Tribal Nonpoint Source Pollution: Best Management Practices After a Wildfire

U.S. Environmental Protection Agency Pacific Southwest / Region 9

Water Division
Tribal Clean Water Section | June 2023

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Introduction

Section §319 of the Clean Water Act (CWA) funds over 200 tribal nonpoint source (NPS) programs across the United States, 112 of which are in EPA's Region 9 (California, Arizona, and Nevada). The water quality impacts of wildfire are an increasing nonpoint source challenge in the arid west, particularly in rural and forested areas that are home to many tribal communities. Some of the water quality impacts of wildfires include sedimentation, nutrient enrichment, pH changes, increased water temperature, and contamination of waterways.

This factsheet explores the Best Management Practices (BMPs) following a wildfire in three main categories: (1) rapid assessment of burned watersheds, (2) erosion control, and (3) long-term recovery and restoration plans. Tribes can use §319 funds to install BMPs to address pollutants in ash, minimize erosion, and replant burned areas. Remediation actions may be funded under CWA Section §319 when included in a tribe's NPS Assessment Report and Management Plan (AR&MP) and showing the link to water quality protection or restoration.

Best Management Practices

Section §319 funding can help tribes plan for and/or recover from a wildfire event. For safety's sake, please be sure to take precautions to ensure the fire is fully extinguished and the land is stable before you return to burned areas and take recovery steps. Establishing a point of contact who leads the development and execution of a fire plan, is crucial.

Are You Ready? Things to Assess for Fire Preparedness and Recovery Capacity:

- ❑ Wildfire hazard and response capability, including traditional cultural knowledge and practice
- ❑ Community and culturally significant structures and values at risk
- ❑ Residential and commercial, public properties at risk
- ❑ Community plans and ordinance
- ❑ Wildfire mitigation/risk reduction programs
- ❑ Human and Financial Resources
- ❑ Community outreach and input

Source: https://fireadaptednetwork.org/resources/

01. Rapid assessment post-fire

Rapid assessments immediately after a fire event are critical to the success of recovery. While the Bureau of Indian Affairs (BIA) usually coordinates on post-fire assessment when tribal lands are within or downgradient from a burn scar, tribes can contact their local Bureau of Indian Affairs office to request that a Burned Area Emergency Response (BAER) team produce a BAER report. Tribes can request access to BAER within 1-7 days after fire containment, and the Rapid Assessment of Vegetation Condition after Wildfire within 30-45 days after fire containment. BAER and other assessment tools, such as the Burn Severity Map, can provide tribes quick impact analysis on burned areas and identify immediate water pollution concerns. As an alternative to BAER, tribes can consider drones, a common cost-efficient tool eligible under §319, for a quick assessment. FEMA's Fire Management Assistance Grant also have post-fire assistance available for federally recognized tribal governments.

Examples of 319-Eligible Activities

- **Restoration**: Revegetation with traditional or native plants, removal of invasive species or dry brush, prescribed and controlled fires, or installation of straw wattles or similar erosion controls.
- **Equipment**: Purchase personal protective equipment (PPE) for fire management such as helmets, firefighter packs, gloves, or forestry management tools such as monitoring drones, radios, flashlights, signs, chainsaws.
- **Education**: Train staff on wildfire management for water quality protection or restoration objectives.

Biological monitoring training at Ackerman Creek at Pinoleville Pomo Nation.

02. Erosion control: slope stabilization

Soil erosion is a significant concern for water quality after fires. Ash and other fine particles change soil structure, which often results in soil sealing and water repellency. Intense rainfall can then more easily mobilize these soils and debris, threatening waterbodies downslope. Debris flows can clog waterways and increase flash flood risks, and hazardous compounds can leach into surface or ground water. It is therefore critical to address slope stabilization as soon as it is safe to do.

Burn severity assessments may be used to target restoration and revegetation activities. The first 30 days often focus on local recovery group formation and conducting initial risk and damage assessments. Over the remainder of that year, communities can focus on funding allocation, initial slope stabilization actions, and project implementation, many of which are CWA §319 eligible.

03. Long-term recovery & restoration planning

Two or more years after the initial burn, long-term recovery and restoration should focus on lands that are unlikely to recover naturally. Ongoing monitoring is critical to the long-term restoration strategy, and EPA and other federal agencies have resources to help. The U.S. Forest Service has resources such as its Monitoring Trends in Burn Severity (MTBS) mapping tools for fires over 1,000 acres.[1] The National Oceanic and Atmospheric Administration (NOAA) can provide burn scar flooding monitoring, flood alerts, runoff impact estimates, and local now casts (short-term weather forecast)[2]. EPA funding through §319 can support restoration and planning actions such as:

- Reforestation - Planting or seeding
- Updating Nonpoint Source AR&MP
- Monitoring fire effects on water quality

Straw wattles staked perpendicular to a slope can minimize soil loss.

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https://www.epa.gov/tribal-pacific-sw/r9tribalcwa

[1] MTBS, https://mtbs.gov/

[2] NOAA, https://www.noaa.gov/noaa-wildfire/after-fire