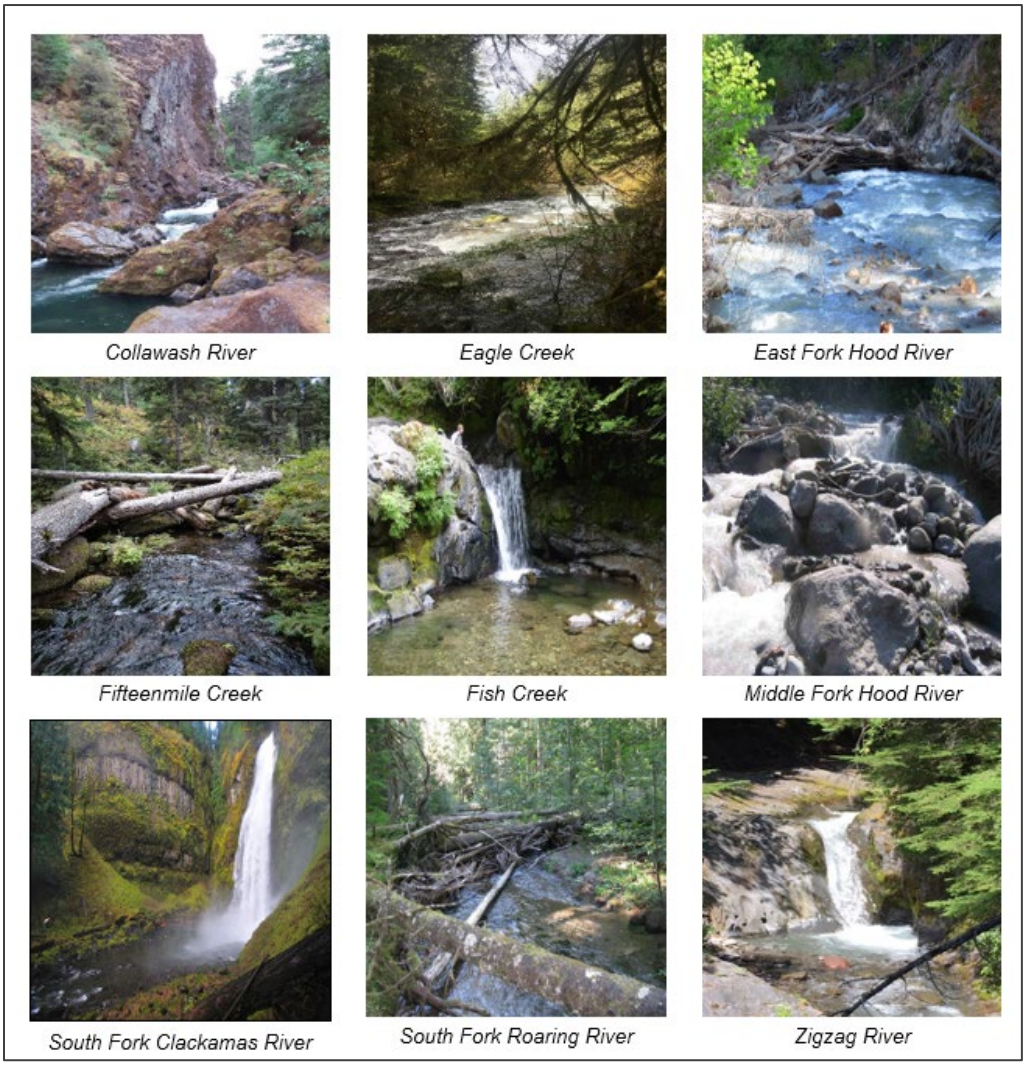
# Wild and Scenic River Comprehensive River Management Plan for Nine Wild and Scenic Rivers

## Environmental Assessment




**Mt. Hood National Forest** **BLM Northwest Oregon District** **September 2021**

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# Introduction

In 2009, nine rivers primarily on the Mt. Hood National Forest were designated as additions to the National Wild and Scenic Rivers System in the Omnibus Public Land Management Act of 2009 (Public Law 111-11, 123 Stat. 991). (This act is hereafter referred to as the Omnibus Act.) The Omnibus Act designated 81 miles of wild and scenic rivers across the Mt. Hood National Forest (the forest) on the Barlow, Hood River, Clackamas, and Zigzag Ranger Districts; and on a portion of lands managed by the Northwest Oregon District of the Bureau of Land Management (BLM).

Federal agencies charged with the administration of the National Wild and Scenic Rivers System are required to prepare a comprehensive river management plan (the plan) for designated river segments (Wild and Scenic Rivers Act, Section 3(d)(1)). The purpose of the plan is to establish overall management direction to protect and enhance the values for which these rivers were designated. The plan establishes river corridor boundaries, management direction, user capacities, monitoring, and other management practices necessary to protect and enhance the river values.

To determine how to manage these wild and scenic river corridors, both a comprehensive river management plan and this environmental assessment (the assessment) are needed. The plan is required by the Wild and Scenic Rivers Act while this assessment is required by the National Environmental Policy Act (NEPA). During the planning process, the two documents work hand-in-hand.

> **Comprehensive River Management Plan:** Contains the river boundaries; river values; management direction, including desired conditions, standards, and guidelines; determine types and amounts of uses (visitor capacity; and monitoring plan).
>
> **Environmental Assessment:** Contains the purpose and need for the plan, alternatives, and environmental analysis.

This assessment has been prepared to determine whether effects of the proposed action may be significant enough to prepare an environmental impact statement. By preparing this assessment, the forest is fulfilling agency policy and direction to comply with NEPA and other relevant Federal and State laws and regulations. For more details of the proposed action, see the Alternatives, including the Proposed Action section of this document.

Project acres and miles presented in this assessment are derived from GIS planning-level shapefiles involving information-based layers and associated attribute files. Slight discrepancies that may appear are likely due to rounding errors. This environmental assessment has been updated to incorporate the impacts of the Riverside and Lionshead Fires. Other changes have been made throughout to address the comments received, as summarized in the Public Involvement and Government Consultation section.

# Background

## Wild and Scenic Rivers Act

In 1968, Congress passed the Wild and Scenic Rivers Act (Public Law 90-542)[1] (hereafter referred to as the Act) and established a nationwide system of outstanding free-flowing rivers. For a river segment to be considered eligible for designation as a wild and scenic river it must be free-flowing and possess outstandingly remarkable values within its immediate environment. These rivers are protected for the benefit and enjoyment of present and future generations. In 1968, Congress identified 27 rivers for study with the enabling legislation. As of April 2019, 226 rivers in 41 states and the Commonwealth of Puerto Rico have been added to the National Wild and Scenic Rivers System.

The Act protects free-flowing waters, water quality, and outstandingly remarkable values of many of our Nation's most spectacular rivers and safeguards the special character of these rivers, while also recognizing the potential for appropriate use and development. The Act purposefully strives to balance river development with permanent protection for the Nation's most outstanding free-flowing rivers.

To accomplish this, the Act prohibits Federal support for actions, such as the construction of dams or other instream activities that would adversely affect the river's free flow, water quality, or outstanding resource values. Designation neither prohibits development nor gives the federal government control over private property. The Act specifically:

- prohibits dams and other federally assisted water resource projects that would adversely affect river values (Section 7 of the Act);
- protects outstanding natural, cultural, or recreational values;
- ensures water quality is maintained;
- directs that river-administering agencies address visitor use capacities to protect the free-flowing conditions, water quality, and outstandingly remarkable values of designated rivers (Section 3(d)(1)); and,
- requires the creation of a comprehensive river management plan that addresses resource protection, development of lands and facilities, user capacities, and other management practices necessary to achieve the purposes of Section 3(d)(1) of the Act.

Following the designation of the rivers listed below as wild, scenic, or recreational rivers, the Act in section 3(d)(1) requires the Federal agencies charged with the administration of each component of the National Wild and Scenic Rivers System to prepare a comprehensive management plan for each designated river segment to provide for the protection of the river values. The plan includes resource protection related to the wild and scenic river's free-flowing condition, water quality, and outstandingly remarkable values, with particular emphasis on: development of lands and facilities, kinds and amounts of visitor use (user capacity), and other management practices necessary or desirable to achieve the purposes of the Act.

[1] The original Act along with all the amendments in order is available here: https://www.rivers.gov/documents/act/complete-act.pdf

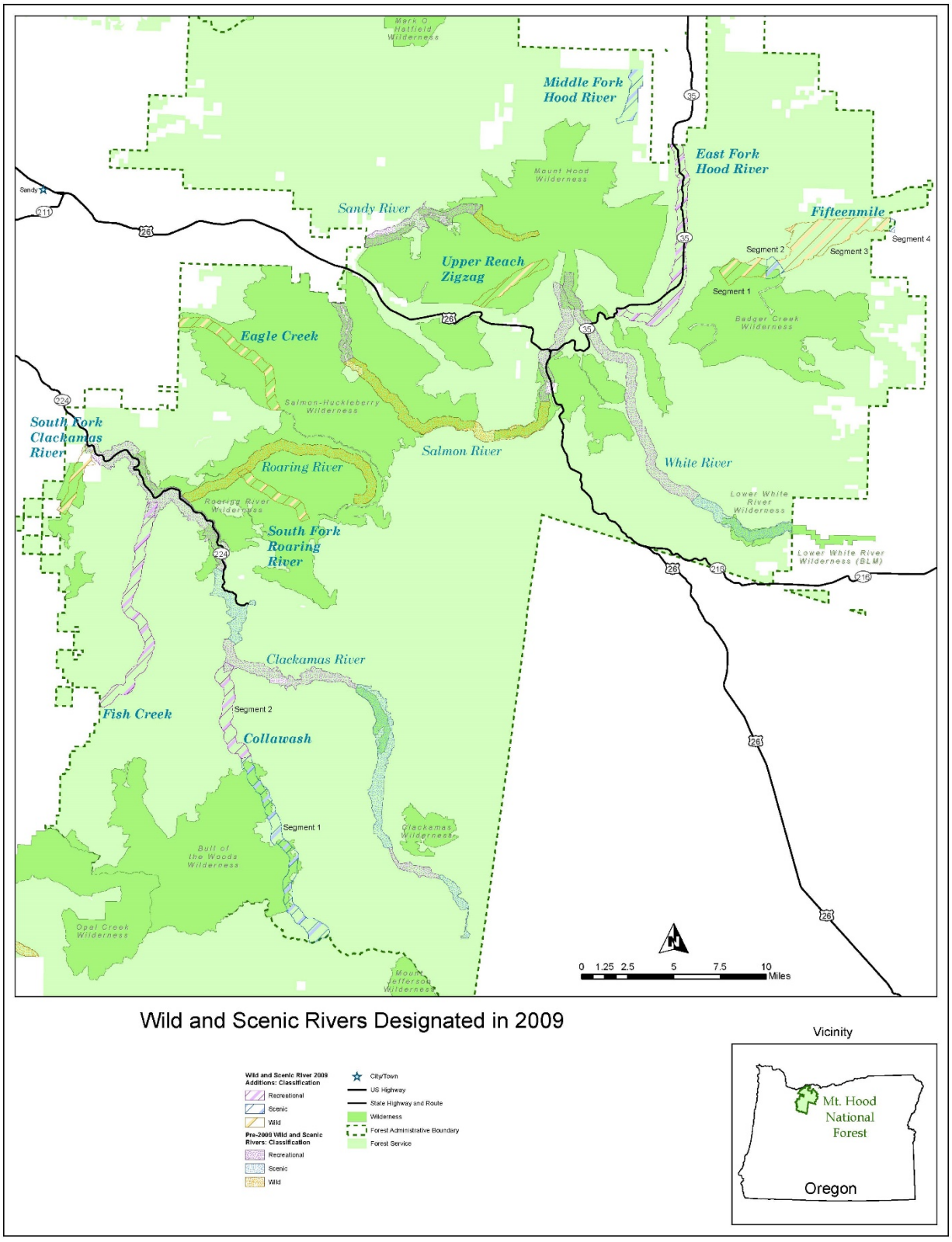


**Figure 1. Vicinity map**

## Omnibus Public Land Management Act

The Omnibus Public Land Management Act of 2009 was passed by Congress on March 30, 2009. Congress passed the Omnibus Act "to designate certain land as components of the National Wilderness Preservation System, to authorize certain programs and activities in the Department of the Interior and the Department of Agriculture, and for other purposes" (Public Law 111-11). This analysis, and the accompanying comprehensive river management plan, addresses the Collawash River, Eagle Creek, East Fork Hood River, Fifteenmile Creek, Fish Creek, Middle Fork Hood River, South Fork Clackamas River, South Fork Roaring River, and Zigzag River.

Rivers designated by the Wild and Scenic Rivers Act are classified as wild, recreational, or scenic (Section 2(b)). The Omnibus Act established a classification for each river segment based on the level of development within the river corridor (see table 1). These classifications are defined as follows.

- **Wild River:** A river or segment of a river that is free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- **Scenic River:** A river or segment of a river that is free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- **Recreational River:** A river or segment of a river that is readily accessible by road or railroad, that may have some development along its shorelines, and that may have undergone some impoundment or diversion in the past.

All nine of the wild and scenic river segments and the interim corridors are managed as directed by the Wild and Scenic Rivers Act of 1968. These designated segments are displayed in Figure 1 and summarized in table 1.

**Table 1. Description, length, and classification of wild, scenic, and recreational river segments designated by the Omnibus Act**

| Designated Segment | Description | Miles | Classification |
|---|---|---|---|
| Collawash River | Segment 1: Headwaters of the East Fork Collawash River to Buckeye Creek | 12.9 | Scenic |
| Collawash River | Segment 2: Buckeye Creek to Clackamas River | 6.9 | Recreational |
| Eagle Creek | Headwaters to the Mt. Hood National Forest boundary | 8.4 | Wild |
| East Fork Hood River | Oregon State Highway 35 to the Mt. Hood National Forest boundary | 14.1 | Recreational |
| Fifteenmile Creek | Segment 1: Source at Senecal Spring to the Badger Creek Wilderness boundary | 2.6 | Wild |
| Fifteenmile Creek | Segment 2: Badger Creek Wilderness boundary to the point 0.4 miles downstream | 0.8 | Scenic |
| Fifteenmile Creek | Segment 3: Point 0.4 miles downstream of the wilderness boundary to the western edge of T2S, R12E, Section 20 | 7.4 | Wild |
| Fifteenmile Creek | Segment 4: Western edge of T2S, R12E, Section 20 to the southern edge of the NW quarter of the NW quarter of T2S, R12E, Section 20 | 0.3 | Scenic |
| Fish Creek | Headwaters to the confluence with the Clackamas River | 13.6 | Recreational |
| Middle Fork Hood River | Confluence of Clear and Coe Branches to the North section line of section 11, T1S, R9E, Section 11 | 3.7 | Scenic |

| Designated Segment | Description | Miles | Classification |
|---|---|---|---|
| South Fork Clackamas River | Confluence with the East Fork of the South Fork Clackamas to its confluence with the Clackamas River | 4.3 | Wild |
| South Fork Roaring River | Headwaters to its confluence with Roaring River | 4.7 | Wild |
| Zigzag River | Headwaters to the Mount Hood Wilderness Boundary | 4.7 | Wild |

## Outstandingly Remarkable Values

Outstandingly remarkable values were identified for each of these designated segments using a set of evaluation criteria and public involvement, which are described in the River Values Report. The outstandingly remarkable values (ORVs) are summarized in table 2 and the relevant resource sections.

**Table 2. Summary of Outstandingly Remarkable Values**

| River | Outstandingly Remarkable Values |
|---|---|
| Collawash River, Segment 1 | Recreation, Geology, Fisheries, and Botany |
| Collawash River, Segment 2 | Geology and Fisheries |
| Eagle Creek | Recreation and Botany |
| East Fork Hood River | Wildlife, Recreation, and Botany |
| Fifteenmile Creek, Segment 1 | Wildlife |
| Fifteenmile Creek, Segment 2 | Wildlife and Recreation |
| Fifteenmile Creek, Segment 3 | Wildlife, Recreation, Historic, and Fisheries |
| Fifteenmile Creek, Segment 4 | Wildlife and Fisheries |
| Fish Creek | Fisheries |
| Middle Fork Hood River | Geology, Scenery, and Fisheries |
| South Fork Clackamas River | Scenery and Historic |
| South Fork Roaring River | Botany |
| Zigzag River | Scenery, Recreation and Macroinvertebrate |

# Management Direction

Management direction can be found in the Mt. Hood Land and Resource Management Plan (Forest Plan) of 1990 and BLM's Northwestern and Coastal Oregon Resource Management Plan (BLM Resource Management Plan) of 2016. The desired conditions and applicable standards and guidelines are described in the following sections.

## Desired Condition

### National Forest System Lands

National Forest System lands are assigned a land-use allocation, which is a management emphasis to particular land areas with the purpose of achieving the goals and objectives of that management area. The designed wild and scenic river corridors are within B1-Wild, Scenic & Recreational Rivers and A1-Reserved land use allocations on the Mt. Hood National Forest. Generally, the "A" land-use allocations preclude regulated timber harvest while the "B" land-use allocations allow timber harvest. When two sets

of standards and guidelines are not consistent, the standards and guidelines which are most restrictive to vegetation and access management predominate (Forest Plan, page Four-133).

The goal of B1 lands are to "protect and enhance the resource values for which a river was designated into the Wild and Scenic Rivers System. The specific goals for Wild, Scenic, and Recreational classified river segments as described in the Forest Plan on page Four-208 are:

- **Wild** – Perpetuate a primitive recreation experience and protect the river corridor to maintain an essentially unmodified environment.
- **Scenic** – Maintain or enhance quality scenery and protect the essentially undeveloped character of the shoreline.
- **Recreational** – Provide opportunities for recreation activities and maintain visual quality of the river corridors.

Then, the major characteristics of the desired condition for all classifications are: Congressionally designated areas of National significance; and river corridors divided into wild, scenic, and recreational segments with each providing different opportunities. Also, there are examples of the following features located in the river corridors: deep, incised canyons and gorges, old-growth forests, glacier-fed headwaters, outstanding views of majestic mountains and river canyons, and alpine and subalpine meadows (Forest Plan, page Four-209).

The desired conditions for wild segments also include: the corridor is essentially free of recreation facilities and signs; access is generally by trail or water; the corridor is essentially an unmodified environment; motorized boats are not present; minimal evidence of recreational users; and, very low interaction between recreational users (Forest Plan, page Four-209).

The desired conditions for scenic segments include: shorelines are typically undeveloped; characterized by a natural-appearing environment with high quality scenery; accessed by roads and trails and seen from major travel routes paralleling the river; motorized boats are not present; low interactions between recreational users, but with evidence other recreational users are present; and, minimal on-site controls of recreational use patterns (Forest Plan, page Four-209 to Four-210).

Lastly, the desired conditions for recreational segments include: visible public roads parallel the river; developments such as campgrounds are close by; access is by roads and trails; opportunities exist for a wide variety of river related recreation activities; characterized by a predominately natural appearing environment; dispersed motorized recreation activities such as car camping, motorcycle use, boating, and snowmobiling occur; and motorized boats may be present (Forest Plan, page Four-210).

The A1 allocation is used for rivers classified as wild to preclude regulated timber harvest. All other goals, desired conditions, and standards and guidelines apply to these river segments. This applies to the wild segments along Eagle Creek, Fifteenmile Creek, South Fork Clackamas River, South Fork Roaring River, and Zigzag River. Then, Collawash River, East Fork Hood River, Middle Creek Hood River, and Fish Creek are managed using the B1 land use allocation as described above.

## Bureau of Land Management Administered Lands

The BLM administered lands along the South Fork Clackamas River are managed using the objectives and management direction found within the Northwestern & Coastal Oregon Resource Management Plan. These are Congressionally Reserved Lands and National Conservation Lands and the management

direction is found on pages 55-56 of the Resource Management Plan. The management objectives for this land use allocations are as follows.

- Conserve, protect, and restore the identified outstanding cultural, ecological, and scientific values of national conservation lands and other congressionally designated lands.
- Protect and enhance the free-flowing condition, water quality, and outstandingly remarkable values of eligible, suitable, and designated wild and scenic river corridors.
- Provide protection to wild and scenic river corridors that are suitable for inclusion as components of the National Wild and Scenic Rivers System until Congress makes a decision on designation.
- Provide protection to wild and scenic river corridors that are eligible but have not yet been studied for suitability as components of the National Wild and Scenic Rivers System pending suitability evaluations.

## Management Standards and Guidelines

The management standards prioritize in protecting and enhancing wild and scenic river values during the planning and implementation of resource management activities in the river corridors. They are intended to preserve the designated rivers' free-flowing condition and protect and enhance river values, including water quality and outstandingly remarkable values. These standards and guidelines are from the Forest Plan and Resource Management Plan.

### Resource Management Plans

B1 land use allocation for designated wild, scenic, and recreational river segments standards and guidelines can be found on page Four-208 through Four-217 of the Forest Plan. The standards and guidelines for the A1-Reserved land use allocations are the same as those listed here for B1. They are given a different land use allocation because regulated timber harvest is not permitted in the A1 allocation.

Similarly, the BLM Resource Management Plan includes the management direction for Congressionally Reserved Lands and National Conservation Lands, which includes wild and scenic rivers, on pages 55 and 56. The BLM administered lands include the South Fork Clackamas Waterfalls Extensive Recreation Management Area (see Appendix D of the comprehensive river management plan for more details). Accordingly, the BLM Northwestern and Coastal Oregon Resource Management Plan, Extensive Recreation Management Areas are administrative units that require specific management consideration in order to address recreation use, demand, or recreation and visitor services program investments (page 251). The BLM manages these areas to support and sustain the principal recreation activities and the associated qualities and conditions of the area. Management of these areas are commensurate with the management of other resources and resource uses.

### Northwest Forest Plan

The Northwest Forest Plan allocations within the designated wild and scenic river corridors varied prior to the 2009 designation. Upon designation, these lands became Congressionally Reserved Areas under the Northwest Forest Plan. "These lands have been reserved by act of Congress for specific land allocation purposes. . . . Included in this category area National Parks and Monuments, Wilderness Areas, Wild and Scenic Rivers, National Wildlife Refuges, Department of Defense lands, and other lands with congressional designations" (NWFP ROD, page 6).

Management of these lands follows direction written in the applicable legislation or plans. Management direction from the other land use allocation standards and guidelines found in the Northwest Forest Plan also applies where it is more restrictive or provides greater benefits to late-successional forest related species, unless the application of these standards and guidelines would be contrary to legislative or regulatory language or intent (NWFP ROD, page C-8). As such, the Riparian Reserve standards and guidelines apply to the extent that they are consistent with the legislative direction for the Congressionally Reserved Areas (NWFP ROD, page C-8). In this case, most of the lands within the wild and scenic corridors on National Forest System lands would be managed under both the Riparian Reserve and Congressionally Reserved Areas standards and guidelines given the extensive overlap.

Riparian Reserves include areas along rivers, streams, wetlands, ponds, lakes, and unstable or potentially unstable areas where the conservation of aquatic and riparian-dependent terrestrial resources receives primary emphasis. Riparian Reserves are designed to protect the health of the aquatic system and its dependent species (NFWP ROD, page 7). The standards and guidelines for Riparian Reserves are found on the Northwest Forest Plan Record of Decision, pages B-12 to B-17. These standards and guidelines are part of the Aquatic Conservation Strategy found on Northwest Forest Plan Record of Decision, pages B-9 to B-11.The Aquatic Conservation Strategy was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The strategy protects salmon and steelhead habitat on federal lands managed by the Forest Service within the range of Pacific Ocean anadromy.

# Purpose and Need for Action

The purpose of this proposal is to develop a comprehensive river management plan, as required by the Act, to protect and enhance the values for which the rivers were designated (free-flowing, water quality, and outstandingly remarkable values), and to identify and implement management actions needed to protect these values within the nine wild and scenic river corridors designated in 2009. The outstandingly remarkable values for these rivers include scenery, recreation, wildlife, fish, geologic/hydrologic, historic, botany, and macroinvertebrates. Another purpose of this proposal is to establish the final river corridor boundaries to facilitate the protection and enhancement of the outstandingly remarkable values, within the limits set in the Act. The underlying need is to address the requirements in section 3(d)(1) the Act for federal agencies to prepare a comprehensive management plan for each designated river segment that provide for the protection of the river values.

The primary purpose of the comprehensive river management plan is to protect and enhance the outstandingly remarkable values, water quality, and free-flowing characteristics of the designated Wild and Scenic Rivers for the benefit and enjoyment of present and future generations. Based upon the evaluation of corridor conditions, existing management direction, and need for action, the comprehensive river management plan will:

- address current conditions and other management practices, as required by law;
- protect and enhance outstandingly remarkable values;
- ensure free-flowing conditions and water quality are maintained;
- determine types and amounts of uses (user capacity) that each river can support while protecting river values;
- inform future management actions within the designated river corridors; and,
- develop a monitoring strategy to maintain desired conditions.

# Location of the Proposed Project Area

The project area is located within the Clackamas, Hood River, Multnomah, and Wasco Counties in the state of Oregon. The Collawash River, Eagle Creek, East Fork Hood River, Fish Creek, Middle Fork Hood River, South Fork Roaring River, and Zigzag River are located solely on lands managed by the Mt. Hood National Forest. South Fork Clackamas River includes National Forest System lands and BLM administered lands, along with a small parcel owned by Portland General Electric. Fifteenmile Creek includes lands owned by the City of Dufur and private landowners. This section of the assessment addresses non-federal land ownerships in more detail. A detailed map of each river, and the proposed final boundaries, can be found in the map packet on the project website: https://www.fs.usda.gov/project/?project=54674.

In fall 2020, the Collawash River, Fish Creek and South Fork Clackamas River wild and scenic river corridors were impacted by the Riverside and Lionshead Fires. The Riverside Fire started on September 8, 2020, and quickly spread to over 138,000 acres, including the majority of Fish Creek, all of South Fork Clackamas River, and a small portion of the Collawash River wild and scenic river corridors. Lightning sparked the Lionshead Fire on August 16, 2020, and then a historic windstorm on September 7, 2020, led to a rapid spread of the fire. The fire burned 204,500 acres, including 700 acres in the Collawash Creek wild and scenic river corridor. The National Forest System lands within these corridors, along with the main access road (Highway 224) are closed by Forest Order due to safety concerns. Similarly, the BLM administered lands within the South Fork Clackamas River corridor are closed by an Emergency Closure Order due to safety concerns.

**Figure 2. Aftermath of Riverside Fire, including severely burned landscape and a view from Clackamas River**

## Collawash River

Segment 1 is designated from the headwaters of the East Fork Collawash River (T9S, R7E, Section 04) to Buckeye Creek (T7S, R6E, Section 14). Segment 1 then continues to Buckeye Creek and 4th-order perennial reach that originates from headwater springs and wetlands. Within this segment, the Collawash River changes name to the East Fork Collawash above its confluence with Elk Lake Creek. This segment falls within the East Fork Collawash and Happy Creek-Collawash subwatersheds (12th-field Hydrologic Unit Codes (HUC) 170900110105 and 170900110106 respectively).

Segment 2 of the Collawash River is designated from Buckeye Creek to the Clackamas River (T6S, R6E, Section 22). Most of the length of this segment is visible from Forest Service Road 63 along which there are several developed and undeveloped riverside campsites featuring large, quality pools that are enjoyed by recreational users. The elevation of this segment ranges between about 1,900 and 1,500 feet. Segment 2 is mostly a 5th and 6th-order perennial reach. The segment lies within the Farm Creek-Collawash River subwatershed (12th-field HUC 170900110107).

Portions of both segments are within the Bull of the Woods Wilderness additions that were designated in the Omnibus Act. Also, the northern termini of the Collawash Wild and Scenic River in segment 2 overlaps with the Clackamas River wild and scenic river corridor. The Clackamas River is designated as a recreational wild and scenic river where the corridors overlap.

In fall 2020, both the Lionshead and Riverside Fires burned portions of the proposed wild and scenic river corridor with mixed severity (see figure 3 and figure 4). The Lionshead Fire burned approximately 690 acres within segment 1 of the proposed Collawash River wild and scenic river corridor. Approximately 53 percent had a low soil burn severity (366 acres) and another 37 percent had moderate soil burn severity (248 acres). Similarly, 254 acres had no tree mortality and another limited acres has high tree mortality (152) immediately following the fires in fall 2020. The Riverside Fire burned 128 acres in segment 2; the majority (54 percent) burned with low soil burn severity (69 acres) and no tree mortality (79 acres). Table 3 and table 4 summarize the impacts of these fires within the proposed wild and scenic river corridor by soil burn severity and basal area mortality.

**Table 3. Soil burn severity within the Collawash River proposed wild and scenic river corridor**

| Soil Burn Severity | Acres in Segment 1 (Lionshead Fire) | Acres in Segment 2 (Riverside Fire) | Total for Both Segments | Percent of Proposed Corridor |
|---|---|---|---|---|
| Low | 366 | 69 | 435 | 6.9% |
| Moderate | 248 | 15 | 263 | 4.2% |
| High | 24 | 0 | 24 | 0.4% |
| Unburned | 50 | 43 | 93 | 1.5% |
| Total | 688 | 127 | 815 | 12.9% |

**Table 4. Basal area mortality within the Collawash River proposed wild and scenic river corridor**

| Basal Area Mortality | Acres in Segment 1 (Lionshead Fire) | Acres in Segment 2 (Riverside Fire) | Total for Both Segments | Percent of Proposed Corridor |
|---|---|---|---|---|
| 0% | 254 | 79 | 333 | 5.3% |
| 1 to 25% | 74 | 14 | 88 | 1.4% |
| 25 to 75% | 208 | 30 | 238 | 3.8% |
| 75 to 100% | 152 | 4 | 156 | 2.5% |
| Total | 688 | 127 | 815 | 12.9% |

# Eagle Creek

Eagle Creek is a tributary of the Clackamas River on the western slopes of the Cascade Range in northwest Oregon. Eagle Creek flows to the west and joins the Clackamas River north of the town of Estacada, Oregon. Eagle Creek is designated from its headwaters (T4S, R6E, Section 12) to the Mt. Hood National Forest boundary (T3S, R6E, Section 19). The segment falls within the Upper Eagle Creek

subwatersheds (12th-field HUC 170900110501). The designated Eagle Creek river corridor lies completely in the Salmon Huckleberry Wilderness.

## East Fork Hood River

The East Fork Hood River flows out of the Newton-Clark Glacier on the south face of Mount Hood in the Cascade Range of Oregon. After flowing for about 2.5 miles toward the southeast, the river makes a sweeping turn to the north, following Oregon State Highway 35. The designated segment of the East Fork Hood River begins where the river first crosses Highway 35 (T3S, R9E, Section 11) and ends at the Mt. Hood National Forest boundary (T1S, R10E, Section 32). The designated segment of the East Fork Hood River is located within the Middle and Upper East Fork Hood River subwatersheds (12th-field HUC 170701050502 and 170701050501 respectively).

## Fifteenmile Creek

Fifteenmile Creek flows toward the northeast eventually joining the Columbia River just below The Dalles Dam. Fifteenmile Creek is located within the Headwaters Fifteenmile subwatershed (12th-field HUC 170701050301).

Fifteenmile Creek, segment 1 flows entirely through the Badger Creek Wilderness, starting at Senecal springs (T3S, R10E, Section 2), and ends at Badger Creek Wilderness boundary at Forest Service Road 2730 crossing (T2S, R11E, Section 31). In segment 1, the elevation descends about 1,621 feet.

Segment 2 of Fifteenmile Creek flows downriver from the Badger Creek Wilderness boundary at Fifteenmile Creek Campground to about 0.4 river miles downriver of Fret Creek confluence with Fifteenmile Creek (T2S, R11E, Section 32). Fifteenmile Creek Trail (Forest Service Trail #456) parallels Fifteenmile Creek for its entirety of segment 2.

Segment 3 starts 0.4 river miles downriver from Badger Creek Wilderness boundary and ends at Forest Service Road 4421 (T2S, R12E, Section 20). Fifteenmile Creek Trail parallels Fifteenmile Creek for about 5.7 of its 7.9 river miles. In segment 3, the elevation descends about 2,138 feet.

Segment 4 of Fifteenmile Creek starts at Forest Service Road 4421 and ends at the forest boundary (T2S, R12E, Section 20). The elevation descends about 41 feet within this segment.

The lower southwest corner of segment 1 falls entirely within the Badger Creek Wilderness, and parts of segments 2 and 3 are within the Mount Hood National Recreation Area. The recreation area was designated in the Omnibus Act to “to provide for the protection, preservation, and enhancement of recreational, ecological, scenic, cultural, watershed, and fish and wildlife values, there is established the Mount Hood National Recreation Area within the Mount Hood National Forest” (Public Law 111-11, Section 1204(a)).

## Fish Creek

Fish Creek Wild and Scenic River begins at its headwaters (T7S, R5E, Section 33) and terminates at the confluence with the Clackamas River (T5S, R5E, Section 11). Elevation of the termini range between about 920 and 4,940 feet. This segment lies within the Fish Creek subwatershed (12th-field HUC 170900110403). The northern termini of the Fish Creek Wild and Scenic River overlaps with the Clackamas River wild and scenic river corridor. The Clackamas River is designated as a recreational wild and scenic river where the corridors overlap.

In September 2020, the Riverside Fire burned the majority (82 percent) of the proposed wild and scenic river corridor. Although it was a mixed severity burn, approximately 77 percent of the corridor had moderate soil burn severity and 54 percent had high tree mortality with 75 to 100 percent of the basal area being removed. The boat ramp and campground located within the river corridor was completely burned over in the fire. Table 5 and table 6 summarize the impacts of the Riverside Fire within the proposed Fish Creek wild and scenic river corridor.

