PRISM Gridded Climate Data
Public Downloads via Web Service
(document last updated 12 October 2017)

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INTRODUCTION

An open web service is available for downloads of individual zipped BIL grids, one BIL grid per request; other types of files must be downloaded manually using the prism.oregonstate.edu website. For more information on the formats, and for a complete explanation of the file naming conventions, see the data formats document. The files available via the web service are a subset of those available through web download. They are of the form

`PRISM_<var>_<stability>_<scale&version>_<time period>[_all|_annual]_bil.zip`

Before downloading data, be sure to acquaint yourself with our terms of use, which explain how to acknowledge any use of our data.

In addition to the data web service, we also provide a "Release Date" web service. This service is intended to provide the end user with the ability to obtain the date upon which a grid was most recently processed and released. In this manner, the user can avoid downloading an entire grid simply to determine whether it is newer than their current copy (ideally as a scripted process that compares retrieved release dates against grids on the user's filesystem).

The Release Date service provides a few columns of information per grid and can be requested for a single grid or a range of grids. See the "RELEASE DATE WEB SERVICE USAGE" section at the end of this document.

You may want to reference the PRISM update schedule document for details on when and how often PRISM grids are updated to incorporate new station data and quality control procedures. Data older than six months are considered stable and should not change.

DATA AVAILABILITY

Data Web Service

Currently, the following data (BIL grids) can be downloaded via the data web service:

Variables: *ppt*, *tmin*, *tmax*, *tmean*, *tdmean*, *vpdmin*, *vpdmax*
- Recent data (4km): 1981 to present; daily, monthly, annual data
- Historical data (4km): 1895 through 1980; complete monthly and annual data by year
- Normals data (800m and 4km): monthly and annual, each as a single grid

Release Date Web Service

Release Date information is maintained from April 2014 forward. Requests for Release Date information on grids older than April 2014 will return an unpopulated line.

The Release Date web service currently supports requests for the climate variables *ppt*, *tmin*, and *tmax* only.

DATA FILE CONTENTS

Each BIL grid is actually a collection of files that is delivered as a single compressed .zip file, essentially comprising a "grid package." Each grid package contains the following files:

- \<filename\>.bil – band interleaved by line (BIL) raster data file
- \<filename\>.bil.aux.xml – auxiliary file containing grid statistics (primarily for Esri software)
- \<filename\>.hdr – standard header file that describes the .bil file content
- \<filename\>.info.txt – information file containing various PRISM parameters
- \<filename\>.prj – projection file describing the coordinate system
- \<filename\>.stn.csv – CSV file containing information about weather stations that provided input data to the PRISM model run that produced the associated BIL grid
- \<filename\>.stx – auxiliary file containing grid statistics (for all GIS software)
- \<filename\>.xml – FGDC metadata file describing the dataset

DOWNLOAD LIMITS

Download activity is continuously monitored. In order to prevent rogue download scripts from exceeding bandwidth limits, if a file is downloaded twice in a 24-hour period, no more downloads of that file will be allowed during that period.

Repeated excessive download activity may result in IP address blocking, at the discretion of PRISM staff.

DATA WEB SERVICE USAGE

Daily, Monthly, Annual Data Request Syntax

To initiate a request via this web service, use a client (web browser, the *wget* utility, etc.) that can perform an HTTP connection with the following parameters:

http://services.nacse.org/prism/data/public/4km/\<element\>/\<date\>

Where:

- \<element\> is *ppt*, *tmin*, *tmax*, or *tmean*
- \<date\> is:
    - YYYYMMDD for daily data (between yesterday and January 1st, 1981) – returns a single grid in a .zip file
    - YYYYMM for monthly data (between last month and January 1981) – returns a single grid in a .zip file

- YYYY for annual data (between last year and 1981) – returns a single grid in a .zip file
- YYYY for historical data (between 1980 and 1895) – returns a single zip file containing 12 monthly grids for YYYY plus the annual.

Valid HTTP examples:

Daily grid: http://services.nacse.org/prism/data/public/4km/tmin/20090405
Monthly grid: http://services.nacse.org/prism/data/public/4km/tmin/200904
Annual grid: http://services.nacse.org/prism/data/public/4km/tmin/2009
Historical monthly data: http://services.nacse.org/prism/data/public/4km/tmin/1944

Valid UNIX command line example:

```
wget --content-disposition http://services.nacse.org/prism/data/public/4km/tmin/20090405
```

Normals Request Syntax

To initiate a request via this web service, use a client (web browser, the *wget* utility, etc.) that can perform an HTTP connection with the following parameters:

http://services.nacse.org/prism/data/public/normals/<resolution>/<element>/<month>

Where:

- <resolution> is *4km* or *800m*
- <element> is *ppt*, *tmin*, *tmax*, or *tmean*
- <month> is:
  - MM with a range of 01-12, or the value 14, which provides the annual normal grid

Valid HTTP examples:

March 800m ppt normal: http://services.nacse.org/prism/data/public/normals/800m/ppt/03
October 4km tmin normal: http://services.nacse.org/prism/data/public/normals/4km/tmin/10
Annual 800m tmax normal: http://services.nacse.org/prism/data/public/normals/4km/tmax/14

Valid UNIX command line example:

```
wget --content-disposition http://services.nacse.org/prism/data/public/normals/4km/tmax/08
```

SAMPLE BULK DOWNLOAD SCRIPT

The web service provides a single grid per request. To perform a bulk download of multiple grids, create and run a script or batch job. An example Perl script is provided below – this example script will download a year's worth of daily ppt grids. (Note that it's important to use the `--content-disposition` switch with the wget command to preserve the original filename, as in the example below.)

```
#!/usr/bin/perl
use strict;
use warnings;
use DateTime;
```

```
my $day;
my $clim_var = 'ppt';
my $base_url = 'http://services.nacse.org/prism/data/public/4km';

my $start = DateTime->new( day => 1, month => 10, year => 1999 );
my $stop = DateTime->new( day => 30, month => 9, year => 2000 );

while($start <= $stop) {
  $day = $start->strftime('%Y%m%d');  #place date in proper format
  system("wget --content-disposition $base_url/$clim_var/$day");
  sleep 2;  #to be nice to our server
  $start->add(days => 1);
}
```

RELEASE DATE WEB SERVICE USAGE

To initiate a request via this web service, use a client (web browser, the *wget* utility, etc.) that can perform an HTTP connection with the following parameters:

http://services.nacse.org/prism/data/public/releaseDate/<element>/<date>

The <element> and <date> syntax is identical to the description in the "DATA WEB SERVICE USAGE" section above.

By default, the output is delivered as tab-delimited text. The output may also be requested in JSON format, by adding "?json=true" to the end of the HTTP request. The following columns of data are provided:

Data date	(e.g., *1999-01-01*)
Release date	(e.g., *2013-01-14*)
Element	(e.g., *tmin*)
Grid count	(e.g., *6*)
Data URL	(e.g., *http://services.nacse.org/prism/data/public/4km/tmin/19990101*)

This web service has the ability to provide grid release date information for a single grid, or a range of grids. Examples of both approaches are given below.

Valid HTTP examples for a *single* grid:

Daily grid: http://services.nacse.org/prism/data/public/releaseDate/ppt/20090405?json=true
Monthly grid: http://services.nacse.org/prism/data/public/releaseDate/ppt/200904

Valid HTTP examples for a *range* of grids:

Daily grids: http://services.nacse.org/prism/data/public/releaseDate/ppt/19990101/19991231
Monthly grids: http://services.nacse.org/prism/data/public/releaseDate/ppt/199201/199212?json=true