

Quick Guide: Georeferencing Images in ArcMap

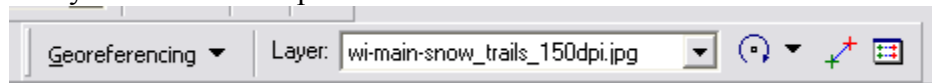
NOTE: You will need at least two layers:

- 1) your layer that needs to be georeferenced, and
- 2) a layer that is already georeferenced, which you will use as a basemap.

For a *basemap* layer, you may use ESRI data that came with your copy of ArcGIS, or download a free layer from www.geographynetwork.com.

Open ArcMap & Turn on the Georeferencing Toolbar and the Editor Toolbar

1. Open ArcMap
2. Click the **View menu**, **Toolbars**, and **Georeferencing Toolbar**
3. You will see this toolbar appear. You may ‘dock’ it within ArcMap so that it will always be in the same place.

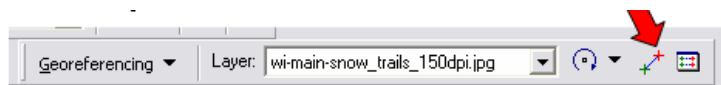


Add and convert the scanned image that will be georeferenced

4. Click **Add data** button and browse to the scanned images
5. In the **Georeferencing Toolbar**, make sure the layer dropdown choice is pointing to *the layer you want to georeference*.
6. If you’re not already looking at the scanned image, **right click its name** in the table of contents and click **Zoom to Layer**.
7. Identify what area the map represents, for example if it’s a map of Ashland County you’ll see that in the title or may have to find some identifying features.
8. Now zoom to the general vicinity of the *basemap*, where the image you want to georeference belongs.
9. Now that you’re zoomed into the general area, Click **Georeferencing**, and **Fit to Display** to bring the scanned image to the same general area as the *basemap*.
10. Save your map so you don’t lose work if anything crashes.

Georeferencing the image

11. On the **Georeferencing Toolbar**, click the **Control Points tool** (note red arrow below) to begin adding “control points”



12. Then, to add a link,
 - i. find and click on a *known location on your image*,
 - ii. then find and click on the same location *in the basemap*.
13. Perform Step 12 three more times so that you have four “control points”.

Tips:

2. You could look for road intersections, land features, building corners, or other objects that you can identify and match in both *your image* and *the basemap*.
3. If you mess up when adding your control points, you can delete an unwanted link from the Link Table dialog box. Access the **Link Table Dialog box** from the **Georeferencing Toolbar**, farthest icon on the right. Simply choose the link to delete and hit the delete key.
4. Also, you can remove a link while you're in the middle of creating it by pressing the **Esc key**.
5. You may find it useful to use a **Magnification window** to add in your links. Access this by going to **Window** in the main menu, then selecting **Magnifier**.
6. When working with these images, you may want to adjust the transparency or turn layers on and off in the table of contents to view each image as you add your links.
13. Ideally, you will be able to add links near each corner of the area and maybe one or more near the center. There will be some maps where you can only find 2 control points to use. In this case this will be enough.

Save the georeferenced image:

14. In the **Georeferencing Toolbar**, click **Georeferencing** and click **Update Georeferencing** to save the transformation information with the image.

Save out a copy of the georeferenced file with projection information:

15. On the **Georeferencing Toolbar**, click **Georeferencing**, and **Rectify...**
16. In the dialog box that appears, accept the default for cell size and resample type (should be nearest neighbor); then ensure the path to save the new file is correct and click **Save**.
17. This does two things: 1), it saves the file out with all the projection information and 2) it creates a backup of the georeferenced map image.