Rangeland Fire Protection Associations: An Alternative Model for Wildfire Response

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Executive summary

Wildfires are increasingly common and growing in size across rangelands in the U.S. West. Although fire is a natural component of sagebrush steppe ecosystems, it can also threaten values such as sage-grouse habitat, forage for grazing, and residential and commercial structures; it can also encourage invasive plant establishment. Wildfire suppression responsibilities have historically been divided by ownership among resident ranchers, some rural fire districts, and government agencies. But wildfire, and interest in managing it, crosses ownership boundaries. Since the 1990s, numerous Rangeland Fire Protection Associations (RFPAs) have emerged in Oregon and Idaho to improve fire management by organizing and authorizing rancher participation in fire suppression alongside federal agency firefighters (typically, the Bureau of Land Management hereafter "BLM"). RFPAs are all-volunteer crews of ranchers with training and legal authority to respond to fires on private and state lands in remote landscapes where there had been no existing state or local fire protection, and can become authorized to respond on federal lands as well. There has been growing policy interest in the RFPA model, yet limited research on how RFPAs function, their capacities, and potential implications for encouraging fire-adapted communities. Our study analyzed the establishment, functioning, successes, and challenges of the RFPA model through four case studies of individual RFPAs and their respective state programs in Oregon and Idaho during 2015–16. We found that:

- Ranchers possess important advantages for fire response that can be put into practice through the RPFA model. These include in-depth local knowledge, access to their own resources and equipment, their spatial distribution across large landscapes, and strong motivation to protect their and their neighbors' properties from fire. This aids in their ability to respond quickly, keeping fires small and preventing the numerous, spatially extensive impacts that can occur with larger events.

- RFPA-BLM relationships were challenged by several factors. These included histories of conflict, differences between state and federal standards (in Oregon), differences in culture between ranching communities and formal firefighting institutions, and specific negative incidents or experiences that eroded trust and confidence.

- RFPA-BLM relationships were improved by experience and time spent together on and off the fireline. Going through similar experiences, building common understandings, and learning more about wildfire and each other appeared

to strengthen informal and interpersonal relationships between individuals. RFPA members increased their understanding of how and why federal fire managers make decisions, and BLM personnel described increased respect for RFPA members' local knowledge and skills.

- The RFPA model has focused on suppression, but many ranchers view fire management more holistically and the potential may exist for RFPA engagement in a wider range of activities. Numerous interviewees in both states indicated interest in pre-fire, preventative measures in particular. One RFPA has participated in a fuel break project, and several others have participated in prescribed burns on private and state lands.

- Establishment of research on avoided costs from RFPA involvement to better quantify the advantages of local knowledge and quick response could help educate legislators and the public.

Our project suggests several implications for practice and management, and for the development of fire-adapted communities more generally:

- Collaboration between agency and ranching partners for wildfire response may be improved by:
  - Ride-alongs and working side-by-side during fire events;
  - Time spent together off the fireline during trainings, meetings, social events, and in the community;
  - Awareness of the lasting impact that single events or incidents can have positively and negatively on trust, with ample time for after-action review for collective processing and learning;
  - Local BLM staff serving as liaisons when non-local incident management teams come in; and
  - Transition memos and time getting acquainted for new BLM staff to provide institutional memory and introduction to RFPAs.

- The fundamental design of RFPA programs structures expectations and relationships, so states creating or revising RFPA programs may consider:
  - Roles of state agencies relative to and between RFPAs and the BLM, which may include mediator, advocate for RFPA needs, guarantor of compliance with federal standards, grantor, convener, pass-through, or program manager;
  - Importance of informal and interpersonal communications and relationships in both ranching and fire management communities, and the need to encourage positive, respectful communication and make space for informal interaction and trust building;
  - Provision of both equipment and training, which may help ensure RFPAs are prepared to participate in suppression and increase BLM comfort; and

- The organizational capacity of RFPAs may be enhanced if they have:
  - Strong leadership such as a chairperson, board, or other leader(s) willing to do organizational and administrative work, steward the RFPA, and set the tone for positive relationships within the RFPA and with the BLM; and
  - Well-established and maintained systems for important functions such as bookkeeping, member training records, and tracking of in-kind and volunteer contributions.

- The RFPA model may offer insights for other working lands communities to increase their participation and empowerment in fire preparation and response, and become more "fire-adapted:"
  - Multiple issues require attention, including safety, liability, interfaces with agency and contractor fire personnel, and organizational structures through which participation could be legally and operationally feasible.
  - Learning and adaptation can help ease the tensions between volunteer and professional institutions, even if the former may begin with relatively limited understandings of fire management. Experience, repeated interactions, and being given responsibility may help local participants gain broader understanding of the justification for professional firefighting techniques, and in turn increase professional comfort with and regard for local knowledge and values.

