

Downloading NASA data from NCCS THREDDS using OpenDAP


<https://ds.nccs.nasa.gov/thredds/catalog/bypass/NEX-GDDP/catalog.html>





 **Catalog** <https://ds.nccs.nasa.gov/thredds/catalog/bypass/NEX-GDDP/catalog.html>

Dataset	Size
 NEX-GDDP	
 bcsd/	

[Data Catalog](#) [at My Group](#) [see Info](#)
THREDDS Data Server [Version 4.6.4-SNAPSHOT - 2015-12-21T05:20:45+0000] [Documentation](#)

1-Select the Scenario


 **Catalog** <https://ds.nccs.nasa.gov/thredds/catalog/bypass/NEX-GDDP/bcsd/catalog.html>





Dataset	Size
 bcsd	
 rcp85/	
 rcp45/	
 historical/	

[Data Catalog](#) [at My Group](#) [see Info](#)
THREDDS Data Server [Version 4.6.4-SNAPSHOT - 2015-12-21T05:20:45+0000] [Documentation](#)

2-click the realization (NASA data has only one realization)


3- select the desired variable




 **Catalog** <https://ds.nccs.nasa.gov/thredds/catalog/bypass/NEX-GDDP/bcsd/rcp85/catalog.html>

Dataset	Size
 rli1p1	
 tasmin/	
 tasmax/	
 pr/	

[Data Catalog](#) [at My Group](#) [see Info](#)
THREDDS Data Server [Version 4.6.4-SNAPSHOT - 2015-12-21T05:20:45+0000] [Documentation](#)

4-select the desired GCM model.

 **Catalog** <https://ds.nccs.nasa.gov/thredds/catalog/bypass/NEX-GDDP/bcsd/rcp85/r1i1p1/pr/>

Dataset	Size
 pr	
 test/	
inmcm4.ncml 	317.0 bytes
bcc-csm1-1.ncml	321.0 bytes
NorESM1-M.ncml	320.0 bytes
MRI-CGCM3.ncml	320.0 bytes
MPI-ESM-MR.ncml	321.0 bytes
MPI-ESM-LR.ncml	321.0 bytes
MIROC5.ncml	317.0 bytes
MIROC-ESM.ncml	321.0 bytes
MIROC-ESM-CHEM.ncml	325.0 bytes
IPSL-CM5A-MR.ncml	323.0 bytes
IPSL-CM5A-LR.ncml	323.0 bytes
GFDL-ESM2M.ncml	321.0 bytes
GFDL-ESM2G.ncml	321.0 bytes
GFDL-CM3.ncml <small>Regular Strip</small>	319.0 bytes
CanESM2.ncml	318.0 bytes
CSIRO-Mk3-6-0.ncml	324.0 bytes
CNRM-CM5.ncml	319.0 bytes
GISS-ER.ncml	320.0 bytes

5-select the **OPENDAP**

 **Data Catalog**
THREDDS Data Server

Catalog <https://ds.nccs.nasa.gov/thredds/catalog/bypass/NEX-GDDP/bcsd/rcp85/r1i1p1/pr/catalog.html>

Dataset: pr/inmcm4.ncml

- Data size: 317.0 bytes
- ID: bypass/NEX-GDDP/bcsd/rcp85/r1i1p1/pr/inmcm4.ncml

Access:

1. **OPENDAP:** [/thredds/dodsC/bypass/NEX-GDDP/bcsd/rcp85/r1i1p1/pr/inmcm4.ncml](#) 
2. **WMS:** [/thredds/wms/bypass/NEX-GDDP/bcsd/rcp85/r1i1p1/pr/inmcm4.ncml](#)

Dates:

- 2016-12-15T14:24:47Z (modified)

Viewers:

- [Godiva2](#) (browser-based)
- [NetCDF-Java ToolsUI](#) (webstart)

6- before downloadin data, you should identify the grid numbers of your study area based on Lat and Long

2

OPeNDAP Dataset Access Form

Action:

Get ASCII

Get Binary

Show Help

Data URL:

<https://ds.nccs.nasa.gov/thredds/dodsC/bypass/NEX-GDDP/bcsd/rcp85/r1i1p1/pr/ini>

Global Attributes:

parent_experiment: historical
parent_experiment_id: historical
parent_experiment_rip: r1i1p1
Conventions: CF-1.4
institution: NASA Earth Exchange, NASA Ames Research Center, Moffett

Variables:

☐ lat: Array of 32 bit Reals [lat = 0..719]

lat:
long_name: latitude
units: degrees_north
standard_name: latitude
axis: Y
_ChunkSizes: 720

☐ lon: Array of 32 bit Reals [lon = 0..1439]

lon:
standard_name: longitude
long_name: longitude
units: degrees_east
axis: X
_ChunkSizes: 1440

