

*SOMETIMES CALM...SOMETIMES WILD BUT IN THE END 2008 WAS...NORMAL?
SNOWIEST CALENDAR YEAR ON RECORD SINCE SNOW RECORDS BEGAN*

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It will be a long time before inhabitants of Southeast Lower Michigan forget the Winter of 2007-08 (but then again, Winter of 2008-09 thus far has been a good challenger). A persistent parade of storm centers brought abundant amounts of snowfall to the region, leaving much of the region up in the top five snowiest winters on record (more in the season write-up below). There was certainly nothing "normal" about the piling up of snowfall week and week during the Winter of 2007-08.

Spring 2008 started out cold and snowy with temperatures below normal in March. After, well above normal temperatures came in April only to reverse again to significantly below in May. With this sine-wave temperature pattern, the entire spring averaged just slightly below normal /-0.2/ over Southeast Lower Michigan. What was more noteworthy was the below normal rainfall with a 2½ - 3 inch deficit coming at the worst time to boot, mainly mid to late spring.

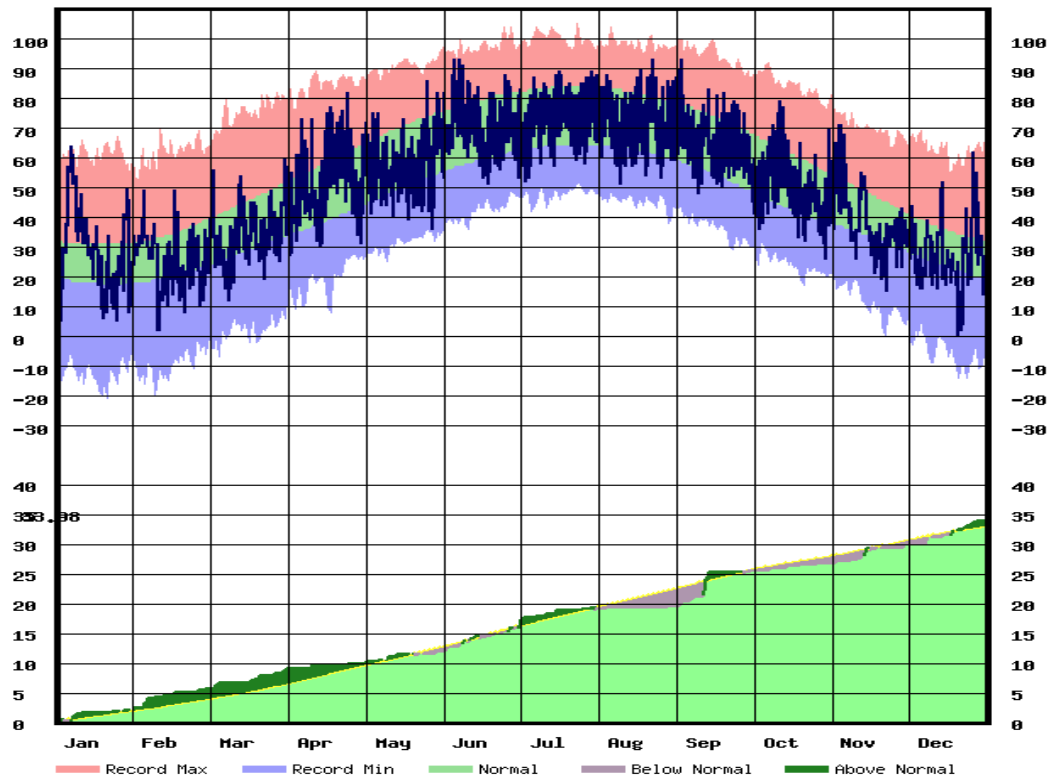
Southeast Lower Michigan had one of its more pleasant summers temperature-wise in 2008. Temperatures averaged just on the higher side of normal. Any warm or hot spells (few that there were) were quickly extinguished by an active parade of cold fronts during the summer. While the fronts brought substantial rains early summer (note rainfall table below), they also brought several storm outbreaks with damaging severe weather. The most notable was the June 8th derecho outbreak that clobbered portions of Livingston, Oakland, Macomb and Southern St Clair counties with wind gusts approaching hurricane strength /74 mph/ (more in season write-up below).

