

Fire Process Research Natural Areas: Managing Research and Restoration of Dynamic Ecosystem Processes

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Abstract—Since 1992 a collaborative group of fire scientists, forest conservationists, and Federal resource specialists have been developing proposals for a Research Natural Area (RNA) in the Warner Creek Fire area on the Willamette National Forest in Oregon. Inspired by these proposals, the Oregon Natural Heritage Plan created the new category of “Fire Process RNAs” in order to protect landscape-scale areas for dynamic ecosystem disturbance and succession processes resulting from wildland fires. Fire Process RNAs have many values for basic wildland fire research, ecosystem restoration, biodiversity conservation, and public education. They are especially suited to frequent-fire ecosystems, such as the ponderosa pine ecosystems of the Southwest and could serve as important control areas for measuring the effects of managed restoration activities and broad-scale environmental change due to global warming. This paper will: (1) present some of the history and theory of the evolving Warner Fire Process RNA proposals; (2) discuss some of the social issues, scientific controversies, and management challenges involved with designing and managing Fire Process RNAs; and (3) present the Warner proposal and its public support as a model to advocate for a network of Fire Process RNAs throughout fire-prone ecosystems of the West.

Introduction

In October 1991, arsonists ignited the Warner Creek Fire inside a protected Habitat Conservation Area (HCA) managed for the northern spotted owl (*Strix occidentalis caurina*). The wildfire burned across 8,900 acres of public wildlands, including the entire 6,800 acre Cornpatch Inventoried Roadless Area. The Warner Creek Fire became the second largest, costliest wildfire in the history of the Willamette National Forest. Fearing that the fire-killed snags and logs posed a risk of potential future catastrophic wildfire, the Forest Service proposed extensive salvage logging in order to reduce fuel loads and construct fuel breaks. This sparked a firestorm of controversy among conservationists who feared copycat arson-for-salvage incidents would occur in other protected habitat reserves.

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Over the next 4 years, the Warner Salvage Sale became one of the most controversial, contested timber sales in the country. The Clinton Administration finally withdrew the timber sale in 1996, and no salvage logging ever occurred inside the wildfire area. Currently, the Warner Burn represents one of the rarest landscapes in the Cascadia bioregion: a roadless, mid-elevation, largely unmanaged burned forest containing both young natural stands and high-mortality old-growth stands.

During the conflict over the Warner Salvage Sale, a collaboration among fire scientists, forest conservationists, and Forest Service resource specialists proposed that the Warner Burn be managed as a Research Natural Area (RNA) in order to research and restore natural fire disturbance and succession processes. This idea was first articulated in “Alternative EF: Ecology of Fire” published in the Warner Fire Recovery Project’s Final Environmental Impact Statement. The Warner Creek Fire and Alternative EF inspired a formal revision of the Oregon Natural Heritage Plan that eventually created the new “Fire Process” RNAs. These were intended to protect large areas of public land for research, education, and restoration of dynamic ecosystem disturbance and recovery processes associated with wildland fire.

The vision of the Warner Fire Process RNA has been expanded in a more recent proposal that utilizes Conservation Biology principles to link the Warner Burn with five adjacent Inventoried Roadless Areas and two designated Wilderness Areas. This would form a landscape-scale fire ecology research complex suited to the fire regime of the westside Cascades. Anticipating future progressive developments in fire management philosophy and policy, proponents seek to develop a model fire management plan for the RNA that would facilitate research and restoration-oriented prescribed burning, wildland fire monitoring, innovative minimum-impact suppression techniques, and showcase fire ecology education in various interpretive trails and displays. However, as the Warner RNA Proposal evolves, it encounters increasingly complex social, scientific, and management issues that challenge not only our desires to “learn from the burn,” but also our abilities to live with wildland fire.

This paper discusses the development of the citizen-initiated Warner Fire Process RNA Proposal out of the Warner Creek Fire and the Warner Fire Recovery Project. I hope that this paper will inspire efforts to develop additional Fire Process RNA proposals in other regions, especially the ponderosa pine ecosystems of the Southwest. I also hope that this paper will reinforce the growing understanding among the fire community that basic fire ecology field research and education are strategic needs that can provide essential

management guides and critical public support for forest ecosystem restoration programs.

Warner Creek Fire

Ignited by arsonists during extreme drought conditions, the Warner Creek Fire entered the tree canopy almost from the point of ignition, and surged rapidly upslope. During a blow-up event, nearly 3,000 acres of prime spotted owl habitat were severely burned in a single afternoon. Stands of old-growth Douglas-fir, western hemlock, and western red cedar were completely scorched from ground to crown, affecting 42 percent of the burned acres. Another 25 percent of the area had some intermediate or mixed mortality ranging from 30–70 percent of the overstory trees. Approximately 33 percent of the area experienced a low-intensity underburn, removing most of the grasses, forbs, shrubs, and saplings, but causing little or no mortality of the overstory trees (Brown and others 1998: 4). This includes 512 acres that were completely unburned within the interior of the Warner burn, inside the designated old-growth grove located at the bottom of the Kelsey Creek basin. As the wildfire backed down the steep ridges, the fire was naturally extinguished when it entered the moist primeval forest in the valley bottom. Forest Service scientists later determined that fire has not burned in Kelsey Creek Basin for the last 850 years.

Although the Warner Creek Fire was ignited and propagated by unnatural ignition sources—criminal arsonists—the resulting mosaic of fire effects was representative of the natural fire regime of the westside Oregon Cascades. The fire was especially effective in restoring the ridgetop complex of dry meadows. These meadows were previously maintained by frequent lightning and Indian burning along the historic trail corridor atop Bunchgrass Ridge. Until the Warner Creek Fire, though, the meadows were declining due to fire exclusion. The elimination of Indian burning and aggressive suppression policies had both caused the meadows to shrink in size and species diversity. The wildfire killed many of the dense patches of young firs that were encroaching upon the meadows, and increased the vitality of the native bunchgrasses. For these and other reasons, the news media’s depiction of the Warner Creek Fire as “catastrophic” contradicted the ecological effects of the fire.

Warner Fire Recovery Project

Two weeks after the Warner Creek Fire was declared out, the Forest Service initiated the Warner Fire Recovery Project. The stated purpose and need for the project was to “recover spotted owl habitat” and “increase knowledge about owl habitat recovery.” The secondary underlying need—to increase knowledge—later proved vital in legitimizing an RNA alternative. The Forest Service’s Inter-Disciplinary Team (IDT) working on the recovery plan originally assumed that the Interagency Scientific Committee’s standards and guidelines for HCAs would prohibit salvage of any downed or standing trees (Thomas and others 1990: 325). Therefore, the IDT determined that the Project provided “an opportunity to set aside all or a portion of the fire area for studies of how both natural and managed landscapes respond to large scale fires (USDA-FS 1992: S-5).”

The category of Research Opportunities thus became a significant issue for analysis in the EIS. The idea of setting aside the Warner Burn for the study of natural fire recovery processes was quickly adopted by the public, including members of a special citizen advisory group organized by the Willamette National Forest to give regular input on the Recovery Project. A majority of the Warner Public Participation Group formally requested that a new alternative be created that would designate the burn as a Research Natural Area (RNA), and develop a new fire management plan that allowed prescribed natural fires (PNFs). Unfortunately, the Willamette National Forest declared that both RNAs and fire planning were issues “outside the scope of the project,” and excluded these from the Draft EIS.

Not satisfied with that decision, the citizen advisory group networked with fire scientists and forest ecologists from across the Pacific Northwest to develop their own proposal for an RNA-based fire recovery plan, and submitted this during the public comment period. The proposal was called “Alternative EF: Ecology of Fire.” Later, when the Willamette’s Draft Preferred Alternative was withdrawn by the Forest Service’s Owl Oversight Committee because it was deemed inconsistent with the agency’s owl conservation strategy, Alternative Ecology of Fire was authorized to be fully developed, analyzed, and published in the Final EIS. This set in motion a truly collaborative effort of agency specialists, conservationists, academics and independent researchers to further develop the concept of a Fire Process RNA for the Warner Burn.

Alternative EF: Ecology of Fire

The goal of the authors of Alternative EF (Alt. EF) was to propose a recovery strategy that centered around research and restoration of wildland fire processes. Alt. EF proposed allowing natural succession processes to recover owl habitat, and a fire management strategy using PNFs to help protect owl habitat from future severe wildfires. The entire burn was divided into four zones for PNF prescriptions that ranged from low to moderate intensity in the zone containing spotted owl nest sites, and higher intensity in the ridgetop meadow zone. Along with PNFs, an active program of fire effects monitoring and research was proposed in order to study both natural fire disturbance and recovery processes.

