

IFTDSS Workshop

Handout 6: Risk Assessment – Worst-Case Flame Length

1. From the Project Summary page, click on **Create New Run**.

IFTDSS 2.0 beta

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Logged in as Huang, ShihMing

Workshop

Create New Run

Project Summary

Help

Information

Edit

Organization Name:

Project Start Date:

Project End Date:

Project Size:

Treatment Type:

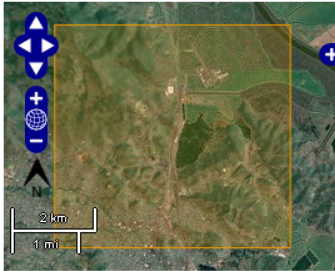
Project Status: Planned

Description:

Date Modified: 01/15/2013

Date Created: 01/15/2013

Area of Interest



Resolution: 30.0m x 30.0m

Northeast corner:
Latitude: 38.1515207°
Longitude: -122.5333747°

Southwest corner:
Latitude: 38.1034121°
Longitude: -122.5980415°

Total Area:
7,481.78 Acres
30,277,800 m²

[Import Landscape data from LANDFIRE](#)

[Import Fuelbeds from LANDFIRE](#) [Upload Landscape Data Set](#)

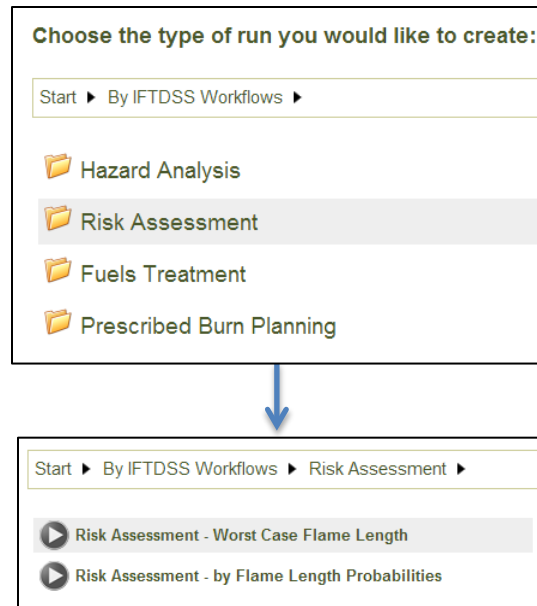
Runs

Run Name	Pathway	Date Modified	Date Created	Actions
Run 1	Manual treatment location (user-defined treatments...	01/15/2013	01/15/2013	

Filters: (all) (all) (all)

Create New Run

2. Select the **Risk Assessment** workflow, then the **Risk Assessment – Worst Case Flame Length** pathway.



3. Give the run a unique name, and then click **Next**.
4. The LANDFIRE data set you acquired will be selected as your data set. Select **Next**.

Select Landscape Data


Available Data Sets:

Percentages next to data set names indicate the percent that the data set covers the selected run area. Data sets below 100% coverage will display a smaller area of data than the selected run area.

A copy of the data set that you select will be made for this run. Changes to the original data set will not affect the data in this run. If you would like to re-import the selected data set into this run, return to this step later and click the Edit button.

Import Values at Risk (optional): ☐

Next >

5. You are now on the Define Values at Risk step. In this step, you will define your values at risk across the entire area of interest using the **Draw Polygon** tool  on the tool bar.

There are two methods for using the map tools to draw polygons: the freeform method and the point-and-click method.

