INSTRUCTOR:

LESSON: Wildland Fire Decision Support System

COURSE: S-261 Applied Interagency Incident Business Management

Emphasis: introduce concepts of WFDSS decision support and available tools that could assist in assessing the fire environment. Introduce process and adherence to WFDSS decisions 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. Understand circumstances that might warrant a WFDSS decision be published.
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 either short or long-term 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 suppression 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.

II. WHEN A WFDSS DECISION IS NEEDED

It is recommended that a decision be considered if;

- Wildland fires are no longer within the initial action defined by the Fire Management Plan (preplanned response is not effective).
- Fire continues to actively spread beyond one or more burning periods.
- Wildland fires are being managed or considered for multiple objectives.
- Prescribed fires exceed prescriptions and are declared wildfires

Decision-making associated with managing wildland fire can have critical impacts. 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.

III. 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 documentation.

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

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

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

Decision making and publishing a WFDSS decision is the responsibility of the appropriate Line Officer or Unit Manager (District Ranger, Forest Supervisor, Regional Forester, Park or Refuge Superintendent, etc.) Fire managers and fire personnel as well as resource managers provide critical input to the decision.

It is important to note that in some cases a WFDSS decisions may be ongoing while initial actions are taking place on a fire. If a WFDSS decision has not yet been published it is important to understand the management strategy (contain, control, monitor, multiple objectives). Once available the WFDSS decision is the guiding document with which the incident is managed.

IV. ELEMENTS OF WFDSS

WFDSS is divided into subsections represented by tabs within the program. These sections are: Information, Situation, Objectives, Courses of Action, Validation, Decisions, Periodic Assessment, and Reports. The WFDSSS system is updated from time to time, so menu options may change but the basic function of each tab will remain the same.

A summary of the most recent revisions to WFDSS can be found on the WFDSS Home page. http://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml

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 information obtained here can help assess whether the pre-planned initial response is accurate or if additional planning is needed for the fire.
This tab features a map view to display most of the information in a spatially explicit format.

Objectives
Purpose: Defines objectives as stated in Land & Resource (LRMP), and Fire Management Plans (FMP). 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.
The Objectives tab also lists specific management and incident requirements that will frame and influence strategic decisions and tactical implementation.

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 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 analyses.
User Roles are: Viewer, Dispatcher, Author, Data Manager, Fire Behavior Specialist, Geographic Area Editor, and Super Analyst.
A user account can be requested from the WFDSS Home Page by selecting the Request Account link.

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 site on the Training tab 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.

WFDSS Resources

Numerous models and tools are available within WFDSS to assist with the above mentioned functional areas.

Models in WFDSS

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

Tools in WFDSS

- Relative RiskAsessment
- Organizational Needs
- Fire Danger Graphs
- Weather forecasts
- Values Inventory
- KMZ downloads

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 provide information to decision-makers and these tools and processes incorporate science and technology to facilitate decision making based on the best available information.

Decision support allows 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.