Pacific Southwest Region (R5) Post-Fire Recovery Plan 2022 (Version 1.0)

Part 1: Steps in post-fire recovery

Creek fire at Huntington Lake; Photo by: Clovis Fire Dept.

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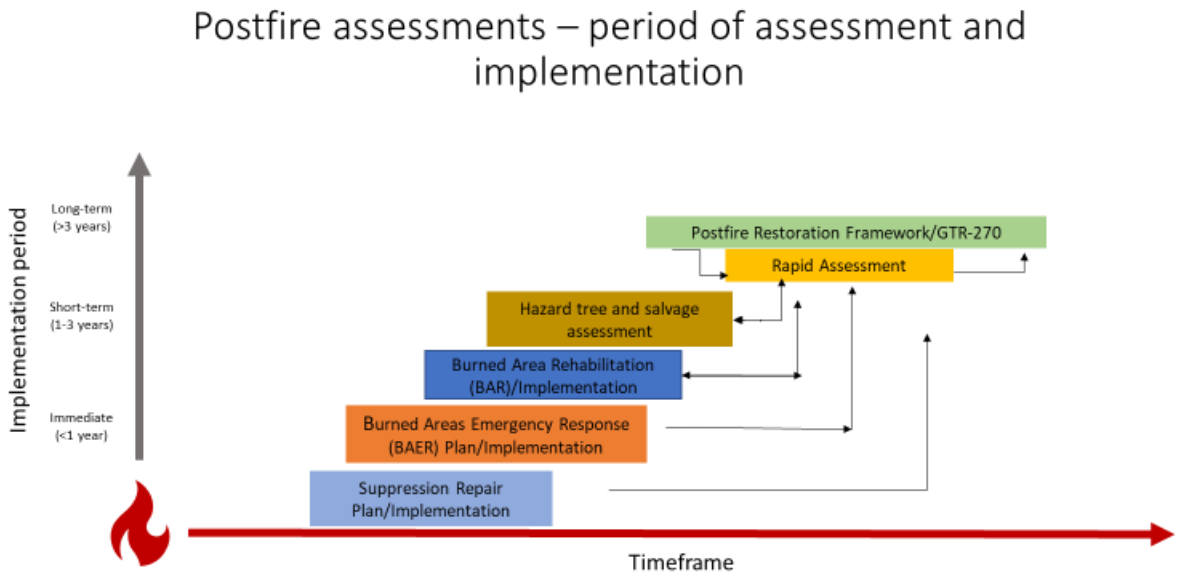
1.0 Introduction

Part 1 of the R5 Post-Fire Recovery Plan, Steps in Post-Fire Recovery, offers a concise description of the steps and actions the Pacific Southwest Region (Region 5 or R5) takes to recover National Forest System lands after a wildfire. Intended for partners and internal audiences, this plan shares what to expect from the Forest Service when a fire occurs. This is a living document, with annual updates as needed.

Part 2 of the Post-Fire Recovery Plan, the Post-Fire Recovery Action Plan, will identify the actions, and status of recovery activities from the previous fire season. Part 2 is a separate document and will be updated annually or as needed to track specific status of wildfire recovery activities.

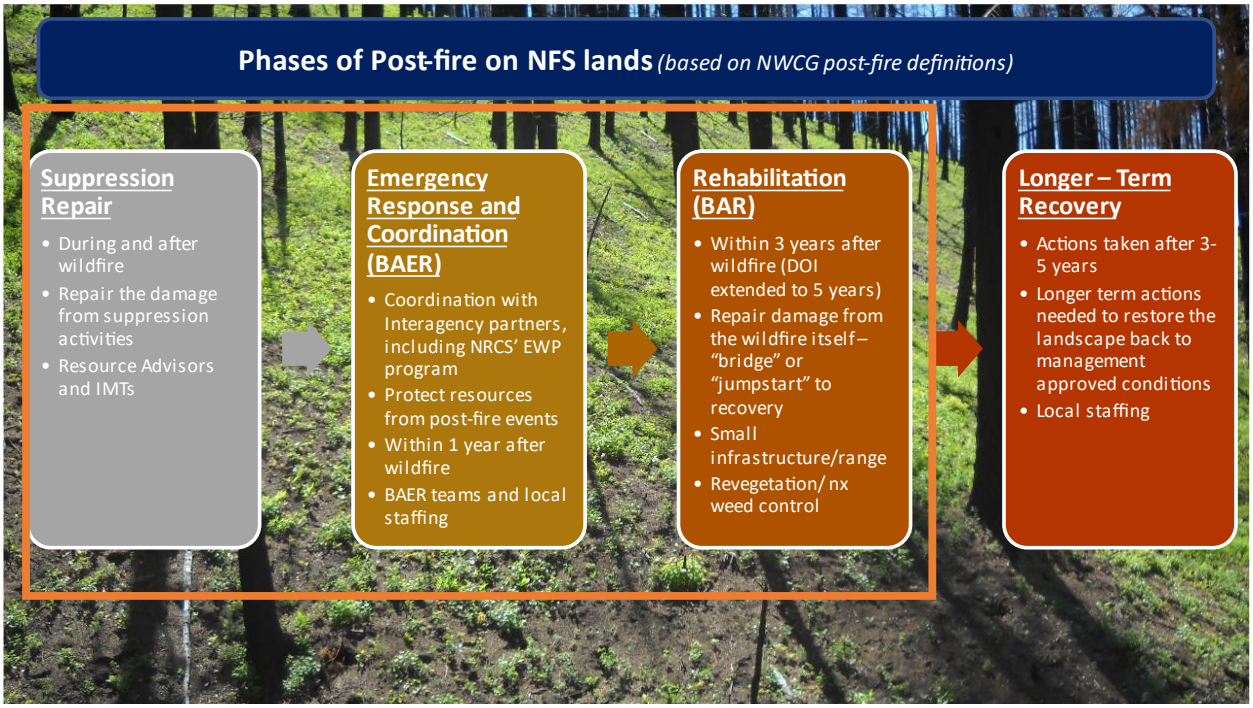
The shift from fire suppression activities to recovery actions such as suppression repair, Burned Area Emergency Response (BAER), Rapid Assessment Teams (RATs), and other post-fire restoration work occurs in a systematic manner at appropriate points in time as fires are contained (Figure 1). Each of the activities in the sequence of events are linked. Actions implemented during suppression and suppression repair can influence what happens with BAER; post-fire rehabilitation; and hazard fuel reduction, hazard tree mitigation, and other post-fire restoration needs, where appropriate.



