**Date of Report: 7/25/2022**

**BURNED-AREA REPORT**

**Note**: The FS and DOI BAER Teams completed one coordinated assessment with two reports. The DOI BAER plan contains specialist reports and additional details. The DOI plan addresses overall post-fire watershed condition and post-fire impacts and threats associated with the Washburn Fire in YOSE; This plan addresses post-fire issues and threats on National Forest lands.

## PART I - TYPE OF REQUEST

**A. Type of Report**

☒ 1. Funding request for estimated emergency stabilization funds
☐ 2. No Treatment Recommendation

**B. Type of Action**

☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
☐ 2. Interim Request **#__**.
☐ Updating the initial funding request based on more accurate site data or design analysis.

## PART II - BURNED-AREA DESCRIPTION

**A. Fire Name:** Washburn
**B. Fire Number**: CA-YNP-000038
**C. State:** CA
**D. County:** Mariposa/ Madera
**E. Region:** 05
**F. Forest:** Sierra
**G. District:** Bass Lake
**H. Fire Incident Job Code:** PPPT1T
**I. Date Fire Started**: July 7,2022
**J. Date Fire Contained**: August 1,2022

**K. Suppression Cost:** $30+M

**L. Fire Suppression Damages Repaired with Suppression Funds (estimates)**

1. **Fireline repaired (miles):** 1.8 miles Dozer line, 3.9 miles handline, 15.4 miles improved road
2. **Other (identify):** drop points, log decks, and dozer push areas

**M. Watershed Numbers**

| *Table 1. Acres of Burned by Watershed* | | | | |
|---|---|---|---|---|
| **HUC #** | **Watershed Name** | **Total Acres** | **Acres Burned** | **% of Watershed Burned** |
| | S. F. Merced | 154,040 | 4886 | 3% |

## N. Total Acres Burned

| **Table 2. Total Acres Burned By Ownership** | |
|---|---|
| **Ownership** | **Acres** |
| NFS | 1994 |
| YNP | 2892 |
| Private | 0 |
| **TOTAL** | 4,886 |

## O. Vegetation Types

Ponderosa Pine, bear clover, upper mixed conifer, and true fir stands;

## P. Dominant Soils:

Sierrita series, Umpa Series (on volcanics), CraneFlat and Waterwheel series. Typic Dystroxerepts

## Q. Geologic Types

The Washburn Fire area occurred within the western slopes of the central Sierra Nevada. The geology is classic Sierra Nevadan reflecting its origins as a sedimentary mountain range intruded by granitic batholiths. Subsequent erosion removed most of the metamorphosed sedimentary bedrock except for a few rock masses remaining as roof pendants. This erosion also exposed large areas of igneous intrusive (granitic) bedrock from the numerous batholithic intrusions. Later volcanic and glacial activity has overlain the granitic terrain with isolated flows and deposits of moraine.

Most of the fire area is underlain with igneous intrusive rocks consisting of granodiorite, tonalite and granite porphyry Raymond Mt.). Metavolcanic rock is in Mariposa grove extending east towards Raymond Mountain. Metasedimentary rock is found in a band west of Raymond Mt.

## R. Miles of Stream Channels by Order or Class

| **Table 3. Miles Of Stream Channels By Order Or Class** | |
|---|---|
| **Stream Type** | **Miles Of Stream** |
| Perennial | 1.0 |
| Intermittent | 2.7 |
| Ephemeral | |
| Other (Artificial Path) | |
| Total | 3.7 |

## S. Transportation System

| **Table 4. Miles of Road and Trail by Jurisdiction** | |
|---|---|
| **Type** | **Miles** |
| Trails (National Forest) | 0 |
| Trails (Non-NF) | 5.15 |
| Roads (National Forest) | 0 |
| Roads (Non-NF) | 3.74 |

**PART III - WATERSHED CONDITION**

### A. Burn Severity (acres)

We spent 2 days validating the BARC map to produce the Soil Burn Severity map. Due to the remote natural of the fire on the Forest, most (not all) of the data points were collected on YNP. Some areas on the Forest have a low confidence of accuracy.

