**Climate Projection Data Analysis**

**Note:** This article is part of class material from Hydroinformatics class in University of Utah (Dr. Erfan Goharian, Dr. Steven Burian).

**Sources**

1) Go to Website: http://gdo-dcp.ucllnl.org

**Instructions**

A) Analysis for one global climate model projection

1) Click on page "Projection: Subset Request”

a. Enter specifications for SLC Airport and Parleys Creek location-specific retrieval. Instructions to enter required information are mentioned here in steps 2 to 5. When finished, press the "Submit Request" button. If form specifications are complete and within retrieval size limits, you will be able to proceed. Otherwise, you will receive a pop-up message stating what needs to be completed. The following steps will describe the process for a request for one station/location. As we have two stations, you need to repeat everything for both stations.

2) Go to sub-tab "Page 1. Temporal & Spatial Extent".

a. Under "Step 1.1: Time Step and Period", select monthly period Jan-1980 through Dec-2099

b. Under "Step 1.2: Domain ", select "NLDAS"

c. Under "Step 1.3: Spatial extent selection method", specify the lat-lon for the SLC airport and Parleys locations and map the location.

|  |  |  |
| --- | --- | --- |
|  | SLC Airport | Parleys Creek |
| Latitude | 40.79 | 40.84 |
| Longitude | -111.98 | -111.71 |

Each location needs one individual request. The "location" is actually one 1/8 deg cell in the spatial coverage. You can zoom and see the cell grid of your location in the interactive map.

3) Go to sub-tab "Page 2. Products, Variables, Projections".

a. Under "Step 2.4: Select Projection Sets", check BCSD-CMIP5-Climate-monthly.

b. Under "Step 2.5", for "Products" select "1/8 degree BCSD projections". Under "Variables", check Precipitation.

c. Under "Emissions Scenarios, Climate Models and Runs", check boxes associated with model " bcc-csm1-1" (1 box per SRES emissions pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5).

4) Go to sub-tab "Page 3. Analysis, Format, and Notification ".

a. Under "Step 3.7: Analysis", keep dial set to "No Analysis", which means you'll retrieve monthly time-series data at the location specified. (The other dials permit retrieval of period and spatial statistics. Retrieval of period statistics will be covered in Step 12.)

b. Under "Step 3.8: Output Format", choose "ASCII, csv", which tells the job-processor to subset the data and make them available in a comma-delimited text file.

c. Under "Step 3.9: Notification when Processing is Complete", enter your email address twice.

d. Finally, indicate your user type, application type, and applicable resource area(s).

e. After you are done with all these steps the status indicator on the top should be all green. If it is not green, you can go back to the related section and check what did you miss.

5) Go to area above the form pages, press button "Submit Request".

a. You should get a popup box with two buttons (Submit or Cancel).

b. The popup box message should be:

c. Press "Submit".

You should get a Windows echo box saying "Response: Request accepted".

d. Press "Ok".

6) Wait for notification email from GDO, which could take minutes to hours depending on custom request. (You should receive two different emails and ftp addresses, each for one grid (station))

a. This particular request should only take a couple minutes given that no other jobs are queued. In this initial release of the web service, the custom retrieval processing time seems to scale closely with the number of projections you select.

7) Go to weblink provided in your notification email. The link points you to an ftp directory of files produced for your job request. Directory contents include:

a. "ftp://gdo-dcp.ucllnl.org/pub/dcp/subset/<job\_identifier>.txt", which summarizes request specs. The string <job\_identifier> will be unique with each custom request.

b. "Prcp.csv" which is projection file without header information or column & row labels.

c. "Info\_\*\*\*\*.txt", which provides header information.

d. "COLS\_\*\*\*\*.txt" and "ROWS\_\*\*\*\*.txt", which provide column and row labels (in this example: COLS labels will indicate projection names and ROWS labels will indicate day number in the monthly projection timeseries (always specified at the 15th day of a given month, with day 1 starting at 1/1/1950)).

e. "Notes.txt" is a generic notes file with information on various types of retrieval. Its content doesn't change with the specifics of your request.

8) Download “bcsd5.zip” file to your computer to a directory of your choice (you can create different folders for each station).