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## Fire and Fuels Management in the Future: Roles and Challenges

BY JOHN D. BAILEY

*Note: The summary from the 2018 Fire Summit Report is abridged and edited by John D. Bailey.*

We live with *and in* unprecedented fuel conditions throughout much of the West; I equate our situation to that of a filled reservoir where the pond is an accumulation of biomass poised to be drained. Our land management practices, for better or for worse, have created this reservoir—a fuel base that is more contiguous and more homogeneous than at any point in history. Furthermore, greater numbers of humans are more closely connected to forests in communities that have an extended area of wildland-urban interface, and more people seem to have deeply held values about the forests they only rarely visit. Meanwhile, the climate is warming and the forests are becoming drier, making fire seasons longer and stretching management resources further. We now live with a fire behavior triangle on steroids: rugged topography, unprecedented fuels, and more extreme fire weather.

Suppressing fire has been at the heart of our forest management strategy and our profession for a century or more. I “fought” fire for years as an undergraduate student, though some of those years included prescribed burning as well. And fire suppression was suc-



PHOTO COURTESY OF JOHN D. BAILEY

### The 2003 B&B Complex fire one decade later, taken near the crest of the Cascades (and Three Fingert Jack).

cessful for many decades. Recently, however, wildfires have changed. We have set records for severity in three of the past four years, and in eight of the past ten; we have “mega-fires”—complex fires that burn at least 100,000 acres. Our society now invests more time, energy, and resources fighting fires than we do taking proactive steps to reduce wildfire severity and foster the resiliency of our forested landscapes. We find ourselves continuously responding to the next emergency rather than acting on a broader, more strategic view of how to coexist with fire and smoke, and to manage our forested landscapes to reduce severity when wildfires do occur (including the use of fire).

This context cries out for solutions and policies that are adaptable to that long-term perspective. It took a century to create the fuel-laden conditions in our forests, and it will take decades

of proactive management to mitigate those conditions. Scientists and land managers alike tell us that we need to adopt both short- and long-term practices that strategically integrate that management (across all ownership boundaries) with the reality of fire and wildfires clearly in mind. Residents of western states cannot expect a future free of wildfires any more than residents of Florida can count on a future free of hurricanes—the difference is that we can take proactive steps to reduce the severity of wildfires and minimize their adverse social impacts over time. But we must be prepared to execute that new strategy with all its component parts.

### 2018 Fire Summit

Oregon State University sponsored a *Fire Summit* held in Portland, Ore., on

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## Fire and Fuels Management

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March 1-2, 2018, at the World Forestry Center to identify viable forest management practices that would help in mitigating the risks and impacts of high-severity fire events. The full report from the Summit is available at [www.forestry.oregonstate.edu/](http://www.forestry.oregonstate.edu/). It was intended to provide elected officials and policy administrators with recommended actions that, if taken, would meaningfully contribute to addressing the increasing challenges facing our fire-prone western forest landscapes.

The report can also now serve as a platform for subsequent dialogue.

Approximately 30 scientists, land managers, and forest policy experts participated in preparatory meetings in the weeks leading up to the Summit's Day One session. These experts represented relevant areas of expertise, geographical locations, and both public and private ownership interests. They came from five states and British Columbia, and represented six universities; seven federal land management agency offices, departments, or research units; four private forestland management entities; and two city governments.

We were organized into three working panels corresponding to thematic areas aligned with the *National Cohesive Wildland Fire Management Strategy*: 1) managing for landscape resiliency; 2) promoting fire-adapted communities; and 3) developing effective wildfire responses. I worked directly with the first panel on resiliency. Panels were asked to discuss and then ultimately prepare policy recommendations building upon the foundation of work documented in the Western Governors' Association (WGA) *Phase III Western Regional Science-Based Risk Analysis Report* (2012) and the Western Governors' *National Forest and Rangeland Management Initiative* (2017).

The panels met in person during Day One the Summit for nine hours of alternating concurrent and plenary sessions designed to frame and finalize recommendations for the next day. Then, on Day Two, approximately 150 people were convened to hear experts summarize the work of each panel, and then participate in extensive, unscripted discussions with a group of university, state, federal, and private forest policy individuals. The day began with opening remarks by Oregon State Senator Herman Baertschiger, Jr. (Chair, Fire Caucus of the Oregon Legislature) and closed with an address and call to action from Oregon's Governor, Kate Brown.

Represented on stage throughout the Day Two sessions were forest policy executives from the Oregon Department of Forestry; Montana Department of Natural Resources and Conservation; and Office of Washington State Commissioner of Public Lands. They were joined by leaders of forest policy programs of the Universities of Washington, Idaho, Montana, and Oregon State, along with a representative of private commercial forestlands. These nine were joined by two distinguished leaders of the U.S. Forest Service: Vicki Christiansen, Acting Chief of the U.S. Forest Service (who, at the time, was Deputy Chief, State and Private Forestry), and James Peña, Regional Forester, Pacific Northwest Region, Region 6 (before announcing his retirement).



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**Next Issue: Silviculture**

The collective remarks of the panelists and speakers offered a big-picture perspective of the remarkable and intertwined context for viewing fire in the West, from the variety of jurisdictions, landscapes and vegetation types, and cultural experiences and expectations. The individuals and entities represented there collectively agreed we must do a better job incorporating the full range of existing science and local land management expertise into our policies and decisions.

### Specific Recommendations from Summit Panels

**1. Expand Strategic Use of Commercial Thinning, Prescribed Fires, and Managed Wildfire as Forest Management Tools.** More partial harvest/thinning, prescribed fires, and strategic management of wildfires during shoulder seasons needs to be undertaken to change the probability and severity of fires during the subsequent hot, dry summer seasons. On this topic, panels made two clear points: 1) that fuel reduction by mechanical thinning is often an essential part of a prescribed burning and/or managed wildfire strategy where there is an overabundance of fuels; and 2) that “no smoke” in and near fire adapted communities is simply not realistic.

Smoke management policies must reflect this fact if we are to strategically manage the wildfire risks. Participants noted that much work remains if we are to build the social and political license necessary to support the scale of additional mechanical thinning, prescribed burning, and/or use of managed wildfire required to effectively reduce the landscape fuel loading and subsequent likelihood of high-severity fires. That said, panelists noted that ongoing research indicates public acceptance may not be playing as big a role in limiting the use of prescribed fire as overabundance of fuels, lack of contractor and market capacity, personal liability rules, and limited burn windows.

**2. Improve Coordination Across Jurisdictions and Ownership Boundaries.** There is a nearly uniform call for local cross-boundary coordination to more proactively address fire-prone landscapes, and to reassess and tailor the existing framework for fire suppression. Summit panelists, presen-

ters, and participants agreed that successful strategies must include ways to manage people as well as trees. If resourced and provided better access to best-in-class data and modeling, there is virtual consensus that stakeholders in a given locality have the expertise and working relationships to evaluate trade-offs, reach compromises, and make strategic and effective wildfire management decisions that make sense locally and across the landscape. Establishing “*Fire Adapted Community Coordinator*” positions to support planning, implementation, and resourcing of such efforts at a *relevant, local* scale could serve as a major step in this direction. These individuals would be charged with accelerating improvements in practices, securing technical assistance, and coordinating access to resources and information across jurisdictions.

**3. Develop and Implement Cross-Boundary “Pre-Fire Response” Plans and Strategies.** Effective fire response during the height of wildfire season is highly dependent upon the planning and coordination efforts that happen well in advance of the fire event itself. Because creating fire-resistant and resilient landscapes is a long-term proposition, panel discussions agreed that aggressive suppression must certainly continue. To be most effective, however, that suppression must be strategic and undertaken in the context of accepted goals for re-establishing

sustainable conditions into the future. Summit panels uniformly noted that additional investment in risk assessments that articulate the unique risk of both fire and resulting smoke to the landscape and populations in each region is needed. Summit panels also addressed the need for pre-fire strategies that specifically address home (or “structure”) ignitions during extreme wildfire conditions, since these ignitions are principally driven by ignition factors (vulnerabilities) of a home in relation to its immediate surroundings—the “home ignition zone.”

**4. Address Inequities Associated with Liability for Cross-Boundary Fires.** Fires frequently cross land ownership boundaries, and in doing so create questions of legal liability for damages associated with the fire event. The current framework for imposing financial responsibility for losses resulting from fires that cross from federal to private forests and vice-versa is a flash point that impedes progress in nearly all discussions regarding fire prevention and suppression efforts. Perceived or actual liability is thought to be a significant impediment to expanding the scale of prescribed burning on private lands. Summit panels discussed and recognized this legal construct as an obstacle to cohesive and effective pre-attack planning, strategy development, and suppression.

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# The Klamath-Lake Forest Health Partnership: An Evolving Example of Planning All-Lands Restoration

BY JASON PETTIGREW

**D**eclining forest health, coupled with severe wildfire, is impacting ecological, social, and economic systems across the western United States. As



landscapes become less resilient and the consequences impact multiple values, communities and land management agencies increasingly seek collaborative approaches to manage across traditional boundaries.

The Klamath-Lake Forest Health Partnership (KLFHP) is implementing landscape-scale projects in south central Oregon that leverage public resources with local capacity for all-lands projects. Despite institutional barriers, the unique combination of partners has enabled KLFHP to garner funding for projects that address multiple resource values. The group seeks to proactively create a portfolio of management options rather than allow extreme events to dictate decisions.

