

# A Community Guide to Researching Missouri Climate and Weather History

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## Preface

Climate data is information, predominantly measurements of weather or weather patterns, that can be used to understand patterns in weather, the current climate, and climate change. These data may be as simple as the temperature on a given day in a given location or may be as complex as a mathematical indicator for drought conditions.

The sites on this page are intended to give an overview of the historical climate of Missouri and are only sites that are available to the public and have scientific-type data: standardized, repeated, and traceable. For information on Missouri's climate prior to the mid-19th century, non-data information sources have to be used: newspapers, personal journals, travel diaries, and the like.

The sites on this page are broken down into three groups: those that track climate information on a large scale - state or region - and encompass Missouri as a whole; those that track climate information on a mid- or small scale and are specific to certain localities; and those that are specific to the St. Louis area.

Because climate data is tracked by many governmental and other institutions, there may be some overlap between data sources (more than one federal bureau has historically tracked rainfall, for instance). Each source has a brief explanation of what kind of information it provides.

The major source of climate data in the United States in the 21st century is NOAA, the National Oceanic and Atmospheric Association, and many of these sites are part of that larger government agency (and which is itself part of the Department of Commerce). The National Weather Service is part of NOAA.

# Data: Missouri

## General

### ➤ Missouri Climate Center

<http://climate.missouri.edu/>

Much historical weather data specific to Missouri can be accessed through the website of the Missouri Climate Center. Its section on Missouri Climate Data (<http://climate.missouri.edu/modata.php>) contains several links to state-level data including a list of Significant Weather Events of the Century.



The screenshot shows the Missouri Climate Center website. The main heading is "February 2015 Weather and Its Impacts on Missouri". The author is Pat Guinan, State Climatologist, Commercial Agriculture/University of Missouri Extension. The article discusses the "Old Man Winter" returning with a vengeance in February, bringing arctic cold and significant snow to Missouri. It mentions that preliminary data indicate a statewide average temperature of 26.0°F, nearly 8 degrees below the long-term average. The month was slightly colder than February last year, and it was the coldest February since 1989. The article also notes that December and January were generally mild, but the winter (Dec-Feb) average temperature was below normal. Preliminary data indicate the winter of 2014-15 averaged slightly less than 1 degree below the long-term average. Some of the coldest temperatures in more than 20 years were reported over parts of southeastern Missouri in February. A deep blanket of snow, in combination with clear skies and calm winds, maximized nighttime cooling across southeastern Missouri. Several locations reported sub-zero temperatures in the region. Cape Girardeau Municipal Airport reported minimum temperatures of -11°F, -7°F and -14°F on Feb 17, 18 and 19, respectively. An unusually mild weekend on Feb 7-8 brought brief relief from the cold, as high temperatures climbed into the 50's and 60's.

Sanborn Field - Columbia  
Humidity: 36%  
Wind Speed: 5.3 mph  
71°F Wind Dir: E  
72°C Pressure: 30.00 in. |  
Soil 2 in: 66.0°F  
Soil 4 in: 66.0°F

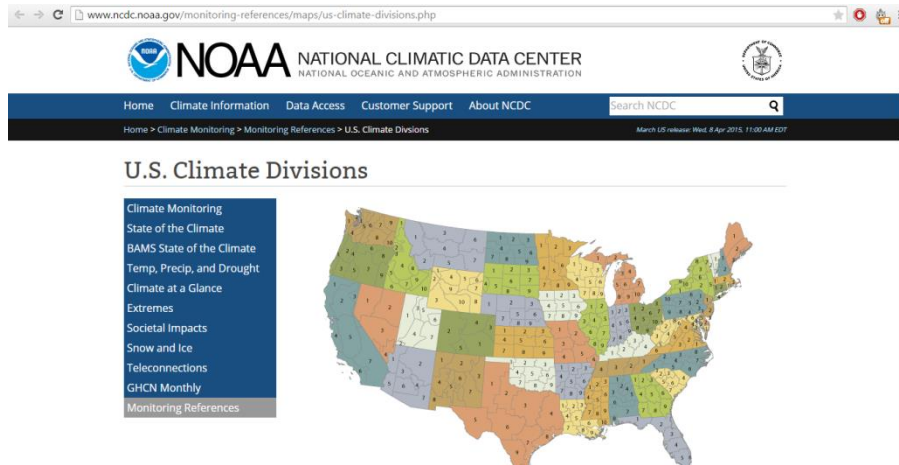
## Temperature Data

### ➤ US Climate Divisional Dataset (1895-present, monthly)

<http://www.ncdc.noaa.gov/monitoring-references/maps/us-climate-divisions.php>

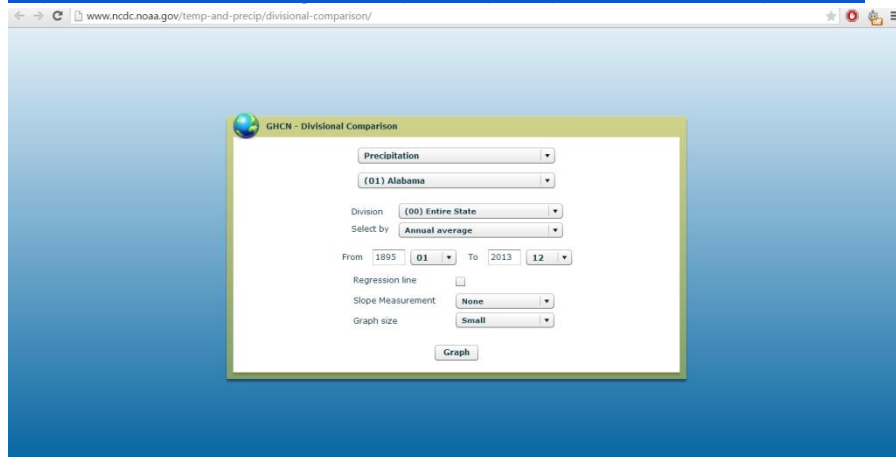
This data tracks climate data within states, which are broken into divisions. Missouri has six divisions: the Northwest Prairie (1), Northeast Prairie (2), West Central Plains (3), West Ozarks (4), East Ozarks (5), and the Bootheel (6). St. Louis is in region 2.

The temperature data for each region for the years 1931-2013 is an average of the temperature data from all the reporting stations within that region. Temperature data for each region for the years 1895-1930 was only published as an average and more specific station-level data doesn't exist. This dataset includes temperature, precipitation (rain, sleet, snow, etc.) and drought conditions.



The dataset itself is very large and difficult to interpret without computerized help, but there is also an interactive page to compare past and current climate temperature and drought conditions. You can compare data by month, season, or year in graph form.

<http://www.ncdc.noaa.gov/temp-and-precip/divisional-comparison/>

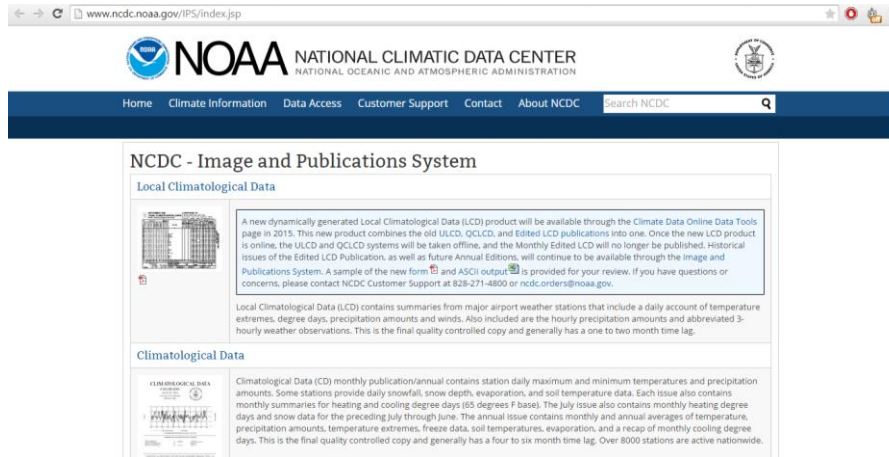


(Note: This may not work on all browsers.)

➤ **National Climate Data Center Image and Publications System**

<http://www.ncdc.noaa.gov/IPS/index.jsp>

This site includes image scans of historic printed climate publications as well as modern renderings covering a wide variety of conditions, areas, and years.



The Climatological Data page (<http://www.ncdc.noaa.gov/IPS/cd/cd.html>) covers monthly temperature and precipitation, by month. Each month's data is available in a separate PDF file and must be downloaded separately. Annual reviews are available for some but not all years. This site allows for the download of weather publications in Missouri dating back to 1884.