Damages resulting from wildfires are addressed through four major stages of post-fire recovery: Suppression Repair, Emergency Stabilization, Rehabilitation, and Restoration and Recovery (Table 1). The four stages include other activities such as hazard materials removal, hazard tree mitigation, and other measures detailed in this document. A summary of these major stages can be found in the 2022 Interagency Standards for Fire and Fire Aviation Operations (Red Book), Chapter 11: https://www.nifc.gov/sites/default/files/redbook-files/RedBookAll.pdf

Figure 1: Schematic of main post-fire recovery process and general timeline

Note: These processes overlap and complement each other.



This plan describes overarching communication needs (Section 2.0), partnerships and shared stewardship (Section 3.0), and an overview on the specific components of post-fire recovery with links to more details (Section 4.0).

2.0 Communication Needs

Although wildfire damage can be immense, often the danger is **not** over after the flames are put out. Flash flooding, structural damage, road instability, and damaged trees are just some of the risks after a wildfire. Timely information regarding post-fire assessments and implementation of post-fire actions is critical. Early communication is the opportunity for relationship building. Communication improves trust in our efforts, promotes conservation and recovery education for the public, and supports early engagement of partners for collaboration and shared stewardship projects.

Effective communications follow these steps:

- Confirm capacity of Public Affairs Officer (PAO) and get additional support if needed
- Ensure PAO regularly communicates with the fire recovery project manager or others coordinating fire recovery efforts and looped into key coordination meeting
- Develop recovery plan talking points and anticipated actions with projected completion; talking points should include ongoing and expected BAER/BAR projects and other fire recovery actions – such as closure order status, ongoing suppression activities, and fire recovery work not associated with BAER/BAR
- Develop informational materials for publication on the web, plus distribution and presentations to the public and stakeholders (environmental groups, recreation groups, rotary clubs, water boards, homeowner associations, and others)
- Consider developing a communication plan that addresses:
    - How to inform Forest Service employees of recovery efforts
    - What information front-line employees will share
    - What partners need to be informed, when and how
    - How to communicate topics of interest to public – what frequency and outreach tools use (e.g., website, email blasts, media releases, language translations)
    - Protocols for elevating issues received from partners
    - How to share information with elected officials
    - How to engage media and respond to inquiries
        - How communicate topics of interest to public; what frequency and outreach tools
        - Identify opportunities with Public Affairs and Communications (PAC) Storytelling Team to spotlight post-fire recovery in action

3.0 Partnerships and Shared Stewardship

Collaboration is the most important method to achieve meaningful progress towards a fire-resilient landscape and a fire-adapted community. National Forests and other local, state and federal agencies are more effective when working on a coordinated fashion. Collaboration is the key to preparedness and the best possible outcomes during and after a wildland fire event. Partnerships build trust and capacity to accomplish post-fire recovery of lands across ownerships, through shared resources and strong working relationships before, during, and after a fire.

Partners and key stakeholders will often change during different phases of post-fire recovery. For example, during suppression and suppression repair, often the Incident Management Team (IMT) will have liaisons who coordinate partner and stakeholder meetings related to fire suppression and operations. This provides a valuable list of potential partners throughout the fire recovery process.

Partners in post-fire recovery include other federal agencies and state and/or county departments of transportation, electric utility companies, and water providers. The State of California Office of Emergency Services (OES) often lead and coordinate interagency meetings during the BAER process and many times beyond, including hazardous materials clean-up, that greatly assist in that phase of coordination.

Additional partners include adjacent landowners, agency land managers, and Special Use Permit holders, such as utility companies.

Steps to maximize effective partnerships and shared stewardship, which include:

- Identify partners with a role in restoration-based recovery operations; this could include county extension, trail organizations, special interest nonprofit groups, friends of agencies, special use permittees (possibly), volunteer groups, and others.
- Identify role(s) partner will play, such as recovery, funding, grant match, and labor.
- Identify agency partner liaison(s) and clarify roles and responsibilities.
- Establish recurring meetings with key partners at an appropriate frequency, including coordination with Cal OES and Debris Removal Task Force.
- Consider weekly meetings with partners conducting health and safety operations on National Forests.
- Group partner meetings when logical. For example, agency meetings and separate meetings for other groups, such as trail organizations, special interest nonprofit groups, friends of agency, special use permittees, volunteer groups, etc..

- Identify meeting facilitator as appropriate and develop an agenda to keep the group focused and results orientated.
- Ensure transparent communications with partners that includes realistic representation of recovery priorities and ranking.
- Assume the number-one priority for a partner may not be number one for agency; plan communications accordingly.