The complexities faced in Klamath and Lake counties are familiar across the western US—mixed ownerships overlaid on diverse landscapes. These counties face similar economic challenges with undesirable forest health conditions, controversial water issues, and increasing wildfire risk due to fuel loading and an expanding wildland-urban interface. The counties differ in land ownership—Klamath's average nonindustrial owner manages 10 acres, compared to 1,500 acres in Lake County where ranching is the predominant land use. Landscape management needs are similar, though differ-



PHOTO COURTESY OF JAKE BARNETT

**Juniper thinning projects in eastern Oregon are common to reduce the encroachment of western juniper due mainly to fire exclusion in fire-dependent ecosystems. The juniper piles are burned under favorable smoke and fuels conditions and often have many tons per acre of biomass material.**



PHOTO COURTESY OF JASON PETTIGREW

**This photo shows the fence line from private land looking onto Forest Service land that is being thinned under the first Good Neighbor Authority timber sale in Region 6.**

ent approaches are used in each county. Large fires with mostly undesirable side effects have occurred in both counties—Barry Point, Oregon Gulch, Winter Rim, Toolbox, and Moccasin Hills are a few that come to mind. In eastern Oregon environments, wildfire

is the primary disturbance we seek to moderate, and at the same time build into future management plans.

A simplified look at the landscape KLFHP seeks to evaluate illustrates a humbling reality where treatment efforts on 4.8 million acres (2.3 million acres on the Fremont-Winema National Forest) are outpaced not only by the annual threat of fire (historical fire return intervals average 14 years in many locations), but also by the encroachment of juniper and noxious weeds, as well as progressively overstocked forest stands. For the past century, much of this landscape has been

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devoid of stand altering or maintenance mechanisms. The Fremont-Winema National Forest's *Accelerated Restoration and Landscape Strategy* (2014) identifies a need to increase the pace and scale of restoration—a strategy that applies to most forest and range landowners in the region.

Landscape-scale conservation that focuses on multiple resource values and ownerships has become an increasingly important management concept. While there is no one-size-fits-all approach, key elements of successful projects include broad partnerships among local, state, and federal organizations, as well as innovative data collection and targeted outreach strategies to recruit private landowners.

The Partnership's overall vision is to create a portfolio of management options across the landscape that incorporate landowner needs and rebuild the resilience of forest and range ecosystems so that large-scale disturbances like wildfire have net positive effects. The group leverages state and federal resources with local capaci-

ty to build projects that meet social, economic, and ecological restoration goals. To address resource needs that cross boundaries, the KLFHP model relies on a shared vision between federal land managers and private landowners, supported by a diverse funding portfolio. The group regularly surveys an area of over 4.8 million acres—regardless of ownership—looking for opportunities to pair federal NEPA-ready projects with work on privately owned land to create projects that meet goals of the National Cohesive Strategy. Operational efficiencies, focused stand treatments, and sensible prescriptions become more evident when ownership barriers are blurred or removed. Watersheds, forest types, and focal species such as mule deer and sage grouse habitats become the operational boundaries we seek to operate within rather than tax lots.

The ability to move forward with landscape-scale restoration in Klamath and Lake counties has been many years in the making. The alignment of state and national priorities

has been critical. For example, the Good Neighbor Authority has paved the way for development of a Federal Forest Restoration Program in Oregon, which allows the Oregon Department of Forestry (ODF) to assist with restoration projects on federal lands. Additionally, ODF has a cooperative agreement with the Natural Resources Conservation Service that enables ODF stewardship foresters to help forest landowners access Farm Bill programs. These tools allow ODF to work with federal and other local partners to access funding and create agreements in support of a shared local vision for landscape-scale restoration.

The North Warner Crooked Mud Honey Project expanded a 60,000-acre Forest Service treatment project to well over 90,000 acres by adding adjacent private landowners using multiple funding sources and technical support from several partners. The projects provide for the removal of commercial timber, stream restoration activities, forage enhancement, and

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removal of encroaching juniper and overstocked non-merchantable conifers. The project includes active noxious weed treatment programs, developing prescribed burn plans, and grazing or forest management restoration work on all ownerships within the project boundaries.

Project planning at a landscape scale includes identifying high potential areas through analysis of current fire risk and vegetation inventory, development of forest management plans, and working with stakeholders to create a shared vision for future resource conditions. Detailed data collection and GIS mapping on private lands provide information for landowners and technical specialists to discuss long-term management with awareness of what is planned on adjacent federal lands. Maintenance plans include wildfire response, landscape maintenance with mechanical and prescribed fire treatments, and technical assistance for private landowners. A forthcoming publication from Oregon State University Extension will document the processes, relationships, and story of recent KLFHP projects.

Key challenges to large-scale treatments include biomass utilization and developing the institutional capacity needed to support an emerging business model around landscape-scale collaborative projects. The latter has been particularly challenging, but the unique combination of partners and

*“Watersheds, forest types, and focal species such as mule deer and sage grouse habitats become the operational boundaries we seek to operate within rather than tax lots.”*

—Jason Pettigrew, ODF Stewardship Forester

trust built through KLFHP has enabled the group to find innovative solutions to these institutional barriers. The project funds acquired thus far are viewed as a stimulus to initiate landscape treatments with a strong impetus to create free market incentives. To continue this work, expand upon untreated acres, and enable sustainable maintenance, there is a critical need for the development of viable biomass markets.

Other challenges include workforce capacity, agency programmatic barriers that inhibit collaboration at the local level, and key players who choose not to participate. The alignment of empowered agency employees, the right funding sources, and a locally derived desire to consider all lands treatments are necessary for successful projects.

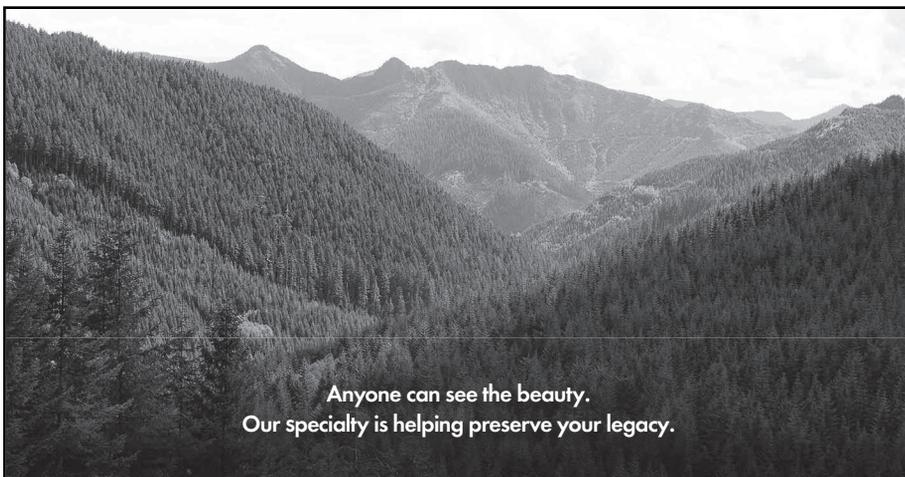
Fire has a much larger role as a tool in resource management in eastern Oregon than in moister western Oregon. As a tool, fire is underutilized, poorly understood, and generally not supported. KLFHP recognizes that few landscapes are ready to receive fire until mechanical treatment can realign their systems. Forest land manage-

ment should seamlessly transition from the mechanical to fire use and complement each other; however, this is often not the case. Landscape-level planning takes a comprehensive view using all the tools available to us, applied in the right places at the right time, to create the appropriate changes. Land managers and landowners must be cognizant of the options and make informed decisions. Forest management plans should look beyond individual trees.

The Klamath Lake Forest Health Partnership realizes the biggest challenge to landscape-level treatments lie in our culture, our relationships, and in ideas that lack forethought. Forest management is a long-term endeavor. Locally, we have learned that physical landscapes often heal sooner than human relationships, though both are damaged by the same catastrophic wildfires, poor forest management decisions, or other ecological disasters. This lesson suggests project success should be measured by relationships and partnerships, rather than just acres treated.

To make a positive difference on a landscape scale we must put the best interest of the land and its people first, while balancing the ecological constraints we face. We can only pull so many levers to bring about change, and finding the right combination can be challenging. We seek to create a diverse, resilient landscape that provides multiple values over time. To get there, we have focused on partnerships that enable us to leverage the resources, relationships, and latest technology to identify shared goals and create management plans that balance complex (often competing) needs for generations to come. ♦

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# Contracted Service Rates for Common Wildfire Hazard Mitigation Approaches in the WUI

BY GARY ELLINGSON, LUKE MACHTOFF, AND ERIC FEMREITE

**N**orthwest Management, Inc. (NMI) has provided forestry consulting services since 1984 throughout the inland Northwest. NMI operates offices in Moscow, Idaho; Deer Park and Colville, Washington; and Helena, Montana. Over the past several decades, NMI and many of its staff of 35 natural resource professionals have provided wildfire hazard mitigation services to clients throughout its service area.

This article provides a general overview of the range of contracted services costs that NMI typically encounters when completing wildfire hazard mitigation proj-



**Gary Ellingson**



**Luke Machtoff**



**Eric Femreite**

ects within the Wildland Urban Interface (WUI). Contracted services primarily include activities associated with tree felling and slash disposal. Wildfire hazard mitigation projects completed in the WUI often occur in settings such as residential subdivisions, rural residential areas, and other areas within or adjacent to cities and towns. In other words, these projects take place where human development intermingles with undeveloped wildland or vegetative fuels that are at varying degrees of risk from wildfire.

These projects occur in developed areas, which has an impact on costs of contracted services. There are often neighbors or community associations involved or impacted by work that require a higher level of project coordination to ensure a successful outcome.

