

# Awesome or Awful? Ranking Winter Severity with the Accumulated Winter Season Severity Index (AWSSI)

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Credit: Steve Hilberg, now at CoCoRaHS

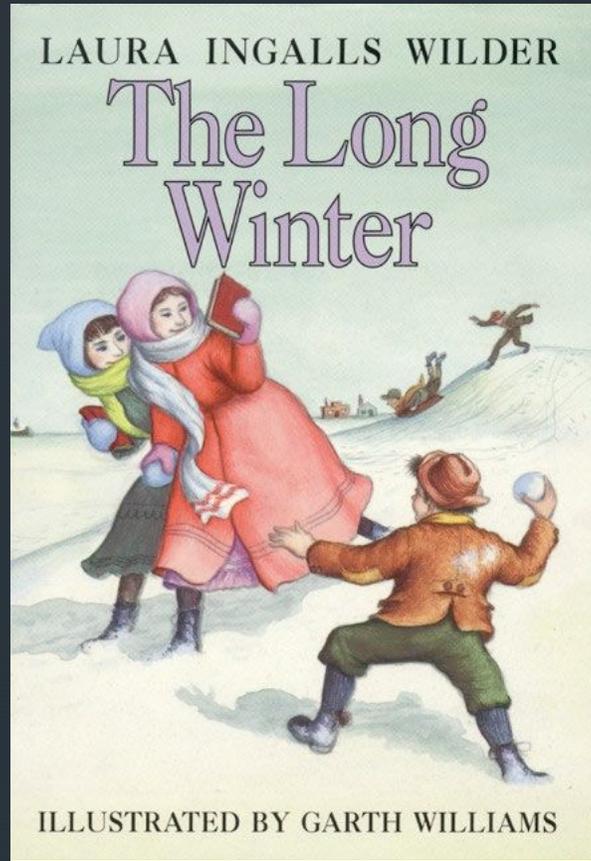
## AWSSI Origin



*Now, this is my  
kind of winter!*



# AWSSI Origin



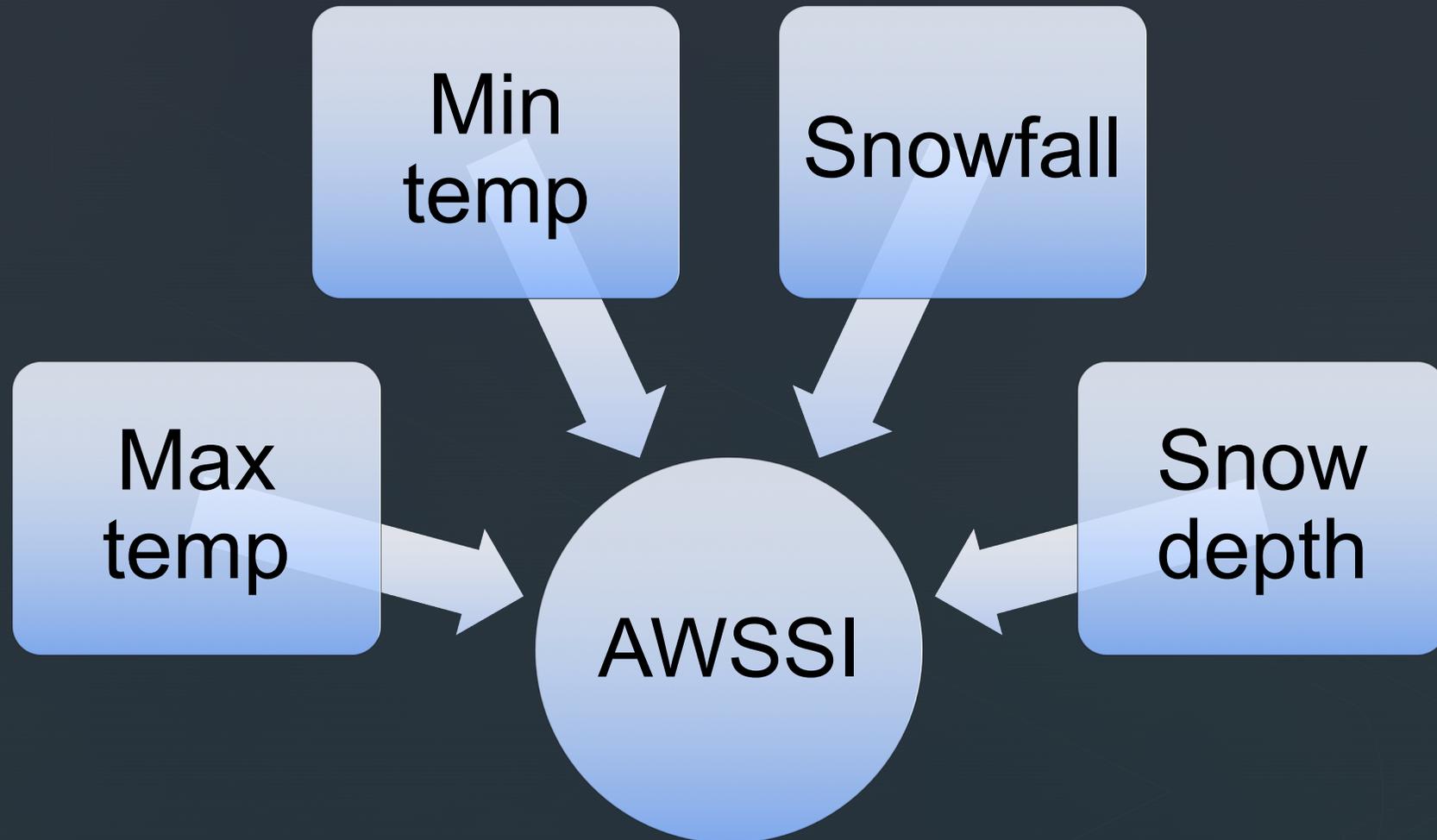
## AWSSI Goals

- Use widely available data
- Objectively index winter conditions
- Accumulate value as season progresses
- Allow comparisons
- Apply to multiple users and needs

# AWSSI Basics



# AWSSI Ingredients



# AWSSI Thresholds

AWSSI Point Thresholds				
Points	Temperature (°F)		Snow (in)	
	Max	Min	Fall	Depth
1	25 to 32	25 to 32	0.1 to 0.9	1
