

New All-Time Low Temperature Recorded in Maine

On the morning of January 16, as New England was under the grip of an arctic blast, an all-time low temperature of -50° Fahrenheit was recorded for Maine. It was recorded at 7:30 a.m. EST at a U.S. Geological Survey (USGS) stream gauge on the Big Black River near Depot Mountain in northwestern Aroostook County. The previous record, -48° Fahrenheit, was set in Van Buren, Maine almost 84 years earlier, on January 19, 1925.

"It is exciting to be a part of this historic event." said George Jacobson, Maine State Climatologist and Member of the State Climate Extremes Committee (SCEC), the group that vetted this measurement for consideration as a new all time minimum temperature record for the State of Maine. "But the real benefit to the State is in good weather and climate data being recorded daily by the NWS, USGS and other partners in the scientific community."

The lowest temperature ever recorded in the U.S. was -80 degrees Fahrenheit on January 23, 1971 at Prospect Creek, Alaska, according to the National Climatic Data Center (NCDC). The lowest temperature recorded in the lower 48 states was -70 degrees Fahrenheit on January 20, 1954 at Rogers Pass, Mont.

The existence of this temperature sensor owes to the partnership between the NWS Weather Forecast Offices in Caribou and Gray, and the USGS Maine Water Science Center in Augusta. This partnership resulted in installation of NWS supplied air temperature sensors on many existing NWS river forecast points and USGS stream gauges over the past several years. The aim of this partnership was to better serve society's needs for high quality weather, water, and climate information.

Increasingly, partnerships such as this between the NWS and USGS are being founded to leverage resources used in weather, water, and climate research to better meet the public's needs. This leverage has resulted in the nearly fourfold increase in the number of temperature reporting stations across the state of Maine between 1925 and 2009.

The process of challenging a state record is comprehensive. The initial report is considered unofficial until a review of the equipment and data is conducted by the State Climate Extremes Committee (SCEC) as to the validity of the report. These findings are submitted to the Director of the National Climatic Data Center for recommendation. The State Climate Extremes Committee includes: the National Weather Service, the State Climatologist, the Northeast Regional Climate Center, and the National Climatic Data Center.

Here is a brief summary of the process:

- State Climate Extreme Committee activated.
- SCEC conference call examined all available data.
- Two temperature sensors and a data logger sent to the USGS Hydrologic Instrumentation Facility for testing.
- Temperature sensors and data logger tested to a low of -50 degrees Celsius (-58.0 degrees Fahrenheit). Sensors performed within their specified accuracy of plus/minus .02 degrees Celsius over the entire temperature range.
- SCEC reconvened. A vote was called for recommending the -45.3 degrees Celsius (-50 degrees Fahrenheit) temperature recorded at the Big Black River be submitted to the National Climatic Data Center as a new statewide all-time record low temperature for Maine. The vote for recommendation was unanimous.
- NCDC Director approved SCEC recommendation.

Timeline of Events

01/19/1925 – W.H. Scott, a weather observer for the USDA, Weather Bureau, records a temperature of -48° Fahrenheit. Other notable temperatures from the area on that date were: -43° at Houlton, -41° at Presque Isle and Millinocket and -32° at Old Town and Winslow (all temperatures in Fahrenheit).

10/1/1983 – USGS station 01010070 begins reporting river data for the Big Black River near Depot Mountain, in northwestern

Aroostook County, Maine.

08/17/2005 – NWS temperature sensor installed.

07/26/2007 – Temperature sensor upgraded to current configuration.

01/06/2009 – Temperature sensor checked for accuracy by USGS.

01/16/2009 – Temperature sensor records -45.3° Celsius (-50° Fahrenheit).

01/16/2009 – NWS issues Public Information Statement advising of a potential new statewide all time record low temperature.

01/16/2009 – State Climate Extreme Committee (SCEC) activated.

01/21/2009 – SCEC conference call examines all available data. Operating range of temperature sensor questioned.

01/23/2009 – Two temperature sensors and data logger sent to the USGS Hydrologic Instrumentation Facility for testing.

01/30/2009 – Temperature Sensors and data logger tested to a low temperature of -50.0° Celsius (-58° Fahrenheit). Sensors perform within their specified accuracy of $\pm 0.2^\circ$ Celsius over entire temperature test range.