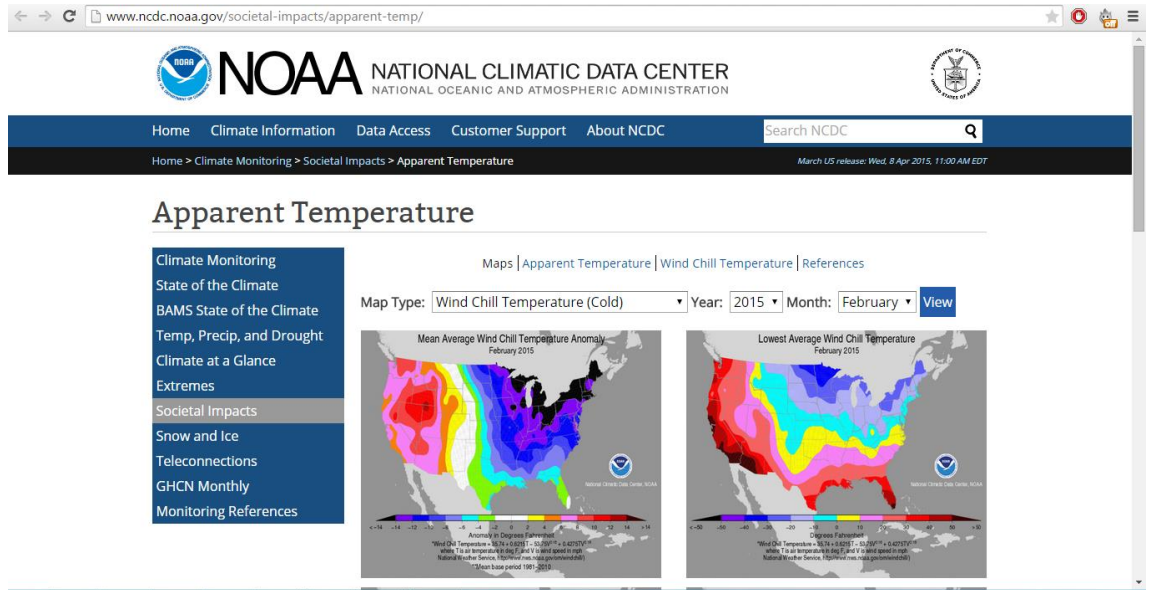


➤ **Heat Index and Wind Chill maps, 1981-present (heat index invented in 1971)**

<http://www.ncdc.noaa.gov/societal-impacts/apparent-temp/>

This site shows nation-wide maps by season and by month for the affected times of year: June, July, August for heat index; January-April for wind chill; “winter” includes data for December. This can be helpful for determining the historic risk of heat deaths; a breezy or windy day with a very high temperature and low humidity may be less risky than a muggy day with slightly lower temperature.

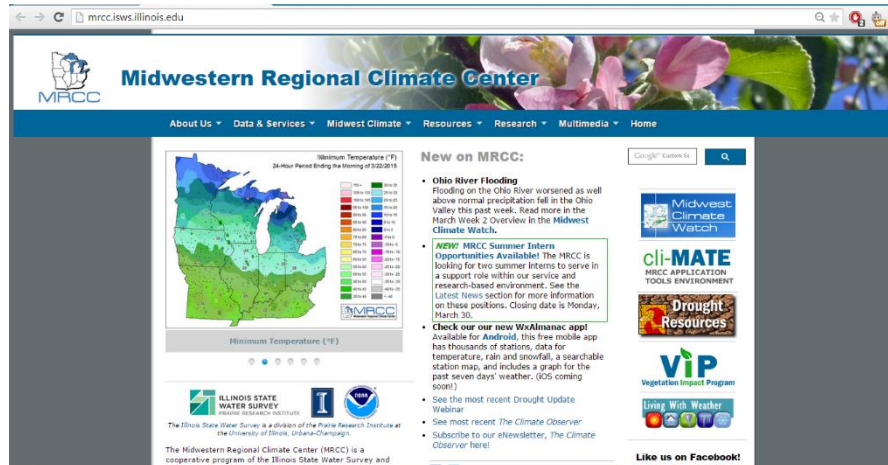




➤ **Midwestern Regional Climate Center (MRCC)**

<http://mrcc.isws.illinois.edu/>

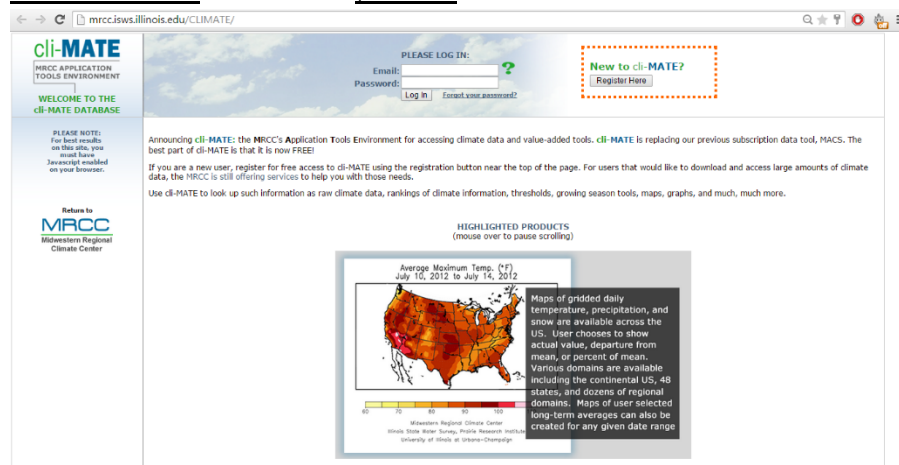
The Midwestern Regional Climate Center is a joint project of the National Climate Data Center (part of NOAA) and the Illinois State Water Survey. This site has historic and current climate data from nine states including Missouri and Illinois. (Because it is an aggregator, this site may or may not include all severe weather events. Their tornado data comes from the Storm Prediction Center.)



Their new data site, cli-MATE, requires registration (with a valid email) but is free. <http://mrcc.isws.illinois.edu/CLIMATE/>

cli-MATE has interactive tools, including maps, for data going back various years (depending on the recording station). You can choose an individual station (for instance, St. Louis Lambert International Airport) as your default data source and see what data is available. Each station has a list of the years that it covers. The oldest Missouri recording station is **ST LOUIS EADS BRG, 1873-1968**; the second oldest is **Columbia, 1889-present**. See *the*

cli-MATE User Start Guide, below.



The MRCC also includes the Climate Database Modernization Project

<http://mrcc.isws.illinois.edu/research/cdmp/cdmp.html>

The Climate Database Modernization Program (CDMP) is working to preserve and place online a wide range of observations about the climate from the last three centuries. The data is digitized and the status of the digitization is available on this page; the data itself is included in cli-MATE. This project includes a history of data from Harrisonville, MO, 1859-1984, which predates any data available in cli-MATE.

## Precipitation

(see also: other sources above)

➤ **Regional Snowfall Index Historic Storms page**

<http://www.ncdc.noaa.gov/snow-and-ice/rsi/historic-storms>

This site has simple descriptions of major snowstorms, 1940s-present. Missouri is in the “Ohio Valley” region for this project’s data



## Floods

➤ **Mississippi River Flood History, 1543-present**



[http://www.srh.noaa.gov/lix/?n=ms\\_flood\\_history](http://www.srh.noaa.gov/lix/?n=ms_flood_history)

This site's data is specific to the Lower Mississippi (New Orleans and environs) but some floods listed are documented as starting much further north. It may be useful for people looking to chart the long-term history of floods of the Mississippi.

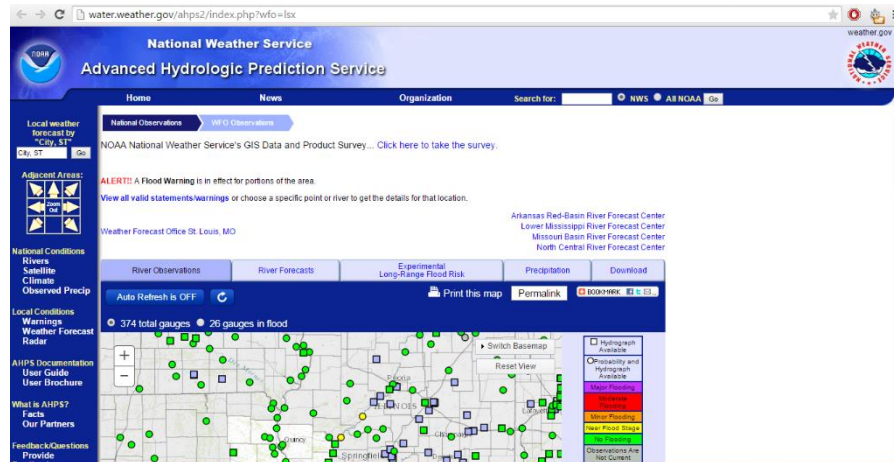
The screenshot shows the National Weather Service River Forecast Office website for New Orleans/Baton Rouge. The main content is a table titled "High Flows and Flood History on the Lower Mississippi River" with the subtitle "Below Red River Landing, LA (1543-Present)". The table has three columns: Year, Dates, and Event Highlights. The event highlights include historical events such as Explorer Hernando Desoto's flood in 1543, the city of New Orleans being inundated in 1734-35, and the 1903 Great Flood.

