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Science & Policy Report

Managing the Landscape for Fire: A Three-Zone, Landscape-Scale Fire Management Strategy

Background

Fire has shaped America's public lands for millennia. From ponderosa pine forests that burn every few decades to spruce-fir stands that erupt into flame every few centuries, most forests have evolved with fire and depend on periodic blazes for their health and regeneration. Fire is such an important force in U. S. ecosystems that vegetation and fire cannot be described independently.

Just as vegetation and fire are intimately connected, land management and fire management must also be inextricably linked. In the last decade, policymakers and forestry experts have come to recognize that a century of fire suppression policies have created a "crisis" in forest health, starving fire-dependent ecosystems of regular fire cycles and creating unhealthy fuel loads that can lead to unnaturally large wildfires in some places. All too often, however, land and resource management plans (LRMPs), the documents that guide all major decisions affecting federal lands, are devised with only cursory consideration of the important ongoing role of fire in the landscape. Even though broad scientific consensus now exists regarding the crucial role fire plays in ecosystem sustainability, few LRMPs specifically address fire management needs.

Because of the intimate connection between land and fire, LRMPs must themselves be fire plans, and land

PHOTO BY KAREN WATTENMAKER

Wind-driven crown fires are a natural part of the ecology of Alaska's boreal forest. The homeowners who survived this fire adapted their surroundings to fit the ecology of the landscape.

managers must work to accommodate fire in the development of all LRMPs. If LRMPs fail to account for the role of fire on a landscape scale, other management failures are sure to follow. For example, timber production schedules must take into account the certainty of fire, or else inevitable fires will foil expectations by consuming growing stock and reducing future harvests. Similarly, landscape-scale objectives, like the maintenance of sufficient wildlife habitat to sustain viable populations, can only be achieved by relying on the landscape-scale process of fire. LRMPs must be developed to account for natural fire and use it wherever possible to achieve plan objectives. Public lands, with their large tracts of undeveloped areas, provide federal agencies with a vital opportunity to use natural fire to achieve social and ecological goals.

This report outlines a simple model to address wildland fire comprehensively across landscapes and describes how that model may be applied to the development of LRMPs.

Key Points

- Land and Resource Management Plans (LRMPs) too often fail to incorporate fire management as an essential part of the planning process, giving only cursory consideration to the important role of fire in the landscape.
- Federal agencies should standardize the inclusion of fire-management goals into LRMPs by using a three-zone strategy that helps managers determine the appropriate level of mitigation against, preparation for, and response to, the inevitable wildland fire.
- The "Community Fire Planning Zone" (CFPZ) is the area within a half-mile of communities in which fire should generally be excluded. Land managers should seek opportunities to improve public safety through infrastructure improvement and fuel treatment to protect homes.
- The "Wildfire Resilience Zone" (WRZ) extends a few miles beyond the CFPZ to a distance where it is safe to consider management approaches in addition to aggressive initial attack. Within the WRZ, suppression will be the response to unplanned fire, but prescribed fire and mechanical thinning may be used to protect critical resource values and restore conditions that are resilient to inevitable fires.
- The "Fire Use Emphasis Zone" (FUEZ) is the area beyond the WRZ, where the full range of management responses to fire (from suppression to allowing natural fire) is possible. In these wilderness, roadless, and remote roaded areas, priority should be placed on Wildland Fire Use for Resource Benefit (WFU) when conditions allow.
- The development of such landscape-scale fire management classifications requires creation of a map that clearly demarcates the three zones using a combination of readily available national and statewide GIS spatial data and local expertise.

Landscape Fire Planning Zones

Land and resource management plans are, at their core, documents that define relationships between landscapes and people. In any landscape, there are three situations with regard to communities and fire.

- First, there are those situations where fire has the potential to cause great damage to people and homes, and should always be excluded. Areas where wildlands come into contact with communities — the wildland-urban interface — are an example.
- Second, there are places where fire can be used as a tool to reduce fuels and restore ecosystems, but only under tightly prescribed conditions.
- Third, there are places where fire poses little risk to people and resources, and natural fires can actually help achieve management objectives, such as fuel reduction and provision of wildlife habitat.