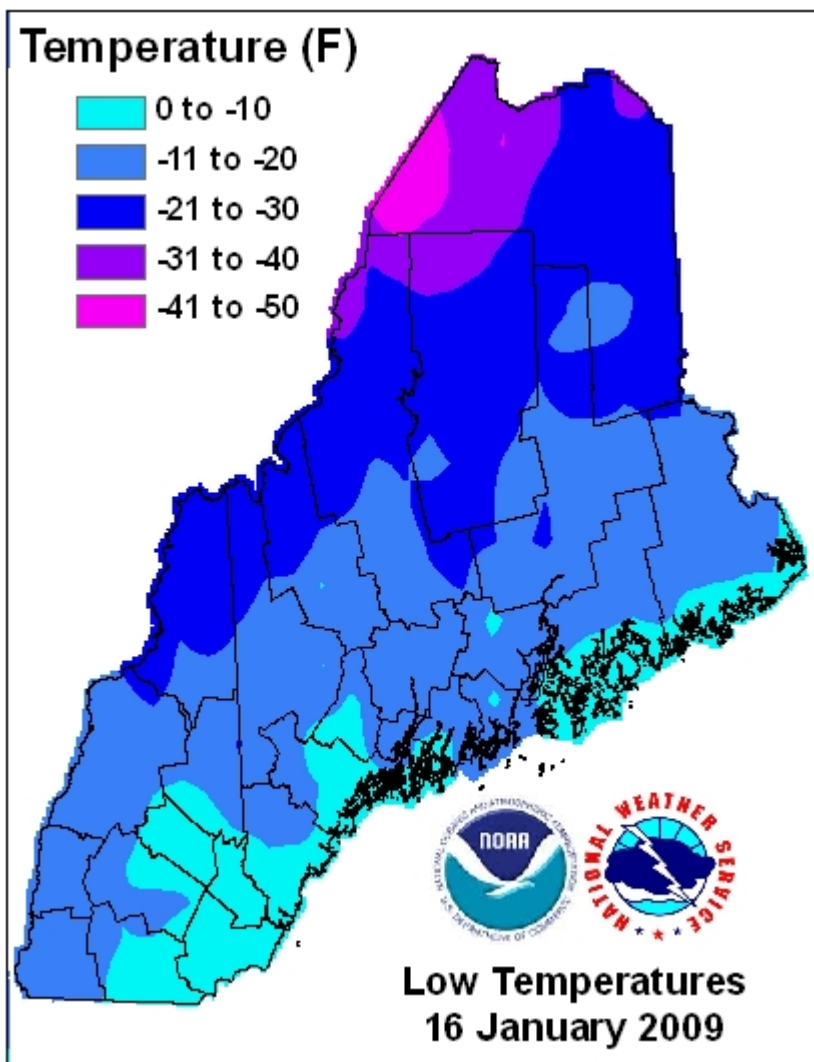
02/04/2009 – SCEC reconvenes. A vote was called for recommending that the -45.3° Celsius (-50° Fahrenheit) temperature recorded at the Big Black River be submitted to the National Climatic Data Center (NCDC) as a new statewide all-time record low temperature for Maine. The SCEC vote for recommendation is unanimous.

02/04/2009 – NCDC Director approves SCEC recommendation. .

Temperatures Across Maine, 16 Jan. 2009

These were the preliminary temperature reports from January 16, 2009.

- First, a map showing temperatures reported across Maine.
- Second is a listing of these reports..



*****MINIMUM TEMPERATURES*****

LOCATION	MIN TEMPS DEGREES (F)	TIME/DATE OF MEASUREMENT	COMMENTS
MAINE			
...AROOSTOOK COUNTY...			
BIG BLACK RIVER	-50	731 AM 1/16	USGS BBRM1
NINEMILE BRIDGE	-48	841 AM 1/16	USGS NINM1
ALLAGASH	-47	722 AM 1/16	COOP ALGM1
DICKEY	-45	833 AM 1/16	USGS DICM1
LILLE	-45	717 AM 1/16	AR034
MASARDIS	-45	840 AM 1/16	USGS MASM1
CLAYTON LAKE	-44	832 AM 1/16	COOP CLTM1
GRAND ISLE	-44	722 AM 1/16	SPOTTER