☐ time: Array of 64 bit Reals [time = 0..34674]

time:
standard_name: time
long_name: time
axis: T
calendar: 365_day
bounds: time_bnds

☐ pr: Grid

time: lat: lon:
time: 32850.5
standard_name: precipitation_flux
long_name: Precipitation
comment: at surface: includes both liquid and solid phases from all types

6-1- select Lat in the page above and then click on **Get ASCII (as shown)** in step 6

```
Dataset {
  Float32 lat[lat = 720];
} bypass/NEX-GDOP/bcsd/rcp85/r1i1p1/pr/inmcm4.ncml;
```

```
lat[720]
-89.875, -89.625, -89.375, -89.125, -88.875, -88.625, -88.375, -88.125, -87.875, -87.625, -87.375, -87.125, -86.875, -86.625, -86.375, -86.125, -85.875, -85.625, -85.375, -85.125, -84.875, -84.625, -84.375,
-84.125, -83.875, -83.625, -83.375, -83.125, -82.875, -82.625, -82.375, -82.125, -81.875, -81.625, -81.375, -81.125, -80.875, -80.625, -80.375, -80.125, -79.875, -79.625, -79.375, -79.125, -78.875, -78.625,
-78.375, -78.125, -77.875, -77.625, -77.375, -77.125, -76.875, -76.625, -76.375, -76.125, -75.875, -75.625, -75.375, -75.125, -74.875, -74.625, -74.375, -74.125, -73.875, -73.625, -73.375, -73.125, -72.875,
-72.625, -72.375, -72.125, -71.875, -71.625, -71.375, -71.125, -70.875, -70.625, -70.375, -70.125, -69.875, -69.625, -69.375, -69.125, -68.875, -68.625, -68.375, -68.125, -67.875, -67.625, -67.375, -67.125,
-66.875, -66.625, -66.375, -66.125, -65.875, -65.625, -65.375, -65.125, -64.875, -64.625, -64.375, -64.125, -63.875, -63.625, -63.375, -63.125, -62.875, -62.625, -62.375, -62.125, -61.875, -61.625, -61.375,
-61.125, -60.875, -60.625, -60.375, -60.125, -59.875, -59.625, -59.375, -59.125, -58.875, -58.625, -58.375, -58.125, -57.875, -57.625, -57.375, -57.125, -56.875, -56.625, -56.375, -56.125, -55.875, -55.625,
-55.375, -55.125, -54.875, -54.625, -54.375, -54.125, -53.875, -53.625, -53.375, -53.125, -52.875, -52.625, -52.375, -52.125, -51.875, -51.625, -51.375, -51.125, -50.875, -50.625, -50.375, -50.125, -49.875,
-49.625, -49.375, -49.125, -48.875, -48.625, -48.375, -48.125, -47.875, -47.625, -47.375, -47.125, -46.875, -46.625, -46.375, -46.125, -45.875, -45.625, -45.375, -45.125, -44.875, -44.625, -44.375, -44.125,
-43.875, -43.625, -43.375, -43.125, -42.875, -42.625, -42.375, -42.125, -41.875, -41.625, -41.375, -41.125, -40.875, -40.625, -40.375, -40.125, -39.875, -39.625, -39.375, -39.125, -38.875, -38.625, -38.375,
-38.125, -37.875, -37.625, -37.375, -37.125, -36.875, -36.625, -36.375, -36.125, -35.875, -35.625, -35.375, -35.125, -34.875, -34.625, -34.375, -34.125, -33.875, -33.625, -33.375, -33.125, -32.875, -32.625,
-32.375, -32.125, -31.875, -31.625, -31.375, -31.125, -30.875, -30.625, -30.375, -30.125, -29.875, -29.625, -29.375, -29.125, -28.875, -28.625, -28.375, -28.125, -27.875, -27.625, -27.375, -27.125, -26.875,
-26.625, -26.375, -26.125, -25.875, -25.625, -25.375, -25.125, -24.875, -24.625, -24.375, -24.125, -23.875, -23.625, -23.375, -23.125, -22.875, -22.625, -22.375, -22.125, -21.875, -21.625, -21.375, -21.125,
-20.875, -20.625, -20.375, -20.125, -19.875, -19.625, -19.375, -19.125, -18.875, -18.625, -18.375, -18.125, -17.875, -17.625, -17.375, -17.125, -16.875, -16.625, -16.375, -16.125, -15.875, -15.625, -15.375,