4.0 Specific Post-Fire Recovery Components

Given the cross-component linkages and timing overlaps, these post-fire considerations increase the efficient planning and implementation of post-fire actions:

- Fire suppression repair and BAER assessments should take priority over strategizing or planning for salvage or other post-fire restoration needs.
- Access to Geographic Information System (GIS) products developed during suppression (e.g., fire perimeter, fire lines, dozer work, safety zone clearing) help development of post-fire restoration needs and inform cumulative effects analyses for any required National Environmental Policy Act (NEPA).
- Quick, accurate collection of information and good communication between the field unit and the Regional Office (RO) helps expedite regional support for post-fire restoration needs. For example, Rapid Assessment Teams (RATs) are scheduled soon after the completion of the BAER team assessment, to use field-verified soil burn severity map and other BAER products to inform next steps.

4.1 Suppression Repair – Evaluation and Implementation

4.1.1 Description and purpose

Suppression repair activities include a series of immediate post-fire actions taken to repair damages and minimize potential soil erosion and other impacts from fire suppression activities. This work repairs the hand and dozer lines, roads, trails, staging areas, safety zones, and drop points created or used during fire suppression efforts. Suppression repair activities also mitigate impacts from hazardous materials from fire suppression activities, such as fire-retardant drops in aquatic habitats and hazardous material spills.

It is the Forest Service's responsibility to alleviate effects from suppression activities, particularly fuel break lines (dozer created); effects of incomplete repair efforts including disruption of drainage patters, channelizing water, habitat fragmentation; and the development of additional social roads/trails that are not consistent with the direction in our Forest Plans and other related plans (e.g., Travel Management Plans). Suppression Repair efforts are our obligation under our policy and existing plans. Of note, repaired fuel break lines are easily reopened by fire suppression equipment in the event of a new fire start.

For more specific handbook direction regarding rehabilitating fire suppression impacts including dozer lines, see FSH 6509.11g, Chapter 50 – Wildland Fire Management.

4.1.2Timing for planning and implementation of activities

Planning for suppression repair begins in the early stages of the fire while it is still burning. A Suppression Repair Plan is developed and approved by the Agency Administrator/local Line Officer and Incident Management Team (IMT). The IMT is responsible, under the direction of the local Line Officer, for repair of suppression-related resource damage.

4.1.3 Data produced and/or used for planning

Data collected to support fire suppression activities and suppression repair include the locations of dozer and hand lines, drop points, safety zones, water drafting locations, roads segments needing repair that were used by fire suppression resources, and other suppression features. During the fire, resource advisors work closely with the IMT to collect data on suppression repair needs and develop treatments as directed by the Suppression Repair Plan. The locations of suppression features, such as dozer lines and safety zones, can be useful for fire recovery planning efforts.

4.1.4 Environmental compliance and consultation

Fire suppression repair activities are addressed under NEPA emergency response procedures (36 CFR 220.4 (b)(1)) and as part of emergency consultation with the U.S. Fish & Wildlife Service (FWS), National Oceanic and Atmospheric Administration (NOAA) Fisheries, and regional Water Quality Control Boards. Suppression repair activities must comply with applicable federal, state, and local environmental statutes and regulations.

Following control of the fire, biologists compile information on the effects of fire suppression activities on wildlife and fish habitat. This information includes all suppression actions that result in a change to habitat such as backburning, retardant drops, and fire lines. Forest Service biologists generally provide this information to their partner agencies at the end of the calendar year.

4.1.5 Information sharing

Information on fire suppression repair activities is shared with the public through social media, public and partner meetings, and news releases. The details shared vary by fire size, resource values affected, and time of release during the fire. For example, information on suppression activities affecting water quality, such as mitigations of hazardous material spills and retardant drops in streams, is shared with the State Water Resources Control Board.

4.1.6 Funding resources

Wildfire suppression funds (WFSU) are used to fund suppression repair activities on federal lands. Repairs can be made to Forest Service improvements and suppression features, like dozer lines, to minimize damage to soil, water, and other resources. WFSU can also be used to repair private lands damaged by suppression activities, but only to a minimum extent to prevent further loss or injury.

For private lands under the jurisdiction of the State Responsibility Area (SRA) but in federal Direct Protection Land (DPA), the state has the authority to perform suppression repair work to state standards at their own expense.

4.1.7 Prioritization when resources are limited

In recent years, an increase in the number of large fires has limited the overall numbers of personnel and equipment available for suppression repair. In some cases, this increased workload can delay suppression repair until after the fire is controlled and into the following spring. After the fire has been controlled and declared out, additional suppression repair activities must be approved in advance by the Regional Forester.

Certain actions, such as hazardous material spills, are addressed immediately by the IMT. The Agency Administrator works with the IMT to prioritize suppression repair activities with other priorities, which may include ongoing suppression and hazard tree mitigation activities.

For more information on suppression repair, see suppression repair and guidance and FSH 6509.11g Chapter 50 – Wildland Fire Management

4.2 BAER/BAR Assessment and Implementation

4.2.1 Description and Purpose

Burn Area Emergency Response (BAER): A BAER assessment is a rapid evaluation of burned watersheds by the BAER team. They identify imminent post-wildfire threats to human life and safety, property (infrastructure), and critical natural or cultural resources on federal lands. Then a plan is crated for immediate actions to implement emergency stabilization measures before the first major storms. This plan considers the effects of fire on loss of vegetation, exposure of soil to erosion, and increased water runoff that may lead to flooding, increased sediment, debris flow, and damage to critical infrastructure and natural/cultural resources. BAER implement such actions as: mulching, seeding, installation of erosion and water run-off control structures on roads and trails, temporary barriers to protect recovering areas, and installation of warning signs. BAER work may also remove safety hazards, such as hazardous debris and trees; prevent permanent loss of habitat for threatened and endangered species; prevent the spread of noxious/invasive weeds; and protect critical cultural resources.