Alt. EF prioritized PNFs, but also allowed some management-ignited prescribed fires, especially in the ridgetop meadow zone. Such fires could occur only after intensive fire history research was completed that included anthropological research on the frequency, locations, and methods of historic Native American burning along Bunchgrass Ridge. In a move that preceded the Federal Wildland Fire Management Policy and its concept of “Appropriate Management Response,” Alt. EF allowed limited and modified suppression activities to occur in order to keep natural fires within their prescription. In the event that some fires exceeded their prescribed fire intensity, Alt. EF mandated that only minimal-impact suppression tactics (MIST) could be used within the burn. The concern was that aggressive suppression actions would not only damage the environment, but might destroy ongoing research projects and monitoring plots.

Rationale for Prescribed Underburning in Spotted Owl Stands

The project's decisionmaker and IDT believed that both prescribed and wildland fires would adversely affect owl nesting and roosting habitat. However, unbeknownst to the authors of Alt. EF at that time, the fire and fuels management team working on the California Spotted Owl conservation plan (a.k.a. the "CASPO" Report) urged that prescribed underburning be used to prevent stand-replacing wildfires in spotted owl Protected Activity Centers (Verner and others 1992: 254). Proponents of Alt. EF argued that, logically, spotted owls evolved with natural succession processes and recurring fire disturbances, and observed that most existing owl stands exhibit some evidence of past fires. Proponents added that fires are a prime agent creating forest structure such as multi-storied canopies and large snags and logs that were vital components of superior spotted owl habitat.

Furthermore, RNA proponents rejected the agency's strategy of protecting owl habitat reserves with fire exclusion—a policy that had already essentially been "vetoed" by the arsonists who ignited the Warner Creek Fire. Conservationists took comfort in the fact that the resident population of spotted owls continued to inhabit and successfully reproduce in the burn. Indeed, the continued existence of the owls inside the burn challenged the assumption that intensive management, especially salvage logging, was necessary to recover the burned area.

Alt. EF was endorsed by prestigious academic members of the research community, including some of the scientists who helped design the Northwest Forest Plan. The student governments of Oregon's two largest universities passed official resolutions in support of Alt. EF and later sent these to Forest Service Chief, Jack Ward Thomas. Then, the Forest Service's Regional RNA Coordinator and ecologists from the Pacific Northwest Research Station drafted their own RNA proposal for the Warner Burn. Finally, the Oregon Natural Heritage Advisory Board used the Warner Creek Fire and Alt. EF as inspiration to establish a new "Fire Process" cell for their network of RNAs. This created a qualitatively new kind of RNA aimed to protect areas for their dynamic ecosystem processes rather than static species composition or geologic features. Consequently, although the Willamette National Forest's final recovery plan was to construct fuelbreaks with salvage clearcuts, the decisionmaker also set aside a 4,200 acre portion of the burn as a "Natural Succession Area" (NSA) to be later considered for designation as an RNA.

Warner Fire Recovery Plan Voided

Implementation of the Willamette National Forest's final recovery plan was repeatedly delayed first by a dozen administrative appeals and then by a lawsuit that resulted in a permanent injunction against the salvage sale. All of these delays occurred during a time of rapid change in forest and fire management policies initiated by the Northwest Forest Plan and the Federal Wildland Fire Management Policy and Program Review. In the midst of a nationwide protest campaign whose slogan was "Stop the Warner Salvage Sale; Save the RNA!" President Clinton ordered the timber sale to

be withdrawn in August 1996. No salvage logging ever occurred inside the Warner burn, and the Willamette National Forest essentially selected the No Action Alternative by default.

Warner Fire Process RNA Proposal

The group of "citizen-scientists" who had drafted Alt. EF developed a new, more expansive RNA proposal, and submitted it to the Regional RNA coordinator in September 1997. Called the "Warner Proposal" for the sake of brevity, it was no longer confined to the 9,000 acre wildfire perimeter. New boundaries were drawn along suitable topographic features and landforms that would aid minimal-impact fire confinement strategies and minimize the need for aggressive suppression.