**Table 5. Soil burn severity resulting from Riverside Fire within the Fish Creek and South Fork Clackamas River proposed wild and scenic river corridor**

| Soil Burn Severity | Fish Creek Acres Burned | Fish Creek Percent of Corridor | South Fork Clackamas River Acres Burned | South Fork Clackamas River Percent of Corridor |
|---|---|---|---|---|
| Low | 405 | 9% | 19 | 1% |
| Moderate | 2,732 | 63% | 1,082 | 81% |
| High | 358 | 8% | 235 | 18% |
| Unburned | 65 | 1% | 0 | 0% |
| Total | 3,560 | 82% | 1,336 | 100% |

**Table 6. Basal area mortality resulting from Riverside Fire within the Fish Creek and South Fork Clackamas River proposed wild and scenic river corridor**

| Basal Area Mortality | Fish Creek Acres Burned | Fish Creek Percent of Corridor | South Fork Clackamas River Acres Burned | South Fork Clackamas River Percent of Corridor |
|---|---|---|---|---|
| 0% | 165 | 4% | 1 | 0% |
| 1 to 25% | 76 | 2% | 5 | 0% |
| 25 to 75% | 975 | 22% | 158 | 12% |
| 75 to 100% | 2,344 | 54% | 1,172 | 88% |
| Total | 3,560 | 82% | 1,336 | 100% |

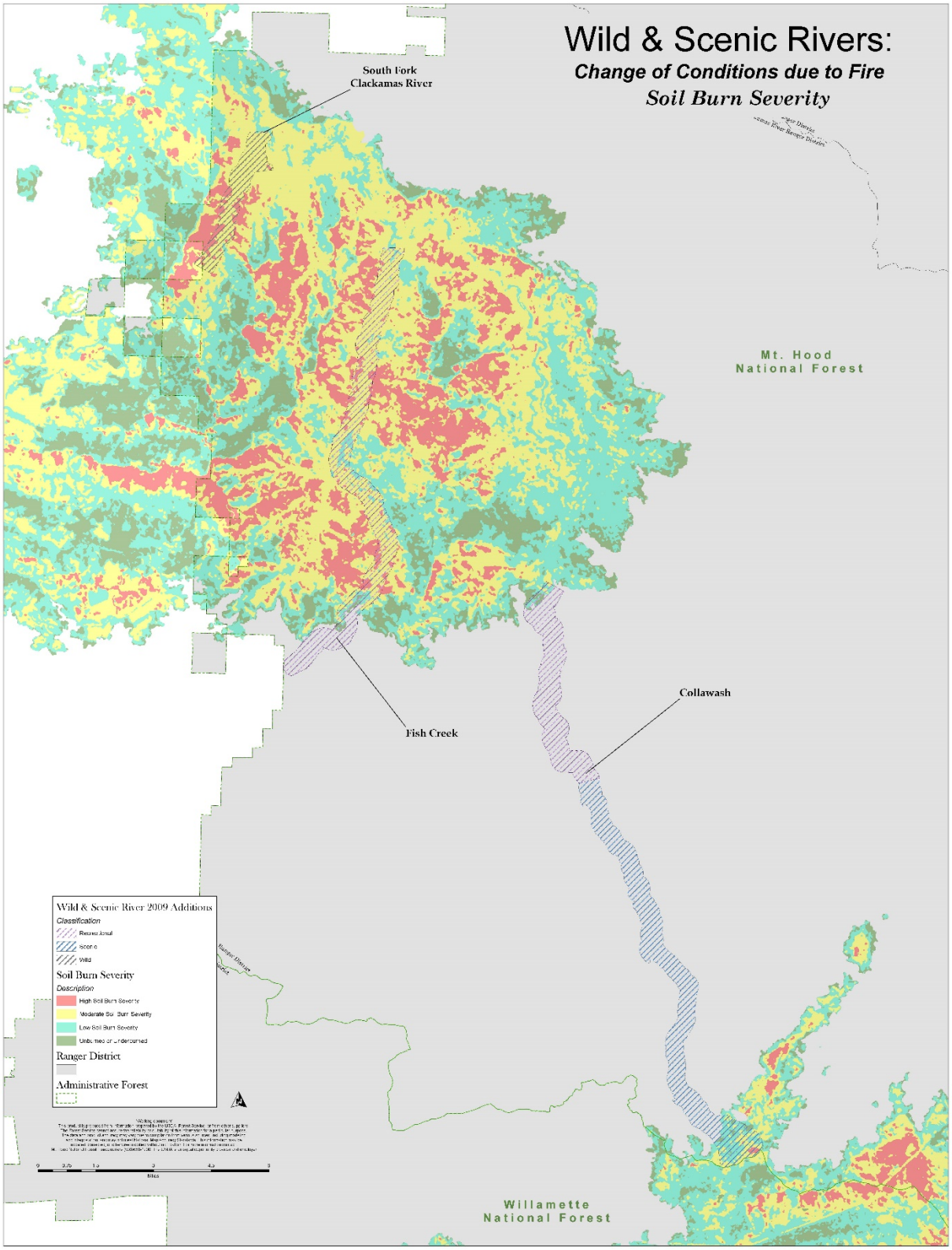


**Figure 3. Map of soil burn severity within the wild and scenic river corridors resulting from the Riverside and Lionshead Fires**

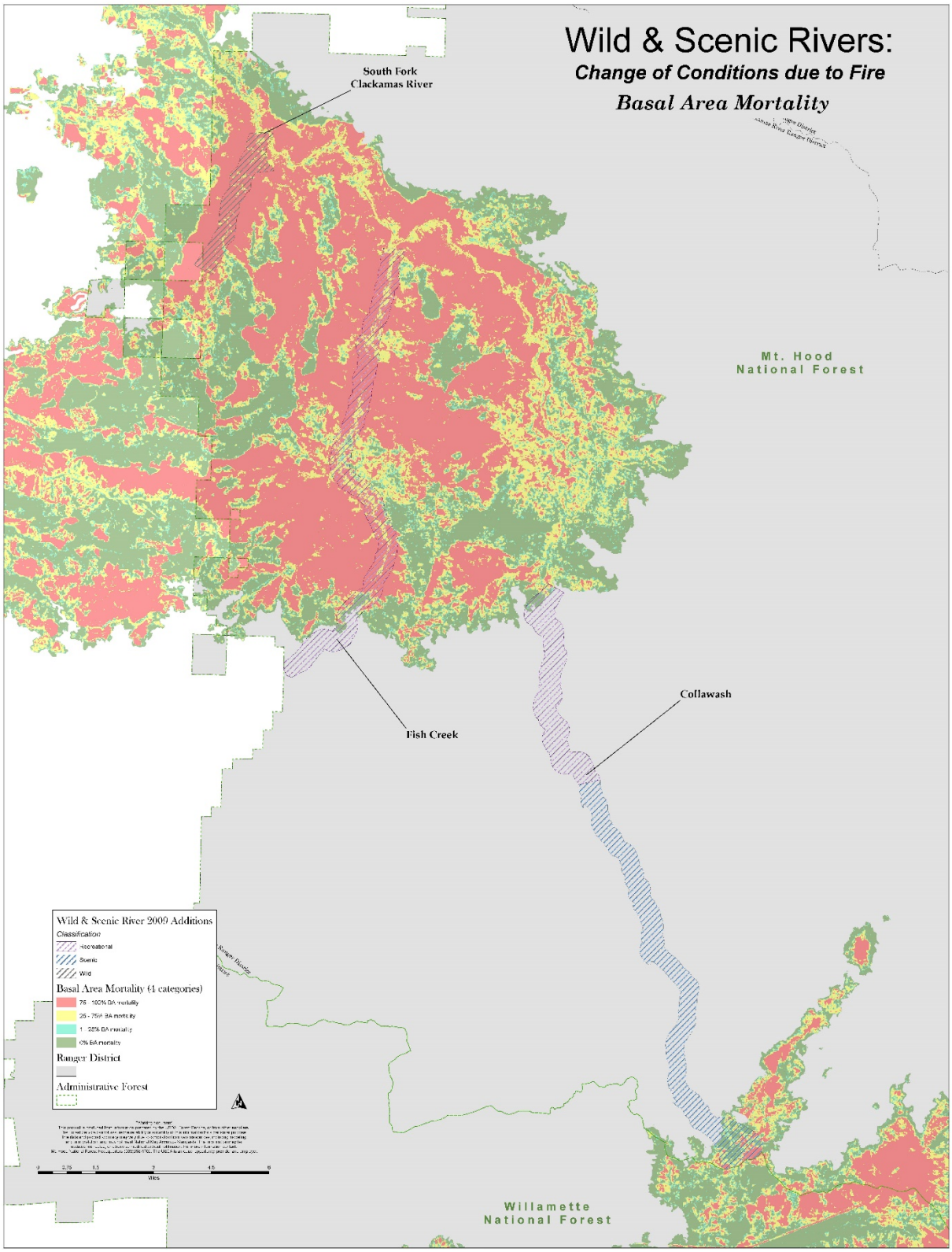


**Figure 4. Map of basal area mortality within the wild and scenic river corridors resulting from the Riverside and Lionshead Fire**

## Middle Fork Hood River

The Middle Fork Hood River has its origins in several glaciers on the north slope of Mount Hood. The designate section of the Middle Fork Hood River begins at the confluence of Clear and Coe Rivers' branches (T1S, R9E, Section 23) and ends along the north section line of section 11 (T1S, R9E, Section 11). The river flows in a northerly direction, joins the West and the East Fork Hood River and eventually flows into the Columbia River near the town of Hood River, Oregon. The designated segment of the Middle Fork Hood River is located within the Lower Middle Fork Hood River and the Upper Middle Fork Hood River subwatersheds (12th-field HUC 170701050505 and 170701050504 respectively).

The Parkdale Lava Beds occur within the wild and scenic corridor of the Middle Fork Hood River and are listed as a special interest area with a geologic emphasis in the Forest Plan (page Four-151). The goal of special interest areas are to "protect and, where appropriate, foster public recreational use and enjoyment of the important historic, cultural, and natural aspects of our national heritage;" and to "preserve and provide interpretation of unique geological, biological, and cultural areas for education, scientific, and public enjoyment purposes."

## South Fork Clackamas River

The upper terminus of the South Fork Clackamas Wild and Scenic River is at the confluence with the East Fork South Fork Clackamas River (T5S, R5E, Section 7). The lower terminus is at the river's mouth at the Clackamas River (T4S, R5E, Sec 29). Elevation of the termini range between about 1,900 and 600 feet above mean sea level. This segment lies within the South Fork Clackamas subwatershed (12th-field HUC 170900110404).

This wild and scenic river segment is located primarily within the Clackamas Wilderness, which was designated in the Omnibus Act, and is partially located on lands managed by the Bureau of Land Management. The northern termini of the South Fork Clackamas River overlaps with the Clackamas River wild and scenic river corridor. The Clackamas River is designated as a recreational wild and scenic river where the corridors overlap.

On BLM administered lands, this corridor overlaps with the South Fork Clackamas Waterfalls Extensive Recreation Management Area. According the BLM Northwestern and Coastal Oregon Resource Management Plan, Extensive Recreation Management Areas are administrative units that require specific management consideration in order to address recreation use, demand, or recreation and visitor services program investments (page 251). The BLM manages these areas to support and sustain the principal recreation activities and the associated qualities and conditions of the area. Management of these areas are commensurate with the management of other resources and resource uses.

In September 2020, the Riverside Fire burned the entire proposed wild and scenic river corridor. Although it was a mixed severity burn, approximately 81 percent of the corridor had moderate soil burn severity and 88 percent had high tree mortality with 75 to 100 percent of the basal area being removed. Table 5 and Table 6 summarize the impacts of the Riverside Fire within the proposed South Fork Clackamas River wild and scenic river corridor. Given the severity of the burn within this area, personnel from the Forest Service and BLM have not been able to fully evaluate the damage to the South Fork Water Board infrastructure. This infrastructure is described in more detail in the Historic and PreContact Resources section below.

## South Fork Roaring River

The entire 4.6-mile segment of the South Fork Roaring River from its headwaters (T5S, R 7E, Section 08) to its confluence with the Roaring River (T4S, R6E, Section 34) is administered as a wild river. The river flows through a narrow, deeply incised canyon, which has large rock outcroppings and cliffs along portions of the canyon. This segment lies within the Roaring River subwatershed (for example, 12th-field HUC 170900110402). The entire designated river is located within the Roaring River Wilderness. Also, the northwestern termini of the South Fork Roaring River overlaps with the Roaring River wild and scenic river corridor. The Roaring River is classified as a wild river where the corridors overlap.

## Zigzag River

The Zigzag River arises from the base of Zigzag Glacier at approximately the 5,000-foot elevation on Mount Hood. The designated segment of the Zigzag River begins at its headwaters (T2S, R8.5E, Section 47) at the Mt. Hood Wilderness boundary (3S, R8E, Section 14). The segment is located entirely within the Mt. Hood Wilderness and lies within the Zigzag Canyon subwatershed (12th-field HUC 170800010202).

# Public Involvement and Government Consultation

This project has been included in the Mt. Hood National Forest Schedule of Proposed Action beginning in September 2018, and has been included in the BLM National NEPA Register beginning in July 2019. No comments were received through those efforts.

## Public Involvement

A letter with an overview of the outstandingly remarkable values and summary of a River Values Report, including an interactive GIS story map, were shared with the public in September 2018. The letter was shared with approximately 340 individuals, organizations, and government agencies. Individual letters were sent to government agencies with specific management responsibilities within the wild and scenic river corridors. These government agencies are Oregon Department of Environmental Quality, Oregon Department of Transportation, National Marine Fisheries Service, U.S. Fish and Wildlife Service, and Natural Resources Conservation Service.

Through this effort, we asked for input on the following questions.

- Are there additional river-related natural, cultural, and recreational resources that are rare, unique or exemplary within these river corridors?
- What observations or concerns do you have about the current conditions within these river corridors that may be impacting the river values?

Fifteen comments were received from individuals and organizations. The organizations included: Middle Fork Irrigation District, Northwest Rafting Company and ECHO River Trips, Mt. Hood Forest Study Group, American Whitewater, Oregon Wild, Oregon Equestrian Trails, Oregon Department of Water Quality, Bark, and U.S. Fish and Wildlife Service, along with three individuals.

All comments were considered by the interdisciplinary team. Suggestions for changes or additions to the outstandingly remarkable values were evaluated using the same evaluation process and criteria included in the River Values Report. As a result, we altered the outstandingly remarkable values on the Collawash River and East Fork Hood River. Geology and recreation were added as outstandingly remarkable values

on segment 1 on the Collawash River, and botany was removed as an outstandingly remarkable value for segment 2. Then, recreation was added as an outstandingly remarkable value for East Fork Hood River.

In July 2019, a scoping packet was distributed to the same mailing list. The scoping packet included a summary of the proposed action, identified user capacity, wild and scenic river corridor boundaries, potential management actions, and a Forest Plan amendment. Eight comments were received, which were from the National Marine Fisheries Service, Friends of Mt. Hood, Access Fund, Oregon Department of Fish and Wildlife, Oregon Wild, and four individuals.

The comments received included the following suggestions: access to the water and surrounding area for horses and cattle; proposed management actions and needs at Pete's Pile climbing area within the East Fork Hood River wild and scenic river corridor; impacts of increasing use and user capacity on big game travel corridors and habitat; and, recommended minor changes to the boundaries. The comments within the scope of this project were incorporated to the proposed action, where appropriate. This resulted in minor changes to the boundaries for South Fork Clackamas River, Fish Creek, Collawash River, and Zigzag River.

Lastly, in February 2021, a draft environmental assessment and comprehensive river management plan was distributed to individuals and organizations that had previously provided comments along with the Northwest Oregon BLM district mailing list. These documents were also posted on the Forest's website (https://www.fs.usda.gov/project/?project=54674). Five comments were received, which were from American Forest Resource Council, Oregon Wild, American Whitewater, and two individuals. A full response to comments is available in the project record and a summary is included in Appendix B: Response to Comments.

## Federally Recognized Tribes and Tribal Consultation

The Confederated Tribes of Warm Springs have ceded lands within the designated wild and scenic river corridors. Ceded lands are those lands where the tribes ceded, relinquished, and conveyed to the United States all their right, title, and interest in the lands and country occupied by them at treaty signing or when reservations were established. Reserved rights to natural resources and lands extend far beyond the boundaries of the reservations. Provisions of the treaty ensured tribes could continue to fish at all usual and accustomed places, and to hunt and gather on all open and unclaimed lands. Federal lands such as the Mt. Hood National Forest and the Northwest Oregon BLM District are "open and unclaimed" lands on which the tribes reserved treaty rights to hunt and gather.

Treaty rights encompass more than an ability to gather, hunt, or fish. The role of tribes in stewardship on the national forest is crucial to restoring, sustaining, and protecting the integrity of lands and resources, vital to the lifeways of indigenous peoples. In partnership with the Forest Service and BLM, tribes contribute traditional knowledge, technical expertise, and funding to restore and manage indigenous biomes for the long-term ecological health and resilience of these public lands.

The Mt. Hood National Forest and Bureau of Land Management have historically consulted with three federally recognized Tribes regarding proposed actions within the boundaries of the nine wild and scenic river corridors. These federally recognized Tribes are: Confederated Tribes of the Grand Ronde, Confederated Tribes of Siletz Indians, and the Confederated Tribes of the Warm Springs Reservation of Oregon.

Fifteenmile Creek, East Fork Hood River and the Middle Fork Hood River all fall within the lands ceded to the United States by the Confederated Tribes of Warm Springs under the 1855 Treaty with the Tribes of

Middle Oregon. Under Article I of the Treaty, the Tribes reserved their right to hunt, fish, gather roots and berries, erect suitable houses for curing the same, and pasture stock on these usual and accustomed lands and unclaimed lands held in common with other citizens. These river segments are also part of the usual and accustomed lands of the Confederated Tribes of the Grand Ronde Community of Oregon. A number of ethnographic studies documents continued Tribal use of these areas, however, in a 2017 meeting between Tribal representatives and the Forest Service, the Forest Service was asked to not highlight documented traditional use areas or archaeological sites associated with pre European contact lifeways as outstandingly remarkable values.

Eagle Creek, South Fork Roaring River, Fish Creek, Collawash River, and South Fork Clackamas River are located ancestral lands of the Confederated Tribes of the Grand Ronde Community, Confederated Tribes of Siletz Indians, and Confederated Tribes of the Warm Springs Reservation of Oregon. Like the eastern rivers, a number of ethnographic studies document continued Tribal use of these areas, however, the Forest Service was asked to not highlight traditional use areas or archaeological sites associated with precontact lifeways as outstandingly remarkable values.

## Other Coordination

In addition to the public involvement, we have coordinated with state agencies, landowners and permittees based on the land ownership and management actions within the wild and scenic river corridors. Fifteenmile Creek and South Fork Clackamas wild and scenic river corridors include in-holdings owned by State or private landowners. We reached out to the landowners within these corridors to share this project and determine management actions. No future management actions were identified at this time.

East Fork Hood River wild and scenic river corridor includes State Highway 35 that is maintained by the Oregon Department of Transportation (ODOT). Roads and infrastructure in designated river corridors provide important transportation networks, but they may also threaten the values for which the wild and scenic rivers were designated, particularly their free-flowing condition, water quality and outstandingly remarkable values. It is important that the Forest Service and ODOT work together to protect and enhance the wild and scenic river values, while maintaining a safe transportation system along Highway 35. The two agencies discussed this project and outlined a management process to be followed to achieve these goals. This management process is described later in this environmental assessment.

Fifteenmile Creek wild and scenic river corridor overlaps with the Friend unit of the Badger Creek Allotment. The range permittee received the scoping letter and provided no comments. This project was discussed at the annual operations meeting with the permittee prior to the 2020 grazing seasons. The Badger Creek Allotment annual operating instructions include the following: “Multiple Indicator Monitoring (MIM) will be implemented on Fifteenmile Stream in the Friend unit. This will be a coordinated effort with the permittee, hydrologist, fish biologist, and range specialist to decide where to monument new sampling sites and how often to monitor. Additional management focus will be implemented in the Friend unit to comply with Wild and Scenic River policy.”

Lastly, this project was discussed with Oregon Department of Fish and Wildlife and Oregon Department of Parks and Recreation. No changes were made as a result of these discussions, and coordination will continue throughout the planning and implementation processes.

# Alternatives, including the Proposed Action

## Alternative Development

While a no action alternative is not explicitly described or analyzed in this document, the existing management conditions were described in the River Values Report (available on the project website) and the analysis below compares, as needed, the effects of continuing this existing management to the effect of the decisions that would be made through the comprehensive river management plan. The River Values Report documents the evaluation of resource conditions and river values at the time that Congress designated these rivers as wild and scenic rivers, and updates these conditions and values to present condition. This is used as baseline throughout this environmental assessment and meets the requirements of 36 CFR 220.7(b)(2)(ii).

The BLM National Environmental Policy Act Handbook describes the no action alternative as "a useful baseline for comparison of environmental effects (including cumulative effects) and demonstrates the consequences of not meeting the need for the action" (BLM NEPA Handbook H-1790-1 page 51). The River Values Report provides the baseline management and resource conditions for the nine wild and scenic rivers; therefore, it meets the requirements for having a no action alternative included in the analysis. When necessary, the analysis below contrasts the difference in effect between the existing management conditions and the modifications.

We are required to develop a reasonable range of alternatives. Alternatives to the proposed action should fulfill the purpose and need and address unresolved conflicts related to the proposed action. As previously described, we have conducted two public comment periods on this project as well as ongoing tribal consultation and coordination with other government agencies. No unresolved conflicts were identified through these issues. Also, as demonstrated in the Environmental Impacts of the Proposed Action section of this environmental assessment, there are no unresolved resource concerns associated with this project. For that reason, no alternatives were developed or analyzed for this project. The proposed action is described and fully analyzed in this environmental assessment.

## Proposed Action

The proposed action is to adopt a comprehensive river management plan for the nine rivers designated by the Omnibus Act. Specifically, the accompanying comprehensive river management plan includes the following:

- a description of the existing resource conditions including a detailed description of the outstandingly remarkable values;
- desired conditions for protecting river values;
- a determination of recreational user capacities;
- descriptions of land uses, infrastructure, current management actions and potential management actions within the corridor;
- description of instream flow and water quality requirements;
- identification of regulatory authorities of other governmental agencies that assist in protecting river values; and,
- a monitoring strategy to maintain desired conditions.

Much of the content of the comprehensive river management plan is informational and provides a baseline for future management (such as planning context and existing water rights). The proposed action analyzed in this environmental assessment includes only the parts of the comprehensive river management plan that change existing management practices. This includes establishing user capacity and final boundaries for each river, identifying management actions to protect and enhance river values, amending the Mt. Hood Land and Resource Management Plan, and adopting a monitoring plan for wild and scenic rivers.

## User Capacity

The Wild and Scenic Rivers Act directs that river-administering agencies address visitor-use capacities to protect the free-flowing conditions, water quality, and outstandingly remarkable values of designated rivers (Section 3(d)(1)). The 1982 National Wild and Scenic Rivers System: Final Revised Guidelines for Eligibility, Classification and Management of River Areas (1982) define carrying capacity as:

> The quantity of recreation use which an area can sustain without adverse impact on the outstandingly remarkable values and free-flowing character of the river area, the quality of recreation experience, and public health and safety. To further meet the requirement of the act, the guidelines note that: Management plans will state the kinds and amounts of public use that the river can sustain without impact to the values for which it was designated (1982).

User capacity can be described as a subset of the larger visitor-use management framework. User capacity is an estimate and not always a definitive number. This is particularly true in situations where the amount of use is low and does not threaten desired conditions or river values. In these situations, capacity estimates yield visitor use numbers that are far higher than current amounts of use; thus, decisions about capacity do not result in near-term management actions to regulate use levels.

The amount of investment devoted to determining user capacity needs to be commensurate with the consequence of the potential decisions to be made about managing visitor use. For most of the nine river segments, identified user capacity numbers do not reflect current use; however, monitoring would still occur, and more precise numbers will be developed if trends suggest river values could be threatened. There were three rivers (Collawash River, East Fork Hood River, and Zigzag River) where use levels reported were moderate and consequently the amount of analysis devoted to identifying user capacity on those rivers was greater. Capacity numbers for those segments are still higher than the current use.

Based on field work and data collection in the summer of 2018, existing data (including wilderness carrying capacity), and interdisciplinary knowledge and review, the user capacities in table 7 were developed for these rivers according to the requirements of the Wild and Scenic Rivers Act.

**Table 7. Summary of identified user capacity (people per day) by river**

| River | Segment | Wilderness/Other Use | Overnight Use | Day Use | Total User Capacity |
|---|---|---|---|---|---|
| Collawash River | Segment 1 | n/a | 50 | 120 | 170 |
| Collawash River | Segment 2 | n/a | 305 | 330 | 635 |
| Eagle Creek | n/a | *Wilderness: 120 | n/a | n/a | 120 |
| East Fork Hood River | n/a | Climbing: 20 | Developed: 234<br>Dispersed: 180 | 1,394 | 1,828 |

| River | Segment | Wilderness/Other Use | Overnight Use | Day Use | Total User Capacity |
|---|---|---|---|---|---|
| Fifteenmile Creek | 4 segments, capacity for all segments^ | ^^n/a | 82 | 120 | 202 |
| Fish Creek | n/a | n/a | 48 | 50 | 98 |
| Middle Fork Hood River | n/a | n/a | 3 | 50 | 53 |
| South Fork Clackamas River | n/a | ^^n/a | 6 | 24 | 30 |
| South Fork Roaring River | n/a | *Wilderness: 120 | n/a | n/a | 120 |
| Zigzag River | n/a | Wilderness: 177 | n/a | n/a | 177 |
| **Grand Total** | **--** | **--** | **--** | **--** | **3,463** |

*Includes both People and Recreational Livestock per day

^Due to the particular use types and activities occurring on Fifteenmile Creek, capacity numbers were not identified by segment. Collawash River had a different pattern of use and resource concerns, therefore, Collawash capacity numbers were identified by segment.

^^While both Fifteenmile and South Fork Clackamas contain designated Wilderness, encounter rates were not used to calculate capacity due to how the rivers weave in and out of Wilderness.

To monitor each river value, one or more key indicators are selected that will allow managers to keep attuned to changes in the ecosystem or social setting. For each key indicator, a threshold is set. This value determines the amount of change desired or that will be accepted before river management objectives are no longer being met. In this manner, indicators and thresholds provide managers with information to determine if the resource values, and opportunities they are managing, are being protected. The standards serve as triggers that cause predetermined management actions to be implemented when the limit is being approached. For each indicator and standard, a management action is identified that would be triggered if a particular threshold is reached. These can be found in the User Capacity Report for Mt. Hood National Forest Wild and Scenic River Analysis (2020) which provides more details on how these numbers were determined, along with the user-capacity numbers, indicators, thresholds, and measures. The User Capacity Report for Mt. Hood National Forest Wild and Scenic River Analysis is available on the project website.

## Final Boundaries

The Wild and Scenic Rivers Act requires that each federally administered river in the National System have a legally established boundary. Section 3(b) of the Act provides specific direction to the river-administering agencies.

> The agency charged with the administration of each component of the national wild and scenic rivers system designated by subsection (a) of this section shall . . . establish detailed boundaries . . . which boundaries shall include an average of not more than 320 acres of land per mile . . . measured from the ordinary high water mark on both sides of the river.

The Omnibus Act (Section 1203(a)(1)(176)(B)) specified that: “the lateral boundaries of both the wild river area and the scenic river area along Fifteenmile Creek shall include an average of not more than 640 acres per mile measured from the ordinary high water mark on both sides of the river.” The rivers are managed with an interim corridor boundary of a quarter mile from the ordinary high water mark (and a half mile for Fifteenmile Creek) on either side of the river until there are final decisions for this

comprehensive river management plan, including the final boundaries. The Forest Service and BLM are preparing separate decisions that will apply to the land administered for their respective agency. After the decisions are signed, the Forest Service (as the river-administering agency) will prepare a final boundary package for each wild and scenic river and publish notice of the final boundaries and availability for review in the Federal Register.

Establishing a wild and scenic river boundary that includes identified river-related values is essential as a basis from which to provide necessary protection. Section 10(a) of the Act describes factors which must be considered in wild and scenic river management and, therefore, provides direction on features which must be included within boundaries.

> Each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration, primary emphasis shall be given to protecting its aesthetic, scenic, historic, archeologic, and scientific features.

Proposed boundary maps are available in the map packet on the project website. The proposed changes from the interim boundaries include the following:

- The boundary on the East Fork Hood River was adjusted to include two wetlands and meadows to enhance the wildlife outstandingly remarkable value. The boundary was then narrowed near the Forest boundary to balance the addition because the recreation, wildlife and botany outstandingly remarkable values are not located in this area.
- The boundary on Fish Creek was extended to the watershed boundary to better protect the fisheries outstandingly remarkable value. The boundary was narrowed along the entire length of the designated segment to account for this change because water quality, free flow, and fisheries (the identified outstandingly remarkable value) are adequately protected given the limited access within the corridor.
- The boundary on Fifteenmile Creek was adjusted to follow the Mount Hood National Recreation Area boundary to capture the recreation outstandingly remarkable value; this adjustment also provides benefits for the fisheries and wildlife outstandingly remarkable values. The boundaries were also adjusted to follow Forest Service Road 4420 in the first segment in order to capture the historic outstandingly remarkable value.
- The boundary on Middle Fork Hood River was adjusted to encompass as much of the lava beds as possible within the lateral boundary requirements (average of 320 acres per river mile) to protect the geology outstandingly remarkable value. The boundary was then narrowed to exclude the pipeline at the Coe diversion towards the settling pond within the Middle Fork Irrigation District to balance the addition because this area is not contributing to the identified outstandingly remarkable values of scenery, fish, or geology.
- The boundary on South Fork Clackamas River was adjusted to incorporate the additional features of the South Fork Water Board infrastructure and thus to protect the historic outstandingly remarkable value. The boundary was then adjusted to follow the Forest boundary in one place, and then narrower where it overlaps with the Clackamas River Wild and Scenic River to balance these additions. The Clackamas River Wild and Scenic River affords the same protections.
- The boundary on Zigzag River was extended to the watershed boundary to better protect the macroinvertebrate outstandingly remarkable value. The boundary was narrowed along the entire

length of the designated segment to account for this change because it is within the designated wilderness, which also protects the water quality, free flow, and outstandingly remarkable values.

We propose to adopt the interim boundaries (a quarter mile from the ordinary high-water mark) without changes for Eagle Creek and South Fork Roaring River. These rivers are within designated wilderness and the existing corridors adequately protect the river values, including the identified outstandingly remarkable values.

## Management Actions

### Proposed Management Actions

Section 10(a) of the Wild and Scenic Rivers Act requires river-administering agencies to protect and enhance the river values. Existing management actions and proposed activities were reviewed and analyzed to ensure that they were consistent with the Wild and Scenic Rivers Act and were not negatively impacting river values.

In order to help the Forest and BLM meet the Wild and Scenic Rivers Act requirements, several management actions (table 8) are proposed to address known impacts to river values. In addition, the proposed management actions are described in the comprehensive river management plan. These proposed management actions may be considered when the existing or future use starts to negatively impact the river values. These proposed management actions will require additional development of a proposed action and site-specific environmental review. Although the impacts to the historic tunnels from the Riverside Fire is not fully known, we still anticipate the need for the interpretative signs based on initial field work (see Historic and PreContact Resources Changed Conditions section for more details).

**Table 8. Proposed management actions**

| River | River Value Enhanced or Protected | Proposed Management Action |
|---|---|---|
| Collawash River | Water quality | Install toilet(s) along the river to address fecal contamination at specific sites, where there is evidence of dispersed camping or other concentrated recreation use, in areas without sanitary facilities. |
| South Fork Clackamas River | Historic Outstandingly Remarkable Value | Develop and install interpretative signs to educate recreationists on potential conflict between Townsend's big-eared bat health and use of the historic tunnels. Apply native seed or certified weed-free mulch to any disturbed areas after the installation is complete as early as practicable to increase germination and growth. Select seed species that are fast-growing, provide ample ground cover, and have adequate soil-binding properties. |

### Management of Highway 35

Roads and infrastructure in designated river corridors provide important transportation networks, but they may also threaten the values for which the wild and scenic rivers were designated, particularly their free-flowing condition, water quality, and outstandingly remarkable values. It is important that the Forest Service (federal river-administering agency) and Oregon Department of Transportation (ODOT) work together to protect and enhance the East Fork Hood River's special values, while maintaining a safe transportation system along Highway 35. The following management process focuses on maintenance activities, since those occur routinely and are foreseeable. The following process is agreed upon by both the Forest Service and Oregon Department of Transportation for the management of State Highway 35 within the East Fork Hood River wild and scenic river corridor. The adoption of this process would help to meet the needs of both agencies and protect the river values.

Potential maintenance projects within the river corridor that may impact river values include sediment build-up below structures; riprap maintenance; hazard tree abatement; and, culvert repair, replacement, and general maintenance. All planned maintenance projects along Highway 35 within the East Fork Hood River wild and scenic river corridor, including in-water projects, will be presented, and discussed at the annual meeting between the Mt. Hood National Forest and Oregon Department of Transportation Region 1.

For in-water maintenance projects (projects occurring in bed or banks), the following process would be used during project development. This process is reviewed and updated as necessary by both agencies approximately every five years when the memorandum of understanding is reviewed. The agreed upon process between the two agencies will be followed for the life of this management plan.