Year	Dates	Event Highlights
1543		Explorer Hernando Desoto encountered a flood on the river near Memphis, TN that persisted over 40 days and likely extended to the lower reaches of the river. [Chronicles by Garcilaso de la Vega (Hoyt, WMO)]
1734-35	December-June	City of New Orleans was inundated for several months. [Hoyt]
1788	July	Severe flooding of the Mississippi River due to a landfalling hurricane's surge. Aid given to Acadian settlers at Fort Stute, Manchac and Baton Rouge. The settlers had arrived in 1783. [TheCajuns.com]
1809		All of the lower Mississippi River was inundated by flooding. [Hoyt]
1825		Last known inundation of New Orleans due to spring flooding. [Hoyt]
1851	June	Major flooding due to excessive rains in Iowa. [Hoyt]
1858		Major destruction of private landowner levees. [O'Brien]
1859		Major destruction of private landowner levees. [O'Brien]
1874		Inundation and numerous private levee failures. [O'Brien]
1882	March	Lower Mississippi Valley flooded; private levee failures. [Hoyt, O'Brien]
1883	June	Private levee failures inundate farm lands. [O'Brien]
1884	February	High flows from Ohio River. [Hoyt]; Private levee failures on lower MS River. [O'Brien]
1890		Private levee failures inundate farm lands. [O'Brien]
1893		High flows and levees held. [O'Brien]
1897	April-May	Baton Rouge crested at 40.05' May 13-15; New Orleans 19.17' on May 13th. [AHPS E-19]
1903	May	9th highest crest of record at New Orleans 19.42 feet on May 29th. [AHPS]
1908	May-July	Lower MS above flood stage for over 100 days below Arkansas City, AR. [Hoyt]

➤ **The National Weather Service River Forecast Office/Advanced Hydrological Prediction Service**

<http://water.weather.gov/ahps2/index.php?wfo=lsx>

This site tracks river levels, including flood stages, for US rivers. This is the link to the St. Louis Forecast Office and has links for individual rivers at various locations. Each historical crest is location-based and each must be searched separately.



Examples:

- National Weather Service Historical Missouri River crests  
<http://water.weather.gov/ahps2/crests.php?wfo=oax&gage=sscn1>
- Historical Crests of the Mississippi River at St. Louis  
<http://water.weather.gov/ahps2/crests.php?wfo=lsx&gage=eadm7>

Note that the St. Louis Forecast Office also covers much of southern Illinois and rivers may be listed without having any relevant Missouri data.

Waterway Menu			Collapse
Big River	La Moine River	North River (MO)	
Black River	Little St. Francis River	North Fabius River	
Bourbeuse River	Maries River	North Fork Salt River	
Cuivre River	Meramec River	Osage River	
- at St. Peters	Middle Fabius River	St. Francis River	
Gasconade River	Middle Fork Salt River	Salt River (MO)	
Hinkson Creek	Mississippi River	South Fabius River	
Illinois River	Missouri River		
Kaskaskia River	Moreau River (MO)		

## Tornadoes (may include Severe Thunderstorms/Lightning Storms)

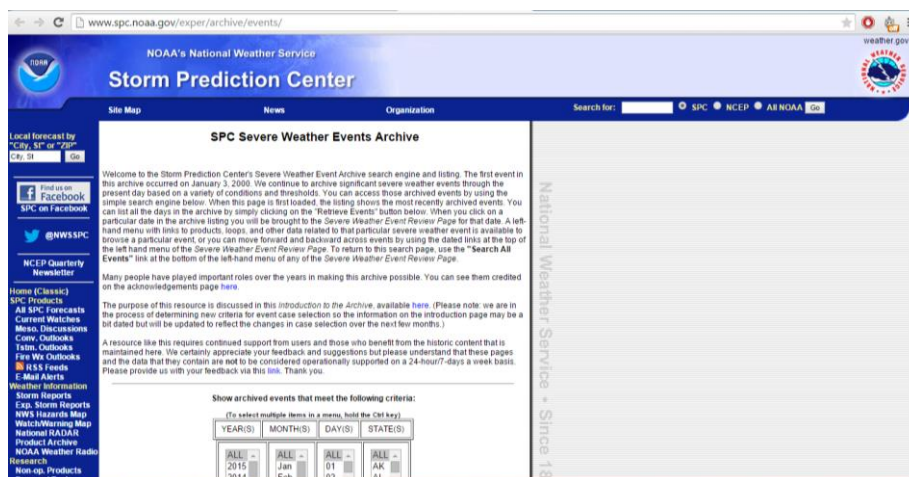
### ➤ NOAA Storm Prediction Center Severe Events Archive

<http://www.spc.noaa.gov/exper/archive/events/>

The Severe Events Archive has a listing of “severe storm events” that can be searched by year and state. Each event has its own page (for instance, the event of January 3, 2000:

<http://www.spc.noaa.gov/exper/archive/event.php?date=20000103>) which lists all

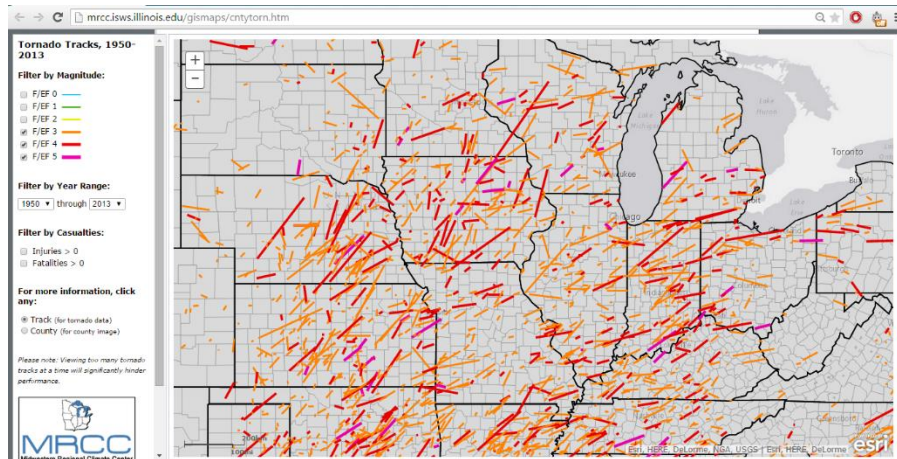
reported incidents for that severe event. The events themselves aren’t confined to a given state, so each event must be viewed individually to see its effect on Missouri. To view the warnings or information put out by the National Weather Service for each event, navigate to that event’s page and click on “Click for discussions issued on [date]”



### ➤ Midwest Climate Center, Tornado Tracks Tool

<http://mrcc.isws.illinois.edu/gismaps/cntytor.htm>

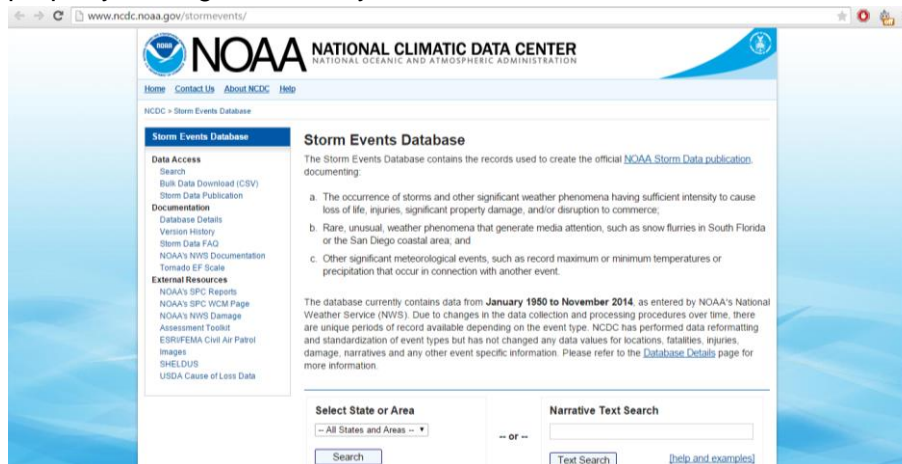
This website offers functionality similar to the previous, with a few additional search delimiters such as fatalities and deaths.



➤ **NCDC Storm Events Database**

<http://www.ncdc.noaa.gov/stormevents/>

This site also has an archive of storm events, which you can search by county or by type of event. The earliest data is from January 1950. The database can be searched by area or by “narrative text search” which allows you to do searches such as “Missouri drought.” The data includes information on deaths, injury, and property damage caused by each storm.



➤ **National Climate Data Center Image and Publications System**

The Climatological Data page (<http://www.ncdc.noaa.gov/IPSCD/cd.html>)

includes downloadable reports from the National Weather Bureau’s Missouri Section that include narrative and statistical information on extreme weather events dating back to 1884.



## Data: Missouri Localities

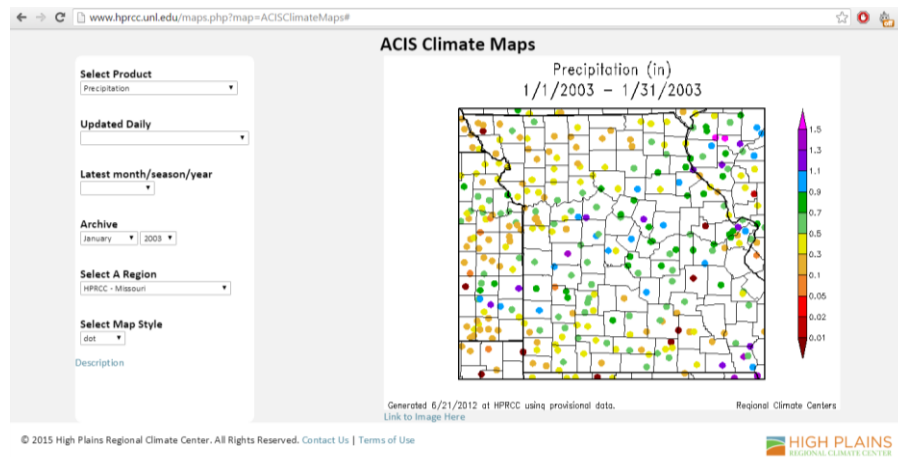
### Temperature and Precipitation

#### ➤ High Plains Regional Climate Center

This website aims to disseminate weather data pertinent to the High Plains region of the United States. Among its features is an interactive map of individual states that allows users to access historical data from individual weather stations. Missouri's map can be accessed through

<http://www.hprcc.unl.edu/maps.php?map=ACISClimateMaps>

By selecting precipitation and HPRCC – Missouri, users are able to local data on temperature and precipitation over various temporal intervals ranging back to 2003.



