

Lesson 7 – Managing Shapes

Estimated time to complete: 30 minutes

In this lesson, you will explore shapes from the **Incidents** tab to:

- Draw shapes on a map.
- View shape details and explore shape management tools (one exercise).
- Download Incident Shapes.
- Upload Shapes.

This lesson contains four exercises.

About Shapes

WFSS accepts a wide variety of shape types to assist with situation assessment, fire behavior analysis, and completing a decision document. Shapes used in WFSS can be:

- Uploaded using the Shape Upload option from the left hand menu (see the Uploading Shapes Quick Tips).
- Drawn on the Situation or Analysis maps.
- Copied to represent a different type of shape for the same incident.
- Downloaded and saved as a shape file.
- Merged to create a new or updated shape or a multi-part shape.
- Deleted from an incident.

Tools for drawing, manipulating, and downloading shapes are available from the Situation and Analysis Map views. About Maps refers to these tools and their use. Shapes cannot be shared between incidents, but a shape can be downloaded from one incident and uploaded into another. Shapes can be deleted provided that the shape has not been used in an analysis or included in a decision.

WFSS shapes are of three types:

- Unit-level shapes include FMU, Strategic Objective, Management Requirement and Other Unit Shapes,
- Incident shapes include Planning Areas, Fire Perimeters, Management Action Points, Objective Shapes, and Points of Interest.
- Analysis Shapes include Ignitions, Landscape Masks, and Barriers.

You'll be working with incident and analysis shapes in this lesson. WFSS has much capacity with regards to shapes and we will only cover a few skills in this lesson. A list of help topics at the end of the lesson will help you locate additional shape-related information.

Drawing Shapes on the Map

The fire is 4,006 acres and you do not have a shape file of the current perimeter. You flew the incident first thing this morning so you have a pretty good idea of where it is and are confident that you could sketch the perimeter on a map.

In this part of the lesson, you will:

- Draw a fire perimeter on the Situation map using the polygon tool, and
- View details for the shape you drew and explore management tools to help you manage it.

WFSS provides a robust set of tools that allow Incident Owners (must be an Author to be an owner) and Incident Editors (any WFSS user can be assigned editing privileges) to draw shapes on the Situation and Analysis maps. Points, lines, polygons and rectangles can be drawn to represent fire perimeters, M.A. P.s, Objective Shapes, Points of Interest, Analysis Ignitions, Barriers, or Landscape Masks. Users assigned the Dispatcher role are the only exception. Dispatchers in the same geographic area as an incident can draw all shape types for an incident except M.A.Ps and Objective Shapes. If a Dispatcher is given incident editing privileges, that person can draw those shapes, too.

Shapes drawn in WFSS can be copied to represent a different type of shape for the same incident, downloaded and saved as a shape file, or deleted from an incident. Shapes cannot be shared between incidents, but a shape can be downloaded from one incident and uploaded into another.

To draw a fire perimeter:

1. From the Incident list, select the radio button beside the incident you want to draw a fire perimeter > click **Assess Situation** and the Situation map opens. On the **Map** tab, select the map layers you want to view to help guide your drawing (Click the + sign beside a category name to expand it, and then mark/unmark the appropriate checkboxes for the map layers you want to view).
2. Select the Polygon draw tool .
3. Place the cursor on the map where you want to start drawing, and then click once.
4. Draw the perimeter, clicking as you go to create vertices. Double-click to release the tool when you are finished. The shape turns yellow.
 - If you don't like the shape you drew, click the eraser tool  to erase your sketch and start again.
 - If you want to draw a multi-part fire perimeter (to represent a main fire and two spot fires, for example), continue to draw shapes until you are finished. Each shape you draw will turn yellow upon completion (draw multi-part shapes carefully, as clicking the erase tool at this point will erase all shapes you have drawn).
5. When you are satisfied with the shape you drew, expand the Incident layer (if it's not already expanded) and click the green plus  icon to the right of Fire Perimeters.
6. Fields with an asterisk require inputs:

- Enter a Name/Label for the shape. Be sure to use a descriptive name (e.g., 04/13 1200 IR).
 - Enter an effective date and time for the shape.
 - Enter a Source Type.
 - Enter a comment about the shape (who it was collected by for example) and an effective time if you choose. Typically, the more information the better.
7. Click **Create**. The shape and its name will appear on the map, and in the tree view with a checkbox next to it.

Viewing Shape Details and Exploring Shape Management Tools

You drew the fire perimeter but you're not sure if its size is accurate, so you need to determine how many acres it is.

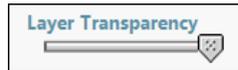
You can view details about a shape by expanding it in the LayerSwitcher. LayerSwitcher is the table of contents on the left that lists available map layers (you can modify the selection from **My Home > System Preferences**). Expanding a shape in the LayerSwitcher reveals shape management tools available for you to use. Viewing details and using shape management tools are especially helpful when multiple shapes exist for an incident. Viewing shape details can help you determine acreage and the effective date and time for a shape, and the accompanying shape management tools can alter how the shape is viewed in the map display.

For example, if three fire perimeters are uploaded for an incident in one day, you can view shape details to determine which one has the most current effective time. If you are viewing the most current fire perimeter and other shapes such as historic fire perimeters and barriers, you can click **Move Layer to Front** to view the fire perimeter displayed on top of the other shapes in the map image.