- The ODOT Maintenance Supervisor or District Manager would contact the ODOT Regional Environmental Coordinator for any in-water projects. The ODOT Regional Environmental Coordinator works with all regulatory or administering agencies, including the Forest Service, to ensure all requirements are met.
- The ODOT Regional Environmental Coordinator would contact the Forest Service Special Uses Permit Administrator. The permit administrator would coordinate with the Hood River District Ranger and other Forest Service employees as necessary to ensure that the project has considered and complies with all Wild and Scenic Rivers Act requirements.
- The Forest Service Special Uses Permit Administrator would provide feedback to the ODOT Regional Environmental Coordinator in a timely manner. If any modifications to the project are required to comply with the Wild and Scenic Rivers Act, these changes would be provided in writing by the Forest Service Special Uses Permit Administrator. Only after this coordination has occurred between the agencies would the maintenance project be implemented.

If a Section 7 review is required under the Wild and Scenic Rivers Act, the Forest Service Special Uses Permit Administrator or District Ranger would notify both the ODOT District Manager and Regional Environmental Coordinator as soon as possible. The project cannot be implemented until the Section 7 review is completed and approved by the Forest Service Regional Forester.

## Forest Plan Amendment

A programmatic amendment to the Mt. Hood Land and Resource Management Plan (Forest Plan) is necessary to modify plan components including land use allocations (management areas) and standard and guideline B1-076. No amendments are needed to the BLM Northwestern & Coastal Oregon Resource Management Plan to adopt the comprehensive river management plan.

The land use allocations (management areas) would be changed as outlined in Table 9. These changes would follow the final boundaries previously discussed. The goal of all Wild, Scenic & Recreational Rivers land use allocations is to: “Protect and enhance the resource values for which a river was designated into the Wild and Scenic Rivers System” (Forest Plan, page Four-208). All wild segments would be changed to the A1-Reserved land use allocation, which has been used in the past for designated wild and scenic rivers that preclude regulated timber production.

**Table 9. Proposed Forest Plan amendment for land use allocations by river**

| Designated Segment | Classification | Land Use Allocation |
|---|---|---|
| Collawash River, Segment 1 | Scenic | B1 |
| Collawash River, Segment 2 | Recreational | B1 |

| Designated Segment | Classification | Land Use Allocation |
|---|---|---|
| East Fork Hood River | Recreational | B1 |
| Fifteenmile Creek, Segment 1 | Wild | A1 |
| Fifteenmile Creek, Segment 2 | Scenic | A1 |
| Fifteenmile Creek, Segment 3 | Wild | A1 |
| Fifteenmile Creek, Segment 4 | Scenic | A1 |
| Fish Creek | Recreational | B1 |
| Middle Fork Hood River | Scenic | B1 |
| South Fork Clackamas River | Wild | A1 |
| Zigzag River | Wild | A1 |

Table 10 shows the amendment to standard and guideline B1-076 within the Fifteenmile Creek corridor to allow existing snowmobile use to continue. Existing snowmobile routes include Forest Service Roads 4420 and 2730, and cross-country (off road) travel is permitted. This change is being made within the Mount Hood National Recreation Area (outside of designated wilderness) in order to be consistent with the Omnibus Act. All other standards and guidelines for B1 lands would apply to all river corridors, regardless of classification (see Forest Plan, pages Four-211 to Four-217).

**Table 10. Proposed Forest Plan amendment for standard and guideline B1-076**

| Standard and Guideline | Existing Language | Proposed Amendment for Fifteenmile Creek (Additions are **bolded**, deletions are ~~strikethrough~~) |
|---|---|---|
| B1-076 | Within wild river corridors, motorized recreational use shall not be allowed. | Within wild river corridors, **over snow vehicle** motorized recreational use **is the only motorized use permitted and must be outside of wilderness areas. All other motorized recreational use** shall not be allowed. **Over-snow vehicle use is only permitted as designated on the over-snow map.** |

The impacts of the proposed Forest Plan amendment, along with the substantive requirements of the 2012 Planning Rule, are fully analyzed in the resource sections of this environmental assessment.

## Monitoring Plan

The Mt. Hood Forest Plan monitoring program was updated in May 2016 to be consistent with the 2012 Planning Rule (36 CFR 219). The questions in table 11 would be added to the monitoring program to address wild and scenic rivers (B1 land use allocation). Then, the monitoring questions in table 11 would be used to help answer these Forest Plan monitoring questions as indicators. Monitoring on all wild and scenic rivers across the Forest would be used as part of the Forest Plan monitoring program.

**Table 11. Additional questions for Mt. Hood Forest Plan Monitoring Program**

| Forest Plan Component | Monitoring Questions | Indicators |
|---|---|---|
| **(ii) Status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems** | | |
| Standards and Guidelines: B1-001, B1-004 and B1-005 | ii.e. Are the classifications, outstandingly remarkable values, free-flowing conditions, and water quality of designated wild and scenic river corridors being maintained or enhanced? | Comprehensive River Management Plan monitoring results and data. |
| **(v) Status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives** | | |
| Desired condition: River corridors divided into wild, scenic, and recreational segments with each providing different opportunities. | v.e. Is the existing use within the user capacities identified for designated wild and scenic rivers? | Monitoring data and trends based on the user capacity indicators, triggers and thresholds. |

The Northwestern and Coastal Oregon BLM Resource Management Plan (August 2016) includes the following monitoring question:

> M36. Monitoring Question: Are the outstandingly remarkable values of designated Wild and Scenic river corridors (including those classified as Wild, Scenic, or Recreational) being maintained? (page 128)

No additional monitoring questions would be added to the Resource Management Plan. The monitoring questions related to BLM lands within the South Fork Clackamas River wild and scenic river would be used to answer this overarching monitoring question.

# Evaluation of the Forest Plan Amendment

As discussed previously in this environmental assessment, the Forest Service has identified a need to amend the Mt. Hood Land and Resource Management Plan to change the land use allocations based on the final wild and scenic river boundaries and classifications, and to adjust one standard for the Fifteenmile Creek wild and scenic river corridor.

The need for this programmatic Forest Plan Amendment closely ties to the purpose and need for the project, which includes developing a comprehensive river management plan to protect and enhance the outstandingly remarkable values, water quality, and free-flowing characteristics of the designated Wild and Scenic Rivers for the benefit and enjoyment of present and future generations.

## Planning Rule Requirements

The Forest Plan would be amended under the 2012 Planning Rule (36 CFR 219). The 2012 Planning Rule has different provisions than the 1982 Planning Rule under which the existing Forest Plan was developed. The purpose of this amendment is to make the Forest Plan consistent with the Omnibus Act, specifically the wild and scenic river designations on the Forest. All future projects and activities must be consistent with the amended Forest Plan.

The 2012 Planning Rule requires the Forest Service to identify which substantive rule provisions within 36 CFR 219.8 through 219.11 that are directly related to the amendment must be applied to the amendment. The applicable substantive provisions apply only within the scope and scale of the

amendment (36 CFR 219.13(b)(5)). The substantive requirements that are directly related to this amendment include the following:

> 36 CFR 219.8(a)(2)(iii) and (a)(2)(iv) –The plan must include plan components, including standards or guidelines, to maintain or restore water quality and quantity.
>
> 36 CFR 219.8(a)(3)(ii)(B) – The plan must include plan components, including standards and guidelines, to maintain or restore the ecological integrity of riparian areas, including plan components to maintain or restore function and connectivity.
>
> 36 CFR 219.10(a)(1) – The plan must include plan components, including standards and guidelines, for integrated resource management to provide for ecosystem services and multiple uses, including outdoor recreation, as well as consider the following: aesthetic values, air quality, cultural and heritage resources, ecosystem services, fish and wildlife species, forage, geologic features, grazing and rangelands, habitat and habitat connectivity, recreation settings and opportunities, riparian areas, scenery, soil, surface and subsurface water quality, timber, trails, vegetation, viewsheds, wilderness, and other relevant resources and uses.

The amendment is modest in scope, because it finalizes what Congress has already legislated and what has been managed as eligible since 1990 through the Forest Plan. Currently, the designated wild and scenic river segments are managed under a variety of land use allocations. These allocations were changed through an administrative change in 2016, but the boundaries do not exactly align with the proposed final boundaries on the Clackamas River, East Fork Hood River, Fifteenmile Creek, Middle Fork Hood River, or South Fork Clackamas River. Similarly, the standard B1-076 does not align with the direction provided by Congress for the management of the Mount Hood National Recreation Area.

## Substantive Requirements

***36 CFR 219.8(a)(2)(iii) and (a)(2)(iv) – to maintain or restore water quality and water resources.***

Water quality and resources were considered in the development of the proposed boundary changes and associated changes to the land use allocations. Designated rivers must be managed to protect water quality. After implementation of the plan amendments proposed under the proposed action, the Forest Plan would continue to provide the necessary components, mainly in the standards and guidelines, for protection of soil, water, riparian, wild and scenic rivers and overall watershed function to meet the substantive requirement listed above. The Hydrology section of this environmental assessment provides more details and analysis on the proposed Forest Plan amendment and this substantive requirement.

***36 CFR 219.8(a)(3)(ii)(B) – to maintain or restore the ecological integrity of riparian areas.***

The ecological integrity of the riparian areas, including as related to the fisheries and botanical outstandingly remarkable values, were considered in the development of the proposed boundary changes and associated changes to the land use allocations. Riparian Reserves would not change and would continue to overlap with land use allocations. Standards and guidelines to protect water resources would not change and would help to manage and protect the free-flowing character, water quality, and outstandingly remarkable values. Aquatic restoration projects could be proposed to enhance fishery resources as guided by management direction and the adopted comprehensive river management projects. The Hydrology section of this environmental assessment provides more details and analysis on the proposed Forest Plan amendment and this substantive requirement.

***36 CFR 219.10(a)(1) – Aesthetic values, air quality, cultural and heritage resources, ecosystem services, fish and wildlife species, forage, geologic features, grazing and rangelands, habitat and***

***habitat connectivity, recreation settings and opportunities, riparian areas, scenery, soil, surface and subsurface water quality, timber, trails, vegetation, viewsheds, wilderness, and other relevant resources and uses.***

The goal of the comprehensive river management plan is to protect and enhance the river values for which the Collawash River, Eagle Creek, East Fork Hood River, Fifteenmile Creek, Fish Creek, Middle Fork Hood River, South Fork Clackamas River, South Fork Roaring River, and Zigzag River were included in the National Wild and Scenic Rivers System.

The implementation of the proposed Forest Plan amendments would continue to provide the necessary components, mainly in the standards and guidelines, for protection of the outstandingly remarkable values, including fisheries species, wildlife species, macroinvertebrates, botanical species, cultural resource, recreation opportunities, and scenery to meet this substantive requirement. The Environmental Impacts of the Proposed Action section of this environmental assessment provide more details and analysis on the proposed Forest Plan amendment and this substantive requirement.

The proposed action provides for aesthetic values within the river corridors. This is accomplished in the comprehensive river management plan through: visual resource management direction for each river segment identified through visual quality objectives based on viewer position; landscape character descriptions that address specific scenic features and qualities for each of the river segments; protection and enhancement of the scenery outstandingly remarkable values identified for Middle Fork Hood River, South Fork Clackamas River, and Zigzag River; and description of the existing conditions and trends for the scenic resource for each river segment. The Scenic Resources section of this environmental assessment provides more details and analysis on the proposed Forest Plan amendment and this substantive requirement.

***36 CFR 219.10(b)(v) – Protection of designated wild and scenic rivers as well as management of rivers found eligible or determined suitable for the National Wild and Scenic River system to protect the values that provide the basis for their suitability for inclusion in the system.***

Modifying land use allocations and finalizing the wild and scenic river corridor boundaries protects and enhances the river values for which these nine rivers were designated. In addition to free flow and water quality, outstandingly remarkable values were determined by an interdisciplinary team using the process discussed in the River Values Report, completed in August 2019.

# Environmental Impacts of the Proposed Action

This analysis of environmental impacts does not include a full discussion of affected environment. For a complete description of the affected environment by resource, as well as an overview of free flow condition, water quality and outstandingly remarkable values for each of the nine wild and scenic river segments associated with this analysis, please refer to the River Values Report or to the specific resource section below. The baseline conditions described in the River Values Report were changed for the Collawash River, Fish Creek and South Fork Clackamas River by Riverside and Lionshead Fires in Fall 2020. The changed conditions resulting from these fires are described in the following sections. The elements of the affected environment that are unchanged are not repeated in this environmental assessment.

# Methodology

Information on resource specific methodology, regulatory framework, and references cited can be found in the project record. This section summarizes the environmental impacts of the proposed action. Specifically, the analysis discloses effects related to the following components of the comprehensive river management plan:

- adoption of the comprehensive river management plan
- user capacity
- proposed wild and scenic river boundaries
- proposed management actions
- forest plan amendment
- monitoring plan

The projects considered in the cumulative effects analysis were updated to include post fire care and recovery projects, especially damage tree abatement, reforestation, and burned area emergency response projects. The burned area emergency response projects include invasive plant treatments, storm patrol, road drainage work, road closures, and hazard signs. A full list of the projects considered is available in the project record. The following analysis also discloses consistency with relevant law, regulation, and policy, including the Forest Plan for each resource area.

# Hydrology

## River Values (Free Flow and Water Quality)

Under the proposed action, all river management would continue to be guided by the existing Forest Plan and BLM Resource Management Plan. This includes the standards and guidelines for Designated Wild, Scenic, and Recreational Rivers as well as appropriate watershed and soil resource direction in the Forest Plan and the Management Direction for Congressional Reserved Lands and appropriate watershed and soil resource direction in the BLM Resource Management Plan. Any future proposed water resource projects would be reviewed under Section 7 of the Wild and Scenic Rivers Act.

This would ensure protection of both the water quality and free flow characteristics of the corridors.

### Water Quality

Collawash River, Eagle Creek, East Fork Hood River, Fifteenmile Creek, Fish Creek, and Middle Fork Hood River all have listed 303(d) segments (impaired waters), for biological criteria (Eagle Creek and Middle and East Fork Hood Rivers), heavy metals (Middle and East Fork Hood Rivers), sedimentation (Fifteenmile Creek), or have a completed total maximum daily load (TMDL) for temperature (Middle and East Fork Hood Rivers, Collawash River, Fifteenmile Creek, and Fish Creek). See the River Values Report, located on the project website (USDA 2019a), for further information.

The majority of water quality impacts to the corridors were caused by past logging and road building. Streamside forests were removed for timber or to build roads. Stream channels were moved and confined to accommodate road infrastructure in the narrow river valleys. These water quality impacts persist today in the form of degraded aquatic habitat and increased stream temperature from the lack of channel complexity caused by historical logging of stream side forests and sedimentation from road locations.

## Free Flow and Existing Infrastructure

Maps showing the locations of existing rip rap, concrete walls, major culverts (not road cross drain culverts), and bridges, are shown in figure 5 through figure 8, as well as, the comprehensive river management plan (available on the project website). Fish Creek, Collawash River, Fifteenmile Creek and East Fork Hood River are the segments where existing road infrastructure are currently impacting stream channels and free flow. The infrastructure may impede the ability of the rivers to flow freely across their valleys, which impacts channel morphology and general stream processes, including flooding, riparian and large wood recruitment, and water quality (mainly stream temperature from the removal of stream side forests, which provide shade).

Fish Creek, Collawash River, Fifteenmile and East Fork Hood River were all designated Wild and Scenic Rivers after road and bridge infrastructure had been constructed. Figure 5 shows the location of road infrastructure along Fish Creek, which parallels Forest Road 54. Figure 6 shows the location of road infrastructure along the Collawash River, which parallels Forest Road 63. Figure 7 shows the location of road infrastructure along Fifteenmile Creek, where Forest Road 2730 crosses just below the Badger Creek Wilderness, and Forest Service Road 4421, where the wild and scenic river corridor ends just above BLM lands. Figure 8 shows the location of road infrastructure along the East Fork Hood River, which parallels Oregon State Highway 35.

For Fish Creek, Collawash River, and Fifteenmile Creek, Forest Service best management practice (BMP) Road-4 (Road Operations and Maintenance (USDA 2012) will continue to be utilized to manage existing roads and bridges. Should further in-channel rip rap or bridge/culvert construction/reconstruction be needed, a Section 7 evaluation would be completed to ensure that effects to free flow characteristics are minimized to the greatest extent possible. This management approach would continue to protect the free flow and water quality in these segments.

As mentioned, the East Fork Hood River recreational section parallels Oregon State Highway 35. The Oregon Department of Transportation (ODOT) is the responsible Agency for the management of the road infrastructure through the segment.

The Forest Service has worked with ODOT to develop a management process for Highway 35, which includes regular and emergency maintenance using both Forest Service (USDA 2012) and ODOT best management practices (ODOT 2020) and any new or improvement projects (which would require a Section 7 analysis). The full description of the agreed management approach developed between the Forest Service and ODOT can be found in the proposed action section.

We acknowledge there are currently impacts from road infrastructure and maintenance of Highway 35. However, with established best management practices and management processes, the free flow and water quality of the East Fork Hood River would not be further degraded in the future.

Overall, many of the existing impacts or trends would continue under the proposed action, but the comprehensive river management plan would add additional protection for hydrology resources, such as user capacity thresholds for recreation, and continuous monitoring and adaptive management that would further protect free flow and water quality characteristics.

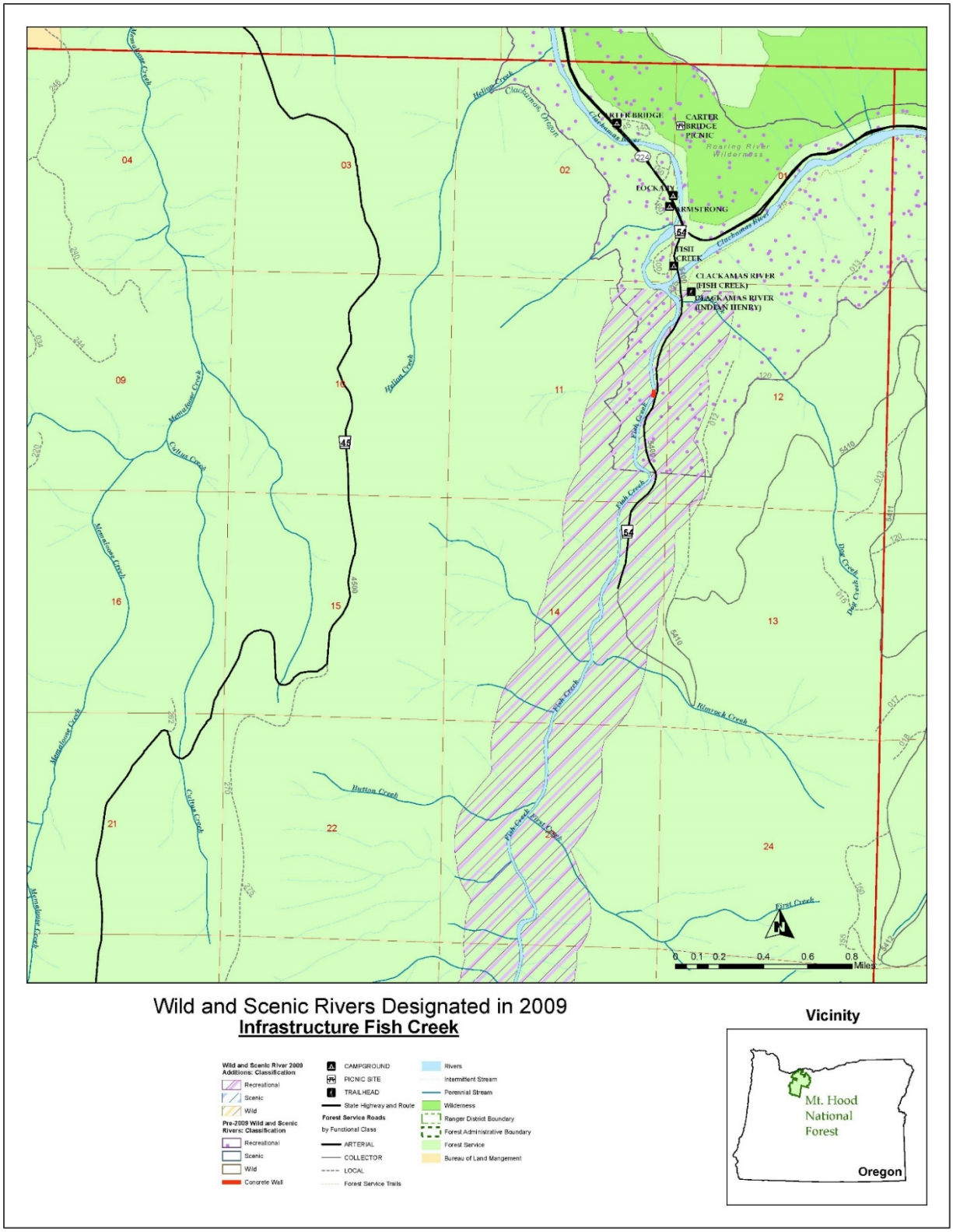


**Figure 5. Location of existing infrastructure in the Fish Creek WSR corridor**

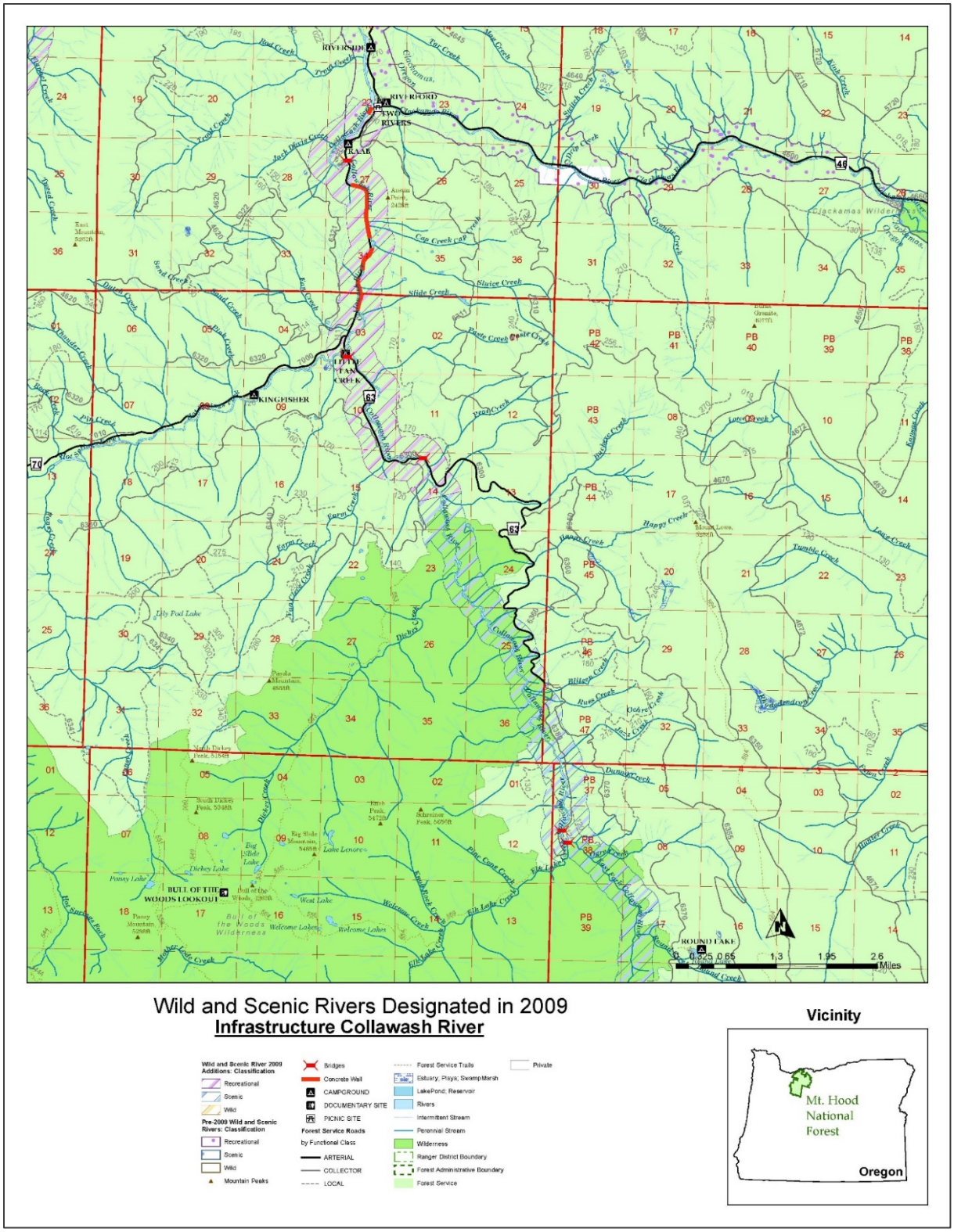


**Figure 6. Location of existing infrastructure in the Collawash River WSR corridor**

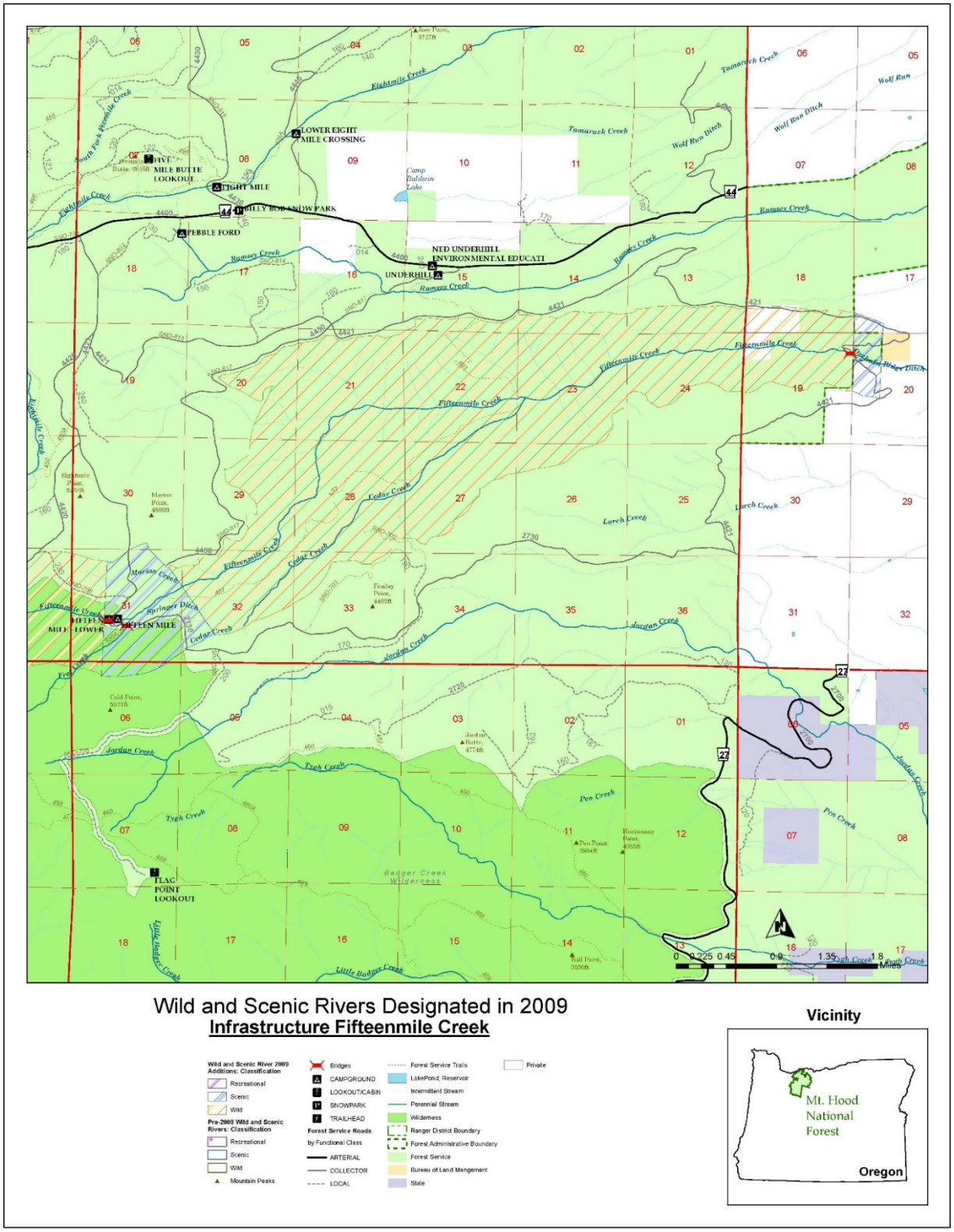


**Figure 7. Location of existing infrastructure in the Fifteenmile Creek WSR corridor**

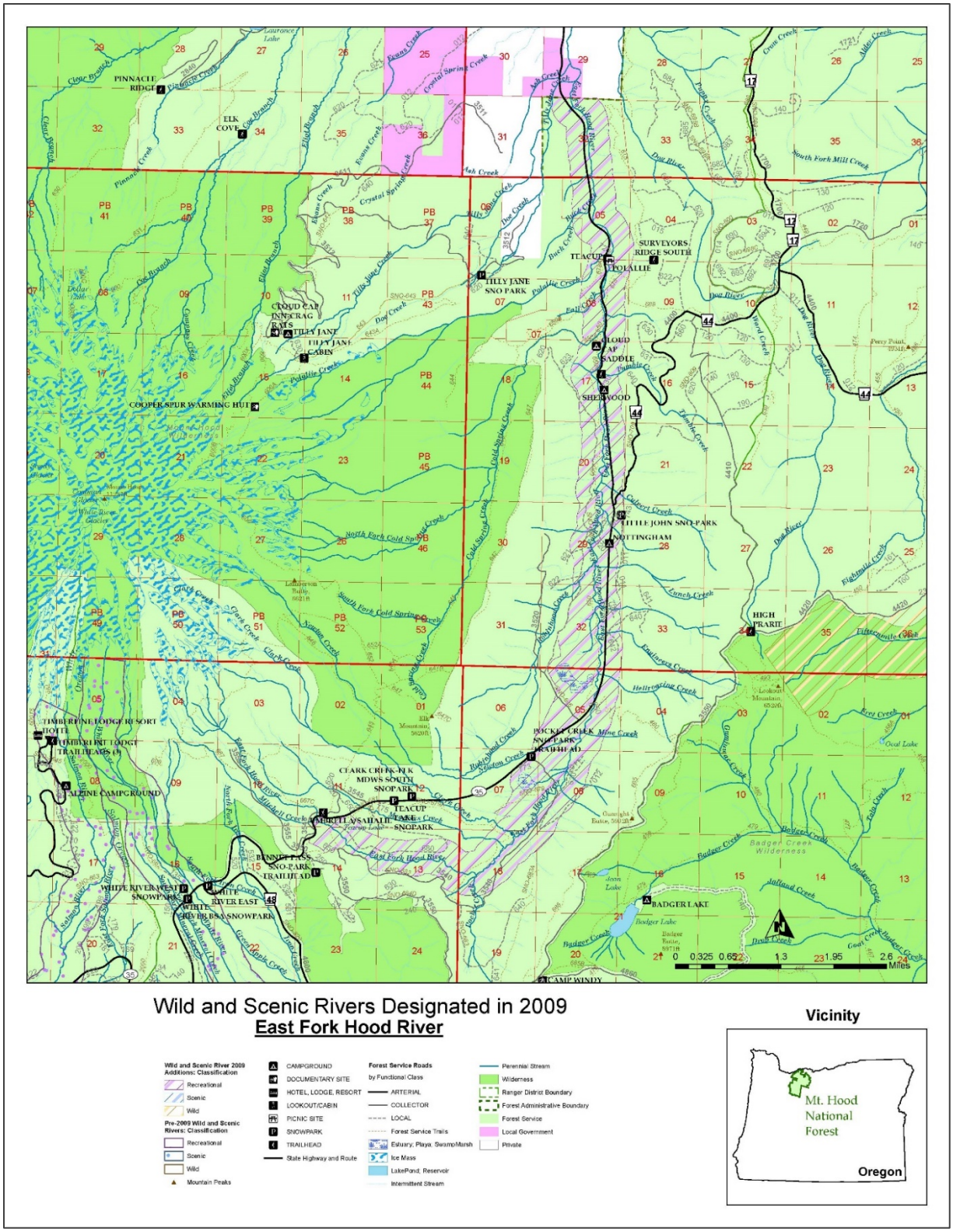


**Figure 8. Location of existing infrastructure in the East Fork Hood River WSR corridor**

## Changed Conditions

Overall, we expect hydrologic response of the watersheds that drain these corridors to include reduced interception and infiltration of precipitation, increased runoff and erosion, higher stream flow volumes for a given precipitation or snowmelt input, and a more rapid rise of stream and river levels compared with those of previous unburned conditions. Additionally, the probability of severe erosion, debris flows, and hillslope failure is substantially higher, and will remain so for at least the next few years. (Callery and Krezlok, 2020).

We expect water quality, particularly in Fish Creek and the South Fork Clackamas River, will be impaired during runoff events. After the initial flushes of ash and fine sediment that occurred over this past winter (2020) and continue to occur into the spring 2020, we expect suspended sediment loading and turbidity levels in Fish Creek and the South Fork Clackamas River within and below the burned area will likely be elevated in response to rainfall and snowmelt in subsequent years, until groundcover becomes re-established in corridor watersheds.

Even after groundcover stabilizes hillslopes in the burned areas, eroded fine sediment that is deposited in draws, stream and river channels, and floodplains in the next few years, will continue to move through the corridors for many years to come. Large woody debris will likely accompany the initial flush of fine sediments and ash, with continued downstream delivery of large debris during high-intensity rain events.

