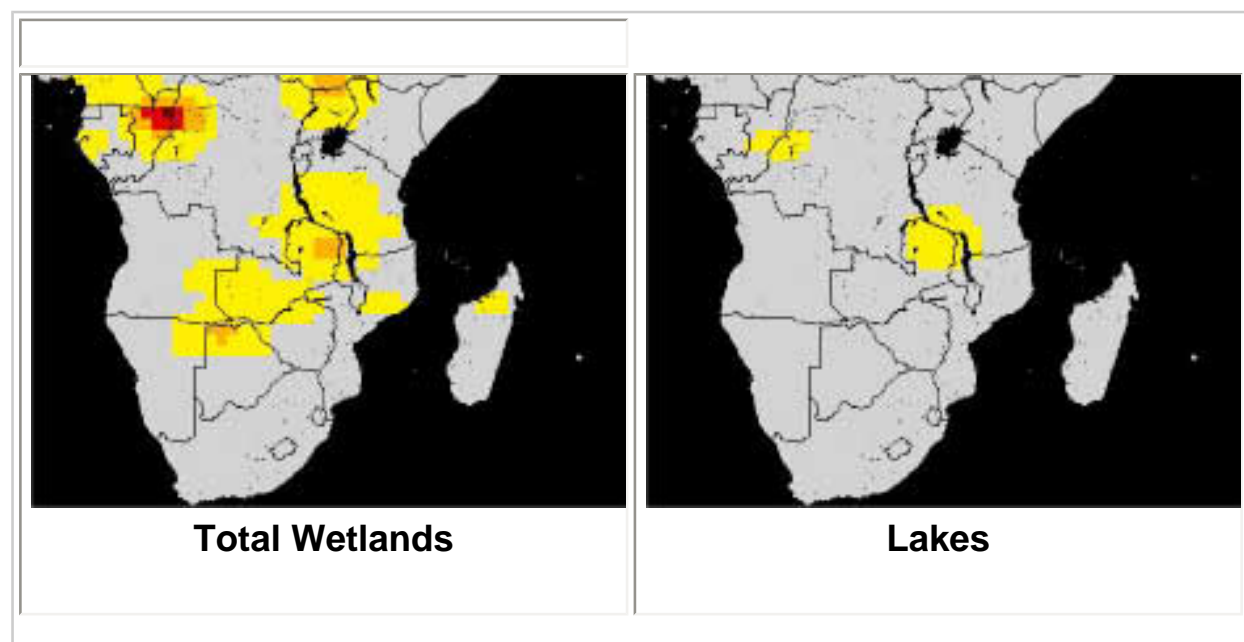# SAFARI 2000 Freshwater Wetlands, 1-Deg (Stillwell-Soller et al.)
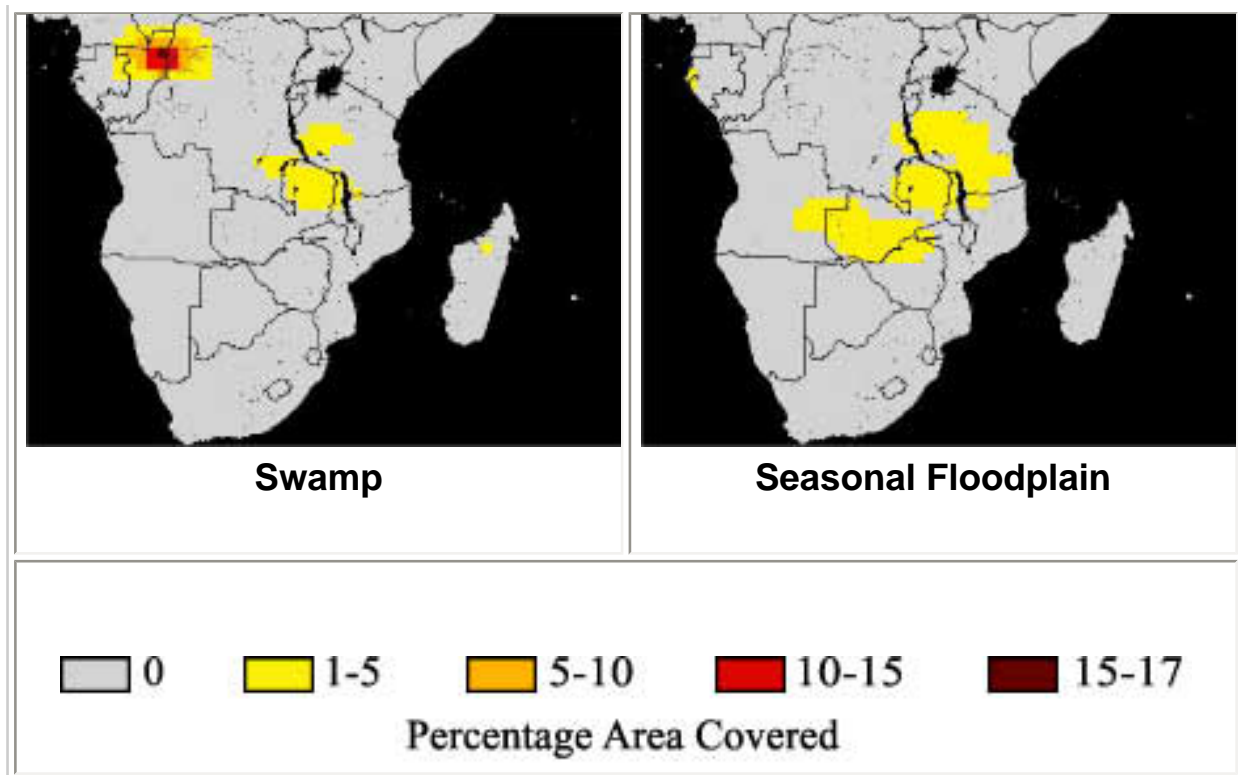
Summary:

The data set consists of a southern Africa subset of the Global Distribution of Freshwater Wetlands data base 1 degree data and are available in ASCII GRID and binary image files formats.

The Global Distribution of Freshwater Wetlands data base has been assembled from two data sets: Aselman and Crutzen's (AC) (1989) wetlands data set and Klinger's (pers. comm., 1995) Political Alaska data set. The aim is to provide an accurate, comprehensive and uniform set of files for convenient specification of wetlands in global climate models. The main source of data is AC global maps of percent cover for a variety of wetlands categories at 2.5-deg latitude by 5-deg longitude resolution. There is some reorganization for seasonally varying categories. Using bilinear interpolation, the AC data was interpolated to a standard 1-deg by 1-deg grid. The AC data set is geographically complete except for the Alaska region. At the time the data set was assembled, AC found that there was no appropriate large-scale data for the Alaska region, therefore they had to make crude estimates based on limited and conflicting published sources. To remedy this Klinger's Alaska data for bogs and fens at 1-deg by 1-deg resolution were added to cover this region.

Sampling of data from Global Distribution of Freshwater Wetlands

Total Wetlands   **Lakes**

Swamp   **Seasonal Floodplain**

☐ 0	☐ 1-5	☐ 5-10	■ 10-15	■ 15-17

Percentage Area Covered

Data Set Information:

This README file contains information regarding:

       1. Data format

       2. Procedure used to create the southern Africa subset

       3. Legend and data source

The Global Distribution of Freshwater Wetlands data set consists of a number of individual files. Each file contains percentage area covered by a particular wetland category. There is 1 downloadable tar file for the southern Africa subset, available in unix compressed (".gz") asciigrid format. Once the files are unzipped and untarred there will be the following files:

Total Natural Wetlands:
- total.1x1

Bog
- bogs.1x1
- bogs_ack.1x1

Fen
- fens.1x1
- fens_ack.1x1

Swamp
- swamps.1x1

Marsh
- marsh.1x1

Swamp/marsh
- swamp-marsh.1x1

Seasonal Swamp/marsh
- swpjan.1x1
- swpfeb.1x1
- swpmar.1x1
- swpapr.1x1
- swpmay.1x1
- swpjun.1x1
- swpjul.1x1
- swpaug.1x1
- swpsep.1x1
- swpoct.1x1
- swpnov.1x1
- swpdec.1x1

Swamp/marsh where seasonality could not be determined
- swmiss.1x1

Lakes
- lakes.1x1

Permanent Floodplain
- pfloodplain.1x1

Seasonal Floodplain
- sfloodplain.1x1
- fldjan.1x1
- fldfeb.1x1
- fldmar.1x1
- fldapr.1x1
- fldmay.1x1
- fldjun.1x1
- fldjul.1x1
- fldaug.1x1
- fldsep.1x1
- fldoct.1x1
- fldnov.1x1
- flddec.1x1

Rice Paddies
- ricepd.1x1
- jan-ricepd.1x1
- feb-ricepd.1x1
- mar-ricepd.1x1
- apr-ricepd.1x1
- may-ricepd.1x1
- jun-ricepd.1x1
- jul-ricepd.1x1
- aug-ricepd.1x1
- sep-ricepd.1x1
- oct-ricepd.1x1
- nov-ricepd.1x1
- dec-ricepd.1x1

All floodplains, discounting seasonality
- fld.1x1

Floodplains where seasonality could not be determined
- flmiss.1x1

* All values are zero for the subset but, files are included for sake of completeness.

It is highly recommended that you review the original documentation for this data set for more specifics. There is some documentation on-line at http://www.scd.ucar.edu/isg/lana/wetlands/ . The complete, original documentation is an NCAR Technical Note (NCAR/TN-416+STR).

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 40

Columns 55

UpLeftX 5

UpLeftY 5

LoRightX 60

LoRightY -35

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 9999 is listed as the nodata value it does not actually appear 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.

Binary File Information

Each ASCII data file has also been converted into a binary image file that can be viewed in any standard image viewing package. The files are single-byte images, no header, 55 columns by 40 rows. Missing data (ASCII -9999) have been converted to the maximum value of 255.

PROCEDURE USED TO CREATE THE SOUTHERN AFRICA SUBSET

The original data were obtained and read following the directions in the original documentation. The data were converted to ASCII arrays and then 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 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

All data values represent percentage area covered by the wetland category. The original data and documentation may be found at the following URL:

hhttp//www.scd.ucar.edu/iag/staff/lana/wetlands

ORIGINAL DATA SET CITATION

L.M. Stillwell-Soller, L.F. Klinger, D. Pollard, and S.L. Thompson.1995. The Global Distribution of Freshwater Wetlands. TN-416STR, National Center for Atmospheric Research (NCAR), Boulder, Colorado, U.S.A. Available on-line at http//www.scd.ucar.edu/iag/staff/lana/wetlands/.