Burned Area Rehabilitation (BAR): The BAR program includes post-fire efforts taken within three years of wildfire containment to repair or improve lands unlikely to recover naturally to a management-approved condition or to repair/replace minor infrastructure and facilities damaged by the fire. BAR program funding under the Bipartisan Infrastructure Bill covers certain post-fire rehabilitation efforts that do not fit within the BAER program constraints. The BAR pilot program funding allows for some post-fire revegetation and invasives-control activities, plus existing minor infrastructure-repair activities.

The BAR program supports the landscape healing process and provides a bridge to long-term recovery. Allocating BAR funds involves the Forest Service identifying projects and using a competitive process to evaluate projects, to ensure the most critical areas receive treatment first.

The BAR process uses non-emergency, but sometimes urgent, actions to improve fire-damaged lands unlikely to recover naturally and to repair or replace facilities damaged by fire that are not critical to life and safety. This phase may include restoring burned habitat, reforestation, additional planting or seeding, replacing burned fences, interpreting cultural sites, treating noxious weed infestations, and installing signs.

4.2.2 Timing for planning and implementation of activities

BAER: Assessments generally start when the fire is 50-70% contained. Implementation occurs for up to one year after the BAER report is approved.

BAR: Reports and requests are reviewed for funding on a quarterly schedule. Implementation occurs within three years of wildfire containment.

4.2.3 Data produced and/or used for planning

BAER: Requires a summary report of post-fire condition and effects with associated data, maps, and analysis. This report includes a characterization of post-fire condition for natural/cultural resources and Forest Service infrastructure, emphasizing post-fire watershed response. If working with partners, summary includes a characterization of downstream watershed effects. Specialist reports are produced for background and supporting information.

BAR: Category 1 projects; requires a request form outlining the fire damage and how the project addresses the specific damage and costs of the project. Category 2 projects document repair or improve lands unlikely to recover naturally to a management approved condition and associated costs.

4.2.4 Environmental compliance and consultation

BAER: BAER activities are facilitated under NEPA emergency response procedures (36 CFR 220.4 (b)(1)). The BAER report reflects an interdisciplinary evaluation of effects and immediate needs for environmental rehabilitation. BAER treatments adhere to applicable agency policy, standards, and all relevant federal, state, and local laws and regulations. Prior to implementation, compliance must meet applicable NEPA emergency response procedures along with emergency consultation for the Endangered Species Act (ESA) and cultural resources consultation.

BAR: Activities must be in accordance with approved management plans and applicable agency policy, standards, and all relevant federal, state, and local laws and regulations. This includes any NEPA, ESA consultation (FWS, NOAA), and cultural resources consultation with State Historic Preservation Office (SHPO) required for these treatments and activities. For urgent or time sensitive actions, NEPA authorities can expedite existing planning procedures.

4.2.5 Information sharing

BAER: PAO provides information, addresses media and other inquiries, and sets up a BAER inciweb site to facilitate information sharing. A BAER Interagency Liaison typically coordinates interagency efforts, which could include attending Cal OES Watershed Task Force or Debris Flow Task Force meetings and providing other interagency coordination needs.

BAR: Forests share information with key partners and cooperators through press releases, information on forward facing web sites and scoping associated with NEPA efforts. Forests work with range permittees and other entities such as campground administrators to implement BAR projects

4.2.6 Funding resources

BAER: Wildland Fire Funds

BAR: Congressional appropriations; currently funded under Bipartisan Infrastructure Bill

4.2.7 Priorities when resources are limited

BAER Assessment: The Regional BAER coordinator in consultation with the Forest/Unit BAER coordinator and Agency Administrator determine BAER skills and personnel needed for the assessment. Based on fire season, the Regional BAER coordinator will work with other forest regions and the Washington Office to allocate BAER resources.

BAER Implementation: Forests implement treatments that reduce risk to life, safety, and property.

BAR Implementation: Forest prioritizes work based on safety, Infrastructure, and long-term recovery needs.

For additional information on BAER, see BAER Directive 2022.

4.3 Rapid Assessments and GTR-270

4.3.1 Description and purpose

Rapid Assessments: A rapid assessment provides information on fire effects to forest resources and management recommendations for the development of fire recovery projects. Rapid assessments:

1) compile information about fire effects,
2) evaluate geographic areas to determine restoration/recovery needs and opportunities,

3) identify resource areas that may drive actions, and
4) suggest focal/priority areas and recovery opportunities, plus processes for future action and consideration.

Rapid assessments can also identify regulatory compliance needs and incorporate input from partners and other stakeholders with a vested interest in fire recovery activities. They also provide interdisciplinary teams with a starting point for planning recovery projects within burn areas. Rapid assessments usually focus on four key resources areas: vegetation (including reforestation and fuels), physical sciences (including watersheds, soils, and geology), wildlife and fisheries, and infrastructure (including roads and recreation infrastructure).

GTR-270 Assessments: Post-fire management on national forests in California often relies on a set of conventional and tactical approaches that may not address the diverse challenges and issues associated with large, severe wildfires and other interactive stressors. The GTR-270 Assessment (Post-Fire Restoration Framework) is a valuable tool based on ecological restoration principles and a step-by-step process to develop a restoration portfolio that informs project planning in post-fire landscapes.

These GTR-270 assessments encourage land managers to assess the influence of future interacting stressors, such as the effects of climate change and altered fire regimes and consider the full range of restoration opportunities to address these ecosystem stressors. Such assessments can inform future post-fire management, monitoring, and research on national forests in California, including landscapes dominated by forest, chaparral, and sagebrush steppe ecosystems.

