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Elkhorn Creek
Wild and Scenic River
Comprehensive River Management Plan

Elkhorn Creek (Photos taken November 2013)

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Contents

List of Tables

List of Figures

Chapter 1: Introduction

Federal agencies charged with the administration of the National Wild and Scenic Rivers System are required to prepare a comprehensive river management plan for designated river segments to provide for the protection of the river values. This plan is designed to address resource protection, development of lands and facilities, user capacities, and other management practices necessary or desirable to achieve the purposes of the Wild and Scenic Rivers Act, section 3(d)(1).

The Omnibus Parks and Public Lands Management Act of 1996 (section 1023, Public Law 104-233, November 12, 1996) designated 6.4 miles of Elkhorn Creek from the Willamette National Forest boundary to the point where the segment leaves Federal ownership along the Bureau of Land Management boundary as a wild and scenic river (see figure 1). The Omnibus Consolidated Appropriations Bill of 1996 (Section 109, Public Law 104-208, September 30, 1996) made the same designation. Elkhorn Creek flows through the Opal Creek Scenic Recreation Area on the Willamette National Forest, which was designated as part of the same act in 1996 (section 105). The purpose of the scenic recreation area is to "protect and provide for the enhancement of the natural, scenic, recreational, historic, and cultural resources of the area in the vicinity of Opal Creek." This area provides a broad range of land uses, including recreation, harvesting of nontraditional forest products, and educational and research opportunities.

Purpose of the Comprehensive River Management Plan

The purpose of the comprehensive river management plan is to establish overall management direction to protect and enhance the values for which the Elkhorn Creek was designated (free-flowing condition, water quality, and outstandingly remarkable values). This plan establishes river corridor boundaries, management direction, user capacities, monitoring, and other management practices necessary to protect and enhance the river values.

Federal agencies charged with the administration of the National Wild and Scenic Rivers System are required to prepare a comprehensive river management plan for designated river segments to provide for the protection and enhancement of the river values and to achieve the purposes of the Wild and Scenic Rivers Act, section 3(d)(1).

Final Wild and Scenic River Corridor Boundary

The Wild and Scenic Rivers Act requires that federally administered rivers in the national system have a legally established boundary. Section 3(b) of the act states:

> The agency charged with administration of a component of the National Wild and Scenic Rivers System designated by subsection (a) of this section, . . . shall establish detailed boundaries therefore...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 Parks and Public Lands Management Act of 1996 (section 1023, Public Law 104-233, November 12, 1996) stated: "The lateral boundaries of both the wild river area and the scenic river area along Elkhorn Creek shall include an average of no more than 640 acres per mile measured from the ordinary high-water mark on both sides of the river." As such, the interim wild and scenic river boundary was one-half mile from the ordinary high-water mark for Elkhorn Creek.

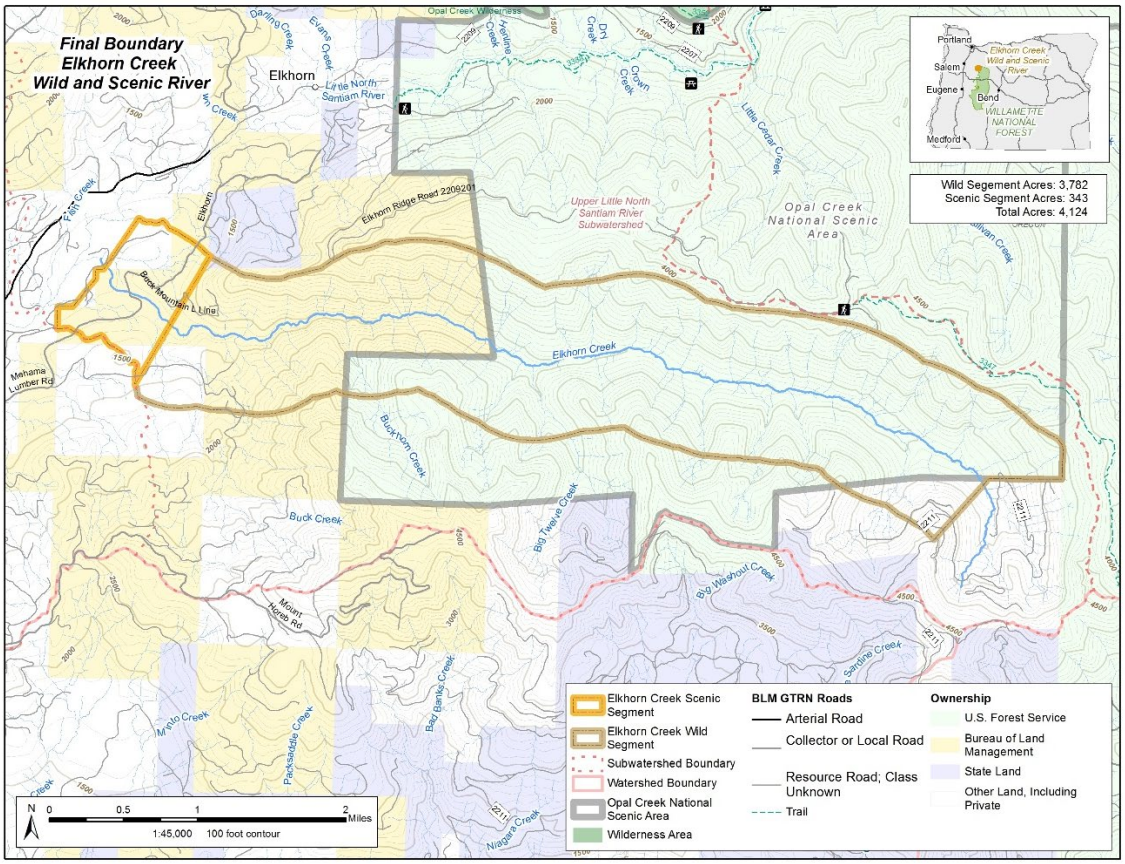

Figure 1. Map of vicinity and proposed final Elkhorn Wild and Scenic River boundary

While the designating act established the termini for the designated segments, it does not establish the lateral boundary for the rivers. Until the legally established boundary is identified, the rivers are managed with an interim boundary (a half mile from the ordinary high-water mark on each side of Elkhorn Creek). Upon adoption of the comprehensive river management plan and the Forest Service and Bureau of Land Management decisions, the river corridor will be managed to the final boundary, as shown in figure 1.

The Willamette Land and Resource Management Plan, as amended (forest plan) of 1990 provides management direction for designated wild and scenic river corridors, and was updated in 2000 to include the creation of Management Area 6a for Elkhorn Wild and Scenic River. Modifying the management area to adjust and finalize boundaries requires a programmatic forest plan amendment, which would be applied specifically to the Forest Service portion of the Elkhorn Creek Wild and Scenic Rivers project area. The interim wild and scenic river boundaries would be adjusted and finalized through the plan amendment, amending Management Area 6a to encompass the river corridor included in the final boundaries for Elkhorn Creek Wild and Scenic River.

The planning team determined that the interim boundary with some minor modifications serves to protect and enhance the outstandingly remarkable values. The proposed final boundary would modify the interim boundary to include additional National Forest System lands in the upper reaches of the watershed for additional protection of fish species and habitat as well as water quality. Other minor modifications would adjust the boundary slightly to follow the ridgeline and where feasible, incorporate additional acres of the watershed boundaries. Outstandingly remarkable values vary by segment and were determined through an interdisciplinary analysis process and are discussed in the following sections.

Chapter 2: Regional Setting and River Values

This section summarizes the finding and description of the river values that contributed to the river's designation within the National Wild and Scenic River System. For a complete description of the river values, including regions of comparison, baseline criteria, and baseline and present situation, see the River Values Report: Elkhorn Creek Wild and Scenic River (USDA, Forest Service 2021).

Wild and Scenic River Classification

River segments are classified as wild, scenic, or recreational based on the condition of the river and the adjacent lands as they exist at the time of designation.

- Wild rivers are 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 (Section 2(b)(1)).
- Scenic rivers are those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive, and shorelines largely undeveloped, but accessible in places by roads (Section 2(b)(2)).
- Recreational rivers are those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Table 1 below describes each designated segment, which are shown in figure 1. Approximately 3.8 miles of the designated Elkhorn Creek are located on National Forest System lands on the Willamette National Forest, and 3.2 miles are located on Bureau of Land Management administered lands. All of Segment 2 is on Bureau of Land Management administered lands, while Segment 1 is located on both National Forest System and Bureau of Land Management administered lands.

Table 1. Description and classification of wild, scenic, and recreational river segments

Segment	Description	Miles	Classification	Administering Agency
1	Willamette National Forest boundary on the common section line between Sections 12 and 13 Township 9 South, Range 4 East to its confluence with Buck Creek (T9S, R3E, Section 1)	6.4	Wild	Forest Service on National Forest System Land and Bureau of Land Management on Bureau of Land Management land
2	Buck Creek to that point where the segment leaves Federal ownership along the Bureau of Land Management boundary in Section 1, Township 9 South, Range 3 East	0.6	Scenic	Bureau of Land Management

River Setting Description

Elkhorn Creek is a tributary to the Little North Santiam River, which is a tributary to the North Santiam River, draining a northeast section of the Willamette River Basin in Marion County. The headwaters of the 8.5-mile-long Elkhorn Creek are on the forested lower west slopes of the Cascade Mountains at elevations up to 4,700 feet. The stream flows through a steeply incised drainage which is over 2,000 feet deep at times, through the Forest Service and Bureau of Land Management lands.

An inner gorge and steep side canyons which were heavily forested before the Beachie Creek Fire offer an outstanding wild river backdrop. Downstream, the canyon opens up and provides a backdrop for

riparian vegetation, Douglas-fir, and a more open river valley. From its origin in Cascade volcanic deposits of andesite, basalt, and ash, Elkhorn Creek flows west where it enters the Little North Santiam River at an elevation of 1,063 feet.

Elkhorn Creek is unique for its remoteness and scenic beauty. Elkhorn Creek is in a pristine, low-elevation setting, with limited access, providing a landscape with few signs of human disturbance or activity. It flows through the foothills of the west side of the Cascade Range and within the Opal Creek Scenic Recreation Area, which was known for its majestic old-growth forests prior to the Beachie Creek Fire.

The purpose of the scenic recreation area is to "protect and provide for the enhancement of the natural, scenic, recreational, historic, and cultural resources of the area in the vicinity of Opal Creek" (section 103, Public Law 104-208). Conifers dominate the viewshed and occur with western red cedar and red alder. The creek is pristine and includes deep, clear pools with moss-covered boulders; rushing whitewater sections; and waterfalls of various heights.

The upper portion of Elkhorn Creek occurs on lands managed by the Forest Service. Downstream, the river flows through the Bureau of Land Management lands. There are scattered parcels of private lands including parts of the upper and lower watershed. The Elkhorn Road accesses the parts of the stream in the lower section, providing access to private lands and recreational uses. This area provides a range of land uses, including recreation, harvesting of nontraditional forest products, along with educational and research opportunities.

Average annual precipitation in the Elkhorn Creek area ranges from approximately 100 inches in the mountains to 40 inches on the valley floor, with the greatest precipitation occurring November through January and the least occurring June through September.

The 2020 Beachie Creek Fire burned at high intensity throughout the Elkhorn Creek Wild and Scenic River Corridor resulting in a loss of all riparian and mid-late seral habitat, and many of the species that used that habitat. Before the fire, conifers dominated the viewshed along with western red cedar, red alder, and vine maple. Elkhorn Creek provided habitat for aquatic and semi-aquatic wildlife species; specifically endemic species considered to have a narrow range.

