



Office of Wildland Fire Issue Paper



October 10, 2014

Risk Based Wildland Fire Management

Program Summary

The Department of the Interior's Office of Wildland Fire (OWF) has led efforts over the past several months to examine opportunities to improve the methodologies for developing and allocating budgets for preparedness and fuels. These efforts considered use of risk analyses and "business rules" to determine how to quantify risk in order to inform an allocation of funding to accomplish the objectives of the preparedness and fuels programs. Using the results of these efforts, the OWF is developing a unified approach for management of preparedness and fuels programs. This approach, advised through task teams with representatives from the bureaus, relies on a common risk-based framework and methodology. Input and advice will be solicited from affected stakeholders such as Indian tribes and the Forest Service during the development process. This common approach is called "Risk Based Wildland Fire Management" (RBWFM).

Background

The OWF has a responsibility to allocate preparedness and fuels management¹ funding to the Department of the Interior's bureaus (Bureau of Land Management, Bureau of Indian Affairs, National Park Service, and Fish and Wildlife Service). The Bureaus, in turn, are responsible for implementing and executing the programs in collaboration with other Federal, Tribal, state, and local partners to support the three goals of the National Cohesive Wildland Fire Management Strategy (Cohesive Strategy). Current allocations for preparedness among the bureaus generally rely on distribution formulas developed in the 1990s and updated during the funding increases under the National Fire Plan in the early 2000s. The Fire Planning Analysis (FPA) tool, which was originally designed and developed to provide science-based tools and capabilities for determining how to allocate funds to provide the most effective, efficient preparedness program across the Department of the Interior (DOI) and US Forest Service (Forest Service), was unable to fulfill these expectations. Therefore, the OWF developed the Hazardous Fuels Prioritization and Allocation System (HFPAS) in an effort to provide a common tool for ranking fuels projects and making allocations to bureaus.

These two systems—FPA and HFPAS, are no longer used for a variety of reasons. Limitations of the prior systems were an important factor. However, evolving, more complex wildland fire management challenges and an improved ability to characterize and manage risk, as a result of research, influenced the change in approaches. Both of these factors are explained in the Cohesive Strategy. The research, data, and planning efforts resulting from FPA and HFPAS have played a valuable role in the development of the Risk Based Wildland Fire Management (RBWFM) approach.

Key Points

The RBWFM approach is based on three principal concepts or elements:

1. **Common Methodology for Risk** - The OWF will use a common methodology to allocate fuels management and preparedness funds to each bureau in proportion to the amount of risk "owned" by each bureau. The risk will be defined in terms of "expected value acres burned." Business rules will be used to guide funding of programs and activities that support multiple bureaus.

¹ 1) *Preparedness* - Activities that lead to a safe, efficient, and cost-effective fire management program in support of land and resource management objectives through appropriate planning and coordination.

2) *Fuels Management* - Act or practice of controlling flammability and reducing resistance to control of wildland fuels through mechanical, chemical, biological, or manual means, or by fire, in support of land management objectives.

2. **Strategic Business Plan** - Each bureau will prepare a “Strategic Business Plan” that will guide how the bureau applies their share of preparedness and fuels funding to “buy down” and maintain reduced risk to values from wildfire across the landscape. This multi-year plan will allow bureaus to organize and implement fire management programs consistent with the context of the bureau’s overall organization, mission, and programs while providing for safety and addressing cost effectiveness and efficiencies (Return on Investment). The OWF will review and endorse each plan to ensure consistency with the goals of the Cohesive Strategy and Departmental policies and priorities.
3. **Performance and Effectiveness Monitoring** - Performance and effectiveness will be measured in terms of reducing risk over time and holding it at reduced, acceptable levels. Each bureau, along with the OWF, will undertake appropriate review and oversight activities to assess progress. Results will improve the WFM preparedness and fuel programs efficiencies and effectiveness.

Current State and Next Steps

The DOI’s WFM program will be organized for management purposes along three main themes – allocation of funds, business plans describing intended use of funds, and program accountability. While similar to the conceptual approach described above, some detail on the risk model and national elements are presented.