GTR-270 assessments focus on specific ecological concerns for fire recovery while rapid assessments use a broader approach for identifying recovery needs for multiple resource areas over the entire burn area. GTR-270 assessments may also cover a broader geographic area not constrained by recent burn perimeters or land ownership boundaries to address broader resource concerns and cumulative impacts, whereas rapid assessments focus on individual wildfire events in the past fire season on national forest lands exclusively.

4.3.2 Timing for planning and implementation of activities

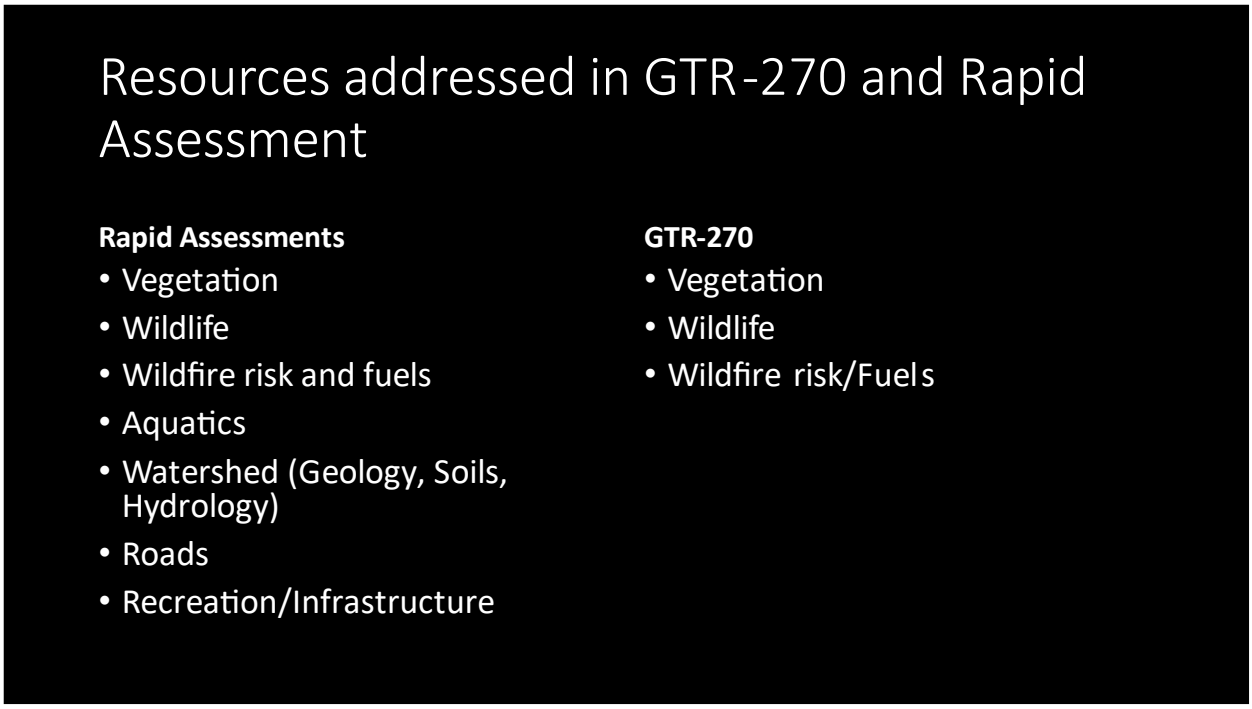
Rapid assessments are led by off-Forest Rapid Assessment Teams, thereby providing support to local units as they address other aspects of post-wildfire management (i.e., suppression repair, BAER, BAR, etc.). Assessments should begin as soon as possible after the fire has been controlled. However, Rapid Assessment Teams are often staffed with the same specialists needed for suppression repair, BAER, and BAR assessments, which sometimes delays the start of rapid assessments until after these other activities are completed. Ideally, rapid assessments should be completed within one to two months, usually within 30 days, unless size and complexity necessitate longer and following control of the fire.

GTR-270 assessments are initiated at the request of forest units or the Regional Office and focus on medium- and long-term, post-fire management. Initial suppression repair and the Forest Service BAER program provide immediate response to severely burned landscapes on national forests, to protect life, safety, property, and critical natural and cultural resources by implementing emergency stabilization treatments. In contrast, the GTR-270 Assessments address longer term (years to decades) restoration objectives. The framework is complementary to the BAER process as it builds from existing rehabilitation treatments and relies on initial BAER assessments for important post-fire information (e.g., soil and vegetation burn severity data). The GTR-270 Assessments are also complementary to the Rapid Assessments. For best results, the team that works on the Rapid Assessment should establish early communication with the GTR-270 Assessments team to ensure close integration between the two teams.

The Rapid Assessments provide a breadth of knowledge but limited depth, while the GTR-270 assessments provide depth with a narrow focus on the primary resources of interest to the unit. The complementary nature of both assessments ensures a robust, comprehensive evaluation of post-fire landscapes.

GTR-270 assessments should be completed anywhere from the end of the calendar year the fire occurred to about six months into the next calendar year, depending on the complexity of analysis. Critical information from the Rapid Assessment is integrated into the GTR-270 process prior to the completion of the report. The chart below visually displays the resources and assets covered by both assessments.

Figure 2: Resources and assets addressed in GTR-270 and post-fire Rapid Assessment*



*GTR-270 assessments also cover wildfire risk and fuels.
This resource concern is incorporated in vegetation assessment and not shown in Figure 2.

4.3.3 Data produced and/or used for planning

Rapid Assessments provide considerable amounts of data used to develop proposed actions for fire recovery projects. Data sources for rapid assessments include forest data, BAER reports, incident data, fire suppression repair information, and newly generated data such as post-fire satellite imagery of the burn areas. Because they are intended to be quick to complete, Rapid Assessment Teams generally do not collect additional field data.