The river's edge provided habitat for riparian dependent species, while the upland forest and older forests of the river corridor provided habitat for a multitude of species (see the River Values Report: Elkhorn Creek Wild and Scenic River (USDA Forest Service 2021). The Elkhorn Creek Wild and Scenic River Corridor still contains many important features that wildlife need, such as a largely roadless, non-fragmented habitat with water. See the River Values Report for Elkhorn Creek Wild and Scenic River and the Elkhorn Creek Wild and Scenic River Changed Conditions Post-Fire Summary Report (USDA Forest Service 2021 and 2022b), which may be accessed via the project webpage for additional description of baseline and current resource conditions along the river.

Free-Flowing Condition

Section 7 of the Wild and Scenic Rivers Act directs Federal agencies to protect the free-flowing condition and other values of designated rivers. The term free-flowing is defined in the act as "existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway." Therefore, it is important to describe both the free-flowing characteristics of the river as well as structures that impact it. Elkhorn Creek meets the free-flowing condition requirements.

Streamflow is typical of western Cascades streams where most runoff occurs during winter storm events. Base-flow or low-flow occurs during late summer and early fall when mean stream discharge drops below 20 percent of the mean winter flow.

Many small headwater channels dry up completely during this period. Average total annual stream discharge past a United States Geological Survey gauging station on the Little North Santiam River near the mouth is 390,258 acre-feet, or 127 billion gallons. For tributary streams that flow into the Little North Santiam River, such as Elkhorn Creek, the lowest average monthly discharges normally occur August through September, averaging 30 to over 100 cubic feet per second.

The Little North Santiam Watershed Analysis (Bureau of Land Management (BLM) 1997) provides some background on periods of limited flow in the Little North Santiam watershed. Flows in the Little North Santiam watershed are barely able to meet resource demand in dry summers. The watershed analysis for the Little North Santiam found that streamflow in the Little North Santiam River may experience extreme low-flow, up to 20 percent of the time. This is the result of streamflow decreases along the stream due to dryer summer conditions when groundwater becomes the predominant source of streamflow.

For the Little North Santiam River, for dryer summer low flow periods with little or no precipitation, there was an estimated 21 days of groundwater storage left in the basin before the Little North Santiam River became dry. Ground water storage available for streamflow in an average year is estimated to be 50 days at the end of the low flow period. Streamflow reductions in Elkhorn Creek from dry summer conditions and reductions in groundwater storage and low precipitation would be similar, although on a smaller scale.

The 1997 watershed analysis for the Little North Santiam recommends studying actual water availability during low flow periods on the Little North Santiam River. Further, it recommends to “assess impacts of future water withdrawals on instream flows and aquatic organisms. State agencies such as the Oregon Department of Water Resources may be best suited to organizing the task” (Executive Summary, page 2). Similar monitoring would be recommended for Elkhorn Creek.

Climatic trends in the Little North Santiam watershed may have a similar impact on stream flows in Elkhorn Creek. Climatic trends are apparent and can be broken down into three distinct periods. The first period, 1932 through 1944, experienced lower than average precipitation and discharge most years; the second period, 1945 through 1975, received greater than average precipitation and discharge most years; while the third period, 1976 through 1994, was again lower than average for precipitation and discharge.

Stream gages are the best method of monitoring river discharge (free flow). The nearest flow gauges are on the Little North Santiam River downstream of Elkhorn Creek (U.S. Geological Survey stream gage 14182500 Little North Santiam River near Mehama, Oregon). This stream gage has been continually operated since 1931.

For more information about free flow including channel condition morphology and riparian systems, see the Free Flow section in the River Values Report: Elkhorn Creek Wild and Scenic River (USDA Forest Service 2021).

Water Quality

Water quality and the Clean Water Act are regulated in the State of Oregon by the Oregon Department of Environmental Quality, and the U.S. Environmental Protection Agency (point source pollution). As per the Clean Water Act, the designated Elkhorn Creek segments are designated for the following beneficial uses: irrigation, livestock watering, wildlife habitat, cold water aquatic life, warm water aquatic life, and

primary contact recreation. Oregon Department of Environmental Quality water quality standards regulate other parameters including turbidity, suspended solids, temperatures, plant nutrients, and *E. coli* bacteria.

Elkhorn Creek was listed on the Oregon Department of Environmental Quality 303(d) water quality limited stream list for summer stream temperature based on water quality assessments. The water quality standard for temperature is based on exceedances of the 18-degree Celsius maximum temperature threshold. The standard was designed for maintaining lower temperatures for anadromous fish rearing. A total maximum daily load allocation and water quality management plan was approved for the Willamette Basin in 2008. Elkhorn Creek is listed as Category 5, meaning that at least one beneficial use is not supported, or in other words, the stream temperature is out of compliance with state standards. The water quality management plan provided direction for improving stream temperature conditions. No other water quality parameters were considered impaired in the watershed.

Several small unnamed tributary streams join Elkhorn Creek in the upper watershed. None are known to have water quality problems. Roads on a portion of the private lands in the upper watershed need maintenance to reduce their potential for contributing sediment to the watershed.

The Beachie Creek Fire impacts resulted in downgrading the watershed condition for the Upper Little North Santiam River. Elkhorn Creek is in the Upper Little North Santiam River 6th field hydrologic unit code (HUC 170900050503) watershed[1] draining into the larger North Santiam River, in the Willamette River Basin, western Oregon. Watershed condition surveys completed under procedures outlined in the USDA Forest Service Watershed Condition Framework Technical Guide (Potyondy and Geier 2001) have been completed. The watershed condition classification characterizes health and condition based on a variety of factors. Generally, the watershed was functioning properly before the Beachie Creek Fire. After the fire, the watershed condition was re-evaluated. Based on the analysis and the variables shown in the following table 2, the watershed is now functioning at risk.

Table 2. Watershed condition variables in Upper Little North Santiam River pre- and post-Beachie Creek Fire

Variable	Pre-fire Condition	Post-fire Condition
Aquatic biota condition (fish, invertebrates)	Fair	Fair
Riparian and wetland vegetation condition	Good	Poor
Water quality condition	Good	Good
Water quantity condition	Good	Good
Aquatic habitat condition	Fair	Good
Road and trail condition	Fair	Fair
Soil condition	Good	Fair
Forest cover and health condition	Good	Good
Terrestrial invasive species condition	Good	Good
Fire effects and fire regime condition	Fair	Fair

Riparian and wetland condition and soil conditions have been adversely impacted by the fire. Conditions are expected to improve as vegetation recovers in the watershed, however, some may take decades or more to recover. For watershed condition variables that are primarily tied to hydrology, the stream temperatures may continue to change and will likely need further evaluation.

[1] Sixth field watersheds or 6th level hydrologic unit code (HUC) are typically 10,000 to 40,000 acres in size. The term "watershed" in this report refers to the sixth field watershed.

At the time this plan was developed, the stream temperature results from Elkhorn Creek are under legal review and the water quality status of this stream may be elevated based on a lawsuit. As a result, another total maximum daily load for stream temperature would be required, and the need for this would be documented in the next listing status results. Another total maximum daily load would provide management actions needed on the river to improve water quality.

Outstandingly Remarkable Values

Fisheries is an outstandingly remarkable value for both segments, and scenery is an outstandingly remarkable value for the wild segment. No additional resources are considered outstandingly remarkable values in the post-fire conditions. The following table 3 summarizes the outstandingly remarkable values for Elkhorn Creek after the Beachie Creek Fire. See the River Values Report for Elkhorn Creek Wild and Scenic River and the Elkhorn Creek Wild and Scenic River Changed Conditions Post-Fire Summary Report (USDA Forest Service 2021 and 2022b) for more information on region of comparison, baseline condition, and rationale for all resources considered.

Beachie Creek Fire significantly impacted the Elkhorn Creek Wild and Scenic River corridor and changed the outstandingly remarkable values in the short and long-term. After the Beachie Creek Fire, wildlife was no longer an outstandingly remarkable value because the habitat conditions no longer exist, at least in the short-term. Due to this change, wildlife will be considered a resource of interest and monitored for changes. As the ecosystem recovers, wildlife may be re-evaluated if the baseline conditions have returned for consideration as an outstandingly remarkable value.

Table 3. Summary of outstandingly remarkable values for all river segments

River Value	Wild Segment	Scenic Segment
Scenery	Yes	No
Recreation	No	No
Geology	No	No
Fisheries	Yes	Yes
Wildlife[2]	No	No
Cultural Resources	No	No

2–See Changed Conditions Report for a more detailed description and rationale for change to proposed wildlife outstandingly remarkable value due to the Beachie Creek Fire.

Scenery

Scenery is an outstandingly remarkable value in the wild segment of the Elkhorn Creek Wild and Scenic River. Elkhorn Creek provides exemplary scenery because of the visual interplay of vegetation, water, and geology; the constrained, dramatic views created by the geology, specifically in the lower reaches of the creek; and the opportunity to see an unmanaged, natural landscape for an extended length of the wild segment. The wild segment offers iconic examples of scenic elements that appear to be untouched by modern humans. Distracting views of more modified landscapes are not possible in the lower reaches, but distant views of mountains still frame the view at the top of the corridor. The scenic conditions are river-related – dependent on the changing qualities of light within the canyon as it interacts with water and foliage; and the way the creek shaped the geology of the canyon over millions of years.

Images of this segment of the creek have been featured in *Oregon Wild and Scenic Rivers*, *Oregon Kayaking* and *Oregon Waterfalls,* in addition to Forest Service and Bureau of Land Management websites. These images appear to typically look upstream into the wild segment (see figure 2).

The scenic resources of the scenic segment, though high-quality, are not outstandingly remarkable. Within the region of comparison, there are several segments of the Middle Fork of Hood River, Molalla River, and the North Fork Middle Fork, Willamette River with scenic outstandingly remarkable values. These rivers travel through similar terrain between the mountains and the Willamette Basin; and were formed by similar geological processes.

Figure 2. View of wild segment of Elkhorn Creek (photo taken June 2016)

The Beachie Creek Fire changed the forest and vegetation cover within the river corridor due to the complete burn through the corridor and the intensity of the fire. The geological setting and the way that the views of the wild and scenic river corridor are constrained by the geology will remain the same. The interplay of water with boulders in the river would be unchanged.

With the burning of surrounding vegetation, short-term impacts could include increased erosion into the river, which would change the clear quality and turbidity of the water, as well as slowing water movement in the corridor. There may be more downed logs in the water. The dappled effects of sunlight through the trees and the changing colors related to change of season are created by large, old-growth trees and dense canopy; these elements will be gone in the short-term. Logs in the wild and scenic river would not be removed.

Lower-level vegetation (ferns, mosses) should recover sooner than trees. Early stages of recovery would include ground-level shrubs and forbs, with a more open canopy featuring deciduous trees like red alder and big leaf maple. This condition would be more visually open with views across green slopes interspersed with surviving trees, burned trunks, and clumps of mid-story trees. In the long term, a dense

canopy dominated by Douglas-fir would return. Moss and lichen would cover trees and rocks. The original scenic conditions of dappled sunlight that changes with the season and time of day, sparkling flowing waters and deep green riparian areas would return.

The fire condition should not be considered an intervention; fire is natural, and the current condition offers a unique opportunity to see recovery of a river corridor without human intervention. Some elements of the geology will be more visible and views up into the segment will be longer. It will be possible to see the process of recovery and regrowth over many years, as early tree and shrub species establish and then give way to later species like Douglas-fir. For these reasons, scenery remains an outstandingly remarkable value in the wild segment of Elkhorn Creek.

Fisheries

The fisheries of Elkhorn Creek are an outstandingly remarkable value within both the wild and scenic segments. Elkhorn Creek provides valuable habitat for federally listed threatened and endangered species. The Santiam Basin and is considered a stronghold for both the Little North Fork Santiam River Watershed and Santiam Basin.

