



Post-Fire BAER Assessment

Burned Area Emergency Response (BAER)

Information Brief

CentralWashingtonFireRecovery.info



Jolly Mountain Fire – Values at Risk Matrix and Treatments

November 2017

EMERGENCY DETERMINATION

The BAER team began assessing the area for post-fire emergencies on September 29, 2017. In that time the team has identified the following values at risk to post-fire threats. Interim reports may be submitted as additional assessments are completed. The risk matrix below, Exhibit 2 of Interim Directive No.: 2520-2014-1 was used to evaluate the Risk Level for each value identified during Assessment. Only values at risk that had a risk of Intermediate or above are discussed.

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	RISK		
Very Likely	Very High	Very High	Low
Likely	Very High	High	Low
Possible	High	Intermediate	Low
Unlikely	Intermediate	Low	Very Low

The table below describes the values at risk, probability of damage or loss, magnitude of consequences, risk, rationale for emergency treatment or actions and proposed treatments. Emergency Treatments activities (*public health and safety, land, channel, road and trail treatments, protection and safety or public engagement actions).

Critical Value at Risk	Description of Threat	Probability Magnitude Risk	Rationale for Emergency Management Actions	Risk Reduction Treatments/ Management Actions
Human Life and Safety Public Health	Increased flows, ash, sediment and debris from burn slopes upslope of recreation residences may cause damage to the drinking water source/delivery system and pose risk of water quality contamination.	Very Likely Moderate Very High	To avoid potential impacts to public health from water quality contamination from ash, sediment, and debris from post-fire runoff.	Notify owners of potential impacts to their water supply through certified letters. Coordinate with Department of Health on specific precautionary measures to follow.
Human Life and Safety Middle Fork CG (DNR) and Middle Fork Trail #1393	Risk to employees and visitors from flooding below High and Moderate burn severity areas of the Middle Fork Teanaway	Likely Major Very High	To avoid impacts to human health and safety from being caught in flood waters and debris.	Communicate increased risk of flooding for public safety and property protection. Public Information/Outreach, agency coordination ALERT Station installation support for NFS lands
Human Life and Safety Middle Fork Trail #1393 (DNR), West Fork Teanaway #1353	Risk to employees and visitors from hazard trees and flooding below High and Moderate burn severity areas of the Middle Fork Teanaway	Possible Major High	To avoid impacts to human health and safety from being injured by hazard trees or caught in flood waters.	Communicate increased risk of flooding for public safety and property protection. Public Information/Outreach, agency coordination
Human Life and Safety Road Access	Risk to employees and visitors from flooding from areas of High and Moderate burn severity above Hwy 903, and County Roads in the Middle and North Fork Teanaway	Possible Major High	To avoid impacts to human health and safety from being caught in flood waters.	Communicate increased risk of flooding for public safety and property protection. Public Information/Outreach, agency coordination
Human Life and Safety Dispersed Recreation Access	Risk to employees and visitors from flooding at dispersed site users accessing and using Cle Elum Lake beach access below Dry Creek and the unnamed tributary between Morgan Creek and Dry Creek	Possible Major High	To avoid impacts to human health and safety from being caught in flood waters.	Administrative closure of dispersed recreation sites on Cle Elum Lake below Morgan and Dry Creeks. Install signage and barriers to restrict access to unsafe areas below High and Moderately burned drainages will increase public safety.
Human Life and Safety Dispersed Recreation Access	Risk to employees and visitors from flooding at dispersed sites in the North Fork Teanaway River.	Unlikely Major Intermediate	To avoid impacts to human health and safety from being caught in flood waters.	Communicate increased risk of flooding for public safety and property protection. Public Information/Outreach, agency coordination