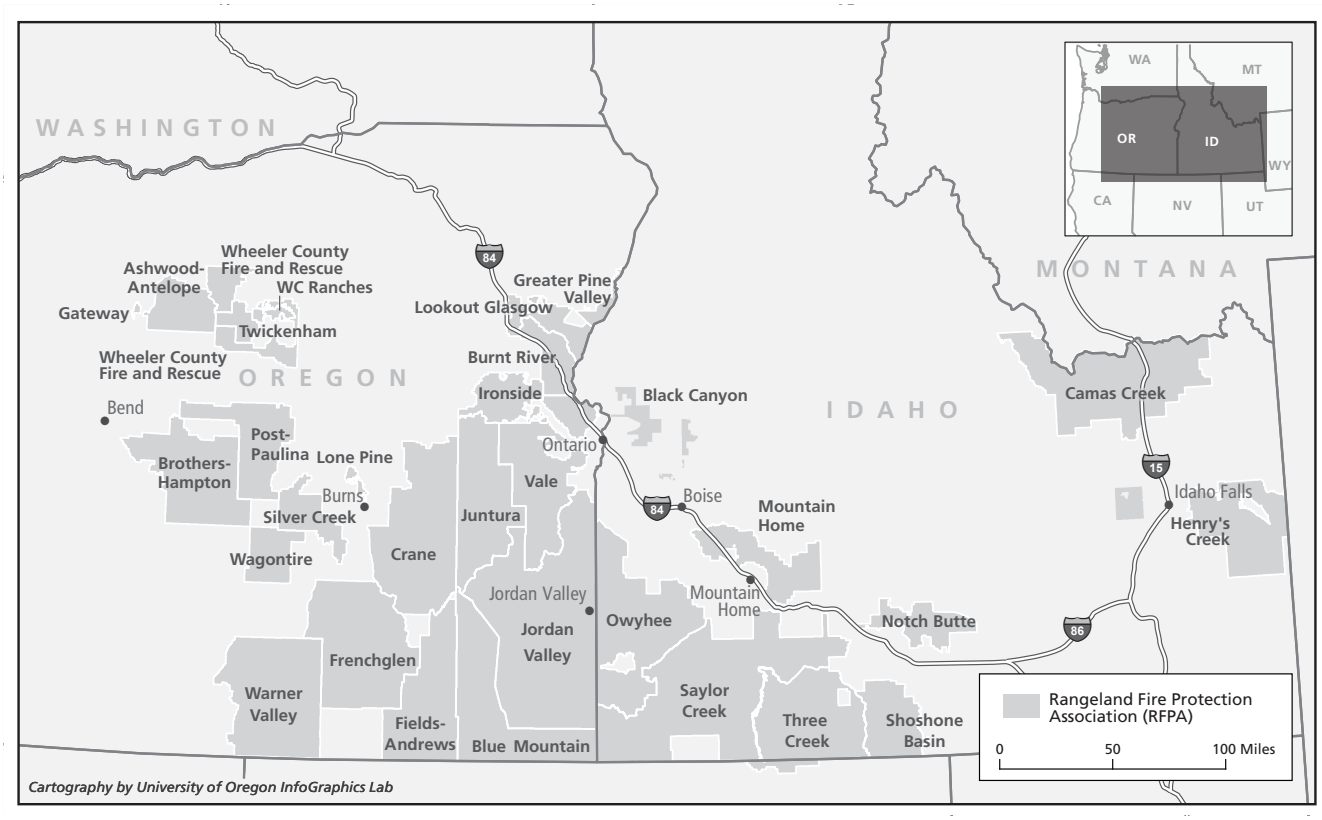
Introduction

Wildfires are increasingly common and growing in size across rangelands in the U.S. West. In Oregon, the 2012 Long Draw fire totaled over 550,000 acres, and the 2015 Soda Fire on the Oregon/Idaho border reached nearly 280,000 acres. Although fire is a naturally occurring component of sagebrush steppe ecosystems, it can also threaten values such as sage-grouse habitat, forage for grazing, and the built environment, and encourage the establishment of invasive annual grasses such as cheatgrass. Loss of habitat due to wildfire and invasive species is considered the greatest threat to the Greater Sage-grouse throughout much of its range, including in Oregon and Idaho. Wildfire suppression responsibilities have historically been divided by ownership among resident ranchers, some rural fire districts, and government agencies. But wildfire, and interest in managing it, crosses these ownership boundaries. Western ranchers typically run cattle on state or federal lands through a system of grazing permits, and grazing is normally prohibited for a period following wildfire on federal land.

Although rancher participation in fire suppression on federal lands was common and even encouraged in the early and mid twentieth century, safety and liability concerns led to a prohibition starting in the 1980s and 1990s. At the same time, ranchers were often closest to many fire starts, able to respond quickly, and deeply invested in protecting forage, cattle, and other values. In some instances, there has been conflict between local ranchers who have taken the initiative to respond to fires on federal lands and the federal fire managers (typically from the Bureau of Land Management, hereafter "BLM") officially responsible for suppression. Ranchers' exclusion from suppression activities created extensive frustration and confrontation with government agencies and officials.

In recent decades, numerous Rangeland Fire Protection Associations (RFPAs) have been created via their respective state programs in Oregon and Idaho to address these conflicts and legally organize rancher participation in fire suppression across ownerships. RFPAs are all-volunteer wildland fire crews primarily composed of ranchers who are trained and authorized to respond to fires on private and state lands in remote landscapes where there had been no existing state or local fire protection. While the states do not have jurisdiction over federal lands, RFPAs often enter into arrangements with their respective BLM districts that allow them to respond to wildfires on BLM lands as well; this is important given the predominance of federal lands on the western range and the great distances (and subsequent response times) associated with these remote landscapes. RFPAs are entities that are "professionally

Figure 1 Rangeland Fire Protection Associations in Oregon and Idaho



trained and legally allowed to utilize interagency fire suppression resources."[1] The RFPA programs in each state recognize ranchers as valuable actors in suppression for their local knowledge (e.g., of roads, water sources, and landscapes) and ability to reach fire starts rapidly.

