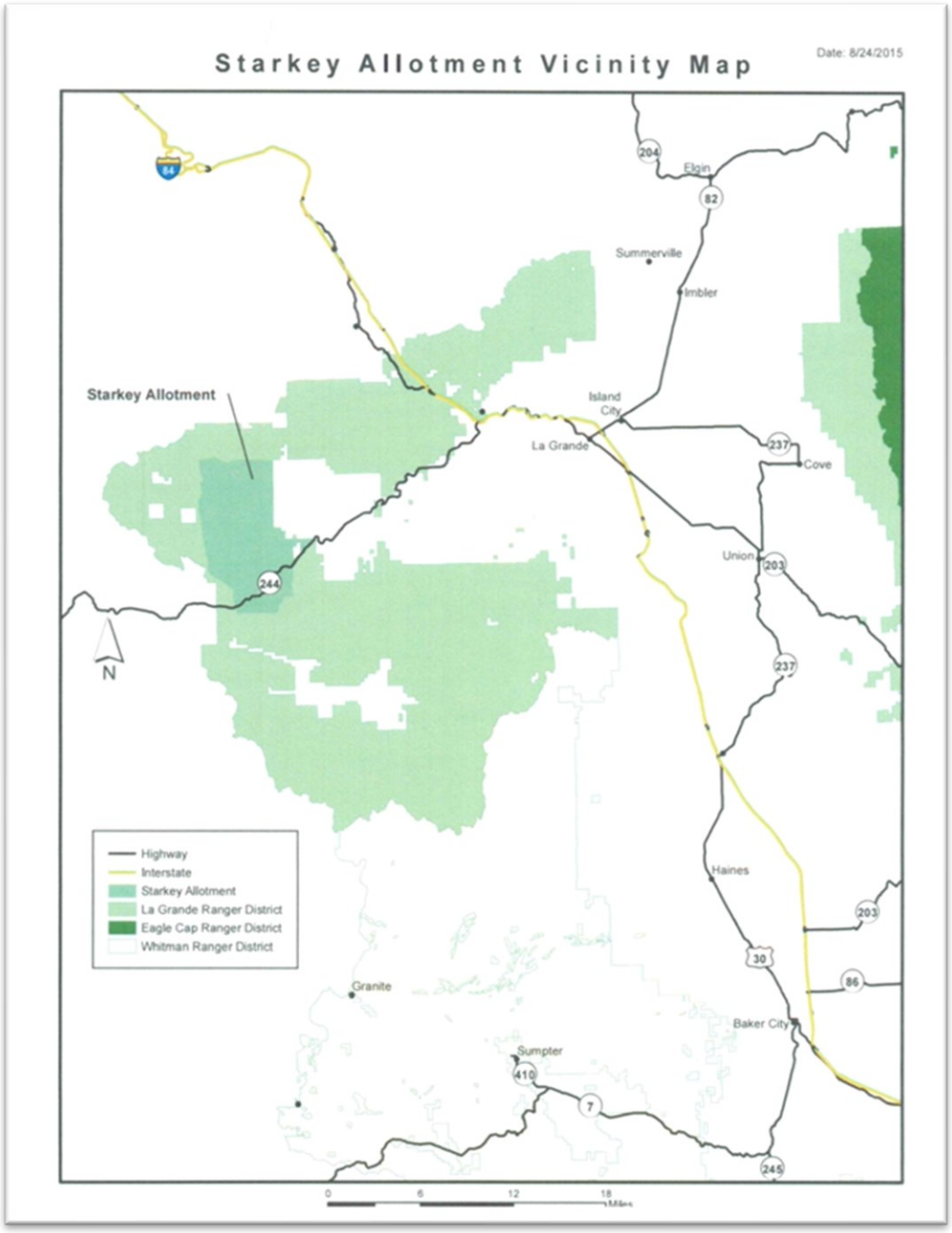


Figure 6. Starkey allotment vicinity map.

Current Forest Plan Direction

The area is allocated for research and will be managed to protect existing projects and provide for future needs. In addition to its range and wildlife research contribution, the experimental forest and range is expected to provide a variety of other benefits and resources including timber and livestock forage when compatible with research uses. The Wallowa-Whitman National Forest plays a key role in co-management of Starkey Experimental Forest and Range with the Pacific Northwest Research

Station, and continues to provide staffing support for environmental compliance with all land use and research activities.

Existing Condition

The Starkey Experimental Forest and Range was established in 1940. It is a world-class research facility and a primary field location for long-term, operational scale scientific studies on the effects of management activities on ungulates and fisheries, as well as effects of deer, elk, and cattle on ecosystem process and function. Scientists conducting research at Starkey have generated many publications and technical reports that are instrumental in providing managers with defensible options and best management practices for managing roads and traffic, including off-road recreation; livestock grazing; riparian restoration; and fuel treatments in relation to ungulates. Significant, long-term research on interactions between livestock and wild ungulates began in 1989, through a joint wildlife research project conducted by the Oregon Department of Fish and Wildlife, Oregon State University, and the Forest Service (Pacific Northwest Research Station and National Forest System).

The Starkey Experimental Forest and Range provides opportunities to study deer, elk, cattle, and other wildlife, as well as other aspects of forest and rangeland management including disturbance ecology (e.g., fire, insects and diseases, grazing by large mammals). A wide variety of land uses are included in Starkey research, such as active silviculture, fuels reduction, biofuel management, fire suppression, riparian restoration, cattle grazing, public access, including uses of motorized and nonmotorized roads and trails, firewood cutting, hunting, and camping and other nonconsumptive recreation. Public access and activities are managed to protect the facilities and meet research needs.

Experimental design and methods are supported by these unique technologies and research infrastructure at Starkey:

- The world's largest ungulate research enclosure (25,000 acres), allowing cause-effect landscape studies to be conducted that are essential to credible use of results in management.
- Numerous GPS telemetry collars are deployed annually, generating more than 30 million deer, elk, cattle, and recreationist locations to date to evaluate effects of land use activities and recreation on wildlife and livestock. Initial telemetry data were provided by a unique automated telemetry system, which was replaced with GPS collars in the mid-2000s.
- An extensive network of traffic counters on roads and trails to evaluate effects of traffic and human activities on wildlife.
- One of the largest, long-term datasets of environmental variables collected specifically for research.
- More than 30 years of hunting research that uses hunters as research treatments to address questions about hunting season designs to meet hunting opportunity and harvest goals.
- A state-of-the art winter feeding and animal handling facility for animal care and evaluation of animal condition for research.

- Use of tractable ("tame") elk, mule deer, and cattle for nutrition and herbivory studies to address critical management questions difficult to address with wild ungulates.
- An extensive network of large riparian and upland forest ungulate exclosures for evaluating long-term effects of wild and domestic grazing on vegetation development and their interactive effects with riparian restoration and upland fuels reduction and prescribed burning.