Using Conservation Biology principles, the Warner Proposal linked the burn with a cluster of four other Inventoried Roadless Areas (RAs). These RAs, in turn, were adjacent to two contiguous Wilderness Areas along the Cascade Crest that had recently developed PNF plans. The original proposal was a 48,000 acre RNA, but this has recently been reduced to approximately 31,000 acres in accordance with the results of a 1999 symposium on Fire Process RNAs. The 31,000 acre Warner RNA connected with 336,000 acres of designated Wilderness would form a landbase where it is hoped that large-scale wildland fire processes could be managed for research and restoration purposes.

The core of the Warner Proposal includes the entire 9,000 acre Warner Burn. This is one of the rarest landscapes in the westside Oregon Cascades: a roadless, mid-elevation, relatively unmanaged, recently burned forest containing both young natural stands and high-mortality old-growth stands. A wide range of disturbance intensities, plant associations, and stand conditions currently exist. Early and late seral stages following large-scale fire disturbances are not adequately represented within existing RNAs. Thus, the Warner Burn has the potential to capture early seral stages of plant communities protected in other RNAs. The Warner Burn presents opportunities to study not only single elements or communities encompassed within it, but also the complex array of fire intensities and communities, their arrangement, connections, and interrelationships through time. The relatively large area and diversity of topography, vegetation, microclimates, habitats, and fire effects make the Warner Burn and its surrounding unburned area well suited for a broad range of research and educational uses.

Agency Responses to the Citizens' Warner RNA Proposal

The Willamette National Forest responded to the Warner Proposal by resurrecting the decisionmaker's 4,200 acre NSA proposal minus the fuelbreaks and salvage clearcuts. However, during the public scoping period the agency received over 1,000 comment letters and every single letter rejected the NSA proposal. The chief criticism was that the NSA was too small and its boundaries too arbitrary to allow wildland fire use. Instead, the letters demanded that the

citizen-scientists' Warner RNA Proposal be included in the EIS process.

The results of the scoping period prompted the Willamette National Forest and the Pacific Northwest Research Station to host a roundtable workshop of fire scientists in April 1999. The assembled scientists from Oregon, Washington, and British Columbia discussed design and management criteria for Fire Process RNAs. The scientists agreed that landscape-scale RNAs were needed in order to best capture natural fire processes at the spatial and temporal scales they function in the westside Oregon Cascades. The scientists determined that for a mid-sized Fire Process RNA, approximately 30,000 acres containing portions of at least two watersheds would be needed to maximize research opportunities. The end result of the symposium was that the scientists validated the general principles articulated in both Alt. EF and the new Warner Proposal.

Ongoing Activities to Learn From the Burn

Despite the lack of formal RNA status, the Warner Burn has attracted fire ecology research and educational activities throughout the last decade. For example, 45 monitoring plots have been established by Forest Service ecologists in order to document the early structure, composition, and regeneration of the burn. If future Forest Service budgets allow, these plots will be resurveyed as part of a long-term monitoring plan. Scientists from the University of Oregon and Oregon State University have also conducted some studies on soils, vegetation, and wildlife in the burn.

The Cascadia Fire Ecology Education Project (CFEEP), a nonprofit conservation organization, and the Northwest Youth Corps (NYC), an alternative high school for at-risk youth interested in pursuing forestry careers, have embarked on a partnership to establish long-term fire effects monitoring plots. CFEEP and NYC have initiated a unique snag longevity study to monitor the rate of fall and decay of fire-killed snags and logs over the next several decades. The methodology for the snag study was developed with the help of Forest Service ecologists and sustainable forestry consultant, Chris Maser. (Known as one of the early "gurus of old-growth" while he was a Bureau of Land Management ecologist stationed at the Pacific Northwest Research Station, Maser was the lead author of the 1988 publication, "From the Forest to the Sea: A Story of Fallen Trees" (Gen. Tech. Report PNW-GTR-229)). The nonprofit groups are now applying the National Park Service fire effects monitoring protocol to their current and future research plots in the burn.