We recommend that federal agencies develop a landscape-scale, three-zone fire management strategy across each administrative unit that reflects these three situations, and that they incorporate these zones into all LRMPs (Fig. 1; see e.g. DellaSala et al. 2004).

The "Community Fire Planning Zone" (CFPZ) exists immediately adjacent to communities and is managed for their protection.

The "Wildfire Resilience Zone" (WRZ) occurs beyond the CFPZ for

some distance (a few miles) and is managed to minimize unplanned fire (through suppression or containment) but also to restore conditions that are ecologically resilient to inevitable fires.

Beyond those zones, the full range of management responses to fire (from suppression to allowing natural fire) is possible, but a priority is placed on Wildland Fire Use for Resource Benefit (WFU). This area is called the "Fire Use Emphasis Zone" (FUEZ) to reflect the preference for WFU when conditions allow.

By developing LRMPs with fire in mind, LRMPs can serve as practical templates for subsequently developed Fire Management Plans (FMPs). FMPs are planning documents required by policy for all federal lands with burnable vegetation (USDA Forest Service et al. 2001). They provide the strategic foundation for all fire-related management activities on a given land management unit before, during, and after a wildland fire. FMPs are developed to aid implementation of the LRMP and must be consistent with all land designations made in the LRMP.

These three planning zones can improve management of public lands by focusing resources where they are most needed and helping to restore natural processes to those lands that can benefit from the restoration of natural fire regimes.

The Community Fire Planning Zone (CFPZ)

The highest priority of fire management must be the protection of people and their homes, and LRMPs must be structured to support this goal. Thus, the first step in designing a plan that addresses fire is to identify the "Community Fire Planning Zone," the area around communities that should be managed to protect homes and structures from wildland fire. This zone is sometimes called the "wildland-urban interface," but Community Fire Planning Zone (CFPZ) better conveys the overriding objective of community protection. The CFPZ is that area in and around communities that should be examined for opportunities to improve public safety through infrastructure improvement and fuel treatment to protect homes. It will not be necessary to treat fuels everywhere within that zone, but quantifying the extent of the area where communities are at risk from wildland fire can help focus community protection efforts.

It has been demonstrated that the most effective way to protect homes is to

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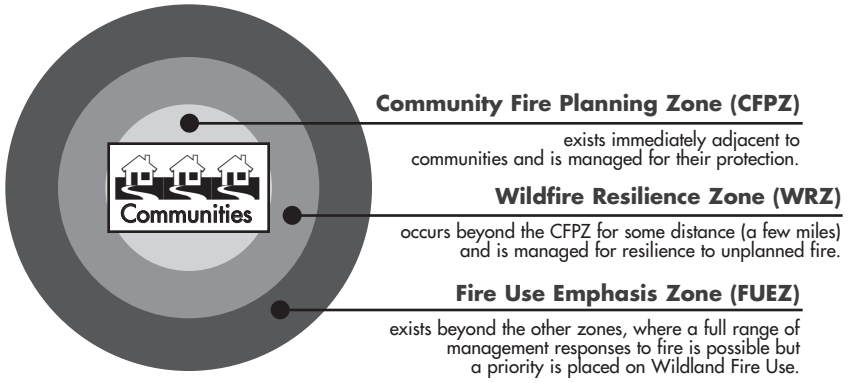
The CFPZ is managed to make suppression operations safer and more effective.

FIGURE 1.

Landscape Fire Planning Zones



A narrow "home ignitability zone" determines whether a home will burn.

build them out of fire-resistant materials and aggressively reduce nearby fuels. The simple principle behind this notion is that homes will not burn if they do not ignite, regardless of what happens to the surrounding forest, and research by the U.S. Forest Service has shown that a very narrow "home ignitability zone" of approximately 60 meters determines whether a home will burn. By clearing highly flammable fuels near homes, thinning small diameter trees within 60 meters of homes, and building with nonflammable materials, especially roofs, fire risk to homes can be dramatically reduced (Cohen and Butler 1998, Cohen 2000).