Slash burning can raise concerns among neighbors as well as local fire and law enforcement agencies. Operators must often mobilize and park equipment on paved streets or within residential areas. Noise associated with chainsaws and operation of mechanical equipment impacts neighboring properties, thus hours of operation may need to be adjusted accordingly. Power lines, lawns, gardens, fences, septic tanks, irrigation systems, and other developments must be protected or avoided. Fixed costs, such as mobilization of equipment, are allocated to a smaller project size, which drives up costs on a per acre basis relative to wildland projects.

Wildfire hazard mitigation projects

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Photo Courtesy: KellyJamesPhoto.com

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## Contracted Service Rates for Common Wildfire Hazard Mitigation Approaches in the Wildland-Urban Interface (WUI)

| Approach  | Applications and Considerations  | Cost Factors  | Cost Range (MT, ID, E. WA)   |
|---|--|---|--|
|  <p><b>Hand thin, hand pile, and burn</b></p>  | <p>Areas without smoke management issues. Areas inoperable to mechanical equipment. Material small enough (&lt;6" dia.) to handle by hand and burn well in hand pile. Piles must be left on-site at least 3-4 months to dry out properly for good consumption and less smoke.</p>  | <p>Stand density and stem size. Topography. Piling is very labor intensive. Burning in WUI may require smoke management coordination and water resources. Coordination with local fire and law enforcement agencies during burning.</p>                               | <p>\$650-\$1,300/ac<br/><i>(does not include burning)</i></p> <p>Labor: \$25-\$33/hr.</p>  |
|  <p><b>Excavator piling</b></p>  | <p>Typically follows mechanical harvest of large trees. Trees greater than 6" dia. are typically machine felled and processed. Smaller trees may be cut by hand or with mechanical equipment. Areas without smoke management issues. Topography and ground conditions suitable for operation of mechanical equipment. Larger material and heavy fuels are more suited to handling with equipment. Need adequate tree spacing for larger piles and equipment operation. Piles must be left for at least 3-4 months to dry out properly for good consumption and less smoke. Some coarse woody debris (logs greater than 6") may be left for wildlife habitat.</p> | <p>Density and size of material. Topography, volume of material, rocky ground, density of residual stand. Burning in WUI may require smoke management coordination and water resources. Coordination with local fire and law enforcement agencies during burning.</p> | <p>\$200-\$550/ac<br/><i>(does not include burning or tree felling)</i></p> <p>Large excavator rates: \$90-\$150/hr.</p> <p>Small or mini-excavator rates: \$65-\$95/hr.</p> |
|  <p><b>Track-mounted excavator or feller buncher with mastication head attachment</b></p> | <p>Topography and ground conditions suitable for mechanical equipment operation. Exposed rocks are undesirable. Useful where burning is not acceptable or desired. Standing and down material can be masticated. Machine reach will allow for thinning if tree spacing is adequate for machine passage. Fire hazard during dry conditions due to sparks. Extremely heavy fuel accumulations may result in a residual chip bed.</p>   | <p>Density and size of material. Topography, volume of material, rocky ground, density of residual stand.</p>   | <p>\$450-\$1,150/ac</p> <p>Machine rates (excavator or feller buncher mounted mastication head, forwarder, etc.): \$150-\$225/hr.</p>  |
|  <p><b>Skid steer or tracked forestry mulching machine</b></p>                           | <p>Limited to level or moderately sloped topography (0-30% slope). Exposed rocks are undesirable. More ground disturbance due to frequent turning and multiple passes. Most efficient with smaller diameter material (standing or down). High level of upper soil disturbance to create a very smooth, manicured result. Can operate in tighter space or residential applications with rubber tracks.</p>  | <p>Density and size of material. Topography, volume of material, rocky ground, density of residual stand.</p>   | <p>\$450-\$1,150/ac</p> <p>Machine rates (skid steer or custom mulcher): \$125-\$225/hr.</p>   |
|  <p><b>Hand thin and chip with towable chipper</b></p>                                   | <p>Restricted to areas close to roads or very flat, operable ground a 4WD pickup can traverse. Useful in WUI settings where pile burning is not desirable. Eliminates the need to return to project area for burning. Chipped material is generally broadcast on-site. Most commercial towable chippers operated by a labor crew are inefficient handling materials larger than 6-8" diameter although machine is rated for larger material. Dragging and feeding material to chipper is labor intensive.</p>  | <p>Generally, a 2- to 4-person crew pairs well with one chipper when chipping is underway.</p>  | <p>\$750-\$1,650/ac</p> <p>Labor: \$25-\$33/hr.</p> <p>Towable chipper with 3-person crew: Approx. \$1,250/day.</p>  |

## Contracted Service Rates for Common Wildfire Hazard Mitigation Approaches in the Wildland-Urban Interface (WUI)

| Approach  | Applications and Considerations   | Cost Factors  | Cost Range (MT, ID, E. WA)   |
|---|---|---|--|
|  <p><b>Hand thin and chip with track-mounted, self-propelled chipper</b></p> | <p>Can be used on steeper and inaccessible topography that towable chipper cannot reach. Less restricted by road access. Useful in WUI settings where pile burning is not desirable. Eliminates the need to return to project area for burning. Chipped material is generally broadcast on-site. Some chippers operated by a labor crew are inefficient handling materials larger than 8-12" diameter although machine is rated for larger material. Dragging by hand is minimized; the chipper comes to the slash.</p> | <p>Generally, 2- to 4-person crew pairs well with one chipper when chipping is underway.</p>  | <p>\$900-\$2,200/ac</p> <p>Tracked chipper with 3-person crew: \$1,500/day.</p>  |
|  <p><b>Use of mechanical logging equipment</b></p>                           | <p>Logging machinery may be utilized in the WUI to harvest larger merchantable and non-merchantable diameter trees. In most instances, the value of merchantable trees does not offset costs of completing the project if the emphasis is on removal of smaller diameter trees.</p>   | <p>There are numerous variables associated with costing these projects and use of a professional forester with timber harvesting experience is required to prepare a project plan and budget. Sufficient space is required for log landing and slash piles.</p> | <p>Costs are highly variable. The logger may work on a lump-sum basis, on a per-acre rate, or charge hourly rates for mobilization, mechanical equipment, and hauling.</p> |

often begin with a property assessment conducted by a trained forestry professional. Once the risk is identified, and the property owner agrees that action to mitigate the risk is required, a detailed project plan and map outlining the migration method and location is prepared. Project plans are generally required for property owners seeking financial or cost-share assistance. Typically, the project plan defines the standard to which the vegetation must be modified to effectively mitigate the fire risk. At this point the devil is in the details as there are typically several alternative approaches that can be utilized to achieve the intended mitigation outcome. The project planner and/or the property owner will determine which approach is best suited to the project and obtain cost estimates from qualified contractors that can perform the work with the required equipment. Cost quotes from contractors are necessary to develop final project budgets and cost estimates.

Contractors that perform wildfire hazard mitigation work face a challenging business environment. Hiring and retaining workers in a seasonal business is difficult. Training is required for employees to operate spe-

cialized equipment in a safe and efficient manner. The work is often physically demanding. Bidding jobs, coordinating work schedules, managing payroll and cash flow, and keeping clients happy are continual challenges.

Most approaches to wildfire mitigation work require significant labor, and therefore labor costs have a considerable impact on project costs and bid rates. Labor includes operating equipment, felling and pruning trees, bucking and piling slash, and dragging trees to chippers. Contractors that provide adequate insurance, tools, fuel, training, transportation, and safety equipment generally charge between \$25-33 per hour or \$200-260 per day (8 hours) for laborers. Specialized equipment used in wildfire hazard mitigation work such as chippers, mulchers, masticators, and logging equipment take a beating in forest settings, and maintenance costs of this equipment is typically very high. Day rates for mechanical equipment usually exceeds \$1,000 per day. Production rates will vary widely depending on fuel loading and the physical environment. Estimating the cost of contracted services is difficult, but the Table is designed to provide a starting point and describe some

general cost considerations.

Property owners and foresters are often surprised at the high costs associated with contracted services. They often make the mistake of under-estimating costs or comparing costs to wildland projects that are generally larger, not as complex, and less intensive from a vegetation management perspective. Property owners generally will require aesthetics to be maintained or improved on their valuable landscapes. We hope the table provides a good starting point for cost estimation. ♦

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# Where There's Smoke There's Fire

BY AMANDA STAMPER

**M**anagement of smoke from both wildfires and prescribed fires has become one of the biggest challenges for fire managers in recent years.



Controlled burning releases a fraction of wildfire emissions on average, yet remains highly regulated in many states, particularly those with large urban populations. Inundating communities for longer timeframes and at higher concentrations than in decades past, wildfires are effectively occupying the air shed, leaving little room for smoke from prescribed fires.

Mitigation of public health impacts from conservation of natural resources using controlled burning presents ongoing and increasing challenges. Success depends upon protecting populations from adverse smoke impacts while ensuring protection of firefighter and public safety from catastrophic wildfires through active forest management, including the use of prescribed fire.

Just as the weather cannot be controlled, wildfires and the smoke they produce are generally regarded as uncontrolled until their behavior is brought within some predefined range. The term controlled burning, synonymous with prescribed fire, implies a degree of control over smoke and where it is going, despite that unanticipated events such as wind shifts may occur. There are expectations that those applying fire to the

landscape demonstrate due diligence in avoiding adverse impacts to communities, often while protecting them from the adverse impacts of wildfire using prescribed fire.

