



# Federal Wildland Fire Agency Managers' Assessment of the 2014 Quadrennial Fire Review

May 2015

## Introduction

The U. S. Forest Service's Fire and Aviation Management Office and the Department of the Interior's Office of Wildland Fire commissioned the 2014 Quadrennial Fire Review (QFR), with the intent to facilitate a balanced, externally-led assessment of how wildland fire management could evolve in 10 to 20 years. This is the third QFR since the initial in 2005 and the second in 2009.

The assessment is based on broad input from experts and private citizens (2,000+) to inform the wildland fire management community's decisions as they work to achieve the vision and goals set out in the National Cohesive Wildland Fire Management Strategy (hereafter Cohesive Strategy) across multiple possible futures. The QFR final report findings will be useful to inform strategic and operational decisions and help make our organizations more agile and resilient in the face of change. As with the Cohesive Strategy, collaboration with our partners across the wildland fire management community is critical. (Partners are defined to include our state, local, and tribal partners, as well as non-governmental organizations, industry, and diverse segments of the public.) After looking "behind the curtain" at possible futures for landscapes and communities in roughly 2034, the importance of continued collaboration became all the more apparent.

### I. QFR Purpose & Vision

The QFR and the Cohesive Strategy exist for different, but complementary purposes. To create the Cohesive Strategy, we assembled a broad and diverse group of stakeholders to take a holistic view of current wildland fire management issues and develop a strategic approach to coordinating multiple agency and homeowner efforts toward achieving a shared vision and goals. The 2014 QFR reaffirms the Cohesive Strategy vision, which is to *safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a nation, live with wildland fire*, while taking a long-range look "over the horizon," mindful of the Cohesive Strategy's three primary goals: 1) restore and maintain landscapes; 2) create fire-adapted communities; and 3) ensure safe and effective fire response and its principles and philosophies. The Cohesive Strategy assesses our ability to achieve a shared vision and goals within the constraints of current and projected policy and capabilities, amidst emerging trends specific to, and beyond wildland fire (for example, demographics).

The 2014 QFR provides a framework to consider how current and emerging trends may interact over 10 to 20 years and the plausible alternative futures within which we may find ourselves in 2034. The alternative futures aid in identifying signposts and trends that can inform management decisions, helping the fire program to successfully pursue the Cohesive Strategy goals over the long term. We believe strongly that the Cohesive Strategy vision and goals remain paramount, and we hope that the QFR inspires readers to initiate and sustain conversations about how we as a wildland fire management community can achieve them in light of the challenges the future presents. We would also like to challenge readers to reflect on *all* of the futures and indicators that might warn us of their emergence, and perhaps most importantly, think about how we can seek out opportunities to pursue the vision and goals of the Cohesive Strategy even if the confluence of trends or unexpected shocks put us off track.

In the coming months, we will articulate a formalized structure by which we will employ the insights offered by this QFR (and future QFRs) to inform mid-course updates to the Cohesive Strategy, and ultimately, a formal vision for synchronizing the two processes and their results. In the meantime, this document captures some of our key takeaways from the QFR process and identifies key themes and related actions we will be emphasizing for our agencies.

## II. QFR Alternative Futures

Each of the two previous QFRs have attempted to present a future-oriented perspective; but the 2014 report is the first to offer a set of distinct, but plausible alternative futures for wildland fire using a formalized process known as Strategic Foresight. While the other elements of the process are important, and rightfully informed the final report's conclusions and actions for consideration, we feel that the review's "futuring" components reflect its true purpose – provoking conversation, and ultimately innovation, to help us make more informed decisions as we implement the Cohesive Strategy across a variety of potential future conditions. We intend to use the QFR's alternative futures in ongoing planning, to "keep us on our toes" and help focus our organizations' efforts in areas that present the highest potential return on investment (ROI) for the wildland fire management community at large.