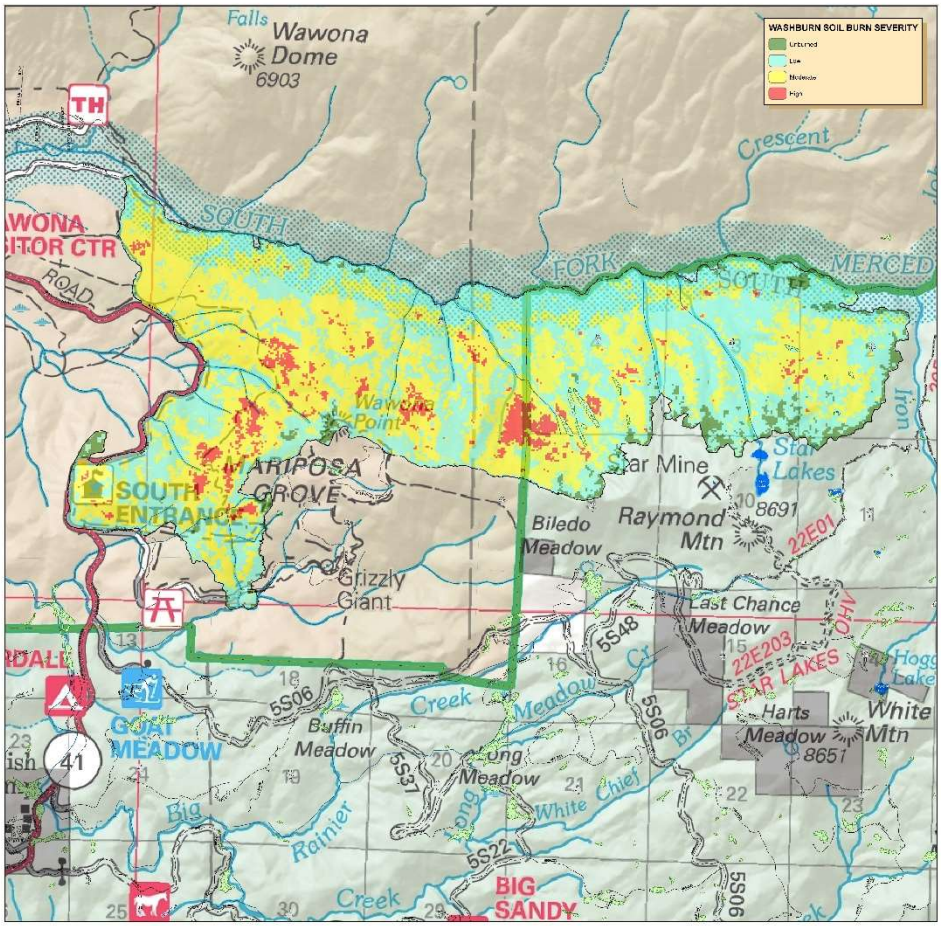
**FINDINGS**

Roughly half of Washburn Fire soil burned at moderate severity, with approximately five percent of soils burned at high severity (Table 6, Figure 1). Thermal damage across primary soil types is given in Table 2.

| Table: 5 Summary of Soil Burn Severity by land Ownership (acres) | | | | | | |
|---|---|---|---|---|---|---|
| Location | Unburned/low | Low | Moderate | High | Unknown | Total |
| Yosemite | 35 | 1142 | 1534 | 167 | 14 | 2892 |
| Sierra | 127 | 996 | 774 | 59 | 37 | 1994 |
| Total | 163 | 2138 | 2308 | 226 | 52 | 4886 |

| Table: 6 Summary of Soil Burn Severity by land Ownership (Percent) | | | | | | |
|---|---|---|---|---|---|---|
| Location | Unburned/low | Low | Moderate | High | Unknown | Total |
| Yosemite | .72 | 23.37 | 31.4 | 3.4 | .29 | 59.2 |
| Sierra | 2.60 | 20.4 | 15.8 | 1.2 | .76 | 40.8 |
| Total | 3.3 | 43.8 | 47.2 | 4.6 | 1.1 | 100 |

Figure 1: Soil Burn Severity



### Soil Thermal Damage Assessment

The BAER watershed team collected standard postfire field data to anchor watershed response and VARs risk assessments over July 23-24. The core team (Prentice, Fong, Ellsworth) are domain experts in soils, process geomorphology, and hydrology with substantial postfire assessment experience. Soil thermal damage was assessed following conventions in Parsons et al (2009), and soil burn severity (SBS) mapping was guided by soil-landscape mapping fundamentals (Hudson 1992). The degree of soil thermal damage was determined by litter layer combustion, disruption or collapse of soil aggregates, fine root alteration and hydrophobicity. The team calibrated on representative unburned locations prior to field data collection. Field sampling was stratified by BARC map classes around access corridors, and ground data in the black was collected no closer than 200 ft from fire perimeter to minimize backfiring signals along control lines. Points were distributed across Yosemite NP and Sierra NF landbases (n=116).

The combined variability of soil types, landforms, and prefire vegetation were manageable for modelling soil burn severity (SBS) as a whole and no zonal adjustments were required or used. A few systematic anomalies were observed between BARC veg burn severity and actual veg burn severity that were accounted for in postfire watershed interpretation. These included: extensive steep slopes armored with an unbroken surface cover of coarse cobbles that host robust low density fir stands; quartz-laden boulder fields; and a swath of fir stands with a high density of windthrown trees.

