

Guide to WFSA Plus

***Wildland Fire Implementation Plan
and
Wildland Fire Situation Analysis***

2003 Edition

**Decision management software
for firefighting professionals**

Developed by:
BalanceTech, LLC
534 Fairview Avenue
Missoula, Montana 59801
balance@balancetech.com

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Getting started with WFSA Plus 03

WFSA Plus 03 is an automated tool designed to improve decision-making and documentation for wildland fire management. The software helps you organize, analyze and present data used in preparing a Wildland Fire Implementation Plan (WFIP) and a Wildland Fire Situation Analysis (WFSA).

A WFSA Prep program is provided to allow collecting information about suppression costs and fire impacts in advance. This information then can be used when developing a WFSA report. The WFSA Prep program produces a WFSA Prep file, which stores data used by WFSA Plus when comparing alternative strategies.

Throughout WFSA Plus, you use a series of worksheets to gather and organize information about a wildland fire and possible responses. The results are presented in text, graphic and tabular formats. The final product is one or more printed reports.

Each step in preparing each type of report is described here in the *Guide to WFSA Plus*, as well as in the online help.

Installing WFSA Plus 03

WFSA Plus 03 is distributed either electronically over the Internet or on CD-ROM.

If you downloaded WFSA Plus 03 from the Internet:

- 1 Locate the WFSASetup file. It probably will be in your email program's Download folder.
- 2 Select *Run* from the Start menu.
- 3 Run WFSASetup and follow the instructions on the screen.
For example, in the Run dialog box you might type something like
c:\email\download\wfsasetup.exe

If you received WFSA Plus 03 on a CD-ROM:

- 1 Insert the CD-ROM.
- 2 Select *Run* from the Start menu and run
d:\WFSASetup.exe
where d: is the name of your CD drive.
- 3 Then follow the instructions on the screen.

A note to users of previous versions of the software:

If you try to open an old WFSA Plus '98 file, the program will offer to create a WFSA Plus 03 file and then copy most of the information from the old file to the new file. You can then make additional modifications to the new file.

WFSA Plus 03 uses the same file format as WFSA Plus '99, so no conversion is needed for existing WFSA Plus '99 files.

Saving files in WFSa Plus

WFSa Plus saves information when you enter it. There is no special *Save* command.

To save the open file with a different name or to a different drive or directory, select the *Save As* command from the File menu.

WFSa Plus works with one file at a time, so when you create or open a second file, the file that's open is closed automatically. But, because information is saved when it's entered, you don't lose any data.

Learning about the menu commands

On the Menu bar at the top of your screen, you'll find a few brief menus. These contain some basic commands you can use as you work. Generally, here's what you'll find on each menu.

The File menu

Use the commands on the File menu to open, save and import files, print reports and quit the program.

<i>New</i>	Starts a new WFSa Prep or WFSa Plus file
<i>Open</i>	Opens an existing WFSa Prep or WFSa Plus file
<i>Save As</i>	In the WFIP and WFSa programs, saves the open file under a new file name, directory or drive
<i>Printer setup</i>	Allows choice of printer, paper size, source and orientation and print quality
<i>Go to WFSa</i>	Allows you to switch from the WFIP to the WFSa program, keeping the file for the current fire open
<i>Go to WFIP</i>	Allows you to switch from the WFSa to the WFIP program, keeping the file for the current fire open
<i>Exit</i>	Quits the program

The Section menu

Use the commands on the Section menu to open WFIP or WFSa sections.

The Worksheet menu

Use the commands on the Worksheet menu to open WFSa Prep, WFIP or WFSa worksheets.

Note You can also open sections by clicking their tabs at the bottom of the WFIP or WFSa windows. You can open worksheets by clicking their tabs at the bottom of the WFSa Prep windows or above the section tabs in the WFIP or WFSa windows.

The Edit menu

Use the commands on the Edit menu to copy lists and to cut, copy or paste text.

Note You can also edit information in many of the worksheets by highlighting the appropriate text, clicking your right mouse button and then selecting a command from the menu that appears.

The Help menu

Use online help for step-by-step instructions on using WFSA Plus. Online help is also where you learn about specific features of the software, such as printing reports and saving files.

Getting around in WFSA Plus

The chart below explains how you use various features (such as tabs) and devices (such as the mouse) to navigate your way around in the software.

<i>Use this item</i>	<i>To do this</i>
Section tabs	Section tabs appear across the bottom of each WFIP and WFSA screen. Each represents a step in the decision-making and documentation process. Click a tab to go to the section of the program it represents.
Worksheet tabs	Worksheet tabs appear across the bottom of each WFSA Prep screen and above the section tabs of each WFIP and WFSA screen. Each represents a procedure in the decision-making and documentation process. Click a tab to go to the worksheet it represents.
Tab key	Press to move forward from field to field on a worksheet.
Mouse	Click in a field to enter information. Click a number to select a priority rating. Click an item to select it. In text boxes, click the right mouse button to edit text.
On-screen buttons	Buttons appear on some worksheets when you have additional options. For example, the <i>Add New Alternative</i> button on the Strategies worksheet of the Alternatives section of the WFSA program lets you add another alternative.
Menu bar options	Select an option from a menu to perform a task (such as <i>Open</i> from the File menu) or go to a section or worksheet (such as <i>Report</i> from the Section menu).

New Features in WFSa 03

Save the WFSa report to a word processor file-

It is now possible to save the WFSa report to a Rich Text Format (RTF) file, which can then be opened with a word processing program such as Microsoft Word.

There are two issues to be aware of when saving to an RTF file. First, on the Graph page, patterns are not supported in the RTF file, so the graphs will be transferred using solid colors, regardless of the settings you choose for the graph format. Second, on the Signature page, several of the column headings are turned sideways: the text runs vertically rather than horizontally. In the RTF file, this formatting is lost, although it can be easily restored from within most word processors. For example, in Microsoft Word, select Text Direction from the Format menu to change the orientation of the text.

Help compatibility

The online Help has been updated to be compatible with current operating systems including Windows 2000 and Windows XP, as well as Windows 95, Windows 98 and Windows ME. As a result, you should no longer see the error message “Run-time error ‘6’: Overflow” when trying to use the Help menu, or when exiting the program.

Adding complexity factors

A programming error was corrected so that it is now possible to add situation-specific complexity factors to any category.

Starting the WFSA Plus programs

When you open the WFSA Plus program, you'll see a row of three buttons, with a brief description above each, and the *Exit* button at the bottom.

Use this button ***To do this***

<i>WFSA Prep</i>	<p>Open the WFSA Prep program.</p> <p>You use the WFSA Prep program to collect helpful information in advance, information that will be used by the WFSA program.</p> <p>Data about suppression costs and fire impacts can be copied from an Interagency Initial Attack Assessment (IIAA) database file or entered by hand.</p> <p>By storing these numbers, relating to costs and impacts, some of the more time-consuming parts of completing a WFSA can be completed in advance.</p>
<i>WFIP</i>	<p>Open the WFIP program.</p> <p>If the fire is not human caused, and you have an approved Fire Management Plan, you may be able to manage the fire for benefits.</p> <p>You use the WFIP program to assist in preparing WFIP reports, and to review whether managing the fire for benefits is appropriate.</p>
<i>WFSA</i>	<p>Open the WFSA program.</p> <p>Human caused fires, as well as those occurring in a location where a Fire Management Plan has not been prepared and approved, require a WFSA report. The WFSA program will assist you in preparing one.</p>
<i>Exit</i>	<p>Quit the program.</p>

Working with WFSA Prep files

A WFSA Prep file stores values for computing suppression costs and impacts on resource values when completing a WFSA.

Setting up the WFSA Prep file in advance saves precious time when a fire is burning and a WFSA must actually be prepared. It also provides more accurate estimates of costs and impacts.

Typically, a single WFSA Prep file is prepared for each administrative unit. The file then can be distributed to any computer on which WFSA Plus is installed.

If you have an existing Interagency Initial Attack Assessment (IIAA) database file, WFSA Plus can use information from that file to create an WFSA Prep file.

When a fire occurs, you select the WFSA Prep file containing data for the affected unit. Then, when you have WFSA Plus compute estimated costs and impacts of the fire, the estimates will be based on data appropriate for the location of the fire. If necessary, you can modify the data to fit the specific circumstances of the fire.

Procedures

- 1 After opening the WFSA Plus program, click the *WFSA Prep* button to start the WFSA Prep program.
- 2 From the WFSA Prep welcome screen, if you wish to:
 - **create a new WFSA Prep file**, click *New* and then follow the instructions under **Creating a WFSA Prep file** below.
 - **open an existing WFSA Prep file**, click *Open* on the WFSA Prep screen and then select the file you wish to open. The instructions beginning with **Worksheet 2: Management Goals** on page 8 will help you review and edit the file.

➤ **Creating a WFSA Prep file**

- 1 When you click *New* on the WFSA Prep screen, the Name the WFSA Prep file dialog box appears.

