

# WILDLAND FIRE USE IN ROADLESS AREAS: RESTORING ECOSYSTEMS AND REWILDING LANDSCAPES



Timothy Ingalsbee

In May 2000, the Forest Service released a proposal to protect roadless areas on the national forests and grasslands from degradation through future roadbuilding. The Roadless Area Conservation Draft Environmental Impact Statement, coupled with an unusually severe fire season in 2000, precipitated an unprecedented level of discussion and debate on wildland fire management in roadless wildlands.

The Forest Service's roadless area initiative reflects broad popular support for a new wildland management paradigm: protecting and restoring our public wildlands. In the next few years, several developments are possible:

- The final Roadless Area Conservation Rule will prohibit both logging and roadbuilding in roadless wildlands;
- Federal appropriations for the next decade will include increased funds for fire preparedness and fuels management programs; and
- A strong popular mandate will develop for restoring roadless wildlands degraded by past timber extraction and fire exclusion. However, conservationists will oppose mechanical fuels treatments, and rural communities will oppose large-scale prescribed fire treatments.

*Dr. Timothy Ingalsbee is the Director of the Western Fire Ecology Center, American Lands Alliance, Eugene, OR.*

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For argument's sake, let's suppose all this comes to pass. The traditional tools of intensive forest management—mechanical timber removal and prescribed fire—will then be highly constrained. How will roadless areas be protected and restored? The answer: through wildland fire use.

## New Definition, New Vision

Fire management to protect and restore roadless wildlands will require a new definition of suppression as part of ecosystem fire restoration. The old view of suppression as the “moral equivalent of war,” complete with military-style terminology such as “fighting” fire and initial “attack,” will have to change into something more reflective of a restoration ethos. Indeed, in a new system that promotes wildland fire use for *restoration* benefits, suppression will no longer be defined as limiting the temporal or spatial extent of fires, but rather as lowering the intensity of fire behavior and the severity of fire effects. Consequently, the category “acres burned” will become less relevant except in connection with the qualitative analysis of fire behavior and effects; acres burned will be

associated with high, moderate, or low intensity and severity.

Ironically, fire managers might be rewarded for increasing the number of acres burned by wildland fires. If and when suppression actions become necessary, they will serve long-term, planned ecosystem restoration goals, not short-term fire containment objectives. Indeed, fire managers might be more interested in promoting fires in roadless wildlands than in preventing or suppressing them. If there is a place for aggressive suppression, it will be near human communities where lives and property are at stake—not in roadless wildlands that depend on the restoration of wildland fire.

## Converting Firefighters into Fire Lighters

In practice, firefighting in roadless wildlands will become something more akin to fire lighting. Burning out has already become the tool of choice for suppressing wildland fires in roadless areas. Backfiring poses less danger to firefighters in the steep, rugged terrain of most roadless areas than fireline containment. Incident commanders are increasingly ordering more backfires and large-scale burnout

operations, usually with the intention of containing fires along major ridges or perimeter roads.

Some backfires have been excessively severe, ignited with the intention of complete consumption “from ground to crown.” Moreover, creating contiguous blocks of burned soil and vegetation through large-scale burnout operations can reduce fire’s benefits in maintaining biological, structural, and stand age diversity. Eliminating those “green islands” of unburned fuel adversely affects refugia for wildlife and soil microorganisms—vital agents in natural postfire recovery processes. The scale of backburning will likely be vastly increased in order to manage wildland fire use for resource benefits in roadless areas. But backburns should be “sloppy”—ignited in a mindset of sensitive restoration, not aggressive suppression.

In the new paradigm of ecosystem fire restoration, the vanguard of roadless area fire management will be smokejumpers, helitacks, and hotshots. These are the best trained, best equipped, most physically fit firefighters. Comfortable with igniting fires, they are the most capable of managing wildland fires for resource benefits in roadless areas.

