Mapping GLOBE Visualizations: Creating A Bioregion View

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You can create geo-referenced GLOBE images of any selected region for any day or any topic you choose. For instance, you can select a view of the Great Lakes Bioregion or the Southwest Desert Bioregion. Below are several steps to perform to do this.

This exercise is a companion to the discussions in GLREAD1 and GLREAD2 (Mapping GLOBE Visualizations). Those files are components in a larger "how-to" exercise designed to help you download and map GLOBE world visualizations. Those files can be downloaded from http://www.esri.com/arclessons. It is highly recommended that you download, study, and use the global instructions and practice files in preparation for creating bioregion maps using GLBREAD3.

Steps:

1. Capture the GLOBE image(s) of your bioregion of choice.

    A. Go to http://www.globe.gov and navigate to the Visualizations page, followed by the GLOBE Maps page.

    B. Here, set "Map Size" to LARGE (a pull-down menu on the left below the map image).

    C. At the "Data Source" pull-down menu (also below the map image), select SATELLITE AND MODEL.

    D. Locate the <Map Options> menu

    E. Select <Enhanced Map Controls>.

    F. Under <option 2> enter the latitude and longitude of the center of the region you wish to view. [Note: West longitude and South Latitude are expressed as negative numbers, i.e. –82 = 82 W. Longitude]

    G. Set the zoom to an appropriate value and redraw the map [i.e. Great Lakes works at 12X; Australia at 2X]

    H. This will bring up a map image centered on the region of interest.

    I. Capture the map image using a right click (or on a Macintosh, hold your cursor over the image). This allows you to save the image to your hard drive as an image file.

    J. Place your images in a common directory such as GLOBE or IMAGES. This way you will know where to find existing files and to store others.

    K. To select other topics, select a new one from the "Datasets for this map type" pull-down menu, then click the "Redraw Map" button.

L. Capture a map image using a right click (or on a Macintosh, hold your cursor over the image). This allows you to save the image to your hard drive as an image file.

M. Place your images in a common directory such as GLOBE or IMAGES. This way you will know where to find existing files and to store others.

2. Convert captured image into another graphics format.

A. Using graphics software such as Photo Editor, Paint Shop Pro, PhotoShop, etc. convert the file to either of the following types:
--uncompressed TIF or BMP
--JPG (Requires use of the ArcView JPEG extension that is not available for use in ArcVoyager SE.)

B. Name this file something meaningful (e.g., MXTM0125.JPG for maximum temperature on January 25) and deposit it in a meaningful directory (such as GIS\DATA\IMAGES).

3. Creating the geo-referencing master file (Worldfile) for your bioregion

A. In order to align your bioregion image in ArcView with other data layers such as roads, cities, etc. you need to georeference the image. Review GLBread2 for a more detailed explanation of worldfiles and the georeferencing process.

B. Create a shapefile that matches some distinct feature in the image you wish to georeference. For example, the Florida peninsula was used to georeference an image of the southeastern US. A shapefile of the Australian continent was used to georeference GLOBE images on the continental scale.

C. Download ESRI K-12 SchoolTools at: http://www.esri.com/industries/k-12/moretool.html. Follow the simple directions in the <register.txt > file to create the needed world file. Use your previously converted GLOBE image when SchoolTools asks for an image and your previously defined shapefile when the program asks for a shapefile.

D. You may now use the world file (refer to GLBread2) to align all the images you wish to download using the same central latitude/longitude. Rename the file created by SchoolTools MASTER.FLW and follow the steps below.

4. Add the geo-referencing file to create a pair of files that work together.

A. From the MASTER directory inside GLOBEIMG, copy the file MASTER.FLW and place it in the directory with your new image file. This file is a master geo-referencing file (also known as the world file) to use with all the large-format images you retrieve from the GLOBE home page.

B. Rename this image to match the file name of the new image. For instance, if the image is MXTM0125.JPG, make the MASTER.FLW read MXTM0125.FLW.

C. Change the file extension of MXTM0125.FLW to correspond to the graphics format of your image.
--For a JPG, make the geo-referencing file extension read JGW.
--For a TIF, make the geo-referencing file read TFW.
--For a BMP, it should be BPW.

(NOTE: Notice that the first and last characters of the image's file extension become the first and second characters of the geo-referencing file's file extension. Also, notice that the last character of the geo-referencing file's extension is always W. The naming of the FLW extension of the MASTER.FLW was done on purpose as a renaming hint.)

5. Map the image(s) and other data inside ArcView or ArcVoyager.

A. Launch ArcView and open a new View.

B. Add your new geo-referenced image as an IMAGE theme. NOTE: If the image is a JPEG, you must load ArcView's JPEG extension by selecting it from extensions listing found in the FILE menu, under EXTENSIONS.

C. You may now add additional layers of information such as roads, cities, rivers, etc. on top of the image layer.