The file name uses a format of three characters identifying the unit, the two-character state abbreviation, and the final two digits of the year, with an extension of FCD. For example, the Miles City District in Montana will use the file name MCDMT03.FCD.

- 2 Type in the 3-character unit identifier.

If it's unique in the database, the unit name and state will be filled in immediately.

If you're unsure of the 3-character ID, or if the same ID is shared by more than one unit, you can type part of the ID or part of the Unit Name. A list of matching or similar unit names will be displayed in the ID Finder. If yours is in the list, click on it and the information will be filled into the boxes immediately.

In some cases, your Unit Name and ID may not be in the database. If this happens, you'll need to type in the Unit ID, Unit Name and state, yourself. Please notify Balance Technologies (see the title page for contact information), so that we can update the database.

- 3 Click *OK* to accept the filename and go to the Introduction worksheet. You're now ready to enter and edit data.

➤ **Worksheet 1: *Introduction***

The Introduction worksheet, which is displayed when you're starting a new WFSA Prep file or opening an existing one, provides an overview of the WFSA Prep process.

The title bar displays the file you're working with; you'll also see the tabs for the five other worksheets across the bottom of the screen.

➤ **Worksheet 2: *Management Goals***

You can record resource management objectives, standards and guidelines for wildland fire suppression for each Resource Management Area (RMA).

- 1 When you click the *Management Goals* tab, you'll see three Management text boxes and buttons that allow you to add or remove RMAs.

When you're creating a WFSA Prep file, the boxes will be blank. When you're reviewing and editing an existing file, these boxes will display previously entered information.

- 2 To add an RMA, you click the *Add Management Area* button.
- 3 Then type the RMA's name into the Resource Management Area box.
- 4 Press *Tab*, and then type the objectives for the RMA that are relevant to fire suppression into the Management Objectives box.
- 5 If you want to:
 - **add more RMAs**, repeat Steps 2 through 4 above until you've typed in names for every RMA and described the objectives for them.
 - **review or retype an RMA**, click the appropriate management area in the Management Areas box at the left. You can then review and edit the objectives for the area you've chosen, or click in the Resource Management Area box at the right to change the RMA's name.
 - **delete an RMA**, click in the Resource Management Areas box on the RMA you want to remove, and then click the *Delete Management Area* button.

Note The management objectives for the RMAs aren't printed in the WFSA report. They will be available for reference when suppression objectives for a fire are being established.

The suppression objectives for a specific fire appear in its WFSA report.

After you finish reviewing and editing the RMAs and objectives, you can click the *Suppression Resources* tab to review and edit the suppression resources.

➤ **Worksheet 3: *Suppression Resources***

When you click the *Suppression Resources* tab, you'll see a list of cost estimates for suppression resources.

You can:

- **edit resource names**, short names, units or costs by clicking the appropriate boxes and typing in your changes.
- **change the order** of listed items by typing new numbers in the “#” column.
- **add items** to the list by clicking the *Add Item* button and entering the appropriate information into the Add Suppression Resource dialog box.
- **delete items** from the list by first clicking the number of the item and then clicking the *Delete Item* button.

After you finish reviewing and editing the suppression resources list, you click the *FMZs* tab to list the FMZs and Representative Locations.

➤ **Worksheet 4: *FMZs***

On the FMZs worksheet, you list the FMZs and the Representative Locations for your administrative unit. You can import the data you need from an existing Interagency Initial Attack Assessment (IIAA) file and then add items as needed, or you can enter data by hand.

- 1 When you click the *FMZs* tab, you'll see a table with the headings “Fire Management Zone” and “# RLs,” as well as the *Import from IIAA...* and *Add Item* buttons.
- 2 **To import data** from an existing IIAA file:
 - 1) Click the *Import from IIAA...* button.
The Select IIAA file dialog box appears.
 - 2) Double click the IIAA file you want to use. WFS Plus will copy the needed data into the current WFS Plus Prep file.
 - 3) The FMZs and Representative Locations from the IIAA file will appear in the table. You can, if needed, edit the FMZ names and change the number of Representative Locations (RLs).
 - 4) Enter additional FMZs, as needed, by clicking the *Add Item* button and typing in data.

—Or—

To enter FMZs and Representative Locations by hand:

- 1) Click the *Add Item* button.
- 2) Type in an FMZ and the number of Representative Locations.
- 3) Enter additional FMZs, as needed, by repeating the above steps.

After you finish reviewing and editing the FMZ table, you can click the *NVC Table* tab to enter or edit per acre cost estimates.

➤ **Worksheet 5: *NVC Table***

For every FMZ and Representative Location in your administrative unit, you can review and change the estimated impacts on resources for each FIL.

- 1 When you click the *NVC Table* tab, you'll see drop-down lists for the FMZs and Representative Locations of the administrative unit, and a table that shows gains and losses for each FIL.

If you entered data by hand in the Fire Management Zones worksheet, the table contains all zeros for those FMZs. If you imported an IIAA file, the numbers from that file are displayed in the table.

- 2 To display the FMZs for your administrative unit, click the drop-down-list arrow to the right of FMZ.
- 3 From the list, you select an FMZ to work on.
- 4 To display the Representative Locations for the FMZ you selected, click the drop-down-list arrow to the right of Representative Location.
- 5 You click a Representative Location to work on.
- 6 You click in the appropriate boxes (for example, Mature Timber, FIL 1) and enter your data.

Note Remember to include the minus sign when entering losses.

- 7 You select other Representative Locations and FMZs, and review and edit the data for them by repeating Steps 2 through 6 above.
- 8 After you finish entering data, you can review the total estimated impact on resources for each FIL. The estimates are displayed in the row at the bottom of the table. To review the estimates for other FMZs and Representative Locations, click the appropriate drop-down lists.

After you finish reviewing the estimated impacts on resources, you can click the *Suppression Cost/Acre* tab to edit suppression costs.

➤ **Worksheet 6: *Suppression Cost / Acre***

For each FMZ in the administrative unit, you can review and change the estimated per acre costs of suppressing fires.

- 1 When you click the *Suppression Cost/Acre* tab, you'll see the FMZ drop-down list for your administrative unit and a table that lists fire sizes and suppression costs.
 - **If you typed in** data by hand in the FMZs worksheet, the table is blank for those FMZs.
 - **If you imported** an IIAA file, the numbers from that file are displayed in the table.
- 2 To display the FMZs for this WFSAs Prep file, click the drop-down-list arrow to the right of FMZ.
- 3 From the list, you select an FMZ to work on.
- 4 Click in the appropriate box (the top one, if you're starting with a blank table) in the To column and then enter the largest fire size for that particular cost per acre.

WFSAPlus will automatically insert the next larger figure in the next From column.

Note If you enter 9,999,999 in the To column, WFSAPlus will assume it's the last entry and won't make an entry in the next From column.

- 5 Click in the Suppression cost per acre column and type in the estimated cost per acre.
- 6 Continue entering numbers in the To and Suppression cost per acre columns.
- 7 You select other FMZs and review and edit the data for them by repeating Steps 2 through 6 above.

Note When you've finished making changes to the WFSAPrep file, you don't need to take any specific action to save it—the file is kept up to date as you make changes.

When you're finished creating and editing WFSAPrep files, you quit the program by selecting *Exit* from the File menu.

You can now distribute WFSAPrep files to the people who will prepare WFSAs for each fire in the administrative unit.

➤ **Distributing WFSAPrep files**

Once a WFSAPrep file is created, it may have to be distributed to a variety of locations. For example, if a WFSAPrep file is created for a Forest, it may need to be distributed to individual Ranger Districts.

To transfer a WFSAPrep file, you can use Windows Explorer to copy the file onto a floppy disk, and then copy it from the floppy disk onto the destination computer. You can find the WFSAPrep file in the costs folder. Normally this folder will be found in c:\wfsaplus. The WFSAPrep file should be copied into the costs folder on the target machine.

Creating a WFIP report

Some wildland fires may qualify to be managed for benefits, rather than suppressed. The WFIP program may be used to assist in assessing whether a WFIP report should be prepared.

If a WFIP is appropriate, you provide information for a WFIP report using the five sections of the WFIP program. Instructions provided in the following pages will help you follow each of the steps.

Procedures

- 1 After opening the WFSA Plus program, click the *WFIP* button to start the WFIP program.
- 2 From the WFIP welcome screen, if you wish to:
 - **create a new WFSA Plus file**, click the *New* button or select *New* from the File menu, enter a file name and click *Save*.
 - **open an existing file**, click the *Open* button or select *Open* from the File menu, select the file you want to open and click *Open*.

If you're:

- **creating** a new WFIP, you follow the procedures beginning with **Section 1 / Stage I: Assess** on the next page.
- **reviewing and updating** an existing WFIP, **Section 5 / Periodic Assessment**, which starts on page 21, will help you work with an existing WFIP.

Section 1 / Stage I: Assess

To begin a WFIP, you describe the current fire situation, and then assess whether managing the fire for benefits is appropriate.