Elkhorn Creek is a regionally important producer of resident and anadromous fish species. A portion of the wild segment, and the entire scenic segment, is critical habitat for federally listed spring Chinook salmon and steelhead trout, in addition to several Bureau of Land Management and Forest Service sensitive species which include the Pacific lamprey and coastal cutthroat trout. Introduced, non-federally-listed coho salmon also utilize lower Elkhorn Creek. There is a high diversity of species relative to the native fish for the area. Additionally, Elkhorn Creek flows almost immediately into the Little North Santiam River, which supports a wild steelhead trout fishery.

Except for some moderately altered habitat in the lower portion of the creek (primarily within the scenic segment from past logging and associated road construction in riparian areas), the majority of riparian and stream habitat in the wild and scenic river corridor is relatively unaltered, and therefore, high quality. The Forest Service managed portion in the upper drainage is essentially unaltered and is considered exceptionally high-quality. The wild and scenic river corridor also supports a diversity of habitats for federally listed species along with Forest Service and Bureau of Land Management sensitive species, as well as spawning, rearing, and migration habitats. These habitats serve as critical refugia, specifically for steelhead trout, for populations in the Little North Santiam River and Santiam Basin.

Water quality is a major post-fire concern as elevated erosion rates and stream flows can negatively affect aquatic species and their habitats. Specifically, critical habitat for upper Willamette Chinook and steelhead is at risk of degradation with increased fine sediment and reduced stream shading post-fire. Increased habitat degradation and juvenile and sub-adult mortality of Chinook salmon is possible due to accelerated sedimentation, loss of stream shade and large wood, and potential accelerated channel erosion (USDA Forest Service 2020). Recent (2021) post-fire observations (Parker, Jonas, BLM hydrologist personal communication 2022) report active bank erosion, consumption of a large portion of instream woody debris (including pre-fire large woody debris placement projects), but that some woody debris accumulations remain.

Similarly, coarse sediments (for example spawning gravels) appear to have been scoured and washed downstream below the Elkhorn Road bridge presumably affecting the quantity and quality of residual salmon and steelhead spawning beds in those locations. These observations were confirmed during a May 2022 field visit. Downstream of the bridge, overall channel conditions were very active, fresh gravel deposits were observed in a side-channel, there was evidence of recent bank erosion, and woody debris moving through the reach.

A temperature spike was also recorded during 2021 monitoring that exceeded 80 degrees Fahrenheit (Hydrology Analysis). It is presumed fish populations are still present in Elkhorn Creek albeit at lower numbers because of less and reduced quality of habitats. Shifts in species distribution have likely occurred and will continue to occur as the creek responds to high flows and potential landslides or debris flows. Specifically, freshwater lamprey species may benefit in the short and medium term because they prefer warmer temperatures; and utilize fine sediments along stream margins and pools during their juvenile burrowing life stage.

Long-term, habitat is expected to slowly stabilize as riparian and upland vegetation reestablishes, sediment input declines, and risk of debris slides recedes. Riparian vegetation is expected to recover over time, increasing shade and reducing water temperature. Hardwood riparian trees and shrubs have the potential to recover rapidly (Halofsky and Hibbs 2009). Conifer woody debris may increase in the short term as the remaining dead trees fall into the creek. It will likely take many decades for trees of sufficient size to grow and be recruited as instream woody debris.

The Elkhorn Creek Wild and Scenic River Corridor still contains many important habitat components that fish need. It is still a largely roadless, non-fragmented habitat. Elkhorn Creek will continue to provide habitat for fish species. In the short-term, the conditions within Elkhorn Creek still warrant fisheries as an outstandingly remarkable value; fish populations and assemblages (variety and abundance of fish species) should be monitored to see how species respond to the changing habitat.

Chapter 3: Land Uses and Infrastructure

This section presents information known about the current uses along each river, including private lands. See figure 1 for a depiction of land ownership within the corridor. Table 4 and table 5 depict acres of land ownership within the river corridor.

Land Ownership within River Corridor

Elkhorn Creek is located in Marion County, Oregon. Most of the land within and immediately adjacent to the corridor is under Federal ownership on Bureau of Land Management and National Forest System lands, as shown in table 4 and table 5 below. A total of 334 acres of private land is included within the corridor (see table 5).

This comprehensive river management plan implies no jurisdiction over private land or private rights in the river corridor, outside the bed and banks of the designated river. This plan does not include the authority or any proposals to manage or acquire private land.

Table 4. River miles by land ownership for Elkhorn Creek

Ownership	River Miles in Scenic Classification	River Miles in Wild Classification	Total River Miles
Bureau of Land Management	0.6	2.6	3.2
Forest Service	0	3.8	3.8
Total	0.6	6.4	7.0

Table 5. Land Ownership in acres within wild and scenic river corridor

Land Ownership	Scenic Segment	Wild Segment	Total
National Forest System	0	2,475	2,475
Bureau of Land Management	230	1,082	1,312
Private	93	240	334
State	0	4	4
Total Acres	323	3,801	4,124

Existing Water Rights

The designation as a wild and scenic river “shall not be construed as a reservation of the waters of such streams for purposes other than those specified in the act, or in quantities greater than necessary to accomplish these purposes” (section 13(c)). As such, the existing and pending water rights that influence water flow within the designated wild and scenic river segments were reviewed as part of this process.

Federal reserved water rights are subject to adjudication by state courts. No federally reserved water rights have been legally established for Elkhorn Creek. No guarantees of un-altered in-stream flows for Elkhorn Creek have been secured in the courts. Private water rights do exist for Elkhorn Creek that would potentially impacts flows.

The designated wild and scenic segments of Elkhorn Creek flow from the headwaters to the confluence with the Little North Santiam River. For Elkhorn Creek, two water rights claims would likely have little effect on flows because they would likely only use a small percentage of the available stream flow. Several undisturbed headwater channels provide flow to Elkhorn Creek, and most of these have no human

impacts. Water from Elkhorn Creek provides municipal water to downstream users for drinking water and other uses after flowing into downstream waters.

Water right certificate 14923 is for livestock watering in the lower watershed. The water right exists on lower Elkhorn Creek before the confluence with the Little North Santiam River. This water right is for diversion from tributaries to the North Santiam River. The water rights permit states that water diversion is for livestock watering. However, the exact amount of flow allowed to be taken from Elkhorn Creek is not specified in the decree. The water diversion point is specified in the permit and is located off the Willamette National Forest near the confluence of Elkhorn Creek and the Little North Santiam River. Up to 50 cubic feet per second flow removal is specified in the decree.

Because the decree does not specify which drainage would be diverted there is not adequate information to quantify exactly how much flow would be taken from Elkhorn Creek. Without additional information on the extent of diversion from Elkhorn Creek, it is unclear what amount this claim might use from the lower stream. There are several other tributaries that could supply water for this claim as well as the mainstem Little North Santiam River. Given that, it is likely only a fraction of the 50 cubic feet per second would be removed from Elkhorn Creek and it is assumed this water right would likely have little effect on flows.

Water right application number 81390 is for 5.7-acre feet for a reservoir in the upper watershed in the headwaters of Elkhorn Creek on private lands. The water could be diverted from the headwaters of Elkhorn Creek. Water withdrawal amounts would depend on reservoir levels because when the reservoir is full, there would be little withdrawal. For this water right there is currently no infrastructure for diverting water out of the stream. There is a third of an acre headwater pond drained by two partially plugged culverts. This water right is having little to no impact on flows in Elkhorn Creek. This pond might be useful for a source of water in the event of a wildfire in the drainage.

There are no diversions in the headwaters, but there is a possible diversion near the stream mouth on private lands. The existing stream hydrograph would likely continue to provide water that protects and benefits the outstandingly remarkable values for free flow and a more natural hydrograph along Elkhorn Creek on Federal lands.

Beneficial Uses

Beneficial uses of water in the larger Little North Santiam River Watershed which includes the Elkhorn Creek sub-watershed include irrigation, domestic use, fisheries, aesthetics, power, and miscellaneous other uses. For the Little North Santiam River, according to a Little North Santiam Watershed Analysis (BLM 1997), the Oregon Department of Environmental Quality lists low flows and flooding as problems in the Little North Santiam River. Demands for water in that drainage are increasing with private water-rights, municipal rights, and fisheries concerns.

Activities and Infrastructure

Lands and Special Uses

Mineral Rights

The designating legislation for Opal Creek Scenic Recreation Area, (Public Law 104-333 (7)(A)) which encompasses the wild segment of Elkhorn Creek on National Forest System lands provides for mineral withdrawal. “Subject to valid existing rights, all lands in the scenic recreation area are withdrawn from—

(i) any form of entry, appropriation, or disposal under the public lands laws; (ii) location, entry, and patent under the mining laws; and (iii) disposition under the mineral and geothermal leasing laws."

Additionally, subject to valid existing rights, the Wild and Scenic Rivers Act withdraws all minerals within the bed or banks or one-quarter mile of the banks of designated wild river segments, which applies to the portion of the wild segment of Elkhorn Creek on Bureau of Land Management lands. For the scenic river segment and outside the one-quarter mile withdrawal on the Bureau of Land Management portion of the wild segment within the final boundary, filing of new mining claims or mineral leases is allowed. However, it is subject to reasonable access and regulations that minimize surface disturbance, water sedimentation, pollution, and visual impairment. At the time this plan was prepared, no valid claims or active mineral leases are within the river boundary.

Transportation Infrastructure

Roads

Elkhorn Road is a paved road that travels through the scenic segment of the corridor that provides a motorized route and bridge over Elkhorn Creek. Elkhorn Ridge Road, a primitive forest road, is located just above and along the ridgeline to the north of the wild and scenic river boundary. Though a 0.3-mile segment of the road was included in the interim corridor, the final boundary was adjusted to follow the ridgeline and does not include any portion of this road. The Mehama Lumber Road, located within the western boundary of the corridor, extends into the wild segment on private land (with seasonal closures) and has been decommissioned on Bureau of Land Management land. There is an earthen berm closure on Bureau of Land Management land near the proposed boundary line. The Buck Mountain L Line Road is within the proposed boundary on Bureau of Land Management land with seasonal closures. There is another road located within the southeastern corner of the wild segment that extends across private land. The portion of this road on Forest Service land is not traveled frequently and becomes impassible approximately 5 miles from the intersection with Forest Service Road 351.

Easements and Right-of-Way

There is a reciprocal right of way on private land owned by Frank Timber Resources located at Township 9 South, Range 3 East, section 12.

Parking

An unpaved parking pull-off is currently available along the Elkhorn Road for one vehicle near the bridge in the scenic segment of the river corridor. No other parking locations are available within the river corridor.

Other Infrastructure

No other developed infrastructure or utilities exist on National Forest System and Bureau of Land Management lands within the river corridor. Available maps show some roads on private land. We do not know what other infrastructure exists on private land within the corridor or the full extent of the road system on private land.

Recreation and Visitor Amenities

The use and evidence of use of the area by recreationists is not well documented because of the undeveloped, unmodified environment along with the challenging terrain that makes creek access difficult. There are no existing or planned developed recreation sites, trails, or access points to provide

visitor comfort, safety or easy access that would attract users to the area. The river is not navigable. The area is closed to biking and equestrian use.

Only non-motorized opportunities, such as hunting, fishing, wildlife viewing and photography, exist by way of cross-country, off-trail travel. These dispersed opportunities are accessible for the adventure seeking, agile recreational user who holds a high degree of self-reliance and knowledge of primitive outdoor skills that are required to meet the inherent challenge and risk of the natural environment here. The creek is not navigable due to boulders and downed trees blocking the channel, steep rock walls lining the creek making portage impossible in many places. Within the last 5 years, the only documented use of the area by recreationists was in the upper section when kayakers used unknown cross-country routes to access the creek.

