

United States Average Annual Precipitation, 1961-1990

Metadata also available as

Metadata:

- * Identification_Information
- * Data_Quality_Information
- * Spatial_Data_Organization_Information
- * Spatial_Reference_Information
- * Entity_and_Attribute_Information
- * Distribution_Information
- * Distribution_Information
- * Distribution_Information
- * Metadata_Reference_Information

Identification_Information:

Citation:

Citation_Information:

Originator: Chris Daly, Spatial Climate Analysis Service

Originator:

George Taylor, the Oregon Climate Service at Oregon State University

Publication_Date: 200006

Title: United States Average Annual Precipitation, 1961-1990

Geospatial_Data_Presentation_Form: map

Publication_Information:

Publication_Place: Corvallis, OR, USA

Publisher:

Spatial Climate Analysis Service, Oregon State University; USDA - NRCS National Water and Climate Center, Portland, Oregon; USDA - NRCS National Cartography and Geospatial Center, Fort Worth, Texas

Online_Linkage: <<http://www.ocs.orst.edu/prism>>

Online_Linkage: <<http://www-atlas.usgs.gov/atlasftp.html>>

Online_Linkage:

<<http://www.ftw.nrcs.usda.gov/prism/prism.html>>

Description:

Abstract:

This data set shows polygons of average annual precipitation in the contiguous United States, for the climatological period 1961-1990. Parameter-elevation Regressions on Independent Slopes Model (PRISM) derived raster data is the underlying data set from which the polygons and vectors were created. PRISM is an analytical model that uses point data and a digital elevation model (DEM) to generate gridded estimates of annual, monthly and event-based climatic parameters.

Purpose:

These data are intended for geographic display and analysis at the national level, and for large regional areas. The data should be displayed and analyzed at scales appropriate for 1:2,000,000-scale data. No responsibility is assumed by the Spatial Climate Analysis Service, the USDA - NRCS National

Water and Climate Center, the USDA - NRCS National Cartography and Geospatial Center, or the U.S. Geological Survey in the use of these data.

Supplemental_Information:

There are many methods of interpolating precipitation from monitoring stations to grid points. Some provide estimates of acceptable accuracy in flat terrain, but few have been able to adequately explain the extreme, complex variations in precipitation that occur in mountainous regions. Significant progress in this area has been achieved through the development of PRISM (Parameter-elevation Regressions on Independent Slopes Model). PRISM is an analytical model that uses point data and a digital elevation model (DEM) to generate gridded estimates of monthly and annual precipitation (as well as other climatic parameters). PRISM is well suited to regions with mountainous terrain, because it incorporates a conceptual framework that addresses the spatial scale and pattern of precipitation in such regions.

Detailed descriptions of the PRISM raster data can be found on the Oregon State University PRISM web page at <<http://www.ocs.orst.edu/prism>> Additional information is available through the Natural Resources Conservation Service web pages at the National Water and Climate Center at <<http://www.wcc.nrcs.usda.gov/water/climate/prism/prism.html>> or through the National Cartography and Geospatial Center at <<http://www.ftw.nrcs.usda.gov/prism/prism.html>>

This data set is also available as an Arc/INFO coverage. Please see the Spatial Climate Analysis Service web page at <http://www.ocs.orst.edu/prism/prism_products.html> for more information.

The source PRISM data is packaged on 3 CD-ROM's covering the Lower 48 United States and is available from NRCS for \$50. The 48 States are broken into three regions: East, Central and West. Each CD contains the annual and monthly precipitation coverages, as well as the gridded data. The CD-ROM's may be ordered through <<http://www.ftw.nrcs.usda.gov/prism/prism.html>>

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 19610101

Ending_Date: 19901231

Currentness_Reference: ground condition

Status:

Progress: Complete

Maintenance_and_Update_Frequency:

No updates are planned for the 1961-1990 climatological period. However, a similar data set will probably be produced in 2001 for the 1971-2000 climatological period.