➤ **Worksheet 1: Introduction**

When you open a WFIP to work with a particular fire, you see the Introduction worksheet for the Stage I: Assess section. It provides an overview of the Stage I: Assess section.

The title bar displays the file you're working with; you'll also see the tabs for the WFIP sections in a row across the bottom of the screen. The tabs for the Stage I: Assess worksheets are in the row above the section tabs.

To go to one of the other worksheets or sections, just click its tab.

➤ **Worksheet 2: General Information**

- 1 When you click the *General Information* tab, you'll see text boxes in which you enter identifying information about the fire.
- 2 Here, you type in basic data about the fire including the name, jurisdiction, and start date and time.
- 3 Press *Tab* to move from box to box.

For more information about what to enter into each field, see the **General Information data entry chart** on page 14.

➤ **Worksheet 3: Describe Conditions**

- 1 To describe the elements that affect containing the fire, click the *Describe Conditions* tab.

You'll see four text boxes.

- 2 Here, you type in:
 - Fuel conditions (for example: extremely dry, heavy ground fuel)
 - Current and forecast weather (for example: humidity levels, wind, rain)
 - Current and forecast fire behavior (for example: direction in which the fire is burning)
 - Resources available to suppress the fire (for example: crews in the area, national crews, equipment)
- 3 Press *Tab* to move from box to box.

➤ **Worksheet 4: Risk Chart**

- 1 To assess the relative risk for the current fire, click the *Risk Chart* tab.
The Risk Chart worksheet appears, displaying a chart with four scales.
- 2 You assess the relative risk by clicking the appropriate factors associated with each of the four scales.
The relative risk is indicated in the yellow box at the bottom of the screen.

General information data entry chart

The fields on the General Information worksheet are listed below, along with the information you need to enter into each field.

<i>In this field</i>	<i>Enter this information</i>
Fire Name	(Self-explanatory)
Incident number	The agency number assigned to the fire (such as BOD 296 or BNF 001)
Jurisdiction(s)	The agency that has fire protection responsibility (such as USFWS, USFS or BLM)
Administrative Unit	The local administrative unit (such as Hart Mountain Refuge Area or Flathead Indian Reservation)
FMP Unit	The Fire Management Plan Unit
Geographic area	The recognized Geographic Coordination Area where the fire is (such as Northwest or Northern Rockies)
Management code	The local unit's fiscal management code
Start Date/Time	The date and time the fire started
Discovery Date/Time	The date and time the fire was discovered
Current Date/Time	The date and time the WFIP is being prepared
Current Fire Size	The size of the fire in acres
Location (Lat/Long or Legal)	The latitude and longitude of the fire or a legal description of the land involved
Cause	The cause of the fire

➤ **Worksheet 5: *Response Decision***

Once you've identified and described the fire, you need to document the decision to manage or attack it. To do so, you answer several questions about the fire.

- 1 Click the *Response Decision* tab.
- 2 You'll see five questions, which you answer *Yes* or *No* by clicking the appropriate circles.
- 3 If you answer:
 - **No to all five questions**, WFSA Plus indicates that you should manage the current fire for resource benefits.
 - **Yes to at least one question**, WFSA Plus indicates that you should initiate a suppression oriented response.

➤ **Worksheet 6: Next Step**

When you click the *Next Step* tab, you'll see a diagram that displays the options that are available to you: whether to manage the fire for benefits, or to suppress it.

If the results of the assessment suggest that:

- **you manage the fire for benefits—**

You can click the *Stage II: Short-term* tab and go on to **Section 2 / Stage II: Short-term**, which starts on the next page, to continue the WFIP process, or click the *Report* tab and jump to **Section 4 / Report**, which starts on page 19, to preview and print the Stage I report.

- **you suppress the fire—**

You can click the *Report* tab and jump to **Section 4 / Report**, which starts on page 19, to preview and print the Stage I report.

If a WFSA report is needed, you can select *Go to WFSA* from the File menu, and go to **Creating a WFSA report**, which starts on page 23.

Section 2 / Stage II: Short-term

In the Stage II: Short-term section, you describe short-term implementation actions, assess the complexity of the fire, and determine whether a Stage III Long-term Action Document should be developed.

➤ **Worksheet 1: Introduction**

When you click the *Stage II: Short-term* tab, you'll see the Introduction worksheet, which provides an overview of the Stage II: Short-term section.

➤ **Worksheet 2: Short-term actions**

- 1 When you click the *Short-term actions* tab, you'll see the Initial Action Sections list, and a text box into which you enter information about each topic.
- 2 One at a time, click on each topic name, and, in the Body text box, type in text pertaining to that topic.

➤ **Worksheet 3: Complexity analysis**

Here, you rate a variety of characteristics of the fire situation to evaluate the complexity of the fire.

- 1 When you click the *Complexity analysis* tab, you'll see a list of complexity elements, which you assign values, and the Final Complexity Rating based on those values.
- 2 Rate the complexity of each element by clicking in the box next to it in the "Value" column and typing in a value between 1 (low) and 5 (high).

Note You can press *Tab* to move from one element to the next.

When you're satisfied with the value of each complexity element, you can review the Final Complexity Rating and the total assessment value in the yellow boxes at the bottom of the screen.

WFSAPlus determines the overall complexity value of the fire situation by multiplying each element's weight by its value (the product appears in the $W \times V$ column) and then adding up the resulting products.

➤ **Worksheet 4: Stage III need assessment**

- 1 To determine whether a Stage III Long-term Action Document is needed, click the *Stage III need assessment* tab.
You'll see a chart with four scales.
- 2 You assess the need by clicking the appropriate factors associated with each of the four scales.
- 3 After reviewing the chart, click in the appropriate circle to indicate whether:
 - Stage III Implementation Actions should be developed and implemented.—Or—
 - Stage II Implementation Actions should be maintained.

➤ **Worksheet 5: Next Step**

When you click the *Next Step* tab, you'll see a diagram that displays the options that are available to you: whether to create a Stage III plan, or to continue with the current plan.

If the results of the assessment suggest that:

- **a Stage III plan is needed—**

You can click the *Stage III: Long-term* tab and go on to **Section 3 / Stage III: Long-term**, which starts on the next page, to begin describing the Stage III actions for the fire, or click the *Report* tab and jump to **Section 4 / Report**, which starts on page 19, to preview and print the Stage II report.

- **you continue with the current plan—**

You can click the *Report* tab and jump to **Section 4 / Report**, which starts on page 19, to preview and print the Stage II report.

Section 3 / Stage III: Long-term

In the Stage III: Long-term section, you describe objectives, risks and other elements involved in managing the fire for benefits.

You can also copy Stage III text from another WFIP or another document, or paste it into a word processor document.

Worksheet 1: Introduction

When you click the *Stage III: Long-term* tab, you'll see the Introduction worksheet, which provides an overview of the Stage III: Long-term section.

Worksheet 2: Long-term Implementation Actions

1 To describe the objectives, risks, and costs of managing the current fire, click the *Long-term Implementation Actions* tab.

You'll see the topics of the WFIP on the left, and a box where you can enter information describing aspects of the plan on the right.

2 To enter text for each topic of the WFIP, click in the Implementation Plan Sections list on the topic name you want to select.

3 Type in text that describes the implementation plan for that topic.

By highlighting text and then clicking the drop-down lists and buttons above the text box, you can select different fonts, sizes and styles to change the appearance of the WFIP report.

4 Continue highlighting topic names and entering text until you've completed each section.

Worksheet 3: Import / Export

1 First, click the *Import / Export* tab.

The Import / Export worksheet appears.

2 If you wish to import Stage III text from another WFS Plus file, click the *Import* button and select a file.

The Stage III: Long-Term Implementation Plan section will be copied from the selected file, and will be part of the WFIP report for the current fire.

Note Using the Import feature will replace any Stage III text already entered. If you wish to import text, you should complete this step prior to making any other Stage III entries.

3 If you wish to copy the Stage III: Long-Term Implementation Plan section to an external word processor, click the *Export* button.

You can then read and edit the text using most word processing programs, such as WordPerfect or Word.

When you're ready, you can click the *Report* tab and go on to **Section 4 / Report** to preview and print pages of the WFIP report.

Section 4 / Report

In the Report section, you can create a documentation checklist for the report.

You can also preview and print the entire report or selected pages from the Report worksheets.

➤ **Worksheet 1: Introduction**

When you click the *Report* tab, you'll see the Introduction worksheet, which provides an overview of the Report section.

➤ **Worksheet 2: Table of Contents**

1 To indicate which documentation products are needed, and whether each one has been completed, click the *Table of Contents* tab.

You'll see a list of documentation products, with check boxes for each.

2 To show which products are needed, click in the appropriate boxes in the *Needed* column. To de-select a product, click in its box again. A means the item will show as "Needed" on the documentation checklist.

3 To show which products are completed, click in the appropriate boxes in the *Completed* column. To de-select a product, click in its box again. A means the product will be marked "Completed" on the documentation checklist.