-15.125, -14.875, -14.625, -14.375, -14.125, -13.875, -13.625, -13.375, -13.125, -12.875, -12.625, -12.375, -12.125, -11.875, -11.625, -11.375, -11.125, -10.875, -10.625, -10.375, -10.125, -9.875, -9.625,
-9.375, -9.125, -8.875, -8.625, -8.375, -8.125, -7.875, -7.625, -7.375, -7.125, -6.875, -6.625, -6.375, -6.125, -5.875, -5.625, -5.375, -5.125, -4.875, -4.625, -4.375, -4.125, -3.875, -3.625, -3.375, -3.125,
-2.875, -2.625, -2.375, -2.125, -1.875, -1.625, -1.375, -1.125, -0.875, -0.625, -0.375, -0.125, 0.125, 0.375, 0.625, 0.875, 1.125, 1.375, 1.625, 1.875, 2.125, 2.375, 2.625, 2.875, 3.125, 3.375, 3.625, 3.875,
4.125, 4.375, 4.625, 4.875, 5.125, 5.375, 5.625, 5.875, 6.125, 6.375, 6.625, 6.875, 7.125, 7.375, 7.625, 7.875, 8.125, 8.375, 8.625, 8.875, 9.125, 9.375, 9.625, 9.875, 10.125, 10.375, 10.625, 10.875, 11.125,
11.375, 11.625, 11.875, 12.125, 12.375, 12.625, 12.875, 13.125, 13.375, 13.625, 13.875, 14.125, 14.375, 14.625, 14.875, 15.125, 15.375, 15.625, 15.875, 16.125, 16.375, 16.625, 16.875, 17.125, 17.375, 17.625,
17.875, 18.125, 18.375, 18.625, 18.875, 19.125, 19.375, 19.625, 19.875, 20.125, 20.375, 20.625, 20.875, 21.125, 21.375, 21.625, 21.875, 22.125, 22.375, 22.625, 22.875, 23.125, 23.375, 23.625, 23.875, 24.125,
24.375, 24.625, 24.875, 25.125, 25.375, 25.625, 25.875, 26.125, 26.375, 26.625, 26.875, 27.125, 27.375, 27.625, 27.875, 28.125, 28.375, 28.625, 28.875, 29.125, 29.375, 29.625, 29.875, 30.125, 30.375, 30.625,
30.875, 31.125, 31.375, 31.625, 31.875, 32.125, 32.375, 32.625, 32.875, 33.125, 33.375, 33.625, 33.875, 34.125, 34.375, 34.625, 34.875, 35.125, 35.375, 35.625, 35.875, 36.125, 36.375, 36.625, 36.875, 37.125,
37.375, 37.625, 37.875, 38.125, 38.375, 38.625, 38.875, 39.125, 39.375, 39.625, 39.875, 40.125, 40.375, 40.625, 40.875, 41.125, 41.375, 41.625, 41.875, 42.125, 42.375, 42.625, 42.875, 43.125, 43.375, 43.625,
43.875, 44.125, 44.375, 44.625, 44.875, 45.125, 45.375, 45.625, 45.875, 46.125, 46.375, 46.625, 46.875, 47.125, 47.375, 47.625, 47.875, 48.125, 48.375, 48.625, 48.875, 49.125, 49.375, 49.625, 49.875, 50.125,
50.375, 50.625, 50.875, 51.125, 51.375, 51.625, 51.875, 52.125, 52.375, 52.625, 52.875, 53.125, 53.375, 53.625, 53.875, 54.125, 54.375, 54.625, 54.875, 55.125, 55.375, 55.625, 55.875, 56.125, 56.375, 56.625,
56.875, 57.125, 57.375, 57.625, 57.875, 58.125, 58.375, 58.625, 58.875, 59.125, 59.375, 59.625, 59.875, 60.125, 60.375, 60.625, 60.875, 61.125, 61.375, 61.625, 61.875, 62.125, 62.375, 62.625, 62.875, 63.125,
63.375, 63.625, 63.875, 64.125, 64.375, 64.625, 64.875, 65.125, 65.375, 65.625, 65.875, 66.125, 66.375, 66.625, 66.875, 67.125, 67.375, 67.625, 67.875, 68.125, 68.375, 68.625, 68.875, 69.125, 69.375, 69.625,
69.875, 70.125, 70.375, 70.625, 70.875, 71.125, 71.375, 71.625, 71.875, 72.125, 72.375, 72.625, 72.875, 73.125, 73.375, 73.625, 73.875, 74.125, 74.375, 74.625, 74.875, 75.125, 75.375, 75.625, 75.875, 76.125,
76.375, 76.625, 76.875, 77.125, 77.375, 77.625, 77.875, 78.125, 78.375, 78.625, 78.875, 79.125, 79.375, 79.625, 79.875, 80.125, 80.375, 80.625, 80.875, 81.125, 81.375, 81.625, 81.875, 82.125, 82.375, 82.625,
82.875, 83.125, 83.375, 83.625, 83.875, 84.125, 84.375, 84.625, 84.875, 85.125, 85.375, 85.625, 85.875, 86.125, 86.375, 86.625, 86.875, 87.125, 87.375, 87.625, 87.875, 88.125, 88.375, 88.625, 88.875, 89.125,
89.375, 89.625, 89.875
```

