NAIP Photography

In 2005, NRCS partnered with Farm Service Agency (FSA) and other state and local partners to acquire USDA National Agriculture Imagery Program (NAIP) photography for Michigan. The resulting digital imagery will be used by NRCS planners as an additional orthoimagery layer, supplementing the existing C1993/C1998 DOQ data.

The 2005 NAIP is 1 meter resolution, leaf-on, natural color imagery, flown in the summer of 2005. The original quarter-quad TIFF images were compressed and joined to create a single mosaic image for each county.

Please refer to page 7 for information on interim and certified versions of NAIP products.

Locating the Imagery

The national Geospatial Dataset File Naming standard requires that the certified NAIP data be placed in the "**f:\geodata\ortho_imagery**" folder. File names include county FIPS code for unique identification. For example (Clinton County):

f:\geodata\ortho_imagery \ortho_1-1_1n_s_mi037_2005_1.sid

FIPS Code

Generally, three types of NAIP files will appear in the "ortho_imagery" folder:

- NAIP county mosaic 3-band raster images in MrSID compressed format
- Shapefiles of quarter-quad polygons which correspond to the original NAIP TIFF images (see "IDAT" attribute for imagery flight date)
- Text files generated by the MrSID encoding process

NRCS-MI ArcMap Templates

Customer Service Toolkit **[COUNTY]_ToolkitGIS_Template.mxd** files and NRCS-MI Area Office **[COUNTY].mxd** files have been updated to contain an additional "NAIP 2005" layer. Users will not find it necessary to manually load NAIP imagery into their current ArcMap document when using one of these NRCS-MI map templates.

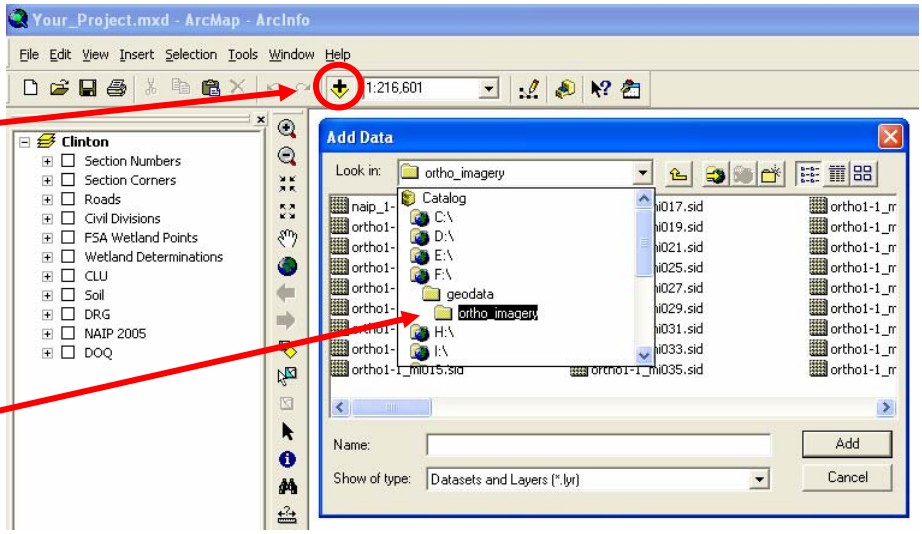
Toolkit Users: The updated Toolkit map template can be copied into your current client's **ArcGIS_Projects** folder with the **Change/Add ArcGIS Template** button.

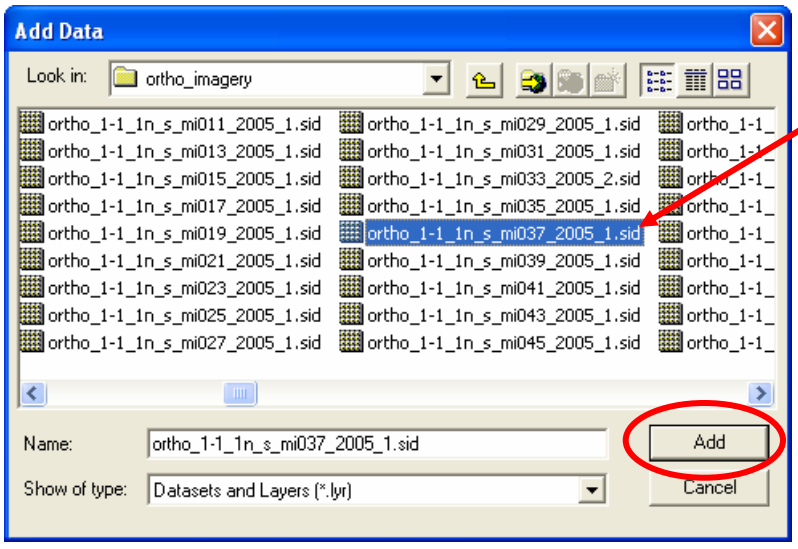
Loading the Imagery in ArcMap

When not initiating ArcMap from an updated NRCS-MI map template, (as when re-opening an older, existing project), it will be necessary for users to manually load the NAIP data into the current map document.

