

What Fire Behavior Specialists Need To Know

About WFDSS - 2017

This document is a quick reference for Fire Behavior Specialists to review duties, prerequisites, recent enhancements, new data layers, training aids, little known features, recommendations and things to consider during the preseason that will help you use WFDSS more efficiently.

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Fire Behavior Specialist Duties

As a WFDSS fire behavior specialist, you may be asked to:

- Select and run appropriate fire behavior analyses (Basic, Short Term, Near Term, and FSPro) to support wildland fire decision makers.
- Accept (or reject) and document the inputs and outputs of fire behavior analyses.
- Grant privileges to other analysts as needed.
- Distribute results and provide interpretation of fire behavior analyses to agency administrators, fire manager, Incident Management Teams, and Geographic Area Coordination Center.

Pre-requisites to Becoming a WFDSS Fire Behavior Specialist

Users requesting the Fire Behavior Specialist Role in the Production side of WFDSS should have the following courses and experience:

- Previous fire behavior modeling experience, including evaluating and modifying landscape files, historic climate, and forecasted weather as this role utilizes geospatial fire behavior models AND
- S-490 Advanced Fire Behavior Calculations, AND
- S-491 Intermediate National Fire Danger Rating System, AND
- S-495 Geospatial Fire Analysis, Interpretation and Application OR S-492 Long Term Fire Risk Assessment and S-493 FARSITE, OR
- Qualified FBAN or LTAN with WFDSS Fire Behavior training/experience

Recent WFDSS Enhancements

There were no new WFDSS releases in 2016. The top of the Training Resources page in WFDSS contains the most recent application documentation. Please complete the [survey](#) to help with the future of training development and expansion of media training materials. Don't forget to check out the Hot Picks menu on the right for recent training materials and guides.

Table 1: Recent WFDSS Enhancements

Feature	Description
Customized Risk Tables	Create customized risk tables on the Assessment tab within the Default Decision Editor. This feature is useful when the Values at Risk inventories from STFB, NTFB or FSPro runs do not contain a complete set of potentially threatened values. With this feature, you can customize these types of inventories to capture a more complete list of values. See Creating and Editing Customized Risk Tables for more information.
Hauling Charts	The surface fire characteristics chart, known as the hauling chart, now includes the wind speed and direction used in the simulation as part of the title of the chart. Generate a Basic or Short-term fire modeling run to access the hauling charts. Then, view the modeling run and under the results tab there is a link to the hauling charts.
Alpha Numeric Code Added to LCP Critique	What does this code do? Landscape critiques now include both the number and letter code for the 40 fuel models for easier use by those familiar with only one or the other.

Data Layers

Table 2: WFDSS Data Layers

Data Layer	Description
MTBS Data	Monitoring Trends in Burn Severity (MTBS) data for the Continental United States as map layers by year; 2010- 2014 are currently available, but 2015 data will become available in WFDSS in 2017. For a single year, burn area boundaries as mapped by MTBS will display as a red outline. Burn severities within each burn area boundary will display as a categorized image (thematic raster) color-coded according to burn

Data Layer		Description	
		severity. Users may have to manually add this layer to their available map layers (My Home>System Preferences>Disturbance>MTBS>Select appropriate dataset).	
Layer Files		WFSS offers layer (.lyr) files for analysis-related data downloads . Data can be downloaded for Near Term Fire Behavior (NTFB) Arrival Time in 1,2,3,4,6,12, or 24 hour periods, as well as burn period. FSPRO layer files are also available as an ascii or shapefile, or users can choose to download a zipfile of all layer files available.	
Incident Analysis KMZ Output Layers		The table below displays what layers are available for kmz download from each type of WFSS analysis.	
Basic	Short Term	Near Term	FSPRO
Incident Origin	Incident Origin	Incident Origin	Incident Origin
	Analysis Ignition	Analysis Ignition	Analysis Ignition
	Analysis Barrier	Analysis Barrier	Analysis Barrier
	Arrival Time Grid	Arrival Time Grid	
	Major Flow Paths		
Gridded Wind Vectors	Gridded Wind Vectors		
		Burn Periods	
			FSPRO Probability Output
Flame Length	Flame Length	Flame Length	
Rate of Spread	Rate of Spread	Rate of Spread	
Fireline Intensity	Fireline Intensity	Fireline Intensity	
Heat per Unit Area	Heat per Unit Area		