States regulate smoke produced by controlled burning differently, ensuring compliance with each state's implementation of the Clean Air Act. Requirements for prescribed burning air quality regulatory compliance range from predetermined cut-off times for ignitions to prevent overnight settling of smoke and associated impacts to populated or smoke sensitive areas, to relatively little oversight or permitting requirements in remote areas without fire protection and populations likely to be affected by air quality issues. Forest fuels and agricultural residues are generally treated differently, just as the smoke they produce differs considerably.

While there are no easy solutions to meeting the often-competing objectives of maintaining air quality and forest and rangeland health, government agencies such as US Forest Service, Natural Resource Conservation Service, and the National Wildfire Coordinating Group have created guidance to help practitioners. Basic smoke management practices out-



PHOTO COURTESY OF AMANDA STAMPER

**A participant at the Ashland Prescribed Fire Training Exchange in 2016 and 2017.**

lined in Table 1 provide a framework for ensuring that efforts are made to protect the public from smoke impacts. These practices also provide for information to be delivered effectively based on the best available science, enabling both practitioners and impacted populations to make informed decisions to protect themselves from smoke, whether from wildfire or prescribed fire.

**Table 1. Basic Smoke Management Practices**

| Basic Smoke Management Practice (BSMP)         | Benefit Achieved with the BSMP   | When the BSMP is Applied—Before/During/After the Burn |
|--|--|---|
| Evaluate Smoke Dispersion Conditions           | Minimize smoke impacts.  | Before, During, After                                 |
| Monitor Effects on Air Quality                 | Awareness of where the smoke is going and degree it impacts air quality.   | Before, During, After                                 |
| Record-Keeping/Maintain a Burn/Smoke Journal   | Retain information about the weather, burn, and smoke. If air quality problems occur, documentation helps analyze and address air regulatory issues. | Before, During, After                                 |
| Communication—Public Notification              | Notify neighbors and those potentially impacted by smoke, especially sensitive receptors.  | Before, During  |
| Consider Emission Reduction Techniques         | Reducing emissions can reduce downwind impacts.  | Before, During  |
| Share the Airshed—Coordination of Area Burning | Coordinate multiple burns in the area to manage exposure of the public to smoke.   | Before, During, After                                 |

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## Evaluate and anticipate smoke dispersion conditions to minimize impacts

Develop a smoke management plan **before** burning, based on analysis and evaluation of weather conditions most appropriate for meeting both prescribed fire and smoke management objectives. Monitor weather conditions and forecasts **during** the burn, and compare them to predicted and observed to better anticipate potential smoke dispersion. Continue to monitor and compare weather forecasts and on-site weather observations **after** burning to understand possible effects of lingering smoke from smoldering fuels.

## Monitor effects of fire on air quality

Monitor regional air quality conditions and forecasts using online resources such as the National Weather Service, local air quality monitoring sites, and EPA AirNow **before** burning. If air quality is predicted to be poor, consider postpon-

ing further planning and logistics until air quality conditions improve. Monitor smoke impacts on air quality, particularly near smoke-sensitive areas, towns, highways, and schools using resources such as field reconnaissance and monitoring reports **during** and **after** burn.

## Record Basic Smoke Management Practices, fire behavior, and fire effects

Document observed weather and air quality conditions as well as current forecasts, and observe trends **before** burning. Record practices employed **during** the burn including emission reduction techniques such as modified ignition patterns, on-site weather observations, fire behavior, smoke dispersion and impacts, size of area burned, and fuels burned as part of the prescribed fire burn plan documentation. Retain records, observations, and burn plans **after** burning for reference in case of an inquiry, or in the event of an adverse air quality impact.

## Communicate with and notify authorities, partners, and affected public

Notify appropriate emergency response dispatch centers, air quality regulators, fire response agencies, and neighbors and citizens of affected smoke-sensitive areas of anticipated smoke and air quality impacts **before** burning. Develop contingency plans for potential undesirable impacts and notify appropriate agencies of those plans in advance. If public transportation is or may be affected, provide appropriate and timely updates to affected authorities **during** the burn, paying heed to smoke impacts from smoldering fuels.

## Utilize emission reduction techniques

Consider available emission reduction techniques **before** burning, including timing of ignition prior to anticipated precipitation, use of ignition techniques to limit large-diameter

(CONTINUED ON NEXT PAGE)



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fuel consumption, and burn unit design with sub-units for option of easily ceasing ignitions as needed. The recently revised NWCG Smoke Management Guide listed in the resources sidebar provides helpful guidance on emission reduction techniques. Document use of techniques employed to reduce emissions **during** the burn and observed effects. Complete mop-up as quickly as possible and ecologically appropriate, and extinguish smoldering fuels if necessary to address any potentially adverse smoke impacts in advance.

### **Collaborate with nearby fire managers to manage smoke emissions**

Agencies authorizing burns in many states determine regional emission loads as part of their permitting processes; however, individual burn managers may collaborate to help avoid local adverse smoke impacts

## **Resources for Basic Smoke Management Practices**

**USFS-NRCS guide to Basic Smoke Management Practices (BSMPs)**  
<https://bit.ly/2EXFgkN>

**NWS Fire Weather Forecasts**  
<https://bit.ly/2HxVmXW>

**NWS Fire and Smoke Mapping Resources**  
<https://bit.ly/2HwCIf>

**EPA AirNow! Air Quality Observations and Forecasts**  
<https://bit.ly/1eln6uU>

**USFS BlueSky Playground**  
<https://bit.ly/2qloxNn>

**NWCG Smoke Management Guide for Prescribed Fire and Wildland Fire**  
<https://bit.ly/2HbJMyi>

**USFS Intro to Prescribed Fire in Southern Ecosystems**  
<https://bit.ly/2vpdgr1>

**NIFC National Smoke Management Resources**  
<https://bit.ly/2voQBLs>

**NWCG Smoke Committee (SmoC)**  
<https://bit.ly/2HdfvTy>



PHOTO COURTESY OF AMANDA STAMPER

### **Smoke from a prescribed burn for reduction of juniper on the Crooked River National Grassland in 2013.**

regardless of regulatory requirements **before** burning. Burn managers can establish information sharing networks with other burn managers to coordinate burn days and cooperatively reduce acres burned when necessary to avoid adverse smoke impacts **during** and **after** burning.

Employing basic smoke management practices before, during, and after a prescribed burn should be tailored and adjusted to local factors including tolerance and sensitivity of the populations affected, wildfire hazard, and feasibility of alternatives to burning, to name a few.

Establishment and practice of these approaches can serve as a solid foundation for building social license to help communities better adapt to living with wildland fire, including the smoke it produces. ♦

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# Omnibus Bill Delivers Fire Funding Fix, New Fuels Reduction Tools

BY NICK SMITH

**T**he Consolidated Appropriations Act of 2018, also known as the “omnibus” bill, delivered a number of legislative victories for federal forest management. Notably, the bipartisan forestry package gives federal agencies additional funding and new policy tools to support fuels reduction work on public lands.



Chief among these victories is a solution to federal “fire borrowing” that has hamstrung federal land management agencies for many years. The process for setting federal wildfire budgeting at the 10-year average of suppression costs has failed to keep pace with larger and increasingly severe fires. Whenever the agency exhausts its firefighting budget for the fiscal year, it is forced to redirect money from non-fire programs including those for fuels reduction.

The Society of American Foresters, the conservation community, forest products industry, and other stakeholders have long advocated for a solution to fire borrowing. Some have proposed simply allowing agencies to access emergency disaster funds when suppression funds are exhausted, but the idea has faced resistance from key members of Congress. After four years of negotiations a compromise was finally reached, though the solution is nuanced and comes with a few caveats.

According to the Federal Forest Resource Coalition, the omnibus includes a new fire suppression funding mechanism that will adjust federal spending caps to accommodate firefighting needs. The legislation provides a new “disaster cap allocation” for wildfires starting in Fiscal Year (FY) 2020 at \$2.25 billion, which increases to \$2.95 billion in FY 2027. In addition, the legislation freezes the wildfire suppression line item at the Forest Service at the FY 2015 level to stop the slow

migration of non-fire funding to the fire programs at the beginning of each fiscal year.

Importantly, the new budget cap doesn’t come into effect until FY 2020. For FY 2018 and 2019, the bill provides \$1.946 billion in fire suppression funding, to be allocated to the Department of Interior and the Forest Service. If this funding, which is \$500 million above the current 10-year average, proves insufficient, the Congress will have to provide additional emergency spending.

In addition to the budget fix, the \$1.2 trillion omnibus increases wildfire-related programs by nearly \$550 million, including an \$80 million increase to the Forest Service’s Hazardous Fuels line item. In total, hazardous fuels and fire accounts total \$3.3 billion out of the \$5.9 billion total (55 percent) for the Forest Service.

The omnibus bill includes several forest management policy reforms. This includes a new 3,000-acre Categorical Exclusion (CE) under the Healthy Forests Restoration Act (HFRA) for Forest Service “Wildfire Resilience” projects. The CE must use a collaborative process, consider best available science, and maximize retention of old-growth and large trees. Projects must be located within landscapes designated under the Farm Bill as of March 23, 2018. Projects may also be within the Wildland Urban Interface, or within Condition Class 2 or 3, or Fire Regime Groups I, II, or III that contain very high wildfire hazard potential. Before using this CE, the Forest Service is required to apply its “extraordinary circumstances” regulation to ensure no significant effects.

The omnibus also reforms vegetation management around power lines and establishes new HFRA categories for fuel breaks and fire breaks. Under HFRA, these projects are eligible for expedited procedures including action/no-action analysis and a waiver of the administrative objection process.