Beyond the 60-meter home ignitability zone, communities may wish to thin trees to create "defensible space" within which firefighters may work safely, to reduce the probability of crown fire and to protect scenic views or watershed quality. Nowicki (2002) applied rules of thumb developed by fire physicists and fire safety personnel to conclude that community protection zones of 400 meters could provide an area that would allow firefighters to work safely to protect structures.

In 2003, The Wilderness Society released a report, *The Wildland Fire Challenge* (Aplet and Wilmer 2003), which suggested that a maximum buffer distance of a half mile is generally sufficient to provide the latitude to adjust community fire planning zones to terrain, taking advantage of natural fuel breaks such as cliffs and rock outcrops. While there may occasionally be situations that require extension of the CFPZ to greater distances, we encourage the federal agencies generally to employ a CFPZ up to one-half mile beyond communities (Wilmer and Aplet 2005).

If there are situations where extending the width of the CFPZ helps improve community safety, it may fairly be asked, "Why limit the width of the CFPZ at all?" The answer is that management for community protection may compromise other resource objectives. Treating fuels to protect homes may result in unnatural forest conditions that diminish wildlife habitat, water quality, and aesthetics. It is therefore important to limit the CFPZ to the area where it will do the most good to protect homes. Narrowing the width of the CFPZ also helps to focus limited resources (money, personnel) where they will have the greatest impact.

It is important to emphasize here that this logic does not argue for clearing a half-mile buffer around every community. Rather, the CFPZ is the area within which to look for *opportunities* to treat fuels to protect homes. Not every type of vegetation will need to be treated, and there are some vegetation types, such as chaparral and subalpine forest, within which thinning will be only marginally effective at lowering the probability of crown fire. However, treatment near homes (and the use of fire-resistant building materials) can be very effective at increasing the chance that a home will survive the inevitable crown fire.

Efforts to map the wildland-urban interface or CFPZ have shown that

community protection is predominantly a private land challenge, but where the CFPZ overlaps with federal land, there is an important role for the federal agencies (Wilmer and Aplet 2005). Management within the CFPZ consists of actions that minimize the threat of fire to homes. Obviously, paramount among those actions is aggressive suppression when fires start. The CFPZ is a place where, ideally, fire is excluded. This task is enhanced by sufficient suppression infrastructure, such as hydrants and access roads, as well as suppression forces ready to attack at a moment's notice. It is also enhanced by fuel treatments, such as mowing and pruning, to minimize fine fuels that contribute to rapid fire spread.

But absolute fire exclusion is, unfortunately, wishful thinking. We will never be able to keep fire out of the CFPZ completely. Accordingly, precautions must be taken so that, when fire does eventually burn, it poses a minimal risk to homes. Such precautions include reducing tree density (thinning) near homes to reduce heat output during fires. Reducing heat output may keep homes from igniting and give firefighters the space they need to protect structures. Fortunately, many of these precautions have been formalized for public education through programs such as FIREWISE (see www.firewise.org).

Historian Stephen Pyne (2003) has called structure loss in the CFPZ "a dumb problem to have" because it is preventable. Within the CFPZ, we know what must be done to minimize fire risk; we simply need the will and the means to do it. Pyne imagines a future in which people are "active agents in shaping the fire regime of their surroundings, not simply passive victims and whining litigants."

Becoming an "active agent" can be achieved in two ways. First, homeowners must manage their property to minimize risks to their homes and their neighbors. Second, community members, including the federal agencies, must work together across ownerships to develop plans that meet community fire protection needs.

The Community Wildfire Protection Plan (CWPP) process, established in the

Where communities intermix with wildland fuels, community members must work together to devise a plan that achieves common goals for the CFPZ.

