LBA Regional Land Cover from AVHRR, 1-km, Version 1.2 (IGBP)

Description:

The data set consists of a LBA study area subset of the IGBP DISCover Data Set. The DISCover data set is one data set contained within the Global Land Cover Characteristics Data Base.

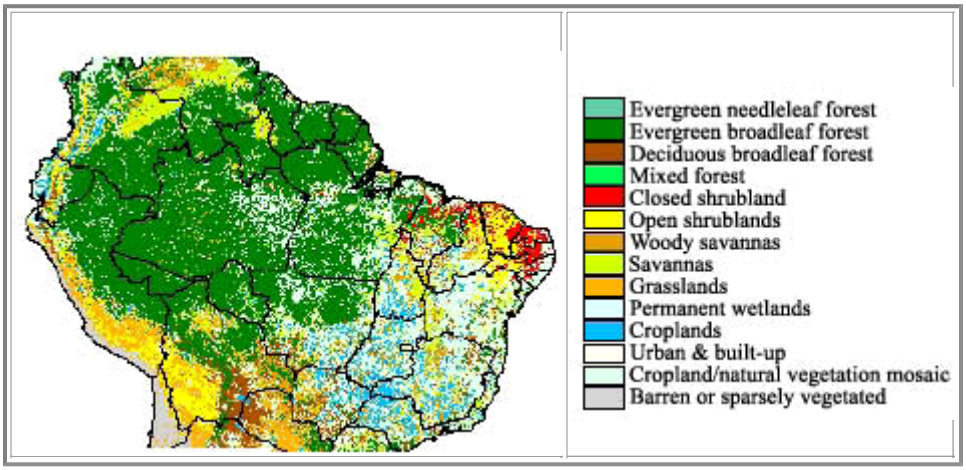
The U.S. Geological Survey (USGS), the University of Nebraska-Lincoln (UNL), and the European Commission's Joint Research Centre (JRC) have generated a 1-km resolution global land cover characteristics data base for use in a wide range of environmental research and modeling applications. The global land cover characteristics data base was developed on a continent-by-continent basis. All continental data bases share the same map projections (Interrupted Goode Homolosine and Lambert Azimuthal Equal Area), have 1-km nominal spatial resolution, and are based on 1-km Advanced Very High Resolution Radiometer (AVHRR) data spanning April 1992 through March 1993. Each data base contains unique elements based on the geographic aspects of the specific continent. In addition, a core set of derived thematic maps produced through the aggregation of seasonal land cover regions are included in each continental data base. The continental data bases are combined to make six global data sets, each representing a different landscape based on a particular classification legend. The following derived data sets are included in the global land cover data base:

* Global Ecosystems (Olson, 1994a, 1994b)
* IGBP Land Cover Classification (Belward, 1996)
* U.S. Geological Survey Land Use/Land Cover System(Anderson & others, 1976)
* Simple Biosphere Model (Sellers and others, 1986)
* Simple Biosphere 2 Model (Sellers and others, 1996)
* Biosphere-Atmosphere Transfer Scheme (Dickinson and others, 1986)

The legends for each of these derived data sets can be found in the documentation accompanying the data.

For a description of the methodology for the global data base, see the global readme file found under the EROS Data Center DAAC home page (http://edcwww.cr.usgs.gov/landdaac/glcc/glcc.html).

LBA Subet of the IGBP DISCover Land Cover Data Set



IGBP DISCover Legend

1	Evergreen Needleleaf Forest
2	Evergreen Broadleaf Forest
3	Deciduous Needleleaf Forest
4	Deciduous Broadleaf Forest
5	Mixed Forest
6	Closed Shrublands
7	Open Shrublands
8	Woody Savannas
9	Savannas
10	Grasslands
11	Permanent Wetlands
12	Croplands
13	Urban and Built-Up
14	Cropland/Natural Vegetation Mosaic
15	Snow and Ice
16	Barren or Sparsely Vegetated
17	Water Bodies

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, discover.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 1 to 17. Coordinates listed below are in decimal degrees.

Rows
Columns
UpLeftX -0.850033E+02
UpLeftY 9.999337934438
LoRightX -0.300061E+02
LoRightY -0.250014E+02
cellsize 0.938358E-02
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 that value does not actually occur in the data. 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 for South America was provided by the data originator in a binary raster format in Lambert Azimuthal Equal Area projection.

The file was imported into ArcInfo and converted to a grid using the IMAGEGRID command. More information on how to do this is included in the on-line documentation for the data set (http://edcwww.cr.usgs.gov/landdaac/glcc/technote.html).

After converting the image to a grid, it was found that there were cells on the edges of the grid with values of 0. This value is not defined in the legend and the cells in which it occurred were clearly not over the mainland. Those cells were reclassified as 17 corresponding to water bodies in the legend.

Once the data was in ArcInfo grid format, the command PROJECT was used to reproject from the original Lambert Azimuthal Equal Area projection to a geographic projection using the georefrencing information given in the on-line documentation:

units: meters
Radius of sphere of reference: 6370997
longitude of center of projection: -60 00 00
Latitude of center of projection: -15 00 00
False easting: 0.0
False northing: 0.0

Due to the reprojection, some areas in the resulting geographic grid contained no data values. Since these cells were also on the edges of the grid and not corresponding to land points on the main land they were set to a value of 17.

The reprojected grid was then subset. 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 was the grid in geographic projection. 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 is the legend for the IGBP DISCover data set:

1 Evergreen Needleleaf Forest
2 Evergreen Broadleaf Forest
3 Deciduous Needleleaf Forest
4 Deciduous Broadleaf Forest
5 Mixed Forest
6 Closed Shrublands
7 Open Shrublands
8 Woody Savannas
9 Savannas
10 Grasslands
11 Permanent Wetlands
12 Croplands
13 Urban and Built-Up
14 Cropland/Natural Vegetation Mosaic
15 Snow and Ice
16 Barren or Sparsely Vegetated
17 Water Bodies

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 through the Earth Resources Observation System Data Center (EDC) Distributed Active Archive Center (DAAC) World Wide Web site: http://edcwww.cr.usgs.gov/landdaac/glcc/glcc.html