Further, the omnibus bill amends federal stewardship contracting. The Departments of Agriculture and

Interior can now award 20-year stewardship contracts, or agreements in areas where the majority of federal lands are in Fire Regime Groups I, II, or III. It permits agencies to give a preference to contractors that would, as part of a contract, promote an innovative use of forest products, including cross-laminated timber. The legislation also includes fixes to address the cancellation ceiling excess value, as well as the annual reporting issues associated with stewardship contracting.

The bill also requires mapping within two years of wildfire risks to inform evaluations of wildfire risk, prioritize fuels management needs, and show potential for wildfire that could be difficult for suppression resources to contain and that could cause ignitions to structures. Finally, the omnibus bill provides a long-sought improvement to the federal Good Neighbor Authority (GNA) law that allows state agencies to work with the Forest Service to implement projects on forests in need of treatment. Specifically, it permits GNA projects to include reconstruction, repair, or restoration of National Forest System roads.

Overall, the forestry package in the omnibus bill is a major accomplishment. It will help federal agencies improve management of federally-owned forests, reduce fuel loads, and mitigate the risks of catastrophic fires. ♦

*Nick Smith is a member of the Portland Chapter of the Oregon Society of American Foresters. He is executive director of Healthy Forests, Healthy Communities, which advocates for active forest management on publicly-owned forests. He can be reached at nicksmith1976@gmail.com.*

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# When Fire Threatened, John Engelién and His Forest Were Ready

BY JIM GERSBACH

**D**oes thinning and pruning trees help reduce the risk of catastrophic fire on forested property? If you ask woodland owner John Engelién of Polk County, Oregon, the answer is a resounding yes. John almost certainly saved forest on his property a few years ago by treating 30 acres of Douglas-firs to make the grove more resilient to wildfire.



John's family has owned the grove and another 70 acres of forested land northwest of Dallas, Ore., since the 1930s. John was born on the land and inherited it in 1985. He and his father before him staggered the harvesting of Douglas-fir and some Willamette Valley ponderosa pine to keep the land a patchwork of differently aged stands.

One hill was harvested around 2000 and replanted with Douglas-fir. After a dozen years the planted area was choked with tall grass and invasive brush typical of western Oregon—Scot's broom and blackberries. The 20' to 40' tall Douglas-firs had limbs nearly to the ground. The dead lower limbs made it difficult for John to walk

through and formed the perfect ladder fuel to carry fire up into the tree canopy. John knew something should be done and turned to his local Oregon Department of Forestry (ODF) office in Dallas.

ODF has an Oregon-wide agreement with the federal Natural Resources Conservation Service to provide technical assistance to owners of non-industrial forestland looking to improve their forest stands. ODF stewardship foresters can help landowners inventory what's on their property and develop a treatment plan. Once a plan is created, the landowners can hire out the work, do it themselves, or do some and hire out the rest.

After the work is completed, the



PHOTO COURTESY OF OREGON DEPARTMENT OF FORESTRY

**Landowner John Engelién points out to Unit Forester Jeff Classen of the Oregon Department of Forestry how high up he limbed his Douglas-fir trees. Removing lower limbs kept a 2013 wildfire from climbing into the canopy, preventing a more intense crown fire.**

ODF stewardship forester visits the property to certify that the work was done according to the plan. Landowners include the certification in their application to receive reimbursement through the NRCS's Environmental Quality Improvement Program. EQIP has been available to owners of nonindustrial forestlands since the 2008 federal Farm Bill.

Oregon is a big state with more than 30 million acres of forestland. NRCS prioritizes different parts of the state to meet certain strategic goals, such as reducing the risk of wildfire in a watershed a community depends on for drinking water. Reimbursement is set at a fixed rate per acre based on which treatment was done. So far in fiscal year 2017-18, 174 Oregon landowners are slated to receive \$6.3 million in reimbursements for voluntary forest conservation work on 13,547 acres.

John worked with ODF to create his forest stewardship plan. With plan in hand, he then hired a crew and set to work in early 2013. Over four months they cut down brush and used chain-



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saws to cut off limbs 6 to 8 feet from the ground. Using a technique called lop and scatter, they spread the limbs widely over the ground rather than in tall piles. When the work was finished in April, the grove looked like a well-groomed park. ODF certified the work and John applied for and received partial reimbursement through the EQIP program.

John completed the work on his property just in time. The summer of 2013 was dry in Oregon. The state had its driest July on record, getting only 7% of average precipitation that month. When fires started, dry fuels readily burned, even in the Willamette Valley. Oregon saw more state-protected land burn that summer than at any time since the last of the four Tillamook Burn fires in 1951. By August, nine large wildfires were burning from one end of the state to the other.

In the last half of that month, John was harvesting straw when he noticed smoke on a nearby hill. Sparks from equipment being operated on a nearby property had set grass and brush on fire. Flames were racing east toward his Douglas-firs, fanned by steady winds.

Responding to the fire alert, the Oregon Department of Forestry's Dallas Unit quickly sent fire engines and a bulldozer. They were soon joined by engines from local fire departments worried about the fire spreading to nearby farms and homes.

ODF's Dallas Unit Manager Jeff Classen recalls the day as warm, dry, and windy. "The wind was blowing a steady 10 to 15 miles an hour with gusts over 20, pushing flames as high as 20 to 30 feet through the tall brush and some young trees. If the fire got into the tree canopy, it was almost certain to run through the forest out of control."

That didn't happen. Once the fire reached John's recently treated property, there was less fuel and most of it



PHOTO COURTESY OF JOHN ENGELIEN

**Invasive Scot's broom and other brush created a fire hazard on John Engeliens property west of Salem, Oregon. This potentially endangered his stand of Douglas-fir. Under the EQIP program he removed the brush in 2013, which helped reduce the intensity of a wildfire that spread onto his property later that same year.**



PHOTO COURTESY OF OREGON DEPARTMENT OF FORESTRY

**Removing lower limbs and scattering the downed wood helped western Oregon landowner John Engeliens keep a wildfire low to the ground so that it was easier for firefighters to control.**

was scattered and low on the ground. "It just kind of died down and transitioned into a lower-intensity ground fire," remembered Classen.

With trees' lower limbs removed, flames could lick at the trunks but couldn't climb into the canopy. This made it safer and easier for firefighters to beat down the flames and create a

control line.

Within an hour of the fire's start ODF obtained the help of a Weyerhaeuser helicopter. Years earlier John had dug a pond on his property to have water to fight wildfire. The pilot dropped bucket loads from the pond onto the now slower-moving fire. The coordinated attack allowed firefighters on the ground to build and secure control lines. They corralled the fire shortly after dark. Mop up continued for five days.

"Without the pruning and brush control, it's likely the fire would have engulfed all 30 acres of that grove and well beyond," said Classen. "Because of the work done, the fire penetrated only onto seven acres. Trees along the grove's edge, facing an onslaught from the most intense flames, died. In the grove's interior, where flame intensity diminished, most trees survived.

"The work John did in 2010 made it possible for fire fighters to stop the fire and save nearby forestland," said Classen. "It's a great example of how landowners can protect their own and surrounding land."

For more information about Oregon's Strategic Approach to Conservation, visit [www.or.nrcs.usda.gov](http://www.or.nrcs.usda.gov) or

contact your local NRCS field office. ♦

*Jim Gersbach is a Public Affairs specialist for Oregon Department of Forestry in Salem. He can be reached at 503-945-7425 or [jim.gersbach@oregon.gov](mailto:jim.gersbach@oregon.gov).*

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# “Busy Work” for Engine Crews Save Camp Wooten from Catastrophic School Fire

BY LISA NAYLOR

**C**amp Wooten Environmental Learning Center, a gem of the Washington State Park (WSP) system in southeast Washington State,



was saved from a destructive wildfire that started less than five miles from the facility on contracted Washington Department of Fish and Wildlife (WDFW) lands in early August 2005.

On Friday, August 5, 2005, a three-person hand crew was working clearing brush at Camp Wooten when a local citizen reported a fire to the engine crew to which they responded to a mile from the camp near School

Creek in the Tucannon Valley. Weather conditions were hot and dry with very low humidity. A tree had fallen over a powerline and started the fire—a product of nature at the worst possible time of the year.

The crew tried in vain to extinguish the fire, but excess tinder dry fuels and winds were no match for the crew. The School Fire erupted, severely burning the upper Tucannon Valley with Camp Wooten clearly in its destructive path. The fire burned over 51,000 acres before being contained.

Fortunately, due to the fuel reduction actions and on-going fuel reduction maintenance of the Washington State Department of Natural Resources (DNR), WSP, and WDFW in the years preceding the School Fire, the camp was saved and continues to be one of the most popular (and profitable) learning centers in the state.

In 2000, SE Area DNR Fuels Manager Len Riggan applied for scarce funds for fuel reduction projects. His goal was to “keep his two crews busy” during the summer wildfire season as fire crews were on stand-by, ready to respond to calls for firefighters and suppression equipment in the region.

The grant from the National Fire Plan (USDA Forest Service) targeted Camp Wooten in Columbia County and Field Springs State Park in Asotin County. Riggan’s office was awarded \$60,000 to complete fuel reduction in the two state park facilities. The only hitch was the work was to be completed by contractors and not to be used for fire suppression activities.

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PHOTO COURTESY OF WASHINGTON STATE DNR

**Land adjacent to Camp Wooten before fuel reduction activities.**



PHOTO COURTESY OF WASHINGTON STATE DNR

**Camp Wooten area after the School Fire. The fire was devastating and the area is slowly coming back.**

Not a person to be stymied by contract requirements, Riggan and his crew worked closely with WDFW and WSP to create defensible space around camp structures, create fuel breaks, and thin and prune residual trees.

