LBA Regional Derived Soil Properties, 0.5-Deg (ISRIC-WISE)

The isric.tar.gz file contains a subset of the ISRIC-WISE Global Data Set of Derived Soil Properties on a 0.5 x 0.5 Degree Grid (Version 1.0). The subset is
for the LBA-Ecology study area.

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, isric.tar.gz, is a UNIX compressed tar file. Once the file is untarred there are 6 separate files:

1. wise_cac.dat --> soil carbonate carbon density (0-100 cm)
2. wise_ph1.dat --> topsoil pH (0-30cm)
3. wise_ph2.dat --> subsoil pH (30-100cm)
4. wise_sc1.dat --> soil organic carbon density (0-30cm)
5. wise_sc2.dat --> soil organic carbon density (0-100cm)
6. wise_awc.dat --> soil moisture retention (0-100 cm)

The data files are in ASCII Grid format for ArcInfo. Each file contains a single ASCII array with integer values. Coordinates listed below
are in decimal degrees.

Rows 70
Columns 110
UpLeftX -85
UpLeftY 10
LoRightX -30
LoRightY -25
cellsize 0.5
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 data files 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 were provided as raster image files. The files were imported
into ArcInfo and converted to grids using the IMAGEGRID 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 legends are used in the original data:

****wise_cac.dat & wise_sc1.dat & wise_sc2.dat****

0: Background
1: 0-4 kg C m-2
2: 4-8 kg C m-2
3: 8-12 kg C m-2
4: 12-16 kg C m-2
5: 16-24 kg C m-2
6: 24-36 kg C m-2
7: 36-48 kg C m-2
8: >48 kg C m-2
9: Glaciers
10: Oceans & Inland waters

****wise_ph1.dat & wise_ph2.dat****
0: Background
1: pH <= 5.5
2: 5.5<pH<=7.3
3: 7.3<pH,+8.5
4: 8.5<pH
5: 4.0<pH<=8.5 Complex unit
6: Glaciers
7: Oceans

**** wise_awc.dat****
0: Background
1: T<=60mm/m (>66% of grid;mm m-1)
2: 60<T<=90   (>66% of grid;mm m-1)
3: 90<T<=120   (>66% of grid;mm m-1)
4: 120<T<=150   (>66% of grid;mm m-1)
5: 150<T<=200   (>66% of grid;mm m-1)
6: 200<T<500   (>66% of grid;mm m-1)
7: T<=90 Complex   (>50% of grid;mm m-1)
8: 90<T<=150 Complex   (>50% of grid;mm m-1)
9: 150<=T Complex   (>50% of grid;mm m-1)
10: Glaciers   (>66% of grid;mm m-1)
11: Oceans   (>66% of grid;mm m-1)

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 may be obtained upon request from the International Soil Reference and Information Centre (ISRIC). A pdf document describing the data and listing references may be downloaded from the ISRIC web
site (http://www.isric.nl/WISE.htm).

ORIGINAL DATA SET CITATION

Batjes, N.H., 1996. Documentation to ISRIC-WISE global data set of derived soil properties on a 1/2 deg by 1/2 deg grid (Version 1.0). Working Paper and Preprint 96/05, ISRIC, Wageningen.