**Figure 2.** Soil burn severity and seasonal snow elevation estimates.

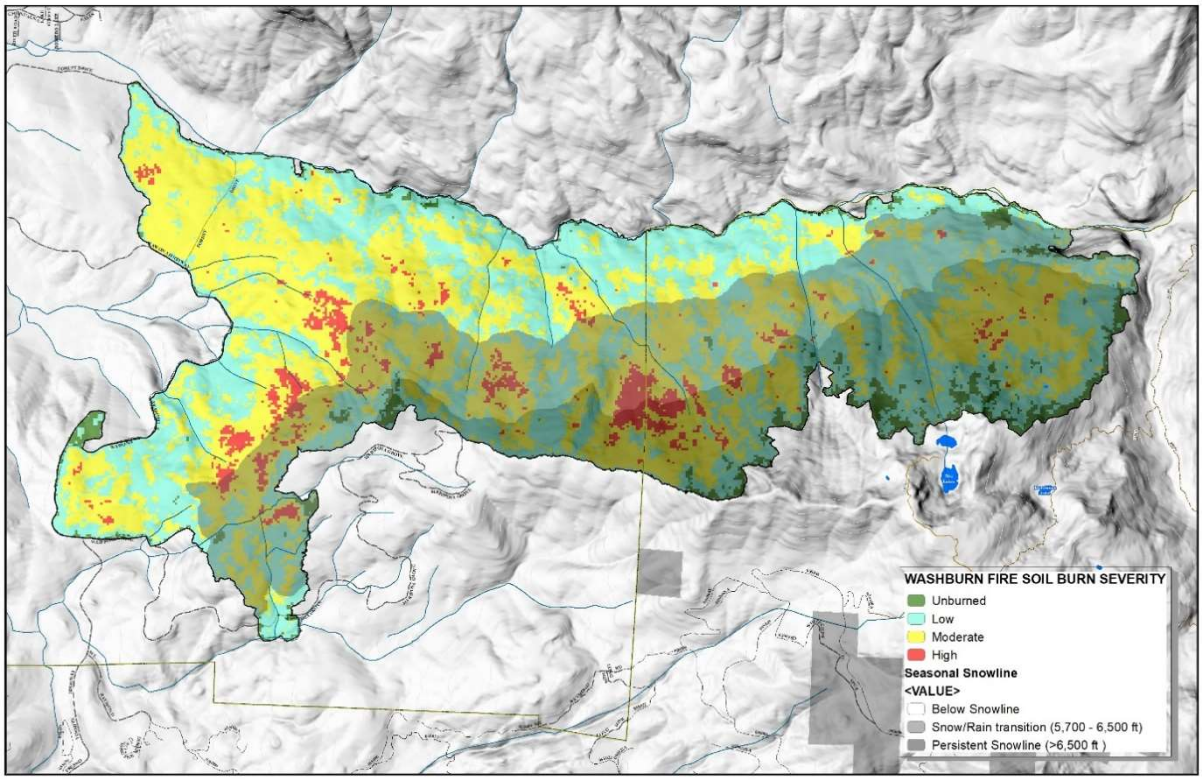



**Table 7.** Soil types, extent and burn severities in Washburn Fire footprint

| Map Unit | Name | Acres | % of scar | Mean slope % | Low | Mod | High |
|---|---|---|---|---|---|---|---|
| 176 | Umpa family | 1156 | 23% | 43 | 42 | 49 | 6 |
| **289** | **Waterwheel-Craneflat complex** | **552** | **11%** | **42** | **34** | **57** | **9** |
| 299 | **Humic Dystroxerepts-Ultic Haploxeralfs complex** | **530** | **11%** | **33** | 40 | 58 | 2 |
| **294** | **Waterwheel-Typic Dystroxerepts complex** | **342** | **7%** | **51** | **20** | **58** | **19** |
| 261yp | Dystric Xeropsamments-Typic Dystroxerepts-Badgerpass-Rock outcrop | 333 | 7% | 45 | 65 | 24 | 1 |
| 275 | Oxyaquic Dystroxerepts-Dystric Xerorthents-Vitrandic Xerorthents-Rubble land | 327 | 7% | 39 | 68 | 27 | 0 |
| **300** | **Typic Dystroxerepts-Ultic Haploxeralfs complex** | **260** | **5%** | **18** | **12** | **86** | **2** |
| 160 | Sirretta family-Rock outcrop complex | 250 | 5% | 48 | 61 | 15 | 0 |
| 290 | **Humic Dystroxerepts-Tuolumne-Typic Xerorthents-Ultic Haploxeralfs complex** | **211** | **4%** | **36** | 55 | 45 | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 304 | Clarkslodge-Rock outcrop complex, metavolcanic | 138 | 3% | 25 | 41 | 42 | 11 |

### B. Water-Repellent Soil (acres)

Water-Repellent Soil: Approximately 1,000

### C. Soil Erosion Hazard Rating – See table 8 below

### D. Erosion Potential

Hillslope erosion modeling conducted in WEPP produced estimates for increased erosion on hillslopes of an average of 48% for a 2-yr precipitation event and 5711% for a 25-yr precipitation event (Table 8). Results point to increased mobilization of hillslope sediment overall, although much of the sediment would remain on the hillslope and not enter waterbodies.

*Table 8: Comparison of pre and post-fire hillslope erosion for a .69in precipitation event with a 2-yr return interval, and a 1.33 in precipitation event with a 25yr return interval*

| | **Erosion** | **2yr 0.69 in** | | | **Erosion** | **25yr 1.33 in** | |
|---|---|---|---|---|---|---|---|
| | pre | post | | | pre | post | |
| **min** | 0.00 | 0.00 | Mg/ha | **min** | 0.00 | 0.00 | Mg/ha |
| **max** | 2.60 | 3.00 | Mg/ha | **max** | 10.20 | 11.50 | Mg/ha |
| **mean** | 0.01 | 0.01 | Mg/ha | **mean** | 0.03 | 1.57 | Mg/ha |
| **st dev** | 0.13 | 0.17 | Mg/ha | **st dev** | 0.51 | 1.33 | Mg/ha |
| | | | | | | | |
| **mean increase** | | 48% | | **mean increase** | | 5711% | |
| **magnitude** | | 1 | | **magnitude** | | 58 | |

### E. Sediment Potential

Sediment Potential: Sediment is likely in unnamed stream channels in high and moderate severity area leading to South Fork Merced; with ash sediment and debris entering the South Fork Merced.

### F. Estimated Vegetative Recovery Period (years)

The Washburn fire in very low/unburned burn severity, soil cover may not be diminished much, if at all. For low burn severity, estimated full return of soil cover and vegetation structure should be 2-15 years. For moderate burn severity and the high burn severity, it could take many decades for return to mature forests. Recovery of early successional herbs and shrubs will be within the first few years even in these higher severity areas.

### G. Estimated Hydrologic Response

The overall hydrologic response for the Washburn fire. The fire burned approximately 4886 acres of the 154,000-acre S.F. Merced watershed, or roughly 3%. Of the 4886 acres burned 47% was low and unburned combined with only 3% of the total watershed burned so little to no change in watershed response is expected. There is the potential for some impacts to water quality and water quantity in areas of high and moderate burn, with some ash and sediment reaching adjacent stream channels and the S. F. Merced during runoff producing rain evens. However, these impacts will be localized and short-term, usually abating 1 to 2 years after the burn.