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -124.762142

East_Bounding_Coordinate: -66.957227
North_Bounding_Coordinate: 49.371731
South_Bounding_Coordinate: 24.545220

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: Precipitation
Theme_Keyword: Rainfall
Theme_Keyword: Climate
Theme_Keyword: PRISM

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: United States
Place_Keyword: Alabama
Place_Keyword: Arizona
Place_Keyword: Arkansas
Place_Keyword: California
Place_Keyword: Colorado
Place_Keyword: Connecticut
Place_Keyword: Delaware
Place_Keyword: District of Columbia
Place_Keyword: Florida
Place_Keyword: Georgia
Place_Keyword: Idaho
Place_Keyword: Illinois
Place_Keyword: Indiana
Place_Keyword: Iowa
Place_Keyword: Kansas
Place_Keyword: Kentucky
Place_Keyword: Louisiana
Place_Keyword: Maine
Place_Keyword: Maryland
Place_Keyword: Massachusetts
Place_Keyword: Michigan
Place_Keyword: Minnesota
Place_Keyword: Mississippi
Place_Keyword: Missouri
Place_Keyword: Montana
Place_Keyword: Nebraska
Place_Keyword: Nevada
Place_Keyword: New Hampshire
Place_Keyword: New Jersey
Place_Keyword: New Mexico
Place_Keyword: New York
Place_Keyword: North Carolina
Place_Keyword: North Dakota
Place_Keyword: Ohio
Place_Keyword: Oklahoma
Place_Keyword: Oregon
Place_Keyword: Pennsylvania
Place_Keyword: Rhode Island
Place_Keyword: South Carolina
Place_Keyword: South Dakota
Place_Keyword: Tennessee
Place_Keyword: Texas
Place_Keyword: Utah

Place_Keyword: Vermont
Place_Keyword: Virginia
Place_Keyword: Washington
Place_Keyword: West Virginia
Place_Keyword: Wisconsin
Place_Keyword: Wyoming
Access_Constraints: None.
Use_Constraints:
None. Acknowledgement of the PRISM model, the Spatial Climate Analysis Service at Oregon State University, the Natural Resources Conservation Service (NRCS) Water and Climate Center, the NRCS National Cartography and Geospatial Center (NCGC), and (or) the National Atlas of the United States would be appreciated in products derived from these data.
Point_of_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Spatial Climate Analysis Service
Contact_Address:
Address_Type: mailing and physical address
Address: 316 Strand Agricultural Hall, Oregon State University
City: Corvallis
State_or_Province: Oregon
Postal_Code: 97331-2202
Contact_Voice_Telephone: (541) 737-5705
Contact_Facsimile_Telephone: (541) 737-5710
Contact_Electronic_Mail_Address: oregon@oce.orst.edu
Native_Data_Set_Environment:
Windows NT Version 4.0 (Build 1381) Service Pack 4; ESRI Arc/INFO 8.0.345

Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report:
Point estimates of precipitation from the National Weather Service Cooperative (COOP) stations were subjected to manual quality control checks by the National Climatic Data Center (NCDC). PRISM precipitation estimates were reviewed by the PRISM Evaluation Group, a panel of climatologists, meteorologists, and hydrologists. The task of this group was to assess the assumptions made by the model and compare model output with the best available precipitation maps from several western states. The group found that the PRISM maps equaled or exceeded the accuracy of the best maps available.

Logical_Consistency_Report:
Precipitation data were derived from two main sources, NCDC Climate Normals and NRCS Cooperative Snow Survey Data. In general, NCDC stations are located at low elevations and in valley bottoms, and encompass the entire US. SNOTEL stations are located primarily at high elevations in the western US.

Polygon and chain-node topology are present. Checks were made to ensure that no two adjacent polygons are labeled with the same precipitation value. A manual spot check was made of peaks,

depressions, and islands.

Completeness_Report:

This data set includes observations and interpolated values for the 48 contiguous United States and the District of Columbia, for the climatological period 1961-1990. This data set is a compilation of the best available data from the various data sources.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Spatial Climate Analysis Service,
Oregon State University

Publication_Date: 1998

Title:

Parameter-elevation Regressions on Independent
Slopes Model (PRISM)

Publication_Information:

Publication_Place: Corvallis, OR, USA

Publisher: Spatial Climate Analysis Service

Type_of_Source_Media: proprietary software

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1994

Ending_Date: 1998

Source_Currentness_Reference: publication date

Source_Citation_Abbreviation: PRISM

Source_Contribution:

Create gridded estimates of precipitation from point
observations and digital elevation model data.