Additionally, levels of some nutrients will likely be elevated in concert with higher turbidity and suspended load. Lastly, stream temperature in the corridors is likely to increase relative to pre-fire conditions where shade has been lost. Riparian vegetation will recover in a relatively short period of time, but shading from larger trees will take decades to recover. More information on stream temperature and riparian vegetation is available in the Changed Condition section of this environmental assessment.

## Environmental Consequences

### Direct and Indirect Effects

#### *Comprehensive River Management Plan*

Under the proposed action, a comprehensive river management plan would be adopted and establish programmatic management direction specific to the nine river corridors that would protect their free-flowing condition and water quality. The comprehensive river management plan would put more focus on these nine established wild and scenic river segments through monitoring and adaptive management.

Implementation of the comprehensive river management plan, in coordination with implementation of Section 7 of the Act (which ensures that no future management would impact the free flow conditions of the rivers) as well as implementation of the standards and guidelines for Designated Wild, Scenic, and Recreational Rivers, pages Four-211 through Four-217 of the Forest Plan, as amended by the Northwest Forest Plan (1994), and Resource Management Plan direction for Wild and Scenic Rivers (page 58), riparian reserves (pages 68-74), hydrology (page 79), and soil resources (page 89) in the Northwestern and Coastal Oregon Resource Management Plan (BLM 2016) would further strengthen the management of the river segments and continue to protect the free flow and water quality over time.

#### *User Capacity*

The user capacity analysis (USDA 2019b) determined appropriate levels of visitor use and activities that would not impact the free flow and water quality while maintaining existing recreation opportunities. We estimated that current recreation use in all nine river corridors are substantially lower than their capacities

established by the analysis. Therefore, the proposed action would be unlikely to change recreation use in any of the river corridors.

There is the potential over time, should these rivers receive increased recreation pressure, that recreation could impact water quality through increased use in riparian areas and the channels themselves. This could impact water quality parameters such as sedimentation, temperature, and fecal coliform.

The user capacity establishes a framework for monitoring and triggering potential management actions in the river corridors if use approaches these thresholds (see the comprehensive river management plan). Implementation of this management approach, as well as the Forest Plan, Resource Management Plan, Section 7 of the Wild and Scenic Rivers Act, and the Clean Water Act would protect water quality and free flow into the future, if this were to occur.

### *Final Boundaries*

The modified boundaries for each of the rivers outlined in the proposed action would not impact the free flow or water quality of these systems.

We recognize that changing boundaries, specifically narrowing boundaries to balance additions, would allow management that could potentially impact water quality and free flow. However, proposed management actions in these areas would be required to go through site specific environmental analysis and follow the management direction set forth in the Mt. Hood Forest Plan the BLM Resource Management Plan, Section 7 of the Wild and Scenic Rivers Act, and the Clean Water Act.

As required by the Wild and Scenic Rivers Act, management actions proposed outside of the final wild and scenic river corridors, but within a geographical area that could still affect the water quality and free flow of a corridor are to be implemented in a way that protects the free flow and water quality in the corridor(s); this would apply to the areas that were removed from the final wild and scenic river corridor. Boundaries were changed along the Collawash River, East Fork Hood River, Fish Creek, Fifteenmile Creek, Middle Fork Hood River, South Fork Clackamas River, and Zigzag River.

### *Forest Plan Amendment*

As noted in the proposed action, several amendments are needed to the current Forest Plan in order to be in compliance with the Wild and Scenic Rivers Act and Omnibus Act.

River segments would either be changed to land management area A-1 (reserved land use allocation) or to B-1 (Wild, Scenic and Recreational River Segments). This specific Forest Plan amendment is programmatic and would, therefore, have no impact to free flow condition or water quality.

These lands are currently managed under Standards and Guidelines for Designated Wild, Scenic, and Recreational Rivers, pages Four-211 through Four-217 and would continue after the plan amendment is finalized. Therefore, no impacts to free flow and waters quality are anticipated.

The standard and guideline from the Forest Plan, B1-076, would be amended to allow over snow travel in the Fifteenmile Creek corridor (outside of designated wilderness) in order to be consistent with the Omnibus Act. This activity is already permitted in this area. Therefore, no impacts to free flow or water quality is anticipated by this change.

### *Proposed Management Actions*

#### Toilet Installation along the Collawash River

There are several site-specific projects proposed. The first includes the installation of toilet(s) along the Collawash River to addresses fecal contamination where there is evidence of dispersed camping or other concentrated recreation use, in areas without sanitary facilities (see the proposed action section of this assessment).

While water quality in the Collawash River is not impaired for fecal coliform by the State of Oregon, there is observational evidence that dispersed recreation could be having localized water quality issues. This action would ensure protection of water quality from recreation pressure in the corridor.

We anticipate localized short-term minimal impacts to soils, riparian and water quality from toilet(s) construction. There would be permanent soil disturbance in stream side corridors, estimated to be a disturbance footprint of up to a quarter acre per toilet. This could have a minor impact on riparian vegetation, stream temperature and soils. The disturbance could create sediment; however, implementation of Best Management Practice Fac-4. Sanitation Systems (USDA FS 2012) is anticipated to protect water quality to acceptable levels. This best management practice would:

- Use suitable setback distances from water bodies or other sensitive areas when siting toilets;
- Use proper field investigations and soil tests to determine suitable soils for the toilet(s); and,
- Seed disturbed areas after construction.

With the anticipated small disturbance footprint, as well as the use of Fac-4 Sanitation Systems to site the individual toilets, the soils and riparian disturbance to steam shade, water temperature and sedimentation would be minimal.

We anticipate construction of toilets would have a net positive on chemical water quality, as we believe toilet construction greatly reduce human waste issues (fecal coliform) in the corridor.

#### Interpretive Signs for Historic Features on the South Fork Clackamas River

The second site specific project involves installation of interpretive signs in the South Fork Clackamas River corridor. First, sign(s) installation would impact a very small geographical area. Secondly, the signs would be sited to avoid sensitive aquatic resources such as wetlands, riparian vegetation, and unstable slopes. Finally, all construction disturbance would be seeded to promote ground cover. As such, we anticipate no effects to the free flow or water quality in the South Fork Clackamas wild and scenic river corridor.

### *Monitoring Plan*

#### Mt. Hood National Forest

The Mt. Hood monitoring plan was updated in 2016 to be consistent with the 2012 planning rule (see table 11). Under the proposed action, implementation of a comprehensive river management plan monitoring plan would put additional monitoring focus on the nine river corridors. Additional monitoring, focused on water quality, fish, macroinvertebrates, and recreation (see proposed action) would guide adaptive management, if necessary. This monitoring, along with adherence to the Forest Plan Standards and Guidelines for Designated Wild and Scenic Rivers, Section 7 process the Act, and the Clean Water Act would provide adequate protection to the free flow and water quality.

**Northwestern and Coastal Oregon BLM**

No additional monitoring questions would be added to the Resource Management Plan. All monitoring would continue under the management plan.

### Cumulative Effects

The proposed action would not add measurable site specific disturbance (direct or indirect effects) in any of the corridors, therefore we do not anticipate cumulative effects to water quality or free flow from these actions.

There may be some minor ground disturbance in the Collawash River corridor due to adding vault toilets and in the South Fork Clackamas River in the form of installation of interpretive signs.

We anticipate minor ground disturbance that, when added to other activities in the corridors, would not either measurably benefit or degrade water quality related to sediment and temperature or free flow.

However, adding toilets to the Collawash River corridor could potentially improve cumulative effects to water quality because the toilets would reduce the amount of fecal coliform in the river from recreation activity.

## Consistency with Relevant Laws, Regulations, and Policy

### Land and Resource Management Plans

#### *Mt. Hood National Forest*

The Forest Plan (USDA 1990) provides management direction, in the form of standards and guidelines, for soil productivity (page Four-49 through 50), water (Four-53 through 58), riparian areas (Four-59 through 63) and designated wild and scenic rivers (Four-211 through 217). Standards and guidelines were developed to protect watershed and hydrology resources, including free flow and water quality.

The Forest Plan was amended by the "Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl" (Northwest Forest Plan) in 1994. The Northwest Forest Plan allocations within the majority of the designated wild and scenic river corridors are managed under the Riparian Reserve standards and guidelines, which offer further protections to water quality and free flow over what is provided in the Mt. Hood National Forest Land and Resource Management Plan. The standards and guidelines include the Aquatic Conservation Strategy, which was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems. The strategy also protects salmon and steelhead habitat on federal lands within the range of Pacific Ocean anadromy.

In developing the proposed action, all standards and guidelines related to soils, water, riparian, and wild and scenic rivers were considered in both the Forest Plan (USDA 1990) as well as the Northwest Forest Plan. Over time, all Forest Plan standards and guidelines related to water quality and free flow will be followed in the management of these wild and scenic river corridors. These standards and guidelines were developed to protect Wild and Scenic River outstandingly remarkable values, water quality, and free flow.

Because the proposed action would have no measurable adverse effects to riparian reserves, the project would meet all of the objectives for the Aquatic Conservation Strategy including:

1. Maintaining and restoring the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.
2. Maintaining and restoring spatial and temporal connectivity within and between watersheds.
3. Maintaining and restoring the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.
4. Maintaining and restoring water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.
5. Maintaining and restoring the sediment regime under which aquatic ecosystems evolved.
6. Maintaining and restoring in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats, and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.
7. Maintaining and restoring the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.
8. Maintaining and restoring the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.
9. Maintaining and restoring habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

### *Northwestern and Coastal Oregon BLM*

The Northwest and Coastal Oregon Resource Management Plan (BLM 2016) provides management direction in the form of management objectives and direction for wild and scenic river management (pages 55-56), riparian reserves (pages 68-74), hydrology (page 79), and soil resources (page 89). This direction was developed to protect watershed and hydrology resources, including free flow and water quality.

## Other Relevant Law, Regulation, or Policy

### *Wild and Scenic Rivers Act*

Section 10(b) of the Wild and Scenic Rivers Act requires that the administering agency protect and enhance the values for which the river was designated (water quality, free flow, and outstandingly remarkable values). All proposed actions outlined in the direct and indirect effects section of this report describe how each action would protect and enhance the free flow and water quality of the associated rivers.

Section 7 directs federal agencies to protect the free-flowing condition and other values of designated rivers. Implementation of Section 7 requires development of rigorous and consistent interagency evaluation procedures to protect river resources. Therefore, any proposed or future project that has the potential to affect the free flow of any of the project river corridors would need to have an evaluation which ensures that free flow is protected to the maximum extent possible.

### *Clean Water Act*

The Clean Water Act provides the structure for regulating pollutant discharges to waters of the United States. The Act's objective is "…to restore and maintain the chemical, physical, and biological integrity of the Nation's waters," and is aimed at controlling point and non-point sources of pollution. The U.S. Environmental Protection Agency (EPA) administers the Act, but many permitting, administrative, and enforcement functions are delegated to State governments. In Oregon, the designated agency for enforcement of the Clean Water Act is the Oregon Department of Environmental Quality. See the River Values Report for further information regarding water quality in project area.

Management of wild and scenic rivers requires our actions to protect water quality. Water quality would be restored or maintained should the Forest Plan standards and guidelines, as well as best management practices, be implemented over time.

# Fish and Wildlife

## Outstandingly Remarkable Value

Of the nine wild and scenic rivers being analyzed, five rivers have fisheries (or macroinvertebrate) as an outstandingly remarkable value, while two rivers have wildlife as an outstandingly remarkable value. River segments with fisheries outstandingly remarkable value include the Collawash River (both segments 1 and 2), Fifteenmile Creek (segments 3 and 4), Fish Creek, and Middle Fork Hood River. The one river segment with macroinvertebrate population as an outstandingly remarkable value is the Zigzag River. River segments with wildlife outstandingly remarkable value include the East Fork Hood River, and Fifteenmile Creek (all 4 segments). The river values for these segments are briefly summarized below, refer to the River Values Report for more detail.

### Collawash River

Fisheries is an outstandingly remarkable value for segments 1 and 2 of the Collawash River. In both Collawash segments, the significance of the vestige wild fish populations, wild fish species diversity, success of the bull trout re-introduction to their historic habitat, and the management of this segment as a wild fish sanctuary is extremely unique regionally.

### East Fork Hood River

Wildlife is an outstandingly remarkable value for the East Fork Hood River. The wild and scenic river corridor provides a critical travel (migration) corridor for deer and elk between winter and calving seasons. The corridor also provides habitat for the harlequin duck; this population is one of the largest on the Forest and is situated on the easternmost edge of this species' range in the Pacific Northwest region. The river corridor provides for a contiguous migration corridor for harlequins to travel from their ocean wintering areas to summer nesting habitat. The river corridor provides for a diversity of habitat including large (high and mid-elevation) wetland/meadow complexes, wide floodplain with numerous side channels, and 2 tributary channel valleys that are continually maintained in early seral due to regular glacial outwash events.

### Fifteenmile Creek

Fisheries is an outstandingly remarkable value for segments 3 and 4. These lower segments sustain multiple fish species listed as federal or state-listed threatened or sensitive species, including steelhead, redband trout and, highly likely, Pacific lamprey. As of fall 2017, all known year-round human created barriers to fish passage have been removed up to the middle of segment 4 in Fifteenmile Creek.

Fifteenmile Creek steelhead are especially unique because they are one of the few remaining wild runs with little hatchery introgression. There has never been a hatchery stocking program for steelhead in the Fifteenmile Creek basin. The summer steelhead population in Fifteenmile Creek is recognized as both a "core" and "genetic legacy" population for the Middle Columbia evolutionary significant unit (ESU) and are thus a regionally significant stock.

Wildlife is an outstandingly remarkable value for all four segments of Fifteenmile Creek. The diversity of habitat types and highly diverse range of species found in this corridor is unique. There are few areas on the forest or region that transition from subalpine-fir to pine/oak in only 11 miles. The Fifteenmile corridor also provides a high-quality critical habitat linkage for deer and elk wintering range to summer (calving/fawning) range. Beaver colonies are present in the watershed, which create even more habitat diversity within the river corridor.

### Fish Creek

Fisheries is the outstandingly remarkable value for Fish Creek due to the combination of wild fish species presence and diversity (late-run coho, winter steelhead, spring Chinook), management of this segment as a part of a larger wild fish sanctuary, and the potential for future use by several other declining wild stocks (bull trout, Pacific lamprey). Fisheries habitat within the wild and scenic corridor is moving towards exceptional habitat based on the large-scale road decommissioning that occurred following the 1996 flood events, effectively eliminating access to about 90 percent of the watershed. Few other watersheds in the region have gone from such high levels of road access to almost none within a few decades.

### Middle Fork Hood River

The fish population in the wild and scenic river segment of the Middle Fork Hood River are an outstandingly remarkable value because of the regional significance of the existing small population of federally-listed Columbia River bull trout. This is the only natural population of bull trout left on the Mt. Hood National Forest, as well as northwestern Oregon. The heart of spawning and rearing habitat for this bull trout population is Laurence Lake and its two tributaries, which are just above the wild and scenic designation for the Middle Fork Hood River. The wild and scenic river serves as a critical link for this population to the Columbia River, which provides additional adult rearing and foraging habitat, as well as connections to populations in nearby basins.

### Zigzag River

Macroinvertebrate is an outstandingly remarkable value. There are only nine populations of the Scott's apatanian caddisfly (*Allomyia scotti*) known in the world, all of which are found on the Mt. Hood National Forest (USDA and USDI 2016). The habitat for this species is present within the Zigzag River.

## Changed Conditions

The Lionshead and Riverside Fire perimeters encompassed two river corridors with fish outstandingly remarkable values: Collawash River and Fish Creek. No river corridors with wildlife outstandingly remarkable values were impacted in 2020.

The Collawash corridor incurred overall minor soil burn severity (4.6 percent moderate and high soil burn severity), as well as basal area mortality (6.3 percent with greater than 25 percent basal area mortality), as displayed in table 3 and table 4. The riparian and aquatic habitat in this corridor is largely intact and is likely to quickly recover vegetatively post-2020 wildfires.

In contrast, the Fish Creek corridor had much higher soil burn severity (72 percent moderate and high soil burn severity), as well as basal area mortality (76 percent with greater than 25 percent basal area mortality), as displayed in table 5 and table 6. Increased stream temperatures can occur following wildfires when riparian overstory vegetation is reduced in moderate and high intensity burns. This can result in increased solar radiation and changes in streamside microclimates until enough riparian vegetation can again shade stream channels. Changes in water temperatures can be especially problematic during the summer, when solar radiation levels are highest and stream flows are at their lowest. Stream temperature in this corridor may increase, relative to pre-fire conditions, where tree shading has been lost, especially due to the north-south orientation of the river channel that allows direct solar interception on the stream channel during the hottest mid-day summer periods. Riparian shrub and hardwood vegetation (i.e. red alder, vine maple, big-leaf maple, black cottonwood, and Oregon ash) will recover in a relatively short period of time, but shading from taller coniferous trees will take decades to recover.

A field visit on October 3, 2020, by the fish biologist on the burned area emergency recovery (BAER) team, noted dense falls of winged seeds (most likely Oregon ash, or other hardwood riparian species) in several locations adjacent to the Clackamas River (Riverside Fire BAER Fish Resource Report, 2020). There were also field observations of native vegetation sprouting on moderate to high soil burn severity suggesting these soils and native vegetation are very resilient due to abundant rainfall and moderate temperatures. This, and the presence of unburned root structures commonly observed throughout the Riverside Fire, suggests the native seed bank found within the soil profile may not be totally lost, and has a good chance of natural robust revegetation recovery.

The potential landslides in moderate and high burn areas in Fish Creek may also potentially include transport of large whole trees (with root wads), as well as sediment into these reaches. Although this may result in short-term local impacts, this recruitment of natural channel habitat forming features will likely provide long-term ecosystem benefits that include the grading and replenishment of anadromous salmonid and bull trout fish spawning gravel, as well as creation and maintenance of fine sediment beds that provide vital Pacific lamprey juvenile (ammocoetes) rearing areas.

In the short-term (0 to 5 years), post-fire effects are likely to increase sediment, water temperatures, and woody debris to Fish Creek. Fish populations still can utilize portions outside of this watershed that did not burn, or burned at lower intensities, that will provide a refuge until vegetation recovers in moderate to high burn severity areas. These refuge areas include the Collawash and Oak Springs Fork of the Clackamas River. Although there will likely be short-term impacts, anadromous fish populations in the Clackamas River are expected to endure, and in time should recover to pre-fire conditions in the long-term (5 to 50 years).

# Environmental Consequences

## Direct and Indirect Effects

### *Comprehensive River Management Plan*

Of the nine wild and scenic rivers analyzed, four rivers have fisheries, one has macroinvertebrates, and two rivers have wildlife as an outstandingly remarkable value. The additional protection of free-flowing condition and water quality would protect and enhance fisheries habitat requirements for four rivers (Collawash River, Fifteenmile Creek, Fish Creek, and Middle Fork Hood River), as well as wildlife (Harlequin duck) in the East Fork Hood River, and macroinvertebrates (Scott's apatanian caddisfly) in the Zigzag River. All of these species require clean, cold, and well-oxygenated water for basic life history requirements, such as spawning, rearing, or maintenance of food base. The identified user capacity would

also protect and enhance wildlife outstandingly remarkable values by limiting disturbance in riparian areas that are generally used by a higher diversity of wildlife species than any other habitat types due to the juxtaposition of abundant food, water, and cover (Forest Plan 1990).

### *User Capacity*

The proposed action identifies appropriate kinds and levels of visitor use that would not impact the outstandingly remarkable values. Pertinent triggers, thresholds, and management actions are identified in cases where fisheries, macroinvertebrate, and wildlife are outstandingly remarkable values, and may be impacted by visitor use.

Any protection to potential habitat or disturbance to fish, macroinvertebrate, or wildlife species listed in the user capacity and monitoring plan, would be in addition to habitat protection currently afforded to species already listed under the Endangered Species Act, National Forest Management Act, Forest Service National policy as stated in Forest Service Manual 2670, and Northwest Forest Plan Riparian Reserve Aquatic Conservation Strategy. In summary, the identified user capacity and monitoring plan maintains or improves fish, macroinvertebrate, and wildlife species and habitat protection due to the increased emphasis on monitoring of specific fish, macroinvertebrate, or wildlife outstandingly remarkable values.

### *Final Boundaries*

No changes to the interim boundaries (a quarter mile from the ordinary high-water mark) are proposed for Eagle Creek or South Fork Roaring River. These rivers are within designated wilderness and the existing corridors adequately protect the identified outstandingly remarkable values, which do not include any fish, macroinvertebrate, or wildlife outstandingly remarkable values.

Seven boundaries were modified from the interim proposed boundaries (Collawash River, Fish Creek, East Fork of the Hood River, Fifteenmile Creek, Zigzag River, Middle Fork Hood River and South Fork Clackamas River). All of the seven proposed boundary changes are either neutral (2), or better protect (5) fish, macroinvertebrate, or wildlife outstandingly remarkable values. These boundaries were extended specifically for seven river segments, and potential impacts to these rivers' value are detailed below:

- **Collawash River**: There are no macroinvertebrate or wildlife outstandingly remarkable values designated in this watershed, but it is expected that protection would increase for the fisheries outstandingly remarkable value by the proposed boundary changes. The widening of the boundary to include the entire headwater watershed area was designed to increase habitat protection to areas that provide high water quality to downstream fish populations and habitat. The narrowing of the boundary in existing wilderness areas would not impact the fisheries values, as habitat protection would be maintained by the current wilderness designation.
- **East Fork Hood River**: There are no fisheries or macroinvertebrate outstandingly remarkable values designated in this watershed, but it is expected that protection would increase for the wildlife (Harlequin duck and big game fawning/calving areas) outstandingly remarkable values by the proposed boundary changes. The boundary on the East Fork Hood River was specifically adjusted to include two large wetlands and meadows that are being used by elk and other wildlife. The proposed adjusted boundary narrowing near the forest boundary continues to protect all stream channel, associated riparian area, and other upland critical habitat elements for seasonal use by Harlequin duck for nesting and rearing young.
- **Fifteenmile Creek**: There are no macroinvertebrate outstandingly remarkable values designated in this watershed, but it is expected that the boundary change would provide additional protection for the fisheries and wildlife (steelhead and wildlife west-east migration corridor) outstandingly

remarkable values. The narrowing of the boundary in existing wilderness areas would not impact the fish or wildlife values, as habitat protection would be maintained by the current wilderness designation.

- **Fish Creek**: There are no macroinvertebrate or wildlife values designated in this watershed, but it is expected that protection would increase for the fisheries outstandingly remarkable value by the proposed boundary changes. The widening of the boundary to include the entire headwater watershed area was designed to increase habitat protection to areas that provide high water quality to downstream fish populations and habitat. The narrowing of some parts of the corridor continues to protect all stream channel, associated riparian area, and other upland critical habitat elements in this largely unroaded and inaccessible watershed.
- **Middle Fork Hood River**: There are no macroinvertebrate resources or wildlife outstandingly remarkable values, and thus there would be neutral effects to these values in this watershed. Fisheries (bull trout) are an outstandingly remarkable value in this segment. The proposed adjusted boundary change continues to protect all stream channel, associated riparian area, and other upland critical habitat elements, and thus would maintain protection for this bull trout population and habitat.
- **South Fork Clackamas River**: There are no fish, wildlife, or macroinvertebrate outstandingly remarkable values, and thus the proposed boundary would have neutral effects to these values in this watershed boundary.
- **Zigzag River**: There are no fish or wildlife values designated in this watershed, but the change in proposed boundary would better protect the macroinvertebrate (Scott's apatanian caddisfly) outstandingly remarkable value. The extension of the boundary to include the entire headwater watershed area was designed to increase habitat protection to areas that provide high water quality to downstream macroinvertebrate habitat. The narrowing of the boundary in existing wilderness areas would not impact the macroinvertebrate values, as habitat protection would be maintained by the current wilderness designation.

In summary, the boundaries for five out of the seven rivers that had boundaries modified were specifically modified to benefit fish, macroinvertebrate, or wildlife outstandingly remarkable values. The remaining rivers are either neutral or would maintain (interim boundaries unmodified) existing fish, macroinvertebrate, and wildlife values.

### *Proposed Management Actions*

Post-installation, both proposed management actions would provide beneficial effects to fish and wildlife, as described below.

#### Toilet Installation along the Collawash River

The installation of toilets on the Collawash River would reduce fecal contamination in river and floodplain areas, reducing impacts to fish and riparian-associated wildlife species. The small area of ground disturbance would be located in already disturbed areas, as well as immediately adjacent to high-use areas that are unlikely to provide habitat for threatened, endangered or sensitive wildlife species.

#### Interpretive Signs for Historic Features on the South Fork Clackamas River

The proposed interpretive signs would have no direct adverse impact to fish or wildlife habitat or populations on the Mt. Hood National Forest, including any threatened, endangered, or sensitive species. The installation of interpretive signs is likely to have very little, to no, ground disturbance to cause direct effects. Any ground disturbance would be completed during the dry season (generally June 1 – October

15). The information provided by interpretive signs would have beneficial effects by reducing recreational disturbance to Townsend's big-eared bats (*Corynorhinus townsendii*); a Forest Service and BLM Regional sensitive species in Oregon.

Neither projects are in the Zigzag River watershed, that contains Scott's apatanian caddisfly populations, and would have no impact to this outstandingly remarkable value.

#### *Forest Plan Amendment*

As noted in the proposed action, an amendment is needed to the current Forest Plan in order to comply with the Wild and Scenic Rivers Act and Omnibus Act. The plan amendments are administrative in nature, and do not change any existing uses. The three plan amendments would therefore maintain existing fish, macroinvertebrate, and wildlife habitat, as well as their current use.

#### *Monitoring Plan*

The Mt. Hood Forest Plan monitoring plan was updated in 2016 to be consistent with the 2012 planning rule (36 CFR 219). Question (ii), identified in Appendix A: Monitoring Plan, would be added to the monitoring plan as part of this proposed action. Under the proposed action, implementation of a comprehensive river management plan monitoring plan would put additional monitoring focus on the six river corridors that contain fisheries, macroinvertebrates, and/or wildlife habitat outstandingly remarkable values. This additional monitoring would guide adaptive management for protection or enhancement of these resources, as necessary.

### Cumulative Effects

There are no direct impacts to fish, macroinvertebrates, or wildlife; therefore, no effects can be cumulated. Indirect effects are beneficial.

## Consistency with Relevant Laws, Regulations and Policy

There are no fish or wildlife outstandingly remarkable values on BLM administered lands, so the Northwestern and Coastal Oregon Resource Management Plan is not applicable to this resource.

### Land and Resource Management Plan

The Forest Plan provides standards and guidelines for management of fish, wildlife, as well as threatened, endangered and sensitive plants and animals. These standards and guidelines are being met through the implementation of proposed management action on the Collawash River, where toilet(s) would be installed along the river to address fecal contamination at specific sites, where there is evidence of dispersed camping or other concentrated recreation use, in areas without sanitary facilities.

- FW-139 Fisheries: Degraded fish habitat shall be improved through rehabilitation, and/or enhancement, project investments and adherence to riparian management direction (see Forestwide Riparian Area and B7 General Riparian Management Area Standards and Guidelines).
- FW-175 TES plants and animals: Habitat for threatened, endangered, and sensitive plants and animals shall be protected and/or improved.

This standard and guideline is consistent with how the interim boundary was changed to encompass as much open meadow habitat as possible to benefit East Fork of the Hood River wildlife (big game) outstandingly remarkable value.

- FW-189 Wildlife: Existing natural meadows/openings shall be maintained.

In developing the proposed action, all standards and guidelines, related to aquatic species, wildlife, water, riparian, and wild and scenic rivers were considered. Therefore, all Forest Plan standards and guidelines were followed and the management recommendations in proposed action would also maintain and protect habitat for aquatic species (fish and macroinvertebrates) and wildlife, as directed by the Wild and Scenic Rivers Act.

In addition, as mentioned above, scenic and recreational segments would be changed to B-1 (Wild, Scenic and Recreational Rivers land use allocation in the Mt. Hood Land and Resource Management Plan). The B1 amendments are administrative in nature, and do not change any existing uses. These lands are currently being managed under the Standards and Guidelines for Designated Wild, Scenic, and Recreational Rivers and would continue after the plan amendment, therefore, fish, macroinvertebrate and wildlife habitat would be maintained.

### Other Relevant Law, Regulation, or Policy

#### *Endangered Species Act*

The proposed comprehensive river management plan actions would maintain, or in some cases be beneficial, to fish and wildlife species. This includes Endangered Species Act-listed anadromous salmon (coho and Chinook), steelhead, and bull trout that reside on the forest and are listed as threatened under the Endangered Species Act. All of these fish species are also outstandingly remarkable values in the comprehensive river management plan, including the Collawash River (both segments 1 and 2), Fifteenmile Creek (segments 3 and 4), Fish Creek, and Middle Fork Hood River segments.

There are two Endangered Species Act-listed wildlife species that occur, or may potentially occur, on the forest (Northern spotted owl (*Strix occidentalis caurina*) and Oregon spotted frog (*Rana pretiosa*)). Oregon spotted frog are only found in Camas Prairie (White River watershed), which is outside of the comprehensive river management plan action area. The northern spotted owls are not stream or riparian obligates, but may incur some benefit from habitat that would be protected within the river corridors.

The Endangered Species Act is already in place to maintain and conserve Federally-listed species and their critical habitat needs on the Mt. Hood National Forest and BLM lands. The additional protection of nine river corridors, including the riparian area, stream channel, water quality, and natural free flow, is consistent with the Endangered Species Act as both have similar habitat protection purposes.

#### *Wild and Scenic Rivers Act*

Section 10(b) of the Wild and Scenic Rivers Act requires that the administering agency protect and enhance the values for which the river was designated (water quality, free flow, and outstandingly remarkable values). The direct and indirect effects section describes how each action would protect and enhance the fish and wildlife value of the associated rivers.

# Geology

## Outstandingly Remarkable Values

### Collawash River

Segments 1 and 2 contain a number of very large, active earthflows, representing “textbook” examples that are easily interpreted in the field. Earthflows within segment 1 are only visible from the river, while those in segment 2 are easily observable from Forest Service Road 63. Intense precipitation events lead to

increased river flows, and subsequently, the river's erosive potential. During periods of increased runoff, the river actively cuts into the toe of the earthflows, accelerating their rate of downslope movement. The dynamic relationship between the river and the earthflows results in constant rearrangement of the river channel and is not something found within the region of comparison. Because of this, and the fact that earthflows of this size are not typically found within the region of comparison, geology is found to be an outstandingly remarkable value.

### Middle Fork Hood River

The Parkdale lava flow provides an excellent example of an A'a type of flow which is typified by rough, jagged and cindery surfaces. Geologically young lava flows of this nature are rare in the region and considered a "textbook" example that can be easily studied and interpreted. The juxtaposition of large debris flows, and young lava flows is not found anywhere else within the region of comparison; and for this reason, geology is considered an outstandingly remarkable value.

## Changed Conditions

The geology outstandingly remarkable value remains intact and unimpacted by the Lionshead and Riverside Fires that burned in the Collawash River corridor. The geology features visible from the river, and the textbook example visible from Forest Service Road 63 is in the unburned section of the Collawash River. As such, there are no changed conditions to the geology outstandingly remarkable value.

## Environmental Consequences

### Direct and Indirect Effects

There would be minimal direct or indirect impacts of the proposed action (toilet installation and interpretative signs) on geologic resources for the nine designated Wild and Scenic Rivers. Adoption of the comprehensive river management plan would provide further protections and enhance the outstandingly remarkable geology values located within the Collawash and Middle Fork Hood Rivers. No user capacity triggers or thresholds were identified for the geology outstandingly remarkable values in the aforementioned river segments because geology would not be affected by visitor use. The final boundary of the Middle Fork Hood River was adjusted to incorporate as much of the Parkdale Lava Beds as possible within the lateral boundary requirements to further protect the geology outstandingly remarkable value from potential future mineral materials development. While neither segment of the Collawash was adjusted for geology outstandingly remarkable value, segment 1 was adjusted for other resources. Additionally, modification of the standard B1-076 for over snow use would have no direct or indirect impacts on the geology outstanding remarkable values. No monitoring requirements were proposed for the geology outstandingly remarkable value.

### Cumulative Effects

There are no recent Forest Service activities within the cumulative effects analysis area that have affected geological resources and there are no foreseeable future actions in the next 5 years apart from this plan. The management actions proposed within the Collawash and Middle Fork Hood River corridors would further protect geologic resources. Since there are no cumulative project effects contributing to these beneficial effects, there are no positive or negative cumulative effects.

## Consistency with Relevant Laws, Regulations, and Policy

There are no geology outstandingly remarkable values on BLM administered lands, so the Northwestern and Coastal Oregon Resource Management Plan is not applicable to this resource.

### Land and Resource Management Plan

The Forest Plan provides standards and guidelines for managing minerals and energy management and geology within segments of congressionally designated Wild and Scenic Rivers. The following standards and guidelines apply specifically to the proposed action with regard to geology outstandingly remarkable values:

- Minerals and Energy Management: B1-053 through B1-063; and,
- Geology: Forestwide Geology Standards Apply.

In addition to protections provided by the B1 land allocation for designated Wild, Scenic, and Recreational Rivers, the existing B8-Earthflow land use allocation of the Forest Plan applies to both segments of the Collawash river and requires "maintain[ing] hydrologic and physical balances to prevent reactivation or acceleration of large, slow moving earthflow areas" (Forest Plan, page Four-261). Where two land allocations overlap, the more restrictive of the two applies to any management actions. The proposed action is consistent with the Forest Plan standards and guidelines discussed above.