Due to the potential impacts to YNP infrastructure, the DOI watershed specialists completed the hydrologic modelling. There is a lack Life and Safety or Property critical values on NFS lands.

Post-fire flow increases based on river return intervals were calculated using a general method to predict post-fire flows (Table 9) that adjusts flow by assigning modifiers to areas within the burned area based on burn severity. The area-weighted flow estimates by burn severity units are then summed to derive the peak clearwater flow (Lindsay, email message, 27 July 2022). For this method, unburned and low burn severity areas were grouped together. For the Q2 (flood return interval of 2 years) estimate, runoff from unburned/low severity areas was assumed to be unchanged, while moderate SBS areas were assumed to respond similarly to a Q5 event, and high SBS areas responded similarly to a Q10 event. For the Q10 event (flood return interval of 10 years), unburned/low severity areas were assumed to be unchanged, moderate SBS areas responded similarly to a Q25 event, and high SBS areas responded similarly to a Q50 event. Models showed minimal increases in post-fire clear water runoff, with an increase of 4.7% for the 2-yr recurrence interval flood at the South Fork Water Intake, and 3.8% at the Hwy 41 bridge. The 10-yr recurrence interval flood had a 2.2% increase at the South Fork Water Intake, and a 1.8% increase at the Hwy 41 bridge.

*Table 9: Comparison of modeled post-fire runoff increase methods for a flood with a 2-yr and 10-yr recurrence interval. "BAER" indicates the method modifying runoff values for areas based on burn severity.*

| | **Pre-fire (cfs)** | **Post-fire (cfs)** | | **Pre-fire (cfs)** | **Post-fire (cfs)** | |
|---|---|---|---|---|---|---|
| | **Gottvald** | **BAER** | % Change | **Gottvald** | **BAER** | % Change |
| | Q2 | Q2 | | Q10 | Q10 | |
| **South Fork Water Intake** | 1272 | 1332 | 4.7% | 4326 | 4421 | 2.2% |
| **Hwy 41 Bridge** | 1636 | 1698 | 3.8% | 5541 | 5639 | 1.8% |

In general, increases in runoff and erosion are expected to be the greatest in the first years following fire, although factors including drought and precipitation regime affect vegetation recovery and thus slope stabilization.