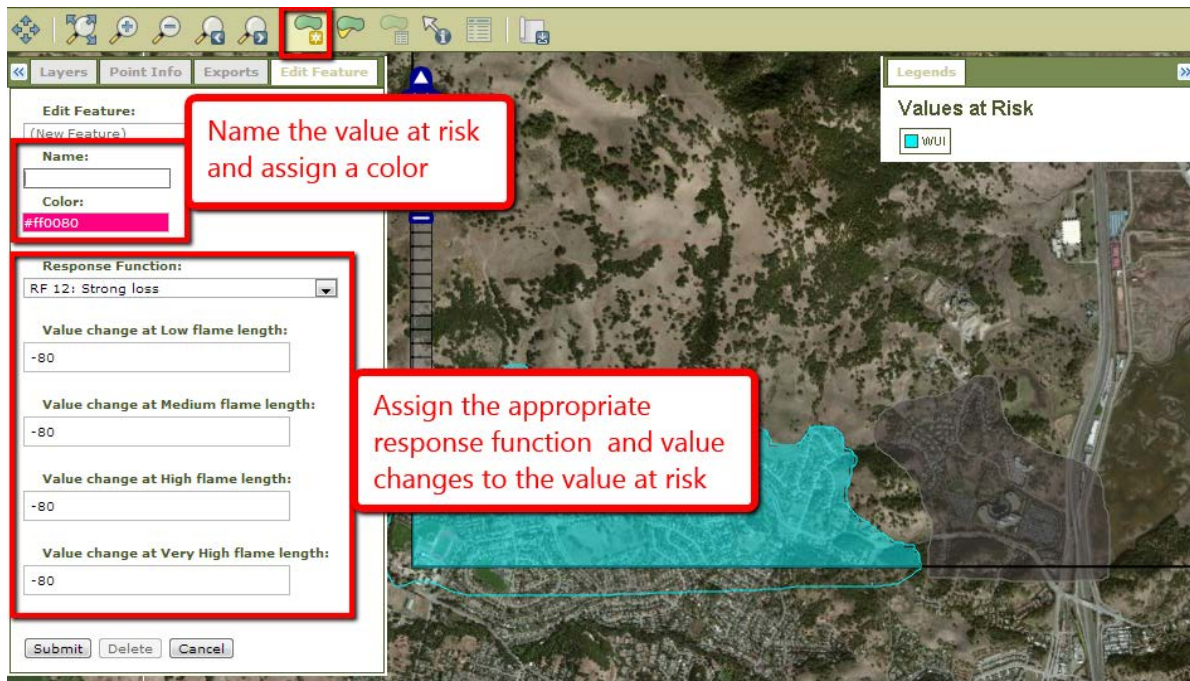
a. The **freeform drawing method**

- While holding down the Shift key, click on the map, hold down the left mouse button, and start drawing your first polygon. While still holding down the Shift key and left mouse button, move the mouse as if it were a pencil to draw your polygon
- Release the left mouse button when you are done drawing the polygon. This creates the polygon and opens the Edit Feature panel

