

PRISM Gridded Dataset Downloads via Web Service

(document last updated 26 Mar 2025)

IMPORTANT NOTICE

This document describes the new PRISM web service, which is currently in effect, replaces all prior web services, and will continue to operate going forward. The old PRISM web service can still be accessed but will be disabled on September 30, 2025. Documentation for the old web service can be found here: https://prism.oregonstate.edu/documents/PRISM_downloads_web_service_v1.pdf

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INTRODUCTION

An open web service is available for downloads of individual PRISM grids, one grid per request, at all resolutions. Via this web service, PRISM grids are delivered in COG ([Cloud Optimized GeoTIFF](#)) format; however, there is an option to download grids in other raster data formats (see the Data Web Service Usage section).

Other types of files can 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](#) section of the website. The files available via this web service use the following file naming scheme:

```
prism_<variable>_<region>_<resolution>_<time_period>.zip
```

<variable>	ppt (precipitation) tmin (minimum temperature) tmax (maximum temperature) tmean (mean temperature) tdmean (mean dewpoint) vpdmin (minimum vapor pressure deficit) vpdmax (maximum vapor pressure deficit)
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<region>	us, ak, hi, pr (Corresponding to: CONUS, Alaska, Hawaii, Puerto Rico)
<resolution>	15s, 30s, 25m (Corresponding to: 400m, 800m, 4km)
<time_period>	Daily data: <yyyymmdd> = 8-digit numerical designation for year, month, day Monthly data: <yyyymm> = 6-digit numerical designation for year, month Annual data: <yyyy> = 4-digit numerical designation for year

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 on 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 until a new time series version is released.

DATA AVAILABILITY

Data Web Service

Currently, the following PRISM data (i.e., grids in COG format) can be downloaded via the web service:

- Variables:
 - ppt, tmin, tmax, tmean, tdmean, vpdmin, vpdmax (as time series grids)
- Recent data: 1981 to present; complete daily, monthly, and annual data
- Historical data: 1895 through 1980; complete monthly and annual data
- Regions: Currently CONUS is the only region available, but we will be adding data for Hawaii, Alaska, and Puerto Rico in the future

NOTE: The PRISM 30-year normals are not available via this web service. They can be downloaded via FTP, or on the PRISM website.

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 following time series climate variables: ppt, tmin, tmax, tmean, tdmean, vpdmin, vpdmax.

DATA FILE CONTENTS

Each COG grid is a collection of files delivered as a single compressed .zip file, essentially comprising a “grid package.” Data downloaded in other raster formats will contain similar ancillary files in each .zip file. To illustrate, each COG grid package contains the following files:

- <filename>.tif – Cloud Optimized GeoTIFF (COG) raster data file (includes header info)
- <filename>.tif.aux.xml – auxiliary file containing grid statistics (primarily for Esri software)
- <filename>.info.txt – information file containing various internal PRISM parameters
- <filename>.prj – projection file describing the coordinate system
- <filename>.stn.csv – CSV file containing information about the weather stations that provided input data to the PRISM model run that produced the associated grid
- <filename>.stx – auxiliary file containing grid statistics (for all GIS software)
- <filename>.xml – FGDC-compliant metadata file describing the dataset

DOWNLOAD LIMITS

Download activity is continuously monitored. 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 our discretion.

DATA WEB SERVICE USAGE

Time Series (daily, monthly, annual) Data Request Syntax

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

`https://services.nacse.org/prism/data/get/<region>/<res>/<element>/<date><?format=[nc|asc|bil]>`

Where:

- `<element>` is *ppt*, *tmin*, *tmax*, *tmean*, *tdmean*, *vpdmin*, or *vpdmax*
- `<region>` is *us*, *hi*, *ak*, *pr*
 - *us* – CONUS (conterminous United States – the 48 states)
 - *hi* – Hawaii (not yet implemented)
 - *ak* – Alaska (not yet implemented)
 - *pr* – Puerto Rico (not yet implemented)
- `<res>` is *400m*, *800m*, *4km* (400m not yet implemented)
- `<date>` is:
 - *YYYYMMDD* for daily data (19810101 to present) – returns a single grid in a .zip file
 - *YYYYMM* for monthly data (189501 to present) – returns a single grid in a .zip file
 - *YYYY* for annual data (1895 to present) – returns a single grid in a .zip file
- `<?format=[nc|asc|bil]>`: optional command that will deliver the data in the specified format.
Format options:
 - **nc**: netCDF format (<https://www.unidata.ucar.edu/software/netcdf>)
 - **asc**: ASCII Grid format (<https://www.loc.gov/preservation/digital/formats/fdd/fdd000421.shtml>)
 - **bil**: BIL format (<https://desktop.arcgis.com/en/arcmap/latest/manage-data/raster-and-images/bil-bip-and-bsq-raster-files.htm>)

