

Flexible Image Linking in ArcMap

For ArcGIS 9.3 and up

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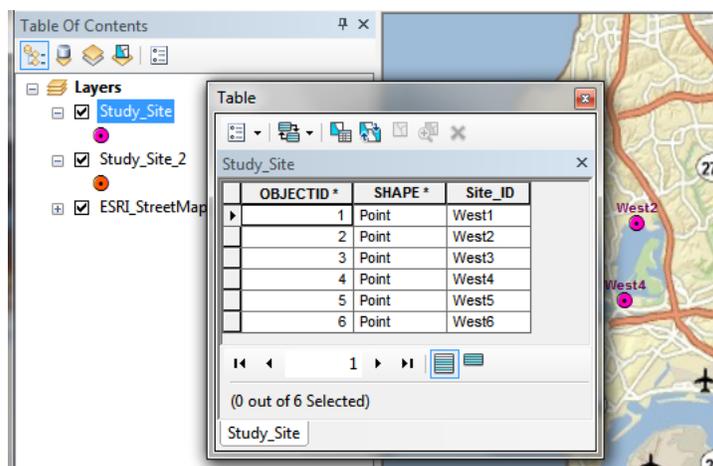
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Note: Images, data and maps used in any examples herein are for educational purposes only and are not intended to reflect any real-world circumstances.

The purpose of this short tutorial is to describe a **method for using a single table to store images for feature classes**. Any feature can be linked to any number of images, and the single images table can be referenced by multiple feature classes.

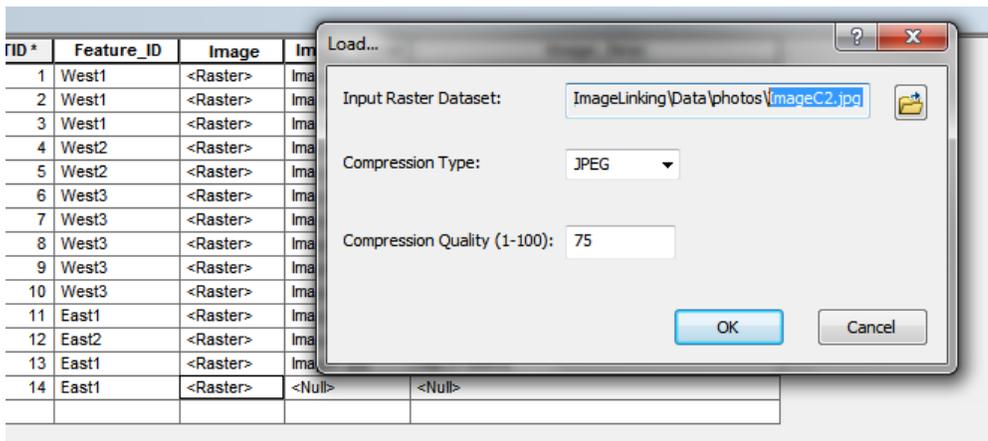
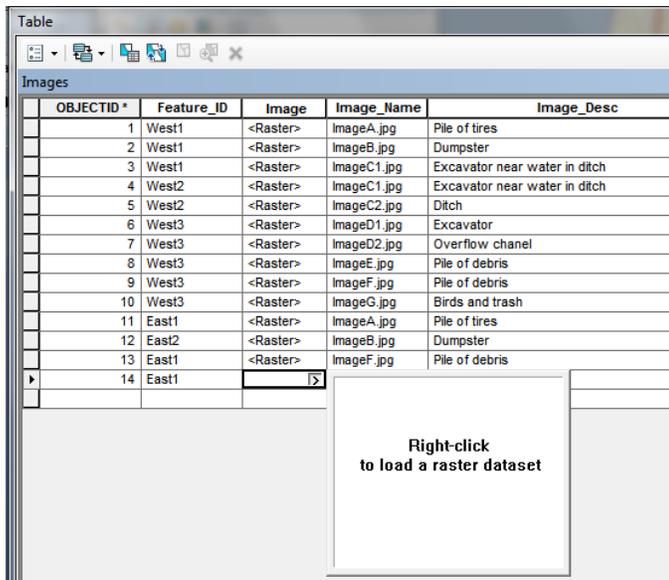
1. The Feature Class to link images to does not need a raster field. It simply needs a field with an identifier value with which to perform a database relate (see *Site_ID* field below):



2. Using ArcCatalog, create a table in a geodatabase (GDB) to store the images (named "Images" in this example) with the following fields:
 - Feature_ID: Text (type needs to match key field in to-be-linked feature class(es))
 - Image: Raster (managed by GDB)
 - Image_Name: Text (optional: for filename)
 - Image_Desc: Text (optional: for a description of image)

3. Add the "Images" table to an ArcMap map (this is usually the one that contains the feature class(es) to which you wish to link).

4. Populate the "Images" table with data and rasters. One way to do this is one-by-one within an edit session:
 - Start an edit session.
 - Open the "Images" attribute table.
 - A value must be placed in the Feature_ID field that matches a field value for the feature for which images will be linked (using a relate).
 - To add the image to the field of type <Raster>, click in the cell and then click on the small button on the right edge; then right-click in the empty box and browse to the image file location.



- While adding a raster, it's easy to copy-and-paste the file name into an "Image_Name" field for reference, as well as entering a description.

