

# Historic Photo Geographic Inventory

A Guide for Geocoding Library of Congress Photo Images.  
NYS Adirondack Park Agency GIS  
J. W. Barge - January 19, 2006

## Background

The Library of Congress Prints and Photographs Division maintains the Prints and Photographs Online Catalog containing over one million digital images. This national archive includes historic photos and print artwork which can be searched and viewed over the Internet. A search on the term 'Adirondack' returns 523 records which are mostly photos of landscapes from 1880 to 1915. These images are a valuable historic reference and may be made even more useful when linked to their geographic location. Images can be located using visual features in the photographs and the title or name given to each photograph. Using GIS, a point data layer can document the approximate observer location and link to the image, to summary information, and to the Online Catalog web record for selected images.

## Prints and Photographs Online Catalog Web Address

<http://www.loc.gov/rr/print/catalog.html>

## Adirondack Park Agency File Address

ArcMap Project: GIS\GISMasterData\Historic\HistoricPhoto.mxd  
Point Shapefile: GIS\GISMasterData\Historic\LOC\PhotoPoints.shp  
Image Files: GIS\GISMasterData\Historic\LOC\Photo\

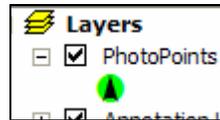
## PhotoPoints Shapefile Attributes

Id	Long, 6, 6, 0	Numeric ID (not used)
Name	String, 50	Published name or title of image from LOC record
URL	String, 100	Online Catalog web record address
Photo	String, 50	Directory path to local image file
PhotoDate	String, 15	Date, year or range photo was taken
Angle_NAz	Short, 3, 3, 0	Observer direction geographic clockwise from north azimuth
Loc_Acc	Short, 2, 2, 0	Point location accuracy (0 = unknown; 1 = field verified; 2 = confident based on photo; 3 = within 100m or neighborhood; 4 = within 1km or hamlet; 5 = within 10km or town; 6 = within 50km or county; 7 = within 100km or state region)
Angle_Acc	Short, 2, 2, 0	Observer direction angle accuracy (0 = unknown; 1 = field verified; 2 = confident based on photo; 3 = N,S,E,W quadrant estimate)

## Procedures to Query the Photo Inventory in ArcMap

(Before starting ArcMap, set up an operating system environment variable that will enable photo points to link to photo images on your system. See “Setting an Environment Variable in Windows Operating System” below for details.)

1. Start ArcMap and open the project “HistoricPhoto.mxd”
2. PhotoPoints shapefile is the top layer in the table of contents. Each point represents the location a photograph was taken from. PhotoPoints are symbolized by a black arrow inside a green circle. The arrow points in the direction the photo was taken.



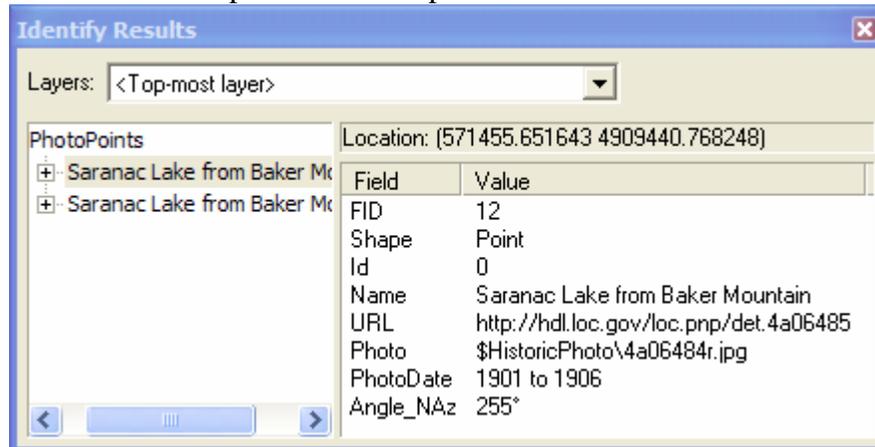
**PhotoPoint layer in the table of contents.**

3. Magnify the map to an area of interest such as Saranac Lake.
4. When you mouse over a PhotoPoint on the map, the name of the photo associated with that point appears.



**Mouse over a PhotoPoint to view the point name.**

5. To identify a point, select the Identify Tool  and click on a photo point. The Identify Results window displays the attributes for the selected point. The photo name, web URL, photo file location, photo date, and observer angle are listed. More than one photo point may be within the search radius of the Identify tool. All points will be listed in the left portion of the Identify Results window. Click items in this list to change the values in the right portion of the Results window and flash the selected point on the map.



**Identify Results window**

6. To visit the Library of Congress web record for the identified point, click on the value listed for the URL field in the Identify Results window. The value will look something like <http://hdl.loc.gov/loc.pnp/det.4a23208>. When you mouse over the URL value, the cursor should change to a pointing hand. If connected to the Internet, the Library of Congress photo record will appear in your default browser.
7. To view the photo image on your system, click on the value listed for the Photo field in the Identify Results window. The value will look something like \$HistoricPhoto\4a23208r.jpg. When you mouse over the Photo value, the cursor should change to a pointing hand. The photo image will display in your default JPEG image viewing application.
8. To find a photo by its name, click the Find tool  which looks like binoculars. Click the Features tab. Enter the value to Find. Select PhotoPoints as the “In:” layer. Click Find. Objects found will be listed in the lower portion of the Find window. Right click on a found object to zoom to or identify the results.

#### Procedures to Edit the Photo Inventory in ArcMap

Start an Edit Session:

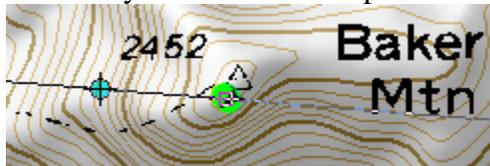
1. Start ArcMap and open the project “HistoricPhoto.mxd”
2. PhotoPoints shapefile is the top layer in the table of contents. Each point represents the location a photograph was taken from. PhotoPoints are symbolized by a black arrow inside a green circle. The arrow points in the direction the photo was taken.
3. Magnify the map to an area of interest.
4. Start an editing session using the folder that contains PhotoPoints layer.

To Add a new point:

1. Set editor Task to Create New Feature and Target to PhotoPoints.
2. Open the Prints and Photographs Online Catalog website and find a photo you want to map. Use the title of the photo and details in the larger image view to approximate where the photo was taken from.
3. Zoom and pan the map to the location the photo was taken from. Map scale should be appropriate for data entry accuracy.
4. Click the Sketch Tool  which looks like a pencil. Using this tool, click on the map to enter a new point where the photo was taken.
5. With the new point still selected, click the Attributes button  on the Editor menu. The attributes window opens for data entry for the new point.
6. Using the LOC Online Catalog web page for the photo, copy and paste the title (exclude brackets) into the Name field in the Attribute window. Right click in the blank value area next to Name and choose paste.
7. Using the Digital ID on the web page, copy and paste the http address into the URL attribute field. For example, copy <http://hdl.loc.gov/loc.pnp/det.4a18877>
8. The value of Photo should be entered as

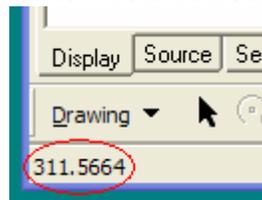
\$HistoricPhoto\\*r.jpg where \* equals the characters after the last period in the URL. Using the example URL above, you would type \$HistoricPhoto\4a18877r.jpg

9. PhotoDate is copied from Created/Published date on the web page. Enter “between 1905 and 1920” as “1905 to 1920”
10. Angle\_NAz records the photograph direction measured clockwise from true north in degrees. (HistoricPhoto.mxd project has Editing Options>Units>Angular Units>Direction Type set to North Azimuth. The default setting is Polar.)
  - a. Click the down arrow next to the Sketch Tool  and select the Direction-Distance Tool . If this tool appears grayed out, reset your edit task to Create New Feature.
  - b. Click on the new photo point on the map. A direction line will appear as you move the mouse away from the clicked point.



Using Direction-Distance tool to obtain apparent camera angle.

- c. Using features in the photo, orient the direction line on the map to line up with the center of the photo image which is the direction the camera was facing.
- d. In the lower left corner of ArcMap the current angle value of the direction line is shown. Note the value when the line matches the camera direction and record this value (round to whole number) in Angle\_NAz attribute.



Angle value in lower left corner of ArcMap

- e. Do Not click the map with the Direction-Distance Tool. Hit Escape or change back to the Sketch Tool.
11. Save the thumbnail and larger photo images to the same local network folder that \$HistoricPhoto points to. The thumbnail is a GIF and the larger image is a JPG.
12. Save your edits and exit when done.

To Edit Existing Points:

1. Set editor Task to Modify Feature and Target to PhotoPoints.
2. Select the Edit Tool .
3. Click on the point to be edited.
4. Open the Attribute window from the Editor toolbar .

5. Click the field values to be changed in the Attribute window.
6. Left click on the point to drag it to a new location.
7. Press Delete to delete the selected point.
8. Save your edits and exit when done.

### Setting an Environment Variable in Windows Operating System

An environment variable is used in the PhotoPoints shapefile to reference where images are stored on the local file system. The shapefile attribute “Photo” uses the variable \$HistoricPhoto to insert the appropriate directory path.

1. Click Start > Control Panel > System for Windows XP. For Windows 2000, click Start > Settings > Control Panel > System.
2. Click the Advanced tab in the System Properties window
3. Click Environment Variables
4. In the Environment Variables window, create a New variable for your User variable account. This is the “New” button in the top half of the window.
5. In the New User Variable window, enter “HistoricPhoto” for Variable name. For Variable value, enter the directory path to the photos on your system. For example, you might enter “D:\Historic\LOC\photos” for the variable value. Do not enter quotation marks.
6. Click OK in New User Variable window
7. Click OK in Environment Variables window
8. Click OK in System Properties window and exit from the Control Panel.

Example of PhotoPoint query results in ArcMap:

