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INSTRUCTOR

LESSON: Wildland Fire Decision Support System

COURSE: S-378 – Aerial Supervision

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Emphasis: introduce concepts of WFDSS decision support and available tools that could assist in the fire environment. Introduce process and adherence to WFDSS decision in managing an incident

OBJECTIVES:

Upon completion of this lesson, participants will be able to:

1. Describe the Wildland Fire Decision Support System (WFDSS).

2. Identify the role of aerial resources in adhering to the WFDSS decision in managing an incident.

3. Identify important information that can be found in the WFDSS decision.

I.   INTRODUCTION

WFDSS is designed to establish a process for documenting strategic decisions, providing decision support, and facilitating development of either short- or long-term operational management plans. The WFDSS process is linear, scalable, and progressively responsive to changing fire complexity and provides a consistent decision analysis and documentation process for all types of wildland fires. WFDSS provides a platform for risk-informed decision-making.

Documentation and analysis of wildland fire management decisions has been required by federal agency policy for nearly 30 years. The 2009 Policy Implementation Guidance requires-

> "Managers will use a decision support process to guide and document wildfire decisions. The process will provide situational assessment, analyze hazards and risk, define implementation actions, and document decisions and rationale for those decisions."

The Wildland Fire Decision Support System (WFDSS) has been developed to meet this need. The Forest Service (FS), Fish and Wildlife Service (FWS), and Bureau of Indian Affairs (BIA) enter all fires into WFDSS, regardless of size. National Park Service (NPS) and Bureau of Land Management (BLM) enter fires into WFDSS only when it escapes initial attack. At 98% initial attack success, there may not be a lot of need for analysis to inform decisions. However, as incidents escape initial attack or are managed for multiple objectives more analysis is needed to inform the decision.

Decision-making associated with managing wildland fire can have critical impacts. It is important to make the highest quality informed decisions possible facilitated by factual information and prediction of the range of outcomes and associated consequences of the decision. Publishing a decision provides documentation of the management action taken on the fire and the rationale behind it which will provide support if the fire is litigated in the future.

II.   WHAT IS WFDSS?

WFDSS is designed to be consistent with accepted models of risk-informed decision making. WFDSS is a web based system that allows users to acquire information, analyze that information, apply that information to inform their decision and gain situational awareness, then to archive the decision and the associated documentation. To accomplish this, WFDSS maximizes the use of appropriately-based deliberation as well as analysis. It is an iterative, information-goal directed process.

- **Risk–informed decision making -** requires two distinct but linked processes:

    1. **Analysis:**
        o   Rigorous, replicable methods to provide information about factual questions.
        o   Brings new information into the process – **informs deliberation.**

    2. **Deliberation:**
        o   Discussion, reflection, and persuasion to communicate, raise, and collectively consider issues, increase understanding, and facilitate substantive decisions.
        o   Brings new insights, questions, and problem formulations – **frames analysis**.

Examples of decision making at this level involve developing a strategic alternative and objectives for a wildfire incident; consider a range of values, hazards and probabilities and focus on longer time periods. They are usually completed at least once, but may require revision, adjustment or a completely new decision as the incident evolves and conditions change.

III.   YOUR ROLE IN WFDSS

As an Aerial Supervisor you may have access to unique information observed from the air. You may be asked to provide input to the decision process. Knowledge and understanding of the risk-informed decision-making process will be critical. Without your understanding of these processes relevant data may be missed. While a team may have been delegated authority to manage an incident, wildfire decisions are inherently complex, and decisions made from a single perspective and single base of knowledge without supplemental input cannot hope to capture and address that complexity.

It is essential that you understand the decision and operate within its guidelines as it truly represents the unit's management strategy and should be the reference with which an incident is managed. It is important to understand that in some cases a WFDSS decisions may be ongoing when aerial resources come on scene of the incident and resources must make tactical decisions based on the management strategy.

IV. ELEMENTS OF WFDSS

WFDSS is designed to include models and tools to analyze and assess the incident. The outputs can then be used to support the decision and assist in driving strategies and future tactics. WFDSS contains the following elements:

Information
Purpose: Documents the initial and continuing fire situation, and provides required information to complete administrative fire reporting.

Situation
Purpose: Provides situational and risk assessment information to support strategic decisions and development of a course of action. Information on fire weather, features, values, fire danger, and more can be accessed. The situation map enables visual Information evaluation. The information obtained here can help assess whether the pre-planned initial response is accurate or if additional planning is needed for the fire.