The 30,396-acre Starkey Allotment Management Plan (AMP) Update project area, which includes the Starkey Experimental Forest and Range, was established in 1906 as a Forest Service grazing allotment and has been managed primarily for research since the 1940's. The project area is located in the Meadow Creek drainage approximately 23 miles west of La Grande, Oregon on National Forest System lands along State Highway 244 in Townships 3 & 4S, Ranges 34 & 35E. Refer to Figure 1 Starkey AMP Update Vicinity Map.

Key Benefits to People

Starkey scientists have relied on stakeholder engagement to identify topics of high relevance to management of forests and rangelands and associated wildlife, and to implement the scientific process from start to finish.

Major changes in policy and management from use of Starkey Project findings include the following:

- Hunting research has dramatically improved harvest designs for elk by state wildlife agencies throughout the United States and Canada and enhanced diversity of hunting opportunities.
- Timber harvest and thermal cover studies have settled national controversies on these issues, resolving litigation and saving the U.S. Forest Service millions of dollars in land use planning.
- Motorized traffic and off-road recreation research was used by the U.S. Forest Service in developing national roadless policy, national off-highway vehicle policy, and travel management plans across the United States.
- Elk-deer-cattle grazing interactions studies resulted in new methods of allotment management planning for cattle grazing on U.S. Forest Service rangeland allotments in the Western United States.
- Elk nutrition and habitat use models developed and validated at regional scales have guided new silvicultural and road management strategies in Oregon and Washington, with approaches adopted in other ecoregions of the Western United States.
- Fire and fuels reduction research provided key information about management designs to benefit ungulate habitat use and performance, while reducing fire risk in forest ecosystems.
- Riparian and stream restoration research documented the benefits of sound restoration methods to recover threatened salmonids and evaluates the compatibility of new cattle grazing practices with salmonid recovery—while testing economic sustainability—for use in national forest allotments.
- Riparian and upland forest restoration has documented the benefits of vegetation recovery to increase stream shading; enhance flowering plant stages for pollination by over 230 species of

native bees; and provide adequate late-summer nutrition to effectively manage distribution and performance of wild and domestic ungulates.

Starkey Project staff have hosted more than 2,000 technology transfer events (tours, presentations, workshops, webinars, and meetings) during the past 30 years. Audiences have consisted of diverse stakeholders, including state, federal, and private natural resource managers; timber, agricultural, and livestock industries; hunting conservation groups and other nongovernmental organizations; and environmental organizations.

The Starkey allotment is grazed by three permittees, two of which are private individuals and one is Oregon State University, a public entity. Forage provided on National Forest System lands can provide an integral and important component to beef cattle production to local communities and thus is important to the two ranch operations with federal grazing permits whose base operations are within Umatilla County. Ranching operations associated with the production of beef cattle use a variety of resources to feed and pasture these animals.

Forage resources in the Starkey Allotment are also important for cattle managed by the Eastern Oregon Agricultural Research Station (EOARC) located within Union County, which is authorized to use publicly owned livestock for research purposes. Research conducted using the EOARC livestock in the ongoing Meadow Creek riparian restoration study will be used to assist in developing a better understanding of the effects of ungulate (wild and domestic) use on restoration of riparian areas in the Blue Mountains. This research may be used to determine appropriate levels of management and protection necessary to achieve restoration objectives. The research is part of a multi-year, multi-agency effort funded through various entities within and outside governmental agencies.

Trends and Drivers

Depending on research objectives, studies vary from nonmanipulative studies at small scales, to experiments involving commercial timber harvesting across multiple stands. Typical forest practices, such as fuels reduction, prescribed fire, and timber harvest, are conducted as part of research direction and may result in a higher level of uncertainty of effects than is expected in other management areas, because research within experimental areas can include testing of novel prescriptions and management approaches. Timber harvest is allowed to meet specific resource objectives for Starkey.

Enclosures, exclosures, and long-term vegetation plots are maintained and protected to provide a continuous data stream to meet research objectives. However, future research may dictate treatment within these areas. Livestock management systems include (1) use of novel cattle grazing systems to facilitate habitat recovery in riparian systems, (2) manipulative ungulate treatments to evaluate cattle versus elk and deer herbivory effects on vegetation development, and (3) evaluation of effects of ungulates on a wide variety of other resources (e.g., water quality, hydrology, nutrient cycling, forest productivity, and wildlife). The number of animals, as well as the allocation of this number between

cattle, deer and elk, may be manipulated as part of the research conducted on the Starkey Experimental Forest and Range.

Information Needs

Over 300 publications have been produced from research at Starkey Experimental Forest and Range since the 1990 forest plan. Forest plan revision needs to include summaries of results of these major research topics that reflect the past 33 years of research at Starkey, and that describe these findings in relation to land use activities. The major research topics that have been addressed at Starkey Experimental Forest and Range are listed in the Key Findings section below. More detailed summaries of the major research findings can be found at the following weblink managed by the U.S. Forest Service Pacific Northwest Research Station: https://www.fs.usda.gov/research/pnw/projects/starkeyproject#research.

Key Findings

Starkey Project research employing use of the 25,000-acre ungulate enclosure and telemetry and traffic monitoring systems represents one of the longest running research efforts, now spanning more than 30 years, by U.S. Forest Service Research and Development (R&D). Research with these technologies was initiated in 1987 by then Pacific Northwest Research Station research wildlife biologist Jack Ward Thomas, who became chief of the U.S. Forest Service in 1993. The legacy of Starkey Project and Jack Ward Thomas continues today with a permanent work force that includes eight scientists, five field staff, and three data analysts among the Pacific Northwest Research Station, Oregon Department of Fish and Wildlife, National Council for Air and Stream Improvement, and Oregon State University, along with over 30 additional partners. Partners have provided significant funding and staffing to continue the long-term success of this unique and invaluable research effort.

The long-term nature of Starkey Project research has generated a substantial data legacy; the project now manages one of the largest long-term datasets on animal locations, spatial data, animal performance, weather, human locations, and traffic that have been collected at landscape scales. These data provide diverse, compelling opportunities to test a broad range of hypotheses and address a variety of ecological theories by interested scientists and graduate students worldwide. Data reside on the U.S. Forest Service Research and Development Data Archive website. Additional long-term data from Starkey Project research will continue to be documented and archived on this website in the next several years.

Murderer's Creek Wild Horse and Burro Territory

Introduction

The Wild Free-Roaming Horses and Burros Act of 1971 (Wild Horse and Burro Act) established the management and protection of wild horses and burros on public lands managed by the Forest Service and Bureau of Land Management. The Murderer's Creek Wild Horse Territory and Herd Management Area was established in 1972. Because the area is managed by both the Forest Service and the Bureau of Land Management, it is referred to in this document as the joint management area.

A Wild Horse Management Plan for the Murderers Creek-South Fork John Day River herd, later known as the Murderer's Creek Wild Horse Territory, was developed, approved, and implemented by the USDA Forest Service and USDI Bureau of Land Management in 1975. The plan's goal was to provide protection, management, and control of wild, free-roaming horses in a herd averaging 100 animals to maintain a balance with other resources.