### Floods

#### ➤ Missouri Climate Center, River Information for Missouri

<http://agebb.missouri.edu/weather/river.htm>

Follow the links to “observed river conditions” for major rivers in Missouri and then look for links in the right hand column under the “Climate and History” heading. Here you will find archival data and information on major flood events.

➤ **Water Resources of Missouri**

<http://mo.water.usgs.gov/>

This site provides information on Missouri’s rivers and streams. Here, you can find real-time information on stream stages, streamflow, water quality, and groundwater levels for over 200 Missouri sites. The left hand menu offers options for exploring historical data for streamflow, groundwater, water quality, annual data reports, and the Instantaneous Data Archive (IDA).

**Data: St. Louis**

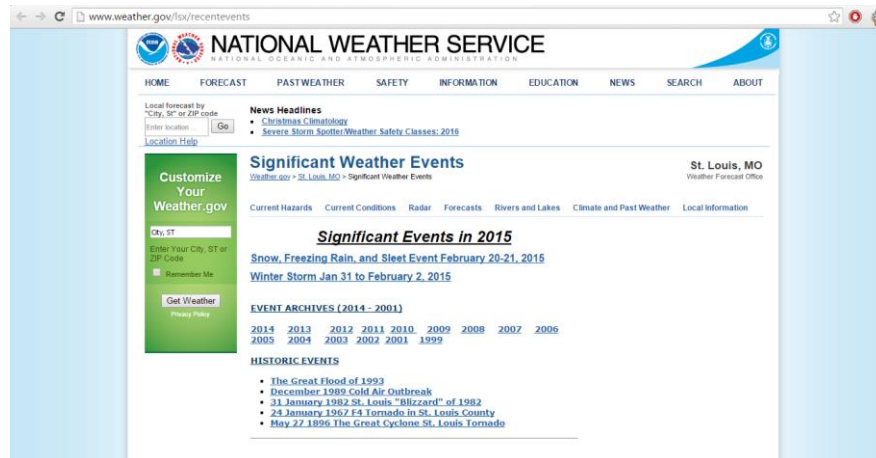
Many of the Missouri data sources above contain within them data specific to the St. Louis metro area or to St. Louis City or County in particular. Below are sources that are specific to St. Louis and do not as a rule cover the rest of the state.

➤ **National Weather Service Events Archive**

<http://www.weather.gov/lx/recentevents>



This site covers significant weather events for St. Louis as tracked by the National Weather Service. Data is year-by-year from 1999 and there are descriptions of six “historic” events back to 1896. Note that this is the St. Louis regional office of the National Weather Service, so there is some data for southern Illinois as well.

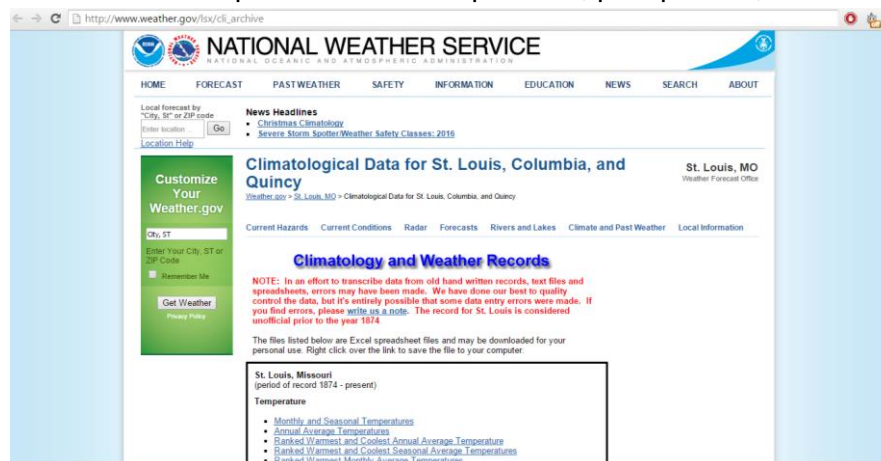


## Temperature

- **National Weather Service Climatological and Weather Records**

[http://www.weather.gov/lsc/cli\\_archive](http://www.weather.gov/lsc/cli_archive)

This page is specific to data for St. Louis, Columbia, and Quincy, Illinois. Information is downloadable as numerical data in Microsoft Excel spreadsheet format. Dataset options include temperature, precipitation, and snowfall.



## Floods

- **Water Management Historic Data Archive** <http://mvs-wc.mvs.usace.army.mil/archive/archindex.html>

This site archives Army Corps of Engineers historic flood stage data for the St. Louis station, which covers ten rivers. Each river must be searched separately, and data are in tables in PDF format. Flood stage measurements date back to



1861. Data is available for downtown St. Louis and the Chain of Rocks station, among others.

**US Army Corps of Engineers**  
St. Louis District

**Water Management Historic Data Archive**

Mississippi River	Illinois River	Missouri River	Kankaskia River	Salt River
Cuivre River	Meramec River	Big Muddy River	St. Francis River	Ohio River

**INTRODUCTION**

This publication is a compilation of the records that observed daily river levels, computed daily flow rates, and stream flow measurements of the Mississippi River and its tributaries. Most stations are within the boundaries of the St. Louis Region District.

Traditionally, river level and stage data are used for computing flow rates (or rates) in the definition of river elevation, because the sea surface is available worldwide. For this reason, the zero datum to which elevations or heights (including river levels) were reduced was formerly called "Sea Level Datum of 1929" or "Mean Sea Level Datum" in this series of reports.

The zero datum formerly in use is the National Geodetic Vertical Datum of 1929 (NGVD). This datum was obtained by taking the average sea level over a period of about 19 years at 28 tide-gauging stations along the Atlantic, Gulf of Mexico and Pacific Coasts.

Although the datum was derived using average tidal measurements, it is not meant to represent local mean sea level at any specific place or time. In addition, while NGVD represents a rounded sea surface in 1929, changes over the 20th century, it should not be confused with zero gauge datum.

In this publication, both the time of the readings and the zero page datum of each page appear directly over the tabulation. Current Standard Time (Eighteenth Century Time) is used. Single readings occur daily at 1:00 AM and discharge are given daily unless so written otherwise unless noted otherwise. The station number for the Mississippi River are the distance from the mouth or the Ohio. The station number the tributaries is generally measured from the mouth of the tributary.

The discharge or flow rate is the quantity of water flowing past a cross section of the stream in a unit of time, and is expressed in cubic feet per second (cfs). The location of the discharge range is given in the footnotes after the tabulation of observed discharges for each station.

**DATA FILES AVAILABLE ON THIS SERVER**

The files located on this server are organized by their DATETIME ID is a storage ID. To determine how the files can be downloaded or viewed, first navigate to the through the website until you find the page of interest.

➤ **The National Weather Service River Forecast Office/Advanced Hydrological Prediction Service Historical Crests of the Mississippi River at St. Louis**

<http://water.weather.gov/ahps2/crests.php?wfo=lsx&gage=eadm7>

This page features the raw data for Mississippi crests, in order of flood height, dating back to 1785.

**Historic Crests**

- (1) 49.58 ft on 08/01/1993
- (2) 43.23 ft on 04/28/1973
- (3) 42.00 ft on 04/01/1785 (P)
- (4) 41.89 ft on 05/22/1995
- (5) 41.32 ft on 06/27/1844
- (6) 40.52 ft on 06/04/2013
- (7) 40.30 ft on 07/02/1947
- (8) 40.28 ft on 07/21/1951
- (9) 39.27 ft on 12/07/1982
- (10) 39.20 ft on 05/04/1983
- (11) 39.14 ft on 04/30/1944
- (12) 39.13 ft on 10/09/1986
- (13) 38.94 ft on 05/24/1943
- (14) 38.91 ft on 10/01/1993
- (15) 38.67 ft on 07/01/2008
- (16) 38.00 ft on 06/10/1983
- (17) 37.79 ft on 04/14/1979
- (18) 37.34 ft on 05/17/2002
- (19) 36.72 ft on 09/18/2008
- (20) 36.61 ft on 04/15/1994
- (21) 36.60 ft on 04/17/1993
- (22) 36.60 ft on 06/10/1851
- (23) 36.50 ft on 04/10/1983
- (24) 36.10 ft on 04/26/1927
- (25) 36.00 ft on 05/19/1892
- (26) 35.45 ft on 04/25/2013
- (27) 35.35 ft on 06/02/1996
- (28) 35.30 ft on 04/21/1945
- (29) 35.30 ft on 06/13/1945
- (30) 35.25 ft on 07/16/1909
- (31) 35.18 ft on 06/28/2010
- (32) 34.95 ft on 06/20/1908
- (33) 34.93 ft on 05/01/2011
- (34) 34.90 ft on 06/26/1943
- (35) 34.83 ft on 05/20/2010

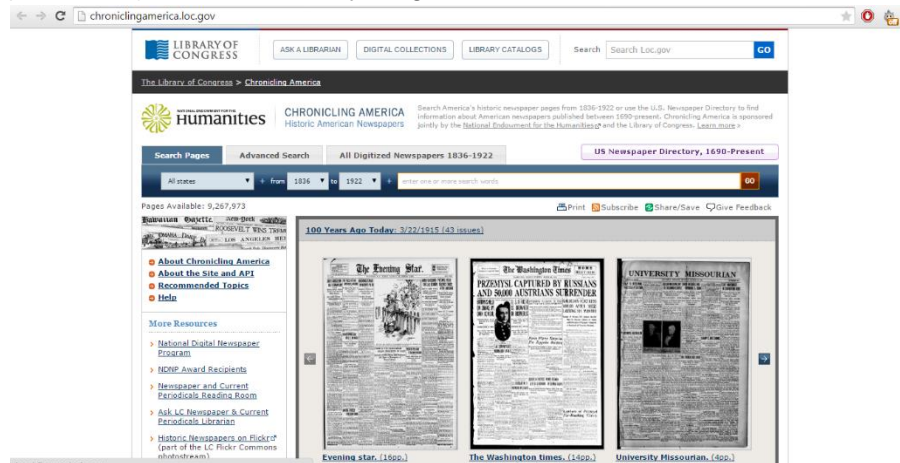
# General Weather Data and History Resources

These additional resources contain some information about historical climate conditions in the region, the country, or the world that may be useful for making comparisons.