1. Click the **Add Data** button

2. Drill down on the **Look In:** list and navigate to the "ortho_imagery" folder in "f:\geodata\".

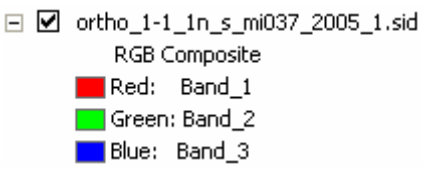




3. Scroll through the list of raster images; click **ONCE** on the file you wish to load.

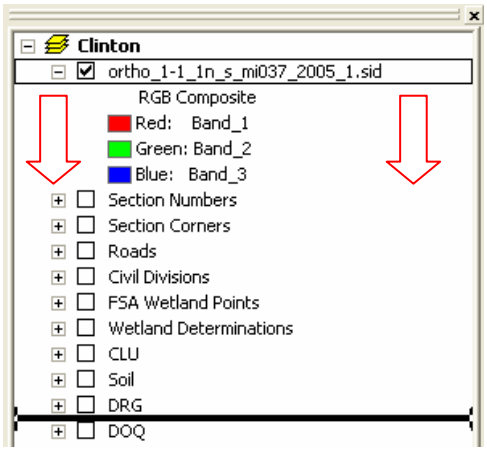
   (If you accidentally double-click the file name and expose the individual imagery bands, click the **Up One Level** button to return.)

4. Click **Add**



The selected image will be added as a new layer in the current map's Table of Contents (TOC).

Modifying the Table of Contents



1. Reposition the Layer

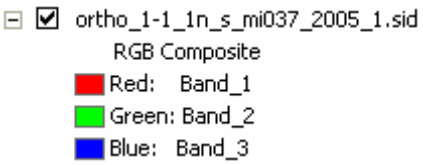
   By default, the new layer appears as the upper-most image in the TOC.

   To reposition the layer, click and hold on the layer name, then drag and drop it into the position identified by the black bar.

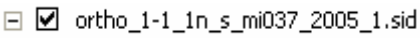
2. Collapse the Layer's Legend

   Clicking the -/+ box will hide/show the layer's legend.

Show Legend:



Hide Legend:



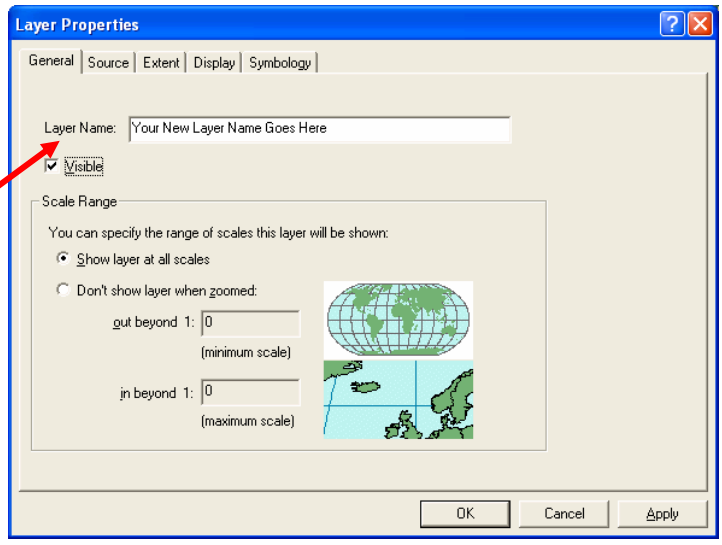
3. Rename the Layer

   The layer is automatically named the same as the data file it is based on. While this name conforms to the Geospatial File Naming Standard, it can be very cumbersome to work with.

(Method 1)

- Right-click on the layer name in the TOC and choose **Properties**.

- Under the **General** tab, enter a new name in the **Layer Name:** box and click **OK**.



OR

(Method 2)

Click on the layer name in the TOC once to highlight it, pause, and then click again to highlight the layer name text. Type in a new layer name and hit Enter.

