



Adapting to a New Fire Future

A new recommendations report for fire management on the Kaibab Plateau and the Grand Canyon's North Rim

EXECUTIVE SUMMARY

The Kaibab Plateau of northern Arizona is poised for substantial ecological change over the coming decades as a more arid regional climate, a century of fire exclusion, and an increasingly intense fire future converge. The long-term fire trajectory on the Kaibab Plateau foretells large, high-severity fires over the next one to three decades, short-interval reburns, and emerging vegetation shifts — all of which management can shape.

Given this trajectory, fire management grounded in proactive forest restoration, best available science, and Indigenous and local knowledge could lead to healthier, more climate-adapted forests. The 2025 White Sage and Dragon Bravo fires, which burned nearly 204,500 acres of public lands on the Kaibab Plateau, made clear that the time to act is now. These fires also highlighted the resilience of local communities and their reciprocal connection with the land, pointing to a strong foundation for future collaboration and forward-thinking actions.

The Kaibab Plateau is managed by the Kaibab National Forest, Grand Canyon National Park, and the Bureau of Land Management Arizona Strip Field Office. Its high-elevation forests include pinyon and juniper woodlands along its flanks, montane ponderosa pine woodland atop the plateau, and mixed conifer with spruce and fir at the highest

reaches. The region's complicated history of logging, periodic insect outbreaks, drought, and fire exclusion, and a recent dramatic escalation of wildfire activity overlay these multiple jurisdictions and forest types and underscore how critically important strategic and coordinated stewardship will be on the Kaibab Plateau in the coming decades.

The plateau holds rare old-growth ponderosa, biodiverse seeps and springs, key habitat for imperiled and endemic species, and more. And its cultural values are irreplaceable — from ancient archaeological artifacts and plants imbued with medicinal, ceremonial, or craft importance, to places of great cultural significance to local tribes. The plateau's cultural and ecological relevance is also a major factor in northern Arizona and southern Utah economies. As many as 400,000 visitors traverse the plateau en route to the north rim of the Grand Canyon annually.



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With these multiple jurisdictions, varied vegetation types, and landscape values in mind, this report sets forth 12 recommendations for supporting post-fire recovery and ongoing forest and fire management to sustain the ecological values and resilience of the Kaibab Plateau. To inform these recommendations, the report weighs future fire, forest, and climate trajectories. Recommendations are based on the three



Wildfire smoke on the north rim of the Grand Canyon. PHOTO: RAVEN CHAVEZ

dominant forest types: ponderosa pine, pinyon and juniper woodland, and mixed conifer. Management decisions must be grounded in local knowledge and meaningful engagement with tribes, and the public. Co-stewardship with associated tribes across planning and decision-making must be folded into the cross-agency collaboration needed to steward the Kaibab Plateau into the future, including leveraging beneficial fire. Because the landscape is divided among the Kaibab National Forest, Grand Canyon National Park, and the Bureau of Land Management Arizona Strip Field Office, managing future fire across it requires a planning framework intended to span boundaries. Monitoring and adaptive management are integral to the success of these recommendations.

The 2025 fires, which devastated the North Rim, are part of an accelerating trend of large, high-severity fire that is reshaping much of the western U.S. The decisions made now and following the inevitable next fires will shape the plateau for years to come. The most ecologically sound path forward in this warming and drying era is neither striving for past conditions that are no longer tenable nor doing nothing. Instead, that path calls for forward-looking, collaborative stewardship that reads the landscape closely, relies on the best-available conservation science joined with Indigenous knowledge, plans across boundaries, and embraces strategic reforestation and beneficial fire.



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READ THE FULL REPORT:

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SUMMARY OF RECOMMENDATIONS

These 12 proactive and scientifically grounded recommendations are designed to support post-fire recovery following the 2025 White Sage and Dragon Bravo fires and ongoing forest and fire stewardship to promote and sustain the ecological resilience of the Kaibab Plateau.

RECOMMENDATION 1:

Meaningfully **include local tribes in co-stewardship** of the Kaibab Plateau.

Supporting tribal co-stewardship calls on land managers to uphold tribal consultation but also to expand beyond “check-the-box” practices to fulfill the federal trust responsibility to tribal nations. This includes uplifting shared authority across planning, decision-making, implementation, and monitoring of forest and fire management actions.