Note To add a subsection, click in the list where you want the new subsection to go, then click the *Add Subsection* button, and type in the name for the subsection.

➤ **Worksheet 3: Preview and Print**

1 To preview or print your WFIP report, click the *Preview and Print* tab.

You'll see the previewing and printing options that are available.

2 To preview or print:

- **the full report**, click the *Select All* button to be sure every page is selected.
- **selected pages**, click the *Clear All* button, and then click the check boxes next to the pages you want.

An in a check box means that page is selected.

Note If you have a color printer, you can print WFIP charts in color. The *Chart Colors* box allows you to preview and print in black and white patterns, colored patterns or solid colors. To select an option, click in the appropriate circle.

3 Click the *Preview* button if you want to see your choices as they will appear when printed.

The Print Preview screen appears.

4 From the Print Preview screen, you can

Click this button ***To do this***

Previous or *Next* View other pages, if you've selected more than one page to preview.

Zoom In Zoom in to a smaller portion of the page.

Zoom Out See a larger portion of the page.

Print Page Print the page you see.

Print Report Print the WFIP report.

Close Return to the Print Report worksheet.

Note You can also zoom in to a smaller portion of the page by double clicking the portion you want to view.

5 When you return to the Print Report worksheet, you can:

- preview other pages by repeating Steps 2 through 4.
- click the *Print* button to print your selections.
- review and change the printer, paper size, source and print quality by clicking the *Printer Setup* button.

When you're through previewing and printing reports, you can:

- go to one of the WFIP worksheets by clicking its tab.
- switch to the WFSA program by selecting *Go to WFSA* from the File menu.
- quit WFSA 03 by selecting *Exit* from the File menu.

Section 5 / Periodic Assessment

While a fire is being managed, you should periodically examine whether the decisions made for managing the current fire are still appropriate, and whether a long-term action plan is needed.

➤ **Worksheet 1: Introduction**

When you click the *Periodic Assessment* tab, you'll see the Introduction worksheet, which provides an overview of the Periodic Assessment section.

➤ **Worksheet 2: Revalidation**

- 1 When you click the *Revalidation* tab, you'll see a list of questions, similar to those on the Response Decision worksheet of the Stage I: Assess section.
- 2 You answer the questions *Yes* or *No* by clicking the appropriate circles.
- 3 If you answer:
 - **No to all six questions**, WFSa Plus indicates that you should continue to manage the current fire for resource benefits.
 - **Yes to at least one question**, WFSa Plus indicates that you should initiate a suppression oriented response.

➤ **Worksheet 3: Next Step**

When you click the *Next Step* tab, you'll see a diagram that displays the options that are available to you: whether to develop a Stage III plan, or to continue with the current plan.

If the results of the assessment suggest that:

- **you may continue to manage the fire for benefits—**

You can click the *Stage III: Need Assessment* tab and go on to **Worksheet 4: Stage III Need Assessment** below to continue the WFIP process, or click the *Report* tab and go back to **Section 4 / Report**, which starts on page 19, to preview and print the Revalidation report.

- **you should suppress the fire—**

You can click the *Report* tab and go back to **Section 4 / Report**, which starts on page 19, to preview and print the Revalidation report.

If a WFSa report is needed, you can select *Go to WFSa* from the File menu, and go to **Creating a WFSa report**, which starts on page 23.

➤ **Worksheet 4: Stage III Need Assessment**

- 1 To review whether a Stage III Long-term Action Document is needed, click the *Stage III Need Assessment* tab.

You'll see the same chart that appears on the Stage III Need Assessment worksheet of the Stage II: Short-term section.

- 2 You can review the assessment that was made, and change it if necessary, by clicking the appropriate factors associated with each of the four scales.
- 3 After reviewing the chart, click in the appropriate circle to indicate whether:

- Stage III Implementation Actions should be developed and implemented.

—Or—

- Stage II Implementation Actions should be maintained.

➤ **Worksheet 5: Next Step**

When you click the *Next Step* tab, you'll see a diagram that displays the options that are available to you: whether to create a Stage III plan, or to continue with the current plan.

If the results of the assessment suggest that:

- **a Stage III plan is needed—**

You can click the *Stage III: Long-term* tab and go back to **Section 3 / Stage III: Long-term**, which starts on page 18, to begin describing the Stage III actions for the fire, or click the *Report* tab and go back to **Section 4 / Report**, which starts on page 19, to preview and print the Stage III Need Assessment report.

- **you should continue with the current plan—**

You can click the *Report* tab and go back to **Section 4 / Report**, which starts on page 19, to preview and print the Stage III Need Assessment report.

Creating a WFSA report

When you've determined that a WFSA is appropriate, you create a WFSA report using the eight sections of the WFSA part of the program. Instructions are provided in the following pages for each of the eight sections.

Procedures

- 1 After opening the WFSA Plus program, click the *WFSA* button to start the WFSA program.
- 2 From the WFSA 03 screen, if you wish to:
 - **create a new WFSA Plus file**, click *New* and then follow the instructions under **Section 1 / Setup** below.
 - **open an existing WFSA Plus file**, click *Open* on the WFSA screen and then select the file you wish to open.

Section 1 / Setup

You use the Setup section to prepare information that will be used later in the WFSA process. If you have a WFSA Prep file, the information can be imported directly. If you don't have a WFSA Prep file, you can set up the tables manually.

If a WFSA Prep file has been provided to you, you can review and edit the information by following the directions under **Worksheet 2: Import Data** below.

If no WFSA Prep file has been provided, or if you wish to type in your own data, you can follow the instructions for **Worksheets 3-6** of this section, starting on page 24.

➤ **Worksheet 1: Introduction**

When you open a WFSA to work with a particular fire, you see the Introduction worksheet for the Setup section. It provides an overview of the Setup section.

The title bar displays the file you're working with; you'll also see the tabs for the WFSA sections in a row across the bottom of the screen. The tabs for the worksheets of the Setup section are in the row above the section tabs.

To go to one of the other worksheets or sections, just click its tab.

➤ **Worksheet 2: Import Data**

You can import WFSA Prep files, which contain data that help with estimating the costs of suppressing a fire and the impacts of fire on natural resources in your administrative unit.

- 1 When you click the *Import Data* tab, you'll see on-screen directions and a list of available WFSA Prep files.
- 2 Click on one of the WFSA Prep files to select it; then click the *Next Step* button. You'll see a list of RMAs.

- 3 Click on all of the RMAs that may be affected by the fire, and then click the *Next Step* button.

You'll see a list of FMZs.

- 4 Click on all of the FMZs that may be affected by the fire; then click the *Import* button.

The screen displays lists of the RMAs and FMZs you've selected.

- 5 You can add more RMAs and FMZs by clicking the *Import additional RMAs/FMZs* button, and then repeating Steps 2 through 4 above.
- 6 If you need to delete an FMZ, you select it in the Fire Management Zones that have been imported box, and then click the *Delete FMZ* button

When you've imported all of the WFSAs Prep files that apply to the current fire, you can click the tabs for any of the other Setup section worksheets to review or edit the information.

➤ **Worksheet 3: Management Goals**

You can record resource management objectives, standards and guidelines for wildland fire suppression for each RMA.

- 1 When you click the *Management Goals* tab, you'll see three Management text boxes and buttons that allow you to add or remove RMAs.

When you're reviewing and editing information that was entered previously, or imported from a WFSAs Prep file, these boxes will display that information. When you're creating the worksheet by hand, the boxes will be blank.

- 2 To add an RMA, you click the *Add Management Area* button.
- 3 Type the RMA's name into the Resource Management Area box.
- 4 Press *Tab*, and then type the objectives for the RMA that are relevant to fire suppression into the Management Objectives box.
- 5 If you want to:
 - **add more RMAs**, repeat Steps 2 through 4 above until you've typed in names for every RMA and described the objectives for them.
 - **review or retype an RMA**, click the appropriate management area in the Management Areas box at the left. You can then review and edit the objectives for the RMA you're working with, or click in the Resource Management Area box at the right to change the RMA's name.
 - **delete an RMA**, click in the Resource Management Areas box on the RMA you want to remove, and then click the *Delete Management Area* button.

Note The management objectives for the RMAs aren't printed in the WFSAs report. They will be available for reference when suppression objectives for a fire are being established.

➤ **Worksheet 4: *NVC Table***

- 1 When you click the *NVC Table* tab, you'll see a table that shows the NVC for each FIL.

When you're reviewing and editing information that was entered previously, or imported from a WFSA Prep file, these boxes will display that information. When you're creating the worksheet by hand, the table contains all zeros.

- 2 Click in the appropriate boxes (for example, Mature Timber, FIL 1) and type in your data.

Note Remember to include the minus sign when entering losses.

- 3 Click one of the circles near the lower left corner of the window to include just losses, or to include both gains and losses–NVC. Your choice should conform to agency policy.
- 4 After you finish entering data, you can review the total estimated impact on resources for each FIL. The estimates are displayed in the row at the bottom the table.