Current Forest Plan Direction

Forage will be reserved for 100 head of wild horses on the Murderer's Creek Wild Horse Territory in the South Fork John Day fiver area.

Existing Condition

The joint management area is in eastern Oregon's Grant County between the towns of Dayville, Mount Vernon, and Seneca. The area lies north of the Izee Highway (County Road 63), south of Aldrich Mountain, east of the South Fork John Day River, and west of Flagtail Mountain. It is within the Upper John Day River subbasin. Major drainages include Murderers Creek, South Fork Murderers Creek, Deer Creek, South Fork John Day River, and Indian Creek. The joint management area contains 108,488 acres of Federal lands. State and private lands are also located within the joint management area. Table 6 provides a breakdown of acreage by ownership.

The joint management area is dominated by coniferous trees. Vegetation types range from Douglas-fir and elk sedge, along with grand fir and elk sedge with dense canopy cover, to more open areas of ponderosa pine, mountain mahogany, juniper, and Idaho fescue-bluebunch wheatgrass. There are steep, timbered slopes bisected by relatively narrow stream channels. North-facing slopes have more trees, while south-facing slopes are more open, often with rock outcrops or serpentine soils. There are areas of rolling to flat lands bisected by very steep rocky canyons. Herb production ranges from 50 pounds per acre to 800 pounds per acre depending on the vegetation type. The joint management area provides important summer and winter range habitat for mule deer, elk, pronghorn antelope, and bighorn sheep; and designated critical habitat to support federally threatened Middle Columbia River steelhead (Oncorhynchus mykiss).

Forty-seven miles of the South Fork John Day River is a designated wild and scenic river. The identified values for the South Fork John Day River are scenery and recreational opportunities; fish, wildlife, and botanical; and geological, prehistoric, and traditional uses. The joint management area is a popular recreation area for hunting, wildlife viewing, and driving for pleasure.

Ninety-two miles of waterways, including the South Fork John Day River and several of its tributaries, are designated under the Endangered Species Act as critical habitat to support federally threatened Middle Columbia River steelhead (*Oncorhynchus mykiss*).

The National Forest System (NFS) and Bureau of Land Management (BLM) lands within the joint management area provide summer and winter range habitat for elk, mule deer, and bighorn sheep. Big game population objectives are agreed upon between the Oregon Department of Fish and Wildlife and the Oregon Fish and Wildlife Commission.

The joint management area overlaps several Malheur Forest Plan Management Areas suitable for timber production.

The joint management area overlays 10 livestock grazing allotments administered by the BLM and 5 grazing allotments administered by the Forest Service (FS). All allotments have permitted livestock grazing on them.

Table 6. Acreage within the Murderer's Creek Joint Management Area boundary:

Ownership	Acres
USDA Forest Service, Malheur National Forest, Blue Mountain Ranger District	73,609
USDI Bureau of Land Management, Prineville District	34,879
State of Oregon Department of Fish and Wildlife, Phillip W. Schneider Wildlife Area	10,479
Private	23,773
Total acres	**142,740**

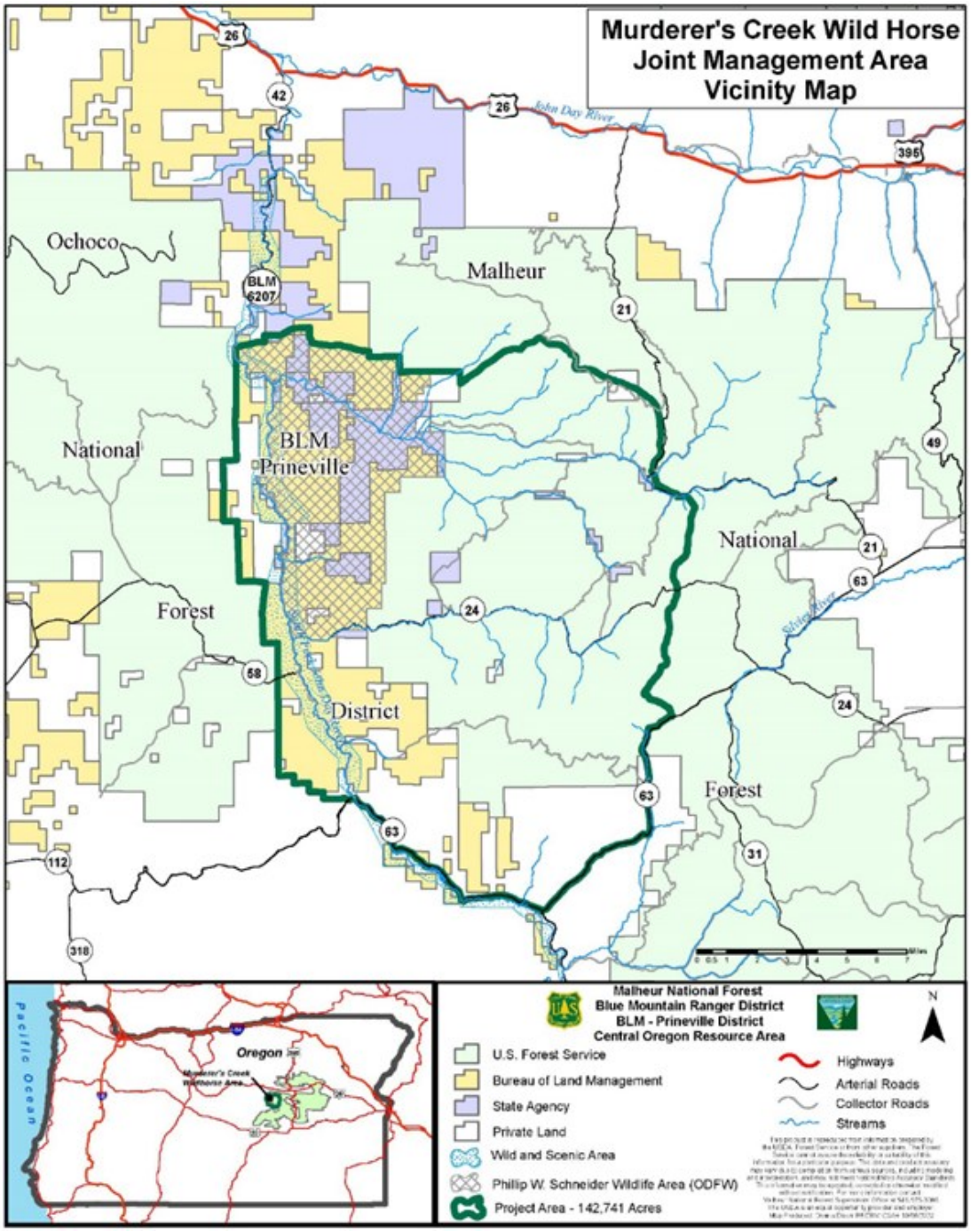


Figure 7. Murderer's Creek Wild Horse Joint Management Area Vicinity Map

The Forest Service, in cooperation with the BLM, is proposing to establish a herd management area plan and conduct population management actions (gather activities) for wild horses in the Murderer's Creek Wild Horse Joint Management Area.