b. The **point-and-click method**

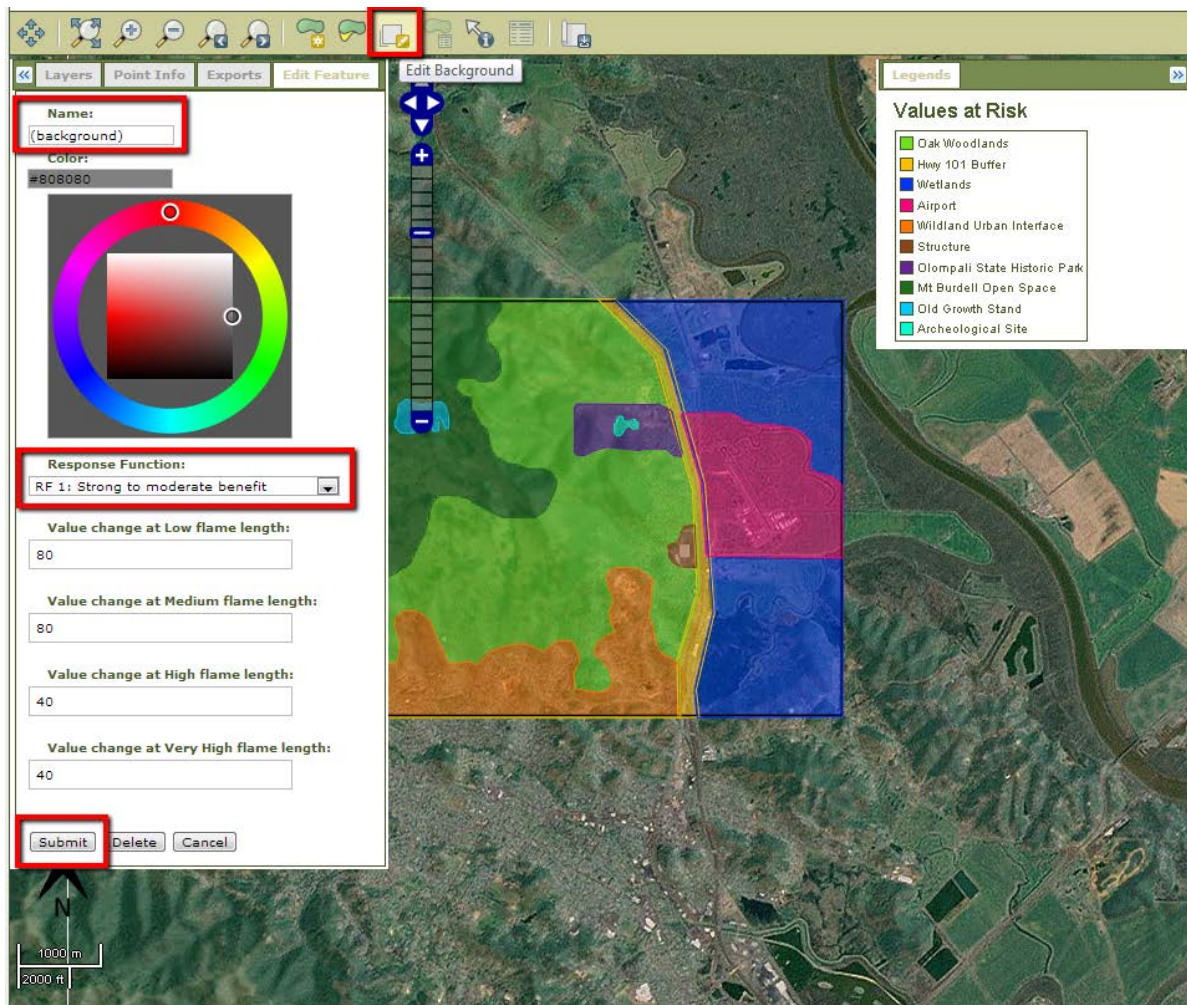
- To start drawing your first polygon, click on the map and release the mouse button.
- Move the mouse to a new point and click and release to add another point. Before moving on, make sure the point is established by moving the mouse away from the point.
- Continue this process until you are done drawing your polygon.
- When you are done drawing the polygon, double-click to create the polygon and to open the Edit Feature panel.

- After drawing a polygon, use the Edit Feature panel to name the polygon and choose a color for it. In addition, pick the appropriate Response Function that best represents the value at risk, and set the values for value change at low, medium, high, and very high flame lengths. Click **Submit** to save your polygon.