### Wild and Scenic Rivers Act

Section 10(b) of the Wild and Scenic Rivers Act requires that the administering agency protect and enhance the values for which the river was designated (water quality, free flow, and outstandingly remarkable values). The comprehensive river management plan would protect and enhance the outstandingly remarkable geology values as no modifications or physical activities are proposed to occur in either the earthflows or Parkdale Lava Beds that occur within the wild and scenic boundaries of the Collawash and Middle Fork Hood Rivers, respectively.

# Recreation

## Outstandingly Remarkable Values

Of the nine wild and scenic rivers analyzed, five rivers were found to have recreation as an outstandingly remarkable value. Those rivers are, Collawash River segment 1, Eagle Creek, East Fork Hood River, Fifteenmile Creek segments 2 and 3, and Zigzag River. Refer to the River Values Report for a more in depth discussion of the evaluation process and current situation and trends.

### Collawash River

Segment 1 of the Collawash River is popular for local use and can draw advanced recreationists looking for a high quality and challenging run. What makes segment 1 unique for recreation is the challenge it provides to expert kayakers. This is due primarily to the geology of the area allowing for a change in experience nearly every time it is rafted. The remoteness and challenge of this segment make recreation an outstandingly remarkable value.

### Eagle Creek

While this corridor lies entirely in wilderness, the attractions and unique experiences along the river draw a specific use that is not found in many areas throughout the region. Since equestrian trails of this caliber

are limited within the region of comparison, people are willing to travel long distances to experience it. For that reason, recreation was found to be an outstandingly remarkable value for this river.

### East Fork Hood River

One of the very reasons the East Fork Hood River was designated is for the "…low impact recreation opportunities abound." This corridor can accommodate many types of recreation and offers a unique experience for kayakers due to its sustained gradient and continuous boulder features, unlike the more common bedrock formations. These traits make this corridor unique when compared to other rivers in the region. For these reasons, recreation is found to be an outstandingly remarkable value for the East Fork Hood River.

### Fifteenmile Creek

The Mount Hood National Recreation Area was designated to provide for the protection, preservation, and enhancement of various values in the area, including recreation. The area is quiet, primitive, low road infrastructure, beautiful, and offers the opportunity for a primitive, yet unique experience for visitors. Segments 2 and 3 overlap with the national recreation area designation and recreation along these two segments was found to be an outstandingly remarkable value.

### Zigzag River

The Pacific Crest Trail and Timberline Trail are popular attractants to this river corridor, while providing unique recreation opportunities for long distance hiking, and circle-the-mountain hiking opportunities, while the wildflowers and mountain vistas add to the experience of the area. Visitors travel from all over the region to experience the views provided by this area. International hikers or long-distance hikers of the Pacific Crest Trail camp next to the river while passing along to their next destination. With such stunning views and hiking opportunities in the corridor, recreation is found to be an outstandingly remarkable value for the Zigzag River.

## Changed Conditions

In fall 2020, the Collawash River, Fish Creek and South Fork Clackamas River proposed wild and scenic river corridors were impacted by the Riverside and Lionshead Fires. The National Forest System lands within these corridors, along with the main access road (Highway 224) are closed by Forest Order due to safety concerns. Similarly, the BLM administered lands within the South Fork Clackamas River corridor are closed by an Emergency Closure Order due to safety concerns.

The change in condition for recreation as it relates to both the Fish Creek and South Fork Clackamas proposed wild and scenic river corridors is very similar. With large portions of these two river corridors burning at such a high severity, access and opportunities for dispersed recreation use have been greatly diminished. The Fish Creek boat launch was destroyed by the fire; however, plans are in the works for replacement of this infrastructure with the use of emergency funds. The bathroom and kiosk located at the facility were not damaged and will likely still be available for use in the future. The only access point into the lower South Fork Clackamas River corridor via trail has been destroyed (Hillockburn trail # 516). Access into these areas will be closed until hazard mitigations can be complete to allow for public safety.

The change in condition for recreation related to the Collawash River is much less drastic. The main concern will be short-term impacts to access on both the north end and south end of the corridor. The recreation outstandingly remarkable value for Collawash segment 1 will not be negatively impacted by this fire. There may be a slight increase in visitor use in the areas open to the public due to displacement from fire closures on the Clackamas Wild and Scenic River.

# Environmental Consequences

## Direct and Indirect Effects

### *Comprehensive River Management Plan*

Under the proposed action, the comprehensive river management plan would establish programmatic management direction specific to the nine river corridors that would protect their outstandingly remarkable values, free-flowing condition and water quality from threats from recreational use while also maintaining appropriate recreational opportunities. As part of developing a comprehensive river management plan, a user capacity analysis was completed, and indicators and thresholds developed to monitor changes to the existing situation to keep attuned to changes in the ecosystem or social setting. Although the comprehensive river management plan includes specific elements that may have impacts, adopting the plan itself does not have any direct effects.

There would be a potential negative impact to recreation by not adopting the comprehensive river management plan due to the lack of management and monitoring, as well as specific protection measures outlined in the user capacity report. Setting indicators and thresholds for management would ensure that public use in the future would not diminish the outstandingly remarkable values of each of the nine rivers. The Forest Plan does not include any river-specific recreation monitoring, therefore future planning and adaptations to new visitor trends will be difficult to assess.

### *User Capacity*

The user capacity analysis identifies appropriate types and levels of visitor use that would not impact the outstandingly remarkable values while maintaining existing recreation opportunities. Current recreation use estimates in all nine river corridors are substantially lower than the identified capacities. Therefore, the proposed action would be unlikely to affect recreation use in any of the river corridors because current recreational use is not anticipated to be restricted, or otherwise changed.

The comprehensive river management plan establishes a framework for monitoring and triggering potential management actions in the river corridors if visitor use approaches the identified capacities. If capacity thresholds are reached, recreation use could potentially be restricted, or managed differently, which may result in adverse impacts if users are no longer able to recreate on the rivers in the ways, times, and levels they currently do. The proposed action would have potential long-term adverse impacts on recreation if capacity-related management actions were triggered and recreational use of any of the nine river corridors were restricted; however, because current use is substantially below capacities, implementation of management actions are unlikely to occur in the foreseeable future.

### *Final Boundaries*

The modified boundaries for each of the rivers outlined in the proposed action would benefit the recreation values. Some boundaries were extended specifically for recreation values, for example, the Fifteenmile Creek boundary was extended to include the entirety of the Mount Hood National Recreation Area. By adding further protections for these valuable recreation resources there would be a long-term positive impact for recreation. Accepting these river corridor boundaries would continue to protect and enhance the recreation-related river values. Eagle Creek and South Fork Roaring River would maintain their interim boundaries which adequately protects the values identified in the area, including the equestrian trail available along Eagle Creek and the reason for its recreation outstandingly remarkable value.

### *Proposed Management Actions*

#### Toilet Installation along the Collawash River

There may be short-term impacts to recreation from installation of toilets along the river, to address fecal contamination, while the toilet is being installed. Certain areas may be closed off during construction. This action would have a long-term positive impact on recreation because there is currently human waste in and around the river where the general public recreates. The human waste is a negative impact to the recreation experience, therefore installing toilets would only enhance the recreation outstandingly remarkable value along the Collawash.

#### Interpretive Signs for Historic Features on the South Fork Clackamas River

Short-term impacts may occur due to the installation of interpretive signs. This may cause temporary displacement of recreation users while installation is being complete. Overall, there would be long-term positive impact from this action due to the education provided to the public. Recreationists would still be allowed to recreate in the area, but would be aware of the presence and impacts to Townsend's big-eared bats and protection of historic resources.

### *Forest Plan Amendment*

As noted in the proposed action, several amendments are needed to the current Forest Plan in order to be consistent with new laws. Wild segments would be changed to the A-1 reserved land use allocation. This specific Forest Plan amendment would have no impact to recreation.

The standard and guideline from the Forest Plan, B1-076, would be amended to allow over snow travel in the Fifteenmile Creek corridor (outside of designated wilderness) in order to be consistent with the Omnibus Act. This addition would have a positive impact to recreation by allowing this use and maintaining the values that were identified with the establishment of the Mount Hood National Recreation Area. There may be short-term negative noise impacts to the adjacent Wilderness while snowmobile use is occurring. These impacts would only occur if users in both areas are recreating at the same time, and this would likely be very infrequent. This plan amendment would further protect the recreation value and be a positive impact to the recreation resource overall. This plan amendment does not authorize changes that have not already been approved by law.

### *Monitoring Plan*

The Mt. Hood monitoring plan was updated in 2016 to be consistent with the 2012 planning rule (36 CFR 219). Question (v), identified in Appendix A: Monitoring Plan, provides a focus on visitor satisfaction, and would be added to the monitoring plan as part of this proposed action.

Visitor satisfaction is addressed in the National Visitor Use Monitoring surveys, and if there were an unacceptable shift in the satisfaction scores or increases in crowding or conflict, then actions may be taken. Some of the actions may be to develop more trails to disperse visitors, add more gathering places, conduct additional monitoring, or possibly restrict the number of people in dispersed sites.

## Cumulative Effects

There are no direct and indirect effects to recreation that can be measured; therefore, no effects can be cumulated.

## Consistency with Relevant Laws, Regulations, and Policy

### Land and Resource Management Plan

The Forest Plan provides standards and guidelines for recreation management, wilderness, and wild and scenic rivers. The Forest Plan addresses many standards and guidelines for recreation. All those were taken into consideration in completing the user capacity report, therefore all Forest Plan standards and guidelines and management recommendations in that document and in this project were followed. The landscape character descriptions outlined in the comprehensive river management plan are consistent with the Forest Plan, as well as the Bureau of Land Management's South Fork Clackamas Waterfalls Extensive Recreation Management Area framework (see Appendix D of the comprehensive river management plan).

The proposed action along the Collawash River to install toilet(s) to address fecal contamination at specific sites, where there is evidence of dispersed camping or other concentrated recreation use, in areas without sanitary facilities, would follow the B1 Forest Plan guidelines.

The standard and guideline from the Forest Plan, B1-076, would be amended to allow over snow travel in the Fifteenmile Creek corridor (outside of designated wilderness) in order to be consistent with the Omnibus Act. This proposed action would enhance the Mount Hood National Recreation Area and would "provide for the protection, preservation, and enhancement of recreational, ecological, scenic, cultural, watershed, and fish and wildlife values." (123 Stat. 991, Public Law 111-11). Forest Service Manual 2370 directs the Forest Service to manage these special designations according to the law that established them.

### Other Relevant Law, Regulation, or Policy

#### *Wilderness Act*

The Forest Service is required to manage designated wilderness in accordance with the Wilderness Act of 1964. The Wilderness Act directs managers to preserve wilderness character, and mandates that both wildness and naturalness be preserved. The Wilderness Act contains what is known as the "Section 4c prohibited uses," that is, the presence of modern structures, installations, habitations, and use of motor vehicles, motorized equipment, or mechanical transport.

All of the proposed actions associated with this project align with the Wilderness Act.

#### *Wild and Scenic Rivers Act*

Section 10(b) of the Wild and Scenic Rivers Act requires that the administering agency protect and enhance the values for which the river was designated (water quality, free flow, and outstandingly remarkable values). All proposed actions outlined in direct and indirect effects in the recreation section describe how each action would protect and enhance the recreation value of the associated rivers.

# Scenic Resources

## Outstandingly Remarkable Values

The nine rivers represent an amazing example of Cascade crest drainages, which highlight both west- and east-side ecosystems. The rivers tumble down from the upper slopes of Mt. Hood and associated mountains and ridgelines. On the western slopes of the Cascade crest, the rivers, such as South Fork Roaring River, are dense with vegetation and lushly forested. To the east, Fifteenmile Creek transitions from glacially influenced floodplains into high desert environments dominated by pine, juniper, and white oak. Combined, the west-east rivers provide a wide range of recreation and scenic opportunities

representing an incredible vestige of wild and scenic America. Six of the nine wild and scenic rivers flow through designated wilderness areas. These overlapping designations highlight the remote, primitive, and undeveloped quality of these rivers to the greater landscape, despite their proximity to the urban Portland metropolitan area. Recreation opportunities are enhanced and, in some cases, depend upon the classic Pacific Northwest scenery these rivers provide.

The river corridors lie within diverse landscapes. Few places fail to meet Forest Plan standards for visual quality. Some disturbed or modified areas occur within river corridors, such as Fish Creek, and are described in the River Value Report. Some disturbed areas no longer in use have not been reclaimed.

Scenery was found to be an outstandingly remarkable value for Middle Fork Hood River, South Fork Clackamas River, and Zigzag River. A summary of the scenery outstandingly remarkable value for each river is below. Scenery is not an outstandingly remarkable value for the following rivers: Collawash River (segments 1 and 2), Eagle Creek, East Fork Hood River, Fifteenmile Creek (all segments), Fish Creek, and South Fork Roaring River. Although these rivers have some unique or interesting scenic values described in the River Value Report, the scenic resources[2] were not highly memorable, not highly diverse, or uncommon when compared to other rivers within the region of comparison nor found to be rare, unique, or exemplary for the area. Refer to the Landscape Character description for narratives that address specific scenic features and qualities for each of the river segments in the comprehensive river management plan (available on the project website). Refer to the River Value Report for more detail on scenic values and current conditions and trends for each river and river segment.

### Middle Fork Hood River

The Middle Fork Hood River flows along the western edge of the Parkdale Lava Beds. This flow provides substantial scenic variety and very rare and unique rock forms. Vegetation patterns and stream characteristics are found in other locations in the region yet are still relatively unique. The views of lava flows and unique rock forms have been found to be visually unique within the region of comparison. Views and photo attractions are substantial with combination of lava flows, adjacent stream, vegetation, and in places long distance views of the Mt. Hood area. The Middle Fork Hood River originates from several glaciers on the north slope of Mt. Hood. Large deposits of stream and lake sediments at the upper end of the lava flow indicate that the river was once dammed by the lava flow. High-quality flows of this nature are rare for the region and can be considered a “textbook” example which can be easily studied and interpreted. The lava flow provides an excellent example of successional stages taking place in the reestablishment of vegetative cover on the lava flow. The southern, or upper, end of the flow already has trees and other vegetation becoming reestablished. The northern, or lower, end of the flow is still virtually barren. The diversity throughout the lava flow provides a unique display of natural processes in action in one location. The Parkdale Lava Flow contributes substantively to the scenery so that it is considered an outstandingly remarkable value.

### South Fork Clackamas River

The river flows through a narrow canyon with large rock outcrops and cliffs, a 100-foot waterfall in the lower part of the segment, and old-growth trees along the river add to the visual diversity. Most of the watershed is filled with Pacific silver fir, Douglas fir and western hemlock. This lower section has been designated as an Oregon State Scenic Waterway. Today the river receives some use from the public,

[2] Scenic Resource synonymous with Visual Resource (Forest Scenery): The composite of basic terrain geologic features water features vegetative patterns and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

although no developed recreation sites currently exist. The South Fork Clackamas waterfalls have been recorded as highly memorable, with exemplary visual features including many photographs found online, in social media, and on other recreational related websites. Pictures of the waterfalls are in the River Value Report. The Oregon City Waterworks facilities, part of the South Fork Water Board, are historically important in the area and, while man-made, they contribute, rather than detract, from the scenery in the area. The South Fork Clackamas waterfalls were indentified as a Extensive Recreation Management Area under the Northwestern and Coastal Oregon BLM Resource Management Plan.

The scenic resources in South Fork Clackamas River were identified as outstanding, and therefore scenery is an outstandingly remarkable value for this river. The river corridor includes unique and highly memorable views of forested waterfalls. South Fork Clackamas River provides unique views uncommon within the region of comparison, including not only picturesque waterfalls, but also man-made features from the historic Oregon City Waterworks facilities, which contribute to the unique views.

### Zigzag River

The Paradise Park area is known for wildflower displays during the summer months, and mountain vista views. The Pacific Crest National Scenic Trail crosses the Zigzag River, where it also overlaps with the historic Timberline Trail. At this crossing, there is a unique opportunity to get a glimpse of Mt. Hood looking up the Zigzag River drainage. This unique experience, along with the seasonal variations of alpine wildflower blooms, makes this area highly memorable. There are some waterfalls in the area, including Zigzag Falls, just above the trail crossing the river. The Forest Plan identified substantial scenic values, including geology contributing to scenic diversity of the river, along with the view upriver towards the top of Mt. Hood. The snow brings seasonal variations to the landscape, but this may not be viewed by many in the winter months. The seasonal wildflowers bring color to the landscape during the summer months.

The scenic resources in Zigzag River were identified as outstanding, and therefore the scenery is an outstandingly remarkable value for this river. The area has unique and highly memorable views of high alpine mountain views from the river corridor. Zigzag River provides unique views from the Pacific Crest Trail.

## Changed Conditions

The Riverside Fire burned the entire proposed wild and scenic river corridor for the South Fork Clackamas River and most of the Fish Creek proposed wild and scenic river corridor. The scenic character's vegetation attributes of form, line, color, and texture have been greatly affected in areas with high tree mortality. The scenery has undergone a fire that burned with higher severity than would historically have occurred in these vegetation types. Many of the places that had a continuous, mature, or old-growth conifer canopy experienced stand replacing fire leaving large areas of visible black tree stems and burned ground surfaces within the two river corridors. Burned ground surfaces will green up over the next few growing seasons. Patches of trees that did not burn entirely include small patches of red-needled trees. Some other areas did not burn as intensely leaving a patchy mosaic of green trees interspersed with the areas of blackened, scorched trees. This landscape will visibly transition over the next ten to fifteen years and longer, with some changes occurring within the next few growing seasons. The scenic resources of this landscape will continue to change rapidly as trees lose needles, debark, and fall to the ground. Post-fire erosion, landslides, or debris flows may also affect the landform scenic character attribute in steep drainages. Over the next few years, visitors may feel that the landscape is very stark until new grasses and shrubs reestablish and begin to soften the effects of the fire. Even though the effects will be softened in the next few years, the form and line of the landscape will be dominated by the vertical line of

tree trunks until the trees have fallen and new growth sprouts around them. Fallen trees may create a jack-straw appearance along the forest floor. The color of the landscape will change as trees lose needles and debark. Blackened tree trunks will fade to a silver, gray color in the next few years. The scenic resources will recover as these changes occur and the effects of the fire fade with time.

The Fish Creek corridor had some disturbed or modified areas visible within the corridor reducing visual quality primarily from past vegetation management activities. The Riverside Fire has likely made these past management activities less evident, blending past shape and edge effects with the surrounding burned vegetation mosaic.

The Lionshead and Riverside Fires had minimal effects on the scenic resources in the Collawash River proposed wild and scenic river corridor due to the smaller amount of the corridor affected by the fire at the mouth and headwaters and overall lower tree mortality within the corridor. Conditions are similar, depending on tree mortality, to those described for the Riverside Fire above.

Several scenic attributes contribute to the South Fork Clackamas River scenery outstandingly remarkable value. The main scenic attribute which may see some impacts from the fire are unique and memorable views of forested waterfalls. The waterfalls remain unchanged over the long-term and still contribute to the scenery outstandingly remarkable value. The forested aspect and old-growth trees described are likely no longer present due to the high tree mortality. However, patches of forest may remain, but will not be fully known since the waterfall areas are difficult to access. Historic Oregon City Waterworks facilities also contribute to the unique scenic views. Minor impacts to the historic structures occurred as described in the Historic and PreContact Resources Changed Conditions section below in this environmental assessment.

# Environmental Consequences

## Direct and Indirect Effects

### *Comprehensive River Management Plan*

Protecting outstandingly remarkable values, free-flowing condition, and water quality provides protection to scenic quality from threats such as recreational use beyond capacity, and development. The generally high scenic quality of the areas would be maintained or enhanced and views in high use areas should improve. The river corridors would be managed to maintain the visual quality[3] objectives established for each river corridor.

Viewsheds[4] beyond the river corridor would also be managed to protect scenic resources based on distances from identified viewer positions and have established visual quality objectives. B1 land use allocations standards and guidelines allow one lower visual quality objective for recreation or structural facilities. Existing management direction would protect the scenery of the designated rivers because proposed management activities in the future would be designed to meet the visual quality objectives. These visual quality objectives require a high degree of sensitivity and design features for management activities.

[3] Visual Quality Objectives (VQO): Categories of acceptable landscape alteration measured in degrees of deviation from the natural appearing landscape

[4] Viewsheds: The total landscape seen or potentially seen from all or a logical part of a travel route use area or water body

BLM administered lands in the South Fork Clackamas River corridor are managed for Visual Resource Management Class I, which provides for natural ecological changes. Future management actions under the comprehensive river management plan would meet Visual Resources Management Class 1 with changes to the characteristic landscape being very low and any management activities changes designed to repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape (BLM 2016 page 94).

### *User Capacity*

Each river corridor would be managed to the recreation capacities identified by the user capacity analysis and should effectively protect desired scenic conditions across the classifications of designated rivers by providing evidence of any trends toward larger numbers of recreationists in specific areas, triggers as described above, and required management actions at specific thresholds. The indicators, triggers, and thresholds for the scenery river value, identified in the user capacity analysis, maintain or enhance scenic quality and scenery outstandingly remarkable values. The capacity analysis identified appropriate types and levels of visitor use that would further protect scenery. Because of the added protection from future increases in recreational use, the proposed action would have a beneficial impact on scenery.

### *Final Boundaries*

Where corridors have been extended to include actual features identified as scenery outstandingly remarkable values, stronger visual protection would be more secure. This applies to the viewsheds of Middle Fork Hood River and South Fork Clackamas River. The Middle Fork Hood River boundary encompasses as much of the lava beds as possible to protect the scenery and geology outstandingly remarkable values. The boundary on the South Fork Clackamas incorporates the South Fork Clackamas waterfalls, which are the main scenic element contributing to the scenery outstandingly remarkable value. The South Fork Clackamas boundary also includes additional features of the South Fork Water Board infrastructure which are historically important in the area, and while man-made, they contribute rather than detract from the scenery in the area and captures more BLM lands at the headwaters to better protect water quality and river values, including scenic resources. All scenic resources contributing to the scenery outstandingly remarkable values are river -dependent and owe their location or existence to the presence of the river and were included within the final boundaries.

### *Proposed Management Actions*

#### Toilet Installation along the Collawash River

Effects of this action would be beneficial to scenery by addressing sanitation issues which can detract from desired natural appearing[5] scenery. It is assumed that the design and site locations would consider sustainable recreation design practices and meet the assigned visual quality objectives of retention[6] in the scenic classification segment and partial retention[7] in the recreational classification segment, therefore, meeting the land management plan direction for visual resources in the Forest Plan.

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[5] Natural Appearing is a descriptive degree of alteration associated with the visual condition of the landscape used as a summary rating for a large land area such as a viewshed corridor. Natural Appearing is defined as an area that appears untouched by man; changes are not visually evident. Generally similar to the Retention visual quality objective.

[6] Retention Visual Quality Objective – Management activities should not be evident to the casual Forest visitor.

[7] Partial Retention Visual Quality Objective – Management activities remain visually subordinate to the characteristic landscape

**Interpretive Signs for Historic Features on the South Fork Clackamas River**

It is assumed that the design and site locations for the signs would consider sustainable recreation design practices to repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape. Although the signs may attract some attention, the education to recreationists provides protection for the outstandingly remarkable values. Overall, the interpretive sites would provide very low changes to the characteristic landscape.

### *Forest Plan Amendment*

The effects of the proposed final boundaries are discussed in the section above. The plan amendment would reflect the proposed final boundaries on the Clackamas River, East Fork Hood River, Fifteenmile Creek, Middle Fork Hood River, or South Fork Clackamas River. The proposed land allocations would have a beneficial impact on scenery. Where land allocations overlap, the visual quality objectives which provide the highest level of visual quality protection predominate.

The proposed amendment for standard and guideline B1-076 for Fifteenmile Creek would not negatively affect scenic resources. Existing snowmobile routes include Forest Service Road 4420 and 2730, and cross-country travel is permitted. Over snow vehicle use could provide a scenery viewing opportunity in the corridor from a viewer position such as a trail within the corridor and a beneficial effect for scenery.

### *Monitoring Plan*

Proposed monitoring questions for maintaining visual quality objectives for the Middle Fork Hood River and South Fork Clackamas River, maintaining outstandingly remarkable values, and monitoring protocols for recreation use numbers should effectively protect desired scenic conditions across the categories of designated rivers by providing evidence of any trends toward larger numbers of recreationists beyond capacities, and by requiring management action at specific threshold numbers. Monitoring and management of dispersed recreation and parking should provide better detection of behaviors that cause soil loss and trampled vegetation. Monitoring would better track visually detracting elements.

## Cumulative Effects

Past activities have created the existing conditions and trends documented in the River Value Report. In general, the effect to scenery resources from these activities is minimal. The River Value Report notes some management activities that caused a decline in scenic quality in some areas due to vegetation removal or man-made features as noted for Fish Creek and East Fork Hood River. Some man-made facilities contribute, rather than detract, from the scenery in the area, such as South Fork Clackamas River. Most of these past activities have formed the current recreation opportunities in the area and most often form the viewing platform and opportunities for viewing scenery.

Ongoing management actions are expected to enhance or maintain scenic resources because they would be designed to meet the visual quality objectives and visual resource standards and guidelines in the Forest Plan. Maintenance and restoration projects are expected to have beneficial effects for scenery by improving the visual condition[8] and create more resilient landscapes. Vegetation management projects

[8] Visual Condition: The visual appearance of a landscape described in terms of the degree of alteration of the natural appearing landscape. These terms are normally used as a summary rating for a large land area such as a viewshed corridor. Descriptive degrees of alteration are: Natural Appearing, Slightly Altered, Moderately Altered, or Heavily Altered. Each category is further defined in the Forest Plan glossary.

should be designed to meet the visual quality objectives assigned to the river corridors using view positions consistent with those outlined in this analysis.

Danger tree abatement following fires would be evident in the short and long-term, especially in areas with high tree mortality and the need to remove more trees. However, removal of danger trees and other burned area emergency response work associated with drainage concerns also provides access over the long term for scenery viewing opportunities. Reforestation of burned areas improves the visual condition by revegetating areas quicker than natural regeneration in high severity and mortality areas. Reinstalling a U.S. Geologic Service stream gauging station on Fish Creek would be partially visible from Forest Road 54 and riverbanks, and was determined through other analysis to meet partial retention visual quality objectives assigned to the area.

Cumulative effects to scenery resources are expected to meet the visual quality objectives of the Forest Plan and visual resource management classes of the Northwestern & Coastal Oregon Resource Management Plan. The direct and indirect effects of this proposal and other actions and developments described would add scenic resource benefits within the river corridors.

## Consistency with Relevant Laws, Regulations, and Policy

### Management Plans

#### *Land and Resource Management Plan*

The Forest Plan provides standards and guidelines for visual resource management forest-wide and in land use allocation management prescriptions.

The following table summarizes visual quality objectives by wild and scenic river management area classification from selected viewer positions using the land use allocation and distance zones identified in the Forest Plan table Four-22, page Four-108. See B1 land use allocation standards and guidelines for descriptions of viewer positions for each segment classification. Designated viewsheds apply visual quality objectives to selected acreages which overlap land use allocations (USDA Forest Service 1990, pages Four-110 to Four-112); if designated viewshed visual quality objectives are not consistent with the following visual quality objectives, the visual quality objectives which provide the highest level of visual quality protection predominate.

**Table 12. Designated Wild, Scenic, and Recreational River viewsheds and visual quality objectives for land use allocation B1 standards and guidelines and as shown in table Four-22 in the Forest Plan ((USDA Forest Service 1990, page Four-108)**

| River Segment | Viewer Position (from Forest Plan standards and guidelines B1-021 to B1-027) | Distance Zone from Viewer Position Foreground | Distance Zone from Viewer Position Middleground | Distance Zone from Viewer Position Background |
|---|---|---|---|---|
| B1 W&S River – Wild Segment (A1 Reserved land use allocation) | River, riverbanks, and trails within the B1 river corridor | Preservation[9] | Retention | Partial Retention |

[9] Preservation Visual Quality Objective – Ecological changes only

| River Segment | Viewer Position (from Forest Plan standards and guidelines B1-021 to B1-027) | Distance Zone from Viewer Position Foreground | Distance Zone from Viewer Position Middleground | Distance Zone from Viewer Position Background |
|---|---|---|---|---|
| B1 W&S River – Scenic Segment | River, riverbanks, US and State highways, Forest highways, and roads, trails, and recreation facilities within the B1 river corridor | Retention | Partial Retention | Partial Retention |
| B1 W&S River – Recreational Segment | River, riverbanks, US and State highways, Forest highways, and roads, trails and recreation facilities within the B1 river corridor | Partial Retention | Partial Retention | Partial Retention |

Although the wild segments fall under the A1 land use allocations, the visual quality objective is addressed in the B1 land use allocation standards and guidelines. The only difference between the standards and guidelines are related to regulated timber harvest. As such, the visual quality analysis will be based on the standards and guidelines on pages Four-212 to Four-213.

### B1 Designated Wild, Scenic, and Recreational Rivers: Visual Resource Management

All management activities on National Forest System lands shall achieve the following visual quality objectives (B1-021):

a. The visual quality objective for wild segments shall be Preservation as seen from the river, riverbanks and trails within the B1 river corridor. (B1-022) A visual quality objective of Retention may be allowed for recreation facilities. (B1-023)

b. The visual quality objective for scenic segments shall be Retention as seen from the river, riverbanks, US and State highways, Forest highways, and roads, trails and recreation facilities within the B1 river corridor. (B1-024) A visual quality objective of Partial Retention may be allowed for structural facilities. (B1-025)

c. The visual quality objective for recreationa1 segments shall be Partial Retention as seen from the river, riverbanks, US and State highways, Forest highways, and roads, trails, and recreation facilities within the B1 river corridor. (B1-026) Modification[10] may be allowed for structural facilities. (B1-027)

d. Exceptions to the above visual quality objectives may occur within “designated viewsheds” (see Forestwide Visual Resource Management Standards and Guidelines regarding designated viewshed visual quality objectives). (B1-028)

e. See Forestwide Visual Resource Management Standards and Guidelines for visual quality objectives prescribed for trails (USDA Forest Service 1990, pages Four-213 - Four-214)

The following table summarizes Forest Plan direction for each of the nine designated river segments based on the visual quality objectives by wild and scenic river classification from selected viewer positions using the land use allocations and distance zones identified in the Forest Plan table Four-22, page Four-108.

[10] Modification Visual Quality Objective – Management activities may dominate the characteristic landscape but must at the same time follow naturally established form line color and texture It should appear as a natural occurrence when viewed in foreground or middleground.

**Table 13. Designated Wild, Scenic, and Recreational River viewsheds and visual quality objectives based on land use allocation B1 standards and guidelines**

| River | Segment (Wild, Scenic or Recreational) | Scenery ORV (Yes or No) | Viewer Position (from Forest Plan standards and guidelines B1-021 to B1-027) | Visual Quality Objective – Foreground | Visual Quality Objective – Middleground | Visual Quality Objective – Background |
|---|---|---|---|---|---|---|
| Collawash River | Scenic | No | River, Collawash Road (Forest Service Road 6300), Farm Creek Road (Forest Service Road) 6340, Campgrounds and day use sites | Retention | Partial Retention | Partial Retention |
| Collawash River | Recreational | No | River, Collawash Road (Forest Service Road) 6300, Forest Service Road 6370, Mansfield Creek Road 4688, Trail 559 | Partial Retention | Partial Retention | Partial Retention |
| Eagle Creek | Wild | No | Creek, Eagle Creek Trail 501 | Preservation | Retention | Partial Retention |
| East Fork Hood River | Recreational | No | River, Highway 35, Coopers Spur Road (Forest Service Road 3510), Teacup Lake Road (S350), Trails, Campgrounds, day use sites, and trailheads | Partial Retention | Partial Retention | Partial Retention |
| Fifteenmile Creek Segment 1 | Wild | No | Creek, Fret Creek Trail 456A | Preservation | Retention | Partial Retention |
| Fifteenmile Creek Segment 2 | Scenic | No | Creek, Forest Service Road 2730, Trail Fret Creek Trail 456A, Fifteenmile Creek Trail 456, Cedar Creek Trail 457, Campground and Trailhead | Retention | Partial Retention | Partial Retention |
| Fifteenmile Creek Segment 3 | Wild | No | Creek, Fifteenmile Creek Trail 456, Cedar Creek Trail 457, Underhill Trail 683 | Preservation | Retention | Partial Retention |
| Fifteenmile Creek Segment 4 | Scenic | No | Creek, Forest Service Road 4421 | Retention | Partial Retention | Partial Retention |
| Fish Creek | Recreational | No | Creek, Fish Creek Road (Forest Service Road) 5400, Campgrounds and day use sites | Partial Retention | Partial Retention | Partial Retention |

| River | Segment (Wild, Scenic or Recreational) | Scenery ORV (Yes or No) | Viewer Position (from Forest Plan standards and guidelines B1-021 to B1-027) | Visual Quality Objective – Foreground | Visual Quality Objective – Middleground | Visual Quality Objective – Background |
|---|---|---|---|---|---|---|
| Middle Fork Hood River | Scenic | Yes | River, riverbanks, NFSR (Forest Service Road 1610 | Retention | Partial Retention | Partial Retention |
| South Fork Clackamas River | Wild | Yes | River, Hillock Burn/Memaloose Road (Forest Service Road) 4500, Hillockburn Trail 516 | Preservation | Retention | Partial Retention |
| South Fork Roaring River | Wild | No | River, Serene Lake Trail 512 | Preservation | Retention | Partial Retention |
| Zigzag River | Wild | Yes | River, Pacific Crest Trail, Timberline Trail 2000, Paradise Park Trail 778, Paradise Park Loop Trail 757 | Preservation | Retention | Partial Retention |

Distance Zones: Foreground = Zero to 1/2 mile from viewpoint, Middleground = 1/2 mile to 5 miles from viewpoint, Background = Beyond 5 miles from viewpoint

### *Northwestern & Coastal Oregon Resource Management Plan*

This management direction is applicable to South Fork Clackamas River (wild classification) on BLM lands in Township 4 South, Range 4 and 5 East, Sections 30 and 32 and Range 4 East, Section 12.