Healthy Forests Restoration Act of 2003, provides an excellent opportunity for citizens and agency managers to work together to achieve common goals for the CFPZ. CWPPs are to be developed by multiple stakeholders to identify and prioritize areas for hazardous fuel reduction and to recommend measures to reduce structural ignitions. Because CWPPs must be considered in the evaluation of federal fuel reduction projects, federal agencies should be part of every CWPP process involving communities whose CFPZ overlaps with federal land. Where these processes have not already begun, we encourage federal agencies to pull stakeholders together to develop these plans.

Various resources exist to help facilitate this engagement, including "A Handbook for Wildland-Urban Interface Communities: Preparing a Community Wildfire Protection Plan," developed by the Society of American Foresters, the National Association of State Foresters, the National Association of Counties, and the Communities Committee of the Seventh American Forest Congress.[1] The "Leaders' Guide for Developing a CWPP" by the International Association of Fire Chiefs, the National Association of State Foresters, and The Wilderness Society is also an excellent resource.[2]

The Wildfire Resilience Zone

The Wildfire Resilience Zone (WRZ) extends beyond the CFPZ to a distance where it is safe to consider additional management responses to fire as alternatives to aggressive initial attack. Within the WRZ, suppression will be the response to unplanned ignitions, but fire may also be introduced intentionally to achieve management objectives. There, the primary management objectives are the protection of critical resource values, such as recreation sites, experimental forests, and research natural areas, and the maintenance of forest composition and structure that is ecologically resilient when the inevitable fire occurs. Generally, this means modifying fuels to protect specific resources and restoring ecosystems, based on an understanding of the historical range of variability (HRV) (Landres et al. 1999). According to HRV theory, an ecosystem that burns with historically characteristic intensity should be resilient to fire and able to recover its prefire composition, structure, and function over time. Managing for resilience can be accomplished under a variety of management prescriptions for different land uses, from commodity production to roaded recreation to roadless areas to passive or active restoration.

While some may argue that the WRZ should be as broad as possible to facilitate resilience across the maximum extent of the landscape, there are many practical reasons to constrain the WRZ. First, the larger the WRZ, the more land must be managed under an obligatory suppression response, which has proven to be more difficult and expensive over time (USDI, BLM et al. 2005). Constraining the WRZ allows suppression forces to focus on a smaller portion of the landscape where they can be most effective. Second, as is the case in the CFPZ, fuel treatment incurs environmental impacts, such as increased soil erosion, that must be balanced against hazard reduction benefits. Third, fuel treatment is expensive and simply cannot be done everywhere. Generally, the value of the material removed through fuel treatment is less than the cost of treatment, so for the foreseeable future, fuel treatment, on federal land anyway, will need to be supported through taxpayer investments. Sound fiscal management requires that those investments be constrained.

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1 http://www.safnet.org/policyandpress/cwpphandbook.pdf

2 http://www.iafc.org/Grants/documents/CWPP_rev062005.pdf

PHOTO BY GREG APLET

Fuel treatment on the Deschutes National Forest in Oregon. Small-diameter trees were thinned to restore a fire-resilient forest structure. Fine fuels created by the thinning operation will be subsequently burned to reduce fire hazard.

Finally, to be effective, fuel treatment must be focused on the places where it is needed most. Throughout the West, the landscapes that are most in need of ecological restoration are those immediately adjacent to communities, often at the base of adjacent mountain ranges. These dry, low-elevation forests of ponderosa pine, Douglas-fir, and various oaks have been the most altered by fire exclusion, and are the most in need of thinning to restore a fire-tolerant forest structure. Constraining the WRZ to the area within a few miles of communities will help assure that these areas receive the restoration attention they need.