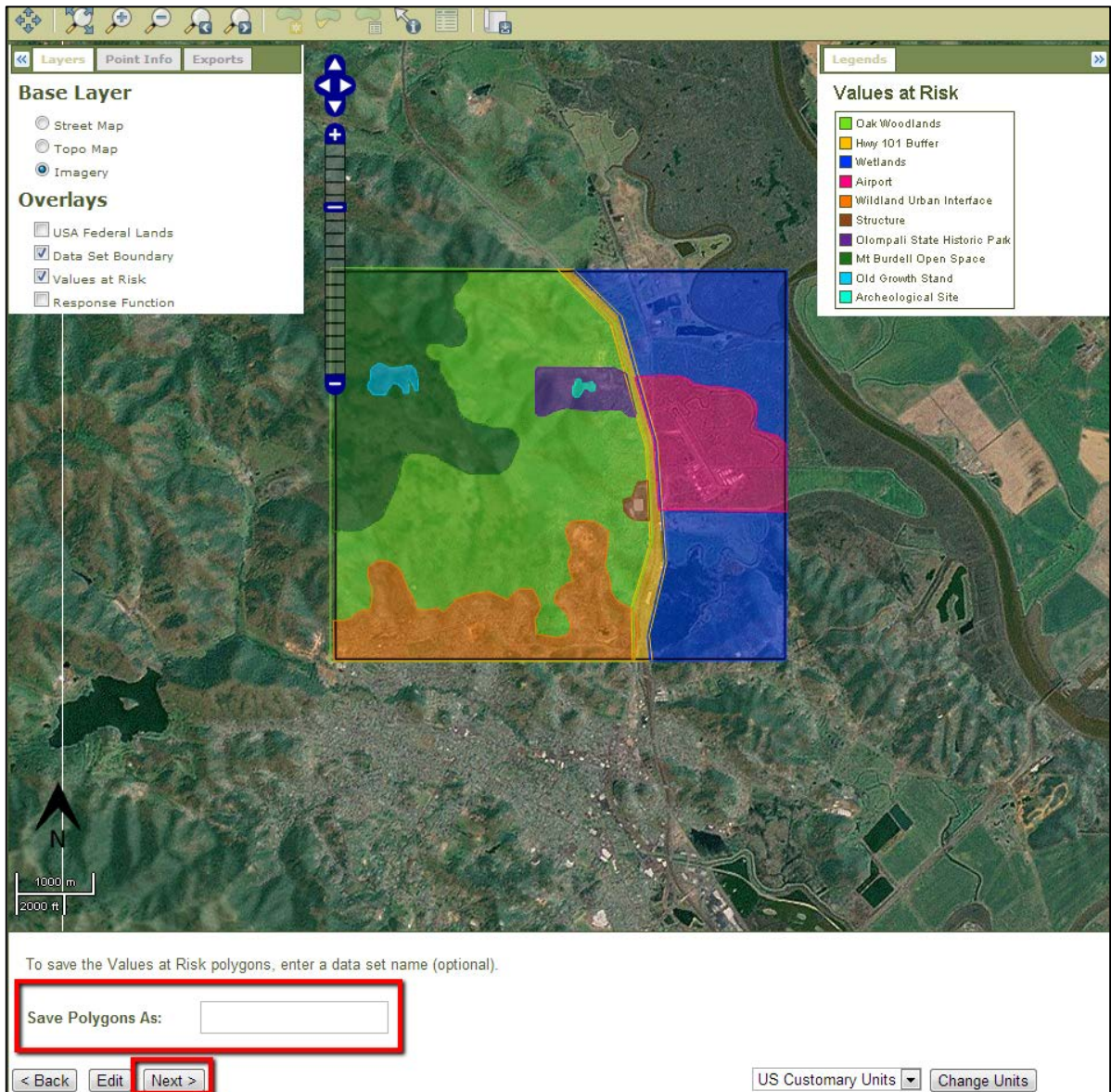


- Repeat steps 5 and 6 to create more Values at Risk polygons. Define the large values at risk first. Draw smaller values at risk on top of the larger values at risk. When one polygon is drawn on top of another polygon, the one on top replaces the one on the bottom in the areas where they overlap.

8. In order for IFTDSS to calculate an output in the risk pathways, all pixels within an area of interest need a response function. To fulfill this requirement, you can assign a background to your Values at Risk map:
 - a. Select the **Edit Background** tool.
 - b. In the **Edit Feature** panel, (background) is automatically assigned as the name.
 - c. You can edit the name and color, and assign the background response function.
 - d. Finally, click **Submit** to save the background.



9. When the values at risk have been defined for every pixel in the area of interest, enter a name for the Values at Risk polygons in the **Save Polygon As:** box, and click **Next**.



10. Now you are on the Inputs step. Customize the IFT-FlamMap and IFT-RANDIG inputs. In addition, specify the minimum flame length for each flame length class. Click **Next**.