The early days of autumn started out extremely wet over Southeast Lower Michigan with the combination of tropical moisture and a slow moving frontal system. Days of heavy rain led to the sixth wettest September on record at Detroit with 5.99 inches. The weather quieted down as temperatures cooled off in October and all in all, it was a fairly pleasant month. Indian summer weather graced the landscape in time for Halloween and continued, for the most part, through the first week of November. The second half of the month did a complete reversal with much colder weather and frequent snows as Winter of 2008-09 made a rude and early entrance. This cold and snowy pattern only got worse in December with well above normal snows and below temperatures.

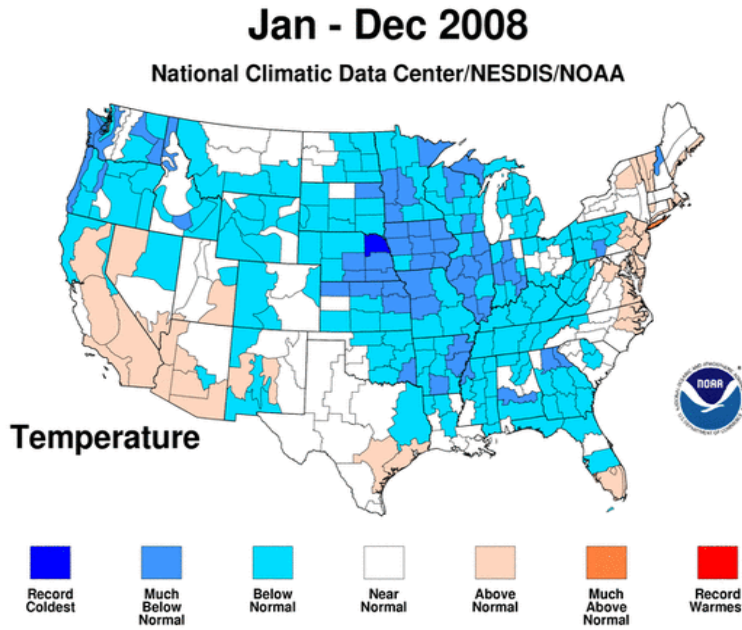
Detroit 2008 Temperature and Precipitation Statistics

	<u>DETROIT</u>	<u>2008</u>	<u>STATS</u>
	TEMP		PCPN
	<u>2008</u>		<u>2008</u>
JAN	28.9		2.13
FEB	25.2		3.61
MAR	33.4		3.17
APR	51.8		0.96
MAY	57.4		2.03
JUN	70.6		4.05
JUL	73.1		3.24
AUG	72.1		0.27
SEP	66.3		5.99
OCT	50.6		1.15
NOV	39.0		3.31
DEC	27.4		4.07
AVE	<u>49.7</u>	TOTAL	<u>33.98</u>
DEP	<u>0.0</u>		<u>1.09</u>

Detroit Metro (DTW) 2008

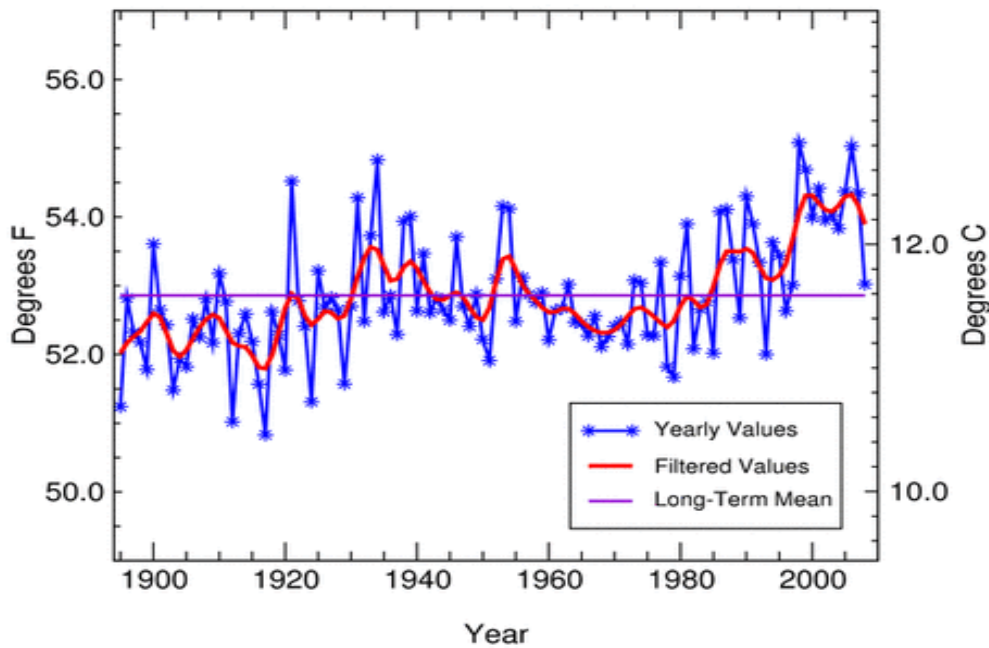


Here's a national view of the cooler temperature pattern in 2008



Quite a plunge from the recent National temperature trend

National (Contiguous U.S.) Temperature
1895 - 2008



National Climatic Data Center / NESDIS / NOAA

[Snowiest year on record since snow records began in Detroit](#)