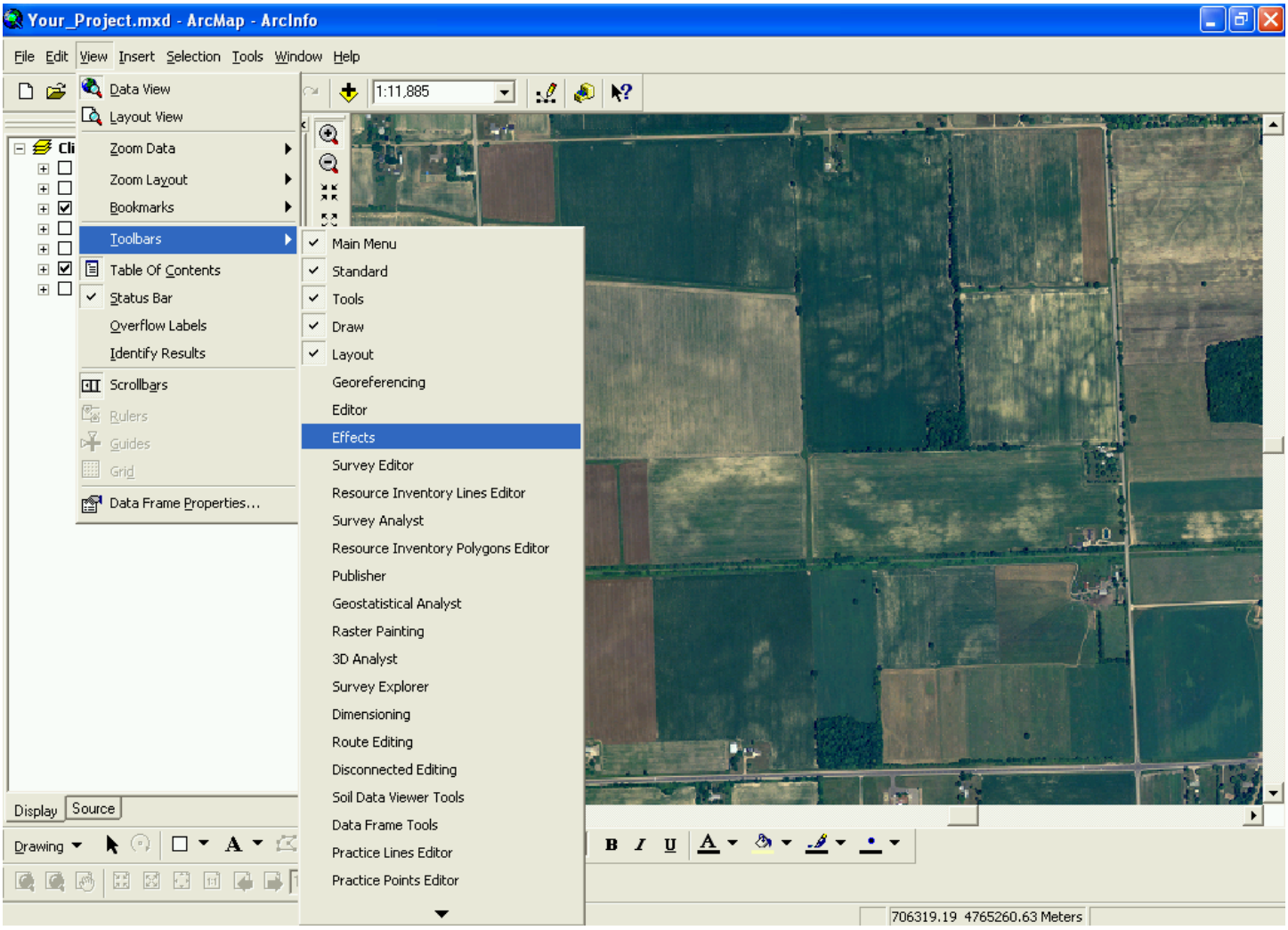
Adjusting Brightness and Contrast

As hardware and software vary from PC to PC, the appearance of the NAIP imagery will also vary on different computers. What appears clearly on one computer may appear “too dark” on another.

In addition, various types of geographic features may require widely different image display settings in order to be more easily identified by the user.

The simplest (and often most effective) option for enhancing image display is to adjust the layer’s Brightness and Contrast settings via the **Effects** toolbar.