Source_Information:

Source_Citation:

Citation_Information:

Originator: Spatial Climate Analysis Service,
Oregon State University

Publication_Date: 1998

Title: Gaussian Filter

Publication_Information:

Publication_Place: Corvallis, OR, USA

Publisher: Spatial Climate Analysis Service

Type_of_Source_Media: proprietary software

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1994

Ending_Date: 1998

Source_Currentness_Reference: publication date

Source_Citation_Abbreviation: FILTER

Source_Contribution:

Change resolution of raster data from 4 km to 2 km using
a Gaussian filter. Gaussian filter was implemented as
custom software written in FORTRAN. For information
about Gaussian filters see : Barnes, Stanley L., 1964 :
A Technique for Maximizing Details in Numerical Weather
Map Analysis. Journal of Applied Meteorology, 3, 396-409

Source_Information:
 Source_Citation:
 Citation_Information:
 Originator: National Climatic Data Center (NCDC)
 Publication_Date: 1991
 Title:
 U.S. National 1961-1990 Climate Normals,
 Climatology of the United States No. 81 -
 Monthly Normals
 Publication_Information:
 Publication_Place: Asheville, NC, USA
 Publisher: National Climatic Data Center
Type_of_Source_Media: online database
Source_Time_Period_of_Content:
 Time_Period_Information:
 Range_of_Dates/Times:
 Beginning_Date: 19610101
 Ending_Date: 19901231
 Source_Currentness_Reference: ground condition
Source_Citation_Abbreviation: CLIM81
Source_Contribution:
 Location and values of known average annual
 precipitation.

Source_Information:
 Source_Citation:
 Citation_Information:
 Originator: Natural Resources Conservation Service
 (NRCS)
 Publication_Date: 1991
 Title:
 Cooperative Snow Survey Data of
 Federal-State-Private Cooperative Snow Surveys
 Series_Information:
 Series_Name:
 Cooperative Snow Survey Data of
 Federal-State-Private Cooperative Snow
 Surveys
 Issue_Identification: Annual issue for Western
 US states
 Publication_Information:
 Publication_Place: Portland, OR, USA
 Publisher: Natural Resources Conservation
 Service
Type_of_Source_Media: database, paper, online
Source_Time_Period_of_Content:
 Time_Period_Information:
 Range_of_Dates/Times:
 Beginning_Date: 19610101
 Ending_Date: 19901231
 Source_Currentness_Reference: ground condition
Source_Citation_Abbreviation: SNOTEL
Source_Contribution:
 Location and values of known average monthly and annual
 precipitation.
Source_Information:

Source_Citation:
 Citation_Information:
 Originator:
 Natural Resources Conservation Service,
 National Water and Climate Center
 Publication_Date: Unpublished material
 Title: Local precipitation monitoring networks
 Type_of_Source_Media: digital files
 Source_Time_Period_of_Content:
 Time_Period_Information:
 Range_of_Dates/Times:
 Beginning_Date: 19610101
 Ending_Date: 19901231
 Source_Currentness_Reference: ground condition
 Source_Citation_Abbreviation: LOCAL
 Source_Contribution: Location and values of known average
 annual precipitation.

Source_Information:
 Source_Citation:
 Citation_Information:
 Originator: Defense Mapping Agency
 Publication_Date: 1985
 Title: 1:250,000-scale Digital Elevation Models
 (DEM)
 Publication_Information:
 Publication_Place: Washington, DC
 Publisher: U.S. Geological Survey
 Online_Linkage:
 <<http://edcwww.cr.usgs.gov/doc/edchome/ndcddb/ndcddb.html>>
 Type_of_Source_Media: digital files
 Source_Time_Period_of_Content:
 Time_Period_Information:
 Single_Date/Time:
 Calendar_Date: 1985
 Source_Currentness_Reference: publication date
 Source_Citation_Abbreviation: DEM
 Source_Contribution:
 Terrain surface input to the PRISM model for estimation
 of precipitation between known points.