➤ **Library of Congress Chronicling America**

<http://chroniclingamerica.loc.gov/>

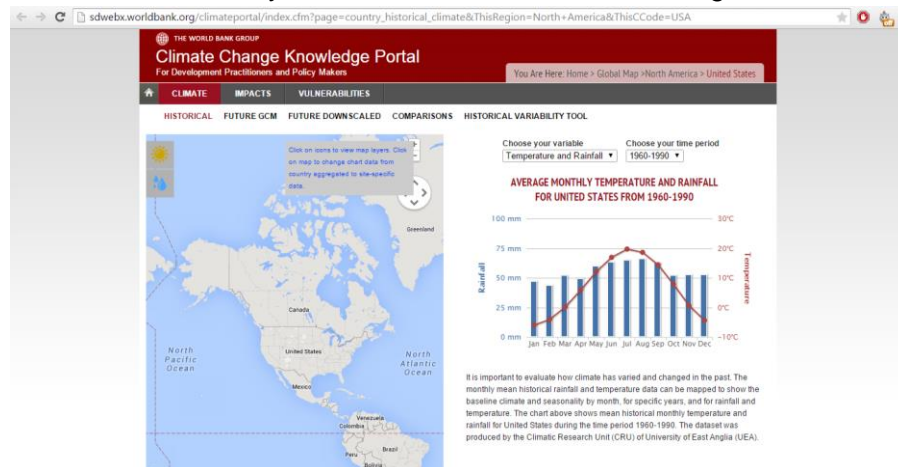
This site showcases digitized historical newspapers 1836-1922, including the St. Louis Republic; the Evening Missourian and the University Missourian (Columbia); the Iron County Register, and more.



➤ **World Bank Climate Change Knowledge Portal**

[http://sdwebx.worldbank.org/climateportal/index.cfm?page=country\\_historical\\_climate&ThisRegion=North%20America&ThisCCCode=USA](http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisRegion=North%20America&ThisCCCode=USA)

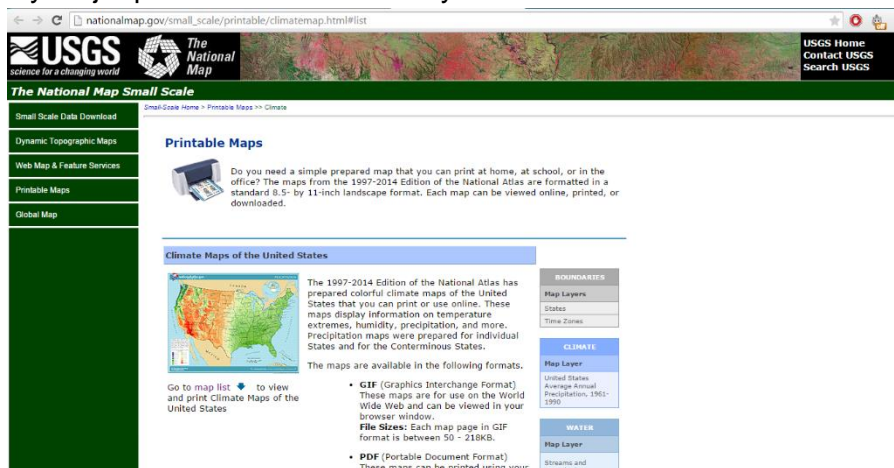
This site includes an interactive map with temperature and rainfall data going back to 1900, in 30-year increments. Can narrow to a given Latitude/Longitude.



➤ **The National Map Small-Scale Collection**

[http://nationalmap.gov/small\\_scale/printable/climatemap.html#list](http://nationalmap.gov/small_scale/printable/climatemap.html#list)

The National Map Small-Scale Collection, which was previously part of the National Atlas, includes an archive of printable climate maps from the 1997-2014 edition. This edition was previously available digitally but has been taken offline as of October 2014. Print copies of this and prior editions should be available in any major public or research library.

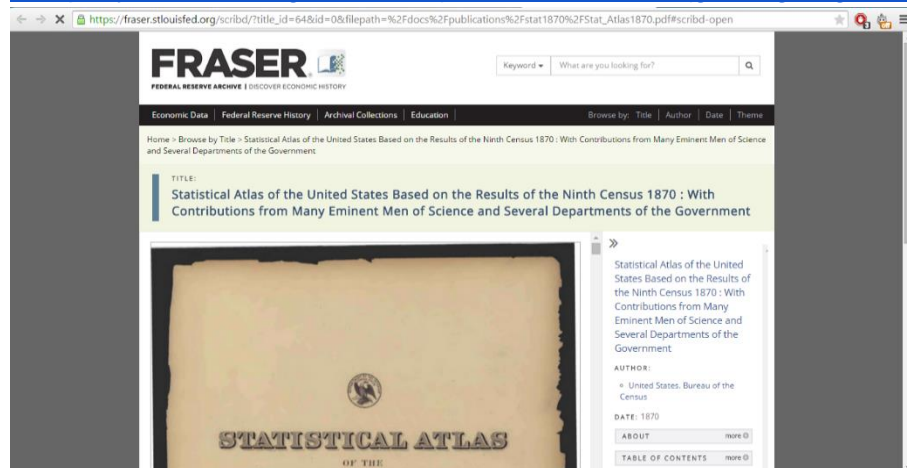


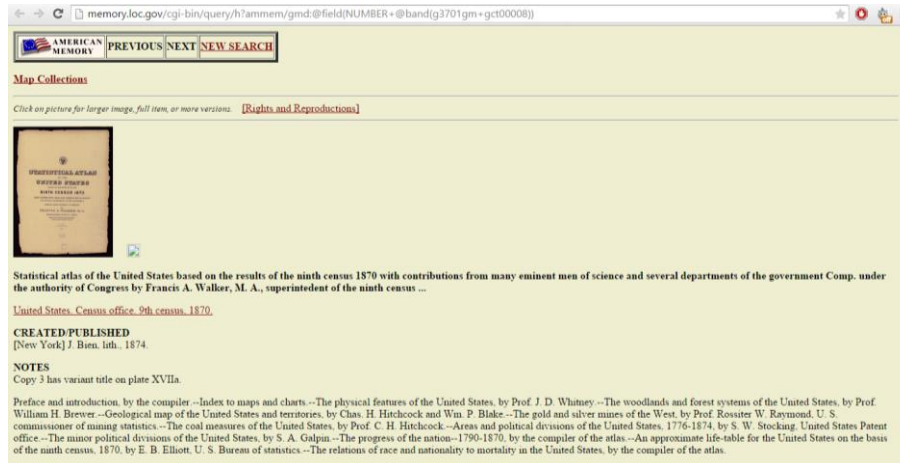
➤ **Statistical Atlas of the United States**

[https://fraser.stlouisfed.org/scribd/?title\\_id=64&id=0&filepath=%2Fdocs%2Fpublications%2Fstat1870%2FStat\\_Atlas1870.pdf](https://fraser.stlouisfed.org/scribd/?title_id=64&id=0&filepath=%2Fdocs%2Fpublications%2Fstat1870%2FStat_Atlas1870.pdf)

This first edition of the National Atlas included demographic, topographical, and climate data from the early 1870s. Relevant maps include precipitation, temperature, barometric pressure, and major storm centers. This version is a compiled PDF that can be downloaded in full by clicking on “Get” and then “Document (PDF)” in the right-hand menu. For individual map images (with higher resolution), visit the Library of Congress site:

[http://memory.loc.gov/cgi-bin/query/h?ammem/gmd:@field\(NUMBER+@band\(g3701gm+gct00008\)\)](http://memory.loc.gov/cgi-bin/query/h?ammem/gmd:@field(NUMBER+@band(g3701gm+gct00008)))





## Aerial Data

### ➤ The State Historical Society of Missouri

<http://statehistoricalsocietyofmissouri.org/cdm/search/collection/aerial/searchterm/louis/field/descri/mode/all/conn/and/order/nosort/ad/asc/cosuppress/0>

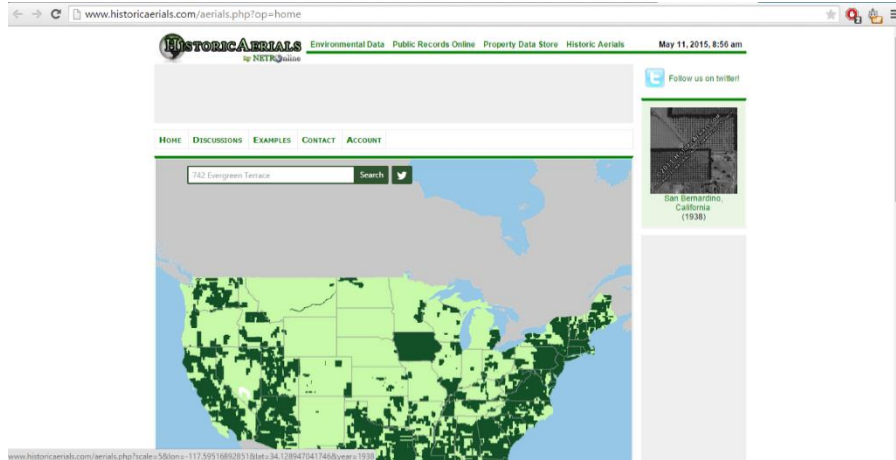
The State Historical Society of Missouri possesses aerial photographs of St. Louis County in 1958 and 1965 that can be viewed online.