OXBOW	-43	842 AM	1/16	COOP	OXBM1
FORT KENT MILLS	-41	853 AM	1/16	AR054	
STOCKHOLM	-41	717 AM	1/16	SPOTTER	
VAN BUREN	-41	845 AM	1/16	COOP	VANM1
EAGLE LAKE	-40	902 AM	1/16	COOP	EGLM1
FORT KENT	-40	851 AM	1/16	COOP	FISM1
FOX BROOK	-40	835 AM	1/16	COOP	FOXM1
PRESQUE ISLE	-39	758 AM	1/16	AWOS	KPQI
LIMESTONE	-38	917 AM	1/16	COOP	LIZM1
CARIBOU WFO	-37	718 AM	1/16	ASOS	KCAR
MADAWASKA	-37	832 AM	1/16	AR037	
SHERMAN	-37	902 AM	1/16	AR072	
HOULTON	-35	838 AM	1/16	ASOS	KHUL
LIMESTONE	-35	717 AM	1/16	AR035	
FRENCHVILLE	-30	835 AM	1/16	ASOS	KFVE
ASHLAND	-28	716 AM	1/16	SPOTTER	
KNOWLES CORNER	-18	839 AM	1/16	COOP	KNCM1
...HANCOCK COUNTY...					
WALTHAM	-30	725 AM	1/16	SPOTTER	
PENOBSCOT	-20	717 AM	1/16	HA037	
BAR HARBOR	-15	831 AM	1/16	AWOS	KBHB
ACADIA NATIONAL PARK	-10	830 AM	1/16	COOP	ANPM1
PROSPECT HARBOR	-10	842 AM	1/16	COOP	PPHM1
STONINGTON RAINWISE	-5	844 AM	1/16	COOP	STOM1
...PENOBSCOT COUNTY...					
GRINDSTONE	-38	837 AM	1/16	USGS	GRNM1
SHIN POND	-38	843 AM	1/16	USGS	SBSM1
CORINNA	-31	852 AM	1/16	COOP	CORM1
OLD TOWN	-30	841 AM	1/16	COOP	OLDM1
MATTAWAMKEAG	-29	840 AM	1/16	USGS	MATM1
WEST ENFIELD	-28	845 AM	1/16	USGS	WENM1
BANGOR	-24	831 AM	1/16	ASOS	KBGR
MILLINOCKET	-24	841 AM	1/16	ASOS	KMLT
PATTEN	-24	842 AM	1/16	COOP	PATM1
SUNKHAZE N.W.R.	-22	843 AM	1/16	COOP	SHZM1
DIXMONT	-12	833 AM	1/16	COOP	DIXM1
...PISCATAQUIS COUNTY...					
KOKADJO	-39	839 AM	1/16	COOP	KKJM1
ABBOT VILLAGE	-37	811 AM	1/16	USGS	ABTM1
BLANCHARD	-35	831 AM	1/16	USGS	BLAM1
GUILFORD	-35	723 AM	1/16	COOP	GULM1
RIPOGENUS DAM	-35	843 AM	1/16	COOP	RIPM1
SEBEC LAKE	-32	838 AM	1/16	COOP	GREM1
DOVER-FOXCROFT	-31	852 AM	1/16	COOP	DFXM1