Here you can copy these Lat data as text and open in Excel. Then find the grid number of your area latitude

For example if your watershed located in the area

Between -2.875 and -12.375, so the grid number will be 310 to 348

1	308	-12.875		
2	309	-12.625		
3	310	-12.375		
4	311	-12.125		
5	312	-11.875		
6	313	-11.625		
7	314	-11.375		
8	315	-11.125		
9	316	-10.875		
0	317	-10.625		
1	318	-10.375		
2	319	-10.125		
3	320	-9.875		
4	321	-9.625		
5	322	-9.375		
6	323	-9.125		
7	324	-8.875		
8	325	-8.625		
9	326	-8.375		
0	327	-8.125		
1	328	-7.875		
2	329	-7.625		
3	330	-7.375		
4	331	-7.125		
5	332	-6.875		
6	333	-6.625		
7	334	-6.375		
8	335	-6.125		
9	336	-5.875		
0	337	-5.625		
1	338	-5.375		
2	339	-5.125		
3	340	-4.875		
4	341	-4.625		
5	342	-4.375		
6	343	-4.125		
7	344	-3.875		
8	345	-3.625		
9	346	-3.375		
0	347	-3.125		
1	348	-2.875		
2	349	-2.625		
3	350	-2.375		
4	351	-2.125		
5	352	-1.875		
6	353	-1.625		

6-2. repeat the step 6-1 for the longitude

This time you should select **Lon** in page shown in step 6 and the click **Get Ascii**

7- for Time also you should choose the number of time step.

In NASA data time starts from **0** (1/1/2006) to **34697** (12/31/2100).

Note that in some models the calendar is not standard and the consider no-leap year (it means all the years are 365-day) so the time starts from 0 to 34674 instead of 34697.

for example, if you see the time in page below, in the box it is written that this model (inmcm4) considers all years as 365-day and not consider leap year. So, the total number of times is from 0 to 34674.

OPeNDAP Dataset Access Form

Action:

Data URL:

Global Attributes:

parent_experiment: historical

parent_experiment_id: historical

parent_experiment_rip: r1i1p1

Conventions: CF-1.4

institution: NASA Earth Exchange, NASA Ames Research Center, Moffett

Variables: ☐ **lat:** Array of 32 bit Reals [lat = 0..719]

lat:

long_name: latitude

units: degrees_north

standard_name: latitude

axis: Y

_ChunkSizes: 720

☐ **lon:** Array of 32 bit Reals [lon = 0..1439]

lon:

standard_name: longitude

long_name: longitude

units: degrees_east

axis: X

_ChunkSizes: 1440

☐ **time:** Array of 64 bit Reals (time = 0..34674)

time:

standard_name: time

long_name: time

axis: T

calendar: 365_day

bounds: time_bnds

☐ **pr:** Grid

time: 32850.5

lat:

lon:

standard_name: precipitation_flux

long_name: Precipitation

comment: at surface: includes both liquid and solid phases from all types

8- after you defined the grid number of the study area and number of times. You can start downloading by **selecting the variable box** (pr, or tmax or tmin) and put the grid numbers and time numbers. At the end click on **Get ASCII**

For example, below I show downloading data for my study area from 1/1/2006 to 12/31/2010

Grid number: Lat: **310** to **348**

Lon: **68** to **100**

Time: 1/1/2006 is **0**

12/31/2010 is **1824**

Note that the server of the website has limitation, and we cannot download all the time steps in one step. It depends on the number of grids we want to download.

OPeNDAP Dataset Access Form

Action:

Data URL:

Global Attributes:

parent_experiment: historical
parent_experiment_id: historical
parent_experiment_rip: r1i1p1
Conventions: CF-1.4
institution: NASA Earth Exchange, NASA Ames Research Center, Moffett

Variables: ☐ **lat:** Array of 32 bit Reals [lat = 0..719]

lat:
long_name: latitude
units: degrees_north
standard_name: latitude
axis: Y
_ChunkSizes: 720

☐ **lon:** Array of 32 bit Reals [lon = 0..1439]

lon:
standard_name: longitude
long_name: longitude
units: degrees_east
axis: X
_ChunkSizes: 1440

☐ **time:** Array of 64 bit Reals [time = 0..34674]

time:
standard_name: time
long_name: time
axis: T
calendar: 365_day
bounds: time_bnds

☒ **pr:** Grid

time: 0:1:1824 lat: 310:1:348 lon: 68:1:100
cell_methods: time: mean (interval: 1 day)
cell_measures: area: areacella
history: 2010-10-25T09:20:20Z altered by CMOR: Reordered dimensions,
original order: time lon lat