### ➤ Historic Aerials

<http://www.historicaerials.com/aerials.php?op=home>

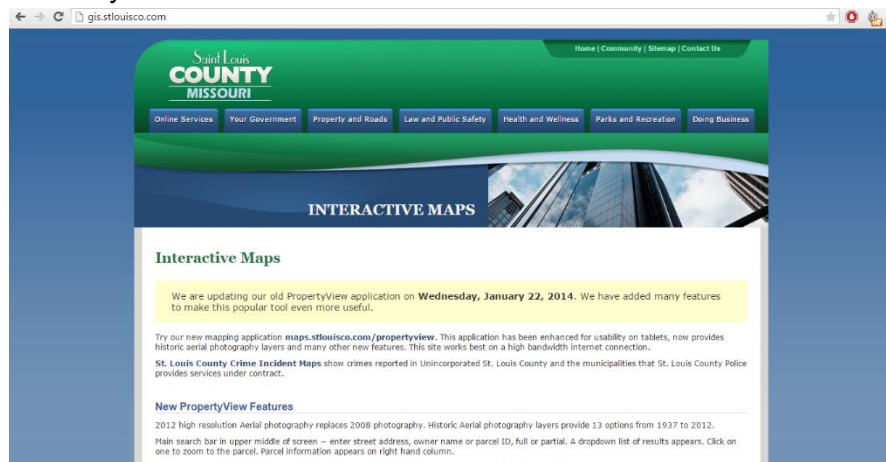
This site contains aerial photographs of several different areas, including St. Louis County. The maps can be viewed for free with a watermark. Includes images from 1958, 1971, 1988, 1996, 2002, 2004, 2005, 2006, 2007, 2011, and 2012.



➤ **St. Louis County Interactive Maps**

<http://gis.stlouisco.com/>

This site includes historic aerial photographs from 1937, 1955, 1966, 1970, 1981, 1997, 2000, 2002, 2004, 2006, 2008, 2010, 2012, and 2014. The interactive maps include features such as FIRM panels; special flood hazard areas (1% annual chance); other flood areas (.02% annual chance); zoning; and FEMA floodways.



➤ **National Archives, Aerial Photography of the Soil Conservation Service, 1934-1954**

<http://research.archives.gov/description/305849>



Images are not available online, but can be requested through the National Archives. The photographs primarily cover the Southwest. Coverage is of watersheds, soil erosion districts, and other areas relating to soil conservation projects. St. Louis County images from 1937; 17 indexes.

research.archives.gov/description/305849

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**Records Hierarchy**

**Record Group 114:**  
Records of the Natural Resources Conservation Service, 1875 - 2002

**Series:**  
Aerial Photography of the Soil Conservation Service, 1934 - 1954

**Tags Contributed by the Public**

[Tagging Policy](#) | [FAQ](#)

**Aerial Photography of the Soil Conservation Service, 1934 - 1954**

**!** This Series describes records, some of which may not be available online.  
To obtain a copy or view the records, please contact or visit the National Archives and Records Administration location(s) listed in the Contact information below.

**National Archives Identifier:** 305849

**Local Identifier:** 114-APFOFILM

**Creator(s):** Department of Agriculture: Soil Conservation Service: Aerial Photography Field Office (ca. 1945 - ca. 1954) (Most Recent)

**From:** Record Group 114: Records of the Natural Resources Conservation Service, 1875 - 2002

**Details**

**Level of Description:** Series

**Type(s) of Archival Material:** Photographs and other Graphic Materials

**The creator compiled or maintained the series between:** 1934 - 1954

**Includes:** 6 item(s) described in the catalog [Search within this Series](#)

**Arrangement:** Arranged either by symbol and roll number on microfilm or by accession number in cut film reels.



# cli-MATE User Start Guide

- If you don't already have a cli-MATE account, you will have to register for one. In your web browser, go to <http://mrcc.isws.illinois.edu/CLIMATE/index.jsp> and click on "Register Here" at the top right hand corner of the page



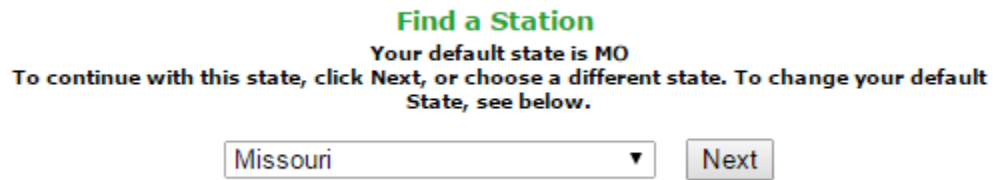
- Once you've filled out the form, you should be redirected to the login page.  
**Note:** make sure that if you have more than one email, you remember which one you've used to register for the site. The password reset will produce an error page if your information does not match what's in the cli-MATE database.
- Log in with your email and cli-MATE password.
- Once you're logged in, you will be taken to your home page, which should display the information for your current weather station. This will default to cli-MATE's home station.



- You can change the default and current station manually. At the top of the left-hand menu, under "Hi, [Your name]," it should say "Select Station." This will take you to a new page.



- o If you know the name of the weather station you can enter it here.
- o If you need to look up the name of the weather station, you can do it by location.



- Clicking “Next” takes you to a new page. You can then narrow the station list by county, or choose by name.

**Select a station by County:**

Choose a County and click "Next" ▼

- Once you’ve chosen a county, click “Next.” All the weather station locations for that county will be listed on the next page.

**Select a station in  
ST. LOUIS CITY COUNTY , MO  
(click the 'go' button next to the station you want)**

	City/Name		Latitude	Longitude	Elevation	Period of Record
<input type="button" value="Go"/>	ST LOUIS UNIV	<input type="button" value="More Info"/>	38.63	-90.23	561	1911 - 1973
<input type="button" value="Go"/>	ST. LOUIS 1.0 SW	<input type="button" value="More Info"/>	38.63	-90.26	490	2011 - 2011
<input type="button" value="Go"/>	ST. LOUIS 1.5 S	<input type="button" value="More Info"/>	38.61	-90.25	511	2009 - 2013
<input type="button" value="Go"/>	ST. LOUIS 2.4 S	<input type="button" value="More Info"/>	38.60	-90.25	504	2009 - 2010
<input type="button" value="Go"/>	ST. LOUIS 4.9 SW	<input type="button" value="More Info"/>	38.60	-90.29	486	2010 - 2012
<input type="button" value="Go"/>	ST. LOUIS 5.7 SW	<input type="button" value="More Info"/>	38.58	-90.29	490	2013 -
<input type="button" value="Go"/>	ST. LOUIS 6.3 SW	<input type="button" value="More Info"/>	38.57	-90.29	463	2014 -

- Choose your preferred station by pressing “Go” next to the appropriate name. Note that the last column gives dates of recording at that station, so make sure the dates match the period you’re attempting to research. Pressing “Go” will take you back to the home page, but you will have a new default station. All the links in the left-hand navigation will now default to the Station, County, and State you have chosen.



From here, you can research any number of climate events or statistics. To find data on a different part of the state, simply select another station.

## Using cli-MATE to Find Warmest/Coldest Periods

1. After selecting the desired station per the directions above, select “Station Data” from the menu on the left hand side. From the station data menu, select “Annual” and then click on “Summary by Month.”

The screenshot shows the cli-MATE interface. On the left is a vertical menu with options: Select Station, Station Data, County Data, Climate Division Data, State Data, Maps of Gridded Data, Charts and Graphs, and Home Links. The 'Station Data' option is highlighted in green, and a sub-menu is open showing: Hourly, Daily, Monthly, Seasonal, Annual (highlighted in green), and Multi-Station. To the right of the sub-menu, there are radio buttons for 'Custom', 'Period', '5 Years', '10 Years', and '30 Years'. Below these, there is a section titled 'choose one of the following:' with options: Summary by Month (highlighted in green), Ranking, Between Specific Years, Thermograph, Maximum Snow, and Greatest 1-Day Precipitation (in).

2. On the Annual Climate Summary by Month page, mark “Period of Record” to see the station’s entire history. Under Climate Elements, select “Average Mean Temperature.”