➤ **Worksheet 5: *Suppression Resource List***

- 1 When you click the *Suppression Resource List* tab, you'll see a list of cost estimates for suppression resources.

- 2 You can:

- **edit resource names**, short names, units or costs by clicking the appropriate boxes and typing in your changes.
- **change the order** of listed items by typing new numbers in the “#” column.
- **add items** to the list, one at a time, by clicking the *Add Item* button and entering the appropriate information into the Add Suppression Resource dialog box.
- **delete items** from the list, one at a time, by first clicking the number of the item and then clicking the *Delete Item* button.

➤ **Worksheet 6: *Cost/Acre***

- 1 When you click the *Cost/Acre* tab, you'll see a table that lists fire sizes and suppression costs.

When you're reviewing and editing information that was entered previously, or imported from a WFSA Prep file, the table will display that information. When you're creating the worksheet by hand, the table is blank.

- 2 Click in the appropriate box (the top one, if you're starting with a blank table) in the To column and then enter the largest fire size for that particular cost per acre. WFSA Plus will automatically insert the next larger figure in the next From column.

Note If you enter 9,999,999 in the To column, WFSA Plus will assume it's the last entry and won't make an entry in the next From column.

- 3 Click in the Suppression cost per acre column and type in the estimated cost per acre.

4 Continue entering numbers in the To and Suppression cost per acre columns.

When you're finished working with the Setup worksheets, you can click the *Situation* tab and go on to **Section 2 / Situation** to describe the current fire situation.

Section 2 / Situation

To begin a WFSA, you describe the current fire situation.

➤ **Worksheet 1: Introduction**

When you click the *Situation* tab, you'll see the Introduction worksheet, which provides an overview of the Situation section.

➤ **Worksheet 2: General Information**

1 When you click the *General Information* tab, you'll see text boxes, into which you type identifying and descriptive information about the fire.

2 Here, you type in basic data about the fire including the name, jurisdiction, and start date and time.

Note If you used the WFIP program for this file, many of these fields will already be completed.

3 Press *Tab* to move from box to box.

For more information about what to enter into each field, see the **General Information data entry chart** below.

General Information data entry chart

The fields on the General Information worksheet are listed below, along with the information you need to type in.

<i>In this field</i>	<i>Enter this information</i>
WFSA #	The number for the WFSA report
Fire Name	(Self-explanatory)
Incident number	The agency number assigned to the fire (such as BOD 296 or BNF 001)
Start Date/Time	The date and time the fire started
Current Date/Time	The date and time the WFSA is being prepared
Jurisdiction(s)	The agency that has fire protection responsibility (such as USFWS, USFS or BLM)
Geographic area	The recognized Geographic Coordination Area where the fire is (such as Northwest or Northern Rockies)
Administrative Unit	The local administrative unit (such as Hart Mountain Refuge Area or Flathead Indian Reservation)
Management code	The local unit's fiscal management code
Current size	The size of the fire at the time the WFSA is being prepared

➤ **Worksheet 3: *Conditions***

- 1 When you click the *Conditions* tab, you'll see four text boxes, which you use to describe the elements that affect containing the fire.
- 2 Here, you type in:
 - Fuel conditions (for example: extremely dry, heavy ground fuel)
 - Current and forecast weather (for example: humidity levels, wind, rain)
 - Current and forecast fire behavior (for example: the direction in which the fire is burning)
 - Resources available to suppress the fire (for example: crews in the area, national crews, equipment)
- 3 Press Tab to move from box to box.

Section 3 / Objectives

The objectives for managing a fire are organized into categories. In this section, you describe the suppression objectives for the current fire, making sure that they're consistent with the resource management objectives for the areas that the fire may affect.

For example, if Forage is described as the protection of grazing allotments, is that objective for fire suppression compatible with the resource management objectives for the affected areas?

Here, you also prioritize both the categories and the objectives by answering two questions:

How important is each category relative to the other categories? For example, is Safety more important than Economics?

Within each category, how important is each objective relative to the other objectives? For example, within the Environment category, is timber a greater concern than water?

You can also review the relative priorities for each of the objectives, within their categories, and overall.

➤ **Worksheet 1: Introduction**

When you click the *Objectives* tab, you'll see the Introduction worksheet, which provides an overview of the Objectives section.

➤ **Worksheet 2: Describe Objectives**

When you click the *Describe Objectives* tab, you'll see a list of categories and objectives that influence fire management. You'll use the middle area to describe categories and objectives for the current fire.

The boxes at the right display management objectives for the RMAs that may be affected by the fire.

- 1 To describe a category or an objective, click on one (for example, "Economic") in the Category/Objective list at the left.

Your selection appears in the top box just to the right.

Note The box is named Category when you've selected a category, and Objective when you've selected an objective.

- 2 To enter a description of the selected category or objective, click in the Description box and type in a description of the suppression objectives.
- 3 To add an objective, you click on the category the objective will be added to, click the *Add Objective* button, and then type in a name and description for the objective.
- 4 To delete an objective, select it in the Category/Objective box and click the *Delete Objective* button.

- 5 You can review management objectives for an RMA by selecting an RMA from the Objectives for Management Area: drop-down list at the right.

If management objectives have been entered for the RMA, they appear in the box under the drop-down list. You can review them to ensure that the suppression objectives for the fire and management objectives for the RMA are consistent.

Notes If you wish, you can use the commands on the Edit menu to copy text from the management objectives and paste it into your descriptions of suppression categories and objectives.

The management objectives for the RMAs aren't printed in the WFSA report. The suppression objectives for the current fire are printed in the report.

- 6 Continue describing and editing categories and objectives by repeating Steps 1 through 5 above.

➤ **Worksheet 3: *Prioritize Categories***

- 1 To prioritize the categories for the current fire, click the *Prioritize Categories* tab.

You'll see a table that lists the categories.

- 2 You can indicate how important each category is relative to the others by:
 - **clicking and dragging the blue bar** next to each number in the Priority column.

—Or—

- **clicking the number** next to each objective in the Priority column, and typing in a number between 0 (low) and 10 (high).

The blue bars and the numbers reflect the importance of each category in relation to the others.

- 1 Continue rating the categories until you're satisfied with the results.

The percentage each category contributes to the overall analysis appears in the % column.

➤ **Worksheet 4: *Prioritize Objectives***

- 1 To prioritize objectives for each category, click the *Prioritize Objectives* tab.

You'll see a list of categories, along with a table that lists objectives.

- 2 In the Category list, you click a category to work on.

The objectives for the category you've selected appear in the table at the right.

3 In the table, you indicate how important each objective is relative to the other objectives within that category by:

- **clicking and dragging the blue bar** next to each number in the Priority column.

—Or—

- **clicking the number** next to each objective in the Priority column, and typing in a number between 0 (low) and 10 (high).

The blue bars and the numbers reflect the importance of each objective in relation to the others within a category.

1 Continue rating the objectives until you're satisfied with the results.

The percentage each objective contributes to the category appears in the % column.

2 Rate the objectives for the other categories by repeating Steps 2 through 4.

➤ **Worksheet 5: Summary**

When you finish setting priorities for categories and objectives, you can review your work to see how they all interrelate.

When you click the *Summary* tab, you'll see a table that lists all of the categories and objectives for managing the current fire.

In the Category/Objective column, you see each category and objective you rated:

The green rows show information about each category—its priority, its weight overall and its description.

The white rows show information about each objective—its priority and weight within its category, the percentage it contributes to the overall decision, and its description.

When you're ready, click the *Alternatives* tab and go on to **Section 4 / Alternatives** to enter alternatives for controlling the fire.

Section 4 / Alternatives

In this section, you describe alternative suppression strategies to be evaluated. Each strategy should have a different primary focus; for example, minimizing fire size, minimizing suppression costs, or minimizing negative impacts of suppression activities.

For each alternative, you identify the target outcome. You may also choose to describe fallback and worst case outcomes. The outcome descriptions include expected fire size and time estimates for containing and controlling the fire.

You also indicate the probability of achieving each outcome. You have the option of describing the suppression resources needed to achieve each outcome.

If the fire may affect more than one FMZ, you indicate the percentage of the fire in each FMZ for each outcome.

➤ **Worksheet 1: Introduction**

When you click the *Alternatives* tab, you'll see the Introduction worksheet, which provides an overview of the Alternatives section.

➤ **Worksheet 2: Strategies**

1 When you click the *Strategies* tab, you'll see boxes for naming, listing and describing alternatives. The bottom of the worksheet shows example strategies and descriptions.

When you begin, the first alternative, labeled "Alternative A," appears in the Alternatives box. The name you give the alternative will replace the phrase "Alternative A."

2 In the Strategy Name box, type the name you want to use for the alternative you're defining. You might use such names as "Minimize fire size (min size)," "Minimize suppression costs (min costs)" or "Minimize negative impacts of suppression activities (MIST)."

Giving the alternative a name makes it easy to identify later.

3 Then press *Tab* or click in the Describe the general theme... box and type in a description of the strategy.

You can enter as much text as necessary.