A trailhead for Forest Service Trail 3347 off Elkhorn Ridge Road is located adjacent to the northeast rim of the corridor. The trail takes recreationists north away from Elkhorn Creek. The topography south of the trailhead is too steep and rugged for trail development; further, as per the Opal Creek National Scenic Area Management Plan, trail development is not allowed.

Management Activities

There are no current, planned, ongoing or recurring management activities occurring within the river corridor. The intent of the plan is to leave the area untouched to recover from the Beachie Creek Fire. If management thresholds are met, a potential management activity that may be taken is the replacement of large woody debris structures to enhance fish habitat in the Bureau of Land Management administered scenic segment (see Framework for Future Development, Design, and Activities). This management activity would require site-specific analysis under the National Environmental Policy Act, Endangered Species Act, and other Federal laws. Management actions within the bed or banks of the river would require compliance with section 7(a) of the Wild and Scenic Rivers Act.

Chapter 4: Tribal and Agency Coordination

Tribal Governments

The federally recognized tribes with ancestral ties to the lands Elkhorn Creek flows through include the Confederated Tribes of Siletz Indians of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Klamath Tribes. 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 indigenous peoples' lifeways. In partnership with the Forest Service and Bureau of Land Management, tribes contribute traditional ecological knowledge, technical expertise, and funding to restore and manage indigenous biomes for the long-term ecological health and resilience of these public lands.

The Klamath people have ancestral ties to the Willamette Forest with aboriginal lands located in the Middle Fork District where the Klamath Trail passed through the area. Due to recent agency communications with the Klamath Tribes regarding tribal consultation, consultation is limited to projects that may impact these aboriginal lands. Therefore, tribal consultation for the Elkhorn Creek Comprehensive River Management Plan project is directed towards three federally recognized tribes including the Confederated Tribes of Siletz Indians of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, and the Confederated Tribes of the Warm Springs Reservation of Oregon.

The Willamette National Forest and Bureau of Land Management Northwest Oregon District have initiated consultation with three federally recognized tribes for this project including the Confederated Tribes of Siletz, the Confederated Tribes of Grand Ronde, and the Confederated Tribes of Warm Springs. During this project's pre-scoping effort on the River Values Report: Elkhorn Creek Wild and Scenic River (USDA Forest Service 2021) conducted in August 2021, the Confederated Tribes of Warm Springs commented to keep them informed of the project's progress to ensure Section 106 issues are being addressed.

Federal Agencies

The Willamette National Forest manages all the National Forest System lands within this wild and scenic river corridor. The Forest Service is the agency charged with administering the portion of the wild segment that crosses National Forest System land within the Elkhorn Wild and Scenic River Corridor. As such, the Forest Service provides the determination of effects to free flow, water quality, and outstandingly remarkable values for any water resources projects as described in Section 7 of the Wild and Scenic Rivers Act where the designated segments cross National Forest System lands.

The Northwest Oregon District manages all the Bureau of Land Management lands within the Elkhorn Wild and Scenic River Corridor. The Bureau of Land Management is the agency charged with administering the scenic segment and the portion of the wild segment that crosses Bureau of Land Management land. As such, the Bureau of Land Management provides the determination of effects to free flow, water quality, and outstandingly remarkable values for any water resources projects as described in Section 7 of the Wild and Scenic Rivers Act where the designated segments cross Bureau of Land Management lands.

The Bureau of Land Management manages mineral claims on all Federal lands; this includes mineral withdrawals on the wild segment on National Forest System land and within a quarter mile of each bank of the wild segment on Bureau of Land Management land. These public lands are closed to mineral

location and entry under the mining laws, subject to valid existing rights. New mining claims cannot be located within withdrawn areas. The Bureau of Land Management manages locatable mineral claims on the scenic segment of the river and the wild segment on Bureau of Land Management lands outside the quarter mile area within the wild and scenic river corridor. Locatable mineral claims could include metallic mineral deposits, industrial minerals, and uncommon varieties of stone.

The Environmental Protection Agency develops and enforces regulations that implement environmental laws enacted by Congress, including those associated with the Federal Water Pollution Control Act, commonly called the Clean Water Act. The Environmental Protection Agency has the authority to implement pollution control programs. The Clean Water Act governs the discharge of dredged or fill material into "waters of the United States." The Environmental Protection Agency is the lead for establishing the environmental guidelines and criteria that must be met to receive a permit under Clean Water Act.

The U.S. Army Corps of Engineers regulates, through permits, the discharge of dredged or fill material into rivers and wetlands of the United States. The U.S. Army Corps of Engineers also regulates structures and work in navigable waters. U.S. Army Corps of Engineers permit applications for activities in wild and scenic rivers that are subject to the provisions of Section 7 of the Wild and Scenic Rivers Act.

The Forest Service shares management responsibilities with the Bureau of Land Management, the National Marine Fisheries Service, and U.S. Fish and Wildlife Service for protecting endangered species act-listed species and their associated habitat. Fisheries is an outstandingly remarkable value in Elkhorn Creek in part because of the presence and quality of habitat for listed fish species.

State Agencies

The Oregon Water Resources Department serves the public by practicing and promoting responsible water management. The Water Resources Department is the state agency charged with administration of the laws governing the allocation of surface water and groundwater resources. The existing water rights in this and scenic river are controlled by the Water Resources Department (see the Existing Water Rights section for more information).

Oregon Department of Fish and Wildlife helps to maintain high-quality fisheries and wildlife habitat on the forest. Fisheries is an outstandingly remarkable value in Elkhorn Creek.

Oregon Department of Environmental Quality oversees the Federal Clean Water Act for the state and is responsible for water quality standards, assessment, and regulation. As such, the Department of Environmental Quality is responsible for identifying 303(d) streams (water quality limited) and developing total maximum daily loads for these streams. Elkhorn Creek is a 303(d) water quality limited stream for summer stream temperature. The water quality section in the River Values Report: Elkhorn Creek Wild and Scenic River (USDA Forest Service 2021) provides further information. The water quality management plan provided direction for improving stream temperature conditions.

The State Historic Preservation Office (SHPO) is a state office with a Federal mandate. Under Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations at 36 Code of Federal Regulations 800, Federal agencies are required to consult with State Historic Preservation Office regarding the eligibility of historic and cultural properties for nomination to the National Register of Historic Places, and on determinations of effects from Federal undertakings and management decisions.

Local Agencies

Marion County encompasses the Elkhorn Creek project area. The county boundaries stretch from the Willamette River to the Cascade Mountains, south of the Portland metropolitan area, in the heart of the Willamette Valley.

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Chapter 5: Planning Context

Relevant Law, Regulation, and Policy

Wild and Scenic Rivers Act

Enacted in 1968, the Wild and Scenic Rivers Act (16 U.S.C. 1271-1278) preserves selected rivers and their immediate environments in free-flowing conditions in order to protect them for the benefit and enjoyment of present and future generations. The act requires river-administering agencies and other Federal agencies to protect and enhance the values for which the river was designated.

The Wild and Scenic Rivers Act requires the administering agency to establish a detailed river corridor boundary of an average of not more than 320 acres per river mile and to prepare a comprehensive river management plan for those areas. The relevant sections of the Wild and Scenic Rivers Act are described throughout this management plan and provide the overarching planning context. A section 7 analysis under the Wild and Scenic Rivers Act is required for any additional future development in the bed or banks of the river within the wild and scenic river corridor.

National Environmental Policy Act

The National Environmental Policy Act of 1969 established procedures for decision making, disclosure of effects, and public involvement for Federal actions. Forest Service Manual 1950.2 requires consideration of the impacts of Forest Service proposed actions on the physical, biological, social, and economic aspects of the human environment (40 Code of Federal Regulations section 1508.14).

To meet requirements under the National Environmental Policy Act, we are completing an environmental assessment for this comprehensive river management plan along with proposed site-specific and adaptive management actions to help address known impacts to river values to protect and enhance those values. Future management actions will require additional development of a proposed action and environmental analysis under the National Environmental Policy Act, where applicable. All proposed projects in the corridor would be checked for consistency with this plan during future analysis.

Management Plans and Agency Policy

The 2012 Planning Rule applicable to National Forest System lands requires that the land management plan include plan components for the "protection of designated wild and scenic river 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" (36 Code of Federal Regulations (CFR) 219.10(b)(1)). Bureau of Land Management has a similar requirement under their land use planning rule 43 CFR 1600.

Both the Forest Service and Bureau of Land Management require that the management plan clearly identify designated segments within the plan area and include plan components, including standards or guidelines, which provide for management in accordance with the Wild and Scenic Rivers Act as well as the law that established that particular river segment. The management direction for each agency can be found in Forest Service Handbook 1909.12 and Bureau of Land Management Manual 6400. In the case where management guidance may overlap or conflict, the more stringent management guidance that offers the greatest protection for resource(s) is followed.

Willamette Land and Resource Management Plan

The Willamette Land and Resource Management Plan, as amended (forest plan) of 1990 provides management direction for designated wild and scenic river corridors, as well as study and eligible wild and scenic rivers. The forest plan states: "These management standards and guidelines apply to a designated river until a river management plan is approved..." (forest plan, pages 4-29).

The management goal for wild segments is to "preserve its essentially primitive character and outstandingly remarkable values; maintain and improve the quality of water which enters the river; maintain and improve fish and wildlife habitat; provide opportunities for river-oriented recreation which are dependent on free-flowing conditions of the river consistent with the primitive character of its surroundings; and comply with all standards for wild rivers as specified in Forest Service Handbook 1909.12, Chapter 8 (1987) and the Wilderness Preservation Act of 1964" (forest plan, pages 4-144).

To meet this goal, the forest plan provides desired conditions, standards, and guidelines for activities within the designated corridors. On April 3, 2000, the Forest Plan Map of Record was updated to include the creation of Management Area 6a for Elkhorn Wild and Scenic River. The applicable management direction for Management Area 6a can be found in Appendix A – Management Direction. This management direction applies to the portions of the designated Elkhorn Creek Wild and Scenic River on National Forest System lands.

Elkhorn Creek was not included in the wild and scenic river eligibility analysis conducted as part of the forest plan process in 1990. No eligibility analysis was completed by the Forest Service prior to the designation of Elkhorn Creek in 1996.

Northwest Forest Plan

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 applies to National Forest System lands within the Elkhorn Creek corridor[2].

The decision amended the forest plan and incorporated seven land allocations which overlap with the existing land use allocations and management areas. The Northwest Forest Plan allocations within the designated interim Elkhorn Creek corridor varied prior to the 1996 designation; approximately 44 percent of the lands within the interim wild and scenic river corridor overlap with the riparian reserve allocation (BLM 1997). 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" (Northwest Forest Plan Record of Decision, 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 (Northwest Forest Plan Record of Decision, page C-8). As such, the riparian reserve standards and guidelines apply to the extent that they are consistent with the legislative direction

[2] The Northwestern and Coastal Oregon Resource Management Plan (2016) incorporated the relevant components of the Northwest Forest Plan, as such this plan does not apply to Bureau of Land Management-administered lands.

for the congressionally reserved areas (Northwest Forest Plan Record of Decision, page C-8). In this case, most of the lands within the wild and scenic corridor 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 (Northwest Forest Plan Record of Decision, page 7). The standards and guidelines for riparian reserves are found in 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.

