

Obtaining Reanalysis Wind Data
For use with Tephra2

Reanalysis Wind Data may be downloaded from this site:

<http://www.esrl.noaa.gov/psd/data/gridded/data.ncep.reanalysis.pressure.html>

In order to use the supplied perl scripts to create a wind database, 3 types of datafiles are required:

Geopotential Height
U-Wind
V-Wind

From the Reanalysis site,

- 1) scroll down to the 'Download/Plot Data' table
- 2) For each item above,
 - a. choose a frequency (four times daily, daily, monthly mean)
 - b. Mouse click 'see list' and select 'Make plot or subset':
 - c. Enter the latitude and longitude of a single point (i.e. your volcano)
 - d. Use the control key and select 2 pressure values to identify a range of heights.
 - e. Choose a time Range: Begin and End
 - f. Choose to create a subset without making plot
 - g. Press 'Create Plot or Subset of Data' button,
 - h. download the file generated

Use the netCDF program 'ncdump' to view and recover the data from the reanalysis files.

Program is included with the NetCDF download <http://www.unidata.ucar.edu/downloads/netcdf/index.jsp>

At the command line, type the following:

```
ncdump -v hgt,time -f C YOUR_GEO_SPAT_HEIGHT_2009.nc >geo_height_date.nc.out
ncdump -v uwnd,time -f C YOU_U_WIND_FILE.nc > u-wind_date.nc.out
ncdump -v vwnd,time -f C YOUR_V_WIND_FILE.nc > v-wind_date.nc.out
```

These are the inputs (data file names) used by the perl script: combine_reanalysis_data.pl

These filenames must be entered in the configuration script combine_reanalysis_data.conf

The format of this script is: KEYWORD=value

The keywords should not be changed. The script will look like:

```
LEVEL_FILE=geo_height_date.nc.out
UWIND_FILE=u-wind_date.nc.out
VWIND_FILE=v-wind_date.nc.out
```

At the command line, type: perl combine_reanalysis_data.pl

Note: These directions were tested with 'daily' data.