This QFR poses four distinct futures. These futures range across multiple spectrums, scorched to resilient landscapes, near- vs. long-term risk, significant versus insignificant federal involvement in wildland fire management, less fire to more fire, and good versus bad fire. Some of the futures, particularly those entitled "Hot, Dry, and Out Of Control" and "Suppression Centric," reflect significantly increased risk. In the former, the risk is nearer term, in the latter it is over the horizon, but likely amplified. "Hot, Dry, and Out of Control" features more fire on a landscape that is not ready for it, whereas "Resilient Landscapes" represents progress toward a situation where fire plays a more natural role. All these futures are plausible, and we acknowledge, as does the QFR, that the community may move through iterations of them over the next 10 to 20 years

While stakeholders across the community may have differing perspectives as to whether the specific futures in the 2014 QFR represent positive outcomes, the QFR is not about setting a vision – the Cohesive Strategy did that – nor is it about predicting the future. Rather, the QFR helps ensure that we as a community can be proactive in detecting potential impediments to achieving the goals of the Cohesive Strategy, or "weak signals" of opportunity where we can focus or invest to accelerate progress. For example, what might be the impacts of legal restrictions that limit our ability to use air-dropped retardant? What actions should we take if energy prices rise dramatically, bioenergy becomes a commercially viable industry, and the public subsequently expresses widespread support for commercial harvesting of forest products? Similarly important is being able to discern whether events such as the tragic Yarnell Hill Fire of 2013 are outliers or indicators of broader change on the horizon. Advance understanding of factors such as these is critical to enabling our organizational agility and continued effectiveness.

As described in the following sections, we will explore options to continue the futuring conducted during this QFR, which may include the institutionalization of environmental scanning, alternative futures analysis, and scenario-based planning within the federal wildland fire agencies. We will also seek opportunities to regularly update these futures and gather input about additional trends or barriers which the QFR may have not have fully addressed.

## III. QFR Themes and Actions

Outlined below are a set of thematic areas and related actions that will be critical as we continue to implement the Cohesive Strategy. Focusing on these themes and actions in a manner that is strategic and which establishes priorities for the use of resources will become increasingly crucial in the years to come if expected trends related to climate change, fire season length, and fire intensity continue to increase risk

and drive up suppression costs. Further, our ability to cultivate efficiencies and capitalize on innovation at all levels will be similarly pivotal to balancing suppression activities with other agency (e.g., resource management) and fire program (e.g., fuels management) requirements.

## Data, Metrics, and Key Performance Indicators

We acknowledge the 2014 QFR's finding that access to sufficient quantities of consistent, reliable, landscape-level data has historically limited our ability to measure the relative effectiveness of various wildland fire management programs. But, simply gathering data without a defined purpose is not sufficient. The challenge goes beyond the Forest Service and DOI; and to that end, we are working to: clarify 1) where doubt exists about the relative effectiveness of specific components of the Forest Service and DOI fire programs – including consideration of linkages with partners' programs; 2) set outcome-oriented metrics and key performance indicators (KPIs) to better assess those components; 3) understand the data required to do so, and set data standards for collection, and; 4) establish processes to collect the data we need to inform decision making about which actions to continue, which to adjust, and which to curtail.

## Resilient Landscapes

Developing a common framework for achieving resilient landscapes was a recurring discussion during this QFR. Through the Cohesive Strategy we are expanding coordination and collaboration with our partners. Doing so, will allow us to pursue landscape scale adaptive management strategies that encompass multiple lines of effort across a diverse community of practitioners and which are grounded in the best available science data. Fuels are a critical part of this effort and we must expand our view of vegetative management to make better use of unplanned ignitions and active forest and rangeland management to continue restoring landscapes to a resilient condition. In the realm of active management, our efforts need to be closely linked with state and local management agencies, tribes, inter-governmental and non-governmental organizations, and industry. We will work to identify areas where the use of active management can help achieve resilient landscapes, and where appropriate, attempt to eliminate barriers to the use of such methods.