Additionally, students from all across the country have attended special fire ecology field seminars and research outings in the Warner burn as part of curriculum for the Wildland Studies Program and the Cascade Science School. The Warner burn is conveniently located next to a major highway just one hour's drive from the city of Eugene, Oregon. Educators from local universities and school districts are becoming some of the more vocal advocates of the Warner Proposal because it has great potential as an outdoor education site and living laboratory for academic research projects. This fulfills one of the oft-neglected purposes

of RNAs to foster education, as well as conduct research and conserve biodiversity (USDA-FS 1997: 2). Accordingly, it is hoped that formal protective status as an RNA would enable future generations of scientists and students continual opportunities to "learn from the burn."

Controversies and Challenges of Managing Fire Process RNAs

RNA proponents are urging the Willamette National Forest to proceed with the EIS process and include a citizen-scientist RNA Alternative in the document. This effort conforms with the recent Committee of Scientists' Report that encouraged more up-front collaboration with scientists in Forest Service planning and projects (Committee of Scientists 1999: xxv). The Federal Wildland Fire Management Policy and Program Review also lauded the role of communication and collaboration, and has called for a renewed emphasis on public participation and partnerships in all aspects of wildland fire management (USDA/USDI 1995: iii). If and when the Willamette National Forest moves forward on the proposal, the fire research community will want to review and submit substantive comments on the EIS. The document will likely raise several critically important, controversial issues that are pertinent to other fire/fuels management programs and projects. With active participation of the fire research community, RNA proponents hope that the Willamette National Forest will produce a model fire management plan focused on research and restoration of wildland fire processes. This should develop a template to help propose and establish additional fire process RNAs in other regions of the National Forest System, especially in the Southwest.

Socioeconomic Issues

An RNA designation would preclude intensive management and commodity resource extraction activities. Accordingly, persuading the citizenry that some large acreage of commercially-valuable timber lands should be set aside for the so-called "wrath of wildfire" will present a public relations challenge, to say the least. The specific Warner RNA proposal largely mitigates this issue by incorporating lands such as LSRs and RAs that make future commercial timber extraction problematic. Timber sales will be even more unlikely if President Clinton's Roadless Area Protection Initiative results in protection of RAs from further logging as well as road-building. Yet, the only commercial logging that would have been affected within the 31,000 acre Warner RNA Proposal was the Helldun timber sale, located just outside the burn perimeter. This timber sale was withdrawn in spring 2000, due to widespread public opposition to its potential adverse effects on the RNA proposal.

Research and Restoration Jobs-in-the-Woods—Too often land managers consider RNAs to be strict land "set-asides" or "lock-ups" that only benefit researchers; however, there are a number of potential socioeconomic benefits that could accrue from a large-scale RNA (Tyrrell, n.d.: 6). Just in terms of research jobs there could be substantial opportunities for workers needed to establish research plots,

conduct field surveys, collect baseline data, initiate research projects, construct trails, and monitor wildland and prescribed fires. Restoration could include jobs for road obliteration, in-stream rehabilitation, invasive weed eradication, and hazardous fuels reduction with manual and prescribed fire treatments. Of course, these research and restoration jobs would have to be funded by alternative sources such as Federal appropriations, grants, endowments, and so forth rather than traditional commodity-producing projects. But given a suitable funding source, the number and kinds of research/restoration jobs and other socioeconomic benefits that could accrue from a fire process RNA over the next century or more is limited only by one's imagination.

Additionally, some have raised the idea of possibly allowing limited commercial extraction in special buffer zones that would straddle the RNA's boundaries. Thus, for example, a fuels management program to reduce hazardous fuels and construct defensible boundaries might allow extraction of some of the understory trees and dead surface fuels to supply a commercial firewood operation. Other commercial enterprises, such as mushroom harvesting, might also be permitted in these buffer zones along the RNA boundaries. Providing jobs, resources, and other socioeconomic benefits in these buffer zones might make the RNA proposal more attractive to certain sectors of the public and political representatives; however, these would have to be subordinated to the overriding goal of protecting the RNA from adverse edge effects that could potentially be caused by commercial activities.

Scientific Controversies

There are genuine unresolved questions and controversies over the relationship of northern spotted owls, "west-side" old-growth forests, and wildland fires. These unknowns became the very impetus and driving rationale for the RNA alternative in the Warner Fire Recovery Project. It is probably a safe assumption that a fire process RNA will entail some degree of extra risk of potential loss of some components of owl habitat. However, it is hypothesized that given sufficient time, natural regeneration and succession processes can and will recover burned sites from the effects of fire disturbances. Given the long fire return intervals, and the long period required to develop superior spotted owl nesting habitat, the testing of this hypothesis might not come for several decades, even centuries. This is an argument in favor of RNA status that would provide long-term protection against intrusive or intensive management that would alter the natural processes and potentially invalidate the data.