1. Click **View**, **Toolbars** and scroll through the list to choose **Effects**.

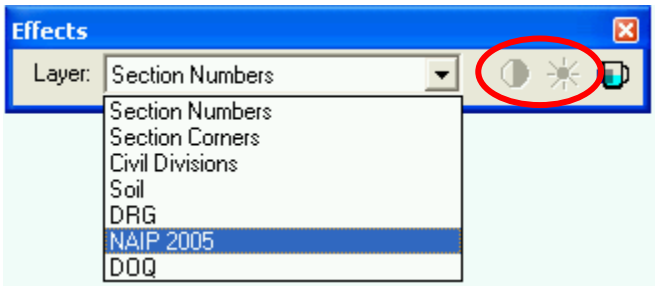


(continued on next page)

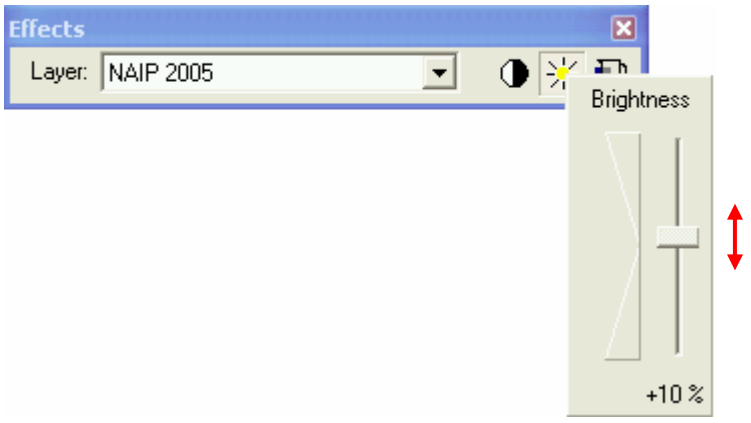
Adjusting Brightness and Contrast (continued)

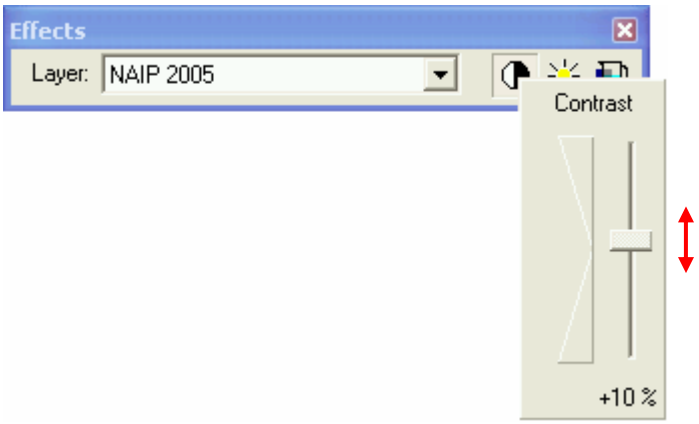
2. Drill down on the **Layer** list in the Effects toolbar and select your NAIP layer.

   The circle at the right shows the **Contrast** and **Brightness** buttons. These buttons will be "grayed out" until a raster layer is chosen from the **Layer** list.



3. To adjust the brightness and contrast settings, click the appropriate button and drag the slider up or down to the desired setting. The map display will refresh when the slider is released.





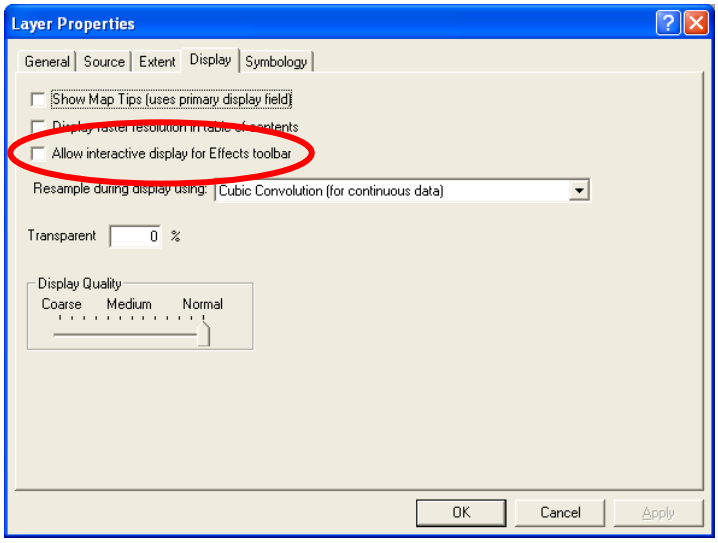
4. Continue to adjust the brightness and contrast settings as needed.