The Forest Service is the lead agency for this environmental assessment, and the BLM is a formal cooperating agency. This environmental assessment analyzes both agencies' actions. In accordance

with our own procedures and regulations, each agency will issue separate decisions. The decisions will establish an appropriate management level for the Murderer's Creek Wild Horse Joint Management Area and a herd management area plan for the area, as well as determine gather activities, post-gather activities, and population growth suppression methods.

Forest Service policy (FSM 2260.2) is to determine population levels by considering the animals' forage and habitat requirements, wildlife, permitted livestock, and other uses recognized under the Multiple Use-Sustained Yield Act. The Forest Service Manual directs that when wild-horses and burros roam part of the year on National Forest lands and part of the year on lands administered by the BLM, the two agencies should develop an approved single territory plan that includes agreement on the desired population level. The BLM Wild Horses and Burros Management Handbook (H-4700-1) uses the term "appropriate management level," and defines the process for establishing it in sections 4.2.1 and 4.2.2. For this analysis, appropriate management level will be used to describe the proposed population level.

Wild horse management is prescribed through acts of Congress and their implementing regulations, Agency policies, and other relevant documents (including State direction) that direct and guide the management of wild free-roaming horses in the Murderer's Creek Wild Horse Joint Management Area. These include:

- Wild Free-Roaming Horses and Burros Act of 1971 (as amended)
- Multiple Use-Sustained Yield Act of 1960
- National Environmental Policy Act of 1969
- Endangered Species Act of 1973
- Forest and Rangeland Renewable Resources Planning Act of 1974
- Federal Land Policy Management Act of 1976 (43 U.S.C. 1701 et seq.) as amended
- Taylor Grazing Act of 1934
- Resource Planning Act as amended by the National Forest Management Act
- Federal regulations regarding management of wild horses on lands managed by the Forest Service (36 CFR §222.60 Subpart D, Management of Wild Free-Roaming Horses and Burros)
- 1990 Malheur Land and Resource Management Plan, as amended
- Federal regulations regarding management of wild horses on lands managed by the Bureau of Land Management (43 CFR Subtitle B, Chapter II, Subchapter D, Part 4700, Protection, Management, and Control of Wild Free-Roaming Horses and Burros)
- The 2015 John Day Basin Resource Management Plan
- Phillip W. Schneider Wildlife Area Management Plan
- Forest Service Manual 2200, Chapter 2260 – Wild Free-Roaming Horses and Burros
- Bureau of Land Management Wild and Free-Roaming Horses and Burros Management Handbook H-4700-1

The most recent aerial survey flight was in early May of 2022. During the flight, 366 adult horses and 51 foals were counted. Statistical analysis estimated a horse population of 503 horses. The 2022 flight did

not survey the entire joint management area (about 24 percent was not surveyed). Survey was limited by weather and helicopter maintenance. Results from this double observer analysis are a conservative estimate of abundance. True abundance values are likely to be higher, not lower, than abundance estimates. The survey extended beyond the joint management area boundaries in several places; however, there are no obvious natural deterrents to horse movements that would contain them within the boundaries of the survey area. Consequently, it is difficult to be sure there were no additional horses inside or outside of the joint management area. Results should be understood to represent the horses present only in the area surveyed, which may not represent all horses that occasionally occupy the survey area and immediate vicinity. The statistical analysis of survey results recommended extending the survey area further in future surveys to ensure all areas potentially occupied by horses associated with the joint management area have been surveyed. This can better ensure surveys cover the full extent of the wild horse range in this area.

Table 7. Survey Flight Summary

Year	Horses Seen	Estimate of the Herd Size[1]
2014	169 total	228 total
2015	No survey flight	Unavailable
2016	194 total	264 total
2017 (Fall resource flight)	166 total (75 on non-public lands, 18 on Ochoco National Forest)	No Estimate
2018	303 total (54 foals, 249 adults)	339 total
2019	343 total (9 foals, 334 adults)	447 total
2020	No survey flight[2]	Unavailable
2021	No survey flight[2]	Unavailable
2022	417 horses counted (51 foals and 366 adults)	503 total

[1] The estimated number is the number of horses seen with an estimate of the additional horses present but not seen during the flight.
[2.] Flights were not scheduled due to concerns from COVID-19.

Overpopulation of wild horses and use of the territory are impacting rangeland resources within and outside the joint management area. Riparian effectiveness and implementation stream monitoring were conducted on grazing allotments at designated monitoring areas from 2004 to 2015. Data indicated wild horse use is contributing to the non-attainment of certain riparian vegetation and stream objectives (specifically, stubble height, stream bank alteration, and utilization). In some cases, objectives were not attained when pastures were rested from livestock use.

It is estimated that the Murderer's Creek horse herd will increase by approximately 10 to 15 percent per year in the absence of an approved herd management area plan and herd management methods. As the herd continues to grow, competition for available forage between wild horses, big game, and livestock is expected, potentially reducing forage below what is needed to maintain a healthy horse

herd. There are also concerns about potential impacts to spring sources and Middle Columbia River steelhead critical habitat.

No actions are currently being taken to manage the population size of the Murderer's Creek herd; therefore, there are no associated costs for planned removal or fertility control. However, concerns with wild horse presence and impacts on private lands within and outside the territory has increased in recent years. Horses are also straying to the adjacent Ochoco National Forest outside the joint management area. The Wild Free-Roaming Horses and Burros Act and agency policies direct that upon a landowner request, wild horses that have strayed from agency lands onto private lands can be removed. Agencies have recently received complaints of as many as 75 wild horses on individual ranches impacting business livelihood. Eight horses have recently been removed at private landowner request at a cost of over $1,000 dollars per horse. Oregon Department of Fish and Wildlife has indicated that recently as many as 300 wild horses have strayed to within the Phillip W. Schneider Wildlife area, causing impacts to big game habitat.

Key Benefits to People

The Forest Service and Bureau of Land Management managed lands within the joint management area provide summer and winter range habitat for elk, mule deer, and big horn sheep. Big game population objectives are agreed upon between the Oregon Department of Fish and Wildlife and the Oregon Fish and Wildlife Commission. The joint management area is a popular recreation area for hunting, wildlife viewing, and driving for pleasure.

Wild horses are impacting federal lands as well as private and State lands within and outside the territory, causing degradation to resources and safety concerns. Conflicts have occurred between wild horses and private land commercial horse breeding and livestock operations. Wild horse presence in the Phillip W. Schneider Wildlife Area reduces forage for deer and Rocky Mountain elk. A herd management area plan, appropriate management level, and approved population management methods for the Murderer's Creek wild horse herd will benefit all landowners impacted by the wild horses in addition to managing for a healthy herd.