Management within the WRZ may be aimed at a number of objectives, including commodity production, visual resource management, recreation, and scientific study, but except in specific locations, such as campgrounds and experimental forests, management should adhere to principles of ecological restoration. One such set of principles can be found in the article "A Citizen's Call for Ecological Restoration: Forest Restoration Principles and Criteria" by DellaSala et al., published in Ecological Restoration in 2003. This article contains a number of sound ideas that should be applied to restoration planning. At the center of the document are three "core principles" upon which a good restoration plan should be based:

1. Ecological Forest Restoration Core Principle: Enhance ecological integrity by restoring natural processes and resiliency.
2. Ecological Economics Core Principle: Develop and employ economic incentives that protect or restore ecological integrity.
3. Communities and Work Force

Core Principle: Make use of or train a highly skilled, well-compensated work force to conduct restoration.

A LRMP is a solid restoration plan if it restores processes, such as vegetation development or characteristic hydrology and fire, not just forest structure, if it is based on an economics that recognizes ecological costs and benefits, not just market values, and if it contributes to the long-term viability of communities with a culture of environmental sustainability.

The Citizens' Forest Restoration Principles (DellaSala et al. 2003) offers a useful framework for forest restoration that, if incorporated into a broadly inclusive, collaborative planning process, can yield a comprehensive restoration plan. A simpler but also helpful set of guidelines is offered by Brown and Aplet (2000) in their paper "Restoring Forests and Reducing Fire Danger in the Intermountain West with Thinning and Fire." They offer several goals for restoration planning that can be summarized as follows:

1. Focus on water and watersheds;
2. Account for rare ecosystem elements;
3. Protect riparian areas;
4. Focus on low elevations;
5. Thin the smallest trees;
6. Treat fine fuels with prescribed fire;
7. Avoid disturbing soils; and
8. Avoid creating new roads and protect roadless areas.

These simple principles can form the basis of a sound program for the Wildfire Resilience Zone and should be employed in the development of a LRMP.

The Fire Use Emphasis Zone

In the Fire Use Emphasis Zone (FUEZ), the full suite of management responses to fire (including suppression and containment) may be appropriate under any given condition, but the intent is to maximize opportunities for Wildland Fire Use for Resource Benefit (WFU) where possible. WFU — managing naturally burning fires in designated, remote sections of the landscape — is widely accepted by scientists and policymakers as an important tool for helping to restore forest health and mitigating the escalating costs of fire suppression. However, in practice, WFU is rarely implemented because it is viewed by fire managers as too risky (Parsons 2000). The only way that the benefits of WFU can be realized over substantial areas is to allow natural fires to burn wherever safe. Designating a FUEZ — the area determined through rigorous analysis to be far enough away from communities that fire will not threaten structures or other highly valued resources — should increase managers' confidence to opt for WFU in the event of a natural ignition.

In order to implement WFU, federal policy requires the existence of a Fire Management Plan (FMP); without an FMP, all unplanned ignitions must be suppressed. Even with a plan in place that authorizes the use of fire in a given area, however, weather conditions, personnel availability, and other variables must be considered before a manager can make a definitive decision to use wildland fire to improve ecosystem condition. Once the initial decision is made, fire managers must constantly monitor and re-assess conditions to see if the fire begins to move out of prescription, at which point suppression will be ordered.

Identifying the specific conditions under which WFU might be appropriate requires detailed scientific and spatial analyses. Even in remote areas, such as the FUEZ, forest conditions, weather and wind factors may preclude the safe use of fire. WFU is only appropriate where the results of fire are likely to produce resource benefits. Generally, this requires a determination that fire behavior will be natural or historically typical for the location. To provide a sufficient basis for fire management, a LRMP would not need to include these detailed analyses, but the plan must provide sufficient latitude to

allow fire planners to identify the appropriate places for WFU in the subsequent FMP. Such latitude can be provided by making the FUEZ as big as possible.

Management prescriptions appropriate for the FUEZ range from wilderness and protection of roadless character in the roadless landscape to active restoration and protection of recreation sites in the roaded portion. Throughout this landscape, prescribed fire may be used to achieve a composition and structure that can accommodate natural fire. This is especially true for the roaded portion of the landscape, where existing roads can be used (possibly after thinning of adjacent fuels) to systematically reintroduce fire to the landscape.