## Engagement

As evidenced by the Cohesive Strategy, and reiterated by this QFR, engagement with communities and individuals across the country is absolutely fundamental to broadening acceptance of wildland fire as a natural change agent on landscapes and encouraging measures to improve resilience. This outreach needs to be interactive and involve coordination at the federal, state, local, and tribal levels in the messages we send. The messaging we use in discussing “the fire management community” will include our partners in government, but also those in non-governmental organizations, industry, and the public. We must also look critically at our own perceptions and attitudes, ensuring that our personnel are aware of contemporary and evolving sociopolitical circumstances in which our program operates. For example, social science data indicates significant public support for the idea of living with fire – when effectively engaged in planning – particularly for the use of fire by actively managed wildfire and prescribed burning.

## Wildland Fire Management Workforce

Our workforce faces significant change in the coming decades. We are working to address our recruitment, training, and career progression practices to best match the needs of a new generation of

personnel, and address troubling challenges related to wildland firefighter fatalities and increasing psychological stress levels. While we believe that wildland fire management is positioned to attract talented, capable individuals from the Millennial and following generations, we must keep tabs on evolving employment preferences and attitudes about work in the outdoors. We also need to consider how to evolve career tracks so we can cultivate our next crop of leaders and provide early opportunities for them to lead while not compromising safety or the good judgment gained through experience; doing so is critical to offsetting the retirement of our Baby Boomer generation leaders. We will heed potential “Red Flags” raised by events like Yarnell and determine whether increasing risk to firefighters, both physical and mental can be mitigated through investment in enhanced technology or expanded workforce capacity, or if we need to make wholesale changes to our suppression approach. Finally, we must also analyze the relative costs of various types of resources we have engaged to augment declining capacity among non-fire funded “militia” (fire-qualified personnel from throughout DOI and the Forest Service who support fire operations in a surge capacity when necessary) to determine if our current approach is sustainable, and if not, consider other options.

### **Innovation and Technology**

We are intrigued by the QFR’s finding that the creation of a Chief Innovation Officer (or CINO-like) charged with collaborating across the federal wildland fire agencies could be extremely beneficial. Given rising suppression costs due to lengthening fire seasons and fire intensity, a CINO could work to drive innovation within the community and foster new approaches to doing business that improve our operational efficiency and help us preserve resources for land management activities that are at risk of being sidelined over the long-term. Further, a CINO could help us identify smart investments, and adjust or curtail those which are not in alignment with, or which do not offer significant ROI related to the Cohesive Strategy. In the realm of technology, a CINO could help build on the success of the Wildland Fire Information and Technology (WFIT) initiative and be a valuable asset as we wrestle with the enormously complex nature of developing new technological capabilities that will span the federal wildland fire agencies and will need to integrate with those of our partners.

### **Future-Oriented Strategic Planning**

We acknowledge the QFR’s findings that our existing capability to conduct ongoing, future-oriented strategic planning that spans the federal fire management agencies could be improved. The exact means of doing so, both in terms of organizational structures and functions, needs to be further investigated; but the conduct of, and processes employed during this QFR, represents a significant step forward for the community in institutionalizing future-oriented thinking. In the coming months, we will explore possible options to sustain the effort begun by the QFR, to include an examination of best practices among other federal agencies and in the private sector, and establish an action plan to move forward.

### **Federal Wildland Fire Agency Organization**

One of the QFR futures, entitled “Suppression Centric,” posits that a possible outcome of a shock-type event could be the consolidation of suppression functions currently housed within federal land management agencies and their realignment under an emergency management-oriented entity.

We do not believe that such reorganization is likely or necessarily desirable. We believe that we should continue to strive to always improve our wildland firefighting capabilities and coordination.

## Risk Management

We intend to use this QFR to build on ongoing discussions about risk-based decision making, including current efforts focused on human factors, and the differing meanings of the term risk across the wildland fire management community. We should consider not just risk-based allocation of investments, but also risk aversion and how people react to and make decisions under stress. The temporal aspects of risk, in other words, the need to embrace responsible short-term risk to achieve long-term benefit, rather than deferring that risk, is another key consideration. With a lack of consensus between federal state, local, and tribal partners and the public regarding what constitutes risk across different landscapes and regions (e.g., lives, property, resources), continuation of this discussion is imperative. The lack of consensus has the potential to exacerbate existing disagreements, and we need to drive toward a future where the community is accepting of a form of risk management that is inclusive of multiple values. From a federal perspective, we also need to explore new means by which we can encourage and firmly support risk-informed decisions by land managers who seek to use wildfire or prescribed burning in support of Cohesive Strategy goals.

## Fire Science

The federal fire science community is a world-class asset and one that can be better employed to support operational activities, strategic decision making, and outreach. This will require more effective engagement of fire and land managers in formulating applied research questions and priorities, which will further ensure a science-based program foundation aligned with the Cohesive Strategy. More broadly, we also need to consider opportunities to allow greater investment in pure research and connections for innovation and development – and we also need to make research findings and innovations more easily accessible across the wildland fire management community.

## IV. Cohesive Strategy Principles and Philosophy

As the Cohesive Strategy and QFR inextricably link the present challenges and opportunities with the potential future, we will address the QFR's key findings under the broader umbrella and within the context of the Cohesive Strategy's principles and philosophies. These overarching guiding *principles* were formulated through discussions with state, local, tribal governments, and non-governmental partners and apply to all stakeholders in the wildland fire management community. As such, we endorse the following principles:

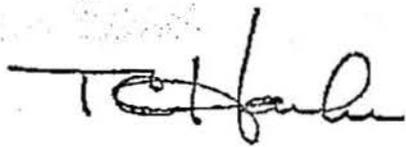
- Reducing risk to firefighters and the public is the first priority in every fire management activity.
- Sound risk management is the foundation for all management activities.
- Actively manage the land to make it more resilient to disturbance, in accordance with management objectives.
- Improve and sustain both community and individual responsibilities to prepare for, respond to and recover from wildfire through capacity-building activities.
- Rigorous wildfire prevention programs are supported across all jurisdictions.
- Wildland fire, as an essential ecological process and natural change agent, may be incorporated into the planning process and wildfire response.

- Fire management decisions are based on the best available science, knowledge and experience, and used to evaluate risk versus gain.
- Federal agencies, local, state, tribal governments support one another with wildfire response, including engagement in collaborative planning and the decision making processes that take into account all lands and recognize the interdependence and statutory responsibilities among jurisdictions.
- Where land and resource management objectives differ, prudent and safe actions must be taken through collaborative fire planning and suppression response to keep unwanted wildfires from spreading to adjacent jurisdictions.
- Safe aggressive initial attack is often the best suppression strategy to keep unwanted wildfires small and costs down.
- Fire management programs and activities are economically viable and commensurate with values to be protected, land and resource management objectives, and social and environmental quality considerations.

We in the federal wildland fire agencies continue to believe in the centrality of these principles, and the philosophy that we cannot achieve them alone. As a community, we should continue to work across programmatic areas, and across jurisdictional barriers, boundaries, and landscapes to avoid a piecemeal, stove piped approach to wildland fire management. In doing so, it will be essential to manage for multiple values using a cohesive approach. When we think about landscapes, we should also be careful to do so in a manner that is inclusive of not just human communities, but also wildlife, watersheds, natural resources, critical infrastructure, religiously or culturally sacred places, and viewsheds, just to name a few.

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We commend and are appreciative of all those who offered their perspective and gave their energy and time to developing this QFR. It is a provocative document that encourages us to stretch our thinking and question long held assumptions, while also affirming that much of what we already do is on the right track. We look forward to using this document to inform our management decisions in the coming years and to continued engagement with the community as we work toward implementing the Cohesive Strategy.



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