Wildland Fire Decision Support System Information

WFDSS Subsections

The Wildland Fire Decision Support System is divided into 8 subsections represented by tabs within the program. These sections are: Information, Situation, Objectives, Courses of Action, Validation, Decisions, Periodic Assessment, and Reports.

Information

Basic information for an incident is found in this section, which includes: Incident Name, Point of Origin, Unique Fire Identifier, Fire Code, Fire Perimeter / Incident Size, Discovery Date, Containment Date, Controlled Date, Out Date, Landscape Data Source, Geographic Area, Responsible Unit at Point of Origin, Incident Cause, Fire of National Significance, and Jurisdictional Agency at Point of Origin. Updating this information is essential for ongoing incidents (especially acreages and dates) as this information is automatically populated into the WFDSS Decision content. It is also important that the incident Owner(s) are available when the incident is updated or transferred. Incident ownership may be associated with an individual or group, depending on fire complexity, jurisdictions involved, and other considerations.

Situation

The Situation section provides a map interface displaying a variety of incident and reference information. It reduces the need for paper maps by giving users a dynamic and intuitive interface in which information needed for decision support is timely and easily accessible from anywhere with an internet connection. This section allows users to create new shape files, view values and boundaries, and conduct Basic and Short-Term fire analysis.

Map (sub tab) – has several spatial layers available:

- Base Layers- WFDSS Topos, Google Maps, Google Physical, U.S. States;
- Incident- Planning Areas, Fire Perimeters, Management Action Points, Points of Interest, Objective Shapes, Point of Origin;
- Analysis- Ignitions, Barriers, Landscape Masks, Basic Fire Behavior, Short Term Fire Behavior, Near Term Fire Behavior, FSPro (Values at Risk);
- Fire Related- Fires since January of current year, Historical Wildfires, Active MODIS, RAWS Stations, Fire Wx Zones, Retardant Avoidance, Significant Fire Potential;
- Disturbance History- Historical Wildfires;
- Boundaries- FMUs, Jurisdictional Agencies, Responsible Agencies, Federal Admin Areas, TNC Lands, Geographic Areas, Counties;
- Designated Areas- Wilderness, Potential Wilderness, Special, Other, BLM;
- Infrastructure- Facilities, Communication, Energy, Roads and Trails;

- Natural and Cultural Resources- Air Quality, Critical Habitat (T&E), Other Species;
- Unit Shapes – Data managers can upload shape files that contain information about local values.
- Map Capture – using the camera button at the top of the map users can create (save) a screen capture of the map that can be later incorporated into a Decision.

Info (sub tab) – the user can access: Feature Information, Fire Danger (ERC charts), Smoke Dispersion, Strategic Objectives, Fire Weather Forecasts, and Predictive Services Significant Fire Potential. Additionally users can access basic information about the underlying landscape file: Source, Elevation, Aspect, Slope, Fuel Model, Canopy Cover, Bulk Density, Stand Height, Base Height.

Objectives
Strategic Objectives and Management Requirements as entered from approved plans (Land & Resource Management Plans, Fire Management Plans) can be viewed and Incident Requirements and Objectives can be developed. Based on the Planning Area, Strategic Objectives and Management Requirements are automatically loaded to the Decision content.

Incident Requirements and Incident Objectives are created which are tiered from the overarching Strategic Objectives and Management Requirements. Users can control the activation or deactivated status of Incident Objectives and Incident Requirements based on fire location and activity.

Courses of Action
Documentation for action items and associated cost is completed in this section. Users can edit, include, or exclude action items each time a decision is made. Several methods for determining cost can be found here; follow your agency direction and include a summary of how the cost was constructed.

Cost can be developed using the Stratified Cost Index (SCI) located in the left hand menu. The SCI is available for USFS and DOI. The correct model is automatically chosen by the Unit ID in the Unique Fire Identifier. The model requires input for the estimated final acreage of the incident. Users can input up to four different estimated acreages.

Management Action Points (MAPs) (left menu) may be developed to define a condition which when met, prompts implementation of a pre-determined action. The Condition, Action, and optional Cost can be defined and linked to geospatial MAPs drawn in the Situation tab.

Validation

The default Course of Action (pre-planned response) and decisions are validated in this section. It is important to document your justification in the comment section as completely as possible for answering the question - "Will the Incident and Strategic Objectives be satisfied with the proposed Course of Action?" WFDSS users should consider the following when writing this justification:

- Are there adequate resources to achieve your COA?
- Has the cost been developed to achieve the COA?
- Does the current fire behavior and weather assessment support the COA?
- Have you completed the Relative Risk Assessment and assessed the Planning Area's Value Inventory?
- Have you checked your Relative Risk Advice considerations?

This information will be viewable throughout the decision process and will be automatically populated in the WFDSS Decision content.

Decisions

In this section, users create, view, edit, and download published decisions. It is important that Owners, Editors, and Reviewers become familiar with their role and understand how to manipulate the incident content into the Decision Content. Additionally, knowing and understanding how and where to save information as agreed upon by the incident Owner(s) are essential. From this tab, an Owner(s) starts the review and approval process. Incident decisions can be edited by incident Owners or by those users who have been granted access through incident privileges. Users will access the decision editor by checking the radio button next to the pending decision, then clicking EDIT. Once editing is completed, users click the Check-In button to allow access by others.