Critical Value at Risk	Description of Threat	Probability Magnitude Risk	Rationale for Emergency Management Actions	Risk Reduction Treatments/ Management Actions
Human Life and Safety Developed Recreation Access	Risk to employees and visitors from flooding at developed sites in or below low burn severity areas including Beverly, Cle Elum River, Red Mountain, Salmon Le Sac-Cayuse, Wishpoosh CG	Unlikely Major Intermediate	To increase awareness of increased post-fire flood risk. To avoid impacts to human health and safety from being caught in flood waters.	Communicate increased risk of flooding for public safety and property protection. Public Information/Outreach, agency coordination
Human Life and Safety Private and DNR lands downstream	Risk to private property from flooding in the Morgan, Dry, Bell, Newport Creeks area, TNC, DNR, Wagonwheel, Dingbat, private below Lick Creek, West Fork and Middle Teanaway	Possible Major High	To increase awareness of increased post-fire flood risk and to avoid impacts to human health and safety from being caught in flood waters.	Communicate increased risk of flooding for public safety and property protection. Public Information/Outreach, agency coordination
Human Life and Safety DNR Developed Recreation Sites	Risk to employees and visitors from flooding at developed recreation sites downstream of areas of High and Moderate burn severity at Indian and Teanaway Campgrounds	Possible Major High	To increase awareness of increased post-fire flood risk and to avoid impacts to human health and safety from being caught in flood waters and debris (the largest areas of High and Moderate burn severity were down slope from FS boundary on DNR and private lands).	Communicate increased risk of flooding for public safety and property protection. Public Information/Outreach, agency coordination. Notify DNR, County through certified letters
Human Life and Safety SUP Access	Risk to flooding at one Recreation Residence that sits low in the floodplain	Unlikely Major Intermediate	To increase awareness of increased post-fire flood risk. To avoid impacts to human health and safety from being caught in flood waters and debris. Only 4% of the watershed burned upstream of cabin, therefore very low risk.	Notify owners through certified letters of risk to increased risk of flooding.
Human Life and Safety Trail Access	Risk to hikers along trails along portions of Trail #1383, #1307 from burned area hazards and increased flood risk.	Unlikely Major Intermediate	To increase awareness of increased post-fire flood risk. To reduce risk to hikers from burned area hazards (stump holes, hazard trees, and rock fall hazards) in areas within and below Moderate and High burn severity.	Signage and public outreach and coordination to communicate post-fire risks

Critical Value at Risk	Description of Threat	Probability Magnitude Risk	Rationale for Emergency Management Actions	Risk Reduction Treatments/ Management Actions
Human Life and Safety Trail Access	Risk to hikers along trails along portions of trails in High and Moderate SBS: FS Trails # 1340, 1340.1, 1225, 1383.1,1393, 1325,1349, 1235, 1222	Possible Major High	To increase awareness of increased post-fire flood risk. To reduce risk to hikers from burned area hazards (stump holes, hazard trees, and rock fall hazards) in areas within and below Moderate and High burn severity.	Administrative closure of Hex Mountain Trail. Signage and public outreach and coordination to communicate post-fire risks
Property Road Infrastructure	Damage to FS Roads 4315124, 4300230, 4305113, 9701203, 4305215, from loss of water control on roads	Major Moderate Very High	To mitigate imminent hazards to the roads system vary from minor sloughing and culvert blockage to partial or total loss of road template.	Drainage improvement treatments to increase stability of road infrastructure will reduce risks of damage on ~4 miles of road.
Property Trail Infrastructure	Damage to FS Trails #1353, 1340 from loss of water control on trails	Very Likely Moderate High	Trail segments with high erosional hazard were susceptible to accelerated erosion pre-fire, therefore trails within high and moderate burn severity, are prone to increased post-fire runoff, concentration of flow, and erosion of the trail surface.	Drainage structures will be installed along ~7.5 miles of trail to control runoff and avoid, minimize and mitigate damage to the trail bed and downslope hillslopes
Natural Resources Soil Productivity	Approximately 20% of the fire area is burned at High and Moderate soil burn severity posing a moderate threat to soil productivity. The extent and degree of changes is unknown. Loss of productivity due to erosion is considered to be long-term but recovery of hill-slope stability is likely to occur within 3-5 years following the fire.	Possible Moderate Intermediate	Hillslope treatments are limited due to timing and topographic limitations, therefore treatments to control water on road and trail infrastructure in areas of High and Moderate soil burn severity will help to avoid further degradation to soil productivity	Road and trail drainage treatments are proposed to control the increase in runoff and avoid erosion of road and trail bed and sedimentation into streams. Natural recovery of effective groundcover is the most cost-effective approach to emergency stabilization.