Given a new mandate to promote wildland fires, professional firefighters such as smokejumpers will no longer have to apologize for “milking” fires; on the contrary, they will be able to assert with pride their competency in maintaining low-severity fires. Minimum-impact suppression tactics will become the norm rather than the exception. Light burning—the predecessor of prescribed burning,

all but suppressed when the Forest Service began systematic fire control—will revive, evolving into a kind of landscape art form. In the new fire restoration regime, firefighters will more accurately be called pyrotechnicians for their skill in using the best available science and technology to manage wildland fires in roadless areas.

## Fire Management Planning

The Federal Wildland Fire Management Policy (USDA/USDI 1995) mandates the development of fire management plans (FMP’s) for all areas subject to wildland fires. Unfortunately, according to a high-level Forest Service report (F&AM 2000), “Fire management planning has not been a priority, with less than 5 percent (5%) of the National Forests having current, approved fire plans. The agency is not in compliance with the National Fire Management Policy.” Without FMP’s, fire managers have no choice but to aggressively suppress all wildland fires, regardless of location, size, intensity, and predicted behavior or effects. This can result in unnecessary economic costs and environmental impacts associated with aggressive suppression—not to mention hazards to firefighters.

With an approved FMP, managers will be able to implement an appropriate management response (AMR) to wildland fires. The AMR, a term introduced in the Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide (NIFC 1998), reflects the new paradigm of managing wildland fire for the desired future condition of the land. The AMR allows a full range of fire management strategies and tactics to be employed on a single

fire. For example, where a portion of a wildland fire threatens to burn into a populated area, aggressive suppression can be used; whereas another portion of the same fire burning in roadless wildlands might simply be monitored as long as the fire conforms to prescribed behavior and effects. Although most management activities will likely be severely constrained in roadless areas, fire management planning will offer many opportunities for ecosystem restoration.

Indeed, fire management planning will likely become a primary focus of roadless area managers, especially if Congress approves significant funding increases for fuels management programs. FMP’s will not only include current fuels surveys and data on historical fires, weather, and terrain, but also outputs from fire simulation models that are run under various



*Bunchgrass Ridge, burned by the 1991 Warner Creek Fire in the Cornpatch Inventoried Roadless Area, Willamette National Forest, OR. The fire helped reduce fir encroachment—a product of fire exclusion policies—and restore ridgetop meadows. Photo: Timothy Ingalsbee, Eugene, OR.*

scenarios. A key component will be information on special resources and sensitive sites (such as riparian areas, fragile soils, and habitat for endangered species) where aggressive suppression will be prohibited. A complete “go/no-go” checklist will allow Federal personnel to utilize the FMP, develop a wildland fire situation analysis, and (as appropriate) select an AMR favoring wildland fire use on some or all portions of a roadless area fire. Winter could become the busiest time of the year for fire staff as they collate data bases, play fire simulation games, and develop FMP’s in hopeful anticipation of the next summer’s fires.

## From Roads to Trails

Conventional wisdom has it that roads are great assets for wildland fire suppression. However, the scientific analysis behind the Forest Service’s roadless area initiative reveals that the net effect of forest roads is to increase the rate of human-caused ignitions,

thereby undermining fire prevention efforts (USDA Forest Service 2000). Roads are also vectors for the spread of flammable invasive weeds. Any benefits from roads in facilitating wildland fire suppression are offset by the tendency of roads to undermine fire prevention efforts.

Fire and fuels management are important but subordinate parts of protecting wildlands and restoring ecosystems. The scientific assessments for the Interior Columbia Basin Ecosystem Management Project concluded that unroaded and unlogged subbasins have a higher ecological integrity and greater fire resiliency than roaded and logged subbasins (Quigley and Arbelbide 1997). Accordingly, roads are liabilities for roadless area protection, not assets. The future of forest conservation lies not only in keeping out new roads, but also in taking out old roads to rewild roadless landscapes.

Moreover, roads are unnecessary for wildland fire management. Aviation resources are fully capable of ferrying fire crews to remote areas. Using longlines and cargo nets, helicopters can deliver all the supplies needed for suppression at remote sites. Helicopters can even deliver complete water systems, including foldatanks, pumps, hoselays, and the water itself. Large base fire camps, with their associated costs, will become increasingly unnecessary, especially on wildland fires in roadless areas. Smaller spike camps and coyote tactics will become the norm, saving time and money and avoiding the hazards of vehicular traffic—a high cause of firefighter fatalities and injuries (Mangan 1999). Most firefighters prefer the peace and quiet of an isolated spike camp to the cacophony of a large fire camp.

