

## 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, XXX Final Fire Perimeter / Incident Size, Discovery Date, Containment Date, Controlled Date, Out Date, Geographic Area, Responsible Unit at Point of Origin, Incident Cause 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
- Incident - Planning Areas, Fire Perimeters, Management Action Points, Points of Interest, Objective shapes;
- Analysis - Ignitions, Barriers, Landscape Masks, Basic Fire Behavior, Short Term Fire Behavior, Near Term Fire Behavior, FSPro (Values at Risk);
- 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.

- 1 • Map Capture – using the camera button at the top of the map users can  
2 create (save) a screen capture of the map that can be later incorporated into  
3 a Decision.  
4
- 5 Info (sub tab) – the user can access: Feature Information, Fire Danger (ERC  
6 charts), Smoke Dispersion, Strategic Objectives, Fire Weather Forecasts.  
7 Additionally users can access basic information about the underlying landscape  
8 file: Source, Elevation, Aspect, Slope, Fuel Model, Canopy Cover, Bulk  
9 Density, Stand Height, Base Height.  
10
- 11 Relative Risk (left menu) – As part of the situation assessment, users can  
12 calculate the relative risk. It is a series of four graphs: Hazards, Values,  
13 Probability, and the summary graph – Relative Risk. As the graphs are  
14 completed, there is a text box to document the thoughts/reasons for the inputs.  
15 The information from the text box automatically populates in the WFDSS  
16 Decision content but the graphs themselves do not. Relative Risk can be visited  
17 pre-season to define some local inputs.  
18
- 19 **Objectives**  
20 Strategic Objectives and Management Requirements as entered from the  
21 approved plans (Land & Resource management Plans, Fire Management Plans)  
22 can be viewed and incident requirements and objectives can be developed.  
23 Based on the planning area strategic objectives and management requirements  
24 are automatically loaded.  
25
- 26 Incident requirements and incident objectives are created which are tiered from  
27 these overarching Strategic Objectives and Management Requirements. Users  
28 can control the activation or deactivated status of incident objectives and  
29 incident requirements based on fire location and activity.  
30
- 31 **Courses of Action**  
32 Documentation for action items and associated cost is completed in this section.  
33 Users can edit, include, or exclude action items each time a decision is made.  
34 Several methods for determining cost can be found here; follow your agency  
35 direction and include a summary of how the cost was constructed.  
36
- 37 Cost can be developed using the Stratified Cost Index (SCI) located in the left  
38 hand menu. The SCI is available for USFS and DOI. The correct model is  
39 automatically chosen by the Unit ID in the Unique Fire Identifier. The model  
40 requires input of the estimated final acreage of the incident. Users can input up  
41 to four different acreages.  
42
- 43 Management Action Points (MAPs) (left menu) may be developed to define a  
44 condition which when met, prompts implementation of a pre-determined action.  
45 The Condition, Action, and optional Cost can be defined and linked to  
46 geospatial MAPs drawn in the Situation tab.

## 1 **Validation**

2 The default Course of Action (pre-planned response) and decisions are validated  
3 in this section at different times during the decision process. Initially validating  
4 the need for a decision and later validating the course of action prior to  
5 publishing a decision. It is important to document your justification in the  
6 comment section as completely as possible for answering the question - "Will  
7 the Incident and Strategic Objectives be satisfied with the proposed Course of  
8 Action?" WFDSS users should consider the following when writing this  
9 justification:

- 10 • Are there adequate resources to achieve your COA?
- 11 • Has the cost been developed to achieve the COA?
- 12 • Does the current fire behavior and weather assessment support the COA?
- 13 • Have you completed the Relative Risk Assessment and assessed the value  
14 inventory?
- 15 • Have you checked your Relative Risk Advice considerations?

16  
17 This information will be viewable throughout the decision process and will be  
18 automatically populated in the WFDSS Decision content.

19

## 20 **Decisions**

21 In this section, users create, view, edit, and download published decisions. It is  
22 important in this area that owners, editors, and reviewers become familiar with  
23 their role and understand how to manipulate the incident content into the  
24 Decision Content. Additionally, knowing and understanding how and where to  
25 save information as agreed upon by the incident owner(s) are essential. From  
26 this tab, an owner(s) starts the review and approval process. Incident decisions  
27 can be edited by incident owners or by those users who have been granted  
28 access through incident privileges: Edit, Review, Approve. Users will access  
29 the decision editor by checking the radio button next to the pending decision,  
30 then clicking EDIT. Once editing is completed, users will click the Check-In  
31 button to allow access by others.

32

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

42

43 The users who are editing the decision content should include Maps captured or  
44 uploaded images that support the decision or help tell the story of the incident  
45 and the decision. These images can be added to any section of the content as  
46 needed. Additionally, the editors should also include all support information:

**Release Date: January 2012**

**APPENDIX N-3**

1 cost development summary, relative risk, social/political concerns, fire behavior  
2 models, values at risk, long term assessment information.

3  
4 Information from the planning documents of the past, that supports the decision,  
5 now must be included in the decision content in WFDSS. It is typically added in  
6 the Assessment portion of the decision content. This information should also be  
7 summarized and referenced in the Rationale portion of the decision.