An appropriate management level is expected to help ensure a thriving natural ecological balance with other uses including livestock grazing and big game habitat, thus meeting the intent of the laws and policies listed.

Wild horses are valued for their innate nature and the role they played in the settlement of the country. They were used as mounts by Native Americans, explorers, missionaries, settlers, army, and ranchers, and valued for their attributes. Some local people have knowledge that the Murderer's Creek herd was mixed with domestic breeds in the early to mid-1900s.

Section 1 of the Wild Free-Roaming Horses and Burros Act includes a Congressional finding that:

- Wild free-roaming horses and burros are living symbols of the historic and pioneer spirit of the West.

- They contribute to the diversity of life forms within the Nation and enrich the lives of the American people.
- These horses and burros are fast disappearing from the American scene. It is the policy of Congress that wild free-roaming horses and burros shall be protected from capture, branding, harassment, or death. To accomplish this, they are to be considered in the area where presently found, as an integral part of the natural system of the public lands.

The activity of viewing and photographing wild horses is not known to be a frequent recreational pursuit on the Malheur National Forest. The joint management area is accessible for wild horse viewing, but participation is estimated to be minimal. Anecdotal evidence suggests the residents of Grant County are known to visit the area and view horses in conjunction with other recreation activities such as recreational driving and wildlife viewing.

Trends and Drivers

Aerial surveys show that the wild horse herd continues to increase in size within the joint management area. From 2018 to 2022, the horse herd had grown by approximately 164 horses, an average of 11 percent herd growth per year.

With no action, horses within the joint management area would not be managed. As the wild horse population increases and forage and water resources become limited, the potential for horses to stray outside the joint management area to private, state lands, and other federal lands is expected to dramatically increase as forage resources decrease and new horse bands form. The need for removal of wild horses on private land at landowner request as authorized by Section 4 of the Wild Free-Roaming Wild Horses and Burros Act of 1971 and Forest Service and Bureau of Land Management regulations would substantially increase and could include hundreds of horses as wild horses continually stray to private lands. Most horses removed from private lands under this authority would be returned to the joint management area.

In 2017, the average removal cost of a wild horse from the range was $1,000 dollars per head; however, the cost of removing wild horses that have strayed to private land we estimate to be substantially higher per horse because of the labor cost for removing isolated and sometimes small groups of horses. Specifically, traps need to be transported to diverse private land locations, set up and removed, and checked daily. As the horse herd grows and horses continue to expand outside the joint management area, we expect the overall future cost for removal of horses that stray to private land substantially increase with no action. There is also an opportunity cost to staff time needed to remove horses that have strayed to private lands, leaving less staff time to manage other important resources on agency lands.

Other costs associated with wild horses straying to adjacent federal lands outside the joint management area could include loss of forage available for big game and adjacent grazing allotments, and damage to range allotment fences and other improvements such as springs.

Projected changes in climate and hydrology are expected to have far-reaching effects on aquatic and terrestrial ecosystems, especially as frequency of extreme climate events (including drought) and associated effects on ecological disturbances (wildfire, insect outbreaks) increase.

The joint management area is in a no snow-ephemeral snow area. It is predicted by 2080 there will be a 50 to 65 percent decline in mean snow residence time of the snow received. A snow-water equivalent percent decrease is also predicted at the Snow Mountain SNOTEL site of 50 to 59 percent, which is the closest SNOTEL site to the joint management area. (Halofsky and Peterson, 2017)

In the joint management area, riparian areas will be especially vulnerable to higher air temperature, reduced snowpack, and altered hydrology. The primary effect will be decreased establishment, growth, and cover of species such as cottonwood, willow, and aspen. One of the largest impacts from climate change to aquatic species and hydrology will be a decrease in the abundance and distribution of redband trout and steelhead, although effects will differ by location and function of both stream temperature and competition from nonnative fish species. (2023 USDA Preliminary EA)

Climate variability will continue across the Malheur National Forest, with higher probabilities of extended drought which can lead to dramatic impacts on the landscape. This is being considered in the Murderer's Creek Wild Horse Management Plan Preliminary Environmental Assessment draft (2023) analysis and development of alternatives by considering best available science and existing resource conditions, and vulnerabilities of hydrological conditions to climate change. The herd management area plans developed for alternatives include monitoring objectives to ensure the rangeland and aquatic health over time.

If the herd population continues to grow as expected, there is the potential for the loss of livestock grazing as forage utilization by the wild horse population increases. There is the potential for rangeland plant communities to degrade. There would not be a thriving natural ecological balance with other uses in the joint management area.

Information Needs

Incorporate Final Decision and components from the Environmental Assessment for the Murderer's Creek Wild Horse Joint Management Area, Herd Management Area Plan currently in analysis by the Malheur National Forest Blue Mountain Ranger District and the Prineville District Bureau of Land Management.

Key Findings

The Wild Horse and Burro Act requires both agencies to protect and manage wild and free-roaming horses in a manner to achieve and maintain a thriving natural ecological balance and multiple-use relationship on public lands.

Forty-seven miles of the South Fork John Day River is a designated wild and scenic river. The identified values for the South Fork John Day River are scenery and recreational opportunities; fish, wildlife, and botanical; and geological, prehistoric, and traditional uses.

Ninety-two miles of waterways, including the South Fork John Day River and several of its tributaries, are designated under the Endangered Species Act as critical habitat to support federally threatened Middle Columbia River steelhead (*Oncorhynchus mykiss*).

The State lands located in the northwest part of the joint management area, generally north of Deer Creek and west of the Malheur National Forest boundary, comprise the much of the Phillip W. Schneider Wildlife Area, managed by the Oregon Department of Fish and Wildlife. The wildlife area also contains Bureau of Land Management managed lands. The Department purchased the wildlife area in 1972 to protect and enhance winter range habitat for the upper John Day River, Aldrich Mountains, and eastern Ochoco Mountains mule deer populations. The management plan completed for the wildlife area in 2006 supports Forest Service and Bureau of Land Management efforts to manage the wild horse herd size.

The joint management area overlaps several Malheur Forest Plan Management areas suitable for timber production. Part of the joint management area is scheduled for a reasonably foreseeable vegetation management project (Bark Project) with an estimated decision in 2023 or 2024 and implementation to start in 2024 or 2025.

The joint management area overlays 10 livestock grazing allotments administered by the Bureau of Land Management and 5 grazing allotments administered by the Forest Service. All allotments have permitted or leased livestock grazing on them.

National Recreation, Scenic and Historic Trails

The National Trails System Act (1968) authorized the creation of a national trail system comprised of National Recreation Trails, National Scenic Trails and National Historic Trails. These trails are included in the Designated Areas Assessment section because of their scenic, recreational and historic value. No nationally designated trails are recognized by the 1990 Forest Plans. Since the 1990 Forest Plans were finalized, no additional national recreation, scenic or historic trails have been designated.