Properties

Crown Fire Calculation Method

Scott & Reinhardt Method

Fuel Moisture

Parameter	Unit	Simulation #1
1-hr Fuel Moisture	percent	4
10-hr Fuel Moisture	percent	8
100-hr Fuel Moisture	percent	8
Live Herbaceous Fuel Moisture	percent	80
Live Woody Fuel Moisture	percent	90

Weather

Parameter	Unit	Simulation #1
Wind Direction	deg	270
20-ft Wind Speed	mi/h	20.00

IFT-FlamMap inputs

Simulation Inputs

Parameter	Unit	Simulation #1
Number of Fire Ignitions to Simulate		50
Duration of the Simulation	min	80

Note: Using a large data set (~250,000 acres), the IFT-RANDIG module is estimated to take an hour to run per 2,000 ignitions. This is just an estimate; the module could take longer to run based on user load.

IFT-RANDIG inputs

Set Flame Length Classes

Specify the MINIMUM flame length (in feet) for each flame length class:

Low Flame Lengths

0

Medium Flame Lengths

4

High Flame Lengths

8

Very High Flame Lengths

11

Set flame length classes

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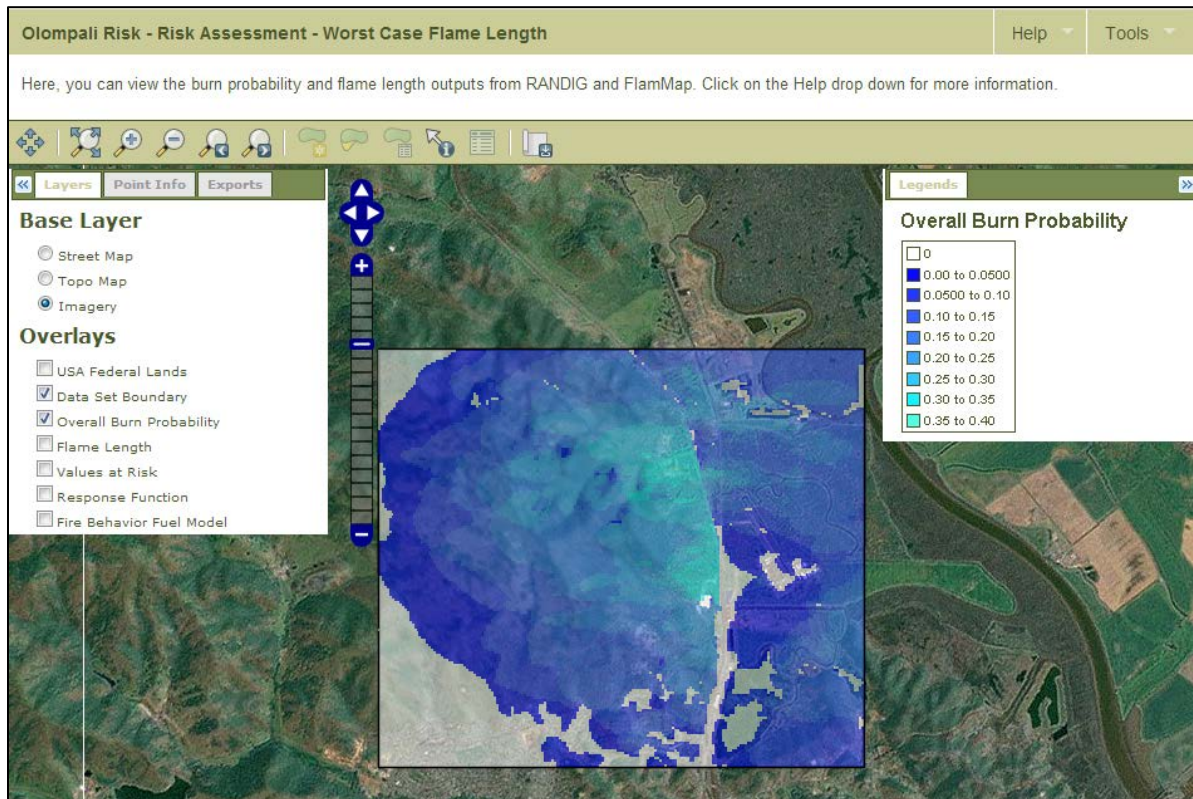
Edit

