# Automated Short-Term Fire Behavior (STFB)

*Estimated time to complete: 30 minutes or more depending on complexity of the simulation*

The automated version of WFDSS Short-Term Fire Behavior (STFB) is a quick way to get an idea of potential fire spread from an ignition point using one set of wind and fuel moisture conditions for the user-defined burn period(s). STFB provides potential fire spread (arrival times and major paths). Some potential uses of Automated STFB (given its many limitations) include the following:

- Obtain insight into potential short-term fire spread times and locations using forecasted weather.
- *Get a rough idea of short-term fire spread during a forecasted wind event.*
- Run "what-if" scenarios for spot fires.
- Run several days of fire spread to help determine the size and extent needed for the Planning Area for the WFDSS Decision Process.
- Evaluate landscape and weather data using historic weather and fire perimeters.


In this exercise, Incident Authors and Owners will become familiar with how to prepare for, run, and interpret a Short-Term Fire Behavior (STFB) model. This exercise is not intended to be a comprehensive guide to BFB, but teaches the user basic skills to run the model. This includes:

- Creating an incident on their home unit, an area of equal familiarity, or recreate a past fire.
- Preparing to run the model by drawing a landscape extent and providing basic model inputs.
- Running the model and interpreting the results.

Before you begin:

- Ensure you have a WFDSS User Name and Password. For information on requesting an account see http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_request_acct.html.
- Ensure you have access to the WFDSS Training site.
- Have either a Fire Behavior Specialist or Super Analyst role. You will also need the Author user role to create an incident.
- This document contains electronic hyperlinks to WFDSS Help and related documents. The hyperlinks are underlined; clicking on this text will take you to the help content or the related document. **Bold** text refers to specific text, buttons, tabs, pages, etc. in the WFDSS program.
- The **WFDSS 101** series found on the **Training** page of WFDSS is an excellent source for gaining basic skills in using WFDSS.

## Creating a New Incident

You need to create an incident on the **Training** site of WFDSS for this exercise. This may be a fictitious fire or you may choose to recreate a past fire. See **WFDSS 101** Lesson 2 Creating an Incident or see Creating an Incident WFDSS Help.

1. Create your incident.

## Running an Automated Short -Term Fire Behavior (STFB) Model

The automated version of Short Term Fire Behavior (STFB) is a quick way to get an idea of potential fire spread from an ignition point. See Running an Automated Short-Term Fire Behavior Analysis for more information.

## Drawing a Landscape Extent

The landscape extent determines the size of the landscape file used for fire behavior modeling (the extent of the area for which you will generate model outputs). See How do you define your landscape analysis area (landscape extent), and how large should it be when doing Basic Fire Behavior (BFB) and Short – Term Fire Behavior (STFB) analyses?

### To draw a Landscape Extent:

1. Click the **Situation** tab. The Situation page appears with the map view.

2. Click the 🖾 Extent tool position your cursor where you want to start the landscape extent, then click and drag the cursor diagonally until the box is the right size and release the button. A green box appears on the map that delineates your landscape extent and represents the area around your incident you want to analyze.

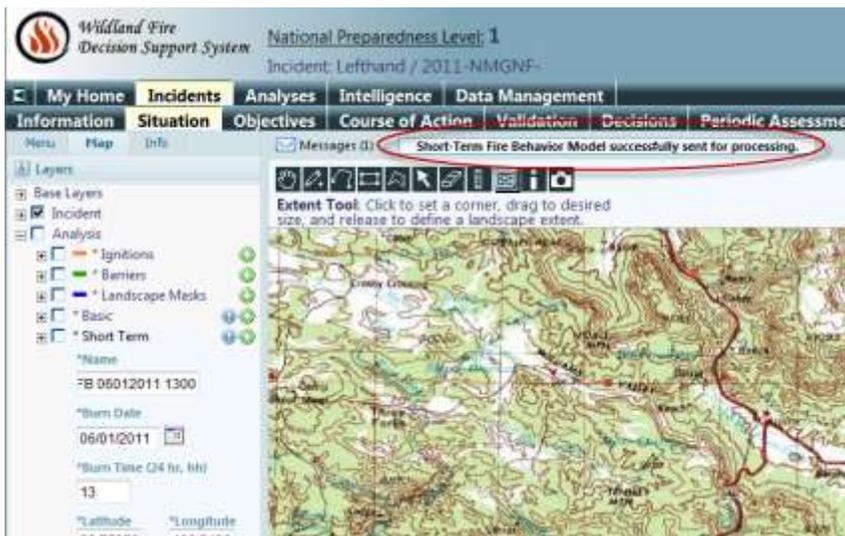## Automated Short-Term Fire Behavior (STFB) Inputs

1. Click the **+** sign next to **Analysis**. The list expands.
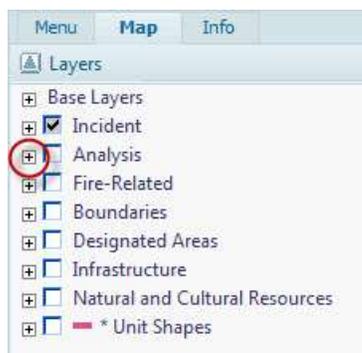


2. Click ⬤ to the right of \***Short Term** to expand the list and create a new STFB analysis.

3. Enter the analysis **Name, Burn Date, Burn Time, Burn Period** length and **Number of** Burn **Periods** (days) you wish to analyze. Typically the burn date would be the day of the analysis, however if you are running this is a simulation in the winter or other off fire season time, chose a date from a past fire season so the weather data the model selects is conducive to fire growth.
4. Click **Next**. The wind data for the **Burn Date** and **Burn Time** displays. Edit this information if needed.
5. Click **Run Model**. Processing may take several minutes. A message appears at the top of the map if the run was successfully sent. If you get an error message check your inputs, it is likely you forgot something such as your landscape extent.



## To View Automated Short-Term Fire Behavior Results

1. Click the **Situation** tab to refresh the page.
2. Click the **+** sign to the left of **Short Term** and then the **+** sign to the left of your analysis name to display the output options.

3. Click the appropriate check box to view the output options on the map. Clicking on the Legend icon to the right of Arrival Time brings up a Legend window for that output option. See WFDSS STFB – What it means (interpretation)
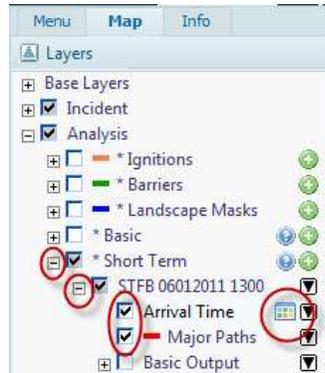


4. Clicking the **+** next to **Basic Output** opens outputs such as flame lengths, rates of spread, fire line intensities, etc., for you entire landscape the same as if you had run Basic Fire Behavior (BFB).

## Values Inventory

You can obtain values inventory information associated with a Short-Term Fire Behavior (STFB) analysis.

WFDSS uses the STFB Arrival Time footprint to query the values inventory database. Click the ▼ down arrow to the right of your analysis name to expand the analysis information and click on the **Values Inventory**. This opens a new window with the values information*. See Automated STFB Values Inventory Information.



## Related Topics on Automated Short-Term Fire Behavior

- WFDSS STFB – What it is
- WFDSS Automated STFB – What it needs (inputs)

- WFDSS STFB – What it does (outputs)

- WFDSS STFB –Why use it – (potential uses)

- WFDSS STFB – Assumptions and Limitations

- Requesting an Analyst-Assisted Fire Behavior Analysis