

Image Analysis for ArcGIS FAQs¹



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How Do I Perform Thematic Layer Editing?

Use ArcMap, ArcCatalog, and ArcToolbox to perform thematic layer editing. Thematic layer editing is typically performed to correct classification errors. Image Analysis currently does not support thematic layer editing; however, we have developed a couple of work-around solutions. This document describes two techniques for editing thematic layers using ArcGIS: 1) using an Overlay analysis, and 2) using the Raster Editor extension.

What You Will Need and Other Assumptions

- A classified thematic image

Overview of Steps

Overlay Analysis:

1. Create and digitize a polygon.
2. Set the Analysis Mask in Spatial Analyst.
3. Reclassify the image in Spatial Analyst.
4. Convert image to a coverage in ArcCatalog and ArcToolbox.
5. Perform an Update overlay analyses in ArcToolbox.
6. Convert Coverage back to an Imagine Image file.
7. Inspect the results.

Raster Editor extension:

1. Download and activate the Raster Editor extension in ArcMap.
2. Digitize a polygon for thematic editing.
3. Save edits and inspect the results.

Step-by-Step Example

Overlay Analysis:

1. Start ArcCatalog from your Desktop, or on the Windows Taskbar click **Start | Programs | ArcGIS | ArcCatalog**.
2. Create a new polygon Shapefile by navigating to an appropriate folder, and selecting **File | New | Shapefile**. Ensure you specify the **Name**, select **Polygon** as the **Feature Type**, and select the **Edit** button to specify the projection information. Click **OK**. *Note: you can specify the projection information by selecting the **Import** or **Select** buttons.*
3. Start ArcMap from your Desktop, or on the Windows Taskbar click **Start | Programs | ArcGIS | ArcMap**. Ensure the Spatial Analyst and Editor extensions are visible. If not, from ArcMap's main menu select: 1) **Tools | Extensions** and enable **Spatial Analyst**; 2) **View | Customize** and enable **Editor**; and 3) **View | Toolbars** and enable **Spatial Analyst** and **Editor**.

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4. Select the **Add Data** button to load the thematic image (that you wish to edit), as well as the Shapefile you just created.
5. From the Editor toolbar, select **Editor | Start Editing**. Ensure that the **Task** is set to Create New Feature, and that the **Target** is set to your new Shapefile. Select the **Sketch** tool button and digitize a polygon over an area that requires editing in the thematic image. Select **Editor | Stop Editing**, and click **Yes** to save the edits.
6. From the Spatial Analyst toolbar, select **Spatial Analyst | Options** and click the **General** tab. Set your Shapefile as the **Analysis Mask**. Select **OK**.
7. From the **Spatial Analyst** toolbar, select **Spatial Analyst | Reclassify**. Set the **Input Raster** as the original thematic image and the **Reclass Field** to Class_names. Change values in the **New Values** column to correct classification errors within the Analysis Mask. Specify an appropriate filename and location for the **Output Raster**. Click **Save**, and then **OK**.
8. In ArcCatalog, navigate to and **Right-click** the original thematic image and select **Export | Raster To Different Format**. Specify an appropriate filename and location, and ensure that **Save As Type** is ESRI Grid. Click **Save**. Follow the same procedure for your reclassified image.
9. Start ArcToolbox from your Desktop, or on the Windows Taskbar click **Start | Programs | ArcGIS | ArcToolbox**.
10. In ArcToolbox, select **Conversion Tools | Export from Raster | Grid to Polygon Coverage**. Set the **Input Grid** as your original image and **Weed tolerance** to 0, and specify an appropriate filename and location in the **Output Grid**. Click **Save**, and then **OK**. Follow the same procedure for the reclassified image.
11. In ArcToolbox, select **Analysis Tools | Overlay | Update** ('updates' or creates a new Coverage by overlaying two Coverages). Set the **Input Coverage** (original image) and **Update Coverage** (reclassified image), and specify an appropriate filename and location for the **Output Coverage**. Select **OK** to run the Update.
12. In ArcToolbox, select **Conversion Tools | Export from Coverage | Polygon Coverage to Grid**. Set **Input Coverage** to your *update output*, **Value Item** to GRID-CODE, and **Cell Size** to the same cell size as your original image. Specify an appropriate filename and location for the **Output Grid**. Click **Save**, and then **OK**.
13. In ArcCatalog, navigate to and **Right-click** the *updated grid* and select **Export | Raster To Different Format**. Specify an appropriate filename and location, and ensure that **Save As Type** is ERDAS IMAGINE. Click **Save**.
14. Inspect the results.

Raster Editor extension:

1. The first step is to download and register the Raster Editor toolbar on your computer—start by going to the following ESRI website: <http://arcobjectsonline.esri.com/ArcObjectsOnline/Samples/Raster/Raster%20Editor/RasterEditor.htm>.
2. Scroll down near the bottom of the webpage and click on **Download Now**, select **Save**, and locate **RasterEditor.zip** in an appropriate directory on your file system. Select **Save**. **Close** the Download Complete dialog when the file has finished downloading.

3. Open Windows Explorer by selecting **Start | Programs | Windows Explorer**. Navigate to and **Double-click** on RasterEditor.zip, and then click the **Extract** button and locate an appropriate directory to place the files. Select **Extract**.
4. Start ArcMap from your Desktop, or on the Windows Taskbar click **Start | Programs | ArcGIS | ArcMap**.
5. From the ArcMap's main menu, select **Tools | Customize**, and select the **Add From File** button. Then navigate to and select **RasterEditorPrj.dll** (from the unzipped files). Select **Open** and then **OK**. Enable **Raster Editor** from the Toolbars tab. Select **Close**.
6. From ArcMap's main menu, select **View | Toolbars**. Enable **Raster Editor**.
7. Select the **Add Data** button to load a thematic image that requires editing.
8. From the Raster Editor toolbar, select **Raster Edit | Start Editing**. Select the raster you would like to edit and click **OK**. Click **OK** again to find a temporary workspace, enter a working directory, and finally select **OK**. *Note: a thematic image will automatically load in the Data Frame called RASEDDAT.img—it is a copy of the thematic image that requires editing. You will make and save edits to this image.*
9. From the Raster Editor toolbar, select a **Solid Polygon Drawing Tool**, and specify **Color** as the **correct class value for the area requiring edits**. *Note: for example, if forest was misclassified as water, you would select the forest class value from the **Color** dropdown menu.*
10. Digitize polygons over RASEDDAT.img to update classification errors. Continue to make classification edits to each class ensuring you specify the correct class (from the **Color** dropdown menu) that you are editing to.
11. From the Raster Editor toolbar, select **Raster Edit | Stop Editing**. Click **Yes** to save the edits.
12. Inspect the results.

Note: the Raster Editor extension's capabilities only extend to editing classes present in the image—use the Overlay analyses approach if you would like to simultaneously make edits and create new classes.