Objectives
Purpose: Defines objectives as stated in Land and Resource (LRMP), and Fire Management Plans (FMP) and lists specific management and incident requirements that will frame and influence strategic decisions as well as tactical plan development and implementation . This information is loaded prior to the fire season as provided in the LRMP and FMPs. If spatially enabled, this list will be reflective of the fire location and the relevant plan information.

Course of Action
Purpose: Defines a specific course of action ranging from a pre-planned initial response to an individualized response for a specific situation. Specificity varies with fire complexity and can include a defined planning area, management actions, resource commitments, and costs for the fire duration.

Validation
Purpose: Provides a review of the Situation, Objectives, and Course of Action to ensure that Objectives can be met, and in the event they cannot be met, the Validation guides the development of a new Course of Action.

Decision Summary
Purpose*:* Documents the response decision, the rationale for that decision, and stipulates the timeframe for revisiting and reassessing the decision.

Periodic Assessment
Purpose: Provides a process to periodically review the current decision, response, and accomplishments to evaluate effectiveness and confirm accuracy or, if needed, indicate progression to a higher response level and associated planning activities.

Reports
Purpose: Enables you to create three types of reports for your incidents. These reports are useful for conducting inbriefs and other meetings, as well as for preparing after action reviews and post-fire reclamation plans.

WFDSS Resources
Numerous models and tools are available within WFDSS to help inform the decision.

Models in WFDSS
- Fire Behavior and Fire Spread Models (Basic, Short Term, Near Term, FSPro)
- Stratified Cost Index (SCI)
- Wildland Fire Air Quality Tools Smoke Models

Tools in WFDSS
- Relative Risk Assessment
- Organizational Needs
- Fire Danger Graphs
- Weather forecasts
- Values Inventory
- KMZ downloads

There are readily available technical experts that can assist in running these models and interpreting outputs for your incident. These models can and should be used to support decision making and are often incorporated in the decision documentation.

On large, complex wildfires the Strategic Operational Planner (SOPL) position may be assigned to the Incident Management Team to work with the Operations and Planning Sections in developing a long-term course of action. SOPL's are specifically trained in developing long-term plans for wildland fires, and are useful on any wildland fire lasting more than three days regardless of the incident's strategic objectives (protection and/or resource benefit).

WFDSS User Roles and Incident Privileges
User Roles within WFDSS correspond to permissions which allow users to perform certain tasks within the application, such as creating an incident or conducting fire behavior analysis.
User Roles are: Viewer, Dispatcher, Author, Data Manager, and Fire Behavior Specialist.

Incident privileges are assigned at the time of (and are specific to) an incident. These privileges allow you to Own, Edit, Review, or Approve decision content. Modifying or uploading any data to the decision should be coordinated with the local unit or the individual responsible for maintaining the WFDSS decision.

Training aids are available on the WFDSS. http://wfdss.usgs.gov/wfdss/WFDSS_Training.shtml
To help users become familiar with navigating in the program WFDSS 101 series is an excellent source for learning how to use WFDSS.

Exercise

Review the various decision elements from the Buckhead 2012 WFDSS Decision. Identify at least two places where retardant use is restricted. It is recommended that you access the Buckhead 2012 incident in the Production site on WFDSS http://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml After signing into WFDSS, click on the Incidents tab. Using the Incident List Filter, type in "Buckhead" in the Incident Name box and "2012" in the Incident Year box and click Find Incidents. Click on the radio button next to Buckhead, then View Information. Click on the Situation tab to view the incident map. If the

various elements are not visible they can be activated from the left Map Layers menu. The Objectives tab can be found at the top of the page in the second row of tabs.
The Buckhead_081112_1323_Decision PDF decision may be used if access to WFDSS is not available.

V.   SUMMARY

Management of wildland fire represents one of the most complex and highest risk activities in land management. Decision support and its contributions to decision-making are vital to fire management success. Decision support tools range from subjective information to quantitative long-term analysis processes and provide information to decision-makers. These tools and processes incorporate science and technology to facilitate decision making based on the best available information.

Decision support gives managers the ability to reduce the amount of uncertainty surrounding the fire, understand the amount of difficulty that could be encountered during management and possible outcomes, develop management strategies and operational tactics, and provide a common understanding and clearer explanation of the situation.

Your input to the decision analysis can be key in the success of managing an incident and providing for firefighter safety.