Arguably, the most notable weather story for 2008 was the record annual snowfall measured at all three major climate locations (Detroit, Flint and Saginaw). Keep in mind, this is not a winter season but a calendar year.

In 2008, 82.6" of snow was measured for Detroit from January 1st through December 31st, 2008. The previous snowfall record for a calendar year was back in 2005 and 1974 when 75.3" This record goes back to 1880... or 128 years! Flint measured 98.3" of snow for 2008 while Saginaw topped both locations at 102.5". Here at the NWS in White Lake the annual snowfall for 2008 was also our highest snowfall for a calendar year (since records began the Winter of 1995-96) with 114.0" !

RECORD ANNUAL SNOWFALLS

DETROIT	2008	FLINT	2008	SAGINAW	2008
JAN	13.8	JAN	22.8	JAN	18.9
FEB	24.2	FEB	29.4	FEB	34.2
MAR	21	MAR	7.3	MAR	1.5
APR	T	APR	0.5	APR	T
OCT	0	OCT	T	OCT	T
NOV	2.2	NOV	9.2	NOV	8.8
DEC	21.4	DEC	29.1	DEC	39.1
TOTAL	<u>82.6</u>	TOTAL	<u>98.3</u>	TOTAL	<u>102.5</u>

Additional statistical data for 2008 can be obtained at:
<http://www.weather.gov/climate/index.php?wfo=dtx>

[Seasonal and Monthly Highlights](#)

Much more information is included in the full [season write-ups](#) .

[Winter 2007-08:](#)

Incredible Stormy Winter Brings Widespread Record Territory Snowfalls

Temperatures fluctuated energetically up and down throughout the winter. When all was said and done (and partly because of those wide temperature

fluctuations), the Winter of 2007-08 went down statistically as just slightly above normal temperature-wise, but well above normal for both rain and snow.

Using the three main locations (Detroit, Flint and Saginaw) the average temperature for Southeast Lower Michigan averaged around 26.0 degrees, or a degree /+1.0/ above normal. And strictly speaking, a degree above normal is still comfortably within the "normal" or average range. And, while temperatures averaged within the normal range, snowfall did not! With storm after storm pushing northeast into the southern Great Lakes during the winter of 2007-08, a surplus of snow and rain was seen throughout the Winter of 2007-08 which continued into the spring.

The following represents the top 5 season snowfalls for Detroit, Flint and Saginaw in their perspective record keeping.

Top 20 Snowless/Snowiest Seasons in Southeast Lower Michigan

Rank	Detroit Area*				Flint Bishop**				Saginaw Area***			
	Snowless		Snowiest		Snowless		Snowiest		Snowless		Snowiest	
	Total	Year	Total	Year	Total	Year	Total	Year	Total	Year	Total	Year
1	12.9	1936-37	93.6	1880-81	17.6	1948-49	82.9	1974-75	7.8	1941-42	87.2	1966-67
2	13.2	1881-82	78.0	1925-26	17.6	1944-45	82.8	2007-08	18.5	1976-77	83.5	1951-52
3	13.7	1948-49	74.0	1981-82	21.7	1943-44	78.6	1966-67	20.0	1952-53	80.0	2007-08
4	15.2	1918-19	71.7	2007-08	23.4	1952-53	76.6	1975-76	21.0	1920-21	75.5	2004-05
5	15.4	1965-66	69.1	1899-00	24.2	1957-58	75.3	1951-52	21.4	1901-02	75.4	1996-97

Spring 2008:

Temperatures oscillated while the landscape dried out

Spring started out cold and snowy with temperatures below normal in March, after, well above normal temperatures came in April only to reverse again to significantly below in May. With this sine-wave temperature pattern, the entire spring averaged just slightly below normal /-0.2/ over Southeast Lower Michigan. What was more noteworthy below normal was the precipitation with a 2½ - 3.0 inch deficit and coming at the worst time to boot, mainly mid to late spring.