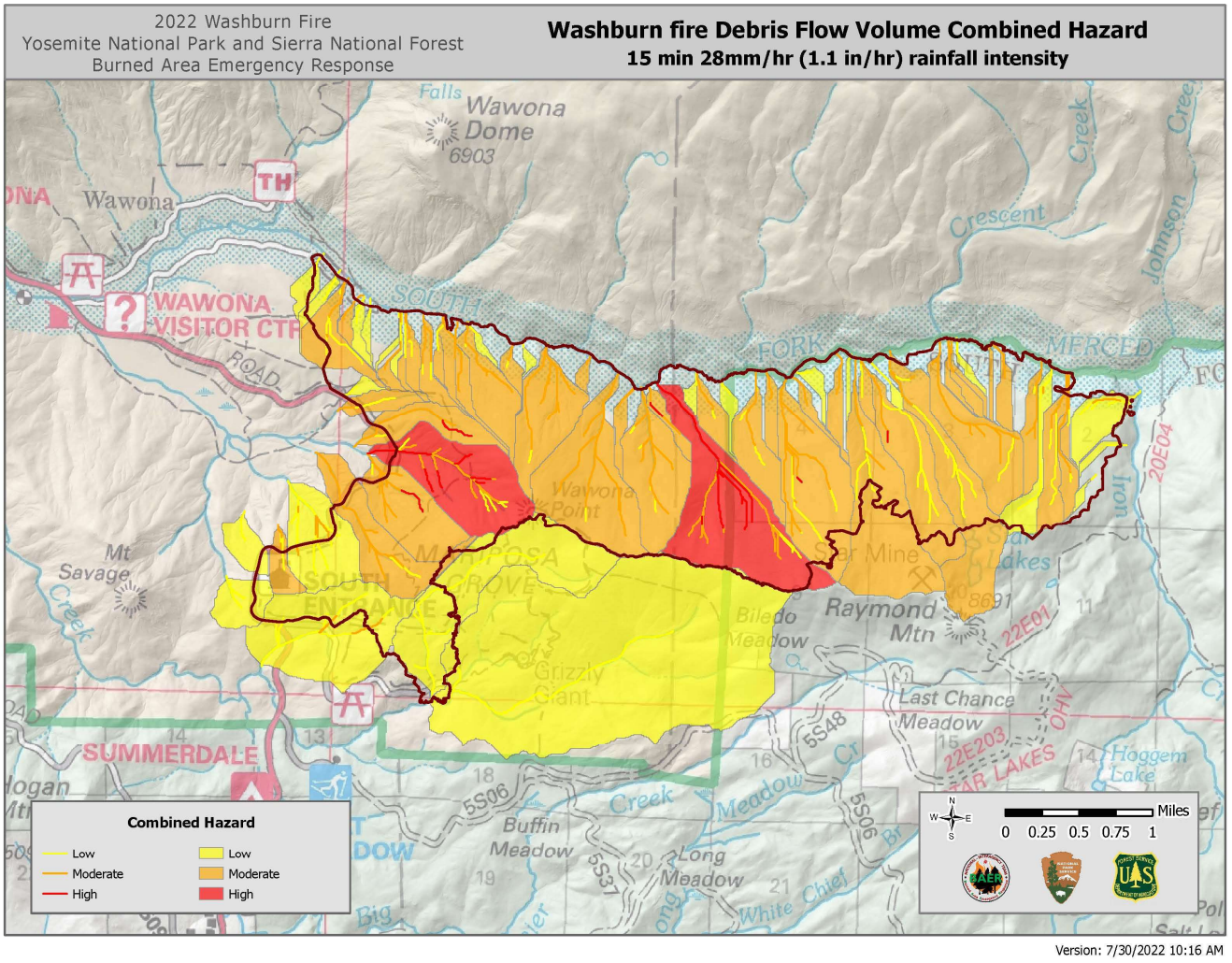
## H. Geology/Geologic Response

a) Rock Fall: Some rocks rolling from slopes above trails is expected; however, no areas of concentrated rock fall were identified.

b) Debris Flow: Using the 15 m/28mm model two subwatershed are at high probability of debris flow. One of them is on the National Forest. Given the lack of downstream Critical Values on the Forest, no adverse impacts are expected. The DOI team is analyzing the effects to Critical values at YNP.

c) Sediment-Laden Flows: Localized amounts expected around moderate and high burn severity areas. No expected to impact Critical Values on the National Forest.

Figure 3: Combined hazard debris flow potential

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## PART IV - SUMMARY OF ANALYSIS

### Introduction/Background

### A. Describe Critical Values/Resources and Threats (narrative)

| Table 5. Critical Value Matrix | | | |
|---|---|---|---|
| **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** |

### Introduction/Background

The human-caused Washburn Fire started on the afternoon of July 7 near the Mariposa Grove in the southwestern corner of Yosemite National Park (YOSE), California. After several days, the fire spread onto Sierra National Forest (SNF) to the east, eventually burning a total of 4,335 acres, including 2,878 acres on YOSE, and 1,957 acres on SNF.

**Washburn Post-Fire Assessment Process**

An interagency team comprised of BAER specialists and YOSE and SNF staff with expertise in hydrology, geology, soil science, cultural resources management, botany, forestry, wildlife, Wilderness, engineering, roads and trails, visitor use, public information, GIS, and environmental compliance contributed to the development of this plan. On July 22, the Washburn BAER Team held an inbriefing with YOSE and SNF leadership and appropriate staff to describe the post-fire assessment process and solicit a list of potential VARs and Critical Values. Satellite imagery obtained for the fire provided a preliminary assessment of potential soil burn severity and vegetation mortality. These data were used by BAER Team members to perform hydrologic modelling of anticipated watershed response, which helped to guide field assessments in and downstream of the burned area. BAER Team members evaluated VARs and critical values for fire-related impacts, potential post-fire threats, and the need for and feasibility of emergency stabilization and rehabilitation treatments. The public was informed of the BAER Team's progress and notable discoveries via InciWeb—The Incident Information System. Findings and recommendations were shared with SNF staff on July 30. The plan contents were shared in a close-out meeting with YOSE leadership on August 3.

## 1) Human Life and Safety (HLS)

Due to the remote nature and lack of developed infrastructure, the threat to human life and safety is negligible.

## 2) Property

In the Washburn Fire, BAER Critical Values for property are nonexistent.

### a) Property - Roads

There are no Forest Service or non-Forest Service roads in the Washburn fire.

### b) Property - Developed Recreation Sites

There are no Forest Service developed recreation sites in or near the Washburn Fire.

### c) Property - Trails

No motorized or non-motorized trails exist within or downstream/downslope of the Washburn fire

## 3) Natural Resources (NR)

### a) Beneficial Uses of Water For Domestic, Municipal, Hydropower Or Agricultural Supply

Wildfires primarily affect water quality through increased sedimentation. As a result, the primary water quality constituents or characteristics affected by this fire include color, sediment, settleable material, suspended material, and turbidity. Floods and debris flows can entrain large material, which can physically damage infrastructure associated with the beneficial utilization of water (*e.g.,* water conveyance structures; hydropower structures; transportation networks).

The loss of riparian shading and the sedimentation of channels by floods and debris flows may increase stream temperature. Fire-induced increases in mass wasting along with extensive tree mortality can result in increases in floating material – primarily in the form of large woody debris. Post-fire delivery of organic debris to stream channels can potentially decrease dissolved oxygen concentrations in streams. Fire-derived ash inputs can increase pH, alkalinity, conductivity, and nutrient flux (e.g. ammonium, nitrate, phosphate, and potassium), although these changes are generally short lived. Post-fire increases in runoff and sedimentation within the fire perimeter may also lead to increases in chemical constituents.

Ash and sediment are likely during storm events in stream channels for several years after the fire.

- *Risk Assessment:* Probability: Likely (ash and sediment can get into S.F. Merced and flow down to Wawona and the water diversion potentially impacting the water supply. This is on YNP and is addressed by the DOI BAER Team and report. Magnitude: Minor (on NF lands). Risk: **Very Low.**
  *Treatments for Beneficial Uses of Water:* None

**b) Hazardous Materials – Threat to Water Quality and Soil Productivity**

No structures burned during the Washburn; as such, no threats to water quality and soil productivity from hazardous materials were identified.

**c) Soil Productivity and Hydrologic Function**

Soil Productivity: Accelerated erosion will occur in the high and moderate burn severity areas. However, these impacts will be localized and short-term, abating after 1 to 2 years. Overall impacts at the watershed scale will be minor.

- *Risk Assessment for Soil Productivity:* Probability of damage or loss: Unlikely. Magnitude of Consequences: Minor. Risk Level: **Very Low.**
  *Treatments – Soil Productivity:* None.

Hydrologic Function: Due to the size of the burn relative to the size of the watershed, impacts to hydrologic functioning are unlikely.. Some short-term, site-specific impacts may be noticeable in the areas of moderate and high burn, leading to localized impacts to hydrologic functioning. However, when looking at hydrologic functioning from the watershed scale, potential impacts are unlikely and minor.

- *Risk Assessment for Hydrological Function:* Probability of damage or loss: Unlikely. Magnitude of Consequences: Minor. Risk Level: **Very Low.**
  *Treatments - Hydrological Function:* No treatments are recommended.

**d) Geologic Hazards**

Four geologic hazards were assessed for the Washburn fire: rock fall, debris slides, debris flows, and sediment-laden flows. See the discussion in Part III above for an overview.

- *Risk Assessment for Geologic Hazards:* Minimal risks due to rolling rocks and unstable soils. Some sediment-laden flows unnamed channels leading to South Fork Merced and flow onto Yosemite National Park. Probability of damage or loss: Unlikely. Magnitude of Consequences: Minor. Risk Level: **Very Low**.

  *Treatments for Geologic Hazards:* No treatments are recommended.

**e) Terrestrial Wildlife**

No federally-listed terrestrial wildlife species are known to occur within the fire area or within the areas where post-fire watershed responses are expected. 4,634 acres (including YNP) of *Proposed* Critical

abitat for the federally endangered fisher occurs in the Washburn fire area. **Table** displays T/E terrestrial species on the Sierra National Forest and the rationale for not considering them in this analysis.

| Table 10. Wildlife Resource Values Considered in this BAER Assessment | | | |
|---|---|---|---|
| **Scientific Name** | **Common Name** | **Status** | **Status and Location within Bullfrog Incident Area** |
| *Pekania pennanti* | SSN DPS Fisher | Federally Endangered | No potential denning[1] or potential foraging[1] habitat within the Bullfrog Fire perimeter |
| *Ovis canadensis sierrae* | Sierra Nevada Bighorn Sheep | Federally Endangered | No critical habitat within the Washburn Fire perimeter |
| *[1] Delineated by the Conservation Biology Institute (CBI) for the SSN DPS of fisher* | | | |

**f) Fisheries and Aquatics**

There is Critical Habitat for two federally listed species within the fire area: Yosemite toad (Threatened). And Sierra Nevada Yellow Legged Frogs. No species are present.

- *Risk Assessment – Yosemite Toad and Sierra Nevada Yellow Legged Frogs:* Probability of effects: **Unlikely.** Magnitude of Consequences is **Minor.** Risk: **Very Low**

*Treatments – Yosemite Toad/SNYLF:* No BAER treatments are recommended.

**g) Botanical Resources**

No federally listed plants occur within the fire area or within the areas where post-fire watershed responses are expected.

**h) Non-Native Invasive Plants as a Threat to Native Vegetative Recovery**

Because the Washburn Fire area has no known invasive species, the importance of protecting its pristine status is paramount. Likely invasive species of concern~~s~~ are common mullein, bull thistle, Scotch broom and cheatgrass. These species are present on some Railroad Fire (2017) suppression lines which are adjacent to the Washburn fire, in some cases in great abundance. Suppression repair impacts occurred outside the fire footprint, in some cases, several miles outside the fire footprint. Total miles of fireline, within and outside the fire footprint are as follows:

- Dozer line – 1.8 miles
- Improved roads – 15.4 miles
- Handline – 3.9 miles
- Road as Line – 22.6 miles

*Other main areas of disturbance*:

- Dozer push areas -2
- Drop Points - 7
- Landings, log decks – 4

*Integrity and Recovery of Native Vegetation – Suppression-Related*

- *Risk Assessment - Invasive Non-Native Plants (Suppression-Related)*: Probability of damage or loss is determined as **Possible**: seeds may have been transported via dozers and other suppression equipment as well as by crews building hand lines. The dozer lines and handlines ~~and miles~~ within and adjacent to burned soil would facilitate rapid establishment and spread if invasive weeds were introduced. Helicopters can also transport weed seeds thus the helispot needs to be checked in 2023.
- Magnitude of consequence would be **Major:** Aggressive weeds adapted to this area if found (e.g., spread of common mullein, cheatgrass; or introductions of Canada thistle, whitetop, spotted

knapweed) could impede native vegetation recovery if undetected and allowed to spread. The risk is thus **HIGH.**

*Treatments for Integrity and Recovery of Native Vegetation (Fire Suppression Areas* Early detection/Rapid Response (EDRR) surveys along dozer lines, handlines, drop points, log land landings and other high priority event points.

*Integrity and Recovery of Native Vegetation – Burned Area*

- *Risk Assessment - Invasive Non-Native Plants (Burned Area)*: The probability is **Possible** for damage or loss: the danger is higher than pre-fire for rapid establishment and spread of seeds that happen to be brought in by wind, runoff, erosion, Livestock, or wildlife. Immediately post-fire (all burn severities) there is an abrupt increase in availability of water, mineral soil, sunlight, and nutrients that can allow newly deposited seeds of invasive weeds to rapidly dominate and outcompete native vegetation. Magnitude of consequence would be **Major,** and risk is **HIGH f**or the same reasons given under suppression-related risk (above).

  *Treatments for Integrity and Recovery of Native Vegetation (Burned Area).* EDRR surveys in the burned area in general and near areas where disturbance is concentrated: trails, dispersed campsites, lakesides.