Scenic Byways/All-American Roads

Introduction

The national scenic byways program is a part of the US Department of Transportation. The program is a grassroots, collaborative effort established to help recognize, preserve, and enhance selected roads throughout the Unites States. The U.S. Secretary of Transportation recognizes certain roads as all-American roads or national scenic byways based on one or more archeological, cultural, historic, natural, recreational, or scenic quality. The purpose of the scenic byways program is to create a distinctive collection of American roads, their stories, and treasured places by creating a unique travel experience and enhanced local qualify of life through efforts to preserve, protect, interpret, and promote the intrinsic qualifies of designated byways. No scenic byways or all-American roads are allocated by the 1990 forest plans. Since the 1990 Forest Plans were finalized the Hells Canyon Scenic Byway was designated in 1992 and further as Hells Canyon All American Road in 2000. Other Scenic Byways designated after 1990 include the Elkhorn Drive Scenic Byway (1993), Journey Through Time State Scenic Byway (1997), and the Grande Tour Route Oregon State Scenic Byway (post 1990).

Other Designated Areas – Special Interest Areas

Introduction

Special areas are formally designated either by congressional statute or by administrative action. Congressionally designated areas are established through a formal act of Congress. Administratively designated areas include research natural areas, and special interest areas such as historic areas, geologic areas, scenic areas, and botanical areas. These areas may be proposed in forest plans but are established through a separate process. Special interest areas exist for the protection and public enjoyment of areas of special characteristics. Once areas have been designated, by either Congress or agencies, the designation does not usually change. Areas recommended or proposed in forest plans may change. The following types of administratively designated areas occur on the Blue Mountains national forests: scenic areas, historical, geological, and botanical areas; research natural areas; municipal watersheds; scenic byways and nationally designated trails.

Current Forest Plan Direction

The special attributes for which the areas are recognized shall provide a variety of unique recreation opportunities for public use and enjoyment. The areas and features will remain in a substantially undisturbed condition. Fences, signs, viewpoints, and other facilities may exist if needed to protect the features or to provide for public use and enjoyment. Evidence of management activities will be subordinate to these special points of interest. Various methods of interpretive services will be provided to enhance understanding and appreciation of them.

Plan, design, and manage projects to protect established boundaries of wildernesses, research natural areas, and other special interest areas.

Special Interest Areas are several unique areas (generally small in size) identified for their special features. The areas may be classified under 36 CFR 294.9 and managed to protect the special features in their natural condition, and to foster public use and enjoyment of those features. Special features which fall within this description are Cultural/Historical, Geological, Botanical, Viewpoints, and Other Areas that include lands containing significant flora and fauna or fossils for zoological or paleontological interpretations.

Manage, preserve, and interpret areas of significant cultural, historical, geological, botanical, or other special characteristics for educational, scientific, and public enjoyment purposes.

Scenic areas of unique natural beauty and high scenic quality will remain mostly unmodified. Opportunities to experience the scenic values, feelings of vastness and isolation from sights and sounds of human activity, sense of independence, closeness to nature, and self-reliance shall be maintained and enhanced. Around the edges or through parts of the area, existing roads are to be retained so that motorized users will have an opportunity to experience the unique beauty and sense of vastness. Trail systems featuring nonmotorized recreation will be fully developed to encourage and

disperse use. In a few cases, vegetative manipulation shall be used to enhance the scenic and other resources in the area.

Existing Condition

The Malheur National Forest has two botanical areas totaling 123 acres. The Umatilla National Forest has four botanical areas totaling 827 acres. There are no botanical areas within the Wallowa-Whitman National Forest.

Malheur National Forest Special Interest Areas include the Cedar Grove Botanical Area (Alaskan yellow cedar), the Magone Lake Geological Area (landslide forming natural lake), and Tex Bridge Geological Area (natural rock formation), Fergy Spruce Grove, and the historic Sumpter Valley Railroad. Cedar Grove and Tex Bridge are in the Aldrich Mountains on the Blue Mountain Ranger District. Magone Lake is located south of Lake Butte on the Blue Mountain Ranger District. Fergy Spruce Grove and the historic Sumpter Valley railroad are located on the Prairie City Ranger District. (1990 forest plan)

The Malheur will develop a management plan for the Sumpter Valley Railroad to provide direction for preserving segments of the old grade. The Malheur National Forest, in cooperation with the Wallowa-Whitman National Forest, will develop interpretive sites along the railroad. A portion of the railroad (16 acres) along Oregon State Highway 26 from the Forest boundary to Dixie Summit will be managed as a special interest area.

The 32-acre perched water table spruce bog, known as Fergy's Bog, will be managed as a special interest area on the Prairie City Ranger District.

Botanical Areas

Botanical areas have special values and unique natural characteristics. Botanical areas contain specimens, groups of plant colonies, or plant communities that are significant because of form, color occurrence, habitat location, life history, ecology, variety, or other features. While botanical areas are generally unsuitable for livestock grazing, some incidental use by livestock could occur within these areas as administrative boundaries typically are not fenced.

Botanical areas may include national natural landmarks. The National Natural Landmark Program was established in 1962 and is part of the U.S. Department of Interior. The program is administered by the National Park Service and includes areas that have been designated by the Secretary of the Interior that represent unique examples of ecological and geological features that comprise our Nation's natural history. There is one botanical area that is a national natural landmark on the Wallowa-Whitman National Forest: Mount Howard-East Peak (1,012 acres).

The Malheur National Forest has two botanical areas totaling 123 acres. The Umatilla National Forest has four botanical areas totaling 827 acres. There are no additional botanical areas within the Wallowa-Whitman National Forest.

Malheur NF: Fergy Spruce Grove and Cedar Grove

Umatilla NF: Charley Creek (41 acres, Pomeroy), Elk Flats Meadow (97 acres), Karl Urban (499 acres, Pomeroy – formally Sheep Creek Falls), Ruckel Junction (9 acres, Walla Walla), Shimmiehorn Canyon (197 acres, Walla Walla), Teal Spring (5 acres, Pomeroy) and Woodward Campground (15 acres, Walla Walla). Henry Creek (34 acres) and Farr Meadows (12 acres) were proposed in the 2018 FEIS and Teal Spring and Woodward Campground were proposed for removal (USDA 2018).

Wallowa-Whitman NF: Mount Howard East Peak National Natural Landmark.

Geological Areas

Geological Areas as defined in the 1990 forest plan are "lands having unique geological features or significance."

The Malheur National Forest has two geological areas totaling 41 acres. The Umatilla National Forest has one geological area totaling 416 acres. There are no geological areas within the Wallowa-Whitman National Forest.