Another component of the aquatic conservation strategy is watershed analyses, which evaluate the geomorphic and ecologic processes operating in specific watersheds. These analyses should enable watershed planning that achieves aquatic conservation strategy objectives (Northwest Forest Plan Record of Decision, page B-11). Watershed analysis provides the basis for monitoring and restoration programs and the foundation from which riparian reserves can be delineated (Northwest Forest Plan Record of Decision, page B-12). The watershed analyses also provide background and existing condition information on the water resources located within the watershed, including designated wild and scenic river segments. The applicable watershed analysis for this area is the Little North Santiam Watershed Analysis (U.S. Department of the Interior, Bureau of Land Management 1997), completed by the Cascade Resource Area of the Bureau of Land Management Salem District in 1997.

Opal Creek Scenic Recreation Area Plan

The wild and scenic river is located within a “very low intensity zone” in the Opal Creek Scenic Recreation Area on National Forest System lands (USDA Forest Service 2002). This zone is managed to provide opportunities for the most primitive recreational experiences. This area is characterized as an unmodified natural environment of very high scenic integrity and remains undeveloped with little to no evidence of recent human activities or impacts. No roads (except existing Forest Service Road 351 to State of Oregon land and Elkhorn Ridge Road), bridges, trails, recreation facilities, or other resource developments are present. The area is generally inaccessible and can only be reached by cross-country travel over very rugged terrain.

The management plan states that activities in this zone are exclusively non-motorized in nature. Recreation use and interaction between visitors is very low, and opportunity to experience considerable isolation from the sights and sounds of human activity is very high. The area offers visitors potential to experience a high degree of solitude and tranquility, with many opportunities to appreciate the natural environment and learn by investigation and self-discovery. Visitors understand that a high degree of self-reliance and knowledge of primitive outdoor skills are required to meet the inherent challenge and risk of the natural environment. Management of the area is done in a non-obtrusive manner emphasizing minimal visible evidence of management restrictions and controls.

Northwestern and Coastal Oregon Resource Management Plan

The Bureau of Land Management’s Northwestern and Coastal Oregon Resource Management Plan (2016) provides management direction on congressionally reserved lands and national conservation lands, which include wild and scenic rivers (Resource Management Plan, pages 55 and 56). The management objectives for wild and scenic rivers include to “protect and enhance the free-flowing condition, water

quality, and outstandingly remarkable values of eligible, suitable, and designated Wild and Scenic River corridors" (Resource Management Plan, page 55). Other management direction applicable to the scenic and wild segments of the Elkhorn Creek on Bureau of Land Management lands can be found in Appendix A – Management Direction. Elkhorn Creek Wild and Scenic River is within the Elkhorn Creek Wild and Scenic River Extensive Recreation Management Area on the Northwest Oregon District.

Desired Future Conditions

The following is the desired future condition that was developed jointly by the Forest Service and Bureau of Land Management for the designated segments of Elkhorn Creek.

Wild Classification (Segment 1)

The area is managed to provide opportunities for unconfined primitive recreation experiences within the recreation opportunity spectrum (Forest Service) and primitive recreation experiences within the recreation setting characteristics (Bureau of Land Management). The area is characterized as a natural-appearing environment of very high scenic integrity that seems unmodified by management activities and remains undeveloped with little or no evidence of human activity or impacts.

The area is generally inaccessible and can only be reached by cross-country travel over very rugged terrain or from an existing bridge. Activities are exclusively non-motorized in nature. Recreation use and interaction between visitors is very low, and opportunity to experience considerable isolation from the sights and sounds of human activity is very high. The area offers visitors potential to experience a high degree of solitude and tranquility, with many opportunities to appreciate the natural environment and learn by self-discovery and investigation.

Visitors understand that a high degree of self-reliance and knowledge of primitive outdoor skills are required to meet the inherent challenge and risk of the natural environment. Management of the area is done in a non-obtrusive manner emphasizing minimal visible evidence of management restrictions and controls. No new road construction, bridges, recreation facilities, or other resource developments are present. Some primitive trail development may occur on Bureau of Land Management administered lands; however, no trail development would occur on lands administered by the USDA Forest Service.

Scenic Classification (Segment 2)

The area is managed to provide opportunities for back country, non-motorized recreation experiences within the recreation setting characteristics. The area is characterized by a predominantly natural environment where evidence of humans and human controls is present but low. Activities are exclusively non-motorized in nature. Recreation use is low, but some interaction between visitors is to be expected. The area offers visitors many opportunities to appreciate the natural environment and learn by self-discovery and investigation.

Visitors understand that a high degree of self-reliance and knowledge of primitive outdoor skills are required to meet the inherent challenge and risk of the natural environment. Management of the area is done in a non-obtrusive manner emphasizing minimal visible evidence of management restrictions and controls. Some primitive parking and trail development may occur on Bureau of Land Management administered lands within or adjacent to the wild and scenic river corridor boundaries of this segment of the river.

Management Standards and Guidelines

The management standards in appendix A prioritize protecting and enhancing wild and scenic river values during the planning and implementation of resource management activities in the river corridor. These

standards and guidelines are from the Forest Plan, Northwest Forest Plan, and Bureau of Land Management Northwestern and Coastal Oregon Resource Management Plan. They are intended to preserve the designated rivers' free-flowing condition and protect and enhance river values, including water quality and outstandingly remarkable values

Consideration of Climate Change

Fires are increasingly the originators of altered landscapes that present new challenges that are further influenced by changing climate trends. Future fires are likely to occur during coinciding periods of heat, fuel aridity, and extreme winds. Areas burned across the landscape are expected to double or triple in the future under a warming climate (Halofsky et al. 2022). Fires kill vegetation and remove biomass; release carbon, nitrogen, and other elements; create dead wood and alter wildlife habitat; create new growing space and landscape diversity; and change nutrient cycling and soil development.

Different plant species have different fire-adaptive strategies, which affects how vegetation reacts to fire. Plant adaptation strategies to fires include avoiders which have thin bark and crown close to the ground and tend to grow in less fire-prone areas; resisters which have thick bark, are shade tolerant, and have a short crown and can survive; and evaders whose seeds survive fire either in the seed bed or crown and regenerate following burns.

Post-fire conifer recovery is dependent on numerous variables including external factors of wind, topography, and climate conditions, as well as seed availability which is affected by seed traits including dispersal mechanism; tree height, age, and size; seed abundance; distance to seed source; and seed viability.

More information on different pathways for stand development mediated by varying fire frequency and severity would increase our understanding of ecological strategies that are adapting to a rapidly evolving future climate. In addition, measuring changes in the physical environment and the interactions of different biological community metrics (macroinvertebrates, birds, pollinators, and so forth) would inform our understanding of ecological services in a post-fire landscape.

The recent Climate Change Vulnerability Assessment from the Forest Service Pacific Northwest Research Station describes future climate trends on the Willamette National Forest relevant to Elkhorn Creek.

> The vulnerability assessment shows that the effects of climate change on hydrology in the [Columbia River Gorge National Scenic Area, Mount Hood National Forest, and Willamette National Forest] assessment area will be significant, primarily because decreased snowpack and earlier snowmelt will shift the timing and magnitude of streamflow; peak flows will be higher, and summer low flows will be lower. Projected changes in climate and hydrology will affect aquatic and terrestrial ecosystems, especially as frequency of extreme climate events (drought, low snowpack) and ecological disturbances (flooding, wildfire) increase.
>
> Distribution and abundance of coldwater fish species are expected to decrease in response to higher water temperature, although effects will vary as a function of local habitat and competition with nonnative fish. Higher air temperature, through its influence on soil moisture, is expected to cause gradual changes in the distribution and abundance of plant species, with drought-tolerant species becoming more dominant. Increased frequency and extent of wildfire (and in some cases insects) will facilitate vegetation change, in some cases leading to altered structure and function of ecosystems, although the frequency and extent of disturbances are uncertain. Vegetation change will alter wildlife habitat, with both positive and negative effects depending on animal species and ecosystem. Animal

> species with a narrow range of preferred habitats (for example, riparian systems, old forest) will be the most vulnerable to more disturbance and large-scale shifts in flora...
>
> Projections suggest that lower elevations of the assessment area may see minimal and local changes in hydrology, consisting primarily of higher rainfall intensity during winter months and less precipitation during summer (chapters 2 and 3). The higher elevation portions of the assessment area along the Cascade crest are expected to experience a shift from winter snow to winter rain-dominated systems, with increased peak during winter and decreased low flows during summer (chapter 3). Increased variability and potential for extreme precipitation events will contribute to the risk of damaging floods. Cold, moving-water habitat conditions are expected to be highly exposed to climate change impacts because of their association with snowmelt-dominated hydrologic systems. Lower summer flows and reduced high-elevation snowpack (coldwater supply) are expected to contribute to increased summer stream temperatures and diminished cold, moving-water habitat characteristics in historically snow-dominated subwatersheds (chapter 3). Increased fire frequency and severity also have the potential to affect riparian areas, particularly if high severity fire spreads into these areas from adjacent portions of the landscape (Halofsky et al, 2022).

One of the biggest vulnerabilities that may affect Elkhorn Creek and its river values are anticipated shifts in precipitation from snow to rain. This shift in precipitation type influences streamflow with peak flows occurring earlier in spring and prolonged low flows during the summer affecting habitat connectivity and water quality across a gradient from the headwaters to the coast. Managers are concerned that warmer air temperature will raise water temperature with the potential to cross thermal thresholds[3] that could cause mortality of fish and other species. In addition, in prolonged low flow periods, habitat requirements for both fresh water and anadromous fish species may not be met at different life cycle stages (migrating, spawning, redds, residents), putting individuals and species at risk.

“By increasing stream temperatures and reducing water storage, climate change will fragment coldwater areas, reducing genetic and population connectivity for species associated with cold water” (Lawrence et al. 2014).

Changes in future climate, such as changes in precipitation, temperature, and weather need to be considered in future management of Elkhorn Creek Wild and Scenic River corridor, especially for potential future actions that apply to ecological systems and wildfire recovery. Consistent monitoring of recovery from the Beachie Creek Fire will determine if the proposed passive management protects and enhances river values through natural recovery, or if thresholds are reached triggering more direct intervention to protect river values and adapt to a changing climate. “As climate change persists for several decades, critical thresholds may be exceeded, causing unanticipated responses to some variables like increasing temperature and carbon dioxide concentrations” (USDA Forest Service 2020b).

The proposed management approach would seek to maintain cool water and allow fire and other natural processes to play their natural ecological role. While the future is uncertain, and it is not possible to safeguard all resources, processes, assets, and values in their current form or context over the long term. This management approach would allow for resource adaptation to a changing climate while taking action when thresholds are reached to ensure protection of river values.

[3] The current state standard is 18 degrees Celsius.

Chapter 6: Implementation and Monitoring Plan

Visitor 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 (Wild and Scenic Rivers Act, October 2, 1968). A capacity analysis was prepared to meet this requirement (USDA Forest Service 2022a).

Visitor use within the designated segments is very low due to difficult access and steep topography; most use has occurred in the scenic segment and consisted of scenic viewing or occasional hiking from the bridge and motorized road across Elkhorn Creek. Overnight use has not been documented and is likely non-existent. In 2020, the Beachie Creek Fire burned extensively through the wild and scenic river corridor, resulting in 75 to 100 percent basal vegetation mortality in most of the designated segments. This event is expected to inhibit visitor use due to both the visual appearance of the area and the presence of hazard trees at potential campsites. The area remains closed due to safety concerns. The National Forest System lands within the corridor are closed by forest order and the Bureau of Land Management administered lands are closed by an emergency closure order.

While data collection has taken place over the years, most resources have not been studied extensively in this corridor. As a result, the user capacity estimates included in this analysis recognize the likelihood that visitor capacity decisions may need to be reviewed and revised if more data becomes available.