GTR-270 Assessment process involves assessing post-fire ecological conditions and other factors that may influence post-fire ecosystem recovery, often incorporating additional analysis tools. A post-fire flow chart, with spatial outputs from the landscape assessment process, directs the user to identify three types of restoration opportunities on a post-fire landscape (i.e., restoration portfolio), including areas to:
1) maintain or promote desired conditions (areas with beneficial/neutral fire effects),
2) take management actions to restore desired conditions (areas with negative fire effects where management is feasible), and
3) reevaluate desired conditions (areas with negative fire effects where management is unfeasible or undesirable, considering climate change and other stressors).

The data products and associated information derived from the GTR-270 assessments include spatial data (i.e., outputs from tools used in landscape assessment process), a restoration strategy (i.e., technical report describing landscape assessment process, restoration portfolio, and management recommendations), and additional information (i.e., informational brief and supplementary materials). GTR-270 assessments can require additional data for areas outside of the fire perimeter to address broader issues, such as habitat connectivity and landscape-scale fire risk.

4.3.4 Environmental compliance and consultation

Rapid assessments are not decision documents and do not require environmental compliance or consultation. However, the information from rapid assessments may inform environmental analyses and future NEPA decisions.

GTR-270 assessments are not decision documents and do not require environmental compliance or consultation. GTR-270 assessment teams are often staffed with personnel from multiple agency program units or resource agencies. GTR-270 products usually undergo a third-party technical review.

4.3.5 Information sharing

Reports produced from rapid assessments are shared internally within the Forest Service and can be provided to external organizations. The reports are intended for use by forest staff for project-level planning and developing fire recovery actions.

The GTR-270 assessments provide a variety of opportunities for information sharing, both internally and externally. The framework can be used to guide discussions with forest specialists on post-fire planning and developing recovery actions during the planning process. Partners and collaborators are encouraged to participate in one or more phases of the GTR-270 process to promote a shared stewardship approach to developing restoration opportunities in burned landscapes. The GTR-270 process documents science-based restoration opportunities across a post-fire landscape, which may be used to develop ecological restoration actions.

4.3.6 Funding resources

Rapid assessments and GTR-270 assessments are funded by congressional appropriations.

4.3.7 Priorities when resources are limited

Rapid Assessment Teams have been difficult to fill in recent years due to an increase in the number of large fires requiring rapid assessments and lack of available specialists. Local resource specialists are often involved with fire suppression, fire suppression repair, and BAER/BAR assessments. Because of this, they are often not available. The Forest Service has addressed this issue in recent years by employing specialists from the Regional Offices including regions to complete the assessments. Due to limited personnel availability, the time frame for some rapid assessments has been extended.

GTR-270 assessments are prioritized by forest leadership and often require involvement from forest and research station staff, plus other partners for development of a restoration strategy. Limited personnel may warrant prioritizing fires and extending the GTR-270 assessments into the calendar year following the fire.

4.4 Hazard Tree Mitigation and Removal

4.4.1 Description and purpose

Hazard tree mitigation and removal provides safe use of National Forest System roads, trails, and facilities by the public, Forest Service staff, firefighters, emergency response personnel, law enforcement, private land holders, contractors, special use permit holders, and others. Many fire areas contain expansive stretches of fire-killed and fire-damaged trees adjacent to National Forest System roads, trails, and facilities. Portions of the post-fire area require abatement for hazard trees killed or damaged by insect and disease, drought, or other stressors from before or after the fire. Many trees pose a serious risk of injury or death as they are structurally unsound and likely to fall during an emergency incident, in the immediate aftermath, and several years following the disturbance event. If left unabated, these trees may fall on roads, trails, and facilities and cause direct injury or death to people (such as a tree falling on a tent with a family sleeping inside) or indirect injury or death (for example, a driver strikes a fallen tree across a road after coming around a blind curve). In Region 5, hazard trees are identified using the Hazard Tree Guide and Mitigation (2022) .

4.4.2 Timing for planning and implementation of activities

Hazard trees are addressed throughout the different stages of the emergency event through post-fire recovery. From the outset, suppression, suppression repair, and BAER address hazard trees that are an imminent hazard to life and property. The hazard is considered mitigated once a tree is on the ground for BAER efforts. However, in the longer term, simply felling of trees does not mitigate the fire hazard these trees pose; the hazard will likely increase and create new problems, such as impeding fire suppression where hazard trees are felled or creating a fuel load problem for future wildfires. Removal of the felled trees is needed to fully remove the risks. Once the fire is contained and spatial data such as Rapid Assessment of Vegetation Condition after Wildfire (RAVG) is available, the R5 Hazard Tree Guideline can identify hazard trees along roads, recreation sites, and utility corridors.

4.4.3 Data produced and/or used for planning

Hazard trees are generally mapped and assessed before treatment to ensure safety of the fire suppression and post-wildfire crews.

4.4.4 Environmental compliance and consultation

Hazard trees abatement activities during suppression, suppression repair, and BAER follow NEPA emergency response procedures 36 CFR 220.4 (b)(1)). Treatments for protection of forest worker and public health and safety may also use emergency response procedures at 36 CFR 220.4 (b)(2) or 36 CFR 220.4 (b)(3), when accompanied by routine environmental analysis procedures to expedite environmental compliance. In addition, urgent or time-sensitive actions may use existing planning procedures in conjunction with expedited NEPA authorities (Emergency Situation Determination 36 CFR 220.21, Emergency Action Determination Section 40807 BIL).

4.4.5 Information sharing

Generally, the number of hazard trees mitigated is recorded during suppression and BAER activities. Post-BAER hazard tree mitigation is disclosed in NEPA documents including public scoping, or the process a federal agency uses to describe a proposed action and possible alternatives.