2	20 to 24	20 to 24	1.0 to 1.9	2
3	15 to 19	15 to 19	2.0 to 2.9	3
4	10 to 14	10 to 14	3.0 to 3.9	4 to 5
5	5 to 9	5 to 9	-	6 to 8
6	0 to 4	0 to 4	4.0 to 4.9	9 to 11
7	-1 to -5	-1 to -5	5.0 to 5.9	12 to 14
8	-6 to -10	-6 to -10	-	15 to 17
9	-11 to -15	-11 to -15	6.0 to 6.9	18 to 23
10	-16 to -20	-16 to -20	7.0 to 7.9	24 to 35
11	-	-21 to -25	-	-
12	-	-	8.0 to 8.9	-
13	-	-	9.0 to 9.9	-
14	-	-	10.0 to 11.9	-
15	<-20	-26 to -35	-	36+
18	-	-	12.0 to 14.9	-
20	-	<-35	-	-
22	-	-	15.0 to 17.9	-
26	-	-	18.0 to 23.9	-
36	-	-	24.0 to 29.9	-
45	-	-	>=30.0	-

2.0" + 4.0" = 6.0"  
 3 pts + 6 pts =  
 9 pts

6.0" = 9 pts

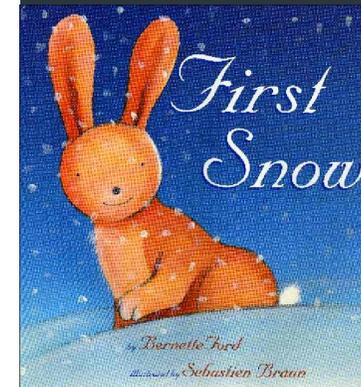
# AWSSI Triggers

Start at the first of these:

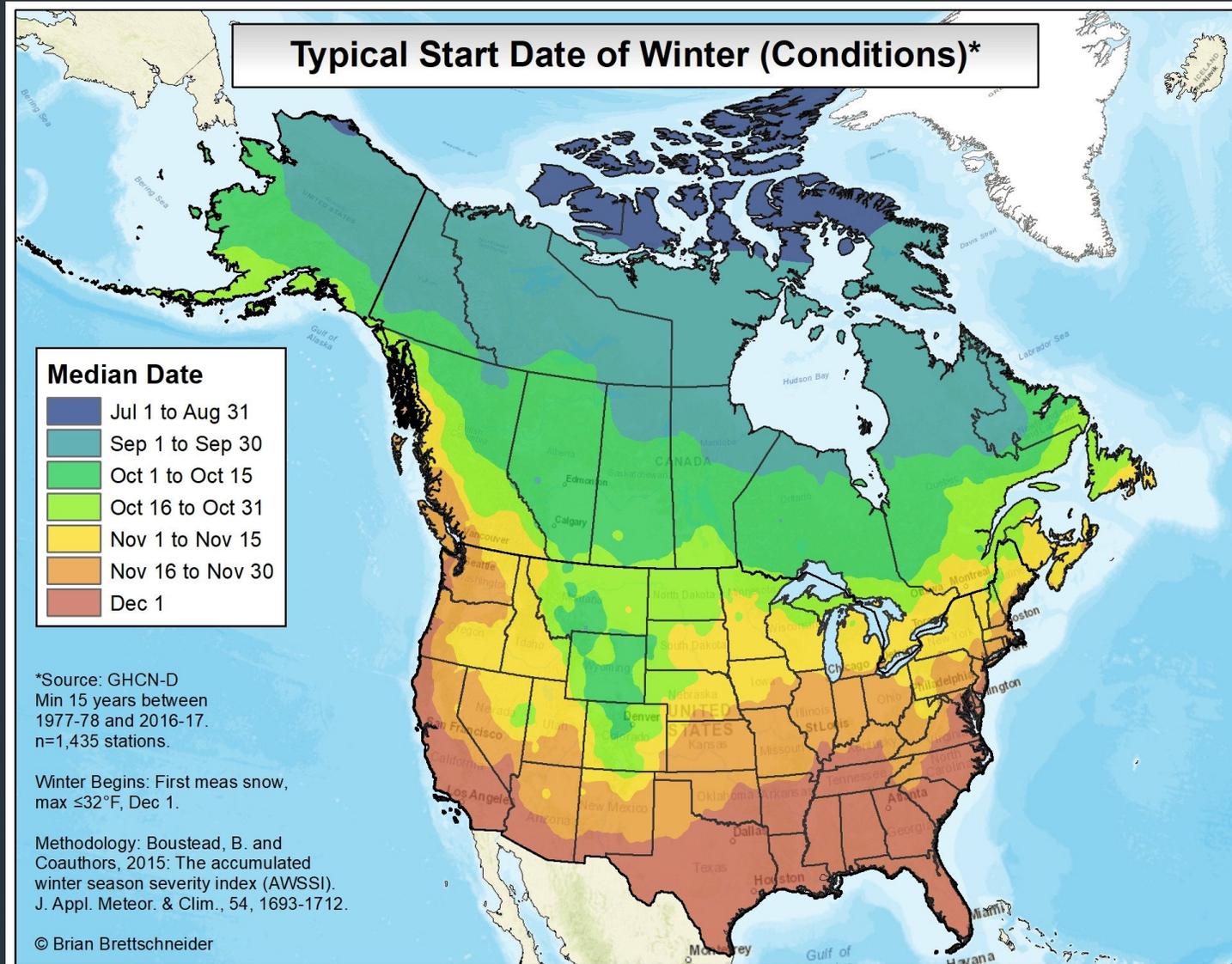
- Max T  $\leq$  32 °F
- Snow fall  $\geq$  0.1 inch
- December 1