## Congressionally Reserved Lands and National Conservation Lands

#### Management Objectives

- Conserve, protect, and restore the identified outstanding cultural, ecological, and scientific values of National Conservation Lands and other congressionally designated lands.
- Protect and enhance the free-flowing condition, water quality, and outstandingly remarkable values of eligible, suitable, and designated Wild and Scenic River corridors.

#### Management Direction

- Conduct management actions, including but not limited to fuels treatments, invasive species management, riparian or wildlife habitat improvements, forest management, and trail construction, in Wild and Scenic River corridors only if consistent with designated or tentative classifications and if any reductions in outstandingly remarkable values would be temporary and outstandingly remarkable values would be protected or enhanced over the long-term. (USDI Bureau of Land Management 2016, pages 55-56)

## Visual Resource Management

#### Management Objectives

- Protect scenic values on public lands where visual resources are an issue or where high-value visual resources exist.
- Prohibit activities that would disrupt the existing character of the landscape in Visual Resource Management Class I areas.

#### Management Direction

- Only allow activities that are found to meet visual management objectives using the Visual Resource Contrast Rating system.
- Visual Resource Management Class I includes—Wilderness Areas; Wilderness Study Areas; and Designated and suitable Wild and Scenic Rivers that are classified as Wild.

Manage Visual Resource Management Class I areas in accordance with natural ecological changes. Prohibit activities that would lower the Visual Resources Inventory class of Visual Resource Management Class I areas. The level of change to the characteristic landscape will be very low and will not attract attention. Changes will repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape. (USDI Bureau of Land Management 2016, pages 93-94).

### *Consistency with Management Plans*

The proposed action would be consistent with Forest Plan components for visual resource management and has been designed to meet the preservation, retention, and partial retention visual quality objectives assigned to the project area by the Forest Plan in the short-term and long-term. The proposed action would be consistent with Resource Management Plan components for visual resource management and has been designed to meet the Visual Resource Management Class 1 assigned to the South Fork Clackamas River by the Resource Management Plan in the short-term and long-term. No negative

cumulative effects to scenic resources are expected in the long-term. There are no irreversible or irretrievable commitments related to scenic resources from the proposed action.

### Other Relevant Law, Regulation, or Policy

#### *Wild and Scenic Rivers Act*

The proposed action protects and enhances the scenery outstandingly remarkable values identified for Middle Fork Hood River, South Fork Clackamas River, and Zigzag River. The comprehensive river management plan describes the existing conditions and trends for the scenic resource and outstandingly remarkable value. The user capacity report outlines monitoring, triggers, and thresholds for protecting the scenery outstandingly remarkable values. Programmatic direction provides for the protection and enhancement of scenic resources within all the river corridors through the visual quality objectives, visual resource management classes, and standards and guidelines for visual management. The proposed action is consistent with provisions and requirements for scenic resources outlined in the Wild and Scenic Rivers Act.

# Historic and PreContact Resources

## Outstandingly Remarkable Values

Of the nine wild and scenic rivers being analyzed two, South Fork Clackamas River and Fifteenmile Creek, contain cultural resources meeting the criteria for an outstandingly remarkable value.

### South Fork Clackamas River

In 1913, the young cities of Oregon City and West Linn suffered a serious outbreak of typhoid from an increasingly polluted Willamette River, their sole source of water at the time. The incident spurred Oregon City's leaders to appoint a "Pure Mountain Water League" and directed it to locate a safer source of drinking water.

The League settled on the pristine South Fork of the Clackamas River in the Cascade foothills. A South Fork Water Board was created to carry out this ambitious project. By the fall of 1915, the new water district had managed to lay 26 miles of 18-inch pipe from a site at the confluence of Memaloose Creek and the South Fork Clackamas all the way to Oregon City and West Linn. The new pipeline began to carry municipal water on October 7, 1915. The infrastructure was expanded in the 1930s with help from one of Franklin Roosevelt's New Deal recovery programs, and improvements were made again in the 1950s. The system was used until it was decommissioned in 1985. The buildings of the waterworks compound, located at the confluence of the main stem and South Fork Clackamas River, were razed in the 1990s. However, the network of roads, tunnels, plank walkways, log bridges and old pipeline that made up the bulk of the waterworks infrastructure were left in place, slowly fading into the green rainforest of the South Fork canyon. These resources have since become home to important species in the area and weekend explorers from around the region.

In September 2020, the Riverside Fire prevented a comprehensive evaluation of the waterworks, however, the existing record, the integrity of the remaining elements, the rare and unique nature of the resource, along with its significance in the early twentieth century development of Oregon City, all suggest it meets the criteria of an outstandingly remarkable value for South Fork Clackamas River.

## Fifteenmile Creek

The Dufur to Lookout Mountain Trail played a prominent role in the early history and settlement of the communities east of the Cascades. Fifteenmile Creek and its headwaters were integral to this history. The drainage was first documented as Nansene Creek prior to the large immigration waves of the mid nineteenth century, and archaeological evidence suggests the headwaters and travel corridor have been in use for more than 2,000 years. In 1852, the first permanent settlers arrived in the Fifteenmile Creek drainage, homesteading near the current site of Dufur. These settlers engaged in stock raising, and by 1872, the Dufur brothers and others were grazing large herds of sheep and other livestock along this travel corridor and at High Prairie, near the Headwaters of Fifteenmile Creek. This was only possible because of the many seeps and streams feeding these upland meadows and Fifteenmile Creek itself.

Sometime prior to 1884, the section of trail up to section 20 of Township 2 South, Range 11 East was converted to wagon road. Enoch B. Dufur purchased land in this section in 1890. By the late nineteenth century, several hundred homesteaders called Fifteenmile Valley home, and the town of Dufur was well established. Several small sawmills operated along the upper extent of Fifteenmile Creek during this period to support the new community, the trail and waterway essential to their operation.

In 1893, the upper extent of Fifteenmile Creek became part of the Cascade Range Reserve. The reserve was created in part to protect the sensitive headwaters of the many creeks in the region from overgrazing. Sheepherders actively opposed creation of the Reserve; however, by 1895, all legal avenues were exhausted. The Forestry Division of the General Land Office began active management of the land that year, with J.B. Senecal as the first Ranger of the northeastern reach of the Reserve based out of Dufur.

Fire prevention was the first priority of the new Forest administrators. The first fire lookout on the eastern side of the Forest was constructed on Lookout Mountain; this was only possible because of the well-established trail and ample water supply found at the headwaters of Fifteenmile Creek. The peak is located at an elevation of 6,540 feet along a long north-south trending ridge, with High Prairie only 300 feet lower. The vantage point is considered one of the best in Oregon, with a commanding view of ten Cascade Range Peaks. An extensive and well-maintained trail system was considered vital. Existing trails were improved and linked to allow easy access to every drainage. Sometime prior to 1901, the Dufur to Lookout Mountain Trail was extended to the southwest, over Bennett Pass, to link with the Barlow Road near Summit Creek. This would become an important cutoff from the Barlow Road, linking the communities from the east and west.

In 1905, administration of Forest lands passed to the Department of Agriculture and newly created Forest Service. J.B. Senecal became the first Ranger of the Barlow District of the Oregon National Forest. Over the next few years, Senecal would spend a great deal of time constructing a cabin at High Prairie, making improvements to the lookout, stringing communications line throughout the Forest, and improving the Dufur to Lookout Mountain Trail. J.B. Senecal is likely the namesake of Senecal Spring, part of the headwaters of Fifteenmile Creek.

Within a decade recreational use of the trail increased greatly. To the east, the trail provided a grand view of eastern Oregon and the Blue Mountains. The unobstructed view of Mt. Hood, several miles to the west, was considered the best on the Forest. Planning was under way for the Mt. Hood Loop Highway during this period, and the Lookout Mountain Trail was a strong candidate for improvement as this scenic travel route. An alternate route prevailed, however, efforts to convert the trail to a road persisted.

In 1933, Roy T. Johnson and a crew of sixty men were charged with creation of the Bennett Pass Road. This road followed the trail alignment from High Prairie to the Barlow Road in the west, and Fifteenmile

Campground in the east. The men camped at High Prairie, using the cabin built nearly three decades earlier by Senecal as a main office.

In segment 1 of Fifteenmile Creek, approximately 1.4 miles of the Bennett Pass Road still exists as Forest Service Road 4420, maintained but still with a native surface. The original alignment of the Dufur to Lookout Mountain Trail parallels the road in this area, a few meters downslope. Remains of the original communication lines laid out by J.B. Senecal also persist. Within segment 1, the site's integrity of location, setting, design, materials, workmanship, feeling, and association remain largely undisturbed. This site was important in the early administration of the Forest and is strongly associated with J.B. Senecal, the area's first, and perhaps most important Ranger.

The trail is associated with nearly every activity occurring in the drainage including grazing, timber harvest, recreation, and Forest Service administration. Fifteenmile Creek played a prominent role in each. For these reasons, the Dufur to Lookout Mountain Trail is considered eligible for inclusion in the National Register of Historic Places. This cultural resource meets the criteria of an outstandingly remarkable value for segment 1 of Fifteenmile Creek.

## Changed Conditions

The Riverside Fire burned a large extent of the South Fork Clackamas River. Fire is a natural and recurring process in areas like the South Fork. The Riverside Fire was not the first fire to affect the area, nor will it be the last. The archaeological features of the Oregon City and West Linn Waterworks are located within the Riverside burn area.

The existing features of the Oregon City Waterworks include a wood settling basin, Memaloose bridge, South Fork Clackamas River intake, log bridge, valve house, gravel road with tunnels, and the pipeline. The road and pipeline parallel the South Fork Clackamas River for approximately 3,000 feet, before forking. The eastern fork travels up Memaloose Creek for 700 feet, while the fork along the South Fork Clackamas continues for an additional 1,500 feet where the newer intake was located.

Most of these features are carved from the steep canyon walls of the South Fork Clackamas River and Memaloose Creeks or constructed from steel and concrete with minor elements of perishable material (biodegradable, such as wood, fiber). Some of the perishable elements of these features may have been lost during the Riverside Fire; however, the main components of the site and its features are impervious to fire and remain intact.

Those elements and features of the Oregon City and West Linn Waterworks that convey the significance and outstanding remarkable value of this historic property remain unchanged by the Riverside Fire.

## Environmental Consequences

### Direct and Indirect Effects

#### *Comprehensive River Management Plan*

General adoption of the comprehensive river management plan, the proposed final boundaries and land use allocations, and the monitoring plan may all be considered an administrative undertaking. These changes in management direction on lands in and around wild and scenic river corridors due to boundary changes and other reallocations of management areas would have no negative effects on cultural resources since cultural resource laws and regulations apply equally to all management areas on National Forest System and BLM administered land. The measures outlined in the management plan, primarily

limiting user capacity and resource monitoring, would protect and enhance the integrity of the cultural resources identified as outstandingly remarkable values.

### *User Capacity*

The interdisciplinary team completed a user capacity analysis to establish a framework for monitoring and triggers of potential management actions in the wild and scenic river if use approaches a capacity threshold. If that point were to be reached, recreation use could potentially be restricted or managed differently. In a few instances, recreation sites and trails are located in the vicinity of cultural resources, including the Dufur to Lookout Mountain Trail and tunnels associated with the Oregon City Waterworks. Restricting or limiting activities in these areas would generally diminish disturbance to cultural resources, preventing observable impacts to site integrity, and protecting those qualities that contribute to a cultural resource's eligibility for listing on National Register of Historic Places.

### *Final Boundaries*

The boundary adjustment in Fifteenmile Creek would preserve the 11.4 mile National Register eligible segment of the Dufur to Lookout Mountain Trail. The boundary on South Fork Clackamas River was adjusted to incorporate the linear features of the Oregon City Waterworks infrastructure, and thus to protect the historic outstandingly remarkable value. In both instances, these resources would benefit from management as an outstandingly remarkable value. Integrity of location, setting, feeling, and association would be preserved and enhanced.

### *Forest Plan Amendment*

Wild segments would be changed to the A-1 reserved land use allocation. As mentioned under general consideration of the comprehensive river management plan, boundary changes and other reallocations of management areas would have no negative effects on cultural resources since cultural resource laws and regulations apply equally to all management areas on the Mt. Hood National Forest.

The standard and guideline from the Forest Plan, B1-076, would be amended to allow over snow travel in the Fifteenmile Creek corridor (outside of designated wilderness) in order to be consistent with the Omnibus Act. Under the 2004 Programmatic Agreement, over snow travel is generally considered exempt from case-by-case review under the National Historic Preservation Act because the action has no potential to cause effects to cultural resources, so long as the action does not involve ground disturbance or create noise which may potentially affect historic properties. Site integrity would be preserved.

### *Proposed Management Actions*

For proposed site specific management actions (toilet installation and interpretive signs) where ground disturbance would occur a pedestrian archaeological survey would be completed following the methodology and standards outlined in the current Mt. Hood National Forest Cultural Resource Inventory Plan (Burtchard and Keeler 1994). This survey will include monitoring of previously recorded archaeological sites within or adjacent to areas of proposed ground disturbance. Any identified archaeological sites would be avoided during all project activities to prevent any direct or indirect effects to site integrity. All documentation and data related to this field work would be incorporated into a Cultural Resource Inventory Report and would be submitted to Oregon State Historic Preservation Office for review and concurrence. This analysis, as well as the formal Section 106 report, would be completed

by an archaeologist meeting the Secretary of the Interior's[11] qualification standards as required by Federal and Oregon state laws. Therefore, the proposed site specific management actions would have no negative effect on cultural resources.

Interpretive signs would enhance visitor experience and appreciation for the historic outstandingly remarkable value of the Oregon City-West Linn Waterworks and related Townsend's big-eared bat health. An informed public generally contributes to preservation of historic properties.

### *Monitoring Plan*

The proposed monitoring plan is consistent with current cultural resource management practices and would ensure proper mitigation measures are taken to preserve site integrity if a threshold is reached. The monitoring plan would aid in early identification and prevention of observable impacts to site integrity, and protection of those qualities that contribute to resource eligibility for listing on National Register of Historic Places. This is a beneficial impact to cultural resources identified as outstandingly remarkable values.

In other resource areas, monitoring may reveal a threshold has been reached, and management action is needed. In such an instance, depending on the proposes action, additional site-specific analysis may be conducted, and additional review completed under National Historic Preservation Act.

## Cumulative Effects

Cultural resources, particularly archaeological sites, are nonrenewable in nature. Any portion of a site damaged or removed diminishes its cultural and scientific value permanently. Lost portions can never be replaced, therefore, all effects to cultural resources are consider cumulative.

Cultural resources are generally avoided for all federal undertakings resulting in no measurable cumulative effects from project activities. Direct effects to cultural resources generally result from deliberate or inadvertent ground disturbance within an archaeological site. Other direct effects occur through natural events, such as wildland fire. Indirect impacts typically result from erosion, bioturbation, or changes in vegetation composition and density. Both are characterized under the National Historic Preservation Act as an adverse effect to cultural resources. A review of existing inventories found no instance of measurable past adverse effects to known cultural resources within the proposed wild and scenic river boundaries. All components and actions proposed under the comprehensive river management plan are consistent with existing laws, management plans, and programmatic agreements governing cultural resources. Because this project would have no effect on cultural resources eligible for the National Register of Historic Places and none of the projects considered for potential cumulative effects, affected cultural resources, there would be no cumulative effects to cultural resources as a result of implementing the proposed action

[11] Sections 106 and 112 of the National Historic Preservation Act and their implementing regulation §36CFR800.2(a)(1), require agencies responsible for protecting historic properties to ensure that all actions taken by their employees or contractors meet professional standards as determined by the Secretary of the Interior.

# Consistency with Relevant Laws, Regulations, and Policy

## Management Plans

### *Mt. Hood National Forest*

The Mt. Hood National Forest Land and Resource Management Plan (Forest Plan) provides standards and guidelines for management of cultural resources. The proposed action is consistent with Forest Plan goals to protect important cultural resources:

- FW-598, FW-600, FW-610, FW-602 and FW-606 For this and future projects within the management area, cultural resource inventories have and would continue to be conducted in compliance with the 2004 Programmatic Agreement during project planning stages.
- FS-608 Field survey results would continue to be fully documented according to current Oregon State Oregon State Historic Preservation Office standards.
- FW-609, FW-610 The potential effects to cultural resources from the current and future proposed actions have and would continue to be assessed.
- FW-612 Cultural resources potentially affected by the proposed actions were and would continue to be evaluated for inclusion on the National Register of Historic Places.
- FW-626 All records and documents concerning cultural resources for this and future projects within these management areas would be kept on file at the Supervisors Office, Mt. Hood National Forest.

### *Northwest and Coastal Oregon BLM*

The Northwest and Coastal Oregon Resource Management Plan (BLM 2016) provides management direction, in the form of Management Objectives and Direction for Wild and Scenic River Management (pages 55-56) and cultural resources (pages 76-77). The plan aims to preserve and protect significant cultural resources and ensure they are available for appropriate uses by present and future generations. That plan also aims to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration or potential conflict with other resources by ensuring that all authorizations for land and resource use comply with Section 106 of the National Historic Preservation Act. The proposed action is consistent with the objectives and direction outlined in the Northwestern and Coastal Oregon Resource Management Plan because the comprehensive river management plan would adhere to the management direction for cultural resources, including evaluating all documented cultural resources for National Register of Historic Places eligibility (BLM 2016 page 76). Places determined to be listed or eligible for listing would be protected through avoidance or other protection measures.

## Other Relevant Law, Regulation, or Policy

The regulatory framework that mandates consideration of the effects of proposed undertakings on cultural resources is wide-ranging. The National Environmental Policy Act requires agencies to analyze the effects of their proposed actions on sociocultural elements of the environment. A number of other laws drive Forest Service and Bureau of Land Management decision making related to cultural resources. These include the Archaeological Resources Protection Act of 1979, the Native American Graves Protection and Repatriation Act of 1990, Executive Order 13007 (Indian Sacred Sites), and the American Indian Religious Freedom Act of 1978. The primary laws and agreements applicable to this undertaking are listed below.

### *National Historic Preservation Act*

Section 106 of the National Historic Preservation Act of 1966 (amended in 1976, 1980, and 1992) is the principal legislation that governs the treatment of cultural resources during project planning and implementation. Implementing regulations that clarify and expand upon the National Historic Preservation Act include 36 CFR 800 (Protection of Historic Properties), 36 CFR 63 (Determination of Eligibility to the National Register of Historic Places), and 36 CFR 296 (Protection of Archaeological Resources). All ensure the Federal government takes into account the effects of any proposed undertaking on cultural resources included in or eligible for inclusion in the National Register.

### *Programmatic Agreement*

The Pacific Northwest Region (Region Six) of the Forest Service, the Advisory Council on Historic Preservation and Oregon State Historic Preservation Office entered into a programmatic agreement regarding the management of cultural resources on National Forest System lands in 2004. The 2004 Programmatic Agreement outlines specific procedures for the identification, evaluation, and protection of cultural resources during undertakings involving the Forest Service. It also establishes the process that Oregon State Historic Preservation Office utilizes to review proposed Forest Service actions for National Historic Preservation Act compliance.

### *Wild and Scenic Rivers Act*

Section 10(b) of the Wild and Scenic Rivers Act requires that the administering agency protect and enhance the values for which the river was designated (water quality, free flow, and outstandingly remarkable values). The proposed action, outlined in the environmental consequences section above, describes how each activity would protect and enhance cultural (historic and precontact) values of the associated rivers.

# Botany

## Outstandingly Remarkable Values

### Eagle Creek, South Fork Roaring River, and Collawash River

Cold water corydalis (*Corydalis aquae-gelidae*) is a botany outstandingly remarkable value for Eagle Creek, South Fork Roaring River, and Collawash River (upper segment also known as segment 1). These wild and scenic rivers were determined to have high-quality habitat for cold water corydalis. Cold water corydalis is a sensitive species on the Region 6 Regional Forester Special Status Species List (February 25, 2019) and a Category A species on the Survey and Manage list (December 2003 list). Survey and Manage Category A species are considered rare, and all known sites must be managed (Record of Decision 2001).

The west side of the Mt. Hood National Forest (Clackamas River and Zigzag Ranger Districts) and the Gifford Pinchot National Forest comprise the geographic epicenter for cold water corydalis in Region 6 of the Forest Service (Pacific Northwest). The vast majority of documented cold water corydalis sites occur on these two national forests (over 300 Element Occurrences) with 10 on the Willamette National Forest and one or two outlier occurrences on the Rogue-Siskiyou National Forest in southwestern Oregon (NRIS TESP-IS database; Montgomery *et al*. 2017; Oregon Flora Project Atlas). Element occurrences are documented known sites and are mapped in the Forest Service's rare species database as either polygons or points. There is some overlap in the data because some element occurrences polygons contain a substantial number of element occurrence points that were entered years later after the polygons had been drawn in an effort to more precisely map and monitor subpopulations; so coming up with an exact

number of element occurrences for cold water corydalis on the Mt. Hood National Forest is less than straightforward, requiring some interpretation of the data. Details about cold water corydalis habitat (such as seral stage, stand age, stand composition) in these three wild and scenic rivers on the west side of the Mt. Hood National Forest can be found in the River Values Report. All three wild and scenic rivers contain high-quality habitat (cold water, favorable stream gradients with likely formation of gravel bars, and older forest) for cold water corydalis.

Cold water corydalis grows along streams of many sizes, from headwater seeps to large rivers (Goldenberg and Zobel 1999). Community composition ordinations indicate that cold water corydalis occurrence is correlated with dense western hemlock/Douglas-fir canopies at lower elevations and with Pacific silver fir and Sitka alder canopies at higher elevations; conversely, occurrence is less likely in forests with less dense canopies found on larger rivers (such as stands dominated by western red cedar or red alder) (Goldenberg and Zobel 1999). Percent canopy cover appears to strongly affect the occurrence of cold water corydalis with its abundance substantively reduced in areas that have been clear-cut (Goldenberg and Zobel 1999). The species seems best suited to habitats in which a high, partial canopy allows sufficient light for growth and reproduction, but hinders the establishment of competing vegetation (Montgomery *et al*. 2017). Cold water corydalis can be found in late-successional riparian forest, mostly in areas not recently subjected to catastrophic floods (Goldenberg and Zobel 1999). Cold water corydalis requires cold water (less than 14 degrees Celsius), a stream gradient less than 4 percent, and tends to be associated with older forest—though older forest may or may not be as critical for cold water corydalis as stream temperature and gradient.

## East Fork Hood River

Violet suksdorfia (*Suksdorfia violacea*) is a botany outstandingly remarkable value for the East Fork Hood River on the Hood River Ranger District. Violet suksdorfia is a sensitive species on the Region 6 Regional Forester Special Status Species List (February 25, 2019) in Oregon only. Violet suksdorfia is not listed as a sensitive species in Washington. Unlike cold water corydalis, violet suksdorfia is not a Survey and Manage species.

Violet suksdorfia has a very limited distribution in Region 6 of the Forest Service (Pacific Northwest) with only six element occurrences (documented sites) in Oregon: two are reported in the Columbia River Gorge National Scenic Area, three on the east side of the Mt. Hood National Forest, and one on the Wallowa-Whitman National Forest (NRIS TESP-IS database, Oregon Flora Project Atlas). In Washington, violet suksdorfia is reported as having been found on the Okanogan-Wenatchee and Colville National Forests (NatureServe 2014, USFS-BLM 2011, and CPNWH 2013 in Glavich 2018), but these occurrences for some reason are not documented in the rare plants database.

Violet suksdorfia occurs in shady, damp to wet mossy areas in east-side ponderosa pine/Douglas-fir stands on steep, rocky slopes; in rock crevices; on cliffs; and in riparian areas (Glavich 2018). The species has also been found growing in creek-side sand (Glavich 2018). The substrate composition at known sites for this species reportedly varies from basalt to granite to limestone (Glavich 2018). In the East Fork Hood River corridor, violet suksdorfia can be found growing on a steep basalt formation called Pete's Pile, a popular local rock-climbing area. More sites for violet suksdorfia may occur in the East Fork Hood River corridor, in other nearby tributaries that flow into the Columbia River, and in the Columbia River Gorge itself that remain to be discovered with further botanical exploration, since steep basalt outcrops abound in the greater Columbia River Gorge area.

## Changed Conditions

The East Fork of the Collawash River comprises a little over half of segment 1 (its southern half), including the area burned by the Lionshead Fire. Cold water corydalis is identified as a botany outstandingly remarkable value for segment 1. The nearest documented cold water corydalis populations are in Hunter Creek, about 3.5 miles to the east, where the Lionshead Fire did reach, and Rhododendron Creek, outside the reach of the fire, about 2.5 miles north of Hunter Creek and about 5 miles east of the river segment. Hunter Creek and Rhododendron Creek flow into the upper Clackamas River, which is the geographical epicenter for cold water corydalis on the Forest, with large and numerous populations widely distributed for several miles along the main stem.

The net result is that the two fires spared the vast majority of both Collawash River segments (over 90 percent of each segment). The Lionshead Fire did burn the uppermost (southernmost) portion of segment 1, which contains a network of tributaries (Cachebox Creek and several unnamed headwater streams) that flow into the East Fork of the Collawash River. The Lionshead Fire may have resulted in some loss of cold water corydalis habitat in the east fork of the Collawash River and its headwater streams in the uppermost portion of segment 1. Headwater streams, such as those within the path of the Lionshead Fire in segment 1, can play an important role in the expansion of cold water corydalis populations. Populations in headwater streams can be a seed source, helping to establish new corydalis populations downstream. Seed is transported downstream, and, if environmental conditions are right and suitable habitat is present, the seed can take hold, germinate, and produce new populations.

Any discussion of loss of corydalis habitat or populations that there may be in segment 1, however, is speculative since, at the present, we do not know how much, if any, cold water corydalis habitat may have been burned by the Lionshead Fire in the uppermost portion of segment 1 or if any of that habitat may have been occupied by the species. ( Given that cold water corydalis resides in streams and rivers (in shallow water, on gravel bars, or along banks), it is possible that suitable in-stream and streambank habitat for the species within the uppermost part of segment 1 may have escaped harm because fire severity was low to moderate. Loss of canopy trees in areas where moderate-severity fire occurred, however, could have a long-term negative effect on cold water corydalis because the species depends on cold stream water (less than 14° Celsius) that shade from older forest canopies provides. With canopy loss, stream temperatures may be elevated for several decades until a new forest canopy establishes that once again adequately shades streams to maintain sufficiently cold stream temperatures. Until these conditions are reestablished in areas where loss of canopy trees has occurred, habitat requirements for cold water corydalis may not be present.

Botany was not identified as an outstandingly remarkable value for the other wild and scenic river corridors impacted by the Riverside Fire.

## Environmental Consequences

### Direct and Indirect Effects

#### *Comprehensive River Management Plan*

Adoption of the comprehensive river management plan would help protect and enhance botany outstandingly remarkable values: cold water corydalis habitat in Eagle Creek, South Fork Roaring River, and Collawash River (the upper segment known as segment 1); and violet suksdorfia in East Fork Hood River. Additionally, adoption of the comprehensive river management plan would help ensure that native plant communities and healthy functioning forest ecosystems are maintained in all the designated wild and scenic river segments.

The comprehensive river management plan would help protect and maintain cold water corydalis habitat by regulating management activities (timber harvest and road construction) and recreational use (such as number of visitors and activities) in Eagle Creek, South Fork Roaring River, Collawash River, and East Fork Hood River.

The comprehensive river management plan would help protect and enhance violet suksdorfia by regulating recreational use (specifically, the number of climbers and climbing practices) in the East Fork Hood River.

### *User Capacity*

Adoption of the comprehensive river management plan would ensure that monitoring is conducted to assess if ground disturbance caused by visitors may be leading to degradation of cold water corydalis habitat, which may create growing space opportunities for invasive plants to colonize and establish, or if invasive plant propagules (seed, stolons, rhizomes, and stem and root fragments) are being introduced by recreationists or pets. Adoption of the comprehensive river management plan would ensure that management action is taken, if the determined degradation threshold is reached, and that any degradation is remedied through rehabilitation, education, or reducing the number of visitors allowed to recreate in the designated wild and scenic rivers.

For violet suksdorfia, monitoring would focus on the impacts of climbers at Pete's Pile, a steep basalt wall where violet suksdorfia grows on ledges and in cracks and crevices. Adoption of the comprehensive river management plan would ensure that monitoring is conducted to assess impacts to violet suksdorfia and other vegetation in the area at Pete's Pile, and vicinity, that may be degraded by climbers. Adoption of the comprehensive river management plan would ensure that measures are taken to educate climbers about violet suksdorfia, and the development of a climbing management plan would address strategies for human waste management, resource protection, and erosion control.

### *Final Boundaries*

The upper boundary was extended to include more of the East Fork of the Collawash River upslope between Mansfield Mountain and Collawash Mountain, in part, because this upper section is likely to contain high-quality habitat for cold water corydalis. The proposed boundary adjustments for the Collawash wild and scenic river (segment 1) would better protect and maintain habitat for cold water corydalis, as well as native riparian plant communities that support this rare (Region 6 sensitive and Survey and Manage) species.

For the East Fork Hood River, boundary changes were made to protect and enhance the recreational and wildlife outstandingly remarkable values identified for the wild and scenic river. Boundary adjustments did not affect violet suksdorfia, the botany outstandingly remarkable value, since Pete's Pile is well within the wild and scenic river segment.

### *Proposed Management Actions*

#### Toilet Installation along the Collawash River

Installation of a toilet facility or facilities along heavily used stretches of the Collawash River would help protect and maintain water quality, which in turn, helps maintain high-quality habitat for cold water corydalis, the botany outstandingly remarkable value. Cold water corydalis requires not only cold water and but clean water (free of excess nitrogen, algal blooms, and contamination by bacteria such as E. coli). The impacts of installing the toilet facility (loss of native vegetation and habitat) would be offset by the benefit of protecting water quality in the river.

**Interpretive Signs for Historic Features on the South Fork Clackamas River**

This wild and scenic river corridor does not have a botany outstandingly remarkable value, so there is no impact. Also, the signs would be installed near the water work infrastructure, which is far enough away from the river's bank that there is no effect on river related or river dependent botanical species or suitable habitat.

#### *Forest Plan Amendment*

There would be no effect of the proposed Forest Plan amendment to allow continued snowmobile use in the Fifteenmile Creek wild and scenic river on native plant communities. Snowmobile use is unlikely to transport and spread invasive plant propagules.

The Forest Plan amendment to change the land use allocations to A1 for wild segments and B1 for scenic and recreational segments would have a beneficial impact to the botany outstandingly remarkable values and native vegetation as described previously in the analysis of the final boundaries.

#### *Monitoring Plan*

A monitoring plan has been included with the comprehensive river management plan that continues to monitor the effects of management actions and visitor use. The monitoring plan would help guide future decisions regarding wild and scenic river segments to help ensure that habitat for cold water corydalis and violet suksdorfia are protected and enhanced. The monitoring plan provides indicators, triggers, and thresholds for determining if degradation of botany outstandingly remarkable values may be occurring and specifies management actions to remedy degradation.

### Cumulative Effects

Based on the analysis in this environmental assessment, there are no cumulative effects to the botany outstandingly remarkable values (cold water corydalis and violet suksdorfia) or to native plant communities with the adoption and implementation of a comprehensive river management plan for the wild and scenic rivers. Given the immeasurable direct and indirect effects associated with these actions, there are no cumulative effects to the botany resource for this project.

## Consistency with Relevant Laws, Regulations, and Policy

There are no botany outstandingly remarkable values on BLM administered lands, so the Northwestern and Coastal Oregon Resource Management Plan is not applicable to this resource.

### Mt. Hood Land and Resource Management Plan (Forest Plan)

The Forest Plan provides standards and guidelines for protecting wild and scenic rivers and the rare botanical species (botany outstandingly remarkable values) dependent on them, as well as the native plant communities within them. The protection of native plant communities and rare species – the botany outstandingly remarkable values cold water corydalis and violet suksdorfia – help wild and scenic rivers maintain their biological diversity and resilience to disturbance (human activities, invasion by non-native plants) and change (climate change). The Forest Plan lists 49 species of sensitive plants, but neither cold water corydalis nor violet suksdorfia is among them. The reason for their omission in the plan is that these two species were not added to the Region 6 Regional Forester Special Status Species Lists, which are periodically updated every few years, until after 1990, the year the Forest Plan was published.

The Forest Plan addresses what management activities are permissible or prohibited in wild and scenic rivers depending on their classification as wild, scenic, or recreational. The wild sections of river courses receive the greatest protection from management activities. For example, standards and guidelines B1-038

and B1-039 prohibit regulated timber harvest (harvest occurring on a rotational basis) and B1-071 and B1-072 prohibit road construction in river segments designated as wild (Eagle Creek and South Fork Roaring River). A lower level of protection is provided by a scenic classification (Collawash River and Middle Fork Hood River). For example, standards and guidelines B1-040 and B1-041 allow for regulated timber harvest and B1-073 and B1-074 allow for road construction in scenic river segments. A recreational classification (segment 2 of the Collawash River and the East Fork Hood River) allows for the most development (page Four – 14, Forest Plan, 1990). The regulation of management activities provided by the various standards and guidelines would help protect and enhance the botany outstandingly remarkable values, which may be sensitive or vulnerable to such activities.

Two of the relevant standards and guidelines include the following.