Critical Value at Risk	Description of Threat	Probability Magnitude Risk	Rationale for Emergency Management Actions	Risk Reduction Treatments/ Management Actions
<p>Natural Resources Hydrologic Function</p>	<p>Risk of impacts to hydrologic function from increased runoff and erosion.</p> <p>The West Fork and lower Middle Fork of the Teanaway, and tributaries off Cle Elum Lake is burned at High and Moderate soil burn severity posing a moderate threat to hydrologic function with lasting impacts to hydrologic response,</p>	<p>Very Likely Moderate Very High</p>	<p>Hillslope treatments are limited due to timing and topographic limitations, therefore treatments to control water on road and trail infrastructure in areas of High and Moderate soil burn severity will help to avoid further degradation to hydrologic function.</p>	<p>Road and trail drainage treatments are proposed to control the increase in runoff and avoid erosion of road and trail bed and sedimentation into streams.</p> <p>Natural recovery of effective groundcover is the most cost-effective approach to emergency stabilization.</p>
<p>Natural Resources Riparian Function</p>	<p>West Fork and lower Middle Fork Teanaway and Cle Elum Lake</p> <p>Increased post-fire flows expected. Channel widening or incision may occur resulting in moderate threat to degradation to riparian areas from increased flows, channel erosion and loss of riparian vegetation.</p>	<p>Unlikely Minor Low</p>	<p>Hillslope treatments are limited due to timing and topographic limitations, therefore treatments to control water on road and trail infrastructure in areas of High and Moderate soil burn severity will help to avoid further degradation to riparian function.</p>	<p>Road and trail drainage treatments are proposed to control the increase in runoff and avoid erosion of road and trail bed and sedimentation into streams</p> <p>Natural recovery of effective groundcover is the most cost-effective approach to emergency stabilization.</p>
<p>Natural Resources TES</p>	<p>West Fork and lower Middle Fork Teanaway and Cle Elum Lake</p> <p>Risk to Bull Trout and Steelhead populations from the threat of increased post-fire flows, erosion and sedimentation of critical habitat</p>	<p>Very Likely Moderate Very High</p>	<p>Hillslope treatments are limited due to timing and topographic limitations, therefore treatments to control water on road and trail infrastructure in areas of High and Moderate soil burn severity will help to avoid further degradation to riparian function and aquatic habitat.</p>	<p>Natural recovery of effective groundcover is the most cost-effective approach to emergency stabilization, fire disturbance is within historical range of variability</p>

Critical Value at Risk	Description of Threat	Probability Magnitude Risk	Rationale for Emergency Management Actions	Risk Reduction Treatments/ Management Actions
Natural Resources TES	Jungle Creek and North Fork Teanaway Risk to Bull Trout and Steelhead populations from the threat of increased post-fire flows, erosion and sedimentation of critical habitat.	Possible Minor Low	Hillslope treatments are limited due to timing and topographic limitations, therefore treatments to control water on road and trail infrastructure in areas of High and Moderate soil burn severity will help to avoid further degradation to riparian function and aquatic habitat.	Natural recovery of effective groundcover is the most cost- effective approach to emergency stabilization, fire disturbance is within historical range of variability
Natural Resources TES MIS, R6 Sensitive Species Habitat	Risk to Region 6 Sensitive Species, westslope cutthroat trout and redband trout	Very Likely Moderate Very High	Hillslope treatments are limited due to timing and topographic limitations, therefore treatments to control water on road and trail infrastructure in areas of High and Moderate soil burn severity will help to avoid further degradation to riparian function and aquatic habitat.	Natural recovery of watershed conditions, fire disturbance is within historical range of variability
Natural Resources Native or naturalized plant communities.	Risk to forested native or naturalized vegetative communities due to significant tree mortality, where natural regeneration is delayed to the loss of the canopy	Likely Moderate High	There are populations of 8 invasive species (Class B noxious weeds) along the travel routes in the burn area. Nearby infestations of invasive plant species are likely to move into the burned area, due to the wind-blown dispersal nature of the seed and the inability of the existing native seed bank to offer natural competition.	Early Detection Rapid Response treatments for invasive species
Natural Resources Native or naturalized plant communities.	Risk to whitebark pine recovery Federal Candidate and Sensitive	Likely Minor Very Low	Whitebark pine burned within this fire perimeter. The natural seed production of the pine and burn intervals may or may not line up to provide seed production post fire.	Natural recovery of watershed and vegetative conditions, some restoration planting may occur through restoration effort.

Critical Value at Risk	Description of Threat	Probability Magnitude Risk	Rationale for Emergency Management Actions	Risk Reduction Treatments/ Management Actions
Natural Resources TES Wildlife	Threats to Northern Spotted Owl, Teanaway wolf pack and wide ranging carnivore critical habitat from vegetation loss, degraded soil productivity and hydrologic and riparian function.	Likely Minor Very Low	Natural recovery of watershed and vegetative conditions, some restoration planting may occur through restoration effort.	Natural recovery of watershed and vegetative conditions, some restoration planting may occur through restoration efforts