Summer 2008:

Even though a comfortable summer it was not without its temper tantrums

General comments heard about the Summer of '08 was how comfortable it was and indeed, Southeast Lower Michigan had one of its more pleasant summers. Temperatures averaged just on the higher side of normal. Any warm or hot spells (few that there were) were quickly extinguished by an active parade of cold fronts during the summer. When using our three main climate stations in our Outlook, the area averaged an even 70 degrees or a half degree /+0.5/ above normal. The warmest weather (relative to normal) during the summer months occurred mainly early in the summer. While June averaged around two degrees above normal, July and August averaged normal to below.

While the active fronts brought copious rain early, they also brought several storm outbreaks with damaging severe weather. Severe weather and resulting scattered heavy rainfall in June and July was the main news of the summer. The projected upper air and associated surface pattern materialized with a vengeance early in summer, resulting in numerous severe weather events.

Derecho of June 8th

A strong squall line intensified into a derecho as it surged through Southeast Lower Michigan in the late afternoon and evening on the 8th. The worst hit area extended across Detroit's northern suburbs in the counties of Livingston, Oakland and Macomb. Winds up to at least 70-80 mph slammed the central portions of the counties bringing down numerous amounts of tree branches, uprooting trees and knocking down power lines. Some of the locations in the worst hits areas included, White Lake, Waterford, Walled Lake, Commerce Township, eastward through Pontiac, West Bloomfield, Bloomfield Hills and then on into Macomb and Chesterfield townships. This resulted in days without power with between 250,000 and 300,000 customers losing power because of this derecho. More can be read [here](#) on the entire event from the severe storms prediction center.

As mentioned, early-midsummer was busy in the severe weather department and more information on the June (or any other month) in regard to many specific severe weather events can be found in the [monthly](#) climate report in the monthly weather summary /CLM/ under [products](#).

Autumn – Early Winter 2008:

Early autumn of 2008 started out extremely wet across Southeast Lower Michigan with the combination of tropical moisture and a slow moving frontal system. Days of heavy rain led to the sixth wettest September on record at Detroit with 5.99 inches, third wettest on record at Flint with 8.64" of rain and with lesser intense rains at Saginaw, 4.55" fell. The worst of the rains came on the 13-14th when a slow moving cold front encountered a tropical plume of moisture laden air left over from tropical storms Lowell and Ike. Rainfall, periodically falling in torrential downpours, occurred much of the 13-14th. Officially at Detroit Metro airport, 2.97" fell on the 13th which blew away the archaic record rainfall for the date of 2.72" established over a century ago in 1892! The rainfall for the 13-14th came in at 3.78" at Detroit Metro, while here at the NWS in White Lake we received 4.75" in the two days!

In October weather quieted down, temperatures cooled off and all in all, it was a fairly pleasant month. Though a bit on the cool side, the month still contained its share of warm days. Frost and freezes came at their normal times and became more widespread by the third week. The warmest time of the month came during the second week /8th-15th/when readings topped out around the 80 degree mark!

Indian summer weather graced the landscape in time for Halloween and continued, for the most part, through the first week of November. The beautiful Indian summer weather peaked temperatures into the lower 70s by the 4th and 5th. While no record highs were set at Detroit, both Flint and Saginaw sneaked out a record high on the 4th with 72 degrees at Flint and 71 at Saginaw. The second half of the month did a complete reversal with much colder weather and frequent snows. Nearly all the days from the 16th on, averaged below normal.

A very impressive cold and stormy December befell the inhabitants of Southeast Lower Michigan. Much of the month (up to about the 27th) averaged four to six degrees below normal before a dramatic warm-up after erasing over half that departure. Frequent snows through much of the month brought well above normal snow amounts to all of Southeast Lower Michigan. Generally, two to three feet of snow fell across the region. At Detroit Metro Airport, the 21.4" of snow that fell was about twice the normal and placed December 2008 in 6th place for snowiest Decembers for Detroit. Here at the NWS in White Lake (and one of the higher amounts in the northern Suburbs) nearly three feet /34.6"/ was measured for December.

Again, additional climate information LOCAL AND NATIONAL can be found at:

<http://www.weather.gov/climate/index.php?wfo=dtx>

If you are web surfing, check out NCDC site for the highlights and extremes in the weather for 2008...worldwide!

<http://www.ncdc.noaa.gov/img/climate/research/2008/ann/significant-extremes2008.gif>