- Standard and guideline B1-001 stipulates that all management activities in the river corridors shall protect and/or enhance the identified outstandingly remarkable values (FSH 1909.12, Chapter 8, 7/87).
- Standard and guideline FW-501 recognizes the threat of invasive species by stipulating that non-native species should not be introduced in wild and scenic river corridors.

The above forest wide and B1 standards and guidelines in the Forest Plan (1990) either permit or prohibit management activities such as timber harvest and road construction in wild and scenic rivers on the national forest. The proposed comprehensive river management plan for the wild and scenic rivers is consistent with the forest-wide and B1 standards and guidelines specified in the Forest Plan. Its adoption and implementation would protect and/or enhance the botany outstandingly remarkable values cold water corydalis and violet suksdorfia in the wild and scenic rivers where these two species occur.

In addition to being a sensitive species on the Region 6 Regional Forester Special Status Species List (February 25, 019), cold water corydalis is a Survey and Manage Category A species on the Survey and Manage List (December 2003). All known sites of Survey and Manage Category A species must be managed (protected) (ROD 2001). The comprehensive river management plan is fully consistent with this standard since cold water corydalis is a botany outstandingly remarkable value and is protected under the Wild and Scenic Rivers Act as outlined throughout this section.

## Other Relevant Law, Regulation, or Policy

### *Wild and Scenic Rivers Act (1968)*

Cold water corydalis is considered an outstandingly remarkable value in Eagle Creek, South Fork Roaring River, and Collawash River (segment 1 or the upper segment). Violet suksdorfia is considered an outstandingly remarkable value in the East Fork Hood River.

None of the ground- or habitat-disturbing activities proposed in the comprehensive river management plan (installation of a public toilet facility on the Collawash River and posting of interpretive signs on the South Fork Clackamas River) would degrade the botany outstandingly remarkable value (cold water corydalis) for these two rivers. The boundary change for segment 1 of the Collawash River would also protect the botany outstandingly remarkable value (cold water corydalis) for that wild and scenic river. Installation of a public toilet would protect water quality (one of the three wild and scenic river-related values) on the Clackamas River; and posting signs to alert visitors to the presence of a Region 6 sensitive species, the Townsend's big-eared bat (Region 6 Regional Forest Special Status Species List, February 25, 2019), would help protect bats and their habitat (tunnels) in the South Fork Clackamas River wild and scenic river. Regulation of rock-climbing activities at Pete's Pile in the East Fork Hood River wild and

scenic river would help maintain and protect the botany outstandingly remarkable value violet suksdorfia. The proposed comprehensive river management plan is consistent with Section 10(a) of the Wild and Scenic Rivers Act (1968).

# Climate Change

## Rationale for Project-Scale Effects on Climate Change

The proposed action allows for little ground-disturbing activities. Additional, site-specific analyses of proposed and potential management actions (see Table 8. Proposed management actions) would be required to implement such actions. The scope and degree of change to forested land would be negligible.

Climate change is a global phenomenon, because major greenhouse gasses[12] mix well throughout the planet's lower atmosphere (IPCC 2013). Considering emissions of greenhouse gasses in 2010 were estimated at 49 plus or minus 4.5 gigatonnes[13] carbon dioxide equivalent[14] globally (IPCC 2014) and 6.9 gigatonnes carbon dioxide equivalent nationally (U.S. Environmental Protection Agency 2015), a project of this size makes an extremely small contribution to overall emissions. Because local greenhouse gasses emissions mix readily into the global pool of greenhouse gasses, it is difficult and highly uncertain to ascertain the indirect effects of emissions from single or multiple projects of this size on global climate. Therefore, at the global and national scales, this proposed action's direct and indirect contribution to greenhouse gasses and climate change would be negligible. In addition, because the direct and indirect effects would be negligible, the proposed action's contribution to cumulative effects on global greenhouse gasses and climate change would also be negligible. Lastly, carbon emissions during the implementation of the proposed action would have only a momentary influence on atmospheric carbon concentrations because carbon would be removed from the atmosphere with time as the forest regrows, further minimizing or mitigating any potential cumulative effects.

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change summarized the contributions of global human activity sectors to climate change (IPCC 2014). From 2000 to 2009, forestry and other land uses contributed just 12 percent of the human-caused global carbon dioxide emissions[15.] The forestry sector's contribution to greenhouse gas emissions has declined over the last decade (IPCC 2014, Smith et al. 2014, FAOSTAT 2013). The largest source of greenhouse gas emissions in the forestry sector globally is deforestation (Pan et al. 2011, Houghton et al. 2012, IPCC 2014), which is defined as the removal of all trees to convert forested land to other land uses that do not support trees or allow trees to regrow for an indefinite period of time (IPCC 2000) (e.g., conversion of forest land to agricultural or developed landscapes). However, forest land in the United States has had a net increase since the year 2000, and this trend is expected to continue for at least another decade (Wear et al. 2013, USDA Forest Service 2016).

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[12] Major greenhouse gases released as a result of human activity include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, and perfluorocarbons.

[13] Gigatonne is one billion metric tons: equal to about 2.2 trillion pounds.

[14] Equivalent carbon dioxide ($CO_2e$) is the concentration of carbo dioxide that would cause the same level of radiative forcing as a given type and concentration of greenhouse gas. Examples of such greenhouse gases are methane, perfluorocarbons, and nitrous oxide.

[15] Fluxes from forestry and other land use activities are dominated by carbon dioxide emissions. Non-carbon dioxide greenhouse gas emissions from forestry and other land use are small and mostly due to peat degradation releasing methane and were not included in this estimate.

The proposed actions and management of nine rivers on the Mt. Hood National Forest and Northwest Oregon BLM District are not considered a major source of greenhouse gas emissions. Under the Comprehensive River Management Plan for Nine Wild and Scenic Rivers, rivers with wild classification are not suitable for regulated timber production. Harvest may occur for purposes of riparian restoration and wildlife corridor connectivity. Rivers with scenic and recreational classifications may have regulated timber harvest, but this harvest activity would have to protect and enhance the river values. Any harvest activity would require site-specific analysis that would consider climate change. Forested land would not be converted into a developed or agricultural condition or otherwise result in the loss of forested area. In fact, forest stands are being retained to maintain a vigorous condition that supports enhanced tree growth and productivity, thus contributing to long-term carbon uptake and storage. In 2010, forests in the United States removed about 757 megatonnes[16] of carbon dioxide from the atmosphere after accounting for natural emissions (e.g., wildfire and decomposition) (US EPA 2015).

Some assessments suggest that the effects of climate change in some United States forests may cause shifts in forest composition and productivity or prevent forests from fully recovering after severe disturbance (Anderson-Teixeira et al. 2013), thus impeding their ability to take up and store carbon[17] and retain other ecosystem functions and services. Climate change is likely already increasing the frequency and extent of droughts, fires, and insect outbreaks, which can influence forest carbon cycling (Kurz et al. 2009, Allen et al. 2010, Joyce et al. 2014).

Forests have a “boom and bust” cycle with respect to carbon, as forests establish and grow, experience mortality with age or disturbances, and regrow over time. Forest management activities such as harvests and hazardous fuels reduction have characteristics similar to disturbances that reduce stand density and promote regrowth through thinning and removal, making stands and carbon stores more resilient to environmental change (McKinley et al. 2011). The proposed actions have little ground-disturbing activities; therefore, no carbon would be released into the atmosphere. Furthermore, any initial carbon emissions from this proposed action would be balanced and possibly eliminated as the stand recovers and regenerates, because the remaining trees and newly established trees typically have higher rates of growth and carbon storage (Hurteau and North 2009, Dwyer et al. 2010, McKinley et al. 2011).

In summary, this proposed action affects a relatively small amount of forest land and carbon on the Mt. Hood National Forest and Northwest Oregon BLM District, in the near term, might contribute an extremely small quantity of greenhouse gas emissions relative to national and global emissions. This proposed action would not convert forest land to other non-forest uses, thus allowing any carbon initially emitted from the proposed action to have a temporary influence on atmospheric greenhouse gas concentrations. This proposed action is consistent with internationally recognized climate change adaptation and mitigation practices.

## Impacts from Predicted Climate Change

Changing climate has affected and will continue to affect hydrologic and fire regimes, among other processes and resources, in the central Cascade region where the proposed actions would take place. Climate models and predictions are regional in scale; therefore, effects at the project level are more uncertain. However, some broad climate trends are still applicable and adaptation strategies would be

[16] A megatonne is one million metric tons; equal to about 2.2 billion pounds.
[17] The term “carbon” is used in this context to refer to carbon dioxide.

incorporated into the design of any management actions. The following summary of trends and climate effects are from the area's climate vulnerability assessment (Halofsky et al. 2020).

Regional mean annual temperature has increased by about 1.2 to1.4 degrees Celsius since 1895, while there are no substantive changes to annual precipitation. However, spring precipitation has increased by about 15 percent when comparing the most recent 30 years (1989 to 2018) to the previous period (1895 to 1988).

The effects of climate change on hydrology is likely to be substantive, primarily due to a decreased snowpack and earlier snowmelt that would shift the timing and magnitude of streamflow. Snowmelt occurs one to three weeks earlier and there has been an increase in rain-on-snow events throughout the Cascades. Increasing temperatures and changes in timing and magnitude of flow would affect water quality, water availability, soils, vegetation, and habitat for aquatic species. Receding glaciers can influence streamflow volume and variability, and increase the risk of outburst floods, landslides, and debris flows. Stream temperatures are predicted to increase by about 1.3 degrees by the 2040s and 2.2 degrees in the 2080, relative to the baseline period in the 2000s.

Fire is considered one of the primary disturbance agents that shaped landscape dynamics across this area. Much of the assessment area has a moderately frequent, mixed-severity fire regime historically. Mosaics of low-, moderate-, and high-severity fire were characteristic with some large, east-wind driven fires of high severity. The climatic conditions that gave rise to the Labor Day Fires of 2020 were not wholly unprecedented. However, in general fire activity (i.e., increased area burned, increased fire size, shorter fire intervals) is projected to increase during the 21st century. Additionally, modeled suitability for large wildfires (greater 200 hectares) during the 21st century is expected to increase across the area and include the northeastern part of the Mt. Hood National Forest and Northwest Oregon BLM District on the high end of this.

# Other Required Disclosures

## Prime Farmlands, Rangelands, Forestlands, and Parklands

U.S. Department of Agriculture (USDA), Departmental Regulation 9500-003 describes obligations of USDA agencies with respect to prime farmlands, rangelands, forestlands, and parklands. The proposed action described in this environmental assessment does not propose changes in land use as described in the regulation and would not result in the conversion of these lands to other uses.

## Floodplains and Wetlands

USDA Departmental Regulation 9500-003 and Executive Orders 11988 and 11990 describes obligations of Federal agencies with respect to floodplains and wetlands. Departmental Regulation 9500-003 advocates that beneficial functions and values of wetlands and floodplains be reserved. Executive order 11988 directs Federal agencies to restore and preserve the natural and beneficial values served by floodplains. Executive order 11990 directs Federal agencies to "avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative."

The Wild and Scenic Rivers Act requires the protection and enhancement of the values which caused the segment to be designated, including free flow, water quality and outstandingly remarkable values, within the wild and scenic river corridor. The floodplains and wetlands within these corridors would be protected in order to meet this statutory requirement. The selected alternative and comprehensive river management

plan will have beneficial impacts on all aquatic resources, including floodplains and wetlands, as discussed in Hydrology and Fish and Wildlife sections of this environmental assessment.

### Environmental Justice and Civil Rights

Executive Order 12898 directs federal agencies to identify and address the problem of adverse environmental effects by agency programs on minority and low-income populations. The principle behind Environmental Justice is that people should not suffer disproportionately because of their ethnicity or income level. None of the actions would impose any disproportionate adverse human health or environmental effects on minority or low-income populations as defined by the Environmental Justice Act. Opportunities for activities that low-income residents may engage in for subsistence, such as firewood cutting, hunting, or huckleberry gathering, would not be altered under the selected alternative. Therefore, low-income residents would not be adversely affected.

### Conflicts with Plans, Policies, or Other Jurisdictions

There are no known conflicts with plans and policies of other jurisdictions associated with implementing this project, including the Clean Water Act, Endangered Species Act, National Historic Preservation Act, and National Forest Management Act. The National Forest Management Act (NFMA) requires national forests to preserve and enhance the diversity of plant and animal communities to meet multiple use objectives based on the suitability and capability of the land. The proposed action is consistent with all other law, regulations and policy as discussed in the "Consistency with Relevant Laws, Regulations and Policies" sections in this environmental assessment.

### Potential or Unusual Expenditures of Energy

There would be no potential or unusual expenditures of energy with this project. The proposed action does not involve any forms of energy expenditure.

## Agencies and Persons Consulted

The Forest Service consulted the following individuals, Federal, State, tribal, and local agencies during the development of this environmental assessment:

#### Federal, State, and Local Agencies

- Oregon Department of Environmental Quality
- Oregon Department of Transportation
- Oregon Department Fish and Wildlife
- Oregon Department of Parks and Recreation
- Oregon Water Resources Department
- National Marine Fisheries Service
- U.S. Fish and Wildlife Service
- Natural Resource Conservation Service
- U.S. Army Corps of Engineers
- Wasco County

- City of Dufur
- State Historic Preservation Office
- Federal Highway Administration

### Tribes

- Confederated Tribes of Warm Springs
- Confederated Tribes of Grand Ronde
- Confederated Tribes of Siletz Indians

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# Appendix A: Monitoring Plan

**Table 14. Monitoring plan (Italicized monitoring questions are part of the current monitoring plans for Mt. Hood National Forest or Northwestern Oregon District of BLM)**

| River Value | Applicable River(s) | Monitoring Question | Indicator | Trigger | Threshold | Management Actions, if threshold reached | Sampling Procedure and Frequency |
|---|---|---|---|---|---|---|---|
| Water Quality, Fish, Botany | All | *Have Best Management Practices (BMPs) been implemented and are they effective at managing water quality consistent with the Clean Water Act?*<br>Are recreation sites adding sedimentation to the wild and scenic river? If yes, is the sedimentation negatively impacting the water quality? | Number of sites associated with trails, take-outs, boat ramps, parking lots, campgrounds, and roads that show evidence of erosion and delivery to the river or a tributary to the river | Observation of rilling and gullies at recreation areas | 0 sites | Designate and direct visitors to sustainable facilities, routes, and river access points.<br>Close and rehabilitate un-sustainable facilities, routes, and river access points.<br>Construct sustainable facilities, routes, and river access points if needed, and where appropriate | Annually for all rivers located outside of wilderness. The frequency of monitoring will increase with noticeable increase in use. The rivers located entirely within designated wilderness and currently see little use. Water quality monitoring, therefore, will be commensurate with apparent use; as use increases, monitoring frequency will also increase. |

| River Value | Applicable River(s) | Monitoring Question | Indicator | Trigger | Threshold | Management Actions, if threshold reached | Sampling Procedure and Frequency |
|---|---|---|---|---|---|---|---|
| Water Quality | All | *Have BMPs been implemented and are they effective at managing water quality consistent with the Clean Water Act?*<br>Is the segment of Wild and Scenic River that is on the Oregon Department of Environmental Quality (ODEQ) 303(d) list classified as impaired (Category 5)? | A designated Wild and Scenic river segment is included on the ODEQ's 303(d) list. | A pollutant has been identified by ODEQ to be impairing water quality on a segment of designated Wild and Scenic River. | The segment is listed as Category 5 and requires a TMDL (total maximum daily load) for the defined pollutant. | Development of a Water Quality Restoration Plan that qualifies ODEQ requirements for meeting the TMDL for the defined pollutant. | As determined in coordination with ODEQ in the signed Water Quality Restoration Plan. |
| Water Quality | Collawash River Segment 2 | Are there potential impacts to water quality from human waste in segment 2 of Collawash River? | Multiple numbers of human waste deposits (obvious shallow burial holes included) and/or direct conduits from fecal source to surface water body | Recent (within 1 year) evidence of dispersed camping or other concentrated recreation use, in areas without sanitary facilities | Multiple piles of unburied human waste observed (per site visit) | More frequent monitoring; informational signage with education on "pack it out" and defecating away from surface water; "pack it out" requirements; fix the cause of contamination; and provide sanitary facilities where possible | Annually. The frequency of monitoring will increase with noticeable increase in recreation use. |

| River Value | Applicable River(s) | Monitoring Question | Indicator | Trigger | Threshold | Management Actions, if threshold reached | Sampling Procedure and Frequency |
|---|---|---|---|---|---|---|---|
| Water Quality, Fish | Fifteenmile Creek Segments 3 and 4 | Is there preexisting management, landscape features, or range improvements that control or draw livestock away from over utilizing stream sections? | Livestock in the stream and disrupting redds (spawning nests), with primary concerns during Steelhead spawning season.<br>Number of sites associated with livestock use that show evidence of erosion and/or sediment delivery to the river or a tributary to the river | Evidence of livestock over utilizing or damaging stream features. Maintain minimum impact. | Evidence of cattle lingering in water bodies un-managed | Period of use during the gazing season on the Friend Unit is August 16 to September 30. Permittee controls livestock movement during season of use to minimize impact of stream sites utilizing management tools listed on the annual operating instruction plan to protect outstanding values. | Site monitoring using range monitoring methods under the ranger permit. |
| Botany | Collawash River Segment 1, Eagle Creek, South Fork Roaring River | *Are known populations of invasive species continuing to spread? Are new infestations occurring?*<br>Is use having an impact on vegetation along riverbanks of the designated wild and scenic river? | Human disturbance and degradation along riverbanks and gravel bars (e.g., trampling of vegetation, creation of informal trails, presence of invasive plants) | Observable (noticeable) increase in disturbances | An observable increase in human disturbance, noted between visits, every 3 to 5 years, that raises concerns | Survey a representative sample of river stretch within the segment.<br>Map areas where disturbance is observed using GPS. If disturbance is observed, educate with signage, rehabilitate disturbance, or consider reducing the number of visitors allowed to recreate in the area | Monitor visitor impacts periodically (every 3 to 5 years) by surveying a representative sample of river stretches within the segment. |

| River Value | Applicable River(s) | Monitoring Question | Indicator | Trigger | Threshold | Management Actions, if threshold reached | Sampling Procedure and Frequency |
|---|---|---|---|---|---|---|---|
| Botany | East Fork Hood River | Are climbing activities negatively impacting the violet suksdorfia at Pete's Pile? | Impacts to vegetation (vascular plants, bryophytes, and lichens) on the climbing wall and at the base of the climbing wall from climbers (Bryophytes = mosses and liverworts) | Evidence of vegetation (vascular plants, bryophytes, and lichens) dislodged from cracks, ledges, and crevices at climbing areas onto ground below | No plant material dislodged from cracks, ledges, and crevices at climbing area | Install interpretative signs to educate climbers about the rarity of violet suksdorfia and potential impacts from recreational activities. Continue fostering partnerships with the local climbing community. Develop a climbing management plan that addresses strategies for human waste management, resource protection and erosion control. This management plan will also address the unauthorized (social) trail. | Monitor Pete's Pile and other popular climbing areas on an annual basis to assess impacts to violet suksdorfia. |

| River Value | Applicable River(s) | Monitoring Question | Indicator | Trigger | Threshold | Management Actions, if threshold reached | Sampling Procedure and Frequency |
|---|---|---|---|---|---|---|---|
| Fish | Collawash River Segments 1 and 2, Fifteenmile Creek Segments 3 and 4, Fish Creek | Are we maintaining or enhancing quality aquatic habitat for threatened and endangered species within the Collawash River, Fifteenmile Creek, and Fish Creek wild and scenic river corridors? | People walking or cooling off in the stream and disrupting redds (spawning nests), with primary concern in late summer and fall (mid-August to November except in Fifteenmile Creek being early spring through Mid-July) during steelhead salmon and bull trout spawning season | Observation of people in the stream during late summer or fall, especially on gravel and cobble substrate | No more than 2 groups of people observed walking instream or disturbing stream substrate in areas that are < 3% gradient that are easily accessible via road | Information posted or signed. Forest Service personnel visits. Identify key spawning areas, and block access to direct use from these reaches | Monitoring of habitat qualities that includes current annual coordination with Oregon Department of Fish & Wildlife, U.S. Fish & Wildlife and Confederated Tribes of Warm Springs |
| Fish | Middle Fork Hood River, Collawash River Segments 1 and 2, Fifteenmile Creek Segments 3 and 4, Fish Creek | *Are Standards and Guidelines effective in maintaining or enhancing aquatic habitat complexity?* | Salmonid habitat | Evidence of reduction or degradation of stream habitat and water quality that supports salmonids | No increase in stream temperature. Maintenance of large wood cover and spawning gravel | Plan and implement actions that would improve habitat conditions | Monitoring of habitat qualities that includes current annual coordination with Middle Fork Irrigation District, Oregon Department of Fish & Wildlife, U.S. Fish & Wildlife and Oregon Department of Environmental Quality. |

| River Value | Applicable River(s) | Monitoring Question | Indicator | Trigger | Threshold | Management Actions, if threshold reached | Sampling Procedure and Frequency |
|---|---|---|---|---|---|---|---|
| Historic | Fifteenmile Creek Segment 1, South Fork Clackamas River | *Are important (National Register eligible) historic properties being maintained, stabilized, and repaired according to historic preservation standards? (Forest Service)*<br>*Are the outstandingly remarkable values of designated Wild and Scenic river corridors (including those classified as Wild, Scenic, or Recreational) being maintained? (BLM)* | Impacts to eligible cultural resources. Site integrity | Impact to integrity of historic properties (elements of integrity include location, setting, design, materials, workmanship, feeling, association) | One or more incidence of impact to integrity | Develop mitigation measures to preserve site integrity. Consult with State Historic Preservation Office concerning mitigation measures if an adverse effect determination is reached | Annual site condition assessment *(Forest Service)*<br>Evaluate 100 percent of BLM-authorized activities that have the potential to affect the outstandingly remarkable values of wild and scenic river corridors. This will be completed annually initially, and then changed to an interval to once every 3 years if 3 consecutive years of monitoring show 100 percent compliance. *(BLM)* |

| River Value | Applicable River(s) | Monitoring Question | Indicator | Trigger | Threshold | Management Actions, if threshold reached | Sampling Procedure and Frequency |
|---|---|---|---|---|---|---|---|
| Macro-invertebrate | Zigzag | Are recreational social trails in and around the stream impacting macroinvertebrates within the Zigzag River wild and scenic river corridor?<br>*Are Standards and Guidelines effective in maintaining or enhancing aquatic habitat complexity?* | Applies to only small springs and tributaries above elevation 3,500 feet.<br>Social trails paralleling spring or dispersed camping or fire rings near springs and spring fed tributaries.<br>People walking in springs or tributary crossing evidence | Evidence of people using the springs for collecting water.<br>Degraded or reduction in instream moss and vegetation | These springs are in steep and unstable areas and nearly inaccessible to hikers. Hikers and campers accessing these areas instream will create small landslides and debris flows in unstable and steep streams. No more than one new trail, campfire, or spring crossing reported in one year | Rehabilitate and close unauthorized trails and campfire rings<br>Information posted or signed to explain sensitive endemic species use and impacts caused by social trails. | Annual site inspections and field visits to monitor for new unauthorized trails, campsites, and roads while staff is performing normal field work. |

| River Value | Applicable River(s) | Monitoring Question | Indicator | Trigger | Threshold | Management Actions, if threshold reached | Sampling Procedure and Frequency |
|---|---|---|---|---|---|---|---|
| Recreation | Collawash River Segment 1, Eagle Creek, East Fork Hood River, Fifteenmile Creek Segments 2 and 3, Zigzag River | *Are people having a high level of satisfaction during their visit to the Mt. Hood National Forest?* | People at one time<br>Visitor satisfaction | Observed increase or crowding at parking areas or pullouts greater than 4 times per season outside holidays<br>Unacceptable shift in satisfaction score (from satisfied to not satisfied), or increase in crowding or conflict measured in National Visitor Use Monitoring | Not to exceeded 80 percent of the assigned river capacity greater than 2 times per season outside holidays | Trail development to disperse visitors. More group campground gathering places. Consider restrictions on number of people in each dispersed site<br>Increase site-specific monitoring if use increase is observed. | Site monitoring annually while staff performing work assignments. National Visitor Use Monitoring occurs every 5 years and informs satisfaction levels on a forest-wide scale. |
| Recreation | Eagle Creek, Fifteen Mile Creek Segments 2 and 3, Zigzag River | *Are the physical/biological, managerial and social settings of each Wilderness Resource Spectrum (WRS) maintained consistent with the standards for wilderness management?* | Encounters per day | Increases noted in group sizes or requests for group permits<br>Increases in impacts based on recreation site or solitude monitoring | Encounters with other groups shall be limited to no more than 10 groups per day during 80 percent of the primary recreational use season | Conduct additional visitor use monitoring | Wilderness monitoring protocols |

| River Value | Applicable River(s) | Monitoring Question | Indicator | Trigger | Threshold | Management Actions, if threshold reached | Sampling Procedure and Frequency |
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| Scenery | Middle Fork Hood River, South Fork Clackamas River, Zigzag River | Are we maintaining the visual quality objectives recommended for the Middle Fork Hood River and South Fork Clackamas River wild and scenic river corridors? (Forest Service)<br>*Are the outstandingly remarkable values of designated Wild and Scenic river corridors (including those classified as Wild, Scenic, or Recreational) being maintained? (BLM)* | Activities or modifications which alter landform, vegetation, water, or character within the viewshed as seen from the river and high use areas | Visitor use activities with evidence of erosion, soil compaction, exposed soils, or damaged vegetation, such as trampling, lack of ground cover or damaged trees | 1 site that does not meet visual resource management plan direction and visual quality objectives | Designate and direct visitors to sustainable facilities, routes, and river access points.<br>Close and rehabilitate un-sustainable facilities, routes, and river access points.<br>Construct sustainable facilities, routes, and river access points if needed, and where appropriate | Site inspections and field visits as part of normal Forest Service administrative duties. *(Forest Service)*<br>Evaluate 100 percent of BLM-authorized activities that have the potential to affect the outstandingly remarkable values of wild and scenic river corridors. This will be completed annually initially, and then changed to an interval to once every 3 years if 3 consecutive years of monitoring show 100 percent compliance. *(BLM)* |
| Wildlife | East Fork Hood River | *What is the trend for early-seral habitat needed for deer and elk persistence?*<br>What is the trend for habitat needed for the Harlequin duck in the East Fork Hood River wild and scenic river corridor? | Wildlife disturbance, specifically Harlequin duck nesting and migration in stream and floodplain, and big game calving, fawning, and foraging habitat | Evidence of new unauthorized dispersed camping sites or user made trails and roads in the corridor | No new (<1) unauthorized dispersed campsites, trails, or roads within the entire river corridor | Restore disturbed area and close it to future use in same year discovered | Annual site inspections and field visits to monitor for new unauthorized trails, campsites, and roads while staff is performing normal work assignments. |

| River Value | Applicable River(s) | Monitoring Question | Indicator | Trigger | Threshold | Management Actions, if threshold reached | Sampling Procedure and Frequency |
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| Wildlife | Fifteenmile Creek All Segments | Are we effectively maintaining or enhancing wildlife habitat in the Fifteenmile Creek wild and scenic river corridor? | Wildlife disturbance and habitat loss | Evidence of new unauthorized dispersed camping sites or user made trails and roads in the corridor | No new (<1) unauthorized dispersed campsites, trails, or roads within the entire river corridor | Restore disturbed area and close it to future use in same year discovered | Annual site inspections and field visits to monitor for new unauthorized trails, campsites, and roads while staff is performing normal work assignments. |

# Appendix B: Response to Comments

In February 2021, the Mt. Hood National Forest and Northwest Oregon BLM conducted a comment period. Six comments were received, which were from American Forest Resource Council, Oregon Wild, American Whitewater, Confederated Tribes of Warm Springs, and two individuals. A full response to comments is available in the project record, and responses to the substantive comments is contained in this appendix.

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Botany and Invasive Plants | The main threat to both of these species [cold water corydalis and Violet suksdorfia], as well as other riparian plant communities, is recreational use, specifically foot traffic. The main threats to cold water corydalis are ground disturbance and invasive species. The text here states that habitat sites will be monitored, and if a "degradation threshold" is reached, the various strategies of rehabilitation, education or reducing the number of visitors would be employed.<br>The Botany ORV in Segment 1 [of Collawash River] is based on the presence of habitat for cold water corydalis, a rare species listed as sensitive in the region., The other ORV is botany, based on the presence of high quality habitat for Cold water Corydalis, a rare wildflower species which is critically imperiled in Oregon. The species has been found in tributaries to the creek [Eagle Creek] . .<br>The Botany ORV is based in particular on high quality habitat, consisting of moist basalt rock outcrops, for the violet suksdorfia, (Figure 9), an extremely rare species threatened with extirpation in Oregon, where there are few known sites. | I would add continuing surveys to determine where the species are actually found, and restricting access to those areas. | The main threat to violet suksdorfia is recreational use, specifically rock climbing at Pete's Pile. Pete's Pile will be monitored annually by a Forest Service botanist to evaluate climbing impacts. Posting signs in the area, including an educational kiosk, and public outreach will also help to inform climbers and manage climbing activity at Pete's Pile. However, if public outreach efforts are not effective, then the Forest will develop a climbing management plan that addresses strategies for human waste management, resource protection and erosion control, as identified in the monitoring plan (see Appendix A: Monitoring Plan in this environmental assessment).<br>The main threat to cold water corydalis is habitat degradation resulting from forest management activities (e.g., timber harvest) and recreational use, specifically trampling of plants. Cold water corydalis is confined to cold water habitat in rivers and streams, including headwater streams, so populations are reasonably protected. Eagle Creek is an example where the river trail is close enough to the river that any corydalis populations that may be in the area could be disturbed by recreationists. Therefore, Eagle Creek is an example where there will be periodic monitoring of detrimental impacts, if any, from recreational use (see Appendix A: Monitoring Plan).<br>Surveys may be done in the future to locate new populations of cold water corydalis in wild and scenic river segments. It is in the public as well as the U.S. Forest Service's interest to identify and conserve cold water corydalis habitat (where the species could potentially occur). |

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Botany and Invasive Plants | Toilet installation is of obvious benefit to cold water corydalis by improving water quality. | The toilets can be located in areas which are not potential habitat for this species. | Toilet facilities would be installed away from the banks of the river and tributary streams and, therefore, away from cold water corydalis habitat, not only to protect the rare species, but to protect water quality as well (see the Botany, Direct and Indirection Effects of the Proposed Management Actions and the Hydrology, Direct and Indirect Effects of the Proposed Management Actions section in this environmental assessment for more information.). |
| Botany and Invasive Plants | Do not spray herbicides on the ground. They kill nature plants and can and will leach into the soil and migrate into the streams and rivers killing the fish and other aquatic life. | If the area needs to be worked on to keep the seedlings viable etc. we need to have people go in to do the thinning/ weeding. | This comprehensive river management plan, and associated proposed action, are not proposing any herbicide or other chemical treatments. Any invasive plant treatments, including herbicide treatments, would comply with the Site-Specific Invasive Plant Treatments for Mt. Hood National Forest and Columbia River Gorge National Scenic Area in Oregon Record of Decision (https://www.fs.usda.gov/nfs/11558/www/nepa/15663_FSPLT1_015679.pdf) or the BLM Integrated Invasive Plant Management for the Northwest Oregon District Decision Record (https://eplanning.blm.gov/eplanning-ui/project/95247/570). |
| Botany and Invasive Plants | Under the CRMP, monitoring will be conducted to assess the impact of climbing at Pete's Pile on the violet species and other vegetation in the area. Climbers will be educated about their possible negative impact on this species, and a climbing management plan would also address erosion control and human waste management. | In that plan, I would make areas where the violet grows off limits to climbers. | Populations of violet suksdorfia are growing on the rock face (along ledges and in crevices, cracks, and other nooks and crannies) that is popular with climbers. Adoption of the comprehensive river management plan would ensure that monitoring is conducted to assess impacts to violet suksdorfia and other vegetation in the area at Pete's Pile, and vicinity, that may be degraded by climbers. If necessary, the comprehensive river management plan would help protect and enhance violet suksdorfia by educating climbers and potentially regulating recreational use (specifically, the number of climbers and climbing practices) in the East Fork Hood River. See Appendix A: Monitoring Plan in this environmental assessment for more information. |

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Boundaries | With a few exceptions, we are generally OK with the boundary adjustments made by the Forest Service. | We urge that the boundary be narrower within the Wilderness and wider below the Wilderness boundary as that will allow for overall better protection of the outstandingly remarkable values. | The Forest re-evaluated the boundaries and determined that the proposed final boundary appropriately protects the outstandingly remarkable values. For Fifteenmile Creek, the values are wildlife, recreation, historic, and fisheries. The boundary on Fifteenmile Creek was adjusted to follow the Mount Hood National Recreation Area boundary to capture the recreation outstandingly remarkable value; this adjustment also provides benefits for the fisheries and wildlife outstandingly remarkable values. The boundaries were also adjusted to follow Forest Service Road 4420 in the first segment in order to capture the historic outstandingly remarkable value. In addition, the wild and scenic boundary averages 640 acres per river mile, which is wider than the other rivers in this comprehensive river management plan. This wider boundary protects and enhances the river values, particularly the wildlife outstandingly remarkable value. The suggested changes do not provide specific areas to include that would further protect or enhance these values. As such, no changes were made to the proposed boundaries. |