   The examples below illustrate a 20% increase in both brightness and contrast in an area covering approximately one section.

BEFORE

AFTER

Adjusting Brightness and Contrast (additional info)



- Optional Setting

  Under the **Display** tab of the layer's properties, users may choose to turn on the **Allow interactive display** option.

  When this option is activated, the map display refreshes as the brightness and contrast sliders are moved, not just when released.

  (May result in slow performance)

- Saving the Settings

  Current brightness and contrast settings of a layer reside within the MXD file and will be reapplied automatically when the MXD file is reopened after saving. The settings apply only to the raster layer within that particular project and do not affect the original image data.

- Rule of Thumb

  The interim 2005 MI NAIP data has a tendency to display a bit too darkly for most NRCS applications, and generally requires brightness and contrast increases of 10% to 20%.

- NRCS-MI Template Settings

  The brightness and contrast settings of NAIP layers in NRCS-MI county MXD templates have already been increased, but may require additional adjustments based on individual user preferences.

Data Quality Issues (Please report quality issues to Brent Stinson, NRCS-MI State GIS Specialist)

Two types of data quality issues may affect the usability of NAIP imagery:

1. Data Errors – Missing data, "shifted" data, uneven color, etc. Problems of this type can usually be corrected within the original data for redeployment.

2. Photographic Anomalies – Cloud cover, haze, shadows, etc. These problems are inherent in the data as originally collected and are much more difficult (if not impossible) to resolve.

The existing 1993/1998 DOQ imagery will be maintained on field servers as a "fall-back" alternative in case of critical problems with the 2005 NAIP imagery.

1 Meter vs. 2 Meter

The goal of the NAIP program is to provide 1 meter resolution orthoimagery every five years. In subsequent years, USDA will strive to acquire a 2 meter, non-ortho version to be used as a visual reference within FSA's compliance process. Since the 2 meter version is not true orthoimagery, it should not be used as a basis for heads-up digitizing.

Interim NAIP vs. Certified NAIP

The NAIP development process allows states to receive an interim, "as-is" version several months before the data has been thoroughly checked and approved for use as orthoimagery by FSA-APFO. This interim release is required by FSA to complete their compliance review process.

Users should be aware that the interim version may contain data errors, and could possibly exceed the horizontal accuracy standards defined for certified NAIP products. The interim version should not be considered "ortho-quality".

Interim 1 meter NAIP data will reside in the "f:\geodata\imagery\compliance_fsa", along with the 2 meter non-ortho versions. When approved as ortho-quality, the NAIP data will be relocated to "f:\geodata\ortho_imagery. For more information, please refer to the NRCS-MI GIS document "Service Center Geodata Structure", available on the NRCS-MI GIS web site.

For more information about the NAIP Imagery program, please refer to the NAIP home page at http://www.apfo.usda.gov/naip.html

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Michigan County FIPS Codes

Alcona	001
Alger	003
Allegan	005
Alpena	007
Antrim	009
Arenac	011
Baraga	013
Barry	015
Bay	017
Benzie	019
Berrien	021
Branch	023
Calhoun	025
Cass	027
Charlevoix	029
Cheboygan	031
Chippewa	033
Clare	035
Clinton	037
Crawford	039
Delta	041
Dickinson	043
Eaton	045
Emmet	047
Genesee	049
Gladwin	051
Gogebic	053
Grand Traverse	055
Gratiot	057
Hillsdale	059
Houghton	061
Huron	063
Ingham	065
Ionia	067
Iosco	069
Iron	071
Isabella	073
Jackson	075
Kalamazoo	077
Kalkaska	079
Kent	081
Keweenaw	083
Lake	085
Lapeer	087
Leelanau	089
Lenawee	091
Livingston	093
Luce	095
Mackinac	097
Macomb	099
Manistee	101
Marquette	103
Mason	105
Mecosta	107
Menominee	109
Midland	111
Missaukee	113
Monroe	115
Montcalm	117
Montmorency	119
Muskegon	121
Newaygo	123
Oakland	125
Oceana	127
Ogemaw	129
Ontonagon	131
Osceola	133
Oscoda	135
Otsego	137
Ottawa	139
Presque Isle	141
Roscommon	143
Saginaw	145
St Clair	147
St Joseph	149
Sanilac	151
Schoolcraft	153
Shiawassee	155
Tuscola	157
Van Buren	159
Washtenaw	161
Wayne	163
Wexford	165