RECOMMENDATION 2:

Retain use of beneficial fire as a key management tool and prioritize actions that move forests toward ecologically grounded fire regimes.

Land management objectives should strive to return more frequent, low-intensity fire patterns to ponderosa pine and dry mixed conifer forests using beneficial fire as a key tool. In pinyon and juniper forests, mitigation of invasive annual species should remain the priority while in more moist spruce and fir forests, patchy forest structure should be promoted.

RECOMMENDATION 3:

Pursue management actions that restore fire-resistant forest structure and heterogeneity and **protect large and old trees**.

Forest restoration actions that involve tree removal should focus on large and old tree retention, thinning from below, and heterogeneous forest-structure targets. They should be paired with prescribed or managed fire to achieve the greatest reductions in the risk of uncharacteristically severe wildfire.

RECOMMENDATION 4:

Consult with tribes to identify and **safeguard cultural resources** proactively and defensively.

Land managers cannot protect what they do not recognize. Managers should consult with tribes and conduct field visits to identify cultural resources and places that can be surveyed and protected in the event of fire.

RECOMMENDATION 5:

Protect and, where appropriate, **restore wetlands and wet meadows** to reduce severe wildfire risk, safeguard culturally important areas, and support overall forest health.

Wetlands and wet meadows should be proactively protected and restored for their fire break potential, water retention functions, and cultural significance. These ecosystems should be excluded, with buffers, from ground-disturbing management activities, including rerouting logging roads where needed.

RECOMMENDATION 6:

Apply specific safeguards to sensitive species with all forest restoration and fire management actions.

Forest thinning and other fire management actions should apply specific safeguards to sensitive, rare, and endemic species. This includes meeting forest-structure and tree-retention targets that support the habitat requisites of the American goshawk, Mexican spotted owl, pinyon jay, Kaibab squirrel, and others, as well as timing operations to avoid disruptions to breeding seasons.

RECOMMENDATION 7:

Minimize disturbance of post-fire forest structure to **support early-stage recovery** by native, fire-adapted plants and wildlife.

After fire, retaining surviving trees and other plants helps natural regeneration to take hold while retaining large, stable snags — standing dead trees — supports unique habitat for dependent wildlife. Intensive ground-disturbing actions soon after fire should be avoided as they can disrupt the regrowth of trees and other plants as well as negatively impact soils and site recovery.

RECOMMENDATION 8:

Define burned trees as hazardous based on public safety and infrastructure concerns, rather than by condition alone.

Public safety remains the top priority for post-fire land management. Standardized risk assessments should be used to evaluate the conditions of burned trees and identify those that pose a safety concern to ensure hazardous tree removal is targeted and efficient.

RECOMMENDATION 9:

Avoid broad-scale salvage logging and do not rely on it to reduce future fire risk.

Salvage logging should not be used as a general fire fuels-reduction tactic. Where tree removal is warranted, actions should be targeted and ecologically informed and follow best practices for minimizing impacts to habitats. Extensive salvage logging across a recovering landscape should be avoided and sensitive areas (e.g., wet meadows) should be entirely excluded.

RECOMMENDATION 10:

Pursue active reforestation where natural regeneration is unlikely and future climate conditions support native forest establishment.

Post-fire land management should allow for natural forest regeneration wherever it can occur. Where natural regeneration is unlikely, managers may consider planting native trees and leveraging on-the-ground assessments and decision support tools to locate sites and guide planting investments.

RECOMMENDATION 11:

Promote native plants and natural regeneration and mitigate invasive species spread in burned areas.

Best practices for mitigating invasive species, such as minimizing ground disturbance, should be applied throughout burned areas. Invasive species prevention should focus on on-the-ground monitoring as well as efforts to protect and restore biological soil crust and native plant species cover. Where natural understory regeneration is unlikely, seed with native-only mixes and avoid non-native seeding entirely.

RECOMMENDATION 12:

Manage public-land uses to support post-fire recovery and regeneration.

Because land uses of the Kaibab Plateau, such as recreation or grazing, can alter the recovery trajectory of post-fire landscapes, they should be limited around recovering burned areas. Monitoring post-fire vegetation recovery can inform and guide adaptive management.



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