Automated Basic Fire Behavior (BFB)

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

WFDSS Automated Basic Fire Behavior (BFB) is a web-based fire behavior application. It gives "snapshot in time" fire behavior outputs (flame lengths, rates of spread, fireline intensities, etc.) for an entire user-defined landscape extent using one set (per cell) of wind and fuel moisture conditions. WFDSS BFB can be thought of as a "spatial BEHAVE or BehavePlus". Using fuels, topography, and weather data, fire behavior characteristics are calculated and displayed for every cell of the landscape extent.

In this exercise, Incident Authors and Owners will become familiar with how to prepare for, run, and interpret a Basic Fire Behavior (BFB) 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.
- 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 will 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 Automated Basic Fire Behavior

Now that you have an incident created, you are ready to begin entering information for your BFB analysis. See Running an Automated Basic Fire Behavior Analysis.
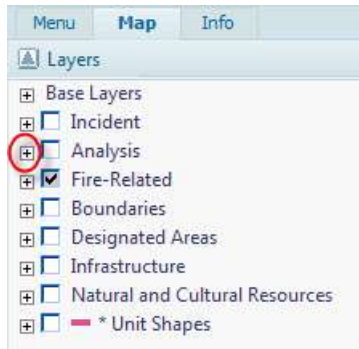
Drawing a Landscape Extent

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 <u>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?</u>
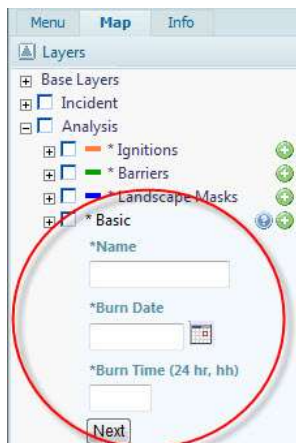
To draw a Landscape Extent:

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 Basic Fire Behavior (BFB) Inputs

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

2. Click ⬤ to the right of **Basic* expand the list and create a new BFB analysis.

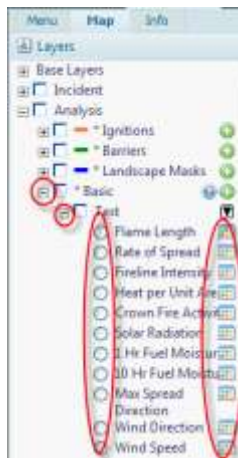3. Enter the analysis **Name**, **Burn Date** and **Burn Time**.

> **Note**: 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.

Viewing Automated Basic Fire Behavior Results

1. Click the **Situation** tab to refresh the page.
2. Click the **+** sign to the left of **Basic** and then the **+** sign to the left of your analysis name to display the output options.
3. Click the appropriate radio buttons to view each of output options on the map. Clicking on the Legend icon to the right of each output brings up a Legend window for that output option.

4. To help interpret analysis results, see <u>Automated BFB – What it means (interpretation).</u>

Related Topics on Automated Basic Fire Behavior

- <u>Automated BFB – What it is</u>
- <u>Automated BFB – What it needs (inputs)</u>
- <u>Automated BFB - What it does (outputs)</u>

- <u>Automated BFB – Why use it – (potential uses)</u>
- <u>Automated BFB – Assumptions and Limitations</u>
- <u>Requesting an Analyst – Assisted Fire Behavior Analysis</u>