The WFDSS Decision content is outlined into several sections: Assessment (Information, Weather, and Other content), Objectives (includes all FMUs, Strategic Objectives and Management Requirements included in the Planning Area as well as all included Incident Objectives and Incident Requirements), Course of Action (includes MAPs), Validation (Includes the Relative Risk text) and Rationale. Multiple editors can be working on different sections of the WFDSS Decision content with a little coordination and using the edit / check-in process. Additional information that supports the Decision should be added to each of these sections.

The users who are editing the Decision content should include maps captures or uploaded images that support the Decision or help tell the story of the incident and the Decision. These images can be added to any section of the content as needed. Additionally, the Editors should also include all support information: cost development summary, Relative Risk, social/political concerns, fire behavior models, Values at Risk, long term assessment information.

Information from past planning documents that supports the Decision, now must be included in the Decision content in WFDSS. It is typically added in the Assessment portion of the Decision content. This information should also be summarized and referenced in the Rationale portion of the Decision.

Prior to submitting a Decision for the Review and Approval process, the Rationale portion of the Decision must be completed. The Rationale content should describe why the Decision was made to implement the Course(s) of Action. Consider explaining what caused you to make this Decision, what caused you to choose the Course(s) of Action, what are the causes and influences on the incident, what are the social and political concerns/pressures, what does the Relative Risk Assessment tell you, are their smoke concerns, and what fire behavior models informed the Decision.

Once a Decision has all the sections completed, it can be submitted for the Review and Approval process. If a Decision has not been published, it can be edited or deleted. However, once a Decision has been published, it is part of that incident record and cannot be changed or removed.

The Incident Objectives, Incident Requirements, Course of Action and Planning Area cannot be viewed by users who do not have incident ownership or privileges until a Decision is published. A new Decision must be made if updated information or findings are to be documented.

Periodic Assessment
This is the section where the Approver(s) will complete the Periodic Assessment and view the previous actions and comments. The Periodic Assessment must be completed based on the timeframe specified by the Approver. Depending upon the complexity and activity on the incident, the timeframe can be set to 1-14 days while publishing the Decision or during the Periodic Assessment process. It is beneficial to document clear, concise information about the incident when completing the Periodic Assessment. The Periodic Assessment information will be part of the project record and a way for someone to gather situational awareness of the incident. It should be useful information, not only during the incident, but also for years to come when reviewing incidents. The comment section is especially pertinent because Approvers can outline the thought process and reasons for either continuing a current decision or requiring a new one.

Reports
This section allows users to create custom reports consisting of portions of Decision content, (e.g. the MAP content or Fire Behavior content). A report can be viewed, edited, published, and downloaded. The Report section does not provide a report on a Published Decision. Reports on Published Decisions can be found in the Decisions tab by using the PDF or HTML button, depending on desired format. When creating a report the user can decide on a custom or a

Management Action Point report. Both reports give the user the ability to select pertinent information from the incident for the report they are constructing.

WFDSS Tools and Functions

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. Typical 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.

Fire Modeling

Fire modeling has been incorporated into WFDSS, in the form of the Fire Spread Probability model (FSPro), Basic Fire Behavior (Basic), Short Term Fire Behavior (STFB) and Near Term Fire Behavior (NTFB). Comparison of WFDSS Short Term and Basic models to stand alone FlamMap and other fire behavior information can be found on the WFDSS homepage under the Related Resources link, fire behavior section. Information for requesting assistance in running these models for your incident can be found at the WFDSS homepage through the Wildland Fire Management Research and Development And Application group, or by visiting http://www.wfmrda.nwcg.gov/decision-support-training.php

Relative Risk Assessment (left menu)

The Relative Risk Assessment is required before publishing a Decision for an incident. Its purpose is to assist in planning for, assessing, and managing the incident. It provides the Agency Administrator with a quick but comprehensive assessment of the risk of the fire. An incident Owner or Editor can perform the assessment.

This is a qualitative process that can be completed in less time than a quantitative long-term risk assessment. The Relative Risk Assessment chart uses three risk components:

- values
- hazard
- probability

Each of these components is assessed independently. The three outputs are then evaluated in a final step that provides the Relative Risk rating for the fire. As the graphs are completed, there is a text box to document the thoughts/reasons for the inputs. The information from the text box automatically populates in the WFDSS Decision content but the graphs themselves do not. Relative Risk can be visited pre-season to define some local inputs. From the Relative Risk rating,

1   guidance is provided within the system to assist the Owner/Author in
2   determining the level of analysis needed, considerations for the incident and
3   documentation of the Decision.
4

5   **Organizational Needs Assessment (left menu)**
6   The Organizational Needs Assessment (ONA) guides Agency Administrators in
7   their management organization selection, both in escalating and moderating
8   situations (.i.e. this process can be used to expand or contract organizations).
9   The ONA is based on Relative Risk, implementation difficulty, and decision
10   concerns. The final part of the ONA combines these variables to determine the
11   level of incident management needed.
12

13   **Incident KMZ (left menu)**
14   Incident KMZ files can be downloaded that include all the incident spatial data
15   and completed analysis from the Published Decision(s). The spatial data is
16   composed of the incident shapes found under the Incident and Analysis layers
17   folder on the Situation Tab. If a decision is pending, only spatial information
18   available to all users will be provided in the KMZ.