4.4.6 Funding resources

This work can be planned and accomplished using a variety of funding resources, including WFSU (for an action associated with fire suppression and suppression repair), WFSU (for an action under BAER), BAR, other congressionally approved funding (such as Disaster Supplemental Funds), appropriated budget, and partner funding.

4.4.7 Priorities when resources are limited

Hazard trees that pose an imminent threat to life and property are treated immediately.

Additional information on hazard trees and hazard tree program is found here: https://www.fs.usda.gov/detail/r5/forest-grasslandhealth?cid=stelprdb5334101

4.5 Hazardous Materials and Solid Waste Mitigation

4.5.1 Description and purpose

"Hazardous materials" is an umbrella term that includes Occupational Safety and Health Administration (OSHA) hazardous chemicals; Resource Conservation and Recovery Act (RCRA) hazardous wastes; Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances; and other toxic and naturally occurring hazardous substances such as asbestos. Solid wastes can include garbage, refuse, household trash, and structural debris.

Hazardous materials and solid waste mitigation, performed as part of wildfire debris cleanup and recovery in California, is conducted in two phases:

Phase I: Removal and Disposal of Fire-Related Hazardous Waste,

Phase II: Removal and Disposal of Fire-Related Ash (Includes Contaminated Soil) and Debris

Appropriate Forest Service environmental engineering specialist should be consulted on how to address potential hazardous materials and solid waste post-fire safely and effectively. This decision is based on site-specific conditions and by the human health and environmental hazards posed by the hazardous materials and solid waste. Hazardous material and solid waste removal and disposal must follow applicable federal, state, and local regulations and be carried out by contractors qualified in hazardous material response.

4.5.2 Timing for planning and implementation of activities

Uncontrolled hazardous materials and solid waste pose significant threats to public health through inhalation of dust and particulates, direct contact with contaminated materials, and contamination of soil and drinking water supplies. Uncontrolled hazardous materials and solid waste are subject to environmental regulatory action. The hazardous materials and solid waste generated by burned or partially burned structures are a source of air, soil, and water quality risks and impact human health and the environment.

Planning and implementation of hazardous waste and solid waste mitigation activities must begin as soon as it is safe to enter the area. BAER teams assess burned infrastructure and make recommendations after consulting with the Regional Office Engineering/Hazardous Material staff as soon as practical. BAER implementation occurs quickly, with stabilization as a priority. Under certain circumstances BAER can remove hazardous materials and solid waste if stabilization methods do not protect human health and the environment. Removal/disposal of hazardous materials and solid waste generally occurs after stabilization and must be performed in accordance with applicable federal, state, and local regulations.

4.5.3 Data produced and/or used for planning

Spatial mapping and characterization of burned infrastructure typically includes identification of size/type of structures burned, soil contamination, asbestos-containing material, burned painted structures, wastewater systems, and burned or partially burned containers of hazardous materials, fuel storage, and treated wood.

4.5.4 Environmental compliance and consultation

Approval of the 2500-8 BAER report authorizes stabilization of hazardous materials and solid waste. When stabilization methods fail to protect human health and the environment, the BAER report approval may provide removal/disposal of hazardous materials and solid waste. Removal disposal of hazardous materials and solid waste is covered under emergency authorities. Stabilization and removal/disposal activities must be conducted in accordance with applicable federal, state, and local regulations.

4.5.5 Information sharing

Post-fire recovery activities are subject to environmental regulatory actions. Coordination and transfer of information throughout the post-fire recovery process is essential. Key agencies to contact include Cal OES and State Waterboards.

4.5.6 Funding resources

During BAER activities, appropriated fire funds from congress are used. Other funds are used for removal/disposal of hazardous materials and solid wastes.

4.5.7 Priorities when resources are limited

Stabilization and removal/disposal of hazardous materials and solid waste are prioritized by impacts to human health and the environment. Suggested prioritization steps include:

1. Removal and proper disposal of hazardous materials and solid waste as required by federal and state environmental regulations. This covers hazardous materials and solid waste in surface water or with the potential to impact surface water and uncontrolled hazardous material classified as airborne hazards.
2. Temporary stabilization of hazardous materials while avoiding disturbing the hazardous materials. Stabilization measures must prevent infiltration by precipitation and contaminated runoff and must be inspected periodically to ensure they are working. Replace any stabilization measures not performing as intended.
3. Removal and proper disposal of hazardous materials and solid waste remaining at the site.

4.6 Landscape Restoration

4.6.1 Description and purpose

Post-fire restoration of landscapes can include a variety of actions depending on the needs of the specific area. These actions can include vegetation management and fuels reduction, revegetation, reforestation, watershed restoration, and infrastructure repair/replacement. Needed actions are identified through such means as rapid or GTR-270 assessments (see Section 4.3 above), interdisciplinary planning and analyses, and/or with local partnerships or collaborative groups. In addition, the BAER assessment process identifies, and documents burned or damaged infrastructure. The rapid

assessment process can further identify and prioritize infrastructure rehabilitation and repair needs.

This section provides an overview of restoration actions and more details for reforestation and watershed restoration.

4.6.2 Timing for planning and implementation of activities

Planning for these actions starts during Rapid Assessments and/or GTR-270 Assessments. Implementation of some actions can start within the first year after a fire. Implementation of some actions can take many years.

4.6.3 Data produced and/or used for planning.

Many sources of data can be used. See Section 4.3 for some of the primary data considerations.

4.6.4 Environmental compliance and consultation

Activities must be in accordance with approved management plans and applicable agency policy, standards, and all relevant federal, state, and local laws and regulations. This includes any NEPA, ESA consultation (FWS, NOAA), and cultural consultation (SHPO) required for these treatments and activities. For urgent or time-sensitive actions, existing planning procedures can be accelerated by expedited NEPA authorities.