In the roadless landscape, including wilderness, a higher burden of proof must be met prior to manipulation, including the use of prescribed fire. The Wilderness Act specifically requires meeting that burden through a Minimum Requirements Analysis, but the special values of roadless areas also demand that a high standard be met. As with suppression action, the Wilderness Act does not specifically prevent fuel management in wilderness, but actions proposed for any part of the roadless landscape must be carefully planned using excellent science and an inclusive public process. Because remote areas tend to be in higher-elevation, cooler vegetation types, less of the FUEZ is likely to be in low-severity-fire forest types that may require thinning or prescribed fire before natural fire will yield resource benefits. The vast majority will be in less-frequent fire regimes that will likely benefit from natural fire.

Fire management in the FUEZ should seek to maintain the natural character of the area, even in the roaded portion, and minimize impacts to aquatic, terrestrial, or watershed resources. Accordingly, Minimum Impact Suppression Tactics should be used throughout the FUEZ when suppression is the appropriate management response.

Mapping the Fire Landscape

Developing a LRMP that supports landscape-scale fire management requires the creation of a three-zone map representing the Community Fire Planning Zone, the Wildfire Resilience Zone, and the Fire Use Emphasis Zone. Creating such a map is a relatively simple matter that relies on a very few readily available spatial data sets:

1. U.S. Census 2000 data at the block level, representing the number of houses in each block.
2. High-resolution land ownership data.
3. Federal land administrative data showing the locations of wilderness, roadless areas, research natural areas, campgrounds, etc.
4. High-resolution vegetation cover data, representing non-wildland cover types and wildland vegetation types.

To develop a map of the CFPZ, we recommend identifying communities denser than one house per forty acres (the minimum density of a wildland-urban interface community, according to the January 4, 2001 Federal Register notice[3]) based on housing density calculated from modified Census 2000 blocks. Census blocks can be modified by subtracting public land and recalculating housing density based on the area of non-public land. Next, communities can be buffered by a half-mile to approximate the CFPZ (see discussion above). The buffered communities can be further refined by removing non-wildland cover types (water, barren, rock, agriculture, and urban land) from the buffered communities based on cover classes from the National Land

[3] "Urban wildland interface communities within the vicinity of Federal lands that are at high risk from wildfire" (*Federal Register* 66(3): 751-777, January 4, 2001).

Example: Clearwater and Nez Perce National Forests

The following map displays the Community Fire Planning Zone in the vicinity of the Clearwater and Nez Perce National Forests in Idaho, its overlap with the Forests, the Wildfire Resilience Zone within five miles of the CFPZ, and the Fire Use Emphasis Zone beyond the WRZ. On these Forests, the CFPZ amounts to only 3 percent of the landscape; the WRZ makes up about 29 percent, about a third of which is wilderness and roadless land, and the remaining 69 percent of the Forest is FUEZ. Seventy-nine percent of the FUEZ consists of wilderness and roadless areas, providing ample opportunity to apply Wildland Fire Use.