Next >

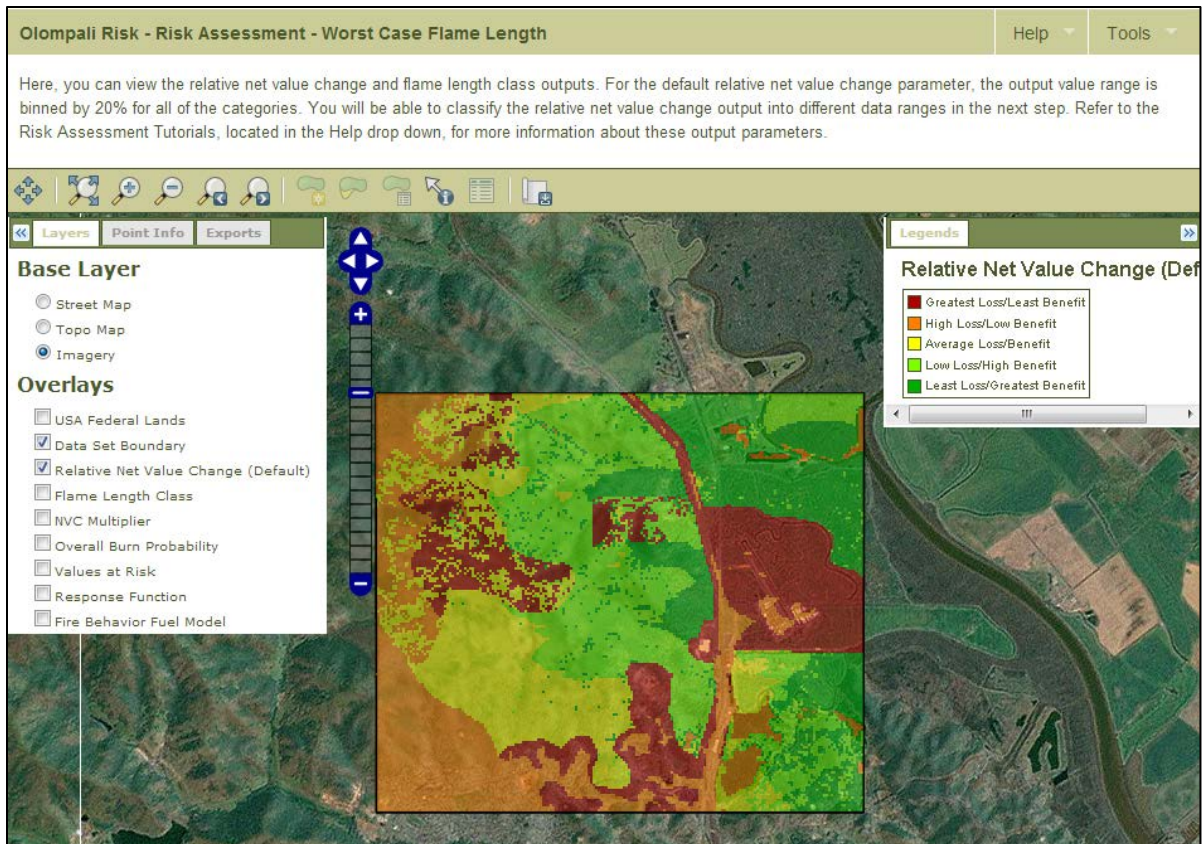
US Customary Units

Change Units

11. Now, you are on the Review Landscape Data step. Review the landscape data and then click **Next**.
12. Now, you are on the Fire Behavior outputs page. On this page, you can review the spatial fire behavior and overall burn probability overlays. Click **Next** after viewing fire behavior outputs.



13. On the Relative Net Value Change step, you can view the default relative net value change as well as flame length class outputs. Click **Next**.



14. On the Classify Net Value Change step, you can customize the net value change breakdown percentages. The percentage values need to add up to 100. Click **Next** after the percentages are set.

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Fire Behavior

Relative Net Value Change

Classify Net Value Change

Map Summary

Run Summary

▶

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Enter Relative Net Value Change Percentages

The relative net value change is classified into 5 data subsets. For the default relative net value change parameter, the output value range is binned by 20% for all of the categories.