Timing of the fuel reduction work was critical to avoid conflicts with clients, user groups to the camp, and routine camp maintenance activities. The projects started in the fall of 2000, continued through 2001, and were completed prior to the state biennium budget deadline in late June 2002. The DNR reviewed the work with WSP and WDFW and determined additional work was needed, including the installation of a shaded fuel break.

Shaded fuel breaks were 100' wide, with 20' tree spacing, and limbed to 3'. All trees under 8" DBH were removed and later pruned to 6'. The shaded fuel break began at the camp north entrance along the access road and around Donnie Lake to the toe of the slopes surrounding the camp. Clearance around buildings was at least 30' and 15' above the rooftops. During the School Fire, open space voids around

structures were wrapped in plastic—not the entire structure, but it helped prevent airflow and embers from lodging under them.

Furthermore, the DNR recommended additional trees be removed, which was initially discouraged by WSP, but user groups applauded the move as clients could more easily be seen by adult leaders adjacent to camp facilities and in and around the property. The Field Springs State Park fuel reduction was completed using contractors, but at much higher cost with far fewer acres treated.

Following the fire, the DNR facilitated the removal of brush material using a chipper treating brush, chipped and spread to areas requiring coverage such as the archery range and footpaths in and around the camp.

Remaining chipped material was burned in piles during the early spring or after group use in the fall. These maintenance activities continue today.

Former Camp Manager Tim Fuller worked with a nonprofit in the Tri-Cities area developing signage to interpret the School Fire and actions taken by WSP and firefighters to protect the facility. Fuller passed away from cancer a few short years after the event, but his legacy and love for Camp Wooten lives on. ♦

*Lisa Naylor is a forester with the Blue Mountain Resource Conservation and Development Council, with offices in Waitsburg, Wash. Lisa serves as the Inland Empire SAF treasurer and can be reached at [lisa.naylor@rocketmail.com](mailto:lisa.naylor@rocketmail.com).*



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**Defensible Space in Action**



PHOTO COURTESY OF LISA NAYLOR

**This is the author's house that survived the catastrophic Columbia Complex Fire that took place a year after the School Fire and burned 109,259 acres near Dayton, Wash. The photo, taken on August 22, 2016, shows the value of defensible space.**



## We Remember

### Ralph Duddles 1940-2018

Ralph Edward Duddles passed away Feb. 23, 2018, in Coos Bay. Ralph and Carolyn Louis Steinmetz were married December 1958 in their home state of Michigan, and in 2008, they were proud to celebrate their 50th wedding anniversary in Coos Bay. Ralph started his forestry studies at Michigan Technical University where his son Jeffrey John was born in 1962. The family moved to Seattle, Wash., to continue his studies at the University of Washington where his second son Donald Edward was born.

Ralph's career as a forest practices forester led to assignments up and down the west coast, with stops in California, Washington, and Oregon. The family moved in 1985 to Coos Bay, where Ralph

was the extension forester for Oregon State University where he helped local landowners in the management of their properties. He also participated in the school's forestry program; Ralph retired in 2002.

The Duddles family has roots in Oregon's history dating from the 1800s. Ralph's grandfather, Thomas Duddles, traveled from Michigan along the Oregon Trail to a land grant homestead on the coastal range near Seaside. They labored several years clearing land and raising a family. The family documents and letters from this period will be donated to the Oregon State University historical archives.

Ralph and Carolyn fulfilled their lifelong dreams of traveling to Europe and Australia. His passions at home included camping, fishing, and hunting. As a father, grandfather, and friend, he invited all to join in learning, and enjoying the beauty and bounty of nature.

Ralph's life was not a poem, but a segment of the movie, "A River Runs Through It." Ralph would want us all to find our role and join the cast; pun intended.

Ralph is survived by wife, Carolyn; sons, Jeffrey and Donald; daughter-in-law

Janis; grandchildren Melissa, Tony, Christine and John; great-grandchildren, Jaida and Avery; brother, Allen; and many nieces and nephews.

He was preceded in death by his father, Willard; his mother, Esther; and his brothers, Ronald and Glenn.

Charitable contributions can be made to the scholarship fund at his Alma Mater Michigan Technical University at [www.mtu.edu/giving](http://www.mtu.edu/giving). If possible, please specify scholarships for forestry students. ♦

## WSSAF Foundation Names 2018 Scholarship Students

The Washington State Society of American Foresters (WSSAF) Foundation continues to award scholarships to community college and university students excited about pursuing careers in forestry. Since 2011, the Foundation has awarded scholarships totaling \$22,000 to 19 bright and worthy students.

Scholarships for the upcoming academic year of 2018-2019 are being awarded to Sarah Bukhart (\$1,000), Chad Horky (\$1,500), and Mari Knutson (\$1,500). Sarah is in her first year at Grays Harbor College. Her goal is to pursue a career in silviculture research. Chad, an Army vet, is a fourth-year student enrolled in the Bachelor of Applied Science degree program at Green River College. Mari has a BS degree in Botany. She is now pursuing a BS degree in Natural Resources and Land Management. All scholarship recipients are active SAF student members.

Thanks to the generosity of WSSAF members and timberland and forest products companies, the Foundation's year-end fund balance has grown to \$54,000.

To help additional students offset the rising cost of their forestry education, the Foundation is seeking the continued support of WSSAF members. Donations can be made to WSSAF, c/o Chuck Lorenz, Treasurer, PO Box 4031, Tumwater, WA 98501. ♦



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## Calendar of Events

**Western Forest Economists annual meeting**, June 3-5, Olympia, WA. Contact: [www.westernforesteconomist.org](http://www.westernforesteconomist.org).

**Firewise Educational Community Event**, June 5, World Forestry Center, Discovery Museum, Portland, OR. Contact: World Forestry Center.

**CESCL: Certified Erosion and Sediment Control Lead Training**, June 5-6, Renton, WA. Contact: NWETC.

**CESCL: Erosion and Sediment Control Lead Training 2-Day in Oregon**, June 12-13, Salem, OR. Contact: NWETC.

**Make Money Manage Hardwood, WHC Annual Symposium**, June 14, Puyallup, WA. Contact: <http://wahardwoodscomm.com>, 360-835-1700, [whc@wahardwoodscomm.com](mailto:whc@wahardwoodscomm.com).

**Western Mensurationists annual meeting**, June 17-19, Flagstaff, AZ. Contact: WFCFA.

**Northwest Seed Orchard Managers and BC Seed Orchard Association Joint Annual Meeting**, June 19-20, Penticton, BC. Contact: BC Seed Orchard Association, [fgcouncil.bc.ca/bcsoa](http://fgcouncil.bc.ca/bcsoa) or WFCFA.

**Oregon Small Woodlands Association annual meeting**, June 28-30, Springfield, OR. Contact: OSWA, [www.oswa.org](http://www.oswa.org), 503-588-1813, [oswa@oswa.org](mailto:oswa@oswa.org).

**When Small is Big II/2018**, July 18, Cheatham Hall, World Forestry Center, Portland, OR. Contact: World Forestry Center.

**12th Annual OSAF Golf Tournament**, July 20, Trysting Tree Golf Course, Corvallis, OR. Contact: Jessica Fitzmorris, [jessica.fitzmorris@yahoo.com](mailto:jessica.fitzmorris@yahoo.com), [www.oregon.forestry.org/content/12th-annual-osaf-golf-tournament](http://www.oregon.forestry.org/content/12th-annual-osaf-golf-tournament).

**2018 WFI International Fellowship Program—Forestry Lightning Talks**, September 13, Cheatham Hall, World Forestry Center, Portland, OR. Contact: World Forestry Center.

**The Forest Products Forum**, Sept. 25, World Forestry Center, Portland, OR. Contact: <https://www.wvotf.org/>.

**Who Will Own the Forest 14?** Sept. 25-27, World Forestry Center, Portland, OR. Contact: <https://www.wvotf.org/>.

**2018 SAF National Convention**, Oct. 3-7, Portland, OR. Contact: [www.eforester.org/safconvention](http://www.eforester.org/safconvention).

**Road Surfacing**, Oct. 10-11, Springfield, OR. Contact: WFCFA.

**The Hagenstein Lectures**, Oct. 14, World Forestry Center, Portland, OR. Contact: Rick Zenn, 503-488-2103, [rzenn@worldforestry.org](mailto:rzenn@worldforestry.org), [www.hagenstein-lectures.org](http://www.hagenstein-lectures.org).

**Visualizing and Analyzing Environmental Data with R**, Oct. 16-17, Issaquah, WA. Contact: NWETC.

**Cultivating Talent: Workforce Strategies in the Forest and Natural Resource Sectors**, Oct. 25, World Forestry Center, Portland, OR. Contact: Rick Zenn, 503-488-2103, [rzenn@worldforestry.org](mailto:rzenn@worldforestry.org).

**PNW Forest Vegetation Management Conference**, Dec. 4-5, Wilsonville, OR. Contact: WFCFA.

**Applied Early Stand Silviculture in the Inland Northwest Conference**, Dec. 12-13, Spokane, WA. Contact: WFCFA.

**Applied Early Stand Silviculture in the Inland Northwest Conference**, Dec. 12-13, Spokane, WA. Contact: WFCFA.

**2019 PNW Leadership Conference, hosted by Oregon SAF**, Feb. 1-2, McMenamins Edgefield, Troutdale, OR. Contact: Meghan Tuttle, [meghan.tuttle@weyerhaeuser.com](mailto:meghan.tuttle@weyerhaeuser.com), [www.forestry.org](http://www.forestry.org), and click on Leadership Conference icon.