The screenshot shows the 'ANNUAL CLIMATE SUMMARY BY MONTH' page. At the top, there are radio buttons for 'Custom', 'Period of Record' (selected), '5 Years', '10 Years', and '30 Years'. Below these are dropdown menus for 'Annual Period' (set to 'January-December'), 'Beginning Year' (set to '1874'), and 'Ending Year' (set to '1968'). A section titled 'Climate Elements - choose one of the following:' contains several radio button options. 'Average Mean Temperature (°F)' is selected. Other options include Total Precipitation (in), Total Snowfall (in), Maximum Snow Depth (in), Greatest 1-Day Precipitation (in), Greatest 1-Day Snowfall (in), Average High Temperature (°F), Average Low Temperature (°F), Heating Degree Days (Base 65°F), Cooling Degree Days (Base 65°F), Growing Degree Days (Base 50°F), Modified Growing Degree Days (Base 50°F, Ceiling 86°F), Highest Max. Temperature (°F), Lowest Max. Temperature (°F), Highest Min. Temperature (°F), and Lowest Min. Temperature (°F). At the bottom center is a 'Get Climate Data' button. In the bottom right corner, there is a logo for 'Powered by ACIS Regional Climate Centers'.

3. Click “Get Climate Data” to see results. The results will be arranged in a table:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
1874	35.2	36.0	43.2	46.9	68.2	78.6	80.8	78.1	70.0	58.1	43.8	38.1	56.4
1875	23.3	26.0	40.2	51.2	64.1	72.2	77.8	72.5	67.0	54.5	41.3	43.5	52.8
1876	41.2	41.4	40.9	57.9	67.3	73.3	79.3	78.4	67.2	55.8	41.5	24.7	55.7
1877	31.1	42.0	39.1	54.9	63.6	74.4	77.9	75.9	69.8	60.6	42.6	48.3	56.7
1878	35.7	40.9	54.3	60.9	63.5	72.7	81.7	79.2	68.9	56.8	47.0	26.9	57.4
1879	27.6	33.8	48.4	55.1	68.7	73.6	80.9	75.7	65.6	64.2	47.9	35.0	56.4
1880	46.9	40.6	43.1	57.9	70.2	74.4	77.8	79.7	67.5	56.2	33.0	28.3	56.3
1881	22.1	31.2	39.6	51.8	71.4	76.1	82.1	83.7	76.7	61.9	44.2	41.6	56.9
1882	32.4	44.9	48.4	59.3	60.2	74.5	75.4	75.5	69.9	62.3	45.5	32.6	56.7
1883	24.4	31.2	39.6	57.3	62.9	73.1	77.7	74.7	68.0	56.6	50.4	40.9	54.7
1884	26.2	36.7	44.2	54.5	65.2	74.2	78.6	75.3	74.9	63.6	47.0	33.6	56.2
1885	26.3	27.4	41.4	57.0	65.5	74.6	81.7	75.9	69.1	56.6	48.3	39.0	55.2
1886	25.6	36.6	45.2	59.3	69.4	74.7	80.6	79.6	72.1	61.4	46.1	29.9	56.7
1887	30.9	40.4	46.1	60.7	71.1	77.1	83.7	79.1	70.0	54.2	45.4	31.8	57.5
1888	25.1	33.1	41.0	59.4	63.1	73.8	79.8	74.7	66.7	55.0	44.9	38.2	54.6
1889	34.8	31.4	46.6	58.1	63.8	70.7	77.9	75.4	67.0	55.1	41.4	49.8	56.0
1890	39.0	40.2	39.0	57.2	63.8	79.3	79.8	74.7	65.0	57.3	48.6	37.7	56.8
1891	36.7	36.2	38.9	58.8	63.5	75.7	74.9	74.8	74.0	57.5	41.2	42.8	56.3
1892	25.9	40.1	40.5	54.0	62.9	76.6	77.1	77.8	70.3	60.1	41.5	33.0	55.0
1893	24.0	31.0	42.7	57.0	63.7	75.2	80.2	76.1	73.3	58.1	45.5	36.2	55.2
1894	37.5	32.3	52.8	58.2	66.0	79.1	79.2	78.7	70.4	59.6	43.2	38.8	58.0
1895	26.8	26.5	45.4	60.3	66.6	77.1	76.4	77.9	75.0	54.2	43.2	37.0	55.5
1896	35.9	36.8	40.6	64.8	73.0	74.0	79.0	79.4	68.2	57.2	46.2	40.8	58.0
1897	30.6	36.8	46.7	56.1	63.5	75.1	80.5	76.8	77.4	66.3	46.1	32.8	57.4
1898	37.3	38.3	47.2	54.4	67.1	77.8	78.3	78.4	74.1	56.0	43.1	32.6	57.1

4. To find the coldest periods, use the arrows next to each month to rank by lowest temperatures (I did this for January, February, and December). Only one month can be ranked at a time. For example, here's January:

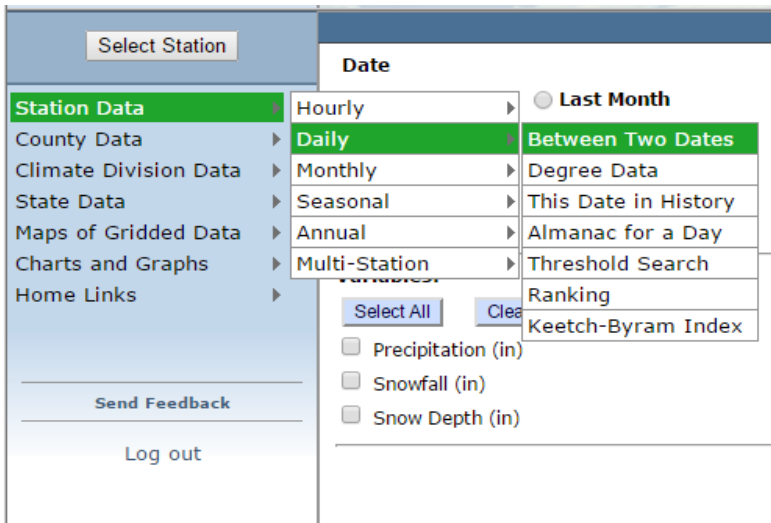
**Average Mean Temperature (I**

Year	Jan
1940	17.2
1918	18.9
1912	20.5
1881	22.1
1875	23.3
1963	23.4
1893	24.0
1905	24.2
1883	24.4
1930	24.7
1888	25.1
1936	25.4
1886	25.6
1962	25.7
1892	25.9
1884	26.2
1885	26.3
1924	26.6
1948	26.6
1895	26.8
1966	26.8
1959	27.1
1879	27.6
1929	27.6
1904	27.8
1957	28.0
1920	28.3
1945	28.7
1915	29.6

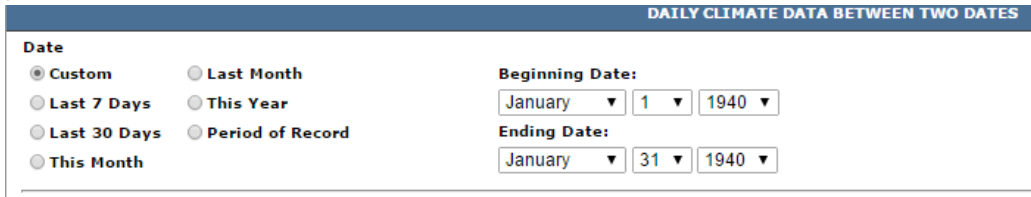
5. Similarly, to find warmest months, rank June, July, and August by highest temperature.

Jun
84.1
82.5
82.4
81.7
81.1
80.5
79.6
79.6
79.3
79.3
79.1
78.9
78.6
78.5
78.3
78.3
78.2
78.0
77.9
77.8
77.8
77.6
77.5
77.4
77.3
77.3
77.2
77.1
77.1
77.1

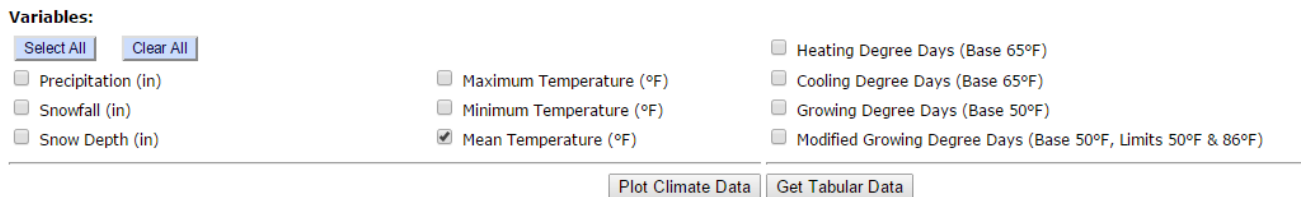
6. Once you have noted the coldest and warmest months you want to track, select “station data” from the menu on the left side. From the station data menu, select “daily” and then “between two dates.”



7. Choose “custom” under date, and then input the desired dates. Begin with a month-long period.



8. Under variables, select Mean Temperature.



9. Click “Get Tabular Data” to see results.



Date	Mean Temp (°F)
1940-01-01	10.5
1940-01-02	7.0
1940-01-03	14.5
1940-01-04	13.0
1940-01-05	4.0
1940-01-06	13.5
1940-01-07	20.5
1940-01-08	21.5
1940-01-09	25.5
1940-01-10	32.0
1940-01-11	38.5
1940-01-12	27.5
1940-01-13	31.5
1940-01-14	31.0
1940-01-15	23.5
1940-01-16	30.0
1940-01-17	13.5
1940-01-18	-2.5
1940-01-19	-1.0
1940-01-20	10.0
1940-01-21	9.5
1940-01-22	17.0
1940-01-23	17.5
1940-01-24	6.0
1940-01-25	0.5
1940-01-26	5.5
1940-01-27	10.0
1940-01-28	21.5
1940-01-29	26.5
1940-01-30	23.0
1940-01-31	32.5
<b>Sum:</b>	
<b>Count:</b>	31
<b>Average:</b>	17.2
<b>Median:</b>	17.0
<b>Low Value:</b>	-2

- To find the coldest/warmest period within that month, note which period of about 10-14 consecutive days had the lowest/highest temperatures. For example, in the image above, a cold period extends from January 17 to January 28.
- Calculate the average temperature for that period. This can also be done by returning to the previous page and updating the beginning and ending dates.