Currently, very limited recreational activities are pursued in the river corridor due to difficult access and steep terrain. Activities that could be accommodated in any segment include hiking, backpacking (very limited), wading-water play, challenging kayaking, fishing, and hunting. Uses that cannot be accommodated in any segment due to terrain, policy, or lack of use-specific designated trails include off-road vehicle driving, horseback riding, and mountain bike riding. While overnight camping could occur in both segments, the terrain is extremely limited for this type of use.

If user capacity is kept to the ranges identified below, negative impacts to river values can be prevented. Larger amounts of people at one time or total numbers of people per day can affect river values in many ways, including proliferation of campsites and erosion from creation of social trails.

The limiting attribute to capacity is access and topography; the river values first to be affected by amount and type of recreational use would be water quality from erosion (user-created trails and campsites). Indicators and thresholds were developed to monitor for any changes to the existing situation.

A summary of capacity estimates is provided in table 6.

Table 6. User capacity for each segment of Elkhorn Creek

Segment	Measure	Existing Use	Estimated Capacity	Justification
Wild	People per day	Non-existent to very low. Estimate one to two groups every 5 years.	15 people per day	Primitive recreation opportunity spectrum, primitive recreation setting characteristics, very low intensity zone, less than 6 encounters, encounters; 3 people in a group.
Scenic	People per day	Very low: most use occurs on Elkhorn Road bridge.	28 people per day	Back country recreation setting characteristics; 7 encounters, 4 people in a group (lowest back country group size and encounters).

Management Actions to Protect and Enhance

Section 10(a) of the Wild and Scenic River Act requires river-administering agencies to protect and enhance the river values. To help meet this requirement, we are completing an environmental analysis for the comprehensive river management plan along with description of user capacity, final boundaries, and potential future actions to protect and enhance those values.

As defined in the Wild and Scenic Rivers Act, water quality is to be protected and enhanced for all designated rivers. By not impairing the natural ability of the watershed vegetation to regenerate, we would promote improvements in water quality compatible with the Wild and Scenic Rivers Act.

Any potential future management actions may require additional environmental analysis and would be subject to all relevant law, regulation, and policy for the relevant agency, including the National Environmental Policy Act.

Proposed Activities and Infrastructure

This plan will protect and enhance outstandingly remarkable values by allowing natural processes to continue to dominate in a landscape largely unmodified by management activities, consistent with desired conditions. This will allow post-fire recovery to occur naturally, as already indicated by the establishment of new vegetation documented within the corridor 2 years following the fire.

This comprehensive river management plan includes some potential future management actions described below if thresholds are reached to ensure that river values are protected and enhanced into the future. The potential management actions would require site-specific analysis under the National Environmental Policy Act, Endangered Species Act, and other Federal laws. Management actions within the bed or banks of the river would require compliance with section 7(a) of the Wild and Scenic Rivers Act.

Framework for Future Development, Design, and Activities

The corridor has a high probability of natural recovery due to optimal local growing conditions including a year-long growing season, high precipitation rates throughout much of the year, and rapid growth rates of diverse native shrub, herb, lichen, moss, conifer, and hardwood species. It is a biophysically diverse area with potential to recover to again be among the highest biomass terrestrial ecosystems in the world. Although the Beachie Creek Fire was historic, it was not an historically unprecedented fire (Reilly et al 2021; Reilly et al. (in press)).

While it will take at least 200 years to reach old growth forest conditions, the area is likely to recover naturally with some changes and natural adaptation due to increased fire frequency and changing climate (Tepley et al. 2014). Even without overstory shade following the fire, the natural rock and steep canyon system topography shade the stream most of the time except during brief hot summer periods when the sun is at its zenith. Overstory shade will increase naturally over time, first with riparian hardwood tree regeneration including alder and willow, followed by upland conifer regeneration. Hardwoods are likely to return first throughout the corridor, providing shade, soil stabilization, wildlife habitat, and contributing to the scenic value. Conifers may change from historical conditions but are likely to recover without management intervention.

Within the corridor, standing and down snags created by the fire pose low risk to human health and safety, structures, or communities, as the area is rugged and remote, with limited or no access above the Elkhorn Road bridge which crosses the scenic segment. While some post-fire hazard tree removal has already been completed along Elkhorn Road near the bridge, broader fuels treatment and hazard tree removal

further from roads will not help the forest to achieve management objectives or desired conditions and are not expected to protect or enhance the outstandingly remarkable values.

No additional development, infrastructure, or facilities are planned or proposed within the corridor with the exception of proposed large woody debris reconstruction in the scenic segment. To meet desired conditions and legal and plan requirements, management actions will only be taken to protect and enhance river values if thresholds are reached, in addition to routine maintenance for already existing roads and the bridge across the scenic segment.

Currently, very limited recreational activities are pursued in the river corridor due to difficult access and steep terrain. Activities that could be accommodated in any segment include hiking, backpacking (very limited), wading-water play, challenging kayaking, fishing, and hunting. Uses that cannot be accommodated in any segment due to terrain, policy or lack of use-specific designated trails include the activities mentioned above (off-road vehicle driving, horseback riding, and mountain bike riding). While overnight camping could occur in both segments, the terrain is extremely limited for this type of use.

Potential Future Management Actions

Monitoring may identify thresholds reached, which could trigger management actions needed to reduce impacts to resources and protect and enhance river values. Some potential future management actions not included in the analysis for this planning effort (USDA Forest Service 2022a) are listed below.[4]

Potential future management activities to protect and enhance river values include adding large woody debris structures in the scenic segment to enhance fish habitat (with any associated equipment use and revegetation needed following activities); planting conifer, native tree, or shrub species in the scenic segment if vegetation fails to regenerate successfully in 10 years post-fire; removing post-fire hazard trees or other hazard trees along roads; treating invasive plants; routine road and bridge maintenance; potential future decommissioning of other spur roads; and visitor use management if capacities are exceeded or impacts to outstandingly remarkable values are identified. Table 7 depicts potential thresholds and triggers for future management actions.

Table 7. Indicators and thresholds that would trigger future management actions

Indicator	Relevant Outstandingly Remarkable Values (s)	Threshold(s)	Potential Future Management Action Triggered
Post-fire conifer and native vegetation regeneration	Fisheries, water quality (especially stream temperature)	Less than 100 surviving conifer seedlings per acre after 10 years; failure of native plants to reseed or loss of seed source such as following potential future high severity fire.	In the scenic section, planting conifers or other native plant species (reforest areas with high probability of survival).
large woody debris, and fish habitat and presence	Fisheries	Add large woody debris structures to the scenic segment of the stream where needed in accordance with Northwest Forest Plan standards (greater than 80 pieces per mile), Bureau of Land Management Northwestern and Coastal Resource Management Plan standards, and current science or research recommendations (Fox and Bolton 2007; Halofsky et al. 2022).[1]	Add large woody debris structure(s) along the scenic segment. Use heavy equipment as needed and revegetate any disturbed areas following use of heavy equipment or other disturbances during implementation.

[4] Future management actions will require additional development of a proposed action and environmental analysis, where applicable. All proposed projects in the corridor would be checked for consistency with this plan during future analysis.

Indicator	Relevant Outstandingly Remarkable Values (s)	Threshold(s)	Potential Future Management Action Triggered
Invasives presence and spread	Scenery, water quality, water quantity, fisheries	Follow thresholds identified in relevant Bureau of Land Management and Forest Service plans for invasive species, especially in riparian areas.	Treat invasive species where needed in accordance with relevant Forest Service and Bureau of Land Management invasives plans.
Stream temperature	Water quality, fisheries	Above 18 degrees Celsius for 7-day average of daily maximums	Comply with Clean Water Act requirements and mitigations for temperature standard compliance.
Best management practices and maintenance plan	Water quality, fisheries	Out of compliance with best management practices and road and bridge maintenance standards.	Maintain roads and Elkhorn Road bridge.

1-Adaptation options—In-stream restoration techniques (for example adding wood to streams) will improve hydrologic connectivity in floodplains and increase water storage capacity (Halofsky et al. 2022).

Evaluation of Water Resource Projects

Section 7 of the Wild and Scenic Rivers Act directs Federal agencies to evaluate federally-assisted or permitted water resource projects to ensure that existing conditions of designated river values (free-flowing condition, water quality, and outstandingly remarkable values) are not diminished. A section 7 determination is required for any water resources project proposed within or below, above, or on a stream tributary to Elkhorn Creek. A section 7 analysis will determine whether a proposed water resources project within Elkhorn Creek would have a "direct and adverse" effect on Elkhorn Creek or whether a proposed water resource project below, above, or on a stream tributary would "invade" Elkhorn Creek or "unreasonably diminish" its river values. More guidance on the section 7 process can be found in the Interagency Wild and Scenic Rivers Coordinating Council Technical Report: Wild and Scenic Rivers Act: Section 7 (Interagency Wild and Scenic Rivers Coordinating Council 2004).

Monitoring Plan

A monitoring strategy is a key element of a comprehensive river management plan and is important to helping ensure visitor use does not degrade river values (Interagency Wild and Scenic Rivers Coordinating Council 2002 and 2018). This section identifies indicators, thresholds, and associated data collection that will inform assessment of river value conditions.

Monitoring is important to ensure that changes stay within acceptable levels and do not compromise the protection and enhancement of river values. Where possible, monitoring programs that are already being conducted for other management purposes were selected to help ensure this monitoring plan is attainable.

The Willamette Land and Resource Management Plan (1990) includes the following monitoring question for wild and scenic rivers:

Are the outstandingly remarkable river values of all eligible, study and designated wild and scenic rivers being maintained or enhanced as required?

Federal law mandates the protection of outstandingly remarkable values of eligible, study, and designated wild and scenic rivers at the river class for which they qualify. See forest plan, pages 5-14 for more information.

The Northwest and Coastal Oregon Bureau of Land Management Resource Management Plan (August 2016) includes the following monitoring question (M36):

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 Northwestern and Coastal Oregon Resource Management Plan.

Table 8 lists proposed monitoring activities with frequencies to ensure that river values are protected and enhanced and identifies when thresholds are reached and triggers for potential future management actions. Sample methods can and should be changed if better means become available.

Table 8. Proposed monitoring

Monitoring Item	River Values or Wild and Scenic Rivers Act Requirement	Frequency	Responsible Agency	Comments
Social media posts including posted photos.	User capacity	Yearly	Forest Service and Bureau of Land Management	Response will depend on impacts to off-road vehicles. Track locations and type of use; determine impacts to off-road vehicles; if seen, determine management actions including education and enforcement.
Campsites in both segments; increases in user-created campsites.	User capacity; potential impacts to water quality and fisheries river values	Once every 5 years	Forest Service and Bureau of Land Management	Record GPS locations of campsites and approximate size of disturbed area. Determine if sites are causing erosion, impacts to vegetation.
Social trails leading from Elkhorn Road bridge in scenic segment, especially the section upstream of the bridge that connects to the wild segment.	User capacity; potential impacts to water quality and fisheries river values	Once every 5 years	Bureau of Land Management	Estimate length and destination of trail and include on a map for future monitoring. If technology allows, record locations of social trails using GPS or other method.
New social trails leading into the wild segment.	User capacity; potential indirect impacts to water quality and fisheries river values	Every 5 years from close by access roads	Bureau of Land Management	Record estimated total length of social trails, or, if technology allows record locations of social trails. Otherwise, include on a map for locating in the future.
Changes in land ownership.	User capacity, potential indirect impacts to all river values	Whenever this occurs	Forest Service and Bureau of Land Management	Consider how new landownership can change access. Determine length and area of corridor affected; develop capacity estimate.
Changes in management or design (new trails in scenic segment or increased facilities there).	User capacity; potential indirect impacts to water quality and fisheries river values	Prior to occurrence	Bureau of Land Management	No trails or facilities currently planned. Determine length and area of corridor affected; develop capacity estimate.
Changes in technology that can increase access (methods of transportation and uses).	User capacity	Ongoing professional observation of recreation trends nationally and regionally	Forest Service and Bureau of Land Management	Types of devices. Determine impacts to river values from this type of transport and access.