Source_Information:
 Source_Citation:
 Citation_Information:
 Originator: U.S. Geological Survey
 Publication_Date: 1999
 Title: State Boundaries of the United States
 Publication_Information:
 Publication_Place: Reston, VA
 Publisher: U.S. Geological Survey
 Online_Linkage:
 <<http://www-atlas.usgs.gov/atlasftp.html>>
 Type_of_Source_Media: online
 Source_Time_Period_of_Content:
 Time_Period_Information:
 Single_Date/Time:
 Calendar_Date: 1999
 Source_Currentness_Reference: publication date

Source_Citation_Abbreviation: Atlas-ST

Source_Contribution:

This file was used to determine the boundary of the data included.

Process_Step:

Process_Description:

Change resolution of raster data from 4 km to 2 km using a Gaussian filter. Gaussian filter was implemented as custom software written in FORTRAN. For information about Gaussian filters see : Barnes, Stanley L., 1964 : A Technique for Maximizing Details in Numerical Weather Map Analysis. Journal of Applied Meteorology, 3, 396-409

Source_Used_Citation_Abbreviation: PRISM, DEM, CLIM81, SNOTEL, LOCAL

Process_Date: 199804

Process_Step:

Process_Description: Contour 2 km raster data using ESRI ARC/INFO GIS package

Source_Used_Citation_Abbreviation: PRISM, FILTER

Process_Date: 199804

Process_Step:

Process_Description:

Convert adjacent isohyets to areas or polygons using custom-designed macro (AML) in Arc/INFO GIS package

Source_Used_Citation_Abbreviation: FILTER

Process_Date: 199804

Process_Step:

Process_Description:

The coverage created by the Spatial Climate Analysis Service using custom software, was edited in Arc/INFO by the Natural Resources Conservation Service, National Cartography and Geospatial Center to match the boundary layer (Atlas-ST) from the National Atlas of the United States. The coast has been verified to match the National Atlas of the United States.

Source_Used_Citation_Abbreviation: Atlas-ST

Process_Date: 200002

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains

Point_and_Vector_Object_Count: 6243

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.02083333

Longitude_Resolution: 0.02083333

Geographic_Coordinate_Units: Decimal degrees

Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: GRS1980
Semi-major_Axis: 6378137.0
Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label:

Area of equal average annual precipitation (described by
prism020.dbf)

Entity_Type_Definition:

Each polygon represents an area with a constant value
for the average annual precipitation, as determined by
the PRISM model.

Entity_Type_Definition_Source: Spatial Climate Analysis
Service PRISM Project

Attribute:

Attribute_Label: Shape

Attribute_Definition: The representation of the entity in the
data.

Attribute_Definition_Source: U.S. Geological Survey

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Polygon

Enumerated_Domain_Value_Definition: A 2-dimensional
element.

Enumerated_Domain_Value_Definition_Source: ESRI GIS
software

Attribute:

Attribute_Label: Area

Attribute_Definition: The size of the shape in coverage
units.

Attribute_Definition_Source: Natural Resources Conservation
Service

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 0.00000

Range_Domain_Maximum: 115.09402

Attribute:

Attribute_Label: Perimeter

Attribute_Definition: The perimeter of the shape in coverage
units.

Attribute_Definition_Source: Natural Resources Conservation
Service

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 0.00647

Range_Domain_Maximum: 874.33448

Attribute:

Attribute_Label: Prism0p020#

Attribute_Definition: Internal feature number.

Attribute_Definition_Source: Natural Resources Conservation
Service

Attribute_Domain_Values:

Range_Domain:
Range_Domain_Minimum: 2
Range_Domain_Maximum: 6244
Attribute:
Attribute_Label: Prism0p020-id
Attribute_Definition: User-assigned feature number.
Attribute_Definition_Source: Natural Resources Conservation Service
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 2
Range_Domain_Maximum: 6287
Attribute:
Attribute_Label: Range
Attribute_Definition: The average annual precipitation.
Attribute_Definition_Source: Spatial Climate Analysis Service
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 0.000
Range_Domain_Maximum: 200.000
Attribute_Units_of_Measure: inches
Attribute_Measurement_Resolution: 2.5

Distribution_Information:

Distributor:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: USDA - NRCS National Cartography and Geospatial Center