8  
9 Prior to submitting a decision for the review and approval process, the Rationale  
10 portion of the decision must be completed. The Rationale content should  
11 describe why the decision was made to implement the course(s) of action.  
12 Consider explaining: what caused you to make this decisions, what caused you  
13 to choose the course(s) of action, what are the causes and influences on the  
14 incident, what are the social and political concerns/pressures, what does the  
15 relative risk tell you, are their smoke concerns, what fire behavior models  
16 informed the decision.

17  
18 Once a decision has all the sections completed, it can be submitted for the  
19 Review and Approval process. If a decision has not been published, it can be  
20 edited or deleted. However, once a decision has been published, it is part of that  
21 incident record and cannot be changed or removed.

22  
23 The Incident Objectives, Incident Requirements, Course of Action and Planning  
24 Area cannot be viewed by users who do not have incident ownership or  
25 privileges until a decision is published. A new decision must be made if  
26 updated information or findings are to be documented.

#### 27 28 **Periodic Assessment**

29 This is the section where the approver(s) will complete the periodic assessment  
30 and view the previous actions and comments. The periodic assessment must be  
31 completed based on the timeframe specified by the approver. Depending upon  
32 the complexity and activity on the incident, the timeframe can be set to 1-14  
33 days while publishing the decision or during the periodic assessment process. It  
34 is beneficial to document clear, concise information about the incident when  
35 completing the periodic assessment. This periodic assessment information will  
36 be part of the project record and a way for someone to gather situational  
37 awareness of the incident. It should be useful information, not only during the  
38 incident, but also for years to come when reviewing incidents. This comment  
39 section is especially pertinent because it outlines the thought process and  
40 reasons for either continuing a current decision or requiring a new one.

#### 41 42 **Reports**

43 This section allows users to create custom reports consisting of portions of  
44 decision content, (e.g. the MAP content or Fire Behavior content). A report can  
45 be viewed, edited, published, and downloaded. The Report section does not  
46 provide a report on a Published Decision. Reports on published decisions can be

1 found in the Decisions tab by using the PDF or HTML button, depending on  
2 desired format. When creating a report the user can decide on a custom or a  
3 Management Action Point report. Both reports give the user the ability to select  
4 pertinent information from the incident for the report they are constructing.

5

## 6 **WFDSS Tools and Functions**

7

### 8 **WFDSS User Roles and Incident Privileges**

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

13

14 Incident privileges are assigned at the time of (and are specific to) an incident.  
15 These privileges allow you to Own, Edit, Review, or Approve decision content.

16

### 17 **Fire Modeling**

18 Fire modeling has been incorporated into WFDSS, in the form of the Fire  
19 Spread Probability model (FSPro), Basic Fire Behavior (Basic), Short Term Fire  
20 Behavior (STFB) and Near Term Fire Behavior (NTFB). Comparison of  
21 WFDSS short term and basic models to stand alone FlamMap and other fire  
22 behavior information can be found on the WFDSS homepage under the Related  
23 Resources link, fire behavior section. Information for requesting assistance in  
24 running these models for your incident can be found at the WFDSS homepage  
25 through the National Fire Decision Support Center (NFDSC) or by visiting  
26 <http://www.wfmrda.nwcg.gov/nfdsc.php> .

27

### 28 **Relative Risk Assessment (left menu)**

29 The Relative Risk assessment is required before publishing a decision for an  
30 incident. Its purpose is to assist in planning for, assessing, and managing the  
31 incident. It provides the Agency Administrator with a quick but comprehensive  
32 assessment of the risk of the fire. An incident owner, editor, reviewer, or  
33 approver can perform the assessment.

34

35 This is a qualitative process that can be completed in less time than a  
36 quantitative long-term risk assessment. The relative risk assessment chart uses  
37 three risk components:

- 38 • values
- 39 • hazard
- 40 • probability

41

42 Each of these components is assessed independently. The three outputs are then  
43 evaluated in a final step that provides the relative risk rating for the fire. From  
44 the relative risk rating, guidance is provided within the system to assist the  
45 owner/author in determining the level of analysis needed, considerations for the  
46 incident and documentation of the decision.

**Release Date: January 2012**

**APPENDIX N-5**

- 1 **Organizational Needs Assessment (left menu)**
- 2 The Organizational Needs Assessment (ONA) guides Agency Administrators in
- 3 their management organization selection, both in escalating and moderating
- 4 situations (.i.e., this process can be used to expand or contract organizations).
- 5 The ONA is based on relative risk, implementation difficulty, and decision
- 6 concerns. The final part of the ONA combines these variables to determine the
- 7 level of incident management needed.
- 8
- 9 **Incident KMZ (left menu)**
- 10 Incident KMZ files can be downloaded that include all the incident spatial data
- 11 and completed analysis from the Published Decision(s). The spatial data is
- 12 composed of the incident shapes found under the Incident and Analysis layers
- 13 folder on the Situation Tab. If a decision is pending, only spatial information
- 14 available to all users will be provided in the KMZ.