Burned Area Emergency Response (BAER) Information Brief

Burned Area Emergency Response (BAER) Limitations

While many wildfires cause minimal damage to the land and pose few threats to the land or people downstream, some fires result in damage that requires special efforts to reduce impacts afterwards. Loss of vegetation exposes soil to erosion; water run-off may increase and cause flooding, soil and rock may move downstream and damage property or fill reservoirs putting community water supplies and endangered species at-risk.

The **Burned Area Emergency Response** (**BAER**) program is designed to address and manage these risks through its goals of protecting life, property, and critical natural or cultural resources. **BAER** is an emergency program for stabilization work that involves time-critical activities to be completed before the first damaging storm event to meet program objectives.

BAER Objectives:

- Determine whether imminent post-wildfire threats to human life and safety, property, and critical natural or cultural resources on **National Forest System** lands exist.
- If emergency conditions are identified, take actions, when appropriate, to manage the unacceptable risks.
- Implement emergency response actions to stabilize soil; control water, sediment and debris movement and reduce impairment of critical resources when an analysis shows that planned actions are likely to reduce risks substantially within the first year following containment of the fire.
- Monitor the implementation and effectiveness of emergency treatments that were applied on **National Forest System** lands.

BAER assessment teams are staffed by specially trained professionals that may include: hydrologists, soil scientists, engineers, biologists, botanists, archeologists, and others who evaluate the burned area and prescribe temporary emergency stabilization treatments to protect the land quickly and effectively. **BAER** assessments usually begin before a wildfire has been fully contained.

The **BAER** assessment team conducts field surveys and uses science-based models to rapidly evaluate and assess the burned area and prescribe emergency stabilization treatments. The team generates a "**Soil Burn Severity**" map by using satellite imagery which is then validated and adjusted by **BAER** team field surveys to assess watershed conditions and watershed response to the fire. The map identifies areas of soil burn severity by categories of low/unburned, moderate, and high which may correspond to a projected increase in watershed response.

The **BAER** team presents these findings in an assessment report that identifies immediate and emergency actions needed to address post-fire risks to life and safety, property, cultural and critical natural resources. The **BAER** report describes watershed pre- and post-fire response information, areas of concern for life and property, and recommended short-term emergency stabilization treatments for **Forest Service** lands that burned.

In most cases, only a portion of the burned area is actually treated. Severely burned areas, steep slopes, places where water run-off will be excessive, fragile slopes above buildings, roads, municipal water supplies, and other valuable facilities are focus areas and described in the **BAER** assessment report as values-at-risk. Time is critical if the emergency stabilization treatments are to be effective.

There are a variety of emergency stabilization treatments that the **BAER** team can recommend for **Forest Service** land such as: Seeding or mulching with agricultural straw or chipped wood, construction of check dams in small tributaries, and digging of below-grade pits to catch runoff and store soil sediment to keep roads and bridges from washing out during floods. The team may also recommend modification of existing drainage structures by installing debris traps, enlarging culverts, installing stand-up inlet pipes to allow drainage to flow if culverts become plugged, adding additional culverts, installing rolling dips, and constructing emergency spillways.

The Cans and Cannots of BAER:

What BAER Can Do:		What BAER Cannot Do:
Install water or erosion control devices.		
Plant for erosion control or stability reasons.		Replant commercial forests or grass for forage.
Install erosion control measures at critical cultural sites.		Excavate and interpret cultural sites.
Install temporary barriers to protect critical resources or for safety		Replace burned pasture fences.
Install warning signs.		Install interpretive signs.
Replace minor safety related facilities.		Replace burned buildings, bridges, corrals, etc.
Install appropriate-sized drainage features on roads, trails.		Repair roads damaged by floods after fire.
Remove critical safety hazards.		
Prevent unacceptable risk to T&E habitat.		Replace burned habitat.
Monitor BAER treatments.		Monitor fire effects.
Monitor for new populations of noxious weeds & treat as needed.		Treat pre-existing noxious weeds.

BAER Funding:

Wildfire Suppression funds are authorized for **BAER** activities and the amount of these expenses varies with the severity of the fire season. Some years see little **BAER** activity while other years are extremely busy.

Because of the emergency nature of **BAE**R, initial requests for funding of proposed **BAER** treatments are supposed to be submitted by the Forest Supervisor to the Regional Office within 7 days of total containment of the fire. For most regions, the Regional Forester's authority for individual **BAER** projects is $500,000. Approval for **BAER** projects exceeding this limit is forwarded onto the Washington Office.

BAER Interagency Coordination:

Multiple agencies work with the **BAER** team and look at the full scope and scale of the situation to reduce the potential threats to life and property; however, **BAER** treatments cannot prevent all of the potential downstream flooding or soil erosion impacts, especially after wildfires change the landscape. So it is important that the public is informed and prepared for potential increased run-off events.

One of the most effective **BAER** strategies is interagency coordination with local cooperators who assist affected businesses, homes, and landowners prepare for rain events. The **Forest Service** and the **Natural Resources Conservation Service (NRCS)** work together and coordinate with local agencies and counties that assist landowners in preparing for potential run-off.

BAER assessment plans and implementation of the **BAER** emergency treatments are a cooperating and coordinated effort between many federal agencies such as the **Forest Service**, **NRCS** , **National Park Service**, **Bureau of Land Management**, **U.S. Fish and Wildlife Service**, **Bureau of Indian Affairs**, **U.S. Geological Survey**, and **National Weather Service**, also including state, tribal governments, local agencies, and emergency management departments. It is important that **BAER** coordinates its assessment and treatment implementation with all affected and interested cooperating agencies and organizations regarding other emergency response, post-fire recovery and restoration efforts.

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