4 To add an alternative, click the *Add New Alternative* button.

Another alternative letter (such as B, C or D) appears in the Alternatives box.

5 Repeat Steps 2 and 3 above.

6 Repeat Steps 4 and 5 until you're done adding alternatives.

7 To remove an alternative, click on it in the Alternatives box, and then click the *Delete Alternative* button.

7 Worksheet 3: *Outcomes*

Once you've entered the alternatives for attacking the fire, you can enter predictions about the outcomes for each alternative.

- 1 When you click the *Outcomes* tab, you'll see areas where you select the level of analysis and enter a description and estimated results for each outcome.
- 2 To select the level of analysis, click one of the circles at the left of the screen:
 - **One outcome for each alternative:** You'll enter a target outcome for each alternative and one worst case outcome for all alternatives.
 - **Two outcomes for each alternative:** You'll enter a target outcome and a fallback outcome for each alternative and one worst case outcome for all alternatives.
 - **Target, Fallback and Worst Case outcomes:** For each alternative, you'll describe three levels of potential outcomes.
- 3 Then select an alternative from the Alternative drop-down list.

If you selected the first or second option in Step 2 above, the Alternative drop-down list will display an "All Alternatives" option, as well as a list of alternatives. You use it to describe the worst case outcome for all alternatives.

- 4 Depending on the option you selected in Step 2 above, the Outcome drop-down list will display one, two or three outcomes for each alternative. One at a time, select each outcome and provide descriptive information.
- 5 Click in the Describe the outcome box to type in a narrative description of the selected outcome, such as locations of fire lines, or where suppression resources will be placed.
- 6 Type your estimates of the final fire size and perimeter and of the days required to contain and to control the fire into the appropriate boxes at the bottom of the worksheet.
- 7 To enter your predictions for each alternative and all outcomes, repeat Steps 3 through 6 above.

➤ **Worksheet 4: Probabilities**

- 1 When you click the *Probabilities* tab, at the upper left, you'll see the Alternative to describe: list.

Beneath the list, a branch diagram begins to the right of the Strategy Name box.

The top branch consists of a % Probability of success box and the Target Outcome box.

If you selected the second or third level of analysis on the Outcomes worksheet, you see the second branch, the Fallback Plan. It consists of a % Probability of success box and the Fallback Outcome box.

The Target and Fallback Outcome boxes display estimates of the final fire size and the number of days that will be required to contain and control the current fire.

For all analysis levels, the bottom branch is the Worst Case Outcome box. It displays an estimate of the final fire size.

The estimates for each outcome come from the Outcomes worksheet of this section or the Potential Size worksheet of the Situation section.

- 2 In the Alternative to describe: box, you click an alternative to work with.

The alternative appears in the Strategy Name box.

- 3 In the % Probability Of Success box, type the percentage that represents how successful you think the target outcome will be (for example, 90 percent).
- 4 If you selected the second or third analysis level on the Outcomes worksheet, you type the probability of success for the fallback outcome into its % Probability Of Success box.
- 5 Continue selecting alternatives and entering the probability of success for each outcome by repeating Steps 2 through 4 above.

➤ **Worksheet 5: Suppression Resources**

Note If you want WFSA Plus to use historical averages of suppression costs for the RMAs involved, rather than estimates of the suppression resources needed for the current fire, you can skip this worksheet.

- 1 To select suppression resources for each alternative and outcome, click the *Suppression Resources* tab.

At the top of the worksheet, you'll see lists of alternatives and of the outcomes for each. To the right, you can review your predictions for the final fire size, and days needed to contain and control the fire.

For each outcome, you estimate the cost of the resources needed to suppress the fire.

- 2 You click an alternative to work on, and then click an outcome (for example, "A. Min size" and "1. Target").

- 3 You click a resource in the Select resources from: list at the left to select it.
The resource is added to the Selected Resources: workspace at the right.
- 4 In the Qty (Quantity) column, enter the number of such resources you require.
- 5 In the Time column, enter the time period required for the resource (for example, 4 shifts).

WFSA Plus computes the total cost for the suppression resource. It appears automatically in the Cost column.

- 6 Continue to select resources for the alternative and outcome you're working on by repeating Steps 3 through 5 above.

Notes You can change the order of your selected resources by typing new numbers under #.

You can delete items one at a time by clicking an item in the list and then clicking the *Delete Row* button.

- 7 Select another alternative or outcome from the lists at the upper left.

If no Selected Resources list has already been prepared for the outcome, the Initialize Resource List dialog box appears. You'll see the alternative and outcome you're working on, as well as choices you can make.

- 8 To start with:

- a **blank list** of suppression resources, click *new (blank) list*, and then click *OK*.
- a **previously created list**, click the alternative and outcome you want to copy, to highlight it. Then click *OK*.

- 9 WFSA Plus returns to the Suppression Resources worksheet, where you can:

- change the quantity and units for items in the list.
- click on items in the Select resources from: list to add them to the list.
- delete items by clicking the *Delete Row* button.
- change the order of the items by retyping the numbers under #.

- 10 Continue selecting alternatives and outcomes and filling out suppression resource lists by repeating Steps 2 through 9 as needed.

Notes You can copy one list onto another at any time by selecting *Copy resource list from...* from the Edit menu. You can choose to either *Replace existing list* or *Add to existing list*.

You don't need to create a resource list for every outcome. If you don't create a list, the suppression costs for that outcome will be estimated based on the expected fire size.

➤ **Worksheet 6: FMZs**

Note If only one FMZ was selected on the Setup Import Data worksheet, you won't see a tab for this worksheet. You skip this procedure and continue by following the instructions under **Section 5 / Analysis** on page 37.

- 1** When you click the *FMZs* tab, you'll see a list of the alternatives and outcomes for the current fire, with estimates of the final fire size for each. You'll also see a table that lists the FMZs.
- 2** You click in the Outcome box to select an alternative and outcome to work with.
- 3** In the table, for each FMZ, click in the Percent column to type in predictions of how much of the fire will burn in each Zone.
- 4** Continue selecting alternatives and outcomes, and typing in the predictions.

When you're ready, click the *Analysis* tab and go on to **Section 5 / Analysis** to estimate the costs and impacts of each outcome.

Section 5 / Analysis

In this section, you rate each outcome for each alternative as to how well it satisfies the objectives you set up earlier. First, you select an objective to rate; then you select a rating for each outcome.

You also estimate the impact of fire and smoke on two kinds of items:

- Resources such as timber and water, and
- Individual items such as structures and specific sites.

WFSA Plus will calculate resource losses for the FILs that you specify. After you've entered your estimates, they appear in the Summary worksheet table.

Finally, for each strategy, you estimate the cost of the resources needed to suppress the fire.

➤ **Worksheet 1: Introduction**

When you click the *Analysis* tab, you'll see the Introduction worksheet, which provides an overview of the Analysis section.

➤ **Worksheet 2: Ratings**

- 1 When you click the *Ratings* tab, you'll see a list of objectives and a table in which you rate each alternative and outcome for each objective.
- 2 In the Objectives box, you click an objective to work with.

The objective appears in the Outcome Ratings box.

- 3 For each outcome:

- **click in the "Rating" column** to indicate how well it satisfies the objective. You position the mouse toward the left to indicate less satisfaction, and to the right to indicate more.

A horizontal bar appears in the column, and a number between 1 and 10 appears in the box to the left of the bar.

—Or—

- **type the rating into the text box** at the left of the "Rating" column. The horizontal bar appears at the right.
- 4 Continue rating the outcomes for the selected objective. You can adjust the ratings by clicking and dragging the horizontal bars or by retyping the numbers.
 - 5 Select the next objective, and repeat Steps 3 and 4, until you're finished.

➤ **Worksheet 3: FIL**

- 1 When you click the *FIL* tab, you'll see a table with column headings "FIL," "Relative Amount" and "%."

Depending upon the options available, you may also see lists of alternatives and outcomes, and FMZs.

- 2 You click the circle next to:
 - **“Use the same FIL settings...”** if you want to use the same FIL settings for all alternatives and outcomes.
 - **“Use separate FIL settings for each FMZ”** if you want to use different FIL settings for each FMZ. This option appears only when more than one FMZ was selected on the Import Cost Data worksheet of the Setup section. Next, you select an FMZ from the Fire Management Zones (FMZs) list.
 - **“Use separate FIL settings for each outcome...”** if you want to use different FIL settings for each outcome. Next, you select an alternative and outcome from the Outcomes list. If more than one FMZ was imported, you’ll also need to select an FMZ from the Fire Management Zones (FMZs) list.
- 3 To indicate the proportion of the fire area that will burn at each FIL, click in the “Relative Amount” column of the table. For example, if a major portion of the fire area will burn at FIL 4, you position the mouse toward the right in the “Relative Amount” column for FIL 4, and click.

A horizontal bar appears, representing the portion of the fire area that is expected to burn at the selected level. The percentage that the bar represents is displayed in the “%” column.