**2019 Oregon SAF annual meeting**, April 17-19, Boulder Falls Inn, Lebanon, OR. Contact: Jeremy Felty, [jeremy.felty@oregonstate.edu](mailto:jeremy.felty@oregonstate.edu).

### Contact Information

**NWETC:** Northwest Environmental Training Center, 1445 NW Mall St., Suite 4, Issaquah, WA 98027, 425-270-3274, [nwetc.org](http://nwetc.org).

**World Forestry Center:** 4033 SW Canyon Rd., Portland, OR 97221, [www.worldforestry.org/event](http://www.worldforestry.org/event)

**WFCFA:** Western Forestry and Conservation Association, 4033 SW Canyon Rd., Portland, OR 97221, 503-226-4562, [richard@westernforestry.org](mailto:richard@westernforestry.org), [www.westernforestry.org](http://www.westernforestry.org).

Send calendar items to the editor at [rasorl@safnet.org](mailto:rasorl@safnet.org).



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# Oregon Forestry to be Showcased at Convention

BY TAMARA CUSHING

In October, foresters from around the country will head to Portland for a week of education and fellowship. The Society of American Foresters will hold the annual National Convention October 3-7 at the Oregon Convention Center. This annual event is an opportunity to highlight forestry in Oregon and the Pacific Northwest.



If you have never attended a national SAF convention, this is a great year to attend your first one! Approximately 1,500 foresters attend from around the country, and among those in attendance are around 400 students representing the future of our profession!

What can you expect at this year's convention? There will be educational sessions spanning the full range of topics in forestry including silviculture, economics, urban forestry, biometrics, and much more!

The theme for this year's convention is Forest Policy and Science-Management Interactions, so you can expect to see that theme running through the plenary sessions and tours.

In addition to the classroom-style educational sessions, we have a great slate of tours to show foresters all the great work that is being done in Oregon and the PNW. Tours were assembled to appeal to everyone including those of us who live and work in Oregon's beautiful forests.

No one should miss the student quiz bowl where teams from 32 of the forestry programs around the country will square off in a battle of forestry knowledge. It is a very impressive show of expertise by these future professionals.

The real hub of activity at the convention is the exhibit hall. We will have exhibitors from equipment companies



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**Don't forget your credit card—proceeds from the silent auction supports forestry education and science.**



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**An intense Quiz Bowl moment.**

and tech companies, as well as the universities, US Forest Service, and organizations like Tree Farm and Forest History Society (just to name a few of the MANY exhibitors). Also in the exhibit hall is the SAF raffle and silent auction. There are always great items to bid on such as hard-to-find books, wood bowls, beautiful photos, trips, tools, and jewelry. And your dollars go to support the Foresters' Fund and Kurt Gottschalk Science Fund.

Oregon SAF has been working on plans for this convention with staff from the national office. Pretty soon you will see requests for items for the silent auction or for volunteers to help during convention. The heavy lifting for a convention is really the volunteers on site. We will need friendly faces to help with the SAF raffles and auction (both selling tickets and helping with the winning tickets). Friendly volunteers will be



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**Bid often and bid high! Join in the fun at the SAF raffle and silent auction at the national convention. WSSAF member John Walkowiak will sell you a few tickets.**

needed for registration. We all know first impressions are everything, so bring your enthusiasm. If you would like to volunteer, contact Ron Boldenow ([rboldenow@cooc.edu](mailto:rboldenow@cooc.edu)) or Ryan Gordon ([ryan.p.gordon@oregon.gov](mailto:ryan.p.gordon@oregon.gov)).

You'll keep hearing more about the convention as we get closer. If you have any thoughts or questions about the convention, let me know. I hope to see many of you at the convention. ♦

*Tamara Cushing is general chair of the 2018 SAF National Convention. She can be reached at [tamara.cushing@oregonstate.edu](mailto:tamara.cushing@oregonstate.edu).*

# High School Forestry Programs Expand in Oregon

BY DICK POWELL

Oregon is one of only several states in the country that offers forestry as a part of their high school curricula. For a time, there were about 20 schools in Oregon with a strong forestry program that operated under the umbrella of the former Associated Oregon Forestry Clubs (AOFC). However, these programs dwindled to only three or four as schools faced serious funding challenges, and believing all students would attend college, focused on making students college-ready. Schools and communities have come to realize that many students do not go on to college and many of those who do go to college never graduate.

Many of these high school forestry students typically spend part of their school day in the woods, which helps them stay in school, and upon graduation, gives them marketable skills. Consequently, a renewed interest in career and technical programs and forestry is coming back into Oregon's schools.

High school forestry programs have grown to 20 schools (including some in Oregon's largest cities including Portland and Eugene) that are certified by the Oregon Department of Education as a "program of study;" another 16 schools are working toward a forestry program that will meet Oregon's program of study standards. Additionally, there are another 26 schools that offer some forestry classes. The teachers of these programs regularly attend the professional development opportunities offered by the Oregon Forest Resources Institute. Eleven schools have joined the Future Natural Resources Leaders (similar to FFA and the replacement for AOFC) to coordinate local skills competitions, as well as the state championship contest and to provide statewide leadership opportunities for students.

The Oregon Natural Resources Education Fund (ONREF) was estab-



lished in 2001 to support high school forestry programs in Oregon. Under its charter, the fund can have sub-funds to support specific areas of interest. ONREF consists of the Main fund (to support forestry education throughout Oregon); Pleasant Hill Sub-fund (to support forestry education at Pleasant Hill High School); and the Terry Selby Memorial Sub-fund (to support forestry education in Benton County high schools). A third sub-fund, the Oregon Society of American Foresters (OSAF) Sub-fund, was started in 2008 because foresters are interested in high school forestry education throughout the state.

ONREF is a "field of interest" fund administered by the Oregon Community Foundation (OCF). The Oregon Natural Resources Education Fund Association (ONREFA) manages the growth and direction of the fund, evaluates grant requests, and provides advice to OCF on distributions. ONREFA membership includes a Board of Directors and two sub-fund advisors for each of the three sub-funds. Of the 12 directors and sub-fund advisors, nine are OSAF members. Of the remaining three advisors, one represents the Oregon Department of Education; another is a school superintendent; and the third is a former science teacher. This group evaluates each grant request against criteria including teacher qualifications and training, advisory committees, and program accreditation. Grants are awarded to those that pass this review process.

## ONREF Funding Levels as of March 14, 2018

|                               |           |
|-------------------------------|-----------|
| ONREF Main Fund               | \$43,650  |
| Pleasant Hill Sub-fund        | \$83,675  |
| Terry Selby Memorial Sub-fund | \$37,273  |
| Oregon SAF Sub-fund           | \$80,384  |
| Total                         | \$244,982 |

When ONREFA board met in March to consider the grant requests from six schools, we had \$11,598 in requests for things including common forestry tools; ventilating a greenhouse for growing native plants; starting a new forestry program; wildlife cameras;

and refurbishing a tractor and chipper. After review, the \$10,902 available for distribution was approved for grant requests for high schools from Amity, Brookings Harbor Christian, Butte Falls Charter School, Neah-Kah-Nie, and Philomath.

Since its inception, ONREF has contributed over \$100,000 toward high school forestry programs and benefited over 8,000 students. The grants have helped fund the purchase of aerial drones, small sawmills, chain saws, chippers, forestry tools and instruments, greenhouses, and a whole host of other equipment and supplies.

The last few years, an OSAF member has gone to each community to award the recipients of ONREF grants in a public setting. This outreach is to let school superintendents, school principals, school boards, and community members know that forestry is alive and well in Oregon—we support forestry education and we are willing to put our money where our mouth is!

ONREF has received significant financial contributions from many within the forest community interested in promoting forestry education in Oregon. Each year, the OSAF Executive Committee puts out a year-end fundraising letter that, among other things, suggests contributing to ONREF. A recent \$10,000 contribution to ONREF came from the estate of a small woodland owner.

For more information on how to contribute to ONREF, please contact Sara Brandt, Senior Philanthropic advisor, at the Oregon Community Foundation, 541-431-7099, or any ONREF board members: Pete Sikora (petes@giustina.com), Julie Woodward (woodward@ofri.org), Jim Rombach (jrombach@aol.com), Steve Cafferata (cafferat@msn.com), Jennifer Beathe (jennifer@starkerforests.com), Jim James (jimjamesoswa@yahoo.com), Tim Keith (tim.keith@oregon.gov), or Dick Powell. ♦

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*Dick Powell serves as co-chair of Oregon's ONREF Sub-Fund, along with Tim Keith. Dick can be reached at [rlpowell@peak.org](mailto:rlpowell@peak.org).*

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## Policy Scoreboard

*Editor's Note: To keep SAF members informed of state society policy activities, Policy Scoreboard is a regular feature in the Western Forester. The intent is to provide a brief explanation of the policy activity—you are encouraged to follow up with the listed contact person for detailed information.*

### Oregon Uplists Marbled Murrelet.

The Oregon Fish and Wildlife Commission met on February 9, 2018, in Portland to decide whether to “uplist” the marbled murrelet (MAMU). The murrelet had been listed as Threatened under Oregon’s Endangered Species Act since 1995. Multiple entities presented written and/or oral testimony on the proposal to the commission. Oregon SAF submitted written testimony prepared by Chair Fran Cafferata Coe and OSAF Wildlife Society Liaison Jenniffer Bakke. In brief, the OSAF testimony asked the commission to make their decision on the best current scientific evidence, including a finding of stable populations along most of the Oregon coast, and the presence of substantial suitable, but unoccupied, habitat for MAMU. The commission decided on a 4-2 vote to uplist MAMU to Endangered status. While the full effect of the listing on forest management is yet to be determined, some forest managers express concern that there will likely be further restrictions on harvesting on State of Oregon forestlands throughout the Oregon Coast Range and ultimately

some trickledown effects on private landowners. As a next step, by June, ODFW scientists must complete survival guidelines, which identify critical habitat sites and determine if current suitable habitat management protocols are sufficient. The full OSAF testimony can be found at [www.oregon.forestry.org/oregon/policy/general](http://www.oregon.forestry.org/oregon/policy/general). Contact: Mark Buckbee, OSAF Policy co-chair, [buckbeefamily@msn.com](mailto:buckbeefamily@msn.com).