Opponents of the Forest Service’s roadless area initiative raise the specter of a huge “land lockup.” To the contrary, the future will see an active program of constructing hiking trails and locating helispots in roadless areas to promote ecosystem fire restoration. Hiking trails will provide critical infrastructure for fire use operations, giving hand crews access to strategic areas and serving as minimal-impact firing and holding lines for large-scale wildland fire use.

Helispots, however, must be carefully located to avoid significant environmental or aesthetic impacts. Helispots should not be small clearcuts in dense stands. Instead, they should be located in natural clearings, such as ridgetop meadows or rock outcrops suitable for safe landing and loading zones, where maintenance costs and impacts remain minimal.



*Kelsey Ridge, burned by the 1991 Warner Creek Fire in the Cornpatch Inventoried Roadless Area, Willamette National Forest, OR. Roadcuts and clearcuts intruding into roadless areas can cause more adverse impacts than do fires, including the degradation of scenic values. Photo: Timothy Ingalsbee, Eugene, OR.*

Well-situated hiking trails and helispots, planned long in advance, will prevent the adverse environmental impacts that now occur when helispots are hastily built for aggressive suppression. Moreover, hiking trails and helispots in roadless areas will have multiple uses, including recreation, research, and restoration work. Unlike proposals for new road construction, a program to construct hiking trails and locate helispots in roadless areas might therefore enjoy broad public support.

## Wildland Fire Use: A Viable Alternative

In the future, if both mechanical fuels reduction and large-scale prescribed fire treatments in roadless areas face insurmountable public opposition, the only viable alternative for managing fuels will be through wildland fire use. This idea is not as farfetched as might seem. In 2000, when dozens of large fires were burning at once across the interior West, fires in roadless areas were often the lowest priority for dispatching personnel and equipment. Thinly stretched firefighting forces concentrated on fighting fires that threatened lives, homes, and communities. Backcountry fires in some roadless areas were carefully monitored and steered away from sensitive areas, but not actively suppressed. The National Fire Plan announced by the President in September 2000 reinforces the trend toward focusing on fires in the wildland–urban interface while managing remote fires through wildland fire use teams.

However, some fires in roadless and even wilderness areas have been actively suppressed. For

example, the 1999 Big Bar Complex Fire on the Shasta–Trinity National Forest in northern California and the Kirk Complex Fire on the Los Padres National Forest in southern California were both lightning-caused wildland fires in wilderness or roadless areas. Suppressing the two fires cost a total of \$178 million—fully 30 percent of the Forest Service’s national suppression budget in 1999—and caused considerable environmental damage (F&AM 2000).

As information about the economic costs and environmental impacts of these and other suppression efforts in roadless areas are revealed, a public outcry might ensue against future similar practices. Conservationists will likely demand a “let-burn” policy in roadless and wilderness areas. Given the widespread public prejudice against the “let-burn” concept, it behooves fire managers to explain the merits of wildland fire use for ecosystem restoration benefits to the public, politicians, and fellow government employees.

## Ecosystem Fire Restoration

As lands with the highest ecological integrity and best fire resiliency, roadless areas offer great opportunities to demonstrate progressive fire and fuels management programs serving wildland protection and ecosystem restoration. A first step will be to abandon our military metaphors and aggressive contain-and-control models of suppression. Compliance with the Federal Wildland Fire Management Policy, new fire management planning, and improved firefighter training in

burning techniques will also be strategic necessities.

Land management agencies will need to move beyond “balancing” prevention, suppression, and prescription programs. They will need to create a fully integrated fire shop that incorporates each leg of the triad—prevention, suppression, and prescription—on perhaps every wildland fire. Above all, fire managers will need to approach their work with sensitivity and humility, working with—not against—natural processes and human communities. In time, society and its public land stewards will come to realize that ecosystem fire restoration is a labor of love, not an act of war.

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IN AREAS  
WITHOUT ROADS**



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