OBJECTID *	Feature_ID	Image	Image_Name	Image_Desc
1	West1	<Raster>	ImageA.jpg	Pile of tires
2	West1	<Raster>	ImageB.jpg	Dumpster
3	West1	<Raster>	ImageC1.jpg	Excavator near water in ditch
4	West2	<Raster>	ImageC1.jpg	Excavator near water in ditch
5	West2	<Raster>	ImageC2.jpg	Ditch
6	West3	<Raster>	ImageD1.jpg	Excavator
7	West3	<Raster>	ImageD2.jpg	Overflow chanel
8	West3	<Raster>	ImageE.jpg	Pile of debris
9	West3	<Raster>	ImageF.jpg	Pile of debris
10	West3	<Raster>	ImageG.jpg	Birds and trash
11	East1	<Raster>	ImageA.jpg	Pile of tires
12	East2	<Raster>	ImageB.jpg	Dumpster
13	East1	<Raster>	ImageF.jpg	Pile of debris
14	East1	<Raster>	ImageC2.jpg	Ditch

- Any number records can be created that will link to a single feature, and they do not need to be entered in continuous order.

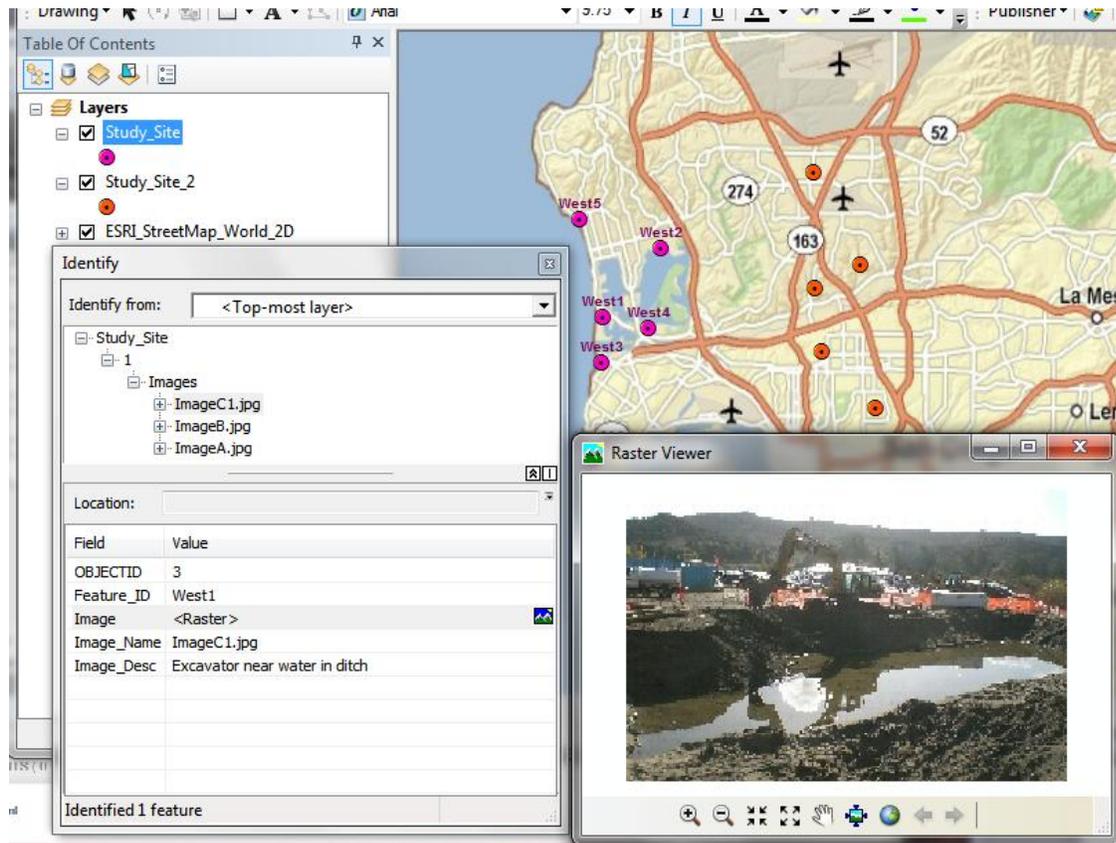
5. Create a relate between Feature Class(es) and the "Images" table.

Relate lets you associate data with this layer. The associated data isn't appended into this layer's attribute table like it is in a Join. Instead you can access the related data when you work with this layer's attributes or vice-versa.

Establishing a relate is particularly useful if there is a 1-to-many or many-to-many association between the layer and the related data.

1. Choose the field in this layer that the relate will be based on:
2. Choose the table or layer to relate to this layer, or load from disk:
3. Choose the field in the related table or layer to base the relate on:
4. Choose a name for the relate:

- Using the Identify tool on a feature that is linked to images will provide access to each image, as well as any file name and descriptions entered in the "Images" table.



Additional Notes:

- Additional images can be added to the "Images" table and linked to new or existing features by entering the appropriate *Feature_ID*.
- Since the rasters are managed, they are stored in the "Images" table in the GDB, so the source rasters are no longer needed for the images to display properly.
- It should be possible to automate the building of the Images table using a script or Add-In. For instance, if each image had the *Feature_ID* either as part of the filename or in the image metadata, it would be possible to write a script to extract that information and easily build or update the Images table.