DAILY CLIMATE DATA B

**Date**

Custom     
 Last Month     
 Last 7 Days     
 This Year     
 Last 30 Days     
 Period of Record     
 This Month

**Beginning Date:**  
January ▼ 17 ▼ 1940 ▼

**Ending Date:**  
January ▼ 28 ▼ 1940 ▼

By clicking “Get Tabular Data,” you can use the average included at the bottom of the page.

**Daily Data Between Two Dates**  
**ST LOUIS EADS BRG (MO)**  
**USW00093963**

Date	Mean Temp (°F)
1940-01-17	13.5
1940-01-18	-2.5
1940-01-19	-1.0
1940-01-20	10.0
1940-01-21	9.5
1940-01-22	17.0
1940-01-23	17.5
1940-01-24	6.0
1940-01-25	0.5
1940-01-26	5.5
1940-01-27	10.0
1940-01-28	21.5

**Sum:**  
**Count:** 12  
**Average:** 9.0  
**Median:** 9.8  
**Low Value:** -2  
**High Value:** 21

M = Missing  
T = Trace  
Midwestern Regional Climate Center  
cli-MATE: MRCC Application Tools Environment  
Generated at: 3/16/2015 12:26:15 PM CDT

The cold period of January 17-28 1940 could be recorded as average temp. 9°/12 days.

12. In addition to this method, I also found the lowest/highest recorded average daily temperatures and looked up those months for more cold/warm periods. I used [http://www.crh.noaa.gov/lsx/?n=cli\\_archive](http://www.crh.noaa.gov/lsx/?n=cli_archive) to find these.

## Climatology and Weather Records

**NOTE:** In an effort to transcribe data from old hand written records, text files and spreadsheets, errors may have been made. We have done our best to quality control the data, but it's entirely possible that some data entry errors were made. If you find errors, please [write us a note](#). The record for St. Louis is considered unofficial prior to the year 1874.

The files listed below are Excel spreadsheet files and may be downloaded for your personal use. Right click over the link to save the file to your computer.

**St. Louis, Missouri**  
(period of record 1874 - present)

**Temperature**

- [Monthly and Seasonal Temperatures](#)
- [Annual Average Temperatures](#)
- [Ranked Warmest and Coolest Annual Average Temperature](#)
- [Ranked Warmest and Coolest Seasonal Average Temperatures](#)
- [Ranked Warmest Monthly Average Temperatures](#)
- [Ranked Coolest Monthly Average Temperatures](#)
- [Daily Record Maximum, Minimum, Lo High and Hi Low Temperatures](#)
- [Ranked Extreme Temperatures \(1893-present\)](#)
- [Ranked Occurrences of Temperatures >= 90 and 100 Degrees \(1893-present\)](#)
- [Ranked Occurrences of Temperatures <= 32 and 0 Degrees \(1893-present\)](#)
- [All Time Record Temperatures](#)
- [Heating Degree Days \(since 1900\)](#)
- [Cooling Degree Days \(since 1960\)](#)
- [Freeze Climatology \(Since 1873\)](#)
- [Growing Season Information](#)

13. Select Ranked Extreme Temperatures (1893-present) to download the Excel spreadsheet.

14. Use the “Highest Average Temp” and “Lowest Average Temp” sections to note the highest and lowest daily temperatures.

EXTREMES (1874 - PRESENT) - SAINT LOUIS, MO																	
RANK	LOWEST HIGH TEMP		RANK	HIGHEST LOW TEMP		RANK	HIGHEST AVERAGE TEMP		RANK	LOWEST AVERAGE TEMP		RANK	WARMEST TEMP		RANK	COLDEST TEMP	
	TEMP	DATE		TEMP	DATE		TEMP	DATE		TEMP	DATE		TEMP	DATE		TEMP	DATE
1	-5	12.24.1983	1	86	07.25.2012	1	97.5	07.14.1954	1	-12.0	01.05.1884	1	115	07.14.1954	1	-22	01.05.1884
2	-4	12.29.1880	2	86	07.24.1901	2	97.0	07.25.2012	2	-9.5	02.12.1899	2	112	07.16.1954	2	-19	01.18.1930
3	-3	02.12.1899	3	85	07.24.2012	3	97.0	07.24.1934	3	-9.5	02.09.1899	3	111	07.24.1934	3	-18	01.20.1985
4	-3	02.09.1899	4	85	07.11.2011	4	96.5	07.20.1934	4	-9.5	12.29.1880	4	110	07.12.1954	4	-18	02.13.1905
5	-2	01.15.1888	5	85	08.19.1936	5	96.5	07.24.1901	5	-8.5	12.22.1989	5	110	08.09.1934	5	-17	01.12.1918
6	-2	01.05.1884	6	84	07.22.2011	6	96.0	07.24.2012	6	-8.5	01.20.1985	6	110	07.20.1934	6	-16	12.22.1989
7	-1	12.22.1989	7	84	07.31.1980	7	96.0	07.18.1954	7	-8.5	12.24.1983	7	108	07.25.2012	7	-16	02.12.1899
8	-1	01.10.1982	8	84	07.12.1966	8	95.5	07.22.1901	8	-8.0	01.10.1982	8	108	06.28.2012	8	-16	02.09.1899
9	0	12.23.1983	9	84	07.26.1936	9	95.0	07.07.2012	9	-8.0	02.13.1905	9	108	07.14.1936	9	-16	01.09.1875
10	0	01.16.1977	10	84	07.15.1936	10	95.0	08.19.1936	10	-7.5	01.12.1918	10	108	08.08.1934	10	-15	12.23.1989
11	0	01.07.1912	11	84	08.04.1930	11	95.0	07.15.1936	11	-7.0	01.16.1977	11	108	07.23.1934	11	-15	01.10.1982
12	0	01.06.1912	12	84	08.05.1918	12	95.0	08.08.1934	12	-7.0	01.07.1912	12	108	07.28.1930	12	-15	12.29.1880
13	0	12.28.1880	13	84	07.22.1901	13	95.0	08.12.1881	13	-7.0	01.15.1888	13	107	07.24.2012	13	-14	01.16.1977
14	1	01.20.1985	14	84	07.30.1887	14	94.5	07.18.2012	14	-5.0	12.23.1989	14	107	07.07.2012	14	-14	01.19.1940
15	1	01.01.1928	15	84	08.12.1881	15	94.5	07.06.2012	15	-5.0	01.24.1894	15	107	08.29.1984	15	-14	01.27.1936
16	1	01.12.1912	16	83	07.18.2012	16	94.5	08.29.1984	16	-4.5	01.18.1940	16	107	07.15.1980	16	-14	01.22.1930
17	1	01.24.1894	17	83	07.07.2012	17	94.5	07.15.1980	17	-4.5	01.05.1924	17	107	07.24.1901	17	-14	01.17.1930
18	1	01.03.1879	18	83	07.06.2012	18	94.5	07.12.1966	18	-4.5	01.06.1912	18	107	07.22.1901	18	-14	01.11.1918
19	2	01.06.2014	19	83	07.05.2012	19	94.5	07.26.1936	19	-4.0	01.27.1936	19	106	07.23.2012	19	-14	01.07.1912
20	2	01.18.1994	20	83	07.04.2012	20	94.5	08.09.1934	20	-4.0	01.23.1936	20	106	07.18.2012	20	-13	12.25.1983
21	2	12.19.1983	21	83	07.23.2011	21	94.5	07.25.1934	21	-4.0	01.12.1912	21	106	07.06.2012	21	-13	01.18.1940
22	2	01.23.1936	22	83	07.21.2011	22	94.5	08.04.1930	22	-4.0	02.02.1905	22	106	06.29.2012	22	-12	02.03.1996
23	2	01.05.1924	23	83	08.18.1995	23	94.0	07.23.2012	23	-3.5	01.18.1930	23	106	07.13.1966	23	-12	12.21.1989
24	2	01.12.1918	24	83	07.13.1995	24	94.0	07.05.2012	24	-3.0	01.06.2014	24	106	07.11.1966	24	-12	01.19.1985
25	2	02.13.1905	25	83	07.16.1988	25	94.0	07.04.2012	25	-3.0	02.03.1996	25	106	08.18.1936	25	-12	12.24.1983
26	2	02.02.1905	26	83	08.21.1983	26	94.0	07.13.1966	26	-3.0	01.18.1994	26	106	07.15.1936	26	-12	01.17.1977
27	3	01.15.1972	27	83	07.12.1980	27	94.0	07.27.1930	27	-3.0	12.25.1983	27	106	07.13.1936	27	-12	02.08.1895
28	3	02.08.1933	28	83	08.22.1936	28	94.0	08.05.1918	28	-3.0	01.01.1974	28	106	07.25.1934	28	-12	01.15.1888

15. Return to cli-MATE to look up the months in which these record temperatures occurred, if they weren't included in the lowest/highest monthly average temperatures.