Contact_Address:

Address_Type: mailing and physical address

Address: 501 W Felix PO Box 6567

City: Ft Worth

State_or_Province: TX

Postal_Code: 76115

Country: USA

Contact_Voice_Telephone: (817) 509-3366

Contact_Electronic_Mail_Address: snechero@ftw.nrcs.usda.gov

Distribution_Liability:

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Standard_Order_Process:

Digital_Form:

Digital_Transfer_Information:

Format_Name: ESRI Shapefile

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name:

<<http://www.ftw.nrcs.usda.gov/prism/prism.html>>

Fees: None

Distribution_Information:

Distributor:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Spatial Climate Analysis Service,
Oregon State University

Contact_Address:

Address_Type: mailing and physical address

Address: 316 Strand Agricultural Hall

City: Corvallis

State_or_Province: OR

Postal_Code: 97331

Country: USA

Contact_Voice_Telephone: (541) 737-5705

Contact_Electronic_Mail_Address: oregon@oce.orst.edu

Distribution_Liability:

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necessarily state or reflect those of the United States Government, the State of Oregon, or any agency thereof.
Standard_Order_Process:

Digital_Form:
 Digital_Transfer_Information:
 Format_Name: ESRI Shapefile
 Digital_Transfer_Option:
 Online_Option:
 Computer_Contact_Information:
 Network_Address:
 Network_Resource_Name:

<http://www.osc.orst.edu/prism/prism_products.html>
Fees: None

Distribution_Information:

Distributor:
 Contact_Information:
 Contact_Organization_Primary:
 Contact_Organization:
 Earth Science Information Center, U.S. Geological Survey
 Contact_Address:
 Address_Type: mailing address
 Address: 507 National Center
 City: Reston
 State_or_Province: VA
 Postal_Code: 20192
 Contact_Voice_Telephone: 1-888-ASK-USGS (1-888-275-8747)
 Hours_of_Service: 0800-1600
 Contact_Instructions:
 In addition to the address above there are other ESIC offices throughout the country. A full list of these offices is at
 <http://mapping.usgs.gov/esic/esic_index.html>

Distribution_Liability:

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Standard_Order_Process:

Digital_Form:
 Digital_Transfer_Information:
 Format_Name: ESRI Shapefile
 Digital_Transfer_Option:
 Online_Option:
 Computer_Contact_Information:
 Network_Address:
 Network_Resource_Name:

 Digital_Transfer_Option:
 Offline_Option:
 Offline_Media: CD-ROM

Recording_Format: tar
Digital_Form:
 Digital_Transfer_Information:
 Format_Name: SDTS
 Digital_Transfer_Option:
 Online_Option:
 Computer_Contact_Information:
 Network_Address:
 Network_Resource_Name:

 Digital_Transfer_Option:
 Offline_Option:
 Offline_Media: CD-ROM
 Recording_Format: tar

Fees:
 There is no charge for the online option. For National Atlas files ordered on CD-ROM there is a base price of \$45.00 per disc, a handling fee of \$5.00, and a per-file charge based on file size. The charge for files less than 10 megabytes in size is \$1.00. The charge for files that range in size from 10 to 150 megabytes is \$7.50. The charge for files of 150 megabytes or larger is \$15.00. The charge is ??? for the United States Average Annual Precipitation, 1961-1990 data set.
Ordering_Instructions:
 To order files on CD-ROM, please see .

Metadata_Reference_Information:
 Metadata_Date: 20000614
 Metadata_Contact:
 Contact_Information:
 Contact_Person_Primary:
 Contact_Person: Peg Rawson
 Contact_Organization: U.S. Geological Survey
 Contact_Address:
 Address_Type: mailing address
 Address: 521 National Center
 City: Reston
 State_or_Province: VA
 Postal_Code: 20192
 Country: USA
 Contact_Voice_Telephone: 703-648-4183
 Contact_Electronic_Mail_Address: atlasmail@usgs.gov
 Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata
 Metadata_Standard_Version: FGDC-STD-001-1998
 Metadata_Security_Information:
 Metadata_Security_Classification_System: None
 Metadata_Security_Classification: Unclassified
 Metadata_Security_Handling_Description: None

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