MILO	-24	851 AM	1/16	COOP	MLDM1
GREENVILLE	-21	837 AM	1/16	ASOS	KGNR
... SOMERSET COUNTY ...					
SAINT AURELIE	-44	844 AM	1/16	COOP	STAM1
TURNER BROOK RAW	-38	845 AM	1/16	COOP	TNBM1
... WASHINGTON COUNTY ...					
DANFORTH	-35	833 AM	1/16	COOP	DANM1
WESLEY	-31	845 AM	1/16	USGS	WSLM1
CHERRYFIELD	-28	831 AM	1/16	USGS	CFDM1
EPPING	-26	835 AM	1/16	USGS	EPPM1
MOSEHORN N.W.R.	-26	841 AM	1/16	COOP	MWRM1
MACHIAS	-25	840 AM	1/16	USGS	MACM1
DENNYSVILLE	-24	834 AM	1/16	USGS	DVLM1
PRINCETON	-22	842 AM	1/16	COOP	PNNM1
WHITING	-21	801 AM	1/16	WS038	
GRAND LAKE STREAM	-20	836 AM	1/16	COOP	GLSM1
TOPSFIELD	-20	852 AM	1/16	COOP	TOPM1
WAITE	-20	722 AM	1/16	WS034	
EAST MACHIAS	-18	852 AM	1/16	COOP	ESTM1
JONESBORO	-14	838 AM	1/16	COOP	JONM1
JONESPORT RAINWISE	-13	839 AM	1/16	COOP	JPTM1
CUTLER RAINWISE	-12	833 AM	1/16	COOP	CUTM1
MILBRIDGE	-12	723 AM	1/16	WS031	
EASTPORT	-9	834 AM	1/16	COOP	EPOM1

Other Extremes of Interest

United States Extreme Temperatures

- Maximum 134°F (56.7°C) July 10, 1913 at Greenland Ranch, CA
- Minimum -80°F (-62.2°C) January 23, 1971 at Prospect Creek, AK
- Contiguous 48 Minimum -70°F (-56.5 °C) January 20, 1954 at Rogers Pass, MT

New England Extreme Temperatures

- Maximum 107°F (41.7°C) August 2, 1975 at New Bedford & Chester, MA
- Minimum -50°F (-45.3°C) December 30, 1933 at Bloomfield, VT and January 16, 2009 at Big Black River, ME

Maine Record Extreme Temperatures

- Maximum 105°F (40.6°C) July 10, 1911 at North Bridgton, ME
- Minimum -50°F (-45.3°C) January 16, 2009 at Big Black River, ME

Extremes for Maine Towns / Cities

Extremes are available for over 40 Maine towns and cities by using our NOWData web query.

Go to either the WFO [Caribou](#) or [Gray](#) interface depending on where the place of interest lies.

First choose the Record Extremes radio button under "1. Product >>."

Next, choose a town / city from the menu under "2. Location >>."

Choose the weather element you have interested in under "3. Variable >>."

Choose "Entire Year" under "4. Month >>."

Most Importantly: choose "Highest" or "Lowest" appropriately under "5. High/Low" for the weather element chosen. For example: if you have chosen "Min Temperature" under "3. Variable >>" then you want to select "Lowest" under "5. High/Low >>." Why? Because you want the *lowest* recorded min temperature, not the highest. If you had selected "Max Temperature" then you would want "Highest."

Finally, press the "Go" button under "6. View >>."

Where is the Big Black River?

The Big Black River is located in northwestern Aroostook County. A tributary of the upper St. John River, it originates in the province of Quebec, Canada. It enters Maine halfway between Depot Mountain and the St. Pamphile Checkpoint. It ends in the St. John River, joining 27 miles upstream from Dickey.

The USGS stream gauge in question is located near where the Depot Rd. crosses the Big Black River, about two miles from the Canadian border. For its exact pinpoint location, see the USGS web site for its associated [maps](#) . For info about the gauge and the data it collects see its USGS [Data Summary](#) .

The following map will help to place this remote location for you. The location of the gauge is indicated by the red pin. Use the map's zoom feature take a closer look, if you so desire.

