

Running Fire Behavior Models

About Fire Behavior Models

Currently IFTDSS only runs one model called “Landscape Fire Behavior” (based on FLAMMAP Basic). It is a raster-based model that shows fire behavior on each given cell of the landscape based on user specified model inputs. Fire behavior in each cell is calculated independently. Vector based models showing growth from ignitions will be incorporated in the future.

The Auto-97th report you ran earlier is intended as a starting point to familiarize yourself with the landscape and the way fuels and weather conditions interact under worst case scenarios. Running Landscape Fire Behavior models in **Modeling Playground** is a good way to test and refine model inputs to reflect the specific conditions you’re interested in.

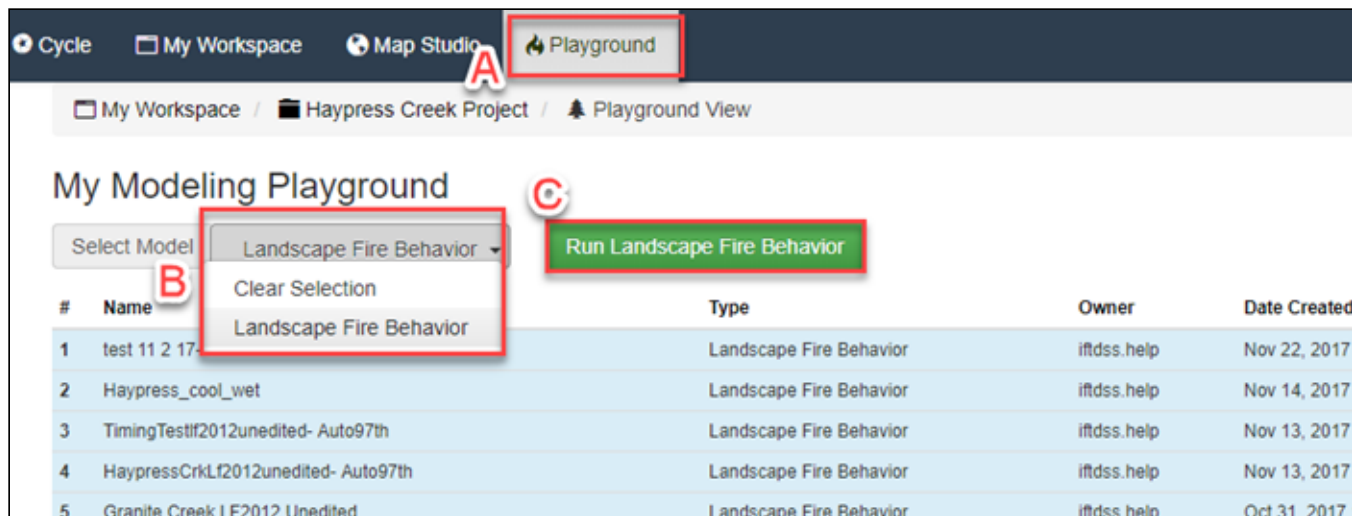
To familiarize yourself with this part of IFTDSS, run a fire behavior scenario for your landscape.

Tutorial Information: This tutorial is written so you may follow along with a landscape of your choosing. If you prefer to replicate our exact steps you may continue by using the “HaypressCrkLf2012unedited landscape” and use the details highlighted within this tutorial.

Running a Landscape Fire Behavior Model

To Navigate to the fire behavior model interface:

- A. Click the **Playground** link in the top navigation
- B. Select **Landscape Fire Behavior** from the drop-down menu
- C. Click **Run Landscape Fire Behavior**. Note that the model runs from the landscape summary are also available in this interface, just like in **My Workspace**.



👉 All saved runs are stored in the same folder as your selected landscape, or in the 'Playground folder' if a new landscape is created but no folder specified.

To populate the input fields and run the model:

- A. Give your run a descriptive name based on your inputs, such as 'Haypress_cool_wet'

- B. Select your landscape from the drop-down menu. We selected "HaypressCrklf2012unedited". Notice that your landscape details are displayed below this area once you select your landscape.

Next, select the input type, starting with "Wind", and fill in the required fields and run the model:

- C. Specify windspeed, in miles per hour, at 20 feet above the ground or above the vegetation (allowed values 0-100 mph). We entered 3 mph.
- D. Enter wind direction as the direction the wind is blowing from (in degrees clockwise from north, with north being 0 or 360 degrees). We entered 156.
- E. Specify a [crown fire calculation method](#). We left this on Scott/Reinhardt
- F. Enter a foliar moisture value. We left this at the default value of 100%
- G. Specify fuel moisture, in percent, for:
- 1 hour fuels (1hr FM) - allowed values 2-100
 - 10 hour fuels (10hr FM) - allowed values 2-100
 - 100 hour fuels (100hr FM) - allowed values 2-100
 - Herbaceous fuels (Herb) - allowed values 30-250
 - Live Woody fuels (WoodyFM) - allowed values 60-200

For this example we used 10% for 1 hr fuel moisture, 14% for 10 hr fuels, 16% for 100 hr fuels, 130% for herb fuels, and 90% for shrub fuels.

Note the **Add Row** button under fuel moistures. By leaving this blank you apply your fuel moistures to the entire landscape. If you added rows, you would enter a different set of fuel moistures for each fuel model.

- H. Upon completing the inputs, click the Save and Run button. You will notice a Save button is also available for the times when you need to close a run before completing the inputs, but want return to it later.

✓ Wind

Wind speed (mph)*

C3

Wind Direction (0 from north)*

D156

✓ Crown Fire Inputs

Crown Fire Method*

EScott/Reinhardt

Foliar Moisture Content*

F100

✓ Initial Fuel Moisture

Model

1hr FM

10hr FM

100hr FM

Herb FM

Woody FM

default

G10

14

16

130

90

+ add row

Save

HSave and Run

Upon the running the model, you will be taken back to the **Modeling Playground** page.

My Modeling Playground

Select ModelRun

Refresh

Search (name)

#	Name	Type	Owner	Date Created	Status
1	Haypress Cool Season	Landscape Fire Behavior	iftss.help	Nov 22, 2017 7:50:09 PM	Completed
2	test 11 2 17- Auto97th	Landscape Fire Behavior	iftss.help	Nov 22, 2017 12:02:30 PM	Completed
3	Haypress_cool_wet	Landscape Fire Behavior	iftss.help	Nov 14, 2017 4:32:17 PM	Completed
4	TimingTest12012unedited- Auto97th	Landscape Fire Behavior	iftss.help	Nov 13, 2017 9:17:29 PM	Completed

It may take a couple minutes for your behavior model to run, you can check its status using the Refresh button in the top right.

When complete, you may click on your model output file and choose the **View on Map** button to view your results in Map Studio, or **Request a Report** to generate a fire behavior summary report in the same layout as the landscape summary reports.

Take a few minutes to generate a summary report and view the results. You can also access your modeling output from **My Workspace**. These results may also be viewed in Map Studio, but we will cover viewing results in Map Studio after this tutorial.

My WorkspaceMap StudioPlayground

My Workspace / Haypress Creek Project / My Workspace

Name	Type	Owner
Haypress Cool Season	Model Output	iftss.help
<div>View on MapDeleteRequest a Report</div>		

Modeling Considerations

Running various scenarios in the modeling playground can be an educational process to determine model sensitivity to various inputs and to evaluate how well Landfire has represented your local fuels. The **Modeling Playground** can be

used in conjunction with **Landscape Editing** to assist users in making landscape modifications to best reflect anticipated fire behavior based on local expertise.

Additionally, for any treatment alternatives analysis in IFTDSS (a process we will walk through later), you will have to pick one weather scenario to compare against multiple landscapes. Running multiple scenarios in **Modeling Playground** can help choose the inputs that best facilitate comparison of the alternatives.