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Boundaries | With a few exceptions, we are generally OK with the boundary adjustments made by the Forest Service. | The FS has made the boundary wider in the lava field, and narrower elsewhere. We urge that the final boundary should be narrower in the lava field, because the lava field is not really threatened by development, and the boundary should be wider in the forested areas that would better protect and restore outstandingly remarkable values. | The Forest re-evaluated the boundaries and determined that the proposed final boundary appropriately protects the outstandingly remarkable values. For Middle Fork Hood River, the values are geology, scenery and fisheries. Both the geology and scenery outstandingly remarkable values are directly tied to the Parkdale Lava Beds, and the fisheries outstandingly remarkable value is tied to the bull trout population. The boundary on Middle Fork Hood River was adjusted to encompass as much of the lava beds as possible within the lateral boundary requirements to protect the outstandingly remarkable values. To balance this addition, the boundary was narrowed to exclude the pipeline at the Coe diversion towards the settling pond within the Middle Fork Irrigation District to balance the addition because this area is not contributing to the identified outstandingly remarkable values of scenery, fish, or geology. The suggested changes do not provide specific areas to include that would further protect or enhance these values. As such, no changes were made to the proposed boundaries. Finally, any future development would need to adhere to the Wild and Scenic Rivers Act and would analyze the impacts to the river values, regardless of the proposed boundary changes. |
| Climate Change | Fast growing healthy trees absorb and store huge amount of carbon dioxide cleaning the air. | (1) We need to look at least a 50 years rotation of tree harvest and/or look at selective thinning or don't cut at all to help curtail global warming. (2) We need to dramatically increase recycling of various paper products to cut down on the need to cut down trees. We need to be mining landfills for materials to be converted into needed products. | This comprehensive river management plan, and associated proposed action, are not proposing to harvest or plant any trees in the proposed corridors. Any specific management actions proposed in the future will analyze the impacts to the river values, including outstandingly remarkable values, free flow conditions, and water quality, in a site-specific environmental analysis. Future management will also need to ensure it complies with the Wild and Scenic Rivers Act, including Section 10 which requires that the rivers be "administered in such manner as to protect and enhance the values which caused it to be included in said system . . ." Both the environmental assessment and comprehensive river management plan have been updated to provide information about how climate change will affect the wild and scenic rivers into the future. |

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Climate Change, Wildfire | One notable omission from the Comprehensive River Management Plan is a discussion of wildfire, an element that shapes many of the Outstandingly Remarkable Values along these rivers. We acknowledge that events of the past year, including direct impacts to rivers considered here, have heightened our awareness of this issue. | We believe the Comprehensive River Management Plans for Wild and Scenic Rivers in the region should better take this into account and address the occurrence of wildfire, its management (including suppression), and its effects so that river values are protected before, during, and after a fire. The Comprehensive River Management Plan should include specific information about Outstandingly Remarkable Values, sensitive areas, and other at-risk values and prepare this information for entry into the Wildland Fire Decision Support System (WFDSS) as one means toward protecting river values during wildfire response. The Comprehensive River Management Plan should acknowledge that fire is a natural ecosystem process that periodically affects the rivers and their surrounding environment as part of a dynamic system and that it is within this larger context that people know, use, and enjoy the rivers that are, in part, shaped by fire. | The baseline condition for each designated wild and scenic river corridor is available in the River Values Report (https://www.fs.usda.gov/nfs/11558/www/nepa/109997_FSPLT3_5595719.pdf). Where relevant, the impacts from previous wildfires were included in the description. The environmental analysis has been updated to incorporate the changed conditions associated with the Riverside and Lionshead Fires that occurred in 2020. Also, the comprehensive river management plan has been updated to incorporate climate change, including natural disaster and extreme weather events, such as those experience in September 2020. The outstandingly remarkable values outlined in the River Values Report were used during fire suppression efforts during the 2020 fire season. These values will continue to be used to identify values at risk if future wildfires occur in these designated wild and scenic river corridors. |
| Cultural Resources | I am providing some comments on the cultural sections of the Nine Rivers plan. I'm sure you would agree that the relevant sections don't represent a modern consideration of cultural resources or the policy guidelines that we all observe. | This is from pages 112-113 of the Nine Rivers Draft Management Plan. The section does not mention NHPA, and does not adequately reflect the section 106 process or Agency responsibilities. I have included some additional comments below, but in general this section can be far more explicit and prescriptive, and reflect the actual NHPA/Forest Service PA that will guide. | Although similar, the evaluation criteria for wild and scenic river historic values are separate and distinct from the criteria for evaluation established for identifying historic properties under the National Historic Preservation Act and detailed in 36 CFR 60.4. The wild and scenic river evaluation criteria does not negate the National Historic Preservation Act requirement for consideration of the effects of undertakings on historic properties within the nine designated wild and scenic river corridors. All required consultation with the State Historic Preservation Officer will be completed for any proposed management actions in the wild and scenic river corridors. |

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Fisheries | The final ORV for this river segment is Macroinvertebrates, based on the probable presence of Scott's apatanian caddisfly, a glacial relict species endemic to Mt. Hood National Forest. It has patchy distribution, only recorded around Mt. Hood. The species is found one mile from this river segment in the Little Zigzag River, so most likely occurs here. | As stated here, surveys should be done to investigate perennial seeps and springs in this river segment to discover and protect known sites. | Surveys will continue in potential habitat (non-glacial springs with wiry moss substrate) around Mt. Hood, including several headwater springs on the Zigzag River (https://www.fs.fed.us/r6/sfpnw/issssp/species-index/fauna-invertebrates.shtml). Any future proposed projects would conduct surveys and complete a Section 7 review under the Wild and Scenic Rivers Act, if needed to ensure the caddisfly species are protected. |
| Forest Plan | We also recommend that the Forest Service consider amending the Desired Future Condition described on page four-209 of the LRMP to align with the ability to actively manage these corridors for the forest health objectives we outline above as well as to achieve the values identified for the designated river and stream segments. This page identifies a desired future condition for wild segment corridor as an “unmodified environment.” This is also noted on page 82 of the Draft Comprehensive River Management Plan. Such language will likely be viewed as prohibitive of not only regulated timber harvest but also unregulated timber harvest. Such direction would not allow the Forest Service to actively manage forests to mitigate the risk of catastrophic wildfire or insect and disease infestations. The LRMP also only permits access to these wild corridors via “trail or water.” It is well documented that adequate road access is necessary to feasibly implement active forest management. | We urge the Forest Service to amend this language pertaining to 1.) unmodified environment; and 2.) access to allow certain active management that includes unregulated timber harvest to occur in an economically feasible manner in these wild corridors. | The Wild and Scenic Rivers Act (Section 2(b)(1)) defines a wild river as "Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America." Wild rivers have no roads, railroads or other provisions for vehicular travel within the river area. A few existing roads leading to the boundary of the river area are acceptable. The classification of each river was determined by Congress in Omnibus Public Land Management Act of 2009. The river administering agencies cannot change the classification and cannot make changes within the wild and scenic river corridor that would impact the classification into the future. As such, roads cannot be added to wild segments and they will continue to be "essentially an unmodified environment" to comply with the Wild and Scenic Rivers Act. |

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Forest Plan | The proposed amendment to B1-076 to allow snowmobile use in the "Wild" sections of Fifteenmile Creek is acceptable so long as use is allowed only as designated on a map, I would hope only on Forest Service roads. (I did not understand what "cross country" meant). | The amendment should read "is the only motorized use permitted, and must be outside of wilderness areas . . ." Otherwise the implication is that other motorized use is allowed inside wilderness areas. | Existing snowmobile routes, include Forest Service Road 4420 and 2730, and cross country (off road) travel is permitted. No natural or cultural resource concerns were identified with this proposed Forest Plan amendment. The impacts of the Forest Plan amendment are fully analyzed and disclosed in the environmental assessment. We have updated the proposed forest amendment language for B1-076 to address the commenter's concern. |
| Forest Plan | The "Desired Conditions" on NFS river corridors correspond with goals of the river segment's particular classification, given on p. 81. One of the goals for "Wild segments is to maintain "an essentially unmodified environment", which is why they were moved to the AI LUA, where timber harvest is not: allowed. Desired future conditions are also consistent with the river segment's classification, and given on p. 82. | Although I agree with the descriptions, taken from the Forest Plan, I would add that any development or existing use should not be at the expense of ORV's. | Programmatic forest plan amendments to desired conditions were not considered with in this planning effort in order to be consistent with existing wild and scenic river management across the Forest. All applicable forest plan components, including desired conditions, will be considered for the 14 wild and scenic rivers on the Forest during the forest plan revision process. |
| Forest Plan | We recommend that the Forest Service consider amending this piece of LRMP direction to provide managers with a clear vision of what type of treatments are permissible and advisable in the W&S corridors to achieve key objectives. | We recommend amending to read: "…Unregulated timber harvest and salvage should occur to reduce stand densities to mitigate risk of catastrophic wildfire and severe insect and disease infestation, address public safety hazards, and ensure adequate forest cover." We believe it is particularly important to replace the word "may" with the word "should" to provide forest managers with the clear guidance that active management to achieve forest health objectives is not simply permitted, but desired on this land base to meet the values identified for the designated river segments. | This comprehensive river management plan, and associated proposed action, are not proposing any vegetation management. As such, the standards and guidelines associated with timber harvest (regulated or unregulated) were not reviewed at this time. Any specific vegetation management actions proposed in the future will analyze the impacts to the river values, including outstandingly remarkable values, free flow conditions, and water quality, along with any potential forest plan amendments (such as those suggested). Programmatic forest plan amendments for specific resource areas were not considered in this planning effort in order to be consistent with existing wild and scenic river management across the Forest. All the applicable forest plan components, including standards and guidelines, will be considered for the 14 wild and scenic rivers on the Forest during the forest plan revision process. |

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Forest Plan | The Wild and Scenic River corridors should be managed like LSRs. Which is to rely on natural processes to develop and restore conditions supporting outstandingly remarkable values. | Careful thinning in dense young managed stands might be helpful in some cases but logging in mature forests and stands over 80 years old is not necessary or desirable to protect and restore ORVs. | The comprehensive river management plan, and associated proposed action, are not proposing any vegetation management. Any specific management actions proposed in the future will analyze the impacts to the river values, including outstandingly remarkable values, free flow conditions, and water quality, in a site-specific environmental analysis. Future management will also need to ensure it complies with the Wild and Scenic Rivers Act, including Section 10 which requires that the rivers be "administered in such manner as to protect and enhance the values which caused it to be included in said system." Also, the site-specific planning process will complete a Section 7 review to ensure compliance with the Wild and Scenic Rivers Act, if the project occurs within the bed and banks of a designated wild and scenic river. |
| Forest Plan | The EA (p 24) says that “The majority of water quality impacts to the corridors were caused by past logging and road building [and]These water quality impacts persist today …” This is strong evidence that logging and roads should be avoided to conserve outstandingly remarkable values. . . . Timber sales are a crude tool that have many trade-offs on soil, water, scenery, habitat, carbon etc. The FS should recognize that the effects of so-called unregulated harvest are often just as significant as the effects of regulated harvest. Any goal that can be accomplished with a timber sale can be accomplished by non-commercial thinning or prescribed fire with many fewer trade-offs. This should be the preferred approach in Wild and Scenic River corridors. | The FS should adopt “A” land use allocations for Congressionally designated Wild and Scenic River corridors, with an exception for variable density thinning in dense young stands (<60 years old) that are accessible from existing roads. | The land use allocation for these nine wild and scenic rivers was chosen based on the classification designated by in the Omnibus Public Land Management Act (Public Law 111-11). The U.S. Department of Agriculture and U.S. Department of Interior guidelines for management of wild and scenic rivers provide more specific information about timber harvest activities by classifications. Wild segments should "show little or no evidence of human activity," including timber harvest. The guidelines continue on to state: "There should be no row crops or ongoing timber harvest and the river area should show little or no evidence of past logging activities" (USDA and USDI 1982). These guidelines align well with the A-1 land use allocation as defined by the Mt. Hood Land and Resource Management Plan. The scenic and recreational classifications allow for high levels of human activity and access, including timber harvest, which aligns with the B-1 land use allocation. Also, the comprehensive river management plan, and associated proposed action, are not proposing any vegetation management. Any specific management actions proposed in the future will analyze the impacts to the river values, including outstandingly remarkable values, free flow conditions, and water quality, in a site-specific environmental analysis, as described in previous comments. |

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| Forest Plan | The "Management Direction" describes the Desired Condition for these river corridors under the Forest Service or BLM Resource Management Plans. Under the Forest Plan, the desired conditions vary according to the river classification (Wild, Scenic, or Recreational). The land use allocation also varies accordingly (Al-Wild, Bl-Scenic or Recreational). | Will timber harvest be allowed in the Bl segments? How does the 1994 NWFP amendment modify the Mt. Hood Forest Plan with respect to Wild and Scenic Rivers? | The Forest Plan provides direction for timber harvest in all river classifications on pages Four-214 to Four-215. Specifically, standards and guidelines B1-038 through B1-047 focus on timber management in wild and scenic rivers. Regulated timber harvest as well as salvage activities are allowed in both scenic and recreational segments (B1 land use allocations). See the previous responses for more details about how this aligns with the Wild and Scenic Rivers Act.<br>Both the environmental assessment and comprehensive river management plan have been updated to provided clarification on how the Northwest Forest Plan applies to the designated wild and scenic river corridors on National Forest System lands. All these lands are designated as Congressionally Reserved Areas under the Northwest Forest Plan. Most of the lands within the corridors are also within Riparian Reserves. Riparian Reserves include areas along rivers, streams, wetlands, ponds, lakes, and unstable or potentially unstable areas where the conservation of aquatic and riparian-dependent terrestrial resources receives primary emphasis. Appendix F in the comprehensive river management plan provides a list of applicable standards and guidelines from both the Forest Service and BLM management plans. |
| Forest Plan | Appendix F includes the Management Direction from the Forest Plan and the statement that use of motorized watercraft “may occur within recreational segments.” This is reiterated in the Environmental Assessment that desired conditions for recreational segments may include motorized boats. We question whether motorized watercraft are appropriate for the segments considered in this Comprehensive River Management Plan. | The fact that a use may be permissible in the Forest Plan should not preclude the Forest from determining that use is inappropriate for the subset of rivers considered here. Section 10a of the Wild and Scenic Rivers Act establishes that each river “shall be administered in such manner as to protect and enhance the values which caused it to be included.” Allowing motorized watercraft on the segments of the Collawash, East Fork Hood River, or Fish Creek classified as recreational is incompatible with values identified for these rivers. | There is no known motorized use at this time. Programmatic forest plan amendments for specific resource areas were not considered in this planning effort in order to be consistent with existing wild and scenic river management across the Forest. All the applicable forest plan components, including standards and guidelines, will be considered for the 14 wild and scenic rivers on the Forest during the forest plan revision process. |

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Forest Plan | Logging is incompatible with maintaining scenic values in scenic, recreational, and wild rivers. | The visual quality objective for vegetation should be “preservation” in all Wild and Scenic River corridors. | The visual quality objectives in the Forest Plan were established to match the classification designated by Congress in the Omnibus Public Land Management Act. The visual quality objective for wild segments is preservation as seen from the river, riverbanks and trails. The visual quality objective for scenic segments is retention and the visual quality objective for recreation segments is partial retention. These visual quality objective aligns well with the Wild and Scenic River Act requirements for classifications. As previously stated, this comprehensive river management plan, and associated proposed action, are not proposing any vegetation management that would impact visual qualities. |
| Forest Plan, Wild and Scenic Rivers Act | Congressionally designated Wild and Scenic River deserve species protection, not just reliance on overly optimistic generic standards that don’t work very well in the real world. | The Wild and Scenic River Plan should adopt specific standards for livestock grazing in WSR corridors. It is not good enough to rely on forestwide standards & guidelines that are known to lead to unacceptable resource degradation affecting soil, water, riparian, aquatic, vegetation, and scenic vales. Livestock are not well behaved. They tend to loiter in sensitive areas such as riparian areas and springs (especially in relatively dry areas such as Fifteenmile Creek drainage). | The Badger Creek Grazing Allotment decision memo (signed September 21, 2007) and annual operating plan include mitigation measures and monitoring for Badger Creek. This comprehensive river management plan, and associated proposed action, are not proposing any changes to the grazing allocations or grazing management. As such, the standards and guidelines associated with grazing were not reviewed at this time. Any specific any changes to the Badger Creek allotment proposed in the future will analyze the impacts to the river values, including outstandingly remarkable values, free flow conditions, and water quality, along with any potential forest plan amendments (such as those suggested). Programmatic forest plan amendments for specific resource areas were not considered in this planning effort in order to be consistent with existing wild and scenic river management across the Forest. All the applicable forest plan components, including standards and guidelines, will be considered for the 14 wild and scenic rivers on the Forest during the forest plan revision process. |

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Grazing | This portion of the river corridor allows live stock grazing. It is really important to keep cattle away from the riparian areas of these river corridors, especially because of fish spawning here. The monitoring question is proactive, emphasizing features that would draw livestock away from over utilizing stream sections. The Indicator, Trigger and Threshold are all good. Fortunately the period of use is limited to August 16 to September 30; management tools to keep cattle out of the stream are listed in the annual operating instructions. | Nonetheless, I would retire this allotment when the present permittee no longer wants it. | This comprehensive river management plan, and associated proposed action, are not proposing any changes to the grazing allocations or grazing management. Retiring an allotment is outside the scope of this project. When the grazing permit is reviewed in the future, the impacts to the wild and scenic river will be considered in the process. Both the current Badger Creek Grazing Allotment decision memo and annual operating plan include mitigation measures and monitoring for Badger Creek. |
| Hydrology | Water quality here is only fair, due to 303(d) listings for iron, copper, thallium and biological criteria (E.coli?). There is also a TMDL (2018) for temperature. | If E. coli levels are high, dispersed camping should be examined as a source and remedied, if necessary. · | The East Fork Hood River is not listed as impaired for E. coli by the Oregon Department of Environmental Quality. No new unauthorized dispersed camping is allowed in the corridor to protect the wildlife outstandingly remarkable value, as described in Appendix A: Monitoring Plan. We will continue to manage recreation in the corridor with best management practices. If water quality issues related to E coli arise in the future, we will use adaptive management (as outlined in Appendix A: Monitoring Plan) to improve conditions to acceptable levels. |
| Hydrology | Fifteenmile Creek has one small instream water right, issued in 1990, and another small right (1--26 cfs) under consideration . . . | . . . [These] should be implemented to protect the Fisheries ORV and other river values. | Neither of these water rights are under the jurisdiction of the Forest Service. A water right for varying amounts on Fifteenmile Creek was issued to the Oregon Water Resources Department on March 27, 1990. Depending on the time of year, the right varies between 4 and 20 cubic feet per second. This right to use the water is to maintain a beneficial instream flow for the purposes of supporting aquatic life. Also, the Oregon Department of Fish and Wildlife applied for a water right for the purposes of beneficial instream uses, and it is currently under review. Depending on the time of year, this right would vary between 10 and 26 cubic feet per second. The Forest Service is supportive of these water rights being fully implemented. |

| Issue | Comment | Recommendation/Suggested Remedy from Commenter | Response to Comments |
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| Hydrology | Toilet installation along the Collawash River is an excellent pro active means of reducing fecal contamination. These two river segments (20 miles total) have a fairly high combined Use Capacity (355 overnight, 450 day use); one segment is designated as Recreational and the other has Recreation as an ORV. | Toilets should be placed in particular where there is dispersed camping and camping limited to those areas. Day use toilets should be placed at trail heads or where there is some particular river feature that attracts people. I would also suggest the installation of mutt mitts at similar locations where dogs are allowed, and trash cans for their disposal. | Toilets, as planned, are intended to be placed in areas of concentrated dispersed or day use to reduce localized impacts to water quality (see the Hydrology, Direct and Indirect Effects of the Proposed Management Actions section of this environmental assessment for more information). At this time, dog waste has not been identified as an issue in this area. If it is identified as an issue in the future, actions such as those would be considered to help protect water quality. |
| Hydrology, Fisheries | Water quality in these segments is fair, and the watershed functioning at risk, with issues pertaining to sedimentation and water temperature. Water quantity conditions are poor, probably due to the numerous diversions. | Considering the high value of fisheries resources here, the agencies should work to improve both water quality and quantity by reducing road connectivity and roads, allowing upstream vegetation to recover, and minimizing downstream diversions. | Fifteenmile subwatershed is a priority watershed for the Mt. Hood National Forest. A Watershed Restoration Action Plan is currently being drafted and is expected to be completed in late 2021, with similar format to the other three watershed restoration action plans already started: https://www.fs.usda.gov/resources/mthood/landmanagement/resourcemanagement. In general, the forest is prioritizing restoration of watersheds supporting multiple threatened or endangered fish species. These action plans also identify needed restoration across an entire 6th field watershed (generally 15,000 to 25,000 acres in size). The action plan will include management actions focused on water quality and quantify. Also, this plan will involve other government agencies, Tribal governments, watershed groups, and interested landowners to collaboratively improve aquatic conditions in this watershed. |

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| Hydrology, Fisheries | Water quality (as well as quantity) is also negatively affected by the Clear Branch Darn, primarily water temperatures. If the Forest Service truly considers Fisheries an ORV for the Middle Fork, it must act now, with other agencies such as ODFW, to alter the dam and its operations to better accommodate these fish populations and ensure their survival. | (1)Minimum flows must also be guaranteed below the irrigation diversions. This must be done before climate change reduces glacial flow even further, and thereby the natural flow in the river upstream of the dam. (2) The location of the Clear Branch darn and the three irrigation diversions needs to be shown on the Middle Fork Hood River map. | The impacts to both water quality and quantity (free flow) from Clear Branch Dam are discussed in the comprehensive river management plan, environmental assessment, and river values report. The environmental assessment has been updated to provide a map of the Middle Fork Irrigation District infrastructure and its proximity to the wild and scenic river boundary. The Western Hood Subbasin Temperature total maximum daily load, which includes the East Fork Hood River and Middle Fork Hood River, was revised by Oregon Department of Environmental Quality in February 2018 and awaits final approval from the Environmental Protection Agency. This total maximum daily load is being revised to incorporate the current temperature standards. Water instream flow analysis was completed as part of this process and will be considered in the Clear Branch Dam planning process. Also, any design features and mitigation measures developed as part of the Clear Branch Dam project and/or associated Endangered Species Act consultation will consider the management of the designated Middle Fork Hood River wild and scenic river. More information about this project will be available on the Forest website in the future: https://www.fs.usda.gov/projects/mthood/landmanagement/projects. |
| Hydrology, Fisheries | This segment has valuable fisheries resources, and I am concerned about upstream diversions for agriculture and hydroelectric power interfering with water quality, free flow, and the attainment of the Fisheries ORV to the degree otherwise possible. The agricultural diversion is greatest in the summer, when stream flow input is lowest and temperatures are higher. | A Section 7(a) review should be completed that stipulates minimum flows after other uses on all tributaries as well as the main stem of this river. | Section 7(a) of the Wild and Scenic Rivers Act provides a specific standard for review of developments below or above or on a stream tributary to a designated river. Such developments may occur as long as the project “will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area as of the date of designation . . .” This standard applies to projects outside the river corridor, but on the same river or a tributary. To meet this requirement, the Natural Resources Conservation Service and Forest Service will need to evaluate the Clear Branch Dam project under this "invade the area or unreasonably diminish" standard. More information about the process is available here: https://www.rivers.gov/documents/section-7.pdf. |

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| Maps | Improvements on vicinity map | (1) For Figure 1, the Vicinity Map, I would have liked a better showing of the South Fork of the Clackamas River, which is on BLM land in Wilderness, I believe. (2) It would have been helpful to label the subsegments for the Collawash and Fifteenmile River corridors in addition to the color coding. (3) On the map for the South Fork Clackamas River, it was unclear if the dark green Wilderness portion was on BLM or Forest Service land. Please clarify. | Individual maps were provided in the map packet available on the project website (https://www.fs.usda.gov/project/?project=54674) and by request. The individual maps are also included as an appendix to the comprehensive river management plan. These maps provide the level of detail requested for South Fork Clackamas River. Also, figure 1 in the environmental assessment has been updated to add the segments for both South Fork Clackamas River and Fifteenmile Creek. |
| Maps | Improvements on vicinity map | The final map should give an overlay to show areas affected by the Riverside Fire. | Maps with the soil burn severity and basal area mortality associated with both the Riverside and Lionshead Fires within the designated wild and scenic river corridors have been added to the environmental assessment (Figures 3 and 4). |
| NEPA | The NEPA analysis needs to do a much better job describing the likely effects on ORVs of adopting “B” land use allocations that allow logging. This analysis is missing from the EA. | The NEPA analysis really needs to compare the effects of alternatives, such as alternatives that allow commercial logging outside plantations, and alternatives that do not allow commercial logging except in plantations. | The land use allocations align with the classifications designated by Congress. Analyzing a long-term vegetation management plan is outside the scope of this analysis. Any specific management actions proposed in the future will analyze the impacts to the river values, including outstandingly remarkable values. Also, future projects will need to complete a Section 7 review to ensure compliance with the Wild and Scenic Rivers Act, if the project occurs within bed and banks of a designated wild and scenic river. Please see the previous responses related to classification and vegetation management for more details. |

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| NEPA | See previous comments from Oregon Wild related to timber management, visuals, monitoring and livestock grazing. | Each substantive issue discussed in these comments should be (i) incorporated into the purpose and need for the project, (ii) used to develop NEPA alternatives that balance tradeoffs in different ways, (iii) carefully analyzed and documented as part of the effects analysis, and (iv) considered for mitigation. | The recommended changes are outside the scope of this project. The purpose and need as written focuses on the comprehensive river management plan: "The purpose of this proposal is to develop a comprehensive river management plan, as required by the Act, to protect and enhance the values for which the rivers were designated (free-flowing, water quality, and outstandingly remarkable values), and to identify and implement management actions needed to protect these values within the nine wild and scenic river corridors designated in 2009." The suggested changes focus on Forest Plan amendments that will be addressed in the forest plan revision process in the future. Programmatic forest plan amendments for specific resource areas were not considered in this planning effort in order to be consistent with existing wild and scenic river management across the Forest. All the applicable forest plan components, including standards and guidelines, will be considered for the 14 wild and scenic rivers on the Forest during the forest plan revision process. See previous responses for more information. |
| NEPA | Table 9 lists potential future management actions. These are all excellent. | A management plan to protect the Townsend's big-eared bats in the South Fork Clackamas River segment should also be a priority, closing any tunnels (with a posted explanation) used by the bats as hibernacula. | The Oregon Wildlife Institute, in coordination with the Forest Service and the BLM, developed a Conservation Assessment for the Townsend's Big-Eared Bat (*Corynorhinus townsendii*) in Oregon and Washington. The BLM Cascades Field Office will work to develop a conservation plan for the species specific to the South Fork Clackamas wild and scenic river (see Proposed Management Actions section of this environmental assessment). The plan would include an implementation strategy for closure of the tunnels that are utilized as a hibernaculum, as well as monitoring and other information for the species. |
| NEPA | The other proposed management action is the installation of interpretive signs on the South Fork Clackamas River to highlight the area's history and protect the Townsend's big-eared bat population (which resides in the tunnels) from recreationists. This is also an excellent proposal. | I have also suggested warning the public about the hazards associated with the abandoned waterworks. | The proposed sign installation is designed to protect the historic outstandingly remarkable value for South Fork Clackamas, rather than to address safety concerns. Any safety concerns associated with the tunnels will be addressed by BLM and may be considered in the conservation plan discussed above. |

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| Other | The monitoring plan should include effectiveness monitoring and validation monitoring efforts to improve our understanding of whether commercial logging ad domestic livestock grazing are protective of ORVs, and whether restoration efforts can be better achieved with fewer trade-offs using non-commercial thinning and prescribed fire. | The monitoring plan should include effectiveness monitoring and validation monitoring efforts to improve our understanding of whether commercial logging ad domestic livestock grazing are protective of ORVs, and whether restoration efforts can be better achieved with fewer trade-offs using non-commercial thinning and prescribed fire. | The Friend Unit of the Badger Creek Allotment overlaps with segments 3 and 4 of the Fifteenmile Creek wild and scenic river; no other allotments overlap with the designated wild and scenic rivers in this comprehensive river management plan. When reviewing the existing use, livestock in the stream and disrupting redds (spawning nests) was identified as a concern, particularly during steelhead spawning season. As such, indicators, triggers, thresholds and management actions were developed to protect the fisheries outstandingly remarkable value and water quality. The monitoring plan does not include commercial timber harvest since that is not an ongoing activity. As previously stated, the impacts to vegetation management, including potential monitoring, will be determined with site-specific environmental analysis. Details are located in monitoring plan, which is Appendix A in the environmental assessment and Appendix E of the comprehensive river management plan. |
| Recreation, Hydrology | Along the Collawash River, toilet installation will enhance recreational use, while protecting water quality and other ORV's. Not mentioned here is the issue of horse poop as a result of equestrian use of the Eagle Creek trail. | Is the trail close to the river? Is the hydrology such that horse droppings are likely to get into the river? What about conflicts between hikers and equestrians? Do they hike different trails? At Silver Falls and Willamette Mission state parks, there are separate trails for these users, which improves the recreational experience for both groups. | Multiuse trails are common on the Forest. The State of Oregon does not list horse or human waste (E coli) as a water quality issue for Eagle Creek. Also, refer to page 24 of the Rivers Values Report for a discussion of the baseline water quality condition for Eagle Creek. This report is available on the project website here: https://www.fs.usda.gov/nfs/11558/www/nepa/109997_FSPLT3_5595719.pdf. |

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| River Values | With respect to the Riverside Fire, I hope and pray that the fire did not destroy or impair the ORV's that distinguish the Fish Creek, South Fork Clackamas River and Collawash River segments. | As a preliminary matter, I would ask that snags and downed wood be left in the river corridors as habitat enhancement, including snags cut for safety reasons. I would also suggest that the agencies seriously reconsider replacing campgrounds that have been damaged if similar facilities can be found in the area. Campgrounds are expensive to both build and maintain, and are not an essential component of achieving the ORV'S. | The environmental analysis has been updated to incorporate the changed conditions associated with the Riverside and Lionshead Fires that occurred in 2020. All the outstandingly remarkable values in the Fish Creek, South Fork Clackamas River, and Collawash Rivers were reviewed and the short-term and long-term impacts to the values were considered; no outstandingly remarkable values have changed.<br>This comprehensive river management plan, and associated proposed action, are not proposing to harvest any trees or fell snags in the proposed wild and scenic river corridors since this is outside the scope of this project. Also, replacing campgrounds is outside the scope of this project. Please refer to the Forest's website for projects addressing post-fire conditions: https://www.fs.usda.gov/projects/mthood/landmanagement/projects, and the BLM ePlanning website: https://eplanning.blm.gov/eplanning-ui/home |
| Socio-Economic | The other elephant in the room is there are too many people. | We should organize a world birth control program which will over time make life better for all humans and for the animals and fish etc. as well as cap and reduce global warming. | This is outside the scope of the comprehensive river management plan. The management plan does address visitor use capacities, as required by the Wild and Scenic Rivers Act, in order to protect the free-flowing conditions, water quality, and outstandingly remarkable values of designated rivers (Section 3(d)(1)). The user capacity for the river is the kinds and amounts of uses the river can sustain to provide for use and enjoyment, while protecting and enhancing river values. For most of the nine river segments, user capacity numbers are higher than current use and no resource concerns were identified. More information on user capacity is available in the comprehensive river management plan in the Implementation and Monitoring section and Appendix G. |

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| Tribal Consultation | The language on Tribal Governments notes that project-specific consultation was invited but it is unclear if the consulted tribes responded or provided specific feedback in the development of the Comprehensive River Management Plan. | We recommend specific language to further document the nature of consultation. | The initial wild and scenic river workshop was held in December 2017. Early the following spring members of the interdisciplinary team and Forest leadership traveled to the Warm Springs Reservation to consult with representatives of the Confederated Tribes of Warm Springs. This was followed a few weeks later by a meeting with representatives of the Confederated Tribes of Grand Ronde at their Portland Office. In addition to in-person meetings, communication (via email and phone) continued with the Tribes throughout the planning process. Input from both Tribes guided the process and was incorporated in the final document. |
| Wild and Scenic Rivers Act | With respect to the Forest Service and BLM, there is mixed land ownership for two of these segments (Fifteenmile Creek and South Fork Clackamas River), and it is my conclusion that management was given to the agency with the majority of land (USFS for Fifteenmile Creek and BLM for South Fork Clackamas River. | Please comment. | The Omnibus Public Land Management Act of 2009 designated the Forest Service as the river administering agency for all designated segments included in this comprehensive river management plan. Although not listed as a river administering agency in the Omnibus Public Land Management Act, BLM will function as the river administering agency on their lands. Only federal agencies can be river administering agencies. Designation of wild and scenic rivers, however, neither prohibits development nor gives the Federal government control over private property. An overview of the role of riverfront property owners can be found here: https://www.rivers.gov/documents/landowners.pdf. |
| Wildfire | I am very interested/concerned about the treatment, cleanup, reforestation etc. of the extensive damage to my area and the State in general. Forests should not be viewed as tree farms but semi permanent habitat for various animals, fish, birds etc. In clearing/ rehabilitating an area special attention needs to be paid to how much ground is disrupted so not to increase land slides, damage natural plants etc. | New Trees need to be planted at least 10 feet apart and it needs to be mixture of different kinds of trees not just firs, Again it is not a tree farm it is a habitat. | This comprehensive river management plan, and associated proposed action, are not proposing to harvest or plant any trees in the proposed wild and scenic river corridors. Therefore, this is outside the scope of this project. Please refer to the Forest's website for projects addressing post-fire conditions: https://www.fs.usda.gov/projects/mthood/landmanagement/projects , and the BLM ePlanning website: https://eplanning.blm.gov/eplanning-ui/home. |