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How to Use Raster Images from Microsoft TerraServer in TerraSync

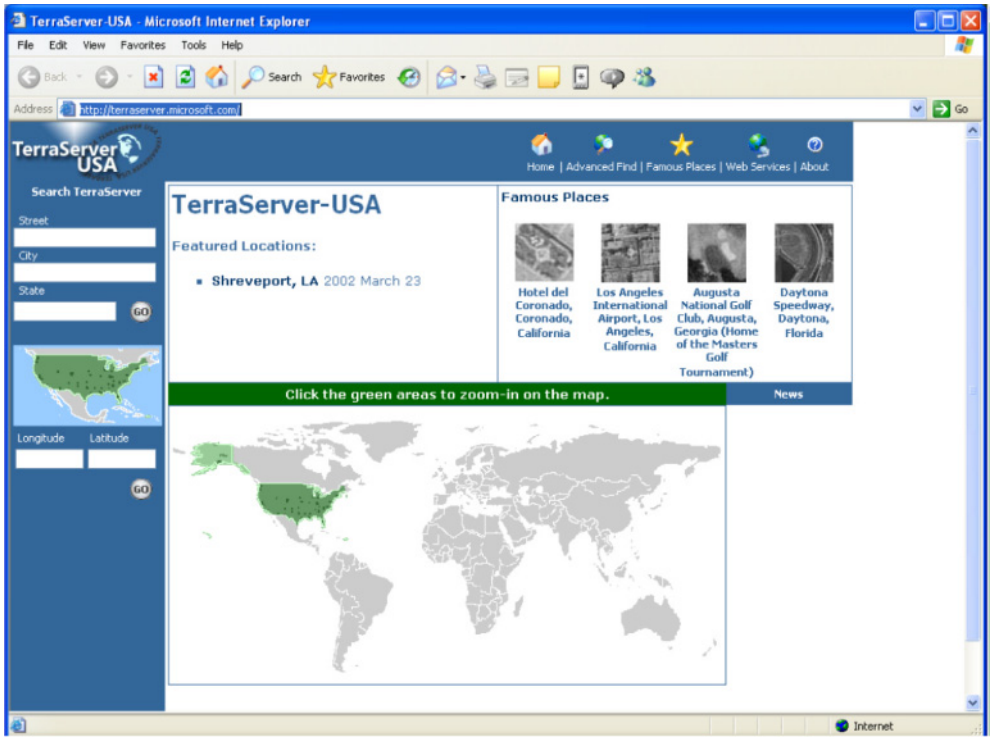
There are several free sources of raster images available on the Internet. The images can be used to enhance a GPS classroom experience for your students, to shape your customer's first impression of the Trimble Mapping System, or for general use in the field. In any case, we recommend that you take advantage of this free and easy-to-use option when showing or using the GeoXH, GeoXT or GeoXM with TerraSync Professional.

This paper describes the necessary steps required to accomplish this task using the Microsoft TerraServer Web site.

Microsoft TerraServer is a Web site that provides free, monochrome, aerial imagery virtually anywhere in the 49 United States (excluding Hawaii), and color imagery to .25 meter pixels in most highly populated cities. It also serves up 7.5 minute USGS Quadrangle maps.

There are several different ways to search and find the image you are looking for. These include Address, Place, Geographic and Famous Places.

You will find the Microsoft TerraServer Web site at: http://terraserver.microsoft.com/



1. On the toolbar at the upper right, click on Advanced Find. We recommend that you select one of the following ways to find the image: Address, Place, DMS, or Decimal Degrees. You can type the name of a city with the Place search or enter the actual geographic coordinates with the DMS search.

2. If you don't have the coordinates for the project site, you can use another mapping software like Microsoft's Trips and Streets or MapQuest to orient yourself to prepare your image search. This allows you to perform an address search in the alternate software or Internet site, then visually compare the two displays. You can also use an alternate software or Internet source to determine the geographic coordinates, then perform a DMS search in TerraServer.

3. Once the image appears, you can use the zoom tool at the left of the displayed image, or your mouse to pan, in order to orient the image exactly the way you would like it to appear on your datalogger screen.

   Note: If you are not exactly sure where the field session will take place, make sure to frame and save several images representing various geographical areas to insure you will not "walk off the image." If you are using a Trimble GeoCE product, we recommend that you select the "largest square" Size tool, located at the upper left corner of the image frame. This is the best size to use in order to "fill" the screen of your GPS unit.

5. When you are ready to download the image, click on the Download icon located above the image in the TerraServer tool bar. The image will reload and reappear exactly as framed.

6. Simply right-click on the image and select "Save Picture As.." We recommend that you save it as a JPG file, rather than a BMP file.

7. Be aware of where you save the image by noting the image name and folder.

8. Once the image has been saved, click on the "World File" link located at the upper right corner of the image frame.

9. A new window will appear revealing a six-line text file. This file contains the size of the pixel in both x and y (scale factor), the rotation for both row and column, and the horizontal coordinates for the upper left corner of the image in the map units.

10. Select File, then Save As. It's important to use the same file name as the image, but with a different extension. The world file extension for a JPG file is JGW. Type both the file name and extension in the File Name field. Following are the world file extensions for some common image files:

Image filename suffix	World filename suffix
JPG	JGW
TIF	TFW
BMP	WLD
SID	SDW
GIF	GFW

11. The default File of Type for this process is HTML. Because you have saved the world file in this format, it's important that you remove some extra characters before the file is usable by a coordinate-based software like Pathfinder Office, ArcView or TerraSync.

💣 Warning: If you save the world file under "File of Type" as a TXT file, you will still have to add the appropriate world file extension to the file name.

💣 Warning: If you are not showing all file extensions, which is the default setting for WindowsXP, the file extension may be shown correctly, but it may actually look like this: *image.txt.jgw*. This file name will not be recognized by your GIS software

🗺 Note: To turn file extensions on in WindowsXP, go to Windows Explorer. Select Tools from the pull down menu, then select Folder Options. Select the View tab. Scroll down to "Hide extensions for known file types," and uncheck that box. Now all your files will display extensions. This will allow you to see the entirety of all your file names and extensions.

12. Open Windows Explorer. Locate the world file and double-click on it. You can see that there are many extra characters that were saved. You must remove all of them except for the six lines of text. The final file will have the following format::

```
1.000000
0.000000
0.000000
-1.000000
482800.000000
5022600.000000
```

🗺 Note: It's important that you associate the World File with WordPad in your computer. To do this, simply go to Windows Explorer, browse to the folder containing the World File, and double-click the file. A dialog will appear asking you what you want to do. Make sure to choose "Select the program from a list" and pick WordPad. This will allow you to see the text file (as above) and will reveal any extra characters you may have therein.

💣 Warning: It's very important that you don't have any extra characters in this file as show above. Make sure there are no extra spaces after any line, or before each line. Make sure there are no carriage returns after the last line, etc.

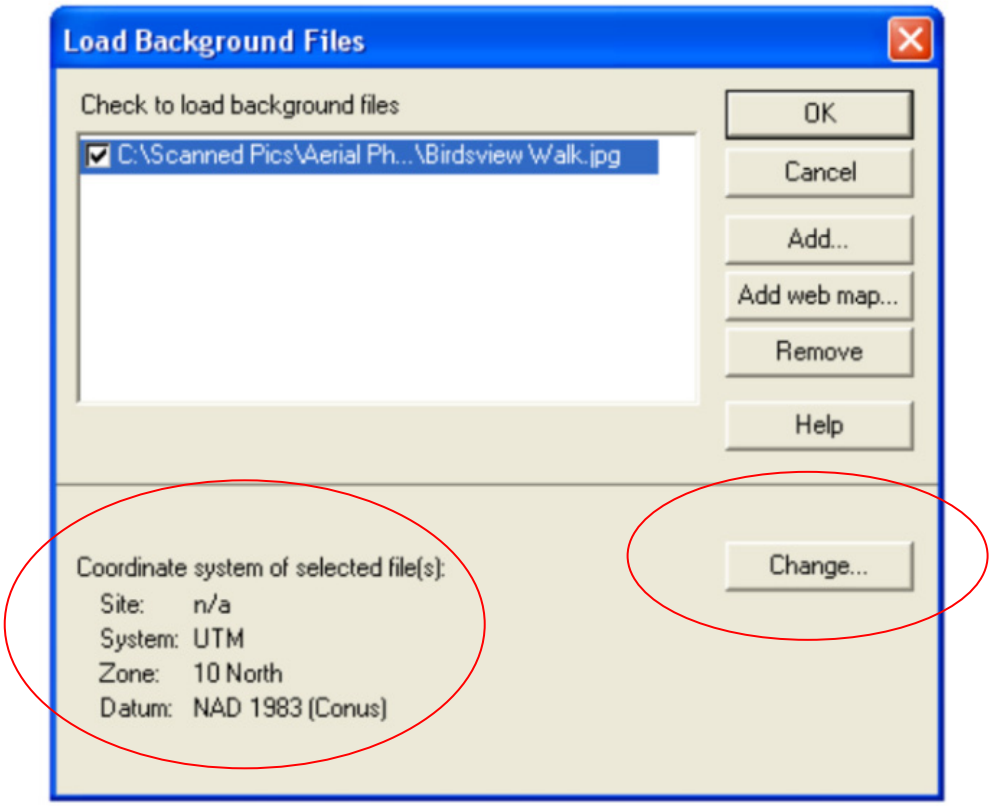
13. Select File, then Save.

🗺 Note: All image files downloaded from the Microsoft TerraServer Web site are registered the UTM (Universal Transverse Mercator) coordinate system, the NAD-83 datum, and the appropriate Zone, in Meters. To find the zone that any particular image is in, click on the Info icon in the toolbar while your image is displayed in TerraServer. It will reveal metadata about the image including the UTM Zone.

14. You are now ready to send the image file and world file into TerraSync through the Pathfinder Office Data Transfer Utility.

🗹 Note: When using the Data Transfer Utility, you won't see the world file listed when you select the image file for transfer. Rest assured, however, that it will be sent to the correct folder on your WindowsCE device.

15. It's important that you select the correct coordinate system, datum and coordinate units, that match the image file registration, under the Setup menu in TerraSync Professional software. If this is not done, the image will not display. A warning will appear in the TerraSync Map window when attempting to load an image file that does not match these settings. This rule only applies to raster files. It does not apply to vector files.



If you have any questions about displaying various file types in TerraSync Professional, please don't hesitate to call.

👁 We offer Priority Technical Support for $595. per year. This allows the user unlimited phone calls through an 800 number to qualified technical support personnel.

To find out more, please call Jim Lahm at (503) 624-6133 or our home office at (208) 324-8006. Email addresses: jim@elecdata.com or elecdata@elecdata.com.