Firefighters masking while working on a fireline on the 2020 Cameron Peak Fire in Colorado. Photo: USDA Forest Service.

Wildfire, COVID-19, and Enterprise Risk Management in the Forest Service

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The COVID-19 global pandemic created dramatic change in nearly every facet of life, including how the Forest Service worked to fulfill its mission despite facing multiple unknowns fraught with risks. Preparing for and responding to wildland fire while reducing the likelihood that wildland fire responders would be exposed to COVID-19 created an unprecedented challenge.

Responding to the challenge required a means to understand and respond to complex emerging risks. Application of enterprise risk management (ERM) helped the agency navigate through the unique threats, challenges, and learning opportunities associated with the concurrence of a catastrophic fire year and a global pandemic.

ENTERPRISE RISK MANAGEMENT IN THE FOREST SERVICE

ERM is a forward-looking process based on risk management principles that helps ensure the sustainability of an organization through adaptation of its strategy and objectives to meet future conditions. ERM can provide the framework and perspective to help organizations better anticipate and prepare for a rapidly changing world.

In principle, ERM helps organizations create and protect value, make high-quality risk-informed decisions, and align strategy with performance. In practice, ERM helps organizations improve their business practices, assess threats and opportunities that could affect the achievement of organizational goals, and continually improve (fig. 1).

In 2016, the Office and Management and Budget required Federal agencies to implement ERM capabilities and to coordinate them with strategic planning, strategic review, and internal control processes (OMB 2016). So began the Forest Service's ERM journey, initiated

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***Figure 1**—Essential elements of Federal Government enterprise risk management (GAO 2016).*

in part by leveraging existing capacity and seeking strategic consultation with both internal and external experts. The agency established the position of Chief Risk Officer and undertook compiling some of the recommended ERM components, including a risk registry and risk profile (CFOC/PIC 2016). Risk management has, in fact, long been a focal area for the Forest Service's Fire and Aviation Management program (Thompson and others 2016), and ERM provided the impetus to consider risk more systematically and holistically, for instance by examining factors such as climate change and workforce well-being.

PUTTING ERM INTO ACTION: WILDFIRE RESPONSE DURING A GLOBAL PANDEMIC

By March 2020, the onset of the global coronavirus pandemic was rapid and unsettling. Under conditions that were unfamiliar if not unprecedented, Forest Service leaders had to make high-impact decisions under considerable time pressures and with limited and changing information. In response, senior agency leaders assembled an ad hoc ERM Team to help them navigate the complex and uncertain terrain and to support risk-informed decision making. This expansion brought additional subject matter expertise and capacity, as well as urgency, to the agency's existing ERM program.

The coronavirus posed myriad systemic risks for Forest Service mission delivery. Early on, the ERM Team identified failure to implement organizational social distancing measures (with respect, for example, to facility status and telework) at the appropriate pace and scale as the predominant and immediate enterprise-level risk to workforce capacity and mission delivery. The team developed protocols for decision making and documentation to support decentralized decision making, with streamlined and timely implementation. The protocols supported rapid, flexible, and adaptable decision making at a time when it was critically needed.

In addition, the ERM Team identified near-term mission-critical risks (to workforce health and safety, wildland fire management, and law enforcement), in addition to potential medium-term and long-term issues (such as recreation pressures, telework adjustments, and virtual mission delivery). Due to the magnitude of the problem and relevant expertise on the team, team members spotlighted wildland fire management as an opportunity to gain experience with ERM principles and practices. In so doing, the team engaged agency leaders in discussions about:

- Potential future scenarios;
- Identification of risks and mitigation options; and
- Development of strategic alternatives grounded in real-world challenges like hiring and housing seasonal employees, moving suppression resources across geographic boundaries, and articulating strategic intent for wildfire response.

At the time, COVID-19 risk to fire personnel was poorly understood, essentially a "known unknown." The ERM Team wanted to corral the appropriate expertise to better understand the issue and support risk-informed decision making. A key tool in the ERM toolkit is scenario analysis, which essentially is a systematic approach to asking "what-if" questions and exploring potential consequences.

Initially, Forest Service scientists from the Northern Research Station helped with high-level scenarios exploring how the severity of the fire season and the severity of the pandemic could interact. As fire activity began to pick up in the Southwest in May and early June, questions emerged regarding whether resources from other regions would be allowed to travel or even be welcomed in the Southwest, and it became apparent that guidance from forest supervisors and Regional Foresters lacked consistency.

The ERM Team helped agency leaders explore the tradeoffs in risk between:

- Fully restricting fire responder movement across geographic boundaries and dealing with the associated implications for fire management outcomes; and
- Allowing unrestricted movement to support fire response while coping with the increased exposure of responders to COVID-19.

As a result, leaders were able to recognize that a consistent agencywide (enterprise-level) response was necessary requiring that resources travel out of area. The corresponding elevation of the coronavirus risk further highlighted the need for developing and adhering to risk-informed COVID-19 mitigation strategies.