Stop after the latest of these:

- Max T  $\leq$  32 °F
- Snow fall  $\geq$  0.1 inch
- Snow depth  $\geq$  1.0 inch
- March 1



# Average AWSSI Start of Winter Date



Not Explicitly Included in AWSSI

Freezing rain

Mixed winter precipitation

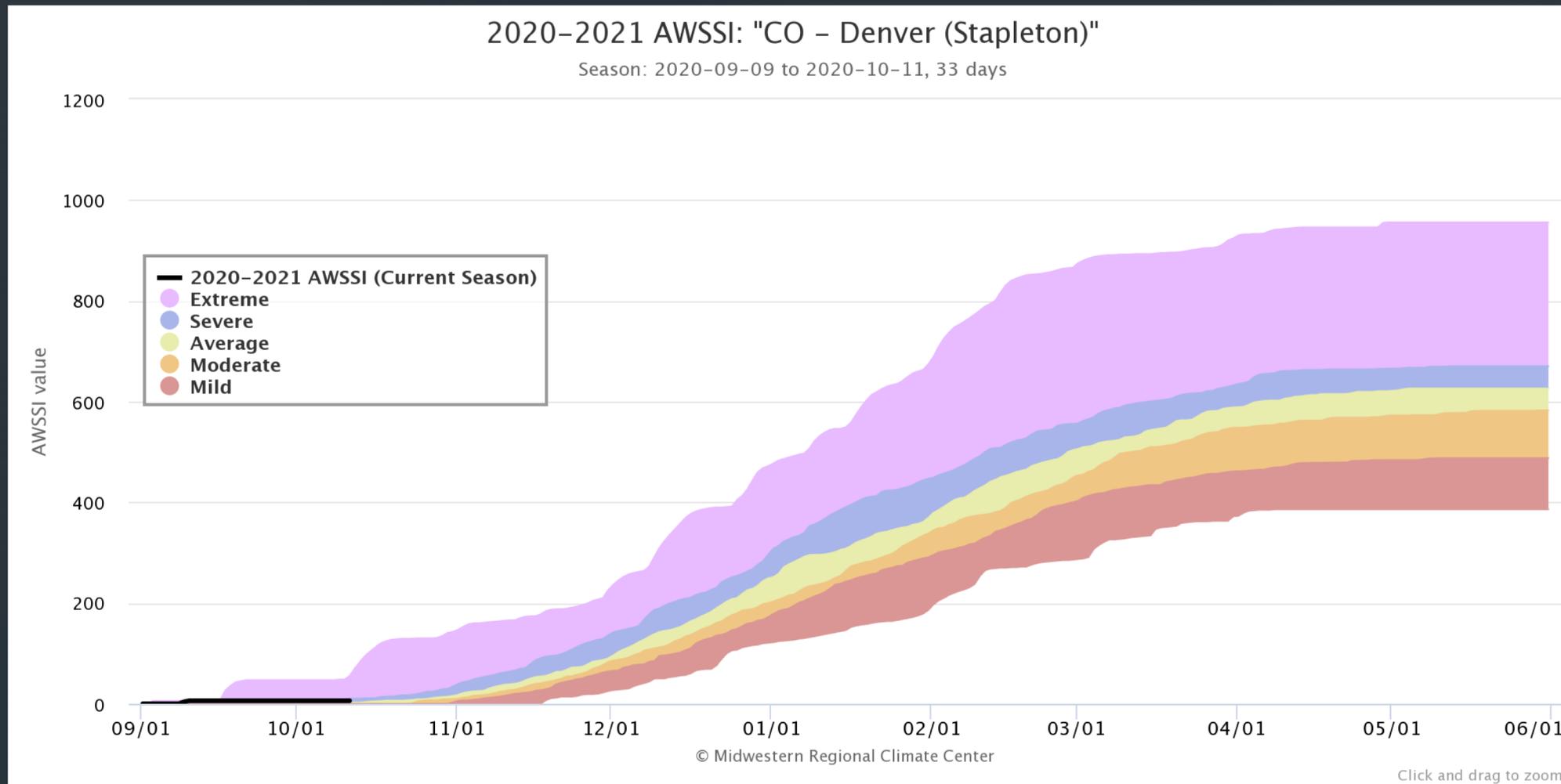
Wind

- Blowing snow
- Wind chill

Freezing fog

Snow melt refreezing

# AWSSI Categories



# Tracking and Displaying AWSSI



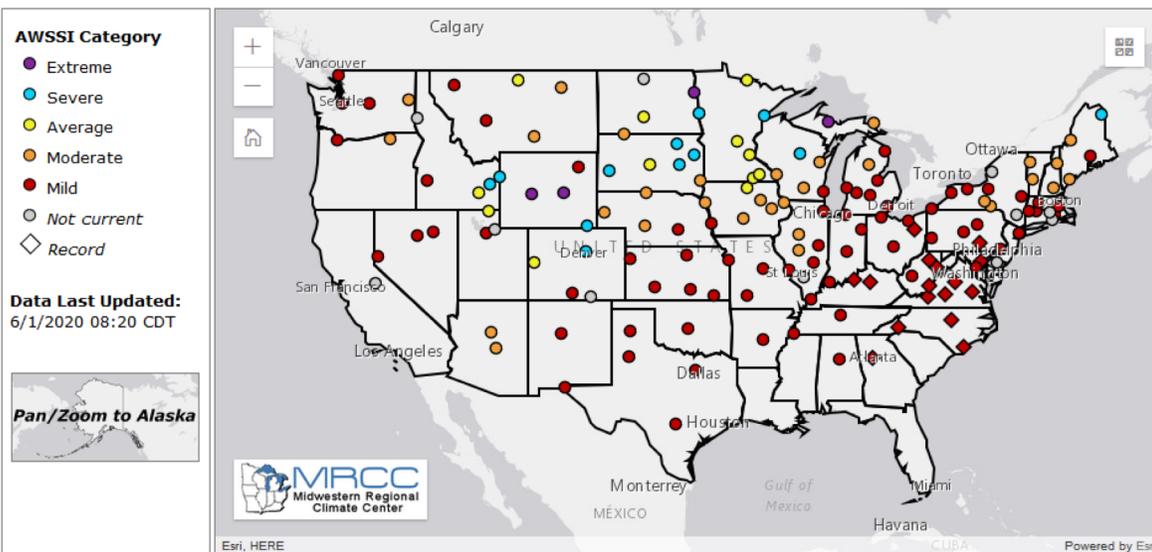


## RESEARCH: ACCUMULATED WINTER SEASON SEVERITY INDEX (AWSSI)



Winter seasons have significant societal impacts across all sectors ranging from direct human health and mortality to commerce, transportation, and education. The question "How severe was this winter?" does not have a simple answer. At the very least, the severity of a winter is related to the intensity and persistence of cold weather, the amount of snow, and the amount and persistence of snow on the ground. The Accumulated Winter Season Index (AWSSI) was developed to objectively quantify and describe the relative severity of the winter season.