Landscape-Scale Fire Management on the Clearwater and Nez Perce National Forests

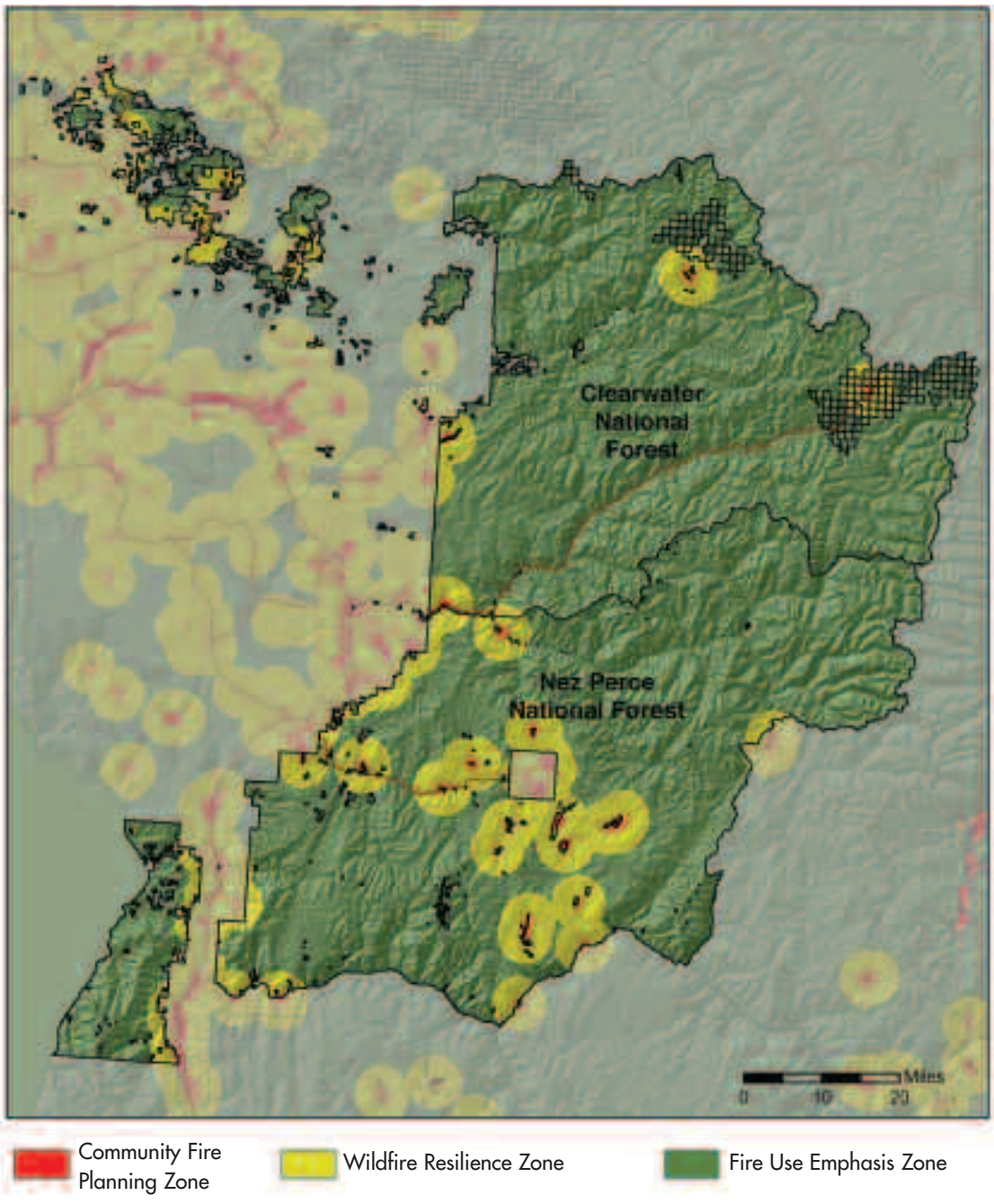

PHOTO BY BRYAN DAY

Prescribed fires, such as this one in Idaho's Upper Snake River District, managed by the Bureau of Land Management, can be used to manage fuels and restore ecosystems in both the WRZ and the FUEZ. Naturally ignited fires can be managed for their resource benefits in the FUEZ.

Cover Dataset or the best available locally derived cover data (http://landcover.usgs. gov/natllandcover. asp). Removal of these non-flammable cover types from the CFPZ helps keep fire protection planning focused on the portion of the landscape where treatment opportunities are greatest. The final map of the CFPZ represents natural vegetation within one-half- mile of communities. The portion occurring on federal land should be identified in the plan for treatment according to plans developed collaboratively between communities and the federal agencies.