- 4 Continue clicking in the “Relative Amount” column for each FIL. You can adjust the bars by clicking and dragging them. The percentages are revised automatically.
- 5 If you’re using separate FIL settings, continue by selecting different alternatives and outcomes, and FMZs, and repeating Steps 3 and 4 above.

➤ **Worksheet 4: *Individual Items***

- 1 When you click the *Individual Items* tab, you’ll see a box for listing items threatened on the left, and a table to the right that you use to enter the dollar impact for each outcome.
- 2 To start the list of items threatened, you click the *Add Item* button.
- 3 Type in an item.
- 4 Click in the appropriate row in the “+Gain/-Loss” column in the table.
- 5 Enter the estimated gain or loss for each outcome.

If you expect a loss, precede the dollar amount with a minus sign. Otherwise, WFSAPlus assumes the amount is a gain.

- 6 To add an item, repeat Steps 2 through 5 above for each item you want to add.
- 7 To delete an item, just select it in the Individual Items Threatened list, and then click the *Delete Item* button.

➤ **Worksheet 5: *Summary***

- 1 When you click the *Summary* tab, you’ll see a drop-down list of the alternatives and outcomes, and boxes that summarize the expected impacts and suppression costs.

- 2 Click on the Outcome drop-down list to select the alternative and outcome you want to review.

You'll see the estimated fire size in parentheses to the right of the outcome.

For the outcome you select,

<i>In this box</i>	<i>You'll see</i>
Total acre impact	The impact on resources per acre (assigned in a WFSA Prep file or the NVC Table of the Setup section) multiplied by the estimated fire size.
Total impact on items	The total value of the items you entered on the Individual Items worksheet.
Total impact	The sum of the figures in the Total acre impact and Total impact on items boxes.
Suppression costs based on fire size	The per acre estimate (assigned in a WFSA Prep file or on the Cost/Acre worksheet of the Setup section) multiplied by the estimated fire size.
Cost of suppression resources	The Total Suppression Costs figure from the Suppression Resources worksheet of the Alternatives section.
Average of the two values	The average of the Suppression costs based on fire size and the Cost of suppression resources figures.

Note If you wish to adjust the amount in the Total impact on items box, refer to **Worksheet 4: Individual Items** on page 38.

- 3 Once you've reviewed the two suppression cost figures and the average of the two, you can type a revised cost estimate into the box at the lower right.

Say, for example, that the costs for previous fires that were the same size as the current fire were high. If the strategy calls for fewer than usual resources and you expect a lower cost, you may want to revise the suppression cost figure.

- 4 The estimated costs and impacts are combined in the Total Cost + Loss box at the bottom of the worksheet.
- 5 To continue reviewing and adjusting the estimated impacts and costs for other outcomes, repeat Steps 2 through 4 above.

When you're ready to see how the alternatives compare, click the *Comparison* tab and go on to **Section 6 / Comparison**.

Section 6 / Comparison

Once you've identified the alternatives and rated the outcomes for each, you're ready to see how the alternatives compare, and to choose an alternative. In this section, WFSA Plus shows you how the alternatives compare according to the ratings you've assigned.

WFSA Plus automatically summarizes the evaluation ratings you entered, and examines each in light of the probability that each outcome will occur. Then each rating is weighted according to the priorities you assigned.

You can compare alternatives using a graph, decision tree, or matrix format, and then indicate which alternative you recommend.

You use the Decision worksheet to state your decision and the reasons for it.

➤ **Worksheet 1: Introduction**

When you click the *Comparison* tab, you'll see the Introduction worksheet, which provides an overview of the Comparison section.

➤ **Worksheet 2: Graph**

1 To view the alternatives in graphs, click the *Graph* tab.

You'll see two bar graphs.

2 In the top graph, you compare the alternatives based on evaluation objectives:

- The legend at the right lists the categories used to evaluate the alternatives (Safety, Economic, and so on).
- The labels below the bars are the names you assigned to the alternatives.
- The height of each bar shows how well each alternative scored overall, with 10 being the highest possible rating.
- The height of each color in each bar shows the impact of each category.

3 In the bottom graph, you compare the alternatives based on costs:

- The legend at the right lists the three cost areas: estimated costs of suppressing the fire, estimated values of resources affected by it, and the total of the estimated suppression costs and resource values.
- The labels below the bars are the names you assigned to the alternatives.
- **When a bar drops down** from the zero point, it shows there was a dollar loss. That is, resources or impacts cost money. Notice that the dollar amounts on the chart appear with minus signs.
- **When a bar extends up** from the zero point, it shows there was a dollar gain. This occurs occasionally in assessing the impacts from the fire. In this case, the total cost takes into account the gains as well as the losses.

➤ **Worksheet 3: *Decision Tree***

1 When you click the *Decision Tree* tab, you'll see two alternatives at a time.

At the top left of each decision tree, you'll see a drop-down list of the alternatives.

Using these lists, you can change the alternatives that are displayed.

Here's what you'll see in the decision trees:

- For each alternative that is displayed, you'll see an Expected Score and an Expected Cost+Loss; for each outcome, you'll see a Score and a Cost+Loss. The scores are based on how well the objectives are met; the cost + loss numbers are the total estimated suppression costs plus the dollar value of the impact on resources. For the alternatives, the Expected Score and Expected Cost+Loss are figured based on the probability of each of the outcomes.
- To the right of each alternative, you'll see its probability of success.
- **If you selected the first level of analysis** on the Outcomes worksheet of the Alternatives section, the branch under each Target Outcome displays the Worst Case Outcome.
- **If you selected the second or third level of analysis** on the Outcomes worksheet of the Alternatives section, the branch under each Target Outcome displays the Fallback Plan. The Fallback Plan shows the Fallback and Worst Case Outcomes and the probability of success for the Fallback Outcome.
- For each outcome, you'll see the final size estimate that was entered into either the Outcomes worksheet of the Alternatives section or the Potential Size worksheet of the Situation section.
- For the Target and Fallback Outcomes, and the Worst Case Outcome, if the third level of analysis was selected, you'll also see the time to contain and time to control estimates that were entered into Outcomes worksheet of the Alternatives section.

1 You use the drop-down lists to select the different alternatives, and compare the results.

➤ **Worksheet 4: *Matrix***

1 Click the *Matrix* tab.

At the top of the matrix, you'll see the suppression costs and the change in resource values (gain or loss) as a result of the impact of the fire.

Next, you'll find the total financial impact of the fire.

Beneath that row, you'll see the column headings "Objective," "Wgt," and "A1," "A2," "A3," "Alt A" and so on. "A1," "A2" and "A3" represent the target, fallback and worst case outcomes for the first alternative you described on the Strategies worksheet of the Alternatives section. "Alt A" represents the first alternative.

2 Compare the "Total financial impact" of each alternative.

3 Review the “Total Score” for each alternative.

In the “Total Score” row, you’ll find the overall score for each alternative. The higher the number, the better the alternative meets the objectives you identified and prioritized.

4 Review the relative importance of each category for each alternative.

As you read across a category row (“Safety,” for example), you’ll see a number for each alternative. This number is the combined rating of all of the objectives in the category for that alternative. The higher the number, the better the rating.

5 Review the relative importance of each objective within each category for each outcome.

As you read across an objective row (“Firefighter Safety,” for example), you’ll see a number for each outcome. This number is the rating for that alternative. The higher the number, the better the rating.

➤ **Worksheet 5: *Decision***

1 When you click the *Decision* tab, you’ll see a drop-down list of the alternatives for attacking the fire, and boxes that help you to fill in the Decision Summary pages of your report.

2 In the Select an Alternative drop-down list, select the alternative you’re planning to use.

3 In the Strategy Description box, the outcome description that you entered into the Outcomes worksheet of the Alternatives section appears. If needed, click in it to edit information.

4 To summarize the reasons for your decision, click in the Rationale box, and type in your reasons, including the key points.

Click the *Complexity* tab and go on to **Section 7 / Complexity**, so you can rate the complexity of the fire.

Section 7 / Complexity

In this section, you determine how complex the fire situation is by selecting elements that describe the situation. The elements are grouped into categories such as Safety and Fire Behavior.

The number of elements you select in each category determines its complexity rating.

After analyzing the elements and the category ratings, you determine what type of incident the current fire is and type in your rationale.

➤ **Worksheet 1: Introduction**

When you click the *Complexity* tab, you'll see the Introduction worksheet, which provides an overview of the Complexity section.

➤ **Worksheet 2: Complexity Analysis**

- 1 When you click the tab, you'll see the Category list and a series of statements (elements) for the highlighted category.
- 2 The "Fire Behavior" category is highlighted. You can begin with "Fire Behavior," or click a different category to select it. The elements for the selected category appear in the Elements for list.
- 3 Click the check box to the left of an element to select it.

When a appears in the check box, it means that element is selected.

For each category, as you select elements, you'll see the number of elements selected in the Category box. Considering the number of elements selected, the category is rated Low, Medium or High.