In response, the COVID-19 Fire Modeling Team was formed to bring epidemiological modeling into an exploration of how disease dynamics could vary based on incident characteristics (such as assignment timing, number of personnel, and duration) and on interventions (such as requirements for social distancing) (Thompson and others 2020). Key findings underscored the importance of adhering to prevention and mitigation guidance from the Centers for Disease Control and Prevention and the Wildland Fire Medical and Public Health Advisory Team. Additionally, the Fire Modeling Team developed a COVID-19 Incident Risk Assessment Tool that was used operationally throughout the 2020 fire year (Thompson and others 2021).

Beyond seeking to better understand the nature of the risk and available mitigations, the ERM Team also sought to support adaptation, innovation, rapid information sharing, and organizational learning. Several articles in this issue highlight discussions and activities initiated through the ERM Team in pursuit of its goals (see, for example, the articles by Westphal and others and by McCarthy and others).

For example, the ERM Team brought in external experts to support development of a risk communication strategy. The experts recommended communicating early and often, along with continuous engagement between agency leadership and the workforce in a "top-down/bottom-up" approach to monitor and adapt to emerging and unforeseen issues. The ERM Team also recognized the need for a system to facilitate peer-to-peer knowledge transfer and learning through rapid, widespread, and structured sharing of information, building on the workforce's capacity for innovation and creativity as keys to success. This effort included activating focus groups to share key findings and cultivate a community of practice among decision makers in fire management (see the article by Flores and others).

MOVING BEYOND THE ISSUE OF THE DAY

The ERM Team intends to help the Forest Service become more anticipatory, planning and preparing beyond next year's budget cycle. For example, an emerging high-profile issue is the pay gap between Federal and non-Federal wildland firefighters, which diminishes the agency's ability to recruit and retain wildland firefighters, particularly in high-cost-of-living areas. A traditional risk management approach would be to explore opportunities to create new job series and other financial incentives to close the gap and make Federal jobs more competitive.

By contrast, an ERM approach would recognize these issues but also explore what the future fire management workforce *should* look like. Various factors indicate that the workforce of tomorrow could look very different from today, including:

- Emerging technology,
- Increasing recognition of health mitigation strategies,
- The need to align fire response and fuels mitigation,
- The expansion of the fire year,
- The ability to provide many functions remotely, and
- Changes in the skills and desires of the future workforce.

If the Forest Service doesn't sufficiently plan for the future workforce, it could not only fail to take advantage of opportunities to improve the efficiency and effectiveness of the agency's suppression response but also continue to have issues recruiting and retaining high-quality employees.

Wildland fire management will likely increase in complexity over the next decade. Climate change will escalate the frequency and severity of drought, lengthen the fire year, and elevate the volume of synchronous fire activity. Societal issues such as expanding human development, the soaring need for water in growing Western States, and rising demand for outdoor recreation will increase societal expectations for the Forest Service to deliver on its mission. Furthermore, a backlog of emerging

Firefighters masking and social distancing on the 2020 Cameron Peak Fire in Colorado. Photo: USDA Forest Service.

systemic fire management issues remains, including uncertain long-term health impacts on responders, an overworked and stressed workforce, evolving labor markets, and emerging needs for increased technological competencies.

ADAPTING TO CHANGE

The story arc ends here with "to be continued"—which, of course, reflects the entire "journey" of ERM. The sidebar summarizes some of the key lessons learned along the way. If we had written this article before the pandemic, the most salient lessons might have been different, and the story next year will certainly evolve. ERM, like its employees, aspires to lifelong learning.

ERM can provide the forward-looking, anticipatory lens to help organizations sustain mission delivery in the future. The challenge facing the Forest Service and other public forest management organizations around the globe will be to sustain both forest and workforce health in the face of a future of increasing volatility, uncertainty, and complexity. Preparing for, responding to, and recovering from increased extremes, disturbances, and disruptions while also attending to human pressures for goods and services will require agility and adaptation. Through its focus on practices like scenario planning and structured monitoring and feedback, ERM can help keep the Forest Service on track toward a sustainable future.

Enterprise Risk Management: Key Themes and Lessons Learned in 2020

- **Adopt Systems Thinking**:
  Seek to understand the entire organization's "ecosystem," how functions and programs interact with each other, and how information flows. Emphasize not only decisions and decision makers but also the contexts in which decisions are made.
- **Pursue Continual, Flexible Improvement:**
  Begin with a manageable scope of work, then develop acumen and expand the program from those foundations. Build in feedback loops to adapt and adjust to your organization's context. Expect that different organizational aspects will mature at different paces and scales.
- **Engage Leadership:**
  Cultivate leadership awareness, participation, and understanding of enterprise risk management. Meet people where they are at, and spotlight early "wins" and milestones achieved to build support.
- **Measure Performance:**
  Meaningful performance metrics are critical for evaluating the impacts of enterprise risks on strategic objectives. Commitment to acquiring and managing the appropriate information can accelerate the cycle of enterprise risk management and organizational learning.
- **Keep an External Focus:**
  If we learned nothing else from the pandemic, it is that external events can dramatically affect the workforce and organizational ability to achieve objectives. Although internal issues such as reporting and compliance remain important, it is essential to periodically scan and assess the external operating environment.
- **Stay Forward Looking:**
  We are not suggesting that we could have predicted the scope and scale of the global pandemic. However, moving forward we can adopt these lessons by building anticipatory foresight skills, investing in mitigating those risks that are foreseeable, and designing continuity of operations plans with adaptation in mind.

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