The safe and effective use of the RFPA model is seen as crucial to larger policy and management goals in the U.S. West, such as coordinated, cost-effective fire management and sage-grouse habitat conservation. For example, RFPAs were recognized in recent nationwide rangeland fire management strategies, such as the Secretary of the Interior's Order #3336, "Rangeland Fire Prevention, Management and Restoration," and in the subsequent Integrated Rangeland Fire Management Strategy (2015). Yet there is limited research on how they function, their capacities, and potential applications to other community-based fire management approaches.[2] RFPAs appear to represent a distinct model of wildfire management in comparison to what is practiced in most wildland-urban interface (WUI) communities in the West. Typically, WUI residents do not have the authority to participate in fire response activities and are primarily tasked with maintaining a fire-safe home environment, or participating in collaborative efforts to support mitigation on public lands. RFPAs involve local citizens directly in wildfire response; therefore, experiences and lessons learned from this model could have potential relevance to other efforts such as the National Cohesive Wildfire Strategy and its focus on fostering "Fire-Adapted Communities."

Our study examined the establishment, functioning, successes, and challenges of the RFPA model through four case studies of RFPAs and their respective state programs in Oregon and Idaho.[3] We present results of this research, potential implications for management and practice, and applications for fire-adapted communities more broadly.

The RFPA context

As of the date of this writing, only three states had established RFPA programs: Oregon, Idaho, and Nevada. The earliest RFPA was established in Oregon in 1964, but most began in the 1990s and 2000s. As of 2017, there were a total of 22 RFPAs established across eastern Oregon, covering 14 million acres of land. Idaho established an RFPA program in 2013, and as of 2017 there were nine established RFPAs, covering over seven million acres of land (see Figure 1, page 4). Nevada's program was established in 2015 and was not included in the present study.

The authorities and rules that guide and support RFPAs are complex; although they are not identical in Oregon and Idaho, the two programs share broad similarities. First, RFPAs receive their statutory authority to respond to fires from state government. In Oregon, RFPA authority is established under Chapter 477 of the Oregon Revised Statutes (Fire Protection of Forests and Vegetation) and the program is administered by the Oregon Department of Forestry (ODF). In Idaho, RFPAs are authorized under Title 38 of Idaho Statutes (Forestry, Forest Products, and Stumpage Districts) and the program is administered by the Idaho Department of Lands (IDL). Both of these legal frameworks allow rangeland landowners to voluntarily form RFPAs as registered nonprofit organizations in areas that lack existing state or rural fire protection, and to protect the private and state land within district boundaries. The states have also defined the rights and responsibilities of RFPAs on these lands, including minimum standards for training and protection from liability when conducting fire protection operations. In addition to giving RFPAs these authorities and roles, state governments help them acquire some heavy equipment, radios, personal protective equipment, and other needs. Resources for this come both from state and federal funds associated with sage-grouse conservation efforts and via a federal surplus equipment program. There has been a more substantial amount of equipment provision in Oregon than in Idaho.

Training has also differed by state. In Oregon, training has been historically provided by ODF. In Idaho, training has been conducted by the BLM. BLM training consists of federal firefighting courses, including S130/S190. During our study, issues with qualification discrepancies on cross-state fires led to the adoption of BLM training standards for Oregon RFPAs in the future (2017 onward).

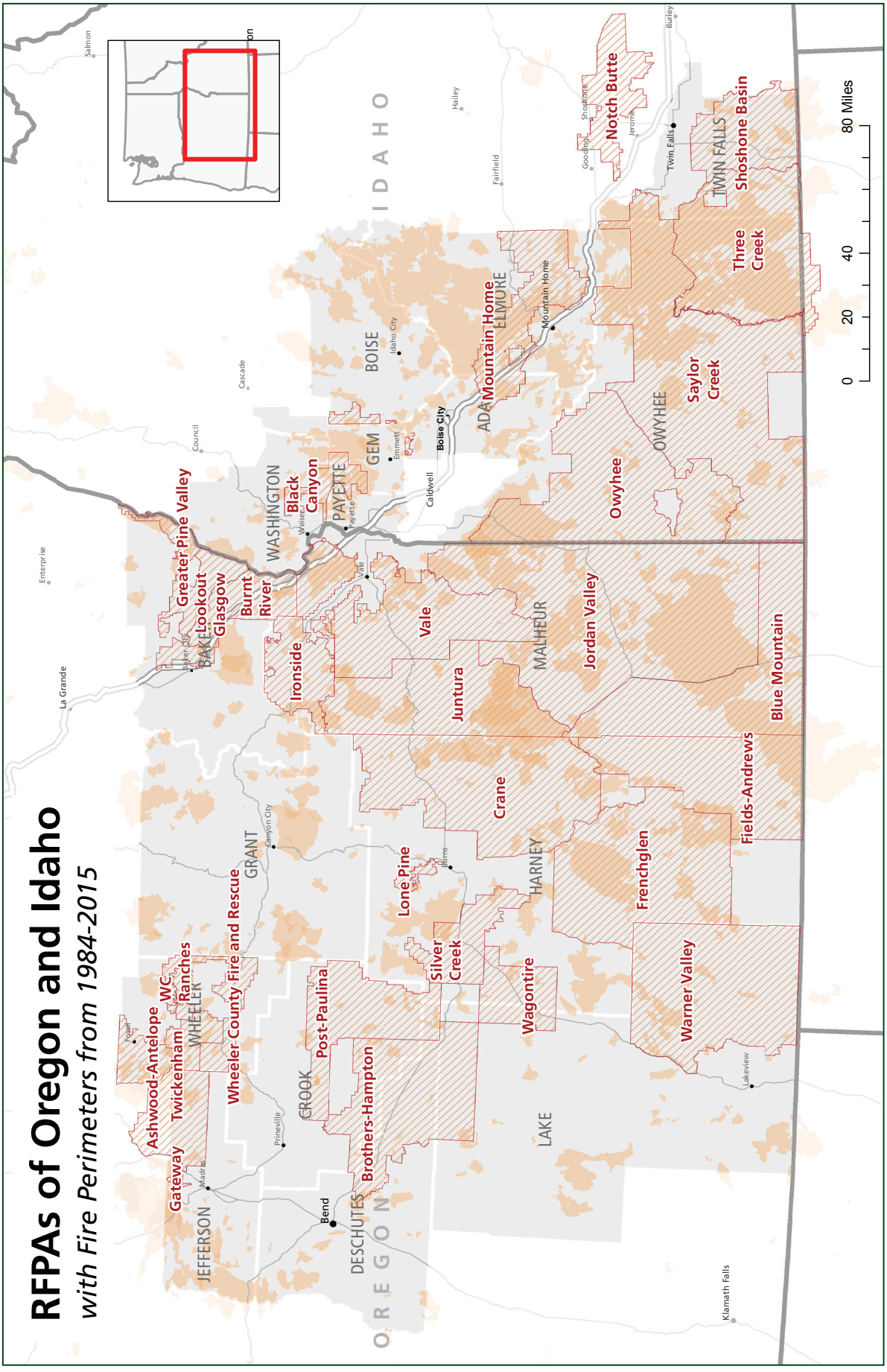
Although Oregon and Idaho provide authority for RFPAs to respond on private and state lands within their respective districts, separate arrangements are necessary for RFPAs to participate in suppression on federal lands (such as those managed by the Bureau of Land Management and U.S. Fish and Wildlife Service). This authorization is established through Memoranda of Understanding (in Oregon) or via Cooperative Fire Protection Agreements (in Idaho). The MOUs or agreements detail fire response procedures, communications protocol, and standards to be followed when acting as cooperators with the federal government. During the time of our study, federal MOUs and agreements limited RFPA participation to initial attack, defined as "the actions taken by the first resources to arrive at a wildfire or wildland fire use incident,"[4] although in 2017, some were being expanded to officially allow for extended participation.

RFPAs themselves are registered nonprofit organizations incorporated in their respective states. As nonprofits, they are governed by their boards and bylaws, and are required to hold liability insurance in order to respond to wildfires. Operating budgets come from annual dues paid by participating members, and the states may assist with financial or operational support to help the RFPAs maintain their insurance and nonprofit status. Volunteer contributions are also substantial, as members often use their own equipment and water sources, and invest significant time. Not all members are active in suppression, but may contribute through their dues, communications support, providing local knowledge, or other means.

Study approach

The goals of this research were to analyze the structure and effectiveness of the RFPA model and to generate findings regarding the institutional contributions to fire-adapted communities. These goals were developed with input from ODF, IDL, BLM, and RFPA members. We began our study by gathering available documentation on RFPAs including state and federal laws and policies, RFPA organizational documents, spatial files, and reports and media about recent large fires in which RFPAs were involved. We then designed a qualitative interview and mapping process for four case studies. Two case study RFPAs were in Oregon (Crane and Jordan Valley) and two in Idaho (Owyhee and Mountain Home). Case study selection was focused on RFPAs with longer histories, larger landscapes, and relatively recent experience with large fires (see Figure 2, page 7 showing recent large fires and RFPA boundaries). We conducted interviews with active RFPA members and BLM in each area, asking questions about their history, experience with fires, relationships with federal fire managers, and development over time. We also interviewed state and federal managers who worked with RFPAs in each state. We interviewed a total of 63 participants. For the mapping component, we asked RFPA members and BLM managers that work directly with RFPAs to indicate values and risks across their respective landscapes by marking up paper maps that were later digitized, synthesized, analyzed by UO InfoGraphics Lab using Esri ArcGIS software. We analyzed interview data using NVivo, a qualitative analysis program. We presented preliminary results at two state-level RFPA meetings in each state, obtaining feedback from ranchers and agencies.

Figure 2


RFPAs of Oregon and Idaho
with Fire Perimeters from 1984-2015
Ashwood-Antelope
WC Ranches
Twickenham
Gateway
Wheeler County Fire and Rescue
Post-Paulina
Brothers-Hampton
Lone Pine
Silver Creek
Crane
Wagontire
Juntura
Vale
Ironside
Burnt River
Glasgow
Lookout
Greater Pine Valley
Black Canyon
Owyhee
Jordan Valley
Frenchglen
Warner Valley
Fields-Andrews
Blue Mountain
Mountain Home
Saylor Creek
Three Creek
Shoshone Basin
Notch Butte
WHEELER
GRANT
CROOK
JEFFERSON
DESCHUTES
LAKE
HARNEY
MALHEUR
OWYHEE
ELMORE
ADA
BOISE
GEM
PAYETTE
WASHINGTON
BAKER
TWIN FALLS
OREGON
IDAHO
Bend
Prineville
Madras
Lakeview
Klamath Falls
La Grande
Enterprise
Baker City
Canyon City
Burns
Vale
Ontario
Payette
Weiser
Emmett
Idaho City
Boise City
Caldwell
Mountain Home
Twin Falls
Jerome
Shoshone
Burley
Hailey
Fairfield
Cascade
Council
Salmon
0
20
40
80 Miles

Findings

Ranchers possessed important advantages for fire response leveraged throught the RFPA model

We found that that several factors allowed RFPA members to provide unique advantages in fire response. These factors were identified repeatedly across multiple interviews with both RFPA and agency interviewees. First, we found that RFPA members are valued for their ability to respond quickly to fire starts. Ranches and their resources were often distributed across large landscapes, while federal managers and equipment were more typically concentrated in communities where agency offices or fire stations are located. This allowed ranchers to frequently reach and respond to starts across ownerships well in advance of the arrival of federal firefighters. Further, as cell phone service and other communications are limited in most RFPA areas, some ranches had previously developed ranch radio systems with privately owned repeaters. At times, this allowed for more extensive coverage than the BLM radios during a fire. Many RFPA members also established the practice of staffing their own ad-hoc fire "lookouts" at times, calling in starts to other RFPA members and BLM fire dispatch. Collectively, this aided in their ability to respond quickly, keeping fires small and preventing the numerous, spatially extensive impacts that can occur with larger events.

Second, RFPA members offered local knowledge that aided both the BLM and other RFPA members in accessing fires and identifying strategies. This knowledge included location and condition of roads, natural firebreaks, grazed areas, and water sources. Rancher knowledge was not a new resource, and some federal firefighters had long utilized it, but only informally. Tensions had also historically arisen when ranchers were asked for information yet were prevented from engaging on fires. The formation of RFPAs as distinct organizations with recognition through MOUs, cooperative agreements, and other guidance and policies has increased their presence and visibility, and provided avenues to more systematically apply local knowledge when coordinating with the BLM.

Third, we found that most active RFPA members had strong motivations to suppress fires and to help their neighbors. RFPA interviewees described the importance of personal property and other values at stake, such as structures, livestock, and forage on the multi-ownership landscapes where they run stock. Given these livelihood ties, ranchers in our case studies had strong personal interests in preventing wildfires from growing out of control. Many also spoke of wanting to fight fire on neighbors' lands, and of working with others across the landscape, repeatedly noting that no one property was more important to protect than another. Not all RFPA members owned equipment or had the capacity to participate in every fire, depending on their age and availability. But some of the members who could not physically serve on the fireline helped in other ways, such as riding with BLM fire managers and providing information about access points and terrain features. Although some interviewees stated they would not typically respond if a fire was located far from their ranch, several active members with equipment recounted traveling long distances at times to respond, demonstrating a commitment to other RFPA members regardless of direct personal impacts.

Perspectives on the role of government in equipment and resource provision varied

The RFPA model in each state differed in its approach to providing equipment and government funds. In both Oregon and Idaho, state governments did help RFPAs procure heavy equipment, radios, personal protective equipment, funds for improving water sources, and other needs using resources from state and federal funds for sage-grouse conservation and via a federal surplus equipment program. However, the volume of equipment provided varied across the two states. In Oregon, state funding for RFPAs in the 2015–17 biennium in particular was increased as these organizations were viewed as a front line of sage-grouse protection by virtue of their work to keep habitat-destroying fires small. ODF also sought to ensure each RFPA had enough reflective patches, radios, and personal protective equipment for its members. For many RFPA members who were contributing significant time and resources of their own to suppress fires, this additional support was recognized and appreciated. Some BLM interviews, however, reflected a concern that Oregon's RFPAs were substantially equipped yet still lacked sufficient training and experience, particularly as they did not consistently receive the S130/S190 federal firefighting training, to use all the new resources safely and effectively.

In Idaho, funds for provisioning RFPAs also came through similar state and federal sources. Less federal surplus equipment had been provided to RFPA members in our Idaho cases. Many Idaho RFPA interviewees were comfortable with this level of resource provision. Alternately, some interviewees did express envy about Oregon's program, and suggested a desire to receive more equipment and resources for their efforts given the expectations placed upon them.

Differences in statutes and instruments contributed to different RFPA-agency relationships in Oregon and Idaho

In Idaho, formalization of the RFPA role through cooperative agreements with the BLM established shared rules and standards, and helped address concerns such as BLM liability for ranchers participating in their suppression efforts. Cooperative agreements are a standard type of legal instrument that federal agencies use to partner with cooperators. Notably, a cooperative agreement requires "substantial involvement" and mutual benefit from both the cooperator and the agency, in this case indicating that the BLM was to be an engaged partner. Standards for RFPA conduct and safety on the fireline were the same as those for the RFPA. The cooperative agreement approach used in Idaho therefore framed the RFPA-BLM relationship through a federal and legal tool.

In Oregon, these relationships were articulated through a different model—Memoranda of Understanding (MOU) between the agency and each RFPA. MOUs are broadly used in a number of settings and sectors, and are not specific to the federal agency context. They are also not legally binding instruments. Although the MOUs contained some similar rules for RFPA involvement (e.g., limiting their participation to initial attack), they did not specify that RFPAs would follow all federal standards. Oregon state standards for personal protective equipment, for example, were used instead.

Another difference between Oregon and Idaho that our study revealed was the statutes underpinning the RFPA right to fight fire. The RFPA statutes in Oregon have a legal foundation in a property owner's right to defend their property from wildfire, whereas the Idaho model is built upon the concept of ranchers being allowed to participate in fire suppression with federal managers. ODF has historically reinforced this basis in state statute in its guidance of RF-

PAs. As a result, we found that many Oregon RFPA members perceived a right to defensible property interests on federal lands (such as cattle, fencing, and forage), regardless of requirements for federal fire cooperators. In general, Idaho RFPA members saw their roles as more limited to early stages of initial attack in their local areas, whereas Oregon members took a more temporally and spatially expansive approach. The state plays a mediating role in both cases, but in Idaho, IDL has tended to help ensure RFPA compliance with BLM requirements whereas in Oregon, ODF has historically advocated for RFPA members in their use of state rather than federal standards.

The differences between state and federal standards caused unease and conflict in Oregon during our study. Conflict arose following the cross-boundary Soda Fire, as RFPAs and BLM staff from across state lines directly encountered these different standards and expectations during a major fire event. After that experience, higher levels within the BLM sought Oregon's alignment with federal cooperator standards, and many RFPA members resisted. The conflict specifically concerned the type of personal protective equipment to be used and the timeframe in which it would need to be donned, as well as differences in the training standards in each state; namely, that Oregon RFPA members did not meet federal cooperator standards for firefighting training. RFPA members did not wish to have to adhere to federal standards, while the BLM pointed out safety concerns. BLM interviewees also noted difficulty at times in accounting for the presence and location of ranchers on fires. BLM and RFPA members both expressed concern at the possibility for "rogue" RFPA members (or non-RFPA locals) to be out moving cattle or otherwise engaging in suppression without communication to others. More broadly, the different philosophies about the basis for RFPA rights also fundamentally challenged BLM-RFPA relationships. The studied Idaho RFPAs generally did not appear to experience this level and type of conflict.

Specific events could have lasting impacts on trust and cooperation

Another source of conflict in all cases was specific experiences or incidents that had lasting impacts. Both RFPA and BLM interviewees shared stories of particular fire events, decisions, or outcomes that notably affected their perceptions of each other. These included, for example, accounts of RFPA members acting in opposition to instructions from BLM or taking what was seen as reckless action; or BLM personnel showing apparent disregard for rancher concerns when implementing burnout operations. For some interviewees, these incidents appeared to result in outcomes such as loss or erosion of trust and respect, reinforcement of pre-existing divisions, and decreased willingness to work together or give others the benefit of the doubt. Often, these stories involved personalities and were about one or a few individuals. But in some instances, they appeared to more broadly influence interviewees' perceptions and attitudes towards the entire institution those individuals represented.

Use of external incident management teams challenged RFPA involvement

Relationships were more challenging when federal firefighters were newer and not known in the community. This was especially evident in instances when fires grew large or complex enough to warrant federal incident management teams. These national-level teams are brought in, typically from outside the region of a fire, to provide leadership and resources for two-week periods. Although the majority of fires that RFPAs respond to are small, our case study RFPAs had each been involved in larger, longer-duration incidents such as the Long Draw, Soda, Buzzard Complex, Pony/Elk Complex, and Owyhee Canyon fires. Numerous RFPA members in both states reported being "cut out" of the suppression effort or disregarded by these teams, in some cases being unable to even communicate with them as they used different radio frequencies. They suggested that local BLM personnel who knew them were essential in helping the non-local teams recognize the role of RFPAs and mediating that relationship.

Relationships improved through experience on fire events and in trainings

Despite conflicts, there was also evidence in both states that some rancher-agency relationships were improving. First, BLM interviewees in particular identified increased RFPA use of BLM radios and standard communication protocol as helpful. They suggested that being able to communicate directly with RFPA members to quickly learn about fire starts and to be aware of RFPA member locations led to safer and more effective management of personnel on a fire.

Another factor identified was the time that RFPA members and BLM personnel spent together during fire events and trainings. Going through similar experiences, building similar knowledge, and learning more about wildfire and each other appeared to strengthen informal and interpersonal relationships between individuals. As a result of being on the fireline, RFPA members described increased understanding of how and why federal fire managers make decisions, and recognized their technical knowledge and skills in interpreting fire behavior and choosing suppression tactics. Ride-alongs where RFPA members joined BLM personnel in traveling around fires and discussing tactics, and working side-by-side on the fireline seemed to be specific ways that this understanding was built. In turn, BLM personnel described increased respect for RFPA members' local knowledge and how much it could help a suppression effort, and also recognized the skills that some ranchers possessed such as their abilities in operating heavy machinery, and their general willingness to work hard to suppress fires.

Further, although some single incidents/events fostered conflict, others enhanced relationships. Specific stories from the fireline such as cases wherein someone listened and was responsive to others' needs, and of "good catches," all contributed to growing respect and willingness to work together. Outside the fireline, training and social events were also credited with improving relationships. Instances where BLM personnel and RFPAs jointly trained, in particular, helped them have more "face time" and a common set of concepts and skills.

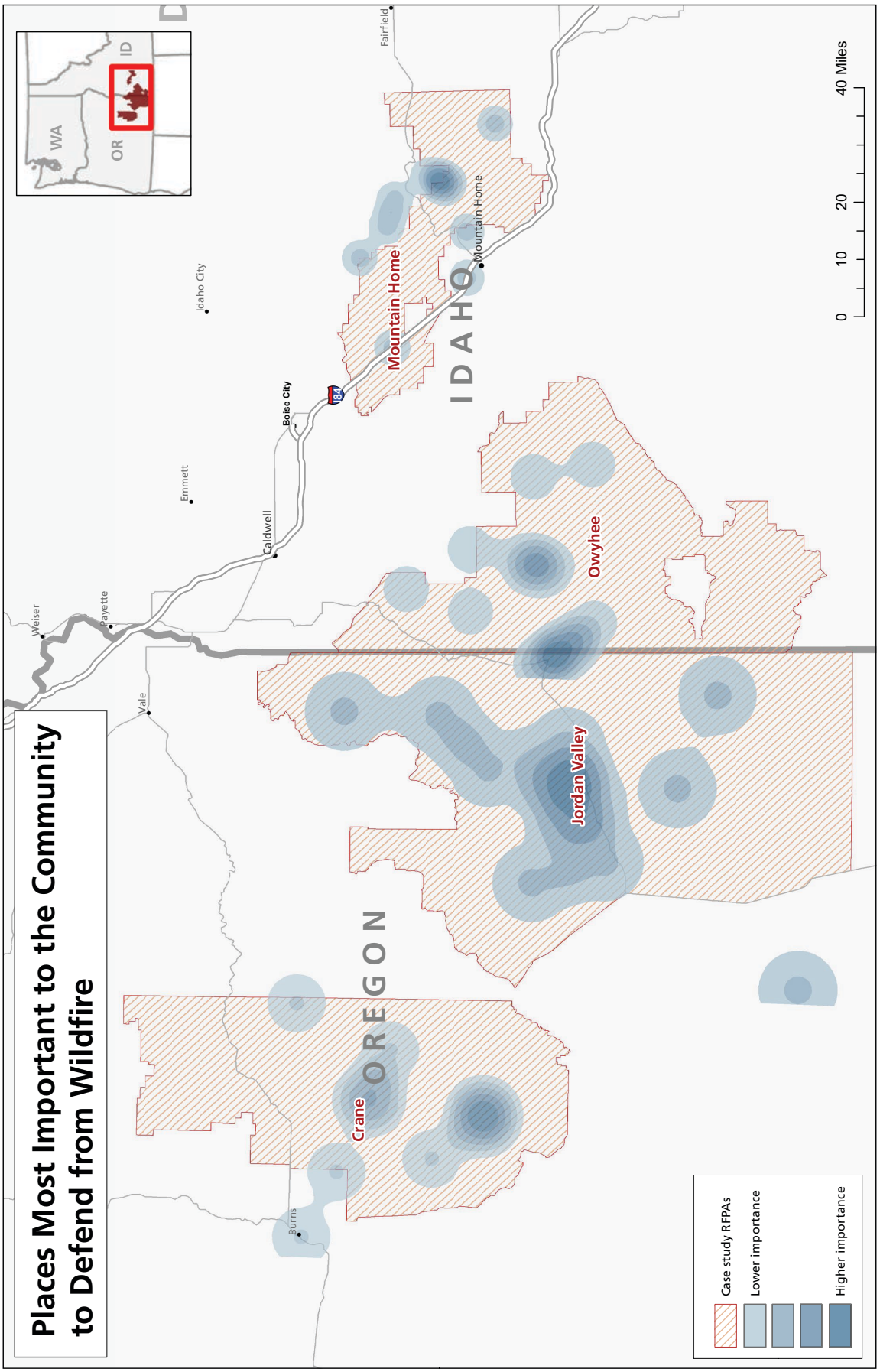
The strengthening of these relationships was often easier in communities where the BLM personnel working with RFPAs had been in their positions for longer periods of time and were already well known in the community, grew up locally, or had some type of ranching background regardless of their place of origin. Some RFPA interviewees indicated personal respect for and knowledge of longtime BLM staff as "good guys," even when they did not always agree with them. They also remarked that those from ranching backgrounds "get it," signifying that they understood RFPA members' values, and motivations in fighting fire.

The RFPA model has focused on suppression, but potential exists for a wider range of activities

To date, RFPAs have largely been used as venues for rancher participation in wildfire suppression across ownerships. The map on page 13 (Figure 3) shows responses to the question "What places are most important to your community to protect from wildfire?" Darker shading represents areas that more case study interviewees identified as important. However, numerous interviewees in both states indicated interest in being involved in more than suppression. They discussed the importance of pre-fire, preventative measures in particular. The Mountain Home RFPA is fairly unique as it has taken on this role. Many of its members partnered with the BLM to plan and implement the Paradigm Fuel Break Project along the Interstate 84 corridor in their area. Wildfire starts off the interstate have long been a common challenge. RFPA members helped conceive the project and dig the miles of firebreak that were approved. Some interviewees in other cases were interested in the potential to do this in their own landscapes.

There was also extensive discussion of the importance of ranchers grazing and using prescribed fire in reducing fuels. Many RFPA interviewees viewed managing fire in a holistic fashion and felt that suppression was only one part of the picture. Our interviews revealed at least one case where ranchers had historically used fire to manage rangelands, but were forced to stop by federal officials. Legal barriers to RFPA member participation in prescribed fire on federal land remain, but RFPAs have already been active in applying prescribed fire to private lands. 2016 reporting showed that seven RFPAs in Oregon conducted some amount of prescribed fire, totaling 5,632 acres overall (4,800 of these acres were from Ashwood-Antelope RFPA). Several RFPA interviewees also shared dissatisfaction with BLM post-fire policies that limit return to grazing and species used for reseeding, but did not necessarily suggest that post-fire issues could be better addressed through the RFPA model. Numerous interviewees expressed hope that the positive relationships they had through the RFPA could be applied to changing federal grazing practices in general, and grazing was a topic of discussion brought up in many instances. Yet many also noted this did not seem currently or readily possible.

Figure 3


Places Most Important to the Community to Defend from Wildfire
WA
OR
ID
IDAHO
OREGON
Fairfield
Mountain Home
Mountain Home
Idaho City
Boise City
Emmett
Caldwell
Weiser
Payette
Vale
Owyhee
Jordan Valley
Crane
Burns
0 10 20 40 Miles
Case study RFPAs
Lower importance
Higher importance

Implications for management and practice

Agency-rancher collaboration

Collaboration between agency and ranching partners for wildfire response will likely continue to face challenges. Enduring cultural differences underpin government-community relationships in some ranching communities. In addition, agency dynamics such as rapid personnel turnover and use of external fire personnel for large events will also remain. Despite these realities, some of the following approaches may help improve collaboration:

- Ride-alongs and working side-by-side during the fires to build understanding of rationale for tactics and strategies as well as to mutually appreciate each others' sources of knowledge and values at risk.
- Time spent together off the fireline during trainings, meetings, social events, and in the community.
- Awareness of the lasting impact that single events or incidents can have positively and negatively on trust; incorporation of time for after-action review for collective processing and learning.
- Local BLM staff serving as liaisons when nonlocal incident management teams come in, helping legitimize role of RFPAs.
- Transition memos and deliberate time to get to know new BLM staff to provide institutional memory and introduction to RFPAs.

Program design or revision

Our research suggests that the fundamental design of RFPA programs was influential in structuring different expectations and relationships in each state. The following observations may inform states setting out to create a RFPA program, or for those that seek to revise an existing program:

- State agencies organizing a RFPA program may wish to consider which roles are best-suited to their capacities, and what relationship they may most productively have relative to and between RFPAs and the BLM. Roles may include, for example, mediator, advocate for RFPA needs, guarantor of federal standard compliance, grantor, convener, pass-through, and/or program manager.
- Informal and interpersonal communications and relationships remain significant in how ranching communities function and interact with agencies. Encouraging a culture of positive, respectful communication and making space for informal interaction and trust-building is as important as, if not more important than, program design.
- Providing not only equipment but also training may help ensure RFPAs are best-prepared to participate in suppression and may increase BLM comfort, as both adequate resources and technical skills are important for safe, effective fire response. However, there may be rancher wariness regarding the "strings attached" to receiving equipment from a government agency.
- Establishment of research to examine avoided costs from RFPA involvement may help better quantify their advantages of local knowledge and quick response. This could aid in educating legislators and the public about the importance of RFPA programs.

Effective RFPA organizations

Each RFPA is its own registered nonprofit organization, intended to provide a venue for systematized rancher participation in fire response. The capacity of these organizations to do this as well as potentially engage in other activities in the future (e.g., fuels reduction), may be enhanced if they have:

- Strong leadership such as a chairperson, board, or other leader(s) willing to do organizational and administrative work, steward the RFPA, and set the tone for positive relationships between the RFPA and BLM.
- Well-established and maintained systems for important functions such as bookkeeping, member training records, and tracking of in-kind and volunteer contributions.

Implications for fire-adapted communities

In general, WUI community residents have been asked to do little more than prepare their immediate home environment for wildfire and to be ready to evacuate as needed. In some places, residents and other stakeholders have also participated in activities such as collaboration around planned fuels reduction and forest health projects. This limited role in wildfire response is in part due to safety and liability issues, and to provide space for expert suppression. Yet some communities have experienced a sense of disempowerment and distress during wildfire experiences as a result of their inability to play a more substantive role. They may have local knowledge or skills/equipment to contribute that is not utilized by federal suppression entities.[5] The existence and outcomes of RFPAs demonstrate that some rural residents may desire and be able to offer more active roles in both fire preparation and response under certain conditions. Other research has found that this is likely to be particularly true in "working lands" communities, which are characterized by long-term/multigenerational inhabitation and an economic and cultural attachment to traditional natural resource livelihoods.[6]

Multiple considerations would need to be addressed for any future expanded engagement of residents, including safety, liability, interfaces with agency and contractor fire personnel, and organizational structures through which participation could be feasible. Learning and adaptation could, however, contribute. RFPA members adapted in several ways as they went through the process of taking some responsibility for fire response. These included both tactical learning around effective response as well as gaining a broader understanding of the justification for professional firefighting techniques. At the same time, professional firefighters in many cases have adapted to working with RFPAs and now see them as invaluable assets. This suggests that residents in other communities may also be able to adapt and learn over time, even if they start out with relatively limited understandings of fire management. In addition, repeated interactions between professionals and residents and a supportive framework (such as provided by state RFPA programs) may also help resolve the tensions between informal local knowledge/institutions and formal federal firefighting knowledge/institutions.

Endnotes

1 https://www.idl.idaho.gov/fire/rfpa/

2 But see: Stasiewicz, A.M. and Paveglio, T.B., 2017. Factors Influencing the Development of Rangeland Fire Protection Associations: Exploring Fire Mitigation Programs for Rural, Resource-Based Communities. *Society & Natural Resources, 30*(5), pp. 627–641.

3 RFPAs are also present or emerging in several other western states, but our study focused solely on Oregon and Idaho, where this model has been present for a longer time.

4 Wildland Fire Incident Management Field Guide, National Wildfire Coordinating Group. 2013.

5 Davis, E.J., Moseley, C., Nielsen-Pincus, M. and Jakes, P.J., 2014. The community economic impacts of large wildfires: A case study from Trinity County, California. *Society & Natural Resources, 27*(9), pp. 983–993.

6 Paveglio, T., Carroll, M.S. and Jakes, P.J., 2008. Alternatives to evacuation—Protecting public safety during wildland fire. *Journal of Forestry, 106*(2), pp.65–70.

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