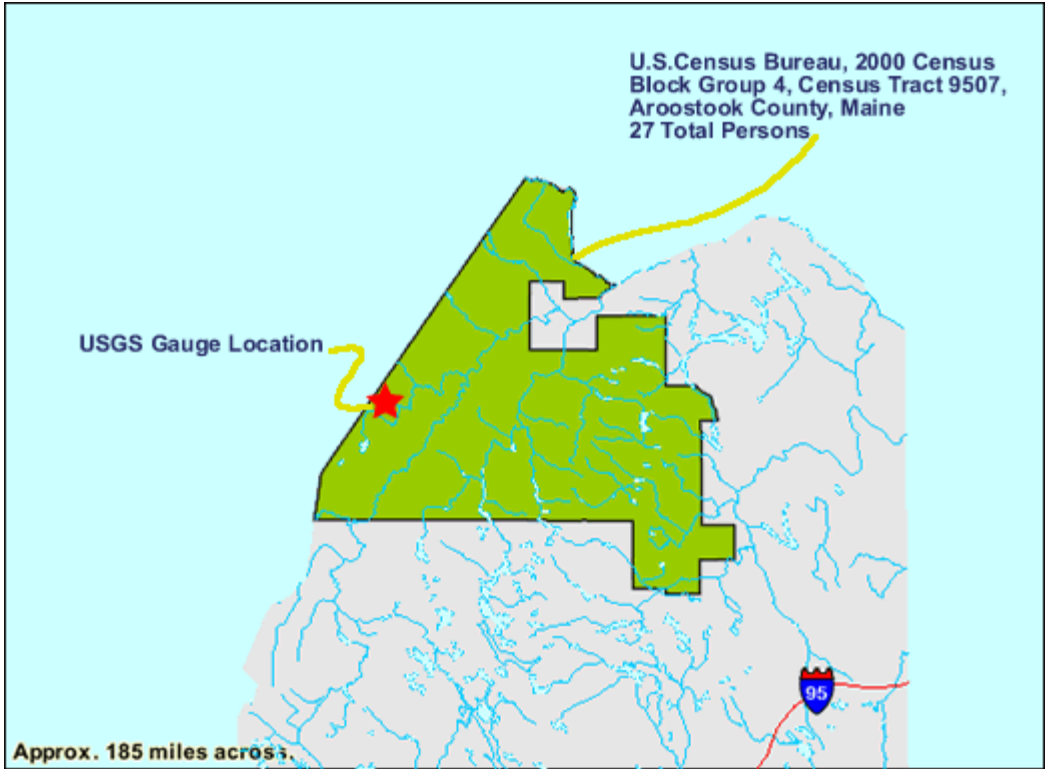
[View Larger Map](#)

The gauge is in a huge tract of uninhabited Maine wilderness. According to the 2000 census, only 27 people live in the gauge's census block group, represented on the U.S. Census Bureau map below. Surprisingly, 11 of those people live within a five mile radius of the gauge.

This census block group's population density is much less than 1 person per square mile. Compare this to Aroostook County, with 11 persons per square mile and 41 persons per square mile for all of Maine.