Data Layer		Description	
Crown Fire Initiation	Crown Fire Activity	Crown Fire Activity	
Solar Radiation	Solar Radiation		
1 Hr Fuel Moisture	1 Hr Fuel Moisture		
10 Hr Fuel Moisture	10 Hr Fuel Moisture		
Max Spread Direction	Max Spread Direction		
Wind Speed	Wind Speed		
Wind Direction	Wind Direction		
Hauling Chart	Hauling Chart		

Training Aids

Table 3: WFDSS Training Aids

	Description
YouTube WFDSS Support Videos Channel	This channel provides training videos that walk you step-by-step through many common tasks. If you have a YouTube account simply search for WFDSS Support Videos. To view new videos as they become available, subscribe to this channel. http://www.youtube.com/user/WFDSSSupportVideos?feature=g-high-u
Modeling Learning Resources section on WFDSS Website > Training	The WFDSS website has been improved with Modeling Learning Resources consolidated on the WFDSS Website > Training page. The Related References page also contains valuable reference information, but core learning materials are now in one location on the Training page.
An Author's Guide to WFDSS Decision Making	The Author's Guide to WFDSS Decision Making was developed to assist an Author through the WFDSS decision process. The Guide uses a Q and A type of walkthrough. The guide was not developed to be a button by button process, but rather designed to guide the author through the decision support process.

	Description
Backup WFDSS Incident Reporting Form	The document provides a paper form Decision Document that can be completed when the WFDSS application is down or internet is unavailable at the time a Decision Document needs to be published.
WFDSS Incident Groups and Decisions	Although the WFDSS Incident Groups feature provides functionality to users managing multiple fires, it cannot be used to create a single decision for multiple fires. Future changes to WFDSS Incident Groups are forthcoming and will provide enhanced functions. Thorough documentation and clarity on incident direction is best completed for individual fires; creation of a single decision for multiple fires should be uncommon.

Little Known Features

Table 4: Little Known Features

Feature	Description
Help	You can access the WFDSS Help system any time by selecting the Help icon in the upper right corner of any WFDSS screen. You can find topics alphabetically in the WFDSS Help index, or look for information using the search feature. The help information is being updated constantly to keep up with program enhancements and in response to user feedback, so check often.
Situation Assessment Features	<p>The Situation Map allows access to a comprehensive set of incident-related data and information that can guide briefings and inform decision documentation. Here are some little-known highlights:</p> <ul style="list-style-type: none"> You can modify your map layers to display only what is relevant to your unit or incident. This will improve navigation during briefings and decision-making (My Home>System Preferences) and allow more efficient access to the most relevant information for an incident. You can display fire planning spatial data for a unit (if it's been loaded) by turning on the Unit Fire Planning map layers. Depending on which planning process a unit has chosen for use in WFDSS, FMUs or Strategic Objectives and Management Requirement shapes are available for viewing in map displays. You can view specific information about individual Management Requirements by clicking the dropdown arrow beside its name in

Feature	Description
	<p>the LayerSwitcher, and then clicking the underscored Mgmt Requirements link.</p> <ul style="list-style-type: none"> • A zone fire weather forecast for an incident’s origin displays by clicking Weather Forecast on the Situation Map>Info tab. To view fire weather forecasts for other zones in the fire area, turn on the Fire Weather and Danger>Fire Wx Zones map layer and use the ‘i’ tool to click in a different zone. When you open the Weather Forecast on the info tab, it will be for the zone you clicked. • Similar to how you switch zones above, you can also choose to generate Fire Danger Rating Graphs for other RAWs in the fire area. The graph that displays on the Situation Map>Info tab is for the RAWs closest to an incident’s origin. Using the ‘i’ tool, click on alternate locations to display ERC-G data for alternate RAWs. These graphs show a 7 day ERC-G forecast in green. • Predictive Service fire potential forecasts are available as spatial, daily map layers in the LayerSwitcher and as a 7 day forecast for an incident’s point of origin on the Situation Map>Info tab. • Fuel Treatment map layers are available in the Disturbance History, but these layers must be added to your list of available map layers in My Home>System Preferences. • Estimated Ground Evacuation Time.
<p>Basic Fire Behavior Hauling Chart</p>	<p>Basic Fire Behavior map results allow users to display modeled flame lengths with the same breakpoints as the Hauling Chart (Fire Characteristics Chart). This feature allows for a quick assessment of landscape areas that may pose safety risks for firefighters and allow for planning of appropriate control tactics. Look for better graphics in near future WFDSS enhancements. See Analyst-Assisted BFB - Why Use it.</p>
<p>Results Landscape Features</p>	<p>Attributes for the landscape file used by an analysis are now available for viewing on the analyses results map page. Attributes such as slope, aspect, and fuel model can be toggled on from the analyses results map LayerSwitcher. Clicking the down arrow next to Landscape in the LayerSwitcher reveals a layer transparency slider bar. With this tool, you can adjust the transparency of your selected landscape feature to better view your results layer underneath. This allows users to better assess areas of the analyses results that show increased fire spread or little or no spread to determine what landscape feature or features may have influenced the fire behavior.</p>

Feature	Description
Results Downloads	<p>The KMZ, ASCII, and Output files are an excellent source to use for displaying analysis results outside of WFDSS, but there are many other useful files located under Downloads on the Results Tab. FSPRO downloads include Fire Size Histogram, Event Coverage, and Daily Acres. These files can be useful to you as an analyst. For example the Event Coverage Report will give you the burnable and non-burnable days for your analysis (also available in two other locations listed in the first section of this document); to help you understand how many days in the simulation the fire didn't spread. Daily Acres Report can give you information on daily spread also indicating how many burnable and non-burnable days your analysis had and when they occurred. See FSPRO Results Downloads and Near Term Results Downloads.</p>
Analysis Report available from the Analysis Tab	<p>The Analysis Report can be obtained from the Analyses tab View Report button or by selecting Report on the Menu switcher tree. The Report provides the same information as the Analysis Details but this printable report also provides more details and some additional graphs and images including a wind rose. The Analysis Report includes a map image of the results. This Report can be an excellent tool to use for briefing a line office or fire manager on the analysis results particularly if you are working remotely and must email this information. See Viewing the Analysis Report.</p>
Estimated Ground Evac Time	<p>A data layer available in WFDSS (Fire Environment and Safety map layers) displays estimated ground evacuation time and models the shortest ground transport time in hours from any point within the continental United State to a hospital. The layer has been designed for strategic decision making only. Its intent is to encourage thoughtful decisions about the risks being transferred to firefighters and how to mitigate those risks. Used in conjunction with modeling results, areas of higher risk can be easily identified and can help inform overall strategy into the short, near or distant future, depending on the model used. See Estimated Ground Evac Time Overview.</p>
Incident Groups	<p>WFDSS populates incident complexes under the Incident Groups tab. Here users can view/create a collection of incidents and view analyses for two or more incidents on the same map page. This can be advantageous when you are monitoring several incidents that are in close proximity and/or you wish to evaluate the impacts of adjacent fires on one another. These groups can remain private or made public and shared with other users.</p>

Feature	Description
	<p>See Creating a Group.</p> <p>NOTE: Incident Groups does not provide a decision documentation process for complexes. Each individual fire within a complex should have an individual decision document.</p>
Reports	<p>Need to quickly generate a list of MAPs and map locations for Operations? WFDSS enables you to create reports that are useful for conducting briefings and sharing published MAPs for active incidents, as well as post-fire for after action reviews and reclamation plans. You can pull information from WFDSS documentation such as text, maps, tables, and images into a report format and both edit/publish the report as you would a decision.</p> <p>Want to share a hard copy, landscape-oriented image of an analysis output with someone? Enter a Report Name when you capture an image of the analysis output. Navigate to the Reports tab in the Incident perspective, locate your report in the list, and you can print a draft or publish it as a report. See Capturing Map Images as landscape-Oriented Reports, Reports and Creating Draft Decisions and Reports</p>