Role of Early Seral/Successional Stages in Old-Growth Development—In the dominant mode of managed "recovery" and "reforestation," Forest Service managers typically prefer to skip early successional stages following fire or logging disturbances and plant nursery-bred conifers. However, it remains a mystery whether or not fire disturbances and early successional stages are necessary elements of long-term old-growth development. For example, recurring fires could stimulate pulsed regeneration and self-pruning mechanisms of trees that help develop all-aged,

multistoried canopy structures that are preferred by northern spotted owls. Likewise, it is recognized that fires are a prime disturbance agent creating large-diameter snags and logs that are vital habitat structures to owls and their prey. An RNA could help reveal how natural fire disturbance and recovery processes function over the long-term, and serve as a control area to compare with managed areas undergoing quasi-experimental silvicultural treatments.

Presence of Past Management Impacts in an RNA—

Another controversial issue concerns the presence of past management impacts inside a new RNA. Inside the Warner burn alone, there are 77 miles of logging roads and 28 plantations whose dense stands of young artificial regeneration were destroyed by the wildfire. These plantations caused fire severity to increase as ember-filled convection columns preheated and ignited the canopies of adjacent old-growth stands. Logging roads and plantations are not suitable for an "elemental" RNA designation, but for a "process" RNA the story is different. It should be assumed that fire behavior and effects will differ in managed versus unmanaged stands; however, it is hypothesized that fire disturbance processes would continue to function naturally on a landscape scale.

In regions such as the Pacific Northwest, it is difficult to find large expanses of intact wildlands that had escaped the Forest Service's road-building and logging program of the 1970s and 1980s. This program had specifically targeted RAs for development. Realizing this fact, the Oregon Natural Heritage Advisory Board came up with the criteria that up to 10 percent of the area of a fire process RNA could contain previously managed sites and still be deemed "natural" enough for RNA designation. The important factor is that the remaining 90 percent of an RNA should be natural, with predominantly native species composition, and lacking evidence of significant management-caused alteration.

Given the extent of forest fragmentation and ecosystem alteration from past intensive management activities, the most likely location containing the quantity and quality of natural areas suitable for fire process RNAs would be found in Roadless Areas. As occurred with the Warner proposal, Fire Process RNAs of the future will likely be proposed "opportunistically" following a wildland fire in an RA. This provides a baseline fire event to study, and prompts significant public interest that could support (or possibly oppose) RNA designation. However, in the frequent fire regimes of the Southwest, some visionaries might take the initiative to propose some RAs for RNA status in anticipation of a future fire event. This prefire proactive planning would provide a much-needed antidote to the current system of "emergency" wildfire suppression followed by "emergency" salvage logging.

Management Conflicts

Other issues that have been raised during the development of the Warner RNA proposal revolve around managing the RNA for research, education, and conservation of biological diversity, but also mixing these with "multiple uses" such as recreation. RNA proponents have argued for essentially a "passive" restoration strategy focused on PNFs to restore the fire regime. But a more "active" restoration strategy utilizing management-ignited prescribed fires could also be used as means of restoring and maintaining biodiversity.

Questions arise as to whether these prescribed fires could be considered suitable research activities, as well as maintenance tools, in the RNA.

Prescribed Fire as a Research Subject and Restoration Tool—Fire history research to date suggests that the frequency of natural ignitions may not be sufficient to restore the natural fire regime of the Warner area given nearly a century of fire exclusion and the elimination of historic Native American burning. Although there are strong advocates for wildland and prescribed fire use in RNAs specifically to maintain ecological processes, most forest managers have opted for a “hands off” approach to fire management (Johnson 1983: 39). Unfortunately, out of 79 established RNAs that are comprised of fire-dependent plant communities, only five of these RNAs undergo prescribed burning; the rest are declining in species, structural, and seral diversity due to fire exclusion (Greene and Evenden 1995: 32). Fortunately, one of these RNAs receiving periodic prescribed burning is located approximately 60 miles from the Warner burn in an eastside Cascade ecosystem on the Deschutes National Forest. In the Metolius RNA, scheduled prescribed burns are conducted as part of a long-term monitoring program serving both restoration and research objectives (Riegel and Youngblood 1999). The Metolius RNA prescribed burning program offers a working model for Willamette managers to apply to a fire process RNA in the Warner burn.

Potential Recreation Impacts on Research Projects—During the development of Alt. EF, a conflict arose within the research community over the belief by some scientists that recreational activities were inappropriate uses for the RNA. Some scientists opposed the construction of a fire ecology interpretive trail out of fear that off-trail hikers would unwittingly trample upon research plots, or vandals would deliberately destroy research sites and equipment. The Warner Proposal, however, includes sufficient acreage that the potential risk of a catastrophic loss of research plots should be minimized. And protection of research sites should be a prominent theme for interpretive and educational programs. National Parks must frequently grapple with the dilemma of providing for “recreational playgrounds and natural area preservation”; hence, National Park Service employees may want to lend some expert advice to the Forest Service on how to manage for these seemingly contradictory uses of the Warner RNA.

Systemic Lack of Funding of RNA Program—A perplexing issue concerns the current general lack of funding for the RNA program in the Pacific Northwest Region (Greene 1999: 3). The Willamette Supervisor cited “a climate of dramatically reduced budgets for RNAs” as one of the reasons for refusing to proceed with an EIS for the Warner proposal. Indeed, more demands are being placed on Forest Service researchers with less staffing and budgets available. However, the example of the privately-funded CFEEP-NYC research program demonstrates that the Federal government could tap into local community labor resources to get some of the “grunt work” of baseline data collection and field research projects started. Managers are thus being urged not to restrict themselves to their agency’s internal resources of budgets, staff, and expertise, but to look to forming collaborative partnerships with the research and

conservation communities to supplement limited Federal resources.

Lack of an Approved Fire Management Plan Continues Commitment to Fire Exclusion—Perhaps the most frustrating issue that affects the viability of the Warner proposal is the fact that the Willamette National Forest lacks an approved Fire Management Plan. The Willamette National Forest’s current Land and Resource Management Plan as amended by the Northwest Forest Plan does not provide for wildland fire use, and commits to total, aggressive suppression in Late-Successional Reserves (LSRs). Approximately 15,000 acres or 48 percent of the citizens’ proposal is currently managed as a LSR, and Willamette National Forest managers have raised the specter of “unfettered wildfires” in the RNA potentially destroying the habitat values of the LSR.

The concept of wildland fire use burning under *planned prescription* is key to agency and public acceptance. If and when a natural or management-ignited fire exceeds its pre-planned prescription window, then it would be converted to a wildfire and suppressed. RNA proponents are clear about their wider policy objectives in establishing the Warner Fire Process RNA: it is intended to serve as a kind of testing ground for changing fire management policies and practices in the Pacific Northwest. It is hoped that the Warner RNA will provide a safe space far away from private property or human communities where not only can people learn from the burn, but can learn to live with fire as a vital ecosystem process.

Conclusion

At the time of this writing (September 2000) the current status and future fate of the Warner Fire Process RNA proposal is uncertain. On the one hand, Forest Service officials claim that their budget does not have enough money to fund an EIS for the RNA. On the other hand, the Warner Proposal continues to generate growing interest and endorsements from scientists, researchers, educators, and resource specialists in the Forest Service and other land management agencies.

With support from the Oregon Governor’s office, Congressman Peter DeFazio has submitted a funding request for the EIS in the 2001 Appropriations Bill in order to provide the Willamette National Forest with the money needed to do the analysis and establish the RNA. Congress is gaining more interest in fire research and fuels management, as evidenced by its continuing funding of the Joint Fire Sciences Program, the Hazardous Fuels Reduction Program, and proposed massive budget increases for Federal fire management programs in the 2001 Interior Appropriations bill. There is also a growing effort by researchers and conservationists familiar with the Warner Proposal to develop citizen-initiated Fire Process RNA proposals in other locations around the West. Proponents argue that the Warner Proposal and Fire Process RNAs are ideas whose time has come, and look forward to inspiring the public, fire professionals, and political representatives on the critical need for fire ecology research and education to guide ecosystem restoration programs in fire-dependent/fire-adapted ecosystems.

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