1. Allocation of Budgetary Resources

Fuels and preparedness funds will be allocated as follows:

a. National Program Areas

Funding for Department-wide programmatic costs, activities, and investments in both preparedness and fuels will be determined through discussions with the bureaus, the OWF, and the Forest Service (for joint projects and activities). This funding will be established prior to allocations to the bureaus.

b. National Assets

Funding from preparedness for national assets (large fire response assets and capabilities such as hotshots, aircraft, and large fire support, including incident management teams and the national cache) will be determined through discussions with the bureaus, the OWF, and the Forest Service. This funding will be established prior to allocations to the bureaus.

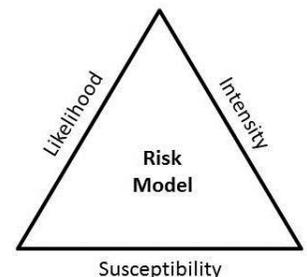
c. Operational Program

Allocation of funding for Operational Programs for fuels management and preparedness are primarily focused on field implementation (e.g., fuels treatment, assets and staff for initial attack, and organizational framework to support field implementation) and will be closely aligned with results from the Risk Based WFM Model as described below.

Risk Based WFM Model

This model uses the relations between three variables: wildfire likelihood, intensity, and susceptibility.

- **Wildfire Likelihood** is based on burn probability using results from FSim (large fire simulation model).
- **Wildfire Intensity** is the measure of fire's rate of spread, fuel consumption, and heat yield at a given point on a fire's perimeter, as derived from FSim. Flame lengths greater than four feet is considered to have a negative effect to an assessed value.



- **Value Susceptibility** is the response of a value to wildfire that characterizes the likely loss to a value in the assessment.
- **Expected Value Acres Burned** is the area containing a priority value that is likely to burn in a given year from fires that originate on DOI land.

Values to be considered will be of Departmental and Bureau priority and that fall into two categories: 1) Life and Property, and 2) Resources.

Expected value acres burned will be calculated for each bureau. Calculation of expected value acres burned will take place on a proposed five-year cycle. Annual funding for both preparedness and fuels will be distributed based on 1) each bureau's proportion of the Departmental total of expected value acres burned, and 2) results from monitoring and reporting.

2. *Strategic Business Plans*

Each bureau will prepare a strategic business plan that lays out a multi-year strategy for utilizing its preparedness and fuels allocations to mitigate the wildfire risk to values and to demonstrate the rate of return of investment. These plans will allow each bureau to choose implementation approaches that are appropriate for the specific missions of the bureau, within minimum standards which ensure safety and interoperability, and emphasize cost effectiveness and efficiencies. These plans should support the three Cohesive Strategy goals. The OWF recognizes that each goal may be emphasized differently across the DOI, depending upon bureau, land characteristics, mission, and regional or local circumstances. The OWF will review and endorse these plans to ensure consistency with overall Departmental strategic goals, policies, and priorities.

3. *Performance and Effectiveness Monitoring*

In collaboration with the OWF, each bureau will be responsible for monitoring, reporting, and oversight based on common standards and methodologies. Monitoring and reporting tools and capabilities (e.g., National Fire Plan Operations and Reporting System—NFPORS, Budget Reports, etc.) will be reviewed for sufficiency and revised where needed. The OWF will conduct independent reviews and oversight activities to ensure consistency and compliance with policy and strategic business plans. Results will improve the WFM preparedness and fuel programs efficiencies and effectiveness.

Key Messages

RBWFM Program Development

- The RBWFM will be developed under the leadership of OWF with support and advice from technical teams comprised of representatives from the bureaus. OWF will provide opportunities for leadership review and participation throughout the development process. As part of the program development process, the OWF will engage in consultation with Indian tribes.
- Completion of the initial capability for RBWFM is targeted for early calendar year 2015. RBWFM will be utilized for development of the FY2017 budget and for FY2016 allocations.
- Several issues remain to be fully explored and addressed during the development process. These include:
 - Values to be utilized;
 - Consideration of weighting values;
 - Tools and methodologies for performance measurement and how results may impact allocation;

- Transition from current allocation percentages to those based on expected value acres burned, if necessary;
- Updating of risk profile based on investments in fuels management and preparedness;
- Refinement and updating of data sets; and
- Business rules for national programs and resources.

Points of Contact

Paul Steblein, Deputy Director, Policy and Budget, Office of Wildland Fire, Department of the Interior, 202-606-3053, paul_steblein@ios.doi.gov

Dick Bahr, Deputy Director, Management and Programs, Office of Wildland Fire, Department of the Interior, 208-334-1550, richard_bahr@ios.doi.gov