Malheur NF: Magone Lake and Tex Bridge

Umatilla NF: Big Sink (Walla Walla)

Historical/Cultural Areas

Cultural-Historical Areas as defined in the 1990 forest plan are "lands possessing historical sites, buildings, or objects of National Register significance related to a theme group, or those having special cultural association to the Native American Community."

Historical areas have historic sites, buildings, or objects of significance. Historical areas are protected or enhanced, and, where appropriate, public use and enjoyment is fostered.

The Sumpter Valley Railroad site (13 acres) is the only historical areas within the Malheur National Forest. There are three historical areas totaling 1,173 acres within Umatilla National Forest. There are no designated historical areas within the Wallowa-Whitman National Forest.

Malheur NF: Sumpter Valley Railroad

Umatilla NF: Greenhorn (NFJD), Olive Lake - Fremont Powerhouse (NFJD), and Target Meadows (Including Burnt Cabin Overlook) (Walla Walla)

Scenic Areas

Scenic areas are places of natural variety where unique physical characteristics provide pleasing views and dispersed recreational opportunities. Scenic areas are designated to protect or enhance, and, where appropriate, foster public use and enjoyment of areas with special landscapes noted for their natural beauty.

The Vinegar Hill-Indian Rock Scenic Area is the only scenic area within the Malheur National Forest (12,800 acres). The scenic area is shared with the Umatilla National Forest (21,900 acres). In addition,

Silver Creek Scenic Area, a 1,500-acre area that was treated in the past forest plan as a scenic area, has not had formal designation. The Umatilla has an additional 9,100-acre scenic area. There are no scenic areas within the Wallowa-Whitman National Forest.

Malheur NF: Vinegar Hill-Indian Rock

Umatilla NF: Vinegar Hill-Indian Rock and Grande Ronde, including the Grande Ronde Roadless Area outside of the Wild River corridor (Walla Walla) and the Greenhorn Mountain Roadless Area plus the area north of the Greenhorn Townsite.

Municipal Watersheds

A municipal watershed is an area that serves a public water system as defined by the Safe Drinking Water Act. The act applies to systems that provide water for human consumption, have at least 15 service connections, or regularly provide water to at least 25 people. The act was amended in 1996 to require source water protection zones for groundwater wells that provide water for public use. The act regulates both community and non-community water systems.

Six communities in the Blue Mountains national forests have water systems that derive water supplies directly from National Forest System lands.

The definition of municipal watershed in current Forest Service regulations does not include communities served by a well or confined groundwater unaffected by Forest Service activities. However, the Safe Drinking Water Act of 1974 was amended in 1996 to require source water protection zones for groundwater wells that provide water for municipal use. Designation of municipal watersheds recognizes the need to protect public water supplies. Municipal watersheds may be managed for multiple uses so long as management activities do not degrade water quality.

Management of some municipal water supply watersheds is subject to the terms of existing agreements between the Secretary of Agriculture and the respective cities.

There are two municipal watersheds within the Malheur National Forest totaling 535 acres. The Umatilla National Forest has one municipal watershed totaling 20,300 acres. There are two municipal watersheds within the Wallowa-Whitman National Forest totaling 24,483 acres.

Malheur NF: Long Creek, Byram Gulch

Umatilla NF: Mill Creek

Wallowa-Whitman NF: Baker City (multiple streams), LaGrande City (Beaver Creek)

Other Designated Areas

Viewpoints are defined in the 1990 forest plan as “sites affording opportunities for viewing forest activities and landscape settings.”

- Bald Mountain (Overlooking Lookingglass Canyon) (Walla Walla)
- Big Creek Meadow (Overlooking the North Fork of the John Day River) (NFJD)

- Big Hole (Overlooking the Wenaha River) (Walla Walla)
- Bridge Creek (Overlooking Bridge Creek Wildlife Area and the confluence of Camas Creek with the North Fork of the John Day River) (NFJD)
- Gray Rock (Overlooking Mt. Emily and Elgin) (Walla Walla)
- Lookout Mountain (Overlooking Alder Creek and Bear Creek drainages of the Grande Ronde River) (Walla Walla)
- Potamus Point (Overlooking Potamus Creek) (NFJD)
- Table Rock (Overlooking Mill Creek and the Walla Walla River valley) (Walla Walla)
- Umatilla Breaks (Overlooking the North Fork Umatilla Wilderness) (Walla Walla)

Key Benefits to People

Special areas on national forests are managed to protect and where appropriate, foster public use and enjoyment of areas with scenic, historical, geological, botanical, zoological, paleontological, or other special characteristics. A special area must possess unusual recreation or scientific values, and it would be desirable that these values be available for public study, use, or enjoyment. These areas provide for conservation of representative, unique, or rare ecosystems or ecological components, as well as culturally significant components. Some of these areas provide natural reference areas to represent eco-regions within each state. Management emphasis is primarily focused on protecting or improving, and where appropriate, developing and interpreting the area's special characteristics for public education and enjoyment.

These unusual geological or biological sites and areas will be preserved and managed for education, research, and to protect their unique character. Facilities and opportunities may be provided for public interpretation and enjoyment of the unique values of these sites and areas. These areas will be officially designated by Regional Forester authority.

The purpose of the National Natural Landmark Program is to identify and encourage the preservation of exceptional examples of the nation's geological and ecological features. National natural landmarks represent nationally significant examples of the nation's natural heritage. The program serves to enhance the scientific and educational values of the designated sites, to strengthen public appreciation of natural history, and to foster conservation of the nation's natural heritage.

Geological areas have outstanding formations or unique geological features of the earth's development, such as caves, fossils, dikes, cliffs, or faults. These areas are protected or enhanced, and where appropriate, public use and enjoyment is fostered.

Historical areas are protected or enhanced, and, where appropriate, public use and enjoyment is fostered. These areas are usually small (generally less than 1,000 acres). Historical areas have historic sites, buildings, or objects of significance and may include Historic Properties of Religious and Cultural Significance to Indian Tribes (HPRCSITs). Historical areas may include archaeological sites and districts; existing preservation and management plans developed for these resources inform

management actions within these sensitive areas to conserve the values for which these areas are designated.

Scenic areas are places of natural variety where unique physical characteristics provide pleasing views and dispersed recreational opportunities. Scenic areas are designated to protect or enhance, and, where appropriate, foster public use and enjoyment of areas with special landscapes noted for their natural beauty.

The management of the municipal watersheds is guided by existing agreements between the individual cities and either the Secretary of Agriculture or the Forest Service. Actions that could degrade water quality are either prohibited or are subject to approval by the respective city. For some communities, wells outside the national forest are the primary water source, but wellhead protection zones may extend onto National Forest System lands.

Trends and Drivers

The changing climate has the potential to affect all special interest areas, whether by physical changes to the climate such as increased temperatures and decreased moisture affecting botanical areas, or from natural disasters influenced and perhaps increased by the changing climate such as increased wildfire severity that could affect historical and cultural areas.