<i>If you select</i>	<i>the category is rated</i>
0 elements in a category	Low
At least 1 element	Medium
More than half of the elements	High

Note To add an element that's not in the category, click the *Add Element* button, and then type the element in the box provided. To delete an element, click the *Delete Last Element* button.

- 4 When you finish selecting elements for a category, click another category in the Category box, and then select the elements that apply.

➤ **Worksheet 3: Guidelines**

- 1 To review the National Wildfire Coordinating Group (NWCG) guidelines for determining the complexity of the current fire, click the *Guidelines* tab. You'll see a series of buttons.
- 2 Click on each button to see the relevant portions of the guidelines.

➤ **Worksheet 4: *Incident Type***

- 1 When you click the *Incident Type* tab, at the left you'll see a list of each of the categories that were rated Medium or High on the Complexity Analysis worksheet. You can scroll through the list to review the elements that you selected.

In the box at the right, you'll see each category, along with its rating, and the number of elements that were selected for it.

In the Summary box, you'll see the number of categories rated Low, Medium or High, the total number of elements you didn't select (No) and those you selected (Yes).

- 2 After reviewing the elements, you can indicate the incident complexity by filling in the Incident Complexity box at the bottom of the screen.
- 3 In the Rationale: box, you type in a rationale for the Incident Complexity Type you entered.

Click the *Report* tab and go on to **Section 8 / Report** to edit and print your decision.

Section 8 / Report

Once the alternatives have been analyzed and compared, you communicate your decision to everyone concerned.

In this section, you add instructions and information and state your decision and the reasons for it, along with any special considerations that people need to be aware of to carry out the decision. You can also preview and print the WFSA report.

➤ **Worksheet 1: Introduction**

When you click the *Report* tab, you'll see the Introduction worksheet, which provides an overview of the Report section.

➤ **Worksheet 2: Topics**

1 To review the selected alternative and complete the report, click the *Topics* tab.

You'll see the alternative you've chosen in a box at the top. Below it are boxes that allow you to fill in the decision summary topics of your report.

2 In the Decision Summary Topics box, you see the topic names for the Summary page of the WFSA report. Click a name to enter, view or edit information:

- "Description" (The description typed into the Outcomes worksheet of the Alternatives section appears so you can edit it, if needed.)
- "Rationale" (The rationale typed into the Decision worksheet of the Comparison section appears so you can edit it, if needed.)
- "Special considerations" (for instance, protecting endangered species)
- "Information policy" (such as names of people to contact for more information)

The cursor moves to the Body box so that you can enter or edit the information.

1 To change a topic heading, click its name in the Decision Summary Topics box; then click in the Heading box and edit the heading.

2 To add a topic, click the *Add Topic* button and type in the heading and body information.

For example, to add a list that names the people who have prepared your WFSA report:

- 1) Press *Tab* to move to the Body box.
- 2) Click the *Add Topic* button.
- 3) Type in your heading.
- 4) Enter the names of the preparers.

Worksheet 3: *Print Report*

- 1 When you click the tab, you'll see the previewing and printing options that are available.
- 2 To preview or print:
 - **the full report**, click the *Select All* button to be sure every page is selected.
 - **selected pages**, click the *Clear All* button and then click the check boxes next to the pages you want.

An **x** in a check box means that page is selected.

Note If you have a color printer, you can print WFSA charts and graphs in color. The Graph Colors box allows you to preview and print in black and white patterns, colored patterns or solid colors. To select an option, click in the appropriate circle.

- 3 Click the *Preview* button if you want to see your choices as they will appear when printed.
- 4 The Print Preview screen appears.

From the Print Preview screen, you can

<i>Click this button</i>	<i>To do this</i>
<i>Left or right arrow</i>	View other pages, if you've selected more than one page.
<i>Magnifying glass</i>	Zoom in to enlarge a portion of the page or out to see more of the page.
<i>Save to File</i>	Save a formatted version of the report to a Rich Text Format (rtf) file.
<i>Print Page</i>	Print the page you see.
<i>Print Report</i>	Print the WFSA report.
<i>Close</i>	Return to the Print Report worksheet.

Note You can also zoom in to a smaller portion of the page by double clicking the portion you want to view.

- 5 When you return to the Print Report worksheet, you can:
 - preview other pages by repeating Steps 2 through 4.
 - click the *Print* button to print your selections.
 - review and change your printing options by clicking *Printer Setup*.
 - click the Save to File button to save your selections to a Rich Text Format (rtf) file.

Note There are two issues to be aware of when saving to an RTF file. First, on the Graph page, patterns are not supported in the RTF file, so the graphs will be transferred using solid colors, regardless of the setting in the Graph Colors box. Second, on the Signature Page, several of the column headings are turned sideways: the text runs vertically rather than horizontally. In the RTF file, this formatting is lost. However, it can be easily restored by most word processors.

For example, in Microsoft Word, select Text Direction from the Format menu to change the orientation of the text.

When you're through previewing and printing reports, you can:

- go to one of the WFSAs sections and worksheets by clicking a section tab and then a worksheet tab.
- switch to the WFIP program by selecting *Go to WFIP* from the File menu.
- quit WFSAs by selecting *Exit* from the File menu.

Interpreting the results

There are some special features that work behind the scenes as you use WFS Plus. These features are mostly mathematical and are used to produce things like the comparison tables you'll see as you work.

Note We include this discussion here for interested readers. Understanding probabilities and how costs are estimated aren't required to use the software.

Probabilities

Many of the computations in WFS Plus take into account the probability that a certain outcome will occur.

The probability of a successful outcome is the same as the probability of success of the primary strategy, or target outcome. The probability of the fallback outcome, on the other hand, isn't the same as the probability of success of the fallback plan. Since the fallback plan is only used if the primary plan fails, the probability of the fallback outcome is the probability that the primary plan fails times the probability of success of the fallback plan.

For example, suppose the probability of success of the target outcome is 60 percent and the probability of success of the fallback plan is 80 percent.

The chance that the target outcome will occur is the same as the chance of success of the primary strategy—in this case, 60 percent. The probability that the fallback outcome will occur is the probability that the primary strategy will fail times the probability of success of the fallback strategy—in this example, $40\% \times 80\% = 32\%$. The probability that both plans will fail and the worst case situation will occur is $40\% \times 20\% = 8\%$. Note that the probabilities of the three outcomes add up to 100 percent— $60\% + 32\% + 8\% = 100\%$.

Expected Costs

The expected costs for an alternative are computed by multiplying the cost for each outcome by the probability that that outcome will occur, then adding the results.

Suppose, in our previous example, the suppression cost for the target outcome would be \$100,000, the cost for the fallback outcome would be \$300,000, and the cost for the worst case outcome would be \$1 million. We would compute the expected cost as follows:

\$100,000 x 60% =	\$60,000
\$300,000 x 32% =	96,000
\$1,000,000 x 8% =	<u>80,000</u>
Expected cost:	\$236,000

Therefore, the expected cost for the alternative would be \$236,000. Note that this is an intermediate value—it's more than the \$100,000 that the target outcome would cost, but less than the \$1 million that the worst case outcome would cost.

It's important to realize that if the final cost of the fire turns out to be \$100,000, it doesn't mean that the expected cost of \$236,000 was the wrong answer. The expected cost predicts the average cost of a series of fires, not the actual cost of any individual fire. If there were 100 fires similar to this one, we would expect 60 of them to end up costing \$100,000 dollars, 32 of them to cost \$300,000, and 8 of them to cost \$1 million. The average cost of all 100 would be \$236,000. The expected cost takes into account uncertainty about the future. Therefore, it's the best value to use when comparing the cost of one alternative with another.

Precision

Most of the computations WFS Plus makes for tables and graphs are rounded off to three digits of precision when they are displayed. This is to avoid giving the impression of extremely precise computations, when in fact the numbers are only estimates.

Terminology

Here are some of the key terms used in WFSA Plus:

Alternative

An overall method of controlling the fire, including a primary strategy, a fallback strategy and, if needed, a worst case scenario.

Category

A group of objectives or elements. A way of organizing material in WFSA Plus. For example, Safety is one of the categories in which you evaluate alternatives.

Element

An item to be taken into consideration when determining how complex the fire is. For example, in the category of Resources Threatened, “Cultural sites” is an element.

FIL Fire Intensity Level

FMZ Fire Management Zone

IIAA Interagency Initial Attack Assessment

Objectives

The goals that you and other managers think the chosen alternative should meet.

Outcome

The end result of a strategy in terms of its success or failure. Each alternative can have up to three outcomes:

- the desired, target outcome,
- a fallback, or contingent, outcome and
- a worst case outcome.

RMA Resource Management Area

Strategy

An approach to controlling and containing the fire.

WFIP Wildland Fire Implementation Plan

WFSA Wildland Fire Situation Analysis

Technical support

For technical support please call John Szymoniak at NIFC at 208-387-5748.

Email: jszymoniak@fs.fed.us

To make suggestions for future versions of the software, please contact:

BalanceTech, LLC
534 Fairview Avenue
Missoula, MT 59801

balance@balancetech.com