Monitoring Item	River Values or Wild and Scenic Rivers Act Requirement	Frequency	Responsible Agency	Comments
Expansion of parking areas near bridge	User capacity; potential indirect impacts to water quality and fisheries river values.	Yearly	Bureau of Land Management	If no vehicles are currently parking outside of the defined bridge parking area, estimates of this user-created parking may be made by observing changes to vegetation (trampling, vegetation loss).
Photo Point Monitoring	Scenery river value (while monitored from the scenic segment, results would be indicative of recovery and condition of scenery river value in the wild segment).	Annually for 5 years, then every 5 years	Forest Service and Bureau of Land Management	Visually document stand development and changes to scenery, fuels, and vegetative structure over time from the same photo points. Recommend at least three locations, looking up and downstream from the bridge and east from the eastern-most edge of the scenic segment.
Light Meter Readings	Scenery river value (while monitored from the scenic segment, results would be indicative of recovery and condition of scenery river value in the wild segment).	Simultaneous with photo point monitoring (above)	Forest Service and Bureau of Land Management	While taking photos, take light meter readings from at least three locations, looking up and downstream from the bridge and east from the eastern-most edge of the scenic segment. Record weather conditions, time of year, and overcast or sunny conditions.
Stream Temperature Monitoring	Water quality and fisheries river value	Annually with seasonal (especially summer) data download	Forest Service and Bureau of Land Management	Maintain a network of stream temperature gages, and work with the Oregon Department of Environmental Quality as much as possible to use their other available data. Suggested locations in the lower sections of the channel near the bridge and the downstream area of the inner gorge.
GIS and Satellite vegetation monitoring	Water quality and fisheries river value, especially factors influencing stream temperature. Scenery river value.	Recommended as available	Forest Service and Bureau of Land Management	Use data to monitor the rate of recovery of riparian and upland vegetation. Implications for stream temperature, fuels, scenery, ecology, soil erosion and landslides, and so forth.

Monitoring Item	River Values or Wild and Scenic Rivers Act Requirement	Frequency	Responsible Agency	Comments
Wildlife Cameras	Related to former wildlife river value lost due to the Beachie Creek Fire. (See discussion in changed conditions report.)	Optional	Forest Service and Bureau of Land Management	Identify returning wildlife presence.
Fisheries monitoring	Fisheries river value	Conduct monitoring at sufficient scale and frequency to effectively meet monitoring objectives to determine species presence or absence (including invasive organisms) and population monitoring.	Forest Service and Bureau of Land Management	Presence and absence monitoring through a combination of ocular (visual) surveys and eDNA. Population monitoring would include methods like spawning ground surveys currently conducted by the Oregon Department of Fish and Wildlife (ODFW). Coordinate with partners (for example non-government organizations such as the Freshwater Trust), ODFW and the Forest Service Pacific Northwest Research Station. Recommend eDNA monitoring where feasible to also determine terrestrial wildlife presence and changes.
Stream habitat monitoring	Fisheries river value	Where feasible, within the scenic section, conduct stream surveys in compliance with Bureau of Land Management protocols (for example, aquatic inventory and monitoring).	Bureau of Land Management	Quantity and quality of instream habitat (includes large wood and pools).

Appendix A: Management Direction

Willamette National Forest Land and Resource Management Plan

Wild and Scenic Rivers: Wild Rivers: FW-076

The potential wild classification attributes within a quarter-mile wide corridor on each side of the eligible or study river segments shall be protected pending congressional action on river designation or until determined to be unsuitable. Comply with all standards for wild rivers as specified in Forest Service Handbook 1909.12 Chapter 8 (1987) and standards specified in Management Area 6a.

Management Area 6a

Emphasis: Wild and Scenic Rivers - Wild

Management Goals

The Wild River Management Area will be managed to:

- Preserve its essentially primitive character and outstandingly remarkable values.
- Maintain and improve the quality of water which enters the river.
- Maintain and improve fish and wildlife habitat.
- Provide opportunities for river-oriented recreation which are dependent on free-flowing conditions of the river consistent with the primitive character of its surroundings.
- Comply with all standards for wild rivers as specified in Forest Service Handbook 1909.12, Chapter 8 (1987) and the Wilderness Preservation Act of 1964.

Desired Future Condition

The character and outstanding recreational value of the wild segments of the designated rivers within the Willamette National Forest boundaries will be maintained. Wild river segments will have the following characteristics:

- Free of impoundments and generally inaccessible except by trails.
- Watersheds or shorelines in essentially primitive condition and unpolluted water.
- Segments appear as wild to the user and represent vestiges of primitive America.
- The potential for visitors to experience a high degree of tranquility and solitude with many opportunities to appreciate the natural environment.

This prescription applies to designated wild and scenic rivers classified as wild rivers and serves as interim management for wild segments of mandated study rivers and eligible river segments until their suitability has been determined.

Standards and Guidelines

Wilderness

MA-6a-01: Management within the wild river corridor will conform to prescriptions and management area direction in MA 1.

Recreation Management

MA-6a-02: The area shall be made available for maximum use for a range of river-related activities that are consistent with maintaining area conditions and providing wild river experiences. This management prescription will provide a physical setting for semi primitive nonmotorized recreation.

MA-6a-03: Recreation use including, but not limited to, hiking, fishing, hunting, and boating is encouraged in wild river areas to the extent consistent with the protection of the river environment and wilderness management standards. Public use and access may be regulated and distributed where necessary to protect and enhance wild river values.

MA-6a-04: River use levels should be managed to maintain the recreation experience quality- establish regulations when the need warrants; and in cooperation with the Oregon State Marine Board, limit size, number, and type of boats.

MA-6a-05: Motorized use shall be prohibited in the wild river area, except for search and rescue and other emergency situations.

Forest Trail System

MA-6a-06: Trail corridor activities and management practices shall provide at least a physical setting for semi primitive nonmotorized recreation opportunity spectrum class opportunities. (See Forest-wide Standards and Guidelines for Forest Trail System.)

Scenic Resources

MA-6a-07: All design and implementation practices should be modified as necessary to meet the VQO [visual quality objections] of preservation.

Soil and Water Quality

MA-6a-08: Water quality shall be maintained or improved to meet Federal criteria or federally-approved state standards. (See Forest-wide Standards and Guidelines for Soil and Water Quality.)

Timber Management

MA-6a-09: No programmed harvest shall be scheduled.

MA-6a-10: Cutting of trees shall not be permitted except where needed to promote a primitive recreation experience (such as clearing for trails and for visitor safety) or to protect the environment (such as control of fire). Where feasible, timber outside the corridor boundary, but within the visual corridors should be managed and harvested with special consideration for visual quality.

MA-6a-11: Vegetation management shall be to maintain or restore natural appearing timber stands throughout the area.

Fire Management

MA-6a-12: Suppression strategies, practices, and activities shall be limited to those which have minimal effects on wild river values.

MA-6a-13: Fires should be suppressed at the lowest acreage practicable.

Lands

MA-6a-14: Agricultural use shall be restricted to a limited amount of domestic livestock grazing and hay production to the extent currently practiced. Row crops shall be prohibited.

MA-6a-15: All water supply dams and major diversions shall be prohibited.

MA-6a-16: No flood control dams, levees, or other works shall be allowed in the channel or river corridor. The natural appearance and essentially primitive character of the river shall be maintained.

MA-6a- 17: New transmission lines, gas lines, water lines, and so forth should be excluded. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way.

MA-6a-18: Existing patterns of land use and ownership shall be maintained provided they remain consistent with the purposes of the Wild and Scenic Rivers Act of 1968. A full range of land use control measures, such as zoning, easements, and fee acquisition will be employed where necessary to protect river values, provide reasonable public access, and maintain the existing river character.

MA-6a-19: Commercial grazing of livestock shall not be permitted on national forest land within the area.

MA-6a-20: Development of hydroelectric power facilities shall not be allowed.

Minerals and Energy

MA-6a-21: Rights and obligations pertaining to valid and existing claims shall be honored, consistent with existing guidelines and future regulations. Appropriate steps shall be taken to obtain withdrawal of the area from entry for locatable minerals. Rights and obligations pertaining to valid existing mineral leases (including geothermal) and permits for salable minerals shall be honored, but all appropriate steps shall be taken to seek early termination and to prevent reissuance of such leases and permits in the area. Appropriate steps shall be taken to prevent removal of salable and leasable minerals (including geothermal) from lands in the area not under valid existing permits or lease.

MA-6a-22: All mining, leasing, and salable extraction activity on national forest administered land within the area shall be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution, and visual impairment.

Facilities

MA-6a-23: No new roads or other provisions for overland motorized travel shall be permitted within a quarter-mile of the riverbank. A few inconspicuous roads leading to the boundary of the river corridor may be permitted.

MA-6a-24: Major public use areas, such as campgrounds, interpretive centers, or administrative headquarters shall be located outside wild river areas. Simple comfort and convenience facilities, such as toilets, tables, fireplaces, shelters, and refuse containers may be provided as necessary within the river area. These should harmonize with the surroundings. Unobtrusive trail crossings may be allowed on tributaries but will not normally cross the river.

MA-6a-25: New structures should not be allowed except in rare instances to achieve management objectives. Structures and activities associated with fisheries enhancement programs may be allowed. A few minor existing structures may be allowed assuming such structures are not incompatible with essentially primitive and natural values of the river corridor.

Management Planning

MA-6a-26: State and other agencies should be involved in forest river planning activities to assure coordination of management actions with State requirements and consistency with the goals of the interagency and scenic rivers planning team.

Monitoring Questions – Wild and Scenic Rivers

Willamette National Forest 2012 Planning Rule Monitoring Program (USDA 2017).

(i) The status of select watershed conditions.

i.a Are standards and guidelines maintaining or improving watershed conditions?

i.b Have best management practices (BMPs) been implemented and are they effective at managing water quality consistent with the Clean Water Act?

(ii) The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.

ii.b Are standards and guidelines maintaining or improving aquatic habitat (instream, lake, and riparian areas)?

ii.d Are known populations of invasive plants continuing to spread? Are new infestations occurring?

Opal Creek Scenic Recreation Area Management Plan

Recreation Management

MA-2c-02: The special recreation area shall be made available for public use and enjoyment, consistent with resource protection and maintenance of special recreation area values.

MA-2c-03: Recreation activities at not less than the levels in existence on the date of enactment of Public Law 104-333 shall be permitted. Levels of recreation use higher than the levels in existence on the date of enactment of Public Law 104-333 may be provided if such uses are ·consistent with the protection of the resource values of the special recreation area.

MA-2c-04: The scenic recreation area shall be made available for a range of recreational opportunities, and will be managed to provide four recreation opportunity settings as specified for each management zone:

a. Very Low Intensity Zone: Primitive

MA-2c-05: When recreation use results in effects that would not achieve desired condition or meet standards, management actions shall be taken to address the impacts or effects. The following actions, in order of priority, should be used in most cases:

a) Informing and educating the public, and site restoration.

b) Site improvement and/or use of regulations such as limiting and designating campfires, designating campsites, hardening sites, establishing minimum setbacks from features, facility development for health and safety, or resource protection, and/or restricting types of use, group size and/or length of stay.

c) Restrict numbers of users or timing of use such as allowing only day use, and/or restricting number of entries.

d) Close areas to all users.

MA-2c~06: Subject to applicable Federal and state law, hunting and fishing in the special recreation area shall be permitted. Under consultation with the Oregon State Department of Fish and Wildlife, designated zones or periods when no hunting or fishing shall be permitted for reasons of public safety, administration or public use and enjoyment of the special recreation area may be established.

MA-2c-09: Information and education efforts should be oriented toward enhancing visitors' experiences, increasing their understanding of and respect for the natural processes and areas special values, and encouraging safe and appropriate use. Visitors are provided with information that encourages user behavior that is respectful of area resources and towards other visitors and minimizes conflicts. Information topics would include visitor orientation, recreation opportunities, management goals and standards, regulations, user safety, fire prevention, enforcement and emergency services, and "leave no trace practices."

MA-2c-11: Partnerships, volunteer programs, and co-operative agreements shall be encouraged to assist in maximizing visitor recreational opportunities and reducing operational costs.

MA-2c-12: Non-motorized recreational mineral collecting activities shall be allowed to occur on all streams that are not encumbered by unpatented mining claims, within the Opal Creek Scenic Recreation Area. All activities should remain within the wet perimeter of the stream to ensure the least possible effect on scenic recreation area resources and values. Recreational mining activities, as defined in OAR 141-89-0040, includes the use of equipment such gold pans, sluices, and rocker boxes.

Scenery Management

MA-2c-15: The Special Recreation Area was established to protect and provide for the enhancement of the natural, scenic, recreational, historic and cultural resources, and shall be managed to meet the following visual quality objectives defined for each management zone:

a. Very Low Intensity Zone: Very High Scenic Integrity/ Preservation

MA-2c-16: Management practices shall result in a physical setting that meets or exceeds the Recreation Opportunity Spectrum class defined within each management zone:

a. Very Low Intensity Zone: Primitive

Forest Trail System

MA-2c-18: No trails shall be developed in the Very Low Intensity Zone. In other management zones, new trails should be considered to disperse use and provide loop travel opportunities. Provide for some barrier-free segments in compliance with accessibility standards.

Vegetation Management

MA-2c-24: The cutting and/or selling of trees including salvage sales shall be prohibited in the Scenic Recreation Area. The cutting of trees in the Special Recreation Area may be allowed only for:

a. Public safety, such as to control the continued spread of a forest fire in the Special Recreation Area or on land adjacent to the Special Recreation Area.

b. Activities related to administration of the Scenic Recreation Area consistent with the Opal Creek Management Plan.

c. Removal of hazard trees along roads and trails

MA-2c-25: Stumps resulting from hazard tree falling should be flush cut to meet scenic quality objectives.

MA-2c-26: In roadside zones, vegetation management such as brush cutting for protection of roads and public safety, controlling/eradicating noxious weeds, and removing slash associated with removing hazard trees, should employ treatment methods consistent with scenic resource management needs. Establishment of native low maintenance species through seeding or planting should be considered on bare soils. Preferred methods are manual treatments over mechanized equipment to avoid or reduce undesirable impacts to soils and damage to vegetation.

Special Forest Products

MA-2c-27: Special forest product collection shall be consistent with resource management needs and limited to:

a. traditional tribal uses, and

b. personal non-commercial use associated with recreation activities but limited to plant cuttings without mortality, gathering of fruits, nuts and mushrooms, and firewood gathering for on-site campfires.

Fire Management

MA-2c-28: Fire prevention messages shall be integrated into information and education efforts, and public contact should be scheduled throughout the recreation use season.

MA-2c-29: Suppression practices within the Opal Creek Scenic Recreation Area should have the least physical impact on the land consistent with other management considerations. Minimal Impact Suppression Tactics (MIST) should be used during suppression efforts. Preference will be given to the use of natural firebreaks. In some cases, direct attack with a minimum width of hand fire line, or wet line using power driven pumps and hose may be more cost-effective and cause the least overall damage to Special Recreation Area values.

Special Uses

MA-2c-34: Inholders, including mine claim holders, within the scenic recreation area shall have the right of reasonable access to and lawful use of their property as provided by law and subject to valid existing rights.

MA-2c-35: Requests for special use permits shall be considered and may be issued for compatible uses if such uses are consistent with the protection of the values for which the scenic recreation area was established.

MA-2c-36: Services shall be compatible with general public use and protect or enhance other special recreation area values and objectives. Outfitting and guiding services may be authorized that support the purposes for which the scenic recreation area was established. Limits on number of operational days, people served, or other restrictions may be placed to preserve a quality recreation experience in the special recreation area.

Lands

MA-2c-37: Subject to the other provisions of Public Law 104-333, the Forest Service may acquire any lands or interests in land in the scenic recreation area that the Secretary of Agriculture determines are needed to carry out this law.

MA-2c-38: Any lands or interests in land owned by a state or a political subdivision of a state may be acquired only by donation or exchange.

MA-2c-39: Within the boundaries of the Opal Creek Wilderness or the scenic recreation area, the Secretary shall not acquire any privately owned land or interest in land without the consent of the owner unless the Secretary finds that:

a. the nature of land use has changed significantly, or the landowner has demonstrated intent to change the land use significantly, from the use that existed on the date of the enactment of Public Law 104-333; and

b. acquisition of the land or interest in land is essential to ensure use of the land or interest in land in accordance with the purposes of Public Law 104-333 or the management plan.

Minerals and Energy

MA-2c-40: Subject to valid existing rights, all lands in the scenic recreation area are withdrawn from any form of entry, appropriation, or disposal under the public lands laws; location, entry, and patent under the mining laws; and disposition under the mineral and geothermal leasing laws (per Opal Creek Act, Public Law 104-333, section 1023 (d)(7)).

MA-2c-42: Where valid claims exist, the rights of the minerals claimant shall be met with the least possible effect on special recreation area resources and values. All mineral prospecting, exploration and development activities on unpatented mining claims, including the use of suction dredges, will be managed according to the terms of Public Law 104-333 and federal regulations in 36 CFR Part 228.

MA-2c-44: Extraction of common variety minerals shall be prohibited, except for the use of the Elkhorn rock quarry for enhancement, restoration, maintenance or construction projects within the special recreation area and Bornite Project Area.

Road System

MA-2c-48: No new roads shall be constructed.

MA-2c-49: Motorized vehicles shall not be permitted off of open roads. Off-road vehicle use on open forest system roads may occur but shall not conflict with other vehicle traffic.

MA-2c-57: No roads, bridges, trails, recreation facilities or other resource developments shall be permitted within the Very Low Intensity Zone.

Education, Interpretation, and Research

MA-2c-61: Research, educational and Interpretive opportunities shall be consistent with protection of natural and cultural resources.

MA-2c-62: Interpretation and education activities shall be developed in consultation with state, Federal, tribes, and local historic preservation organizations and include a balanced and factual interpretation of the cultural, ecological and industrial history of forestry and mining in the special recreation area. Interpretive and educational activities may include interpretive and information signage and exhibits, guided hikes, workshops, courses, seminars, self-directed discovery, classes, and hands on participation in research activities.

MA-2c-63: An interpretive strategy for the special recreation area shall be developed and include site-specific educational goals, interpretive themes and messages, direction for services and facilities development (for example, signs, brochures, guided tours, trails), design criteria consistent with facility development for each management zone, and project implementation priorities.

MA-2c-64: Research and education activities shall be coordinated with recreation management. Size and numbers of groups should be compatible with general public use and minimize impacts on recreational use and activities or degradation of resources and ecological processes. Research projects and educational activities deemed appropriate and compatible with special recreation area objectives shall be permitted.

MA-2c-66: Partnerships shall be encouraged to develop, support and maximize research and education opportunities.

Tribes

MA-2c-67: Existing and future memorandums of understanding for individual tribes shall be followed.

MA-2c-68: Trust responsibilities to Indian tribes shall be maintained, and formal consultation processes with appropriate tribes shall ensure compliance with applicable laws, and encourage meaningful tribal involvement in the management of the special recreation area. Consult on a regular basis with respect to tribal resources within the special recreation area on matters including but not limited to sacred sites; sacred or ceremonial traditions; activities that affect cultural resources; cultural studies of mutual interest; and gathering of traditional use information.

Local Communities

MA-2c-69: Projects that protect and support the economy of the communities of the North Santiam Canyon shall be considered.

MA-2c-70: To protect an important drinking water source for communities served by the North Santiam River, the Federal General Water Quality Best Management Practices shall be used.

Bureau of Land Management Northwestern and Coastal Oregon Resource Management Plan

Land Use Allocations

Congressionally Reserved Lands and National Conservation Lands (pages 55-56)

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.[5]

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.
- During wildfire management operations, use strategies and tactics that would protect the outstandingly remarkable values and classifications (or tentative classifications) within wild and scenic river corridors, except where the wildfire is deemed a threat to human safety or private property, or where use is essential for wildfire control, as determined by the incident commander.

Resource Programs

Lands, Realty, and Roads – Management Direction (pages 81-82)

- Retain lands in Land Tenure Zone 1 (Zone 1) under Bureau of Land Management administration. Lands in zone 1 include existing and future:
  - Designated and suitable wild and scenic river corridors.
- Right-of-way exclusion areas include (see Map D-1):
  - Designated and suitable wild and scenic rivers classified as wild; and
  - Visual resource management class I areas.

In right-of-way exclusion areas, do not grant rights-of-way, except when mandated by law.

- Right-of-way avoidance areas include (see Map D-1):
  - Designated and suitable wild and scenic rivers classified as scenic and recreational; and
  - Visual resource management class II areas not included in right-of-way exclusion areas.

In right-of-way avoidance areas, grant rights-of-way only if the Bureau of Land Management determines that the right-of-way proposals are compatible with the protection of the values for which the land use

[5] Wild and scenic river corridors include all of the river classifications – wild, scenic, and recreational.

was designated, or when no feasible alternative route or designated right-of-way corridor is available as applicable with Bureau of Land Management laws and policy.

Minerals – Management Direction (pages 85-86)

Leasable Minerals: Oil, Gas, or Coalbed Natural Gas Resources

- Apply site-specific stipulations, such as no surface occupancy or conditional surface uses, based on resource protection needs in:
    - Designated and suitable wild and scenic river segments (where not already closed by legislation).

Locatable Minerals

- Recommend for withdrawal from locatable mineral entry:
    - Designated and suitable wild and scenic river segments (where not already closed by legislation).

Salable Minerals

- Areas closed to salable mineral material disposal include (see Map E-1):
    - Designated and suitable wild and scenic river segments (where not already closed by legislation).

Sustainable Energy – Management Direction (page 90)

- Exclude from sustainable energy development areas that are part of national conservation lands (for example, wilderness areas, wilderness study areas, wild and scenic rivers, and national historic and scenic trails), areas of critical environmental concern, and district-designated reserve – lands managed for their wilderness characteristics.

Sustainable Energy, Wind Energy Development – Management Direction (page 91)

- Site development will include practices as needed to reduce or avoid impacts to other resource uses. Appropriate practices will be applied based on site-specific conditions and include, but are not limited to, the following:
    - Exclude designated areas that are part of national conservation lands (for example, wilderness areas, wilderness study areas, wild and scenic rivers, and national historic and scenic trails) and areas of critical environmental concern from wind energy site monitoring and testing and development.

Visual Resource Management – Management Direction (page 94)

- Visual resource management class I includes:
    - 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.
- Visual resource management class II includes:

- Designated and suitable wild and scenic rivers that are classified as scenic. Manage visual resource management class II areas for low levels of change to the characteristic landscape. Management activities will be seen but will not attract the attention of the casual observer. Changes will repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.

Monitoring Plan

Wild and Scenic Rivers

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?

Monitoring Scope: Evaluate 100 percent of Bureau of Land Management authorized activities that have the potential to affect the outstandingly remarkable values of wild and scenic river corridors.

Monitoring Interval: Annual; change interval to once every 3 years if 3 consecutive years of monitoring show 100 percent compliance.

Appendix B: References

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