Because this mapping method utilizes large national and statewide datasets, errors are bound to occur at local scales of application. One such error is the identification of unoccupied private parcels as communities when those private parcels are within a census block that meets the density threshold for selection as a "community." Because of the potential for errors, we highly recommend that the CFPZ be generated through a combination of GIS techniques and local expertise.

In general, the WRZ need not extend beyond about five miles from the CFPZ. While there will be cases where restoration is desirable beyond this distance, the majority of restoration opportunities will be found at the lowest elevations, in dry forests near communities. By establishing a five-mile-wide WRZ, restoration planning can be focused on the "frontcountry," where the need is clear and where there is less controversy over the use of thinning. With time, restoration efforts may be extended beyond the WRZ but these cases are a lower priority for the foreseeable future (i.e., the life of the plan).

Within a five-mile WRZ, a fair amount of the area can be expected to be wilderness and inventoried roadless area. While restoration treatment in wilderness is not prohibited by the Wilderness Act, the need for any proposed manipulation of wilderness carries a high burden of proof, which must be detailed in a Minimum Requirements Analysis. Such a burden of

proof should, with rare exception, make wilderness a low-priority candidate for treatment. Similarly, the Roadless Area Conservation Rule[4] and the "Bosworth letter"[5] place a high standard on entry of roadless areas. Both the Scientific Findings of the Interior Columbia Basin Ecosystem Management Project[6] and the EIS for the Roadless Rule[7] note that roadless areas are among the least ecologically altered parts of the landscape. Thus, roadless areas should also be lower priority candidates for restoration.

While wilderness and roadless areas should be mapped as low priority, some vegetation types seem to be good candidates for restoration. Forest types that historically experienced frequent fire have been identified in the scientific and management literature as the highest priority for fuel treatment. The Cohesive Strategy (Laverty and Williams 2000) sets a national programmatic goal to "[c]oncentrate projects in the shorter interval fire-adapted ecosystems" such as ponderosa pine forests that historically experienced frequent fire. Within these forests, stands of old-growth ponderosa pine with an understory of dense saplings have especially high restoration potential.

We expect that, in mapping priority areas for restoration, agency managers will feel under considerable pressure to utilize existing methods for discriminating Fire Regime Condition Class (FRCC) (Schmidt et al. 2002). We highly recommend against this course of action. Initial criticisms of FRCC methods are discussed by Aplet and Wilmer (2003), and we believe FRCC methods will not stand up to future scientific scrutiny. Rather than relying on these flawed methods, we suggest that agencies map short-interval, fire-adapted ecosystems, such as low-elevation ponderosa pine forests, as the highest priority places to assess project-specific restoration potential on a case-by-case basis.

While WFU is often confined to wilderness, there is no reason why fire cannot be used outside wilderness as well, wherever safe. Thus, the FUEZ may be mapped as everywhere beyond the WRZ, i.e., everywhere that is more than, for instance, five miles from the Community Fire Planning Zone. Within this area, wilderness, roadless areas, and remote roaded land provide excellent opportunities to plan for fire use. The extent of the FUEZ will vary regionally, depending on the degree of regional development. In some places, it may be virtually non-existent, while in others, it may dominate.

In some cases, fire plans may be in place at scales broader than the LRMP. For example, the Bureau of Land Management has been developing statewide FMPs to provide the context for land management planning. In such cases, we believe that the three-zone approach still provides a workable way to implement fire management goals identified at the broader scale.

Conclusion

The preceding sections of this report present a framework for wildland fire management, identify sources of data, and provide methods for allocating land to three fire management priorities. We believe that LRMPs will be better fire management documents if wildland fire is considered early in plan development, and we encourage federal agencies to apply this framework as they revise their plans to achieve fire-safe communities and healthy, fire-resilient ecosystems.

4 http://roadless.fs.fed.us/documents/rule/rule_fedreg.html

5 http://roadless.fs.fed.us/documents/1230_Roadless_Ltr.htm

6 http://www.fs.fed.us/pnw/publications/icbemp.shtml

7 http://roadless.fs.fed.us/documents/feis/

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