For example, if your data ranges from a numerical value of -20 to +40, the categories listed below will be binned into the following data ranges: -20 to -8, -8 to 4, 4 to 16, 16 to 28, and 28 to 40.

You may adjust the weights of these 5 data subsets here. All 5 weights must add to 100%. This functionality will allow you to narrow your search of high fire hazard and risk areas to areas with the greatest potential loss. Please see the Risk Assessment Tutorial (located in the Help drop down) for more information.

Greatest Loss/Least Benefit

High Loss/Low Benefit

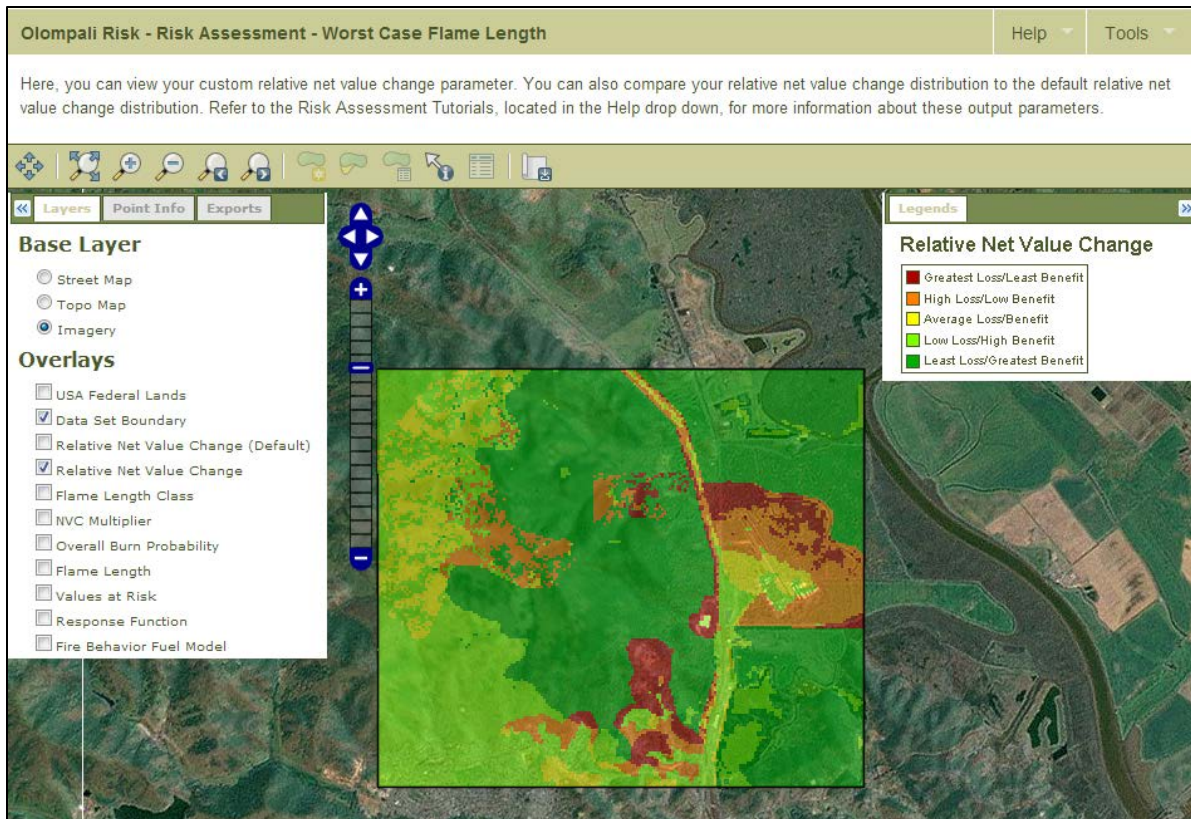
Average Loss/Benefit

Low Loss/High Benefit

Least Loss/Greatest Benefit

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Edit
Next >

15. Now you are on the Map Summary step, where you can view the custom relative net value change across the landscape.



16. Click **Finish** to end the run and go to the Run Summary page.