### Current Season



[ Open Charts Window ]

### End of Season Summaries

Choose previous season map to open:

Select a city to download a .csv file of historical subscores for that station. [see column descriptions]

[See 1980-2014 Averages map](#)

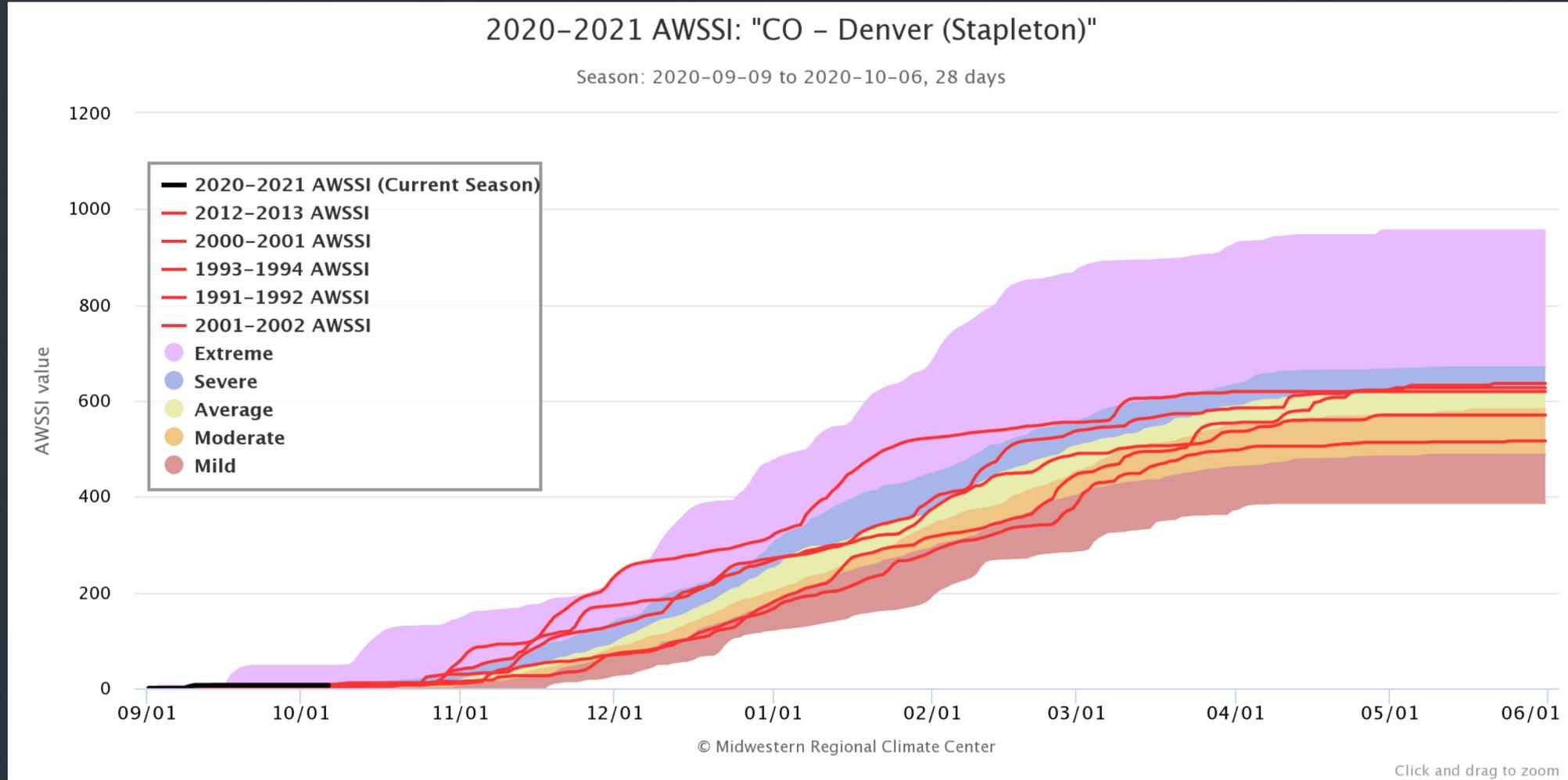
[\(+/-\) About the AWSSI](#)

[^TOP](#)