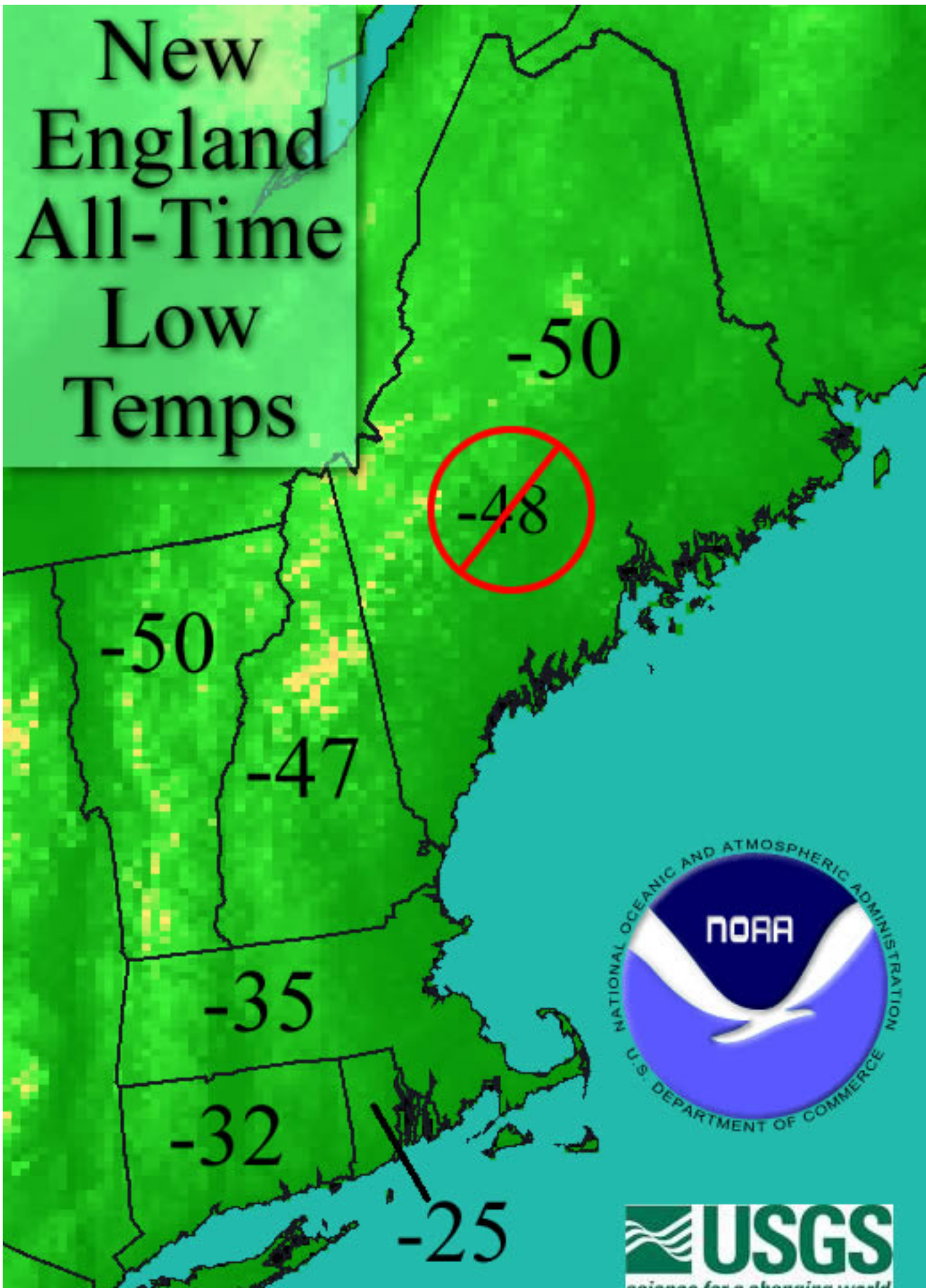
See the Census Bureau's interactive [map](#) for complete details.

The town of Saint-Pamphile, Quebec, Canada is only about four miles from the gauge. It had a population of 2,847 in 2001, according to Statistics Canada.

