Post-Fire BAER Assessment

Burned Area Emergency Response (BAER) Information Brief

CentralWashingtonFireRecovery.info

Jack Creek 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 Eightmile Lake Dam	Increased flows, accelerated erosion, sedimentation, and delivery of debris into the impoundment may reduce storage capacity and further stress the integrity of the head gate and spillway. In the rare event that the head gate/ spillway control is compromised, the magnitude of consequence of flooding downstream would be major with high consequence	Possible Major High	Increased risk within the fire perimeter from hazard trees, flooding that effects IPID's access to their dam infrastructure. The increase in erosion and sedimentation into the impoundment managed by IPID may result in potential impacts to their operation of the reservoir.	Certified letters Interagency coordination. Signage
Human Life and Safety Backcountry Access/ camping	Risk to employees from hazard trees and increased flow risk to assess damage of permitted wilderness camp sites at Eightmile Lake	Possible Major High	To increase awareness of increased post-fire flood risk. To avoid impacts to human health and safety from being caught in flood waters.	Closure of burned backcountry camp sites at Eightmile Lake. Public information /outreach
Human Life and Safety Road Access	Risk of flood damage to FS bridges posing risk to human life and safety	Possible Major High	To reduce impacts of post-fire flow increases to bridge infrastructure from flood waters and debris that impair safe use of bridge.	Inspect bridges in 2018, reassess conditions and determine if stabilization work is necessary to remedy safety issue from post-fire flows.
Human Life and Safety	Risk to private property from flooding within the Eightmile Creek (Trail #1552) drainage and downstream on Icicle Creek	Possible Major High	To increase awareness of increased post-fire flood risk below Eightmile Lake and to avoid impacts to human health and safety from being caught in flood waters.	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 Trail Access	Risk to hikers along trails along portions of trails in high and moderate SBS: FS Trail # 1558, 1594, 1552	Possible Major High	To increase awareness of increased post-fire conditions and risks of traveling and camping in burned areas. To reduce risk to hikers and campers from burned area hazards (flooding, debris flow, stump holes, hazard trees, and rock fall hazards, safe campsite location and water quality impacts) in areas within and below moderate and high burn severity.	Administrative closure of Trails if hazardous. Further assessment may occur in spring to determine hazard. Signage and public outreach Interagency coordination
Property Bridges	Risk of damage to FS 7601 bridge below fire on Eightmile Creek	Possible Major Intermediate	To reduce impacts of post-fire flow increases to bridge infrastructure from flood waters and debris.	Inspect bridges in spring 2018 (not BAER)
Property Trail Infrastructure	Damage to FS Trails from loss of water control is expected from risk of increased runoff and erosion from burned areas on Trails #1558, 1594, 1552	Possible Major 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 ~3 miles of trail to control runoff and avoid, minimize and mitigate damage to the trail bed and downslope hillslopes. Further assessment may occur in spring to determine damage and need for additional drainage work.

Critical Value at Risk	Description of Threat	Probability Magnitude Risk	Rationale for Emergency Management Actions	Risk Reduction Treatments/ Management Actions
Natural Resources Soil Productivity	Approximately 39% 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.	Very Likely Major Very High	Hillslope treatments are limited due to timing, topographic, and wilderness limitations, therefore treatments to control water on trail infrastructure in areas of high and moderate soil burn severity will help to avoid further degradation to hydrologic function.	Trail drainage treatments are proposed to control the increase in runoff and avoid erosion of trail bed and sedimentation into streams. Natural recovery of effective groundcover is the most cost-effective approach to emergency stabilization.
Natural Resources Hydrologic Function	Risk of impacts to hydrologic function from increased runoff and erosion. Approximately 39% of the fire is burned at high and moderate soil burn severity posing a moderate threat to hydrologic function with lasting impacts to hydrologic response	Very Likely Moderate Very High	Hillslope treatments are limited due to timing, topographic, and wilderness limitations, therefore treatments to control water on trails in areas of high and moderate soil burn severity will help to avoid further degradation to hydrologic function.	Trail drainage treatments are proposed to control the increase in runoff and avoid erosion of trail bed and sedimentation into streams. Natural recovery of effective groundcover is the most cost-effective approach to emergency stabilization.
Natural Resources Riparian Function Jack and Van Epps Eightmile	Increased post-fire flows expected are not likely to degrade riparian function. Channel widening or incision is unlikely to occur in the Jack and Van Epps drainages resulting in low threat to degradation to riparian areas from increased flows, channel erosion and loss of riparian vegetation. Channel widening or incision is possible to occur in Eightmile Creek if the headgate/spillway is compromised in a dam breach flood event	Possible Minor Low Possible Major 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.	Natural recovery of effective groundcover is the most cost-effective approach to emergency stabilization in the wilderness. Certified letter to IPID to communicate the fire related impacts to their infrastructure and request them to monitor for stability.

Critical Value at Risk	Description of Threat	Probability Magnitude Risk	Rationale for Emergency Management Actions	Risk Reduction Treatments/ Management Actions
Natural Resources TES	Eightmile Creek Risk to Bull Trout and Steelhead populations (5 mi downstream from Eightmile Lake; 0.9 mi downstream in Jack Creek) from the threat of increased post-fire flows, erosion and sedimentation of critical habitat.	Very Likely Moderate 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 effective groundcover is the most cost-effective approach to emergency stabilization within wilderness, 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	Possible Major High	There are populations of one invasive species (Class B noxious weed) 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, public outreach and education
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.
Natural Resources TES Wildlife	Threats to Northern Spotted Owl 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