Recommendations

Table 5: WFDSS Recommendations

Feature	Description
Disable Fly-Out Menu to Enable Access to Menu Options on Mobile Devices	<p>The Fly-Out menu slides in and out from the left side of the screen, providing more screen space for users. However, use of this default feature prevents access to menu options on mobile devices. To disable this feature navigate to My Home >Systems Preferences and check the box for Enhanced Accessibility.</p>
Sharing Analyses Results	<p>You may share your analyses without accepting your analysis as complete. The Landscape-oriented Report allows you to capture a map image and title it as you would for a decision, and if you add a Report Name below the image capture description you can also generate a landscape mode.pdf report you can edit and print or email for review by other incident personnel.</p>

Feature	Description
	<p>The Landscape Report displays only single map captures. See To capture map images as landscape-oriented reports.</p> <p>Users who are in the Incident Address book can view all the analyses for the incident. To easily share analyses, a user should be added to the address book by either being an Incident Editor, or by creating a fire behavior analysis.</p>
<p>Keeping Analyses up to date on Active Large Fires</p>	<p>Increasingly, data from WFDSS is being used in ancillary intelligence sources. For active incidents, having up to date and accepted- as-complete analyses helps to give a clearer picture of an incident’s potential. Make a point at the end of each day to reject unwanted analysis and annotate accepted analysis to include updated notes and descriptive names. It’s easy to let some of these tasks slide when analysis workloads become large and complex on active incidents.</p>
<p>Guidelines when Naming Analyses</p>	<p>When naming a fire behavior analysis run, use spaces to delineate information rather than underscores or periods. This allows text ‘wrapping’ in the database and is easier to manage under the hood.</p>

Preseason Preparation Checklist (My Home tab)

Table 6: WFDSS Preseason Preparation Checklist

<input type="checkbox"/>	Feature	Description
<input type="checkbox"/>	<p>Passwords</p>	<p>Users are allowed one account per person and it provides access to both WFDSS Production and Training sites.</p> <p>If you forget your password, you can request an automated password reset. An access key link is emailed to your primary email address. Click the link to reset your password. See Do-It Yourself Password Reset and Requesting a Password Reset.</p> <p>Your password must be changed every 60 days. If you have not logged into WFDSS recently you may still be able to log in, but you will be required to change your password. If the system does not allow you to log in and more than 90 days have passed since your last log in, you are likely locked out. Contact the Help Desk (1-866-224-7677) and request a password reset. Do not request a new account; this will cause confusion when preparing decision documents and performing other WFDSS functions.</p>

<input type="checkbox"/>	Feature	Description
<input type="checkbox"/>	Disabled Accounts	If two years have lapsed since your last login and your account is subsequently disabled, you must do two things; first contact your local GAE to request role(s) reassignment and second, call the Help Desk (+1 866.224.7677) to request a password reset. If you are unsure of who your local GAE is, the Help Desk can help you with this.
<input type="checkbox"/>	Contact Information	Check your contact information and ensure that it is up to date. This information is used by the WFDSS system and WFDSS users to contact you for various reasons, for example if you are an incident owner you will receive confirmation when any fire behavior analyses are completed on your incident to the email address listed in your Contact Information. If you have changed jobs, geographic areas, or even agencies you can simply update your Contact Information. See Updating your Contact Information .
<input type="checkbox"/>	User Roles	Ensure that your User Roles are appropriate for your current position and job duties. To view your current User Roles select My Home > User Roles. See Requesting Additional System Privileges or WFDSS User Roles to learn more about user roles and privileges. User roles granted in Production are automatically carried over to Training but conversely, user roles granted in Training are exclusive to the Training site only.
<input type="checkbox"/>	System Preferences	You may select preferred default settings to customize specific items, for example the default base map layer. New map layers are added periodically to the list of available Map Layers from System Preferences. The Map Layers listed in the right hand box are available for display on WFDSS maps. It's a good practice to check these Layers periodically to ensure pertinent data is available for viewing from WFDSS maps (Disturbance History > Fuel Treatments are a good example; these map layers need to be manually added). Users must move those layers that are not needed back to the left hand box if they don't wish to display them on their WFDSS maps. See Changing your System Preference .
<input type="checkbox"/>	Address Book	Check your address book to ensure it is up to date. Preseason is an excellent time to customize your My Address Book. You can set up groups now for use on incidents later. See Address Book , or see the other WFDSS Help topics related to the address book such as, Creating a Group and Editing a Group .