To view shape details and explore shape management tools:

1. Click the expansion  arrow to the right of the shape you just created to view details about it.
2. Note the Effective Date and Area of the shape. If the shape is nowhere near 200 acres, you can click the Delete  tool to delete the shape and draw it again.
3. Note the other tools available for the shape:
 - The Select  tool allows you to select the shape (it turns yellow) so that you can save it as a different type of shape (EXAMPLE: Open the Analysis layers, and then click the green plus sign beside Ignitions. Assign the new Ignition shape a name, and then click **Save**. The fire perimeter shape has now been saved as an Ignition and can be used with fire behavior analysis).
 - The Pan  tool, when selected, will zoom the map display to the shape selected. This is helpful when you are working with a large incident.
 - The Download  tool allows you to download a zipped shapefile of the selected shape. You'll use it in the next exercise.

- The Spatial Inventory link lets you view a list of values that are found within the fire perimeter (clicking the link initiates the report, which may take one-two minutes to process; navigate back to the Situation map and re-click the Spatial Inventory link to refresh).
- The **Layer Transparency Tool** allows you to increase or decrease the opacity of the shape so that you can see other map layers or features beneath it.



- The **Layer Order Tool** allows you to move the shape to the front or back of all the other layers. This is helpful if you have many map layers or features that overlap in an area.



Downloading Incident Shapes

The local GIS specialist has requested a copy of the fire perimeter shape file to help develop a map for the IAP. In this exercise, you will download the zipped shape file for the perimeter that you created in the previous exercise.

WFDSS allows you to download the shapes created for an incident so that you can use them for other things, even after the decision process is complete. You can use the downloaded shapes in any program that uses shapefiles (GIS, Google Earth®, etc.). The following criteria apply:

- All WFDSS users, regardless of role, can download incident-level shapes with the exception of M.A.P.s and Objective Shapes.
- Users with editing privileges for an incident can download all shape types including M.A.P.s and Objective Shapes.
- Shapes are downloaded in WGS84 (decimal degrees).
- All shape types can be downloaded individually.
- Fire perimeters can be downloaded as a batch (all fire perimeters for an incident, or all final fire perimeters for the fires currently displayed in your Incident List).

To download a fire perimeter:

1. From the Situation map, expand the Incidents layers and locate the fire perimeter you want to download.
2. Click the expand  arrow beside the shape.
3. Click the download  tool. The File Download window appears.
4. Click **Save**. The Save As window appears.
5. Navigate to the folder where you want to save the file (make sure you will remember where you save it).
6. If necessary, change the file name.
7. Click **Save**. The ZIP file for the shape is saved to the folder you specified.

Uploading Shapes

You will eventually need an ignition shape file for fire behavior analyses, so you will upload the fire perimeter that you drew in WFDSS and downloaded in the previous exercises.

Uploading shapes is another way you can add a shape to your incident. When managing incidents, you will probably be given shape files that were created outside of WFDSS. These shapes may include fire perimeters collected by GPS units or drawn in a GIS. You can upload shapes from the Shape Upload menu option that is available on the left side of the screen in both the incident and analysis perspectives.

Incident Owners and Editors can upload all incident-level shape types for an incident in WFDSS. In addition:

- Users assigned the Dispatcher role can upload all incident-level shape types except Objective Shapes and M.A.P.s for incidents in their geographic area.
- Users assigned the Fire Behavior Specialist or Super Analyst role can upload all shape types for any incident, regardless of the geographic area.

All shapes loaded into WFDSS require a projection file. WFDSS stores all shapes in the government standard NAD83 GCS. If you upload a shape as a NAD83 GCS, it will not need to be reprojected. If you upload a shape with a different projection, WFDSS will automatically reproject it to NAD83 GCS.

Before uploading a shape, verify the following:

- The incident you want to upload the shape for exists in WFDSS, and that you have editing privileges for the incident or analysis.
- The files associated with the shape are current, correct, and belong with the incident or analysis.
- The shapefile is in a zipped format.
- If multiple shapes exist in the shape ZIP file, they must be dissolved into one.
- The shape ZIP file must contain one shapefile with the following file extensions:
 - .DBF
 - .PRJ (required)
 - .SBN (optional)
 - .SBX (optional)
 - .SHP
 - .SHP.XML
 - .SHX
- The files contained within the ZIP file are at the same directory level. (You can't have a folder inside the ZIP file or the shapes won't upload correctly.)
- Perimeters for your ignition and barrier files are different. If the two files overlap, it can cause unexpected results.

To upload a shape:

1. From the **Information** tab, choose **Shape Upload**. The Upload Shape Files page appears.

2. In the Shape Label field, type a descriptive name for the shape you are uploading (analysis ignition in this exercise), such as **'4/23'perim** (character limit is 64). WFDSS already knows which incident the shape belongs to so a date is sufficient.
3. Select **Analysis Ignition** from the Shape Type dropdown menu. Once Analysis Ignition is selected other data entry options are greyed-out and unavailable.
4. Enter a Shape Date and Time. You flew the fire at 0800 this morning, so the perimeter you sketched is effective at 0800. The effective date and time is beneficial for tracking the history related to the types of shapes uploaded and is helpful during an ongoing incident when multiple shapes can be uploaded in a day.
5. The Source Type for our exercise is **GPS / Air**.
6. You may enter a Comment that describes the shape you are uploading, but it's optional.
7. Click **Browse** to navigate to where the shape ZIP file is stored. The Choose File window appears.
8. Select the ZIP file you want to upload and click **Open**. The path and filename for the ZIP file appear in the File to Upload field.
9. Click **Upload**. You'll get a message in green that the file uploaded successfully.
10. Click **Return** to return to the **Information** tab.

Search for these related topics in the help:

- [About Shapes](#)
- [Drawing Shapes on the Map](#)
- [About Maps](#)
- [Downloading Incident Shapes](#)
- [Uploading Shapes](#)
- [Complex Shapes](#)
- [Copying a Shape](#)
- [Merging Two Shapes](#)
- [Deleting Shapes](#)