Anticipated increases in intensity and frequency of drought, wildfire, and insect outbreaks will be a major challenge for vegetation management in a changing climate. Special habitats (riparian areas, wetlands, groundwater-dependent ecosystems) are uncommon but critical for biodiversity. Controlling non-climate stressors such as non-native plant species and trampling by livestock is especially important in these habitats, which may see hydrologically mediated effects of climate change soon (Peterson and Halofsky, 2017).

Increased temperatures are expected to increased area burned by wildfire. Increased wildfire extent in shrubland and grassland systems is likely to increase mortality of shrub species and native grasses, as well as increase abundance of non-native species, especially annual grasses (Peterson and Halofsky, 2017).

Increasing air temperature, through its influence on soil moisture, is expected to cause gradual changes in the abundance and distribution of tree, shrub, and grass species throughout the Blue Mountains, with drought-tolerant species becoming more competitive (see “Climate Change Report”). Ecological disturbance, including wildfire and insect outbreaks, will be the primary facilitator of vegetation change, and future forest landscapes may be dominated by younger age classes and smaller trees. High-elevation forest types will be especially vulnerable to disturbance. Increased abundance and distribution of nonnative plant species will create additional competition for regeneration of native plant species (Halofsky and Peterson 2017).

Riparian areas and wetlands will be especially vulnerable to higher air temperature, reduced snowpack, and altered hydrology. The primary effects will be decreased establishment, growth, and

cover of species such as cottonwood, willow, and aspen, which may be displaced by upland forest species in some locations. However, species that propagate effectively following fire will be more resilient to climate change. Reduced groundwater discharge to groundwater-dependent ecosystems will reduce areas of saturated soil, convert perennial springs to ephemeral springs, eliminate some ephemeral springs, and alter local aquatic flora and fauna (Halofsky and Peterson 2017).

Information Needs

There is a need to verify the special interest area designations for each forest, including forest plan amendments, for statuses. The withdrawn analysis and FEIS proposals should be reviewed for consideration.

Key Findings

Botanical areas within the Malheur National Forest would not change; however, updated mapping recognizes that the Cedar Grove Botanical Area is 116 acres instead of the currently reported 94 acres. For the Umatilla National Forest, the Charley Creek Botanical Area has decreased in acreage. Botanical areas within the Wallowa-Whitman National Forest would increase 1,102 acres from the addition of the newly designated Mount Howard East Peak National Natural Landmark.

Geological areas within the Malheur National Forest increased to 185 acres at Magone Lake, and would include Tex Bridge at 1 acre, for a total of 186 acres.

The Malheur National Forest's Silver Creek Scenic Area, a 1,500-acre area that was treated in the 1990 forest plan as a scenic area, has not had formal designation.

In addition to the municipal watersheds listed, nine communities in Oregon have watersheds or water sources located on or adjacent to National Forest System lands that should be protected to meet state source-water protection guidelines.

Within the Malheur National Forest:

- The town of Seneca uses two groundwater wells for its public water supply. The wellhead protection zones for these wells may include National Forest System lands and require protection under the Safe Drinking Water Act. Prairie City obtains its water supply from Dixie Creek, which originates on National Forest System lands.
- Twelve additional sites, including campgrounds, administrative sites, and one privately owned site provide water for public use and are regulated by provisions of the Safe Drinking Water Act as non-community water systems.

Within the Umatilla National Forest:

- The North Fork Umatilla River was designated as the municipal water supply for the city of Pendleton by the Oregon State Legislature in 1941. In 1984, the area was designated as a

wilderness area and the city has since transferred its water intake to a point on the Umatilla River near the city of Pendleton.

Within the Wallowa-Whitman National Forest:

- The town of Granite has a water intake on National Forest System lands operating under special use permit. A wellhead protection zone for a groundwater well extends onto National Forest System lands.
- The town of Halfway has municipal water rights on National Forest System lands but has converted the water system to groundwater sources on city-owned lands.
- The upper Wallowa River, including Wallowa Lake, is designated by the Oregon Department of Environmental Quality as the municipal water supply for the city of Joseph. The city water intake is located near the outlet of Wallowa Lake and is not on National Forest System lands.
- The city of Sumpter has a water intake operating under special use permit on National Forest System lands. The watershed is designated by Oregon Department of Environmental Quality as a municipal water supply.
- The city of Wallowa owns municipal water rights on National Forest System lands (Bear Creek) but has converted its water system to groundwater sources on city-owned lands.
- The communities of Richland and Greenhorn obtain their water from surface sources originating on National Forest System lands.
- Fifteen additional sites within the Wallowa-Whitman National Forest, primarily campgrounds and administrative sites, provide water for human consumption and are regulated under the authority of the Safe Drinking Water Act as non-community water systems.

Literature Cited

Halofsky, Jessica E.; Peterson, David L., eds. 2017. Climate change vulnerability and adaptation in the Blue Mountains. Gen. Tech. Rep. PNW-GTR-939. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 331 p.

Littell, J.S., E.E. Oneil, D. McKenzie, J.A. Hicke and M.M. Elsner. 2009. Forest Ecosystems, Disturbances, and Climatic Change in Washington State, USA, Chapter 7. In: The Washington Climate Change Impacts Assessment, Littell, J. S., M. M. Elsner, L. C. W. Binder and A. K. Snover, eds. Climate Impacts Group, University of Washington, Seattle, WA. 256-284.

McKenzie, D., Z. Gedalof, D. L. Peterson and P. Mote. 2004. Climatic change, wildfire, and conservation. Conservation Biology. 18 (4): 890-902.

U.S. Department of Agriculture, Forest Service [USDA FS]. 1989. Land and resource management plan, Ochoco National Forest. U.S. Department of Agriculture, Forest Service, Pacific Northwest Region, Portland, OR.

U.S. Department of Agriculture, Forest Service [USDA FS]. 1990a. Land and resource management plan, Malheur National Forest. U.S. Department of Agriculture, Forest Service, Pacific Northwest Region, Portland, OR.

U.S. Department of Agriculture, Forest Service [USDA FS]. 1990b. Land and resource management plan, Umatilla National Forest. U.S. Department of Agriculture, Forest Service, Pacific Northwest Region, Portland, OR.

U.S. Department of Agriculture, Forest Service [USDA FS]. 1990c. Land and resource management plan, Wallowa-Whitman National Forest. U.S. Department of Agriculture, Forest Service, Pacific Northwest Region, Portland, OR.

U.S. Department of Agriculture Forest Service, [USDA FS]. 2018 (withdrawn 2019). Final Environmental Impact Statement for the Malheur, Umatilla, and Wallowa-Whitman National Forests Land Management Plans. Four Volumes. U.S. Department of Agriculture Forest Service, Pacific Northwest Region, Portland, OR.

U.S. Department of Agriculture Forest Service, (USDA FS), 2023, Draft Preliminary Environmental Assessment Murderer's Creek Wild Horse Joint Management Area, Malheur National Forest, Blue Mountain Ranger District, John Day, OR.