# LBA Regional Land Cover from AVHRR, 1-Degree, 1987 (DeFries and Townshend)

Description:

This data set consists of a LBA study area subset of the UMD 1 deg Global Land Cover product in ASCII GRID format.

The University of Maryland (UMD) 1 degree Global Land Cover product was compiled by researchers at the Laboratory for Global Remote Sensing Studies (LGRSS) at UMD. The product is based on Advanced Very High Resolution Radiometer (AVHRR) maximum, monthly composites for 1987 of Normalized Difference Vegetation Index (NDVI) values at approximately 8 km resolution, averaged to one by one degree resolution. This coarse resolution data set was used as the basis for a supervised classification of eleven cover types that broadly represent the major biomes of the world. Because of missing values at high latitudes, the Pathfinder AVHRR data set for 1987 for summer monthly NDVI and red reflectance values were used to distinguish the following cover types: tundra, high latitude deciduous forest and woodland, coniferous evergreen forest and woodland.

The 1 degree global land cover product is available for download from the Global Land Cover Facility (GLCF) web site. The data are available as a global coverage in both binary and ASCII format. Additional information and references on this data set can be found at the GLCF web site as well as at the LGRSS web site (link provided at the GLCF web site) and in the readme files found along with the data.
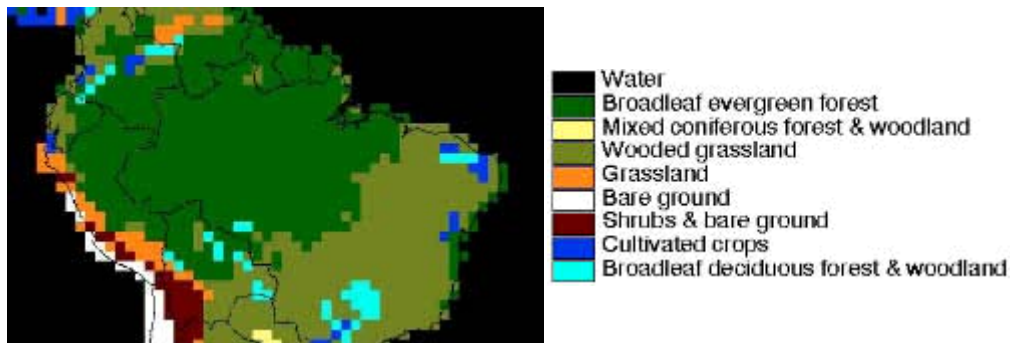
This README file contains information regarding:
1. Data format
2. Procedure used to create the Amazon subset
3. Legend and data source

DATA FORMAT

The downloadable file, glcf1deg.dat.gz, is a UNIX compressed file

The data file is in ASCII GRID format for ArcInfo. The file contains a single ASCII array with integer values. Data values range from 0 to 12. Coordinates listed below are in decimal degrees.

Rows 35
Columns 55
UpLeftX -85
UpLeftY 10
LoRightX -30
LoRightY -25
cellsize 1
Projection geographic

The ASCII file consists of header information containing a set of keywords, followed by cell values in row-major order. The file format is

<NCOLS xxx>
<NROWS xxx>
<XLLCORNER xxx>
<YLLCORNER xxx>
<CELLSIZE xxx>
{NODATA_VALUE xxx}
row 1
row 2
.
.
.
row n

where xxx is a number, and the keyword NODATA_VALUE is optional and defaults to -9999. Row 1 of the data is at the top of the grid, row 2 is just under row 1 and so on. The end of each row of data from the grid is terminated with a carriage return in the file.

Although the nodata_value is set to -9999 in the header portion of the glcf1deg.dat file, that value does not actually occur in the data set.

To import this file into ArcInfo use the following command at an ARC prompt:

ASCIIGRID <in_ascii_file> <out_grid> {INT | FLOAT}

Arguments
<in_ascii_file> - the ASCII file to be converted.
<out_grid> - the name of the grid to be created.
{INT | FLOAT} - the data type of the output grid.
INT - an integer grid will be created.
FLOAT - a floating-point grid will be created.

PROCEDURE USED TO CREATE THE AMAZON SUBSET

The original data set was imported into ArcInfo using the ASCIIGRID command. Using GRID (a raster- or cell-based geoprocessing toolbox that is integrated with ArcInfo) the SETWINDOW command was used to define the subarea of interest. This subarea was defined by identifying the bounding coordinates as follows:

x_min -85 y_min -25 x_max -30 y_max 10

The "snap_grid" option of the SETWINDOW command was used. This snaps the lower-left corner of the specified window to the lower-left corner of the nearest cell in the snap_grid and snaps the upper-right corner of the specified window to the upper-right corner of the nearest cell in the snap_grid. In this case the snap_grid is the original data grid. The purpose of this is to ensure the proper registration of the newly set analysis window. The command format used is as follows:

SETWINDOW x_min y_min x_max y_max original_grid

Once the window was set, creating the new grid was simply a matter of setting the new subset grid equal to the original grid.

subset_grid = original_grid

An ASCII array was created from the new subset grid using the GRID command GRIDASCII.

file.dat = GRIDASCII(subset_grid)

LEGEND & ADDITIONAL SOURCES OF INFORMATION

The following legend is used in the original data set:

0 Water
1 Broadleaf evergreen forest
2 Coniferous evergreen forest and woodland
3 High latitude deciduous forest and woodland
4 Tundra
5 Mixed coniferous forest and woodland
6 Wooded grassland
7 Grassland
8 Bare ground
9 Shrubs and bare ground
10 Cultivated crops
11 Broadleaf deciduous forest and woodland
12 Data unavailable

Although not all of these categories may be represented in the subset of the data, the original legend has been retained.

The original data and documentation can be obtained from the Global Land Cover Facility at the University of Maryland: http://glcf.umiacs.umd.edu.