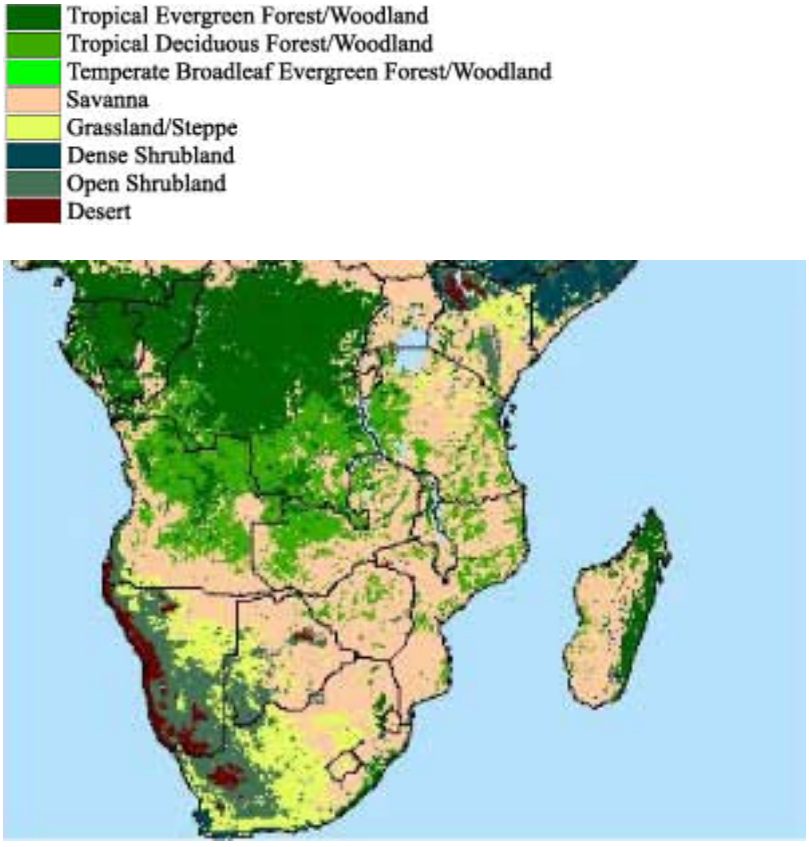
SAFARI 2000 Potential Vegetation, 5-Min (Ramankutty and Foley)

Summary:

The data set consists of a southern Africa subset of the 5min resolution Global Potential Vegetation data set developed by Navin Ramankutty and Jon Foley at the University of Wisconsin. Data are available in both ASCII GRID and binary image file formats.

The original map was derived at a 5min resolution and contains natural vegetation classified into 15 types. This data set is derived mainly from the DISCover land cover data set, with the regions dominated by land use filled using the vegetation data set of Haxeltine and Prentice (1996). The data set represents the world's potential vegetation (i.e., vegetation that would most likely exist now in the absence of human activities), and not necessarily natural pre-settlement vegetation. This is because human activities such as fire suppression have modified the stages of succession at which vegetation communities exist.

Potential Vegetation Types:



The s2k_potveg.dat.gz file contains a subset of the 5min resolution Global Potential Vegetation Data developed by Navin Ramankutty and Jonathan Foley at the University of Wisconsin. The subset is for the southern Africa.

This README file contains information regarding:
1. Data format
2. Procedure used to create the southern Africa subset
3. Legend and data source

DATA FORMAT

The downloadable file, s2k_potveg.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 14 and the nodata value is -9999. Coordinates listed below are in decimal degrees.

Rows 480
Columns 660
UpLeftX 5
UpLeftY -35
LoRightX 60
LoRightY 5
cellsize 0.083333336
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.

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.

Binary File Information

The ASCII data file has also been converted into a binary image file that can be viewed in any standard image viewing package. The file is a single-byte image, no header, 660 columns by 480 rows. Missing data (ASCII -9999) have been converted to the maximum value of 255.

PROCEDURE USED TO CREATE THE SOUTH AFRICA SUBSET

The data set was provided by the data originator as an ArcInfo grid. 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 5 y_min -35 x_max 60 y_max 5

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 for the 15 vegetation types contained in the original data set:

1 Tropical Evergreen Forest/Woodland
2 Tropical Deciduous Forest/Woodland
3 Temperate Broadleaf Evergreen Forest/Woodland
4 Temperate Needleleaf Evergreen Forest/Woodland
5 Temperate Deciduous Forest/Woodland
6 Boreal Evergreen Forest/Woodland
7 Boreal Deciduous Forest/Woodland
8 Evergreen/Deciduous Mixed Forest/Woodland
9 Savanna
10 Grassland/Steppe
11 Dense Shrubland
12 Open Shrubland
13 Tundra
14 Desert
15 Polar Desert/Rock/Ice

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 anonymous ftp. Instructions for ftping can be found at the Center for Sustainability and the Global Environment (SAGE) web site at the University of Wisconsin: http://sage.meteor.wisc.edu/pages/datamodels.html.

Haxeltine, A., and I.C. Prentice, 1996: BIOME3: An equilibrium terrestrial biosphere model based on ecophysiological constraints, resource availability, and competition among plant functional types. Global Biogeochemical Cycles, 10, 693 - 709.

ORIGINAL DATA SET CITATION

Ramankutty, Navin and Jonathan A. Foley. 1999. Global Potential Vegetation Data. Climate, People, and Environment Program, University of Wisconsin, Madison, Wisconsin, U.S.A. Available on-line at http://cpep.meteor.wisc.edu/pages/available.html