4.6.5 Information sharing

Public scoping occurs during NEPA analysis. These actions are typically designed and implemented with partners and through shared stewardship.

4.5.6 Funding resources

Funding for planning and implementation of landscape restoration activities comes from a variety of federal and partner sources. Minor infrastructure can be replaced under the BAR program. Major infrastructure replacement is funded through other agency mechanisms.

Fire Cost Recovery Settlement Funds may be available for some fire for restoration actions. These post-fire funds provide an opportunity on National Forest System lands to

reverse ecosystem degradation, restore ecosystem health and resilience, rehabilitate damaged infrastructures, and prepare landscapes for changing climates and human use patterns. Ecological restoration activities implemented with fire settlement funds strive to maintain functions and processes characteristic of healthy, resilient forests and watersheds. Framing strategies and prioritizing work are important first steps to reach our desired goals on the landscape.

Fire Cost Recovery Settlement Funds should be used in the spirit of the statue under which they are collected. By doing so, we can effectively work towards our goal of ongoing landscape-scale ecological restoration. Ecological restoration activities funded through Fire Cost Recovery Settlement Funds should be linked to a post-fire restoration strategy developed by the affected forest(s).

Ecological restoration activities implemented with fire settlement funds strive to:

- assist the recovery of degraded, damaged, or destroyed ecosystems;
- create sustainable, resilient, and healthy ecosystems with a focus on future conditions considering climate change within the affected ecosystems;
- adopt an interdisciplinary landscape approach to accelerate the pace and scale of ecological restoration;
- ensure the strategy and any proposed actions are linked to the restoration objectives in the Forest Land and Resource Management Plan and any amendments;
- ensure alignment of the strategy and proposed actions with the USDA Forest Service Ecological Restoration Framework, the Region 5 Ecological Restoration Leadership Intent, and Forest Service Handbook (FSH) 2020;
- use best available scientific information and knowledge;
- develop a coordinated strategy among the affected units when the fire-affected area is shared between more than one national forest,
- monitor the success of restoration efforts and successional trajectories of vegetation in the affected landscape and adapt the strategy when appropriate; and
- assist in job creation and retention and economic benefits to the surrounding communities.

Detailed information regarding the use of Fire Cost Settlement Funds can be found in FSH 6509.22 – Fire Damages and Cost Recovery Procedures.

4.6.7 Priorities when resources are limited

Prioritizing typically occurs during the development of annual programs of work.

Additional Landscape Restoration Information

Reforestation. Post-fire reforestation offers opportunities to prevent forest loss and manage vegetation transitions and fuel loads to restore forest resilience and desirable ecosystem processes, especially after uncharacteristically large and severe wildfires and amidst climate change. Without reforestation, large and severely burned landscapes are at risk of semi-permanent or permanent deforestation.

Consequences of inadequately addressing reforestation include: semi-permanent or permanent loss of forest ecosystems; degraded water quality and watershed function, including drinking water sources; loss of habitat and connectivity for forest-dependent wildlife; missed opportunities to help recovering forests better adapt to climate change; altered composition of forest fuels, which increase future risks to wildland firefighters and communities; significant loss of carbon sequestered by live trees and missing state's climate-change mitigation goals; and the degradation and loss of important economic, aesthetic, and cultural resources valued by Californians.

To clarify, reforestation goes beyond seedling planting to consider the full process of pre-and post-planting treatments, while reintroducing natural fire regimes through prescribed fire and unplanned ignitions. A reforestation prescription includes a suite of activities that prepare and manage a site to support development of a new forest.

The USDA Forest Service recently finalized a National Reforestation Strategy. In addition, R5 is working with partners as part of the California Fire and Forest Resilience Task Force to increase reforestation in landscapes across all lands. Actions include expansion of the Placerville Nursery and development of a memorandum of understanding to partner in seed collection, cone crop surveys, cone (seed) collection, and sharing collected seed in California.

The Reforestation Trust Fund is the primary funding source for reforestation needs outside timber sale areas. The recent REPLANT Act, part of the Bipartisan Infrastructure Law (BIL), removes the $30 million cap on the annual distribution of Reforestation Trust Funds, with an agency-wide potential for $1.4-$2.6 billion over 10 years. The Act also promotes effective reforestation treatments and sets a target to address reforestation backlogs.

For additional information on silvicultural practices, see Forest Service Manual 2472.a.

Watershed Restoration. The BAER Team identifies areas of high erosion, runoff, and peak flow risk. These areas may be prioritized post-fire for watershed restoration. In addition, the rapid assessment can help identify areas of post-fire erosion and watershed degradation, including areas re-burned at high severity, and prioritize areas for treatment. When large disturbances such as wildfires occur on national forest lands, Forest Service Manual 2520 provides guidance on practices to assess and track watershed conditions through a six-step watershed condition framework (WCF) process. If the watershed condition is recharacterized as Class 3, this means some physical, hydrological, or biological threshold has been exceeded due to post-fire disturbances. Some changes to the conditions would need to be set on a trajectory to improve conditions and restore the area's physical, hydrological, and biological integrity.

Updating the watershed conditions based on wildfire disturbances is necessary to implement the Watershed Restoration Action Plan (WRAP) and achieve State Water Resources Control Board requirements. Forest Service Manual 2528 outlines the forest's responsibilities implementing emergency watershed protection program. Other regional guidance is provided in Soil and Water Conservation Handbook (FSH 2509.22).

4.7 Summary of Accomplishments from Previous Year (2022 and beyond)

This section will include annual updates to this plan and a summary of accomplishments within the activity areas described above.