### 4) Cultural Resources

An old cabin (Dutchman Cabin) is located at the edge of a meadow north of Star Lakes. It is unknown if the fire affected the cabin. The cabin is in a remote area near the middle of the Forest portion of the burn scar. A reconnaissance flight failed to locate the cabin but did mention observing mining debris and moderate severity fire in the approximate cabin area. If it has already burned, it would not be a Critical Value. While it is unlikely to need any treatments for erosion, it could be a critical value due to hazard trees falling that could crush the cabin. The cabin is managed as eligible for the federal register until such time as it can be evaluated. The likely treatment recommendation would be directional felling away from the cabin.

- *Risk Assessment for Cultural Resources:* Dutchman cabin: Unknown post-fire condition.

  *Treatments for Cultural Resources:* Conduct an UAS assessment and/or ground assessment of the cabin.
  Develop a recommended treatment if Cabin is present.

## B. Emergency Treatment Objectives

- Provide for public safety
- Limit loss of soil productivity and provide for natural vegetative recovery
- Early detection and rapid response of nonnative invasive plants

## C. Probability of Completing Treatment Prior to Damaging Storm or Event

- **Land**: N/A
- **Channel:** N/A
- **Roads/Trails:** n/A

## D. Protection/Safety

**Table 11. Probability of Treatment Success**

| Type of Treatment | Time After Treatment | | |
|---|---|---|---|
| | 1 year | 3 years | 5 years |
| **Land** | 85 | 95 | 100 |
| **Channel** | n/a | | |

| Table 11. Probability of Treatment Success | | | |
|---|---|---|---|
| **Type of Treatment** | **Time After Treatment** | | |
| | **1 year** | **3 years** | **5 years** |
| **Roads/Trails** | n/a | | |
| **Protection/Safety** | Na/a | | |

## E. Cost of No-Action (Including Loss)

Using VAR Lite Cost/Benefit tool, impacts to native plant communities. Cost/Benefit spreadsheet is included in project record on Pinyon.

| Table 12. Cost of No-Action | |
|---|---|
| **Total Treatment Cost** | 0 |
| **Expected Benefit of Treatment** | $ |
| ***Implied Minimum Value*** | 12,769 |

## F. Cost of Selected Alternative (Including Loss)

Using VAR Lite Cost/Benefit tool: Costs include EDRR and Dutchman's cabin investigation. Cost/Benefit spreadsheet is included in project record on Pinyon.

| Table 6. Cost of Selected Alternative | |
|---|---|
| **Total Treatment Cost** | $8,300 |
| **Expected Benefit of Treatment** | $ |
| ***Implied Minimum Value*** | $16,600 |

## G. Skills Represented on Burned-Area Survey Team

| Table 14. Skills on the BAER Team | | | | |
|---|---|---|---|---|
| ☒ Soils | ☒ Hydrology | ☐ Engineering | ☒ GIS | ☒ Archaeology |
| ☒ Weeds/Botany | ☒ Recreation | ☒ Fisheries/Aquatics | ☒ Wildlife | ☒ Trails |
| ☒ Other: PAO | ☐ Geology | | | |

| Table 7. BAER Team Members by Skill* | |
|---|---|
| **Skill** | **Team Member Name** |
| *Team Lead(s)* | Todd Ellsworth. todd.ellsworth@usda.gov; Phone(s) 760-937-2033 |
| Assistant Lead(s) | |
| *Forest BAER Coordinator* | Pablo Gonzales. pablo.gonzales@usda.gov; 559-297-0706 |
| *Soils & Hydrology & Geology* | Sam Prentice, Kat Fong (NPS), Todd Ellsworth |
| *GIS* | Trevor (NPS) |
| *Archaeology* | Erin Potter |
| *Botany/Weeds* | David Campbell (NPS) Joanna Clines |
| *Recreation* | Cori Hayth, Ted |
| *Wildlife* | Theresa Lowe |
| *Aquatic Wildlife* | Anae Otto |
| *PAO* | Cathleen Thompson |

## H. Treatment Narratives

### Land Treatments

Land Treatment #1 Fire Suppression-Related Early Detection, Rapid Response: Early Detection and Rapid Response (EDRR) treatments are proposed along 1 miles of dozer line, 1.5 miles of handline, 2 miles of road used as line, as well as the 2 dozer push areas, 4 landings, log deck areas and 7 drop points. This will provide a good sampling of disturbance areas and potential weed incursion areas. Weed control will be manual and mechanical.

| Table 16. Land Treatment #1: Invasive Weed Early Detection, Rapid Response Treatment – Suppression | | | | |
|---|---|---|---|---|
| **Item** | **Unit** | **Unit Cost** | **# of Units (SNF)** | **Total Cost** |
| **Invasive Plant Detection & Treatment** | | | | |
| GS-6 Bio Tech Crew Members | Days | $190 | 20 | $3,800 |
| **Administration, Travel, and Materials** | | | | |
| GS-11 Botanist (hiring, training, supervising, agreements, coordination) | Days | $400 | 3 | Costs covered by S+E |
| GS-11 Botanist (hiring, training, supervising, agreements, coordination) OVERTIME | Days | $600 | 3 | **$1,800** |
| Vehicle miles at 0.58/mi; ave. trip 150 mi./day | Days | $87 | 4 | Costs covered by S+E |
| M&IE for field locations requiring camping | Days | $50 | 12 | $600 |
| Supplies | Each | $300 | 1 | $300 |
| | | **Total Cost** | | **$4,700** |
| | | | | |

