How to use CORINE in WPS/WRF

This report is based on the post in the WRF Forum http://forum.wrfforum.com/viewtopic.php?f=22&t=2266#p14238

The procedure has two basic steps:

1. Remap, reproject and convert the original CORINE 2000/2006 tif file to ASCII
2. Convert to WPS-binary readable

==== REMAP/REPROJECT/CONVERT (Grass used) ====
- Reproject: reprojection into WGS84 with grass
  tyr> grass -gui

When login, you should choose the coordinate system as EPSG 3035 (Lambert Azimuthal Equal Area). Names of location and map must be given. Here, we use l3035 as the location and data the map.

grass> r.in.gdal

The file « g250_6.tif » (Corine 2006 - 250m resolution) is available at
/net/libre/jomungand/kimy/CorineLandCover/g250_06/ The name of variable will be needed. Here we suppose g250_6

Logout from grass and rel ogin. When rel ogin, you should choose the coordinate system as
WGS84 (longitude and latitude).

grass> r.proj input=g250_6@data location=l3035 output=g250_6_ll

- Remap: Take Table 1 in Pineda et al. 2004 and use it to reclassify the new classes into the USGS ones

grass> r.reclass input=g250_6 ll output=g250_6 ll usgs rules = reclassification.txt
The file « reclassification.txt » is available at
/net/libre/jomungand/kimy/CorineLandCover/g250_06/

- Convert: to an ASCII file
  grass> r.out.ascii input= g250_6 ll usgs output = [filename]

We get now an ASCII file with a header containing:

north: 70:27:36.900634N
south: 35N
east: 44:18:47.140488E
west: 23:49:02.613199W
rows: 14184
cols: 27252
This information will be needed in the second step

References:

=== Convert to WPS-binary readable format ===
(with a slightly modified version of the fortran code provided in viewtopic.php?f=22&t=481&start=10#p12411 by Lorenzo Giovannini, Atmospheric Physics Group Department of Civil and Environmental Engineering, Universiy of Trento)

- (paths can be modified, just be sure to compile with the appropriate routines) in WPS/geogrid/src create a program to read in the data and with the help of write_geogrid.o transform it to WPS format. A sample program is: wpsingest_toCLC.f90

Compile the write_geogrid.c:

gcc -D_UNDERSCORE -DBYTESWAP -DLINUX -DIO_NETCDF -DIO_BINARY -DIO_GRIB1 -D_GEOGRID -O -c write_geogrid.c

- Compile the ingestion program with the write_geogrid.o

gfortran wpsingest_toCLC.f90 write_geogrid.o

- This will create the data in the tile format described in the WPS documentation.

- Copy/move/link this file to where the geog data is stored: /Data/geog/landuse_8s

- Create an index file using the header of the ASCII file created in step 1 similar to:

type=categorical
category_min=1
category_max=24
projection=regular_ll
dx=0.0025
dy=0.0025
known_x=1.0
known_y=1.0
known_lat=35.0
known_lon=-23.817388
wordsize=1
tile_x=27252
tile_y=14184
tile_z=1
missing_value = 10
units="category"
description="24-category USGS landuse-from corine"