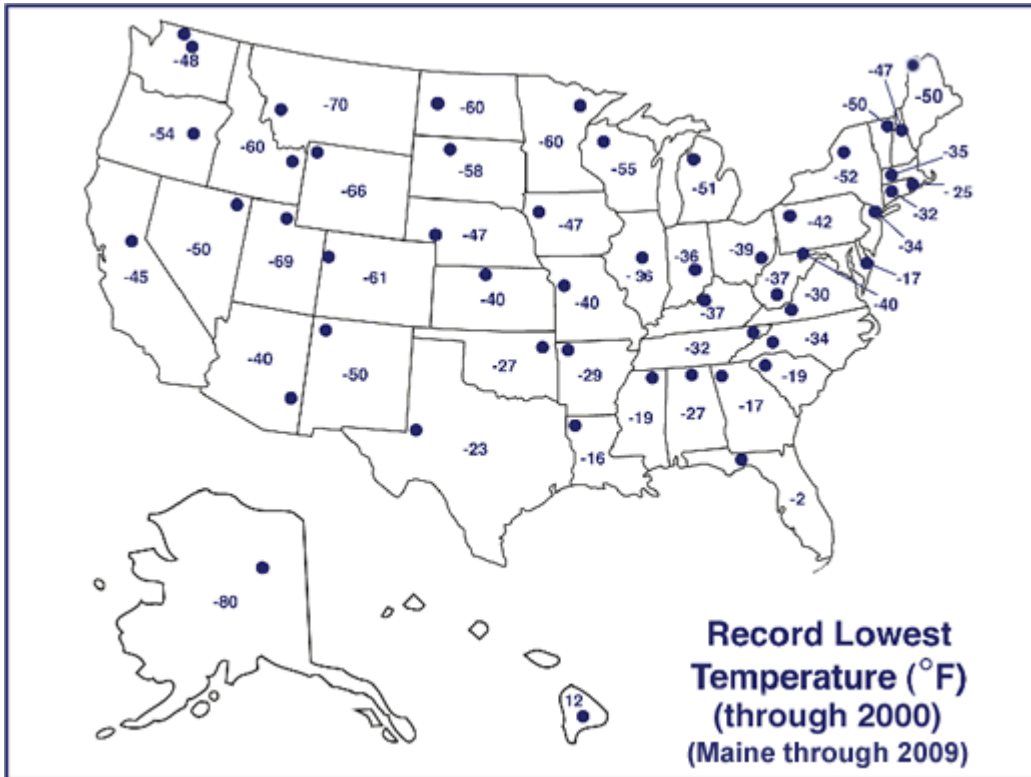


New England All-Time Lows

New England All-Time Low Temps



U.S. All-Time Lows



U.S. All-Time Highs

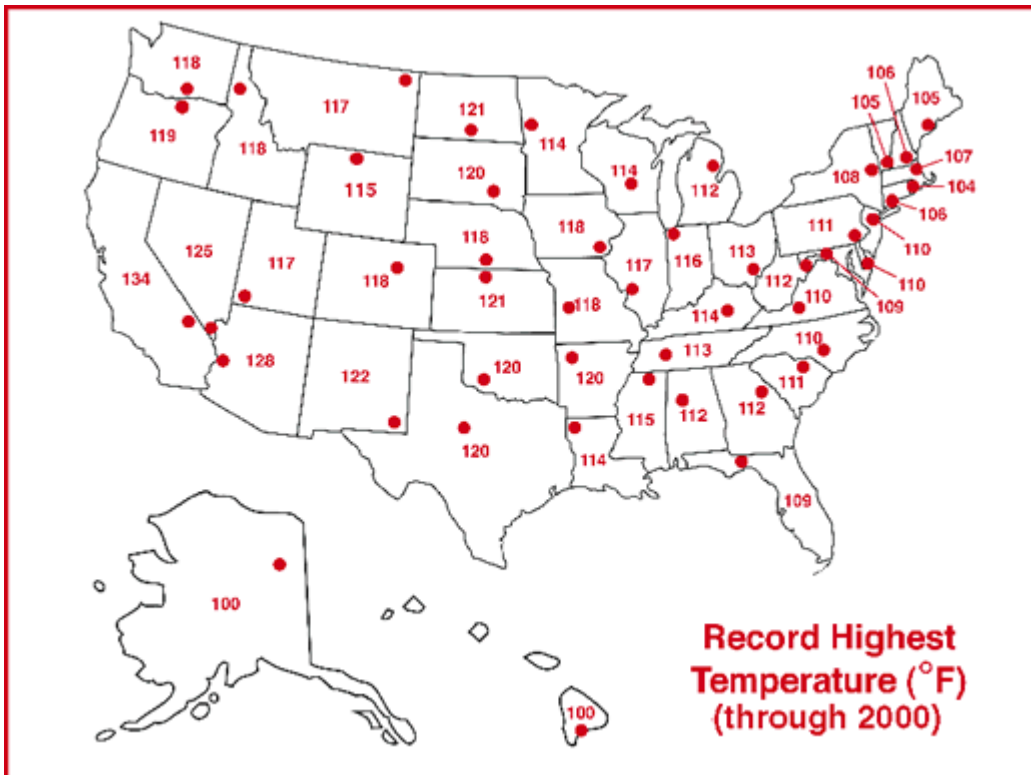


Photo of the Gauge Site

What does it look like? Here is a photo of the gauge's site. The non-weatherproof electronics for the various sensors and communications gear are situated in the building. The sensors are outside the building. The only sensor shown here is the small cylindrical snow capped finned object on the right side of the building. That is the temperature sensor.



[View Larger Photo](#)

NWS Use of the Gauge

Why is it important to have stream gauges out in the middle of nowhere? One specific use for us in the National Weather Service is for flood prediction. Gauges all along a river system, from its headwaters on down, contribute to the success of our flood predictions.

For this purpose, the gauge's ability to measure water level is most important. Other sensors, such as the temperature sensor, (which is getting all the attention here), are used for ancillary purposes. The temperature, for example, helps judge snow melt rates, an important factor in spring flooding.

[Home—NWS Forecast Office—Caribou, Maine](#)

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