**Oregon Legislators Create Wildfire Caucus.** After the damaging 2017 wildfire season in Oregon burned 700,000 acres with a suppression cost of \$340 million, a new bipartisan, bicameral Wildfire Caucus was formed by Oregon state legislators. The caucus is led by Senators Betsy Johnson (D-Scappoose) and Herman Baertschiger (R-Grants Pass). A letter from Oregon SAF was sent to the caucus leaders, volunteering its considerable expertise in the fields of fuel and fire management. OSAF member Dan Shults, retired ODF Southern Area director, was invited to speak to the caucus. In his testimony, Shults outlined SAFs national position statement on Wildland Fire Management. From there he presented a list of recommendations including: 1) encourage federal legislators to reform the existing federal wildfire and hazardous fuel budgeting approach; 2) support ODF efforts to work cooperatively with the Forest Service to accomplish land management objectives under the Good Neighbor Authority Master Agreement; 3) encourage federal line officers to be more aggressive in initial attack; 4) use wildfire to accomplish habitat objectives only when and where risks to state and locally protected lands is minimal;

and 5) support protection funding requests from ODF. The full testimony can be found at [www.oregon.forestry.org/oregon/policy/general](http://www.oregon.forestry.org/oregon/policy/general). Contact: Mark Buckbee, OSAF Policy co-chair, [buckbeefamily@msn.com](mailto:buckbeefamily@msn.com).

### Lane County Spray Ban Initiative Voided by Court; Herbicide Issue Persists.

Following the success of a 2017 ballot initiative that bans aerial spraying in nearby Lincoln County, anti-spray activists in Lane County collected thousands of signatures for a similar local measure, enough to secure a place on the May 2018 county ballot. However, in early March a Lane County Circuit Court Judge ruled that the measure can't be put to a vote because it covers multiple issues and thus violates Oregon's “separate vote requirement.” At the time of this writing, although the court decision gives little or no chance for the measure to appear on the May ballot, supporters plan to file an appeal, and if that fails, they could pursue a modified version for the November ballot.

Because herbicide use on forestlands is an ongoing, serious public issue in Oregon, the recent update and revision of OSAF's position statement “Using Herbicides on Forestlands in Oregon” provides an important resource as questions and concerns arise from interested citizens and public leaders. For example, prior to the Lane court decision, OSAF leaders used the new position statement to help draft responses that would provide local citizens with a professional perspective on herbicide use in forestry, based on current science and experience. All OSAF members are invited to review the expanded discussion and environmental references in the revised position ([www.oregon.forestry.org/oregon/policy/general](http://www.oregon.forestry.org/oregon/policy/general)), and similarly use this material when communicating with policy makers and the interested public about this unique and important issue. Contact: Mark Buckbee, OSAF Policy co-chair, [buckbeefamily@msn.com](mailto:buckbeefamily@msn.com).

### Forest Restoration Collaboratives Meeting Draws Crowd.

Nearly 200 agency professionals, industry and conservationists representatives, and community volunteers from Montana, Idaho, and Washington gathered in Coeur d'Alene on March 20-21 to discuss how to bring together different perspectives to enhance forest health and resiliency.



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From NEPA reform to sustaining collaborative efforts, participants shared ideas and brainstormed ways to keep the momentum going. This meeting was supported by a Foresters' Fund grant. Visit <https://bit.ly/2jg1EO7> for more information. Contact: Dennis Becker, [drbecker@uidaho.edu](mailto:drbecker@uidaho.edu).

**Good Neighbor Authority (GNA) gains speed.** The Idaho Department of Lands plans to increase the pace of Good Neighbor Authority projects in 2018. Agreements are in place on four national forests in Idaho with 11 active GNA projects. Timber harvesting has begun on two timber sales in the Nez Perce-Clearwater National Forests, the proceeds of which are being used to plan 10 additional projects. The Idaho State Legislature recently approved funding for eight new forester positions to expedite GNA planning and implementation. Contact: Dennis Becker, [drbecker@uidaho.edu](mailto:drbecker@uidaho.edu).

**Family Forestry Study in Idaho.** About eight percent of forestland in Idaho is family owned spread across approximately 1.7 million acres (or 56 percent of all privately-owned forest land). Up to one third of that land may change hands in the next five years according to a recent study of family forest owners in Idaho. The study ([www.uidaho.edu/cnr/policy-analysis-group](http://www.uidaho.edu/cnr/policy-analysis-group)) conducted by the University of Idaho Policy Analysis Group in conjunction with the Idaho Department of Lands and University of Idaho Extension, surveyed Idaho's family forest owners to understand management trends and behaviors. The study found that of the nearly 36,000 Idaho family forest owners, 60 percent or more have engaged in active management, including improving wildlife habitat, reducing wildfire risks, harvesting trees, and other actions. Based on the findings, study recommendations are provided for local government and agencies, including building on networks among landowners, families, and neighbors in helping to manage family forests; designing extension programs that focus on improving forest health; and targeting programs to new owners that may have less experience managing forests. Contact: Dennis Becker, [drbecker@uidaho.edu](mailto:drbecker@uidaho.edu). ♦

## Fire and Fuels Management

(CONTINUED FROM PAGE 3)

**5. Invest in Data Mapping, Risk Assessment, and Applied Research That Directly Supports Cross-Boundary Management and Suppression.** Panels identified the need for significant investment in applied research and information tools targeted to directly support pre-fire response planning, wildland fire management, and suppression efforts. Consensus existed across panels, speakers, and in remarks by audience members that the level of current investment to better inform and support our collective efforts on public and private lands is inadequate and illogical considering the breadth and magnitude of the economic, social, and ecological impacts of the current fire reality. This is not another simple call for more research; we need to establish a structure to link, coordinate, and incent cross-disciplinary research efforts of different public and private entities across western states to provide credible, relevant, and timely information in support of planning, management, and suppression efforts. Given the magnitude of the challenges faced, information silos must end, and proposals for coordinating and leveraging institutional knowledge and expertise merit immediate attention and resources.

### The Challenges

The Summit event and subsequent report was neither the start nor the end of stakeholder engagement that is critical to the future of the fire-prone western landscape. Intending to build on 2012 and 2017 initiatives of the Western

Governors Association, the Summit itself was designed to develop actionable findings for consideration by elected officials and policy makers. That goal was largely, but not entirely, accomplished by the complete set of recommendations contained in the report—this article is a heavily abridged version. The next step will be to present the panel's work in multiple forums so that it can be folded into the work of a staggering number of different initiatives occurring around the West. The OSU College of Forestry has committed to work with our partners from each of the states to ensure that individuals from the science panels can be available for follow-up presentations if requested. Contact the author if you are interested.

Change is never easy for individuals, societies, or professions. I feel that this time and this issue, however, is ripe for our profession going forward. Foresters are uniquely prepared to critically think and solve land management problems over large spatial areas and lengthy time spans—it is what we do. The solutions to our wildfire problem, rooted in unprecedented fuel conditions and overcharged fire seasons, are in our view. Active land management that sees and treats our forested landscapes as fuels (in addition to all the other things that are our forests) will be our path forward. Let's get to work. ♦

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*John D. Bailey is Maybelle Clarke MacDonald Professor of Teaching Excellence, Silviculture and Fire Management, OSU College of Forestry, Corvallis, Ore. He can be reached at 541-737-1497 or [john.bailey@oregon-state.edu](mailto:john.bailey@oregon-state.edu). John is an active SAF member.*

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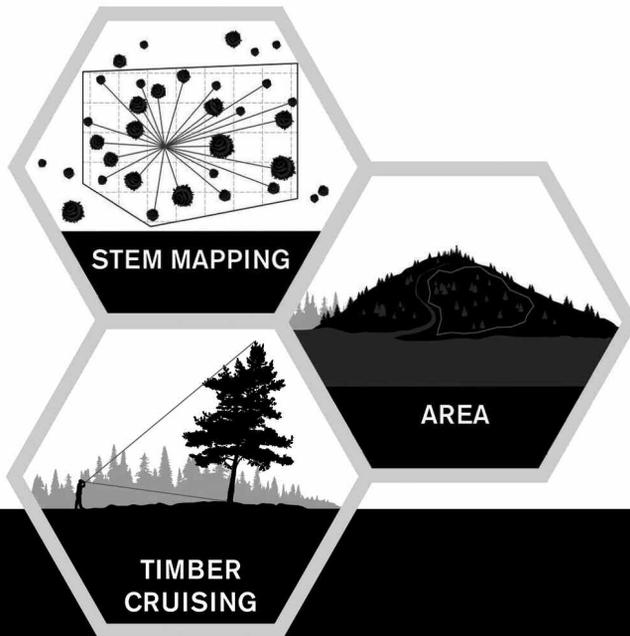
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