Note that by default, this web service provides PRISM “AN” (all networks) data. It is also possible to download PRISM “LT” (long-term) 800m monthly data via this web service. To do so, add “/lt” to the end of the URL request, prior to any format options. For more information about AN vs. LT, see the [PRISM Datasets](#) document.

Example: <https://services.nacse.org/prism/data/get/us/800m/tmax/200506/lt>

If you are uncertain which type of PRISM dataset you have downloaded, simply look inside the “info.txt” file associated with the grid. In that file, the parameter PRISM_DATASET_TYPE will indicate whether the grid is type AN or LT.

Valid HTTP examples:

800m daily grid: <https://services.nacse.org/prism/data/get/us/800m/tmin/20090405>

4km monthly grid: <https://services.nacse.org/prism/data/get/us/4km/ppt/199504>

4km netCDF monthly grid: <https://services.nacse.org/prism/data/get/us/4km/tmin/202204?format=nc>

Valid UNIX command line example:

`wget --content-disposition https://services.nacse.org/prism/data/get/us/4km/tmin/20191121`

SAMPLE BULK DOWNLOAD SCRIPT

This web service provides a single grid per request. To perform a bulk download of multiple grids, you can 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 4km 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 following example.)

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

my $day;
my $clim_var = 'ppt';
my $base_url = 'https://services.nacse.org/prism/data/get/us/4km';

my $start = DateTime->new( day => 1, month => 1, year => 1999 );
my $stop = DateTime->new( day => 31, month => 12, year => 1999 );

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 request with the following parameters:

`https://services.nacse.org/prism/data/get/releaseDate//<region>/<resolution><element>/<date>`

The <region>, <resolution>, <element>, and <date> content and 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 request URL. The following columns of data are provided:

Data date	(e.g., <i>1999-01-01</i>)
Release date	(e.g., <i>2013-01-14</i>)
Element	(e.g., <i>tmin</i>)
Grid count	(e.g., <i>6</i>)
Data URL	(e.g., <i>https://services.nacse.org/prism/data/get/us/4km/tmin/19990101</i>)

This web service can 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:

800m ppt daily grid: <https://services.nacse.org/prism/data/get/releaseDate/us/800m/ppt/20090405?json=true>

4km tmax monthly grid: <https://services.nacse.org/prism/data/get/releaseDate/us/4km/tmax/200904>

Valid HTTP examples for a *range* of grids:

800m daily grids: <https://services.nacse.org/prism/data/get/releaseDate/us/800m/ppt/19990101/19991231>

4km monthly grids: <https://services.nacse.org/prism/data/get/releaseDate/us/800m/tmin/199201/199212?json=true>

GRID COUNT WEB SERVICE USAGE

Over the prior six months, the PRISM monthly grids are updated a total of seven times, and the daily grids eight times, before becoming stable. The gridCount web service provides the user access to the update number (1-8) as an alternative way to determine whether the user has downloaded the latest release.

The grid count update number is identical for a PRISM grid regardless of resolution. In other words, the 4km PRISM daily tmin grid for 20220319 will have the same update number as the equivalent 800m grid.

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

`https://services.nacse.org/prism/data/get/gridCount/<region>/<element>/<date>`

The <region>, <resolution>, <element>, and <date> content and syntax is identical to the description in the “DATA WEB SERVICE USAGE” section above.

This web service provides a single integer (e.g., 6) for a single grid at a time.

Valid HTTP examples:

Daily grid: <https://services.nacse.org/prism/data/get/gridCount/us/tmax/20150819>

Monthly grid: <https://services.nacse.org/prism/data/get/gridCount/us/ppt/201507>