

2020 Beachie Creek and Riverside Fires

Burned Area Emergency Response Plan

Cascades Field Office - Northwest Oregon District
Bureau of Land Management



Photo: Riverside Fire from La Dee Flats Area

Salem, OR
October 2020

Interagency BAER Team



Burned Area Emergency Response Plan

2020 Beachie Creek and Riverside Fires

Agency/Unit: Cascade Field Office - Northwest Oregon District,
Bureau of Land Management

Location: Salem, Oregon

Date: October 19, 2020

Prepared By: Interagency Burned Area Emergency
Response Team (K. Griggs)



Photo: Riverside Fire from La Dee Flats Area

Submitted By: _____
Kenneth Griggs, DOI BAER Team Leader – Salem, OR **Date**

Unit Summary Information

<i>Unit Name</i>	Cascades Field Office
<i>Unit Identifier</i>	CFO
<i>Region</i>	Northwest

Fire Summary Information

<i>Fire Name</i>	Beachie Creek Fire	
<i>Fire Number</i>	OR-WIF-200504 (NFN5)	
<i>Fire Code</i>	NFN5	
<i>Detection Date/Cause</i>	August 16, 2020 /unknown	
<i>Date Contained</i>	estimated October 31, 2020	
<i>Acreage</i>	Jurisdiction	Acres
	Private	78,165
	USFS	50,276
	BLM	38,617
	State	23,881
	ACOE	1,250
	County	444
	BIA	215
	TOTAL	192,848

<i>Fund</i>	21X
<i>Cost Center</i>	LLORN01000
<i>Functional Area</i>	LFE2200000
	LF3200000
<i>WBS</i>	Beachie Creek: LFESNFN50000 LFBRNFN50000

Unit Summary Information

<i>Unit Name</i>	Cascades Field Office
<i>Unit Identifier</i>	CFO
<i>Region</i>	Northwest

Fire Summary Information

<i>Fire Name</i>	Riverside Fire	
<i>Fire Number</i>	OR-WIF-200504 (NKP2)	
<i>Fire Code</i>	NKP2	
<i>Detection Date/Cause</i>	September 8, 2020 / human	
<i>Date Contained</i>	estimated October 31, 2020	
<i>Acreage</i>	Jurisdiction	Acres
	USFS	83,112
	Private	42,049
	BLM	12,607
	County	262
	State	152
	TOTAL ACRES	138,182
	<i>Fund</i>	21X
<i>Cost Center</i>	LLORN01000	
<i>Functional Area</i>	LFE2200000	
	LF3200000	
<i>WBS</i>	Riverside: LFESNKP20000 LFBRNKP20000	

Burned Area Emergency Response Plan 2020 Beachie Creek and Riverside Fires

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<u>Emergency Stabilization (ES)</u> <ul style="list-style-type: none"> • Hazard, Safety, Mile Marker Signs (ES –1) • Storm Prep – inventory, clean culverts (ES –2) • Storm Patrol (ES –3) • K-rail Slope Stabilization and Maintenance @ Molalla River Road (ES –4) • Remove Guardrail @ Molalla River Road (ES –5) • Hazard Tree Assessment/Removal @ Recreation Sites & WUI (ES –6) • Mitigate Safety Issues at Recreation Sites (ES – 7) • Securing Hazardous Materials Near Streams/Waterways (ES-8) • Repair Instream Structures (ES – 9) • Early Detection/Treatment of Priority Noxious Plants (ES-10) • NHPA Section 106 Compliance (ES –11) • Project Implementation (ES –12) 	

Burned Area Rehabilitation (BAR)

- Storm Patrol (BAR – 1)
- Repair/Replace Minor facilities (BAR –2)
- Early Detection/Treatment of Priority Noxious Plants (BAR – 3)
- HE Shrub Planting (BAR – 4)
- NSO Shrub Planting (BAR –5)
- Project Implementation (BAR – 6)

• RIVERSIDE FIRE

Emergency Stabilization (ES)

- Hazard, Safety, Mile Marker Signs (ES – 1)
- Storm Prep – inventory, clean culverts (ES – 2)
- Storm Patrol (ES – 3)
- Hazard Tree Assessment/Removal @ Recreation Sites and WUI (ES – 4)
- Repair Instream Structures (ES – 5)
- Early Detection/Treatment of Priority Noxious Plants (ES – 6)
- NHPA Section 106 Compliance (ES –7)
- Project Implementation (ES –8)

Burned Area Rehabilitation (BAR)

- Storm Patrol (BAR – 1)
- Early Detection/Treatment of Priority Noxious Plants (BAR – 2)
- NSO Shrub Planting (BAR –3)
- Project Implementation (BAR – 4)

Appendix I – Resource Assessments

Appendix II – Environmental Compliance

- BEACHIE CREEK FIRE Environmental Compliance
- RIVERSIDE FIRE Environmental Compliance

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Burned Area Emergency Response Plan 2020 Beachie Creek and Riverside Fires

Executive Summary

Introduction

This plan addresses Emergency Stabilization and Rehabilitation of potential detrimental effects resulting from the Beachie Creek and Riverside Fires that burned on lands managed by the Cascades Field Office of the Bureau of Land Management (BLM). This plan has been prepared in accordance with the Department of Interior policy and guidance, including the U.S. Department of the Interior, Departmental Manual, Part 620, Chapter 7 (Wildland Fire Management, Post-Wildfire Recovery 2017), Interagency Burned Area Emergency Response Guidebook (February 2006), and Interagency Burned Area Rehabilitation Guidebook (October 2006).

Background

Unusually high east west downslope winds and prolonged dry climate caused rapid expansion of multiple wildfires throughout the state of Oregon over Labor Day weekend 2020, prompting significant evacuations of communities and campgrounds.

The Beachie Creek Fire started August 16, 2020 approximately 2 miles south of Jawbone Flats, in Opal Creek Wilderness in Oregon. Late on the night of September 7, 2020 a significant east-west wind event caused downed powerlines and a series of additional merging fires propelled rapid fire growth. The Beachie Creek Fire impacted the communities of Gates, Mill City, and Mehama, Lyons, Detroit, Stayton, and Breitenbush. Although the Beachie Creek fire growth expanded towards the Riverside fire, the fires did not merge. However, the eastern flank merged with the Lionshead Fire. The fire burned through mixed conifer, grass and shrub, numerous snags, heavy dead and down trees, and slash. Previous management and multiple ownerships contribute to many fuel type changes. While the fire burned across a total of 192,848 acres of privately-owned land, Willamette National Forest, BLM, state land, Army Corps of Engineering, and county land; this plan specifically focuses on the 38,617 acres that burned on the BLM acreage. Estimated containment for the Beachie Creek fire is October 31, 2020.

The Riverside Fire started September 8, 2020 approximately half mile from Estacada, Oregon. The Riverside Fire impacted the communities of Molalla and Estacada. While the fire burned across a total of 138,182 acres of Willamette and Mt. Hood National Forests, privately-owned land, BLM, county land and state land; this plan specifically focuses on the 12,607 acres that burned on the BLM acreage. Estimated containment for this fire is October 31, 2020.

BAER Program

The primary objective of the BAER program is to conduct a rapid assessment of post-fire changes to values at risk and prescribe cost effective post-fire stabilization measures necessary to protect human life, property, and critical natural and cultural resources. The scope of BAER

is to address imminent (<1 year) threats caused by wildfire, not long-term management or pre-fire conditions.

The Bureau of Land Management Northwest Oregon District (NWOD) Office requested assistance from the Department of Interior's National Burned Area Emergency Response (BAER) Team to assess post fire values at risk and recommend stabilization and rehabilitation treatments for BLM managed lands. A BAER Team with expertise in hydrology, soils, geology, roads engineering, recreation, botany, cultural resources and archaeology, GIS, forestry, and environmental regulatory compliance assembled October 4, 2020. The BAER Team held an initial briefing with the Northwest Oregon District Manager, Upper Willamette and Cascades Field Office Managers, local Emergency Stabilization and Rehabilitation (ESR leads), and other local cultural and natural resource specialists at the District Office in Salem, Oregon on October 5, 2020. The briefing served as an overview of the BAER process and request for list of local important values at risk. On Friday October 16, 2020, the BAER Team shared findings and recommendations with managers and specialists at a close out presentation. The initial Emergency Stabilization and Rehabilitation plan identified 30 funding specifications totaling \$5,181,041.

Assessment Process

Following field reconnaissance and consultation with Field Office Managers, District Managers, Natural and Cultural Resource Specialists, the BAER team identified the following values most at risk as a result of the Beachie Creek and Riverside Fires. Note that not all issues result in recommendation for stabilization or rehabilitation treatments.

- **Safety Risks to Public and Increased Ecological Damage in Burned Areas**
Burned vegetation that blocked public access to previously inaccessible areas now expose the public to hazards within the burned area, including falling trees and branches, stump holes, and loose footing. Increased public traffic could degrade the recovery of these areas. Burned facilities also have left behind hazards to humans, such as burned stairways and bridges, exposed rebar and nails, open vault toilets, etc. Burned warning and regulatory signs along roadways and within recreation sites also creates safety risks to the public.
- **Municipal Watersheds** – Multiple municipal watersheds were potentially impacted by burned upstream watersheds.
- **Hazardous Materials** - The fires burned several structures, minor facilities, and vehicles/equipment that has left potentially hazardous waste materials exposed, some of which could easily enter rivers and creeks if left on the landscape.
- **Hazardous Trees** – Tree mortality was widespread throughout the fires, leaving behind many potential hazard trees along roadways, recreation sites, and near structures on adjacent private land.

- **Damage to Recreation Infrastructure** - The fires caused extensive damage to public recreation infrastructure at several locations, including Fishermen’s Bend, Elkhorn Valley, and Canyon Creek, as well as at smaller sites. Burned facilities pose safety hazards to personnel and the public, and loss of infrastructure significantly decreases developed recreational opportunities on BLM lands.
- **Damage to Cultural Sites** - Cultural sites within the fires consist primarily of lithic scatters and historic sites associated with logging. Given most groundcover burned, concerns exist for possible looting of artifacts and post-fire erosion of sites.
- **Road Infrastructure** - Roads are critical infrastructure for BLM lands given the active logging industry and extensive public use on these public lands. Concerns regarding roads and related infrastructure include possible impacts to culvert function, debris in ditches, hazard trees, and debris falling onto roadways.
- **Risk of Noxious Weed Spread in Burned Areas** - Noxious weeds can displace native vegetation, reduce biodiversity, and modify fire behavior and fire return interval. The areas within the fire perimeters are susceptible to invasive noxious weed spread from existing populations and inadvertent spread due to fire suppression operations, Invasive species can be aggressive colonizers of burned lands as well.
- **Wildlife** - Core nesting areas for Northern Spotted Owls, listed fish species, and the rare hoary elfin population all lie within the fire perimeters, raising concerns for the health and recovery of the habitat.
- **Aquatic Instream Restoration** - instream structures to create or enhance fishery habitat are located within several creeks and streams within the fire perimeters and are at risk both due to burn impacts and possible increased water and sediment flows.

In response to the risks described above, the following emergency stabilization and rehabilitation treatments are recommended to lessen post-fire impacts and protect critical natural resources for the Beachie Creek and Riverside fires:

BEACHIE CREEK FIRE:

Road Infrastructure, Hazard Trees, and Public Safety: Several treatment specifications are proposed, as follows:

- Replacement of burned hazard, safety, and mile marker signs
- Storm preparation, to clean culverts and remove roadside debris ahead of fall storms
- Storm patrol, to provide labor and equipment to respond to storm events to remove debris and ensure continued culvert function

- K-rail placement to prevent debris from falling onto the roadway
- Removal of burned guardrail along a roadway
- Hazard tree assessment and mitigation at recreational sites and at the urban interface of BLM lands and private property
- Removal of burned materials that pose safety risks to personnel and the public at recreational sites
- Securing of hazardous materials from burned creosoted timbers, treated wood, and burned vehicles/equipment

Biological Resources: Proposed treatment specifications include:

- Planting of native shrubs important to Northern Spotted Owl prey within core nesting areas
- Planting of the larval host plant for the rare hoary elfin butterfly
- Noxious plant treatments at existing invasive weed populations, recreation sites, and in suppression damage areas such as dozerlines, helispots, etc
- Repair of instream fish habitat structures in streams designated as Critical Habitat

Minor Facilities: One treatment specification includes:

- Repair or replacement of minor facilities at several recreation sites

Cultural Resources: One treatment specification includes:

- Surveys to complete NHPA Section 106 compliance on other treatments that may impact cultural resources.

RIVERSIDE FIRE:

Road Infrastructure, Hazard Trees, and Public Safety: Several treatment specifications are proposed, as follows:

- Replacement of burned hazard, safety, and mile marker signs
- Storm preparation, to clean culverts and remove roadside debris ahead of fall storms
- Storm patrol, to provide labor and equipment to respond to storm events to remove debris and ensure continued culvert function
- Hazard tree assessment and mitigation at recreational sites and at the urban interface of BLM lands and private property
- Securing of hazardous materials from one area with burned vehicles

Biological Resources: Proposed treatment specifications include:

- Planting of native shrubs important to Northern Spotted Owl prey within core nesting areas
- Noxious weed treatments at existing invasive plant populations, recreation sites, and in suppression damage areas such as dozerlines, helispots, etc.

- Repair of instream fish habitat structures in one stream with designated as Critical Habitat

Minor Facilities: One treatment specification includes:

- Repair or replacement of minor facilities at several recreation sites

Cultural Resources: One treatment specification includes:

- Surveys to complete NHPA Section 106 compliance on other treatments that may impact cultural resources.

Management Direction, Environmental Compliance

Management direction relevant to Emergency Stabilization and Rehabilitation treatments proposed in this plan can be found in Appendix II and summarized below:

- Northwestern & Coastal Oregon Record of Decision and Resource Management Plan. Bureau of Land Management, Northwest Oregon DO 2016.
- Aquatic & Riparian Habitat Restoration EA. Bureau of Land Management, Northwest Oregon DO 2020.
- Integrated Invasive Plant Management for the Northwest Oregon District Environmental Assessment. Bureau of Land Management, Northwest Oregon DO 2018.

Compliance with environmental laws, regulations, policies, and local agency planning documents are required for all proposed BAER treatment actions on lands managed by the BLM with respect to the Beachie Creek and Riverside Fires. All proposed treatments were reviewed and determined to be covered by the National Environmental Policy Act under existing Categorical Exclusions, Environmental Assessments, and Environmental Impact Statements. Some of the proposed treatments (i.e. repairing instream structures and noxious plant treatments) will require completion of Determination of NEPA Adequacy (DNA) process and Annual Treatment Plan (i.e. noxious plant treatment). Proposed treatment shapefiles will be delivered digitally to local ESR Lead. The Northwest Oregon District will complete any required consultation with Tribes; including the Confederated Tribes of Siletz Indians, Confederated Tribes of Grand Ronde, Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians, and Confederated Tribes of Warm Springs. The Northwest Oregon District has already initiated emergency consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service to address impacts of wildfire suppression actions and post-fire emergency stabilization and rehabilitation treatments effects on threatened and endangered species or their habitat.

Organization of this plan

Portions of the Beachie Creek and Riverside fires impacted BLM managed by the Cascade Field Office. Some sections of this plan are written common to both fires (i.e. Assessments) while others (i.e. Specifications, Environmental Compliance) are presented separately for each fire.

Conclusion

The burned area on BLM managed lands present risk to critical values identified by BLM staff and BAER Team members. As a result, to reduce these threats and mitigate further damage to resources, this initial Emergency Stabilization and Rehabilitation plan outlines twelve (12) Emergency Stabilization (ES) and six (6) Burned Area Rehabilitation (BAR) specifications for the BEACHIE CREEK FIRES totaling \$4,067,873; and eight (8) Emergency Stabilization (ES) and four (4) Burned Area Rehabilitation (BAR) specifications for the RIVERSIDE FIRES totaling \$1,113,168. These actions may be implemented immediately pending approval of funding and alignment of assets. Any additional actions not already proposed in this plan will require additional planning, collaboration, and environmental compliance review prior to implementation.

Burned Area Emergency Response Plan
2020 Beachie Creek and Riverside Fires
Part A – Fire Location and Background Information

Fire Name	Beachie Creek Fire		
Fire Code	NFN5		
Incident Number	OR-WIF-200504 (NFN5)	Jurisdiction	Acres
Agency Unit	Cascade Field Office	Private	78,165
District	Northwest Oregon	USFS	50,276
State	Oregon	BLM	38,617
County	Linn, Marion, Clackamas	State	23,881
Ignition Date / Manner	August 16, 2020 /unknown	ACOE	1,250
Zone	Northwest	County	444
Date Contained	estimated October 31, 2020	BIA	215
		TOTAL	192,848

Fire Name	Riverside Fire		
Fire Code	NKP2		
Incident Number	OR-WIF-200504 (NKP2)	Jurisdiction	Acres
Agency Unit	Cascade Field Office	USFS	83,112
District	Northwest Oregon	Private	42,049
State	Oregon	BLM	12,607
County	Clackamas	County	262
Ignition Date / Manner	September 8, 2020 / human	State	152
Zone	Northwest		
Date Contained	estimated October 31, 2020	TOTAL ACRES	138,182

Burned Area Emergency Response Plan
2020 Beachie Creek and Riverside Fires
Part B – Nature of Plan and Stabilization Objectives

I. Type of Plan (Check one box below)

	Short-term Emergency Stabilization Plan
	Long-term Rehabilitation
X	Both Long and Short-term Rehabilitation

II. Type of Action (Check one box below)

X	Initial Submission
	Updating or Revising the Initial Submission
	Supplying Information for Accomplishment to date on Work Underway
	Different Phase of Project Plan
	Final Report (To Comply with the Closure of the EFR Account)

**Burned Area Emergency Response Plan
2020 Beachie Creek and Riverside Fires**

Part C – Team Organization, Resource Advisors and Consultations

BAER Team Members

Position	Team Member / Affiliation
Team Leader	Kenneth Griggs / U.S. Fish and Wildlife Service
Deputy Team Leader	Jack Oelfke/ National Park Service
Deputy Team Leader	Danelle Nance/ Bureau of Land Management
Botany	Molly Boyter/Bureau of Land Management
Cultural Resources	Dan Hall/ Bureau of Indian Affairs
Environmental Specialist/Documentation	Michelle Barry / U.S. Fish and Wildlife Service
Geographic Information Systems (GIS)	Trisha Johnson/Confederated Tribes of the Colville Reservation
Geographic Information Systems (GIS)	Richard Easterbrook/U.S. Fish and Wildlife Service
Geologist	Andrew Griffin/ Bureau of Land Management
Hydrologist	Spencer Higginson/National Oceanic and Atmospheric Administration
Hydrologist	Scott Sheppard, Bureau of Land Management
Recreation	Tim Kramer/Bureau of Land Management
Roads Engineering/Forestry	Eric Rhodenbaugh/Bureau of Indian Affairs
Roads Engineering	Evan Wernecke, Bureau of Land Management
Soils Scientist	Jennifer Puttere/ Bureau of Land Management

Resource Advisors

Note: Resource Advisors are individuals who assisted the BAER Team with the preparation of this plan. For consultations, see the individual resource assessments in APPENDIX I, SECTION V, CONSULTATIONS for a list of agencies and individuals who were consulted or otherwise contributed to the development of this plan.

Name	Affiliation	Position
Jonas Parker	Bureau of Land Management	ESR Lead
Joe Krish	Bureau of Land Management	Agency Representative
Emily Erwin	Bureau of Land Management	District Planner & Environmental Coordinator
Jason Bernards	Bureau of Land Management	Roads Engineer
John Klock	Bureau of Land Management	Botanist
Britt Betenson	Bureau of Land Management	Cultural Resources Specialist
Kirk Appleman	Bureau of Land Management	Hazardous Materials Coordinator
Steve Baldwin	Bureau of Land Management	Recreation Specialist
Terry Fennell	Bureau of Land Management	Botanist
Peter Kauss	Bureau of Land Management	Hydrology
James Hughes	Bureau of Land Management	Natural Resource Specialist (Weeds)
Corbin Murphy	Bureau of Land Management	Wildlife Biology
John DeLuca	Bureau of Land Management	Wildlife Biology
Kyle Wright	U.S. Forest Service – Deschutes NF	USFS BAER
Leah Tai	U.S. Forest Service Siuslaw NF	USFS BAER
John Chatel	U.S. Forest Service – PNW Region	USFS BAER
Peggy Fisher	U.S. Forest Service – Deschutes/Ochoco NF	USFS BAER

Consultations:

Individuals who were consulted or otherwise contributed to the development of this plan.

Name	Affiliation	Position
Jose Linares	Northwest Oregon District Office	District Manager
John Huston	Cascades Field Office	Field Manager
Michael Matthews	Cascades Field Office	Assistant Field Manager

**Burned Area Emergency Response Plan
2020 Beachie Creek Fire**

Part D – Treatment Costs by Region and Fire

Northwest Region – Oregon

Emergency Stabilization (ES) - Beachie Creek		
No.	Treatment	Total
ES - 1	Hazard, Safety, Mile Marker signs	\$26,607
ES - 2	Storm Prep – inventory, clean culverts	\$165,210
ES - 3	Storm Patrol	\$775,566
ES - 4	K-rail Slope Stabilization and Maintenance at Molalla River Road	\$57,011
ES - 5	Remove Guardrail at Molalla River Road	\$9,600
ES - 6	Hazard Tree Assessment/Removal at Recreation Sites/WUI	\$47,449
ES - 7	Mitigate Safety Issues at Recreation Sites	\$276,303
ES - 8	Securing Hazardous Materials near Streams/Waterways	\$6,366
ES -9	Repair Instream Structures	\$106,560
ES -10	Early Detection/Treatment of Priority Noxious Plants	\$141,789
ES -11	NHPA Section 106 Compliance	\$31,920
ES -12	Project Implementation	\$17,472
Total		\$1,661,853

Burned Area Rehabilitation (BAR) - Beachie Creek		
No.	Treatment	Total
BAR - 1	Storm patrol	\$972,382
BAR - 2	Repair/Replace Minor Infrastructure	\$650,918
BAR - 3	Early Detection/Treatment of Priority Noxious Plants	\$567,156
BAR - 4	HE Shrub Planting	\$23,080
BAR - 5	NSO Shrub Planting	\$162,615
BAR - 6	Project Implementation	\$29,888
Total		\$2,406,039

**Burned Area Emergency Response Plan
2020 Riverside Fire**

Part D – Treatment Costs by Region and Fire

Northwest Region – Oregon

Emergency Stabilization (ES) - Riverside		
No.	Treatment	Total
ES - 1	Hazard, Safety, Mile Marker signs	\$11,009
ES - 2	Storm Prep – inventory, clean culverts	\$90,711
ES - 3	Storm Patrol	\$277,188
ES - 4	Hazard Tree Assessment/Removal at Recreation Sites/WUI	\$3,257
ES - 5	Repair Instream Structures	\$14,170
ES - 6	Early Detection/Treatment of Priority Noxious Plants	\$23,757
ES - 7	NHPA Section 106 Compliance	\$17,346
ES - 8	Project Implementation	\$17,472
Total		\$454,910

Burned Area Rehabilitation (BAR) - Riverside		
No.	Treatment	Total
BAR - 1	Storm patrol	\$349,409
BAR - 2	Early Detection/Treatment of Priority Noxious Plants	\$95,028
BAR - 3	NSO Shrub Planting	\$183,933
BAR - 4	Project Implementation	\$29,888
Total		\$658,258

**Burned Area Emergency Response Plan
2020 Beachie Creek Fire**

Part E – Summary of Stabilization and Rehabilitation Activities

Emergency Stabilization (ES) Activities Cost Summary

Northwest Oregon - Beachie Creek								
Treatment Specification	NFPORS Category	Unit	Unit Cost	# of Units	Fiscal year			Total
					2021	2022	2023	
ES - 1 Hazard, Safety, Mile Marker signs	Human Life & Safety	variable	see spec	see spec	\$26,607			\$26,607
ES - 2 Storm Prep – inventory, clean culverts	Roads	mile	\$2,422	68.21 mi	\$165,210			\$165,210
ES - 3 Storm Patrol	Roads	mile	\$2,843	272.84 mi	\$775,566			\$775,566
ES - 4 K-rail Slope Stabilization and Maintenance at Molalla River Road	Roads	mile	see spec	see spec	\$37,011	\$10,000	\$10,000	\$57,011
ES - 5 Remove	Roads	mile	\$6.86	1400	\$9,600			\$9,600

Guardrail at Molalla River Road								
ES - 6 Hazard Tree Assessment /Removal at Recreation Sites/WUI	Human Life & Safety	acre	\$195.26	243 acres	\$47,449			\$47,449
ES - 7 Mitigate Safety Issues at Recreation Sites	Human Life & Safety	variable	see spec	see spec	\$276,303			\$276,303
ES - 8 Securing Hazardous Materials near Streams / Waterways	Human Life & Safety	ton	\$127	50	\$6,336			\$6,336
ES - 9 Repair Instream Structures	Asset Repair & Replacement	structures	\$26,640	4	\$106,560			\$106,560
ES -10 Early Detection / Treatment of Priority Noxious Plants	Invasive Plants & Weeds	acre	\$77.77	1823	\$141,789			\$141,789

ES -11 NHPA Section 106 Compliance	Heritage Resources	acre	\$70	456	\$31,920			\$31,920
ES - 12 Project Implementati on	Administration				\$17,472			\$17,472
Total								\$1,661,823

Rehabilitation (BAR) Activities Cost Summary

Northwest Oregon - Beachie Creek										
Treatment Specification	NFPORS Category	Unit	Unit Cost	# of Units	Fiscal year					Total
					2021	2022	2023	2024	2025	
BAR - 1 Storm Patrol	Roads	variable	see spec	see spec		\$583,429	\$388,953			\$972,382
BAR - 2 Repair / Replace Minor Infrastructure	Asset Repair & Replacement	variable	see spec	see spec	\$650,918					\$650,918
BAR - 3 Early Detection / Treatment of Priority Noxious Plants	Invasive Plants & Weeds	acre	77.77	1823 acres		\$141,789	\$141,789	\$141,789	\$141,789	\$567,156
BAR - 4 HF Shrub Planting	Terrestrial Habitat	plant	\$1.93	12000		\$23,080				\$23,080
BAR - 5 NSO Shrub Planting	Terrestrial Habitat	plant	\$1.72	94543	\$162,615					\$162,615
BAR - 6 Project Implementation	Admin					\$7,472	\$7,472	\$7,472	\$7,472	\$29,888
Total										

**Burned Area Emergency Response Plan
2020 Riverside Fire**

Part E – Summary of Stabilization and Rehabilitation Activities

Emergency Stabilization (ES) Activities Cost Summary

Northwest Oregon - Riverside								
Treatment Specification	NFPORS Category	Unit	Unit Cost	# of Units	Fiscal year			Total
					2021	2022	2023	
ES - 1 Hazard, Safety, Mile Marker signs	Human Life & Safety	variable	see spec	see spec	\$11,009			\$11,009
ES - 2 Storm Prep – inventory, clean culverts	Roads	mile	\$4,619	19.64 mi	\$90,711			\$90,711
ES - 3 Storm Patrol	Roads	mile	\$3,528	78.56 mi	\$277,188			\$277,188
ES - 4 Hazard Tree Assessment/Removal at Recreation Sites/WUI	Human Life & Safety	acre	\$361.89	9 acres	\$3,257			\$3,257
ES - 5 Repair Instream Structures	Asset Repair & Replacement	structures	\$14,170	1	\$14,170			\$14,170
ES -6 Early Detection/Treatment of Priority Noxious Plants	Invasive Plants & Weeds	acre	\$115.33	206 acres	\$23,757			\$23,757
ES -7 NHPA Section 106 Compliance	Heritage Resources	acre	\$70	247.8 acres	\$17,346			\$17,346

ES - 8 Project Implementation	Administration				\$17,472			\$17,472
Total								\$454,910

Rehabilitation (BAR) Activities Cost Summary

Northwest - Oregon - Riverside										
Treatment Specification	NFPORS Category	Unit	Unit Cost	# of Units	Fiscal year					Total
					2021	2022	2023	2024	2025	
BAR - 1 Storm Patrol	Roads	variable	see spec	see spec		\$209,645	\$139,764			\$349,409
BAR - 2 Early Detection/ Treatment of Priority Noxious Plants	Invasive Plants & Weeds	acre	\$115.33	206 acres		\$23,757	\$23,757	\$23,757	\$23,757	\$95,028
BAR - 3 NSO Shrub Planting	Terrestrial Habitat	plant	\$1.71	107690	\$183,933					\$183,933
BAR - 4 Project Implementation	Administration					\$7,472	\$7,472	\$7,472	\$7,472	\$29,888
Total										\$658,258