Land Treatment #2 Burned Area-Related Early Detection, Rapid Response Treatment: EDRR treatments are proposed within the burn, away from suppression activities, in areas with high probability for invasive plant introductions or expansion. Priority will be near areas where seeds may have originated near campsites, trails, lakesides, streamsides; and other high priority areas, final locations to be determined in the BAER Implementation Plan. Weed control will be manual and mechanical.

| Table 17. Land Treatment #2: Invasive Weed Early Detection, Rapid Response - BAER/Burned Area | | | | |
|---|---|---|---|---|
| **Item** | **Unit** | **Unit Cost** | **# of Units** | **Total Cost** |
| **Invasive Plant Detection & Treatment** | | | | |
| GS-6 Bio Tech Crew Members | Days | $190 | 10 | $1900 |
| **Administration, Travel, and Materials** | | | | |
| GS-11 Botanist – overtime (hiring, training, supervising, agreements, coordination) OVERTIME @ $420*1.5=600 | Days | $600 | 1 | $600 |
| Vehicle miles at 0.58/mi; ave. trip 150 mi./day | Days | $87 | 6 | Costs covered by S+E |
| M&IE for camping. | Days | $50 | 6 | $300 |
| Supplies | Each | $200 | 1 | $200 |
| **Total Cost** | | | | **$3,000** |

## Heritage

The BAER team was not able to assess the condition of the Dutchman Cabin. READ's were also not able to assess the condition of the cabin. Propose to use UAS to fly over the area where the Cabin is located to assess condition. Using UAS will limit exposure of having to walk through the fire area to assess the cabin.

| Table 18. Land Treatment #3: Heritage (cabin) assessment |
|---|

| Item | Unit | Unit Cost | # of Units | Total Cost |
|---|---|---|---|---|
| GS-11 UAS pilot - Overtime | Days | $600 | 1 | $600 |
| Vehicle miles at 0.58/mi; ave. trip 100 mi./day | Days | $58 | 1 | Costs covered by S+E |
| **Total Cost** | | | | **$600** |

### Channel Treatments

No channel treatments are proposed for the Washburn Fire.

### Trail Treatments –

No Trail treatments are proposed for the Washburn Fire.

### Protection/Safety Treatments

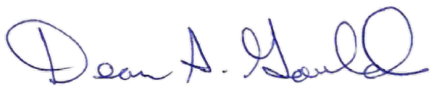
No Protection or Safety treatments are proposed for the Washburn Fire.

### I. Monitoring Narrative
### Treatment Effectiveness Monitoring

## PART V – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS

| | | | NFS Lands | | | | Other Lands | | | All |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Unit | # of | | Other | # of | Fed | # of | Non Fed | Total |
| Line Items | Units | Cost | Units | BAER $ | $ | units | $ | Units | $ | $ |
| | | | | | | | | | | |
| **A. Land Treatments** | | | | | | | | | | |
| EDRR | Days | 385 | 20 | $7,700 | $0 | | $0 | | $0 | $7,700 |
| Heritage | days | 600 | 1 | $600 | $0 | | $0 | | $0 | $600 |
| *Insert new items above this line!* | | | | $0 | $0 | | $0 | | $0 | $0 |
| *Subtotal Land Treatments* | | | | $8,300 | $0 | | $0 | | $0 | $8,300 |
| **B. Channel Treatments** | | | | | | | | | | |
| | | | | $0 | $0 | | $0 | | $0 | $0 |
| | | | | $0 | $0 | | $0 | | $0 | $0 |
| *Insert new items above this line!* | | | | $0 | $0 | | $0 | | $0 | $0 |
| *Subtotal Channel Treatments* | | | | $0 | $0 | | $0 | | $0 | $0 |
| **C. Road and Trails** | | | | | | | | | | |
| | | | | $0 | $0 | | $0 | | $0 | $0 |
| | | | | $0 | $0 | | $0 | | $0 | $0 |
| *Insert new items above this line!* | | | | $0 | $0 | | $0 | | $0 | $0 |
| *Subtotal Road and Trails* | | | | $0 | $0 | | $0 | | $0 | $0 |
| **D. Protection/Safety** | | | | | | | | | | |
| | | | | $0 | $0 | | $0 | | $0 | $0 |
| | | | | $0 | $0 | | $0 | | $0 | $0 |
| *Insert new items above this line!* | | | | $0 | $0 | | $0 | | $0 | $0 |
| *Subtotal Protection/Safety* | | | | $0 | $0 | | $0 | | $0 | $0 |
| **E. BAER Evaluation** | | | | | | | | | | |
| Initial Assessment | Report | $6,000 | 1 | --- | $0 | | $0 | | $0 | $0 |
| | | | | $0 | $0 | | $0 | | $0 | $0 |
| *Insert new items above this line!* | | | | --- | $0 | | $0 | | $0 | $0 |
| *Subtotal Evaluation* | | | | $0 | $0 | | $0 | | $0 | $0 |
| **F. Monitoring** | | | | | | | | | | |
| | | | 1 | $0 | $0 | | $0 | | $0 | $0 |
| | | | | $0 | $0 | | $0 | | $0 | $0 |
| *Insert new items above this line!* | | | | $0 | $0 | | $0 | | $0 | $0 |
| *Subtotal Monitoring* | | | | $0 | $0 | | $0 | | $0 | $0 |
| | | | | | | | | | | |
| **G. Totals** | | | | $8,300 | $0 | | **$0** | | **$0** | **$8,300** |
| Previously approved | | | | | | | | | | |
| Total for this request | | | | **$8,300** | | | | | | |

## PART VI - APPROVALS



August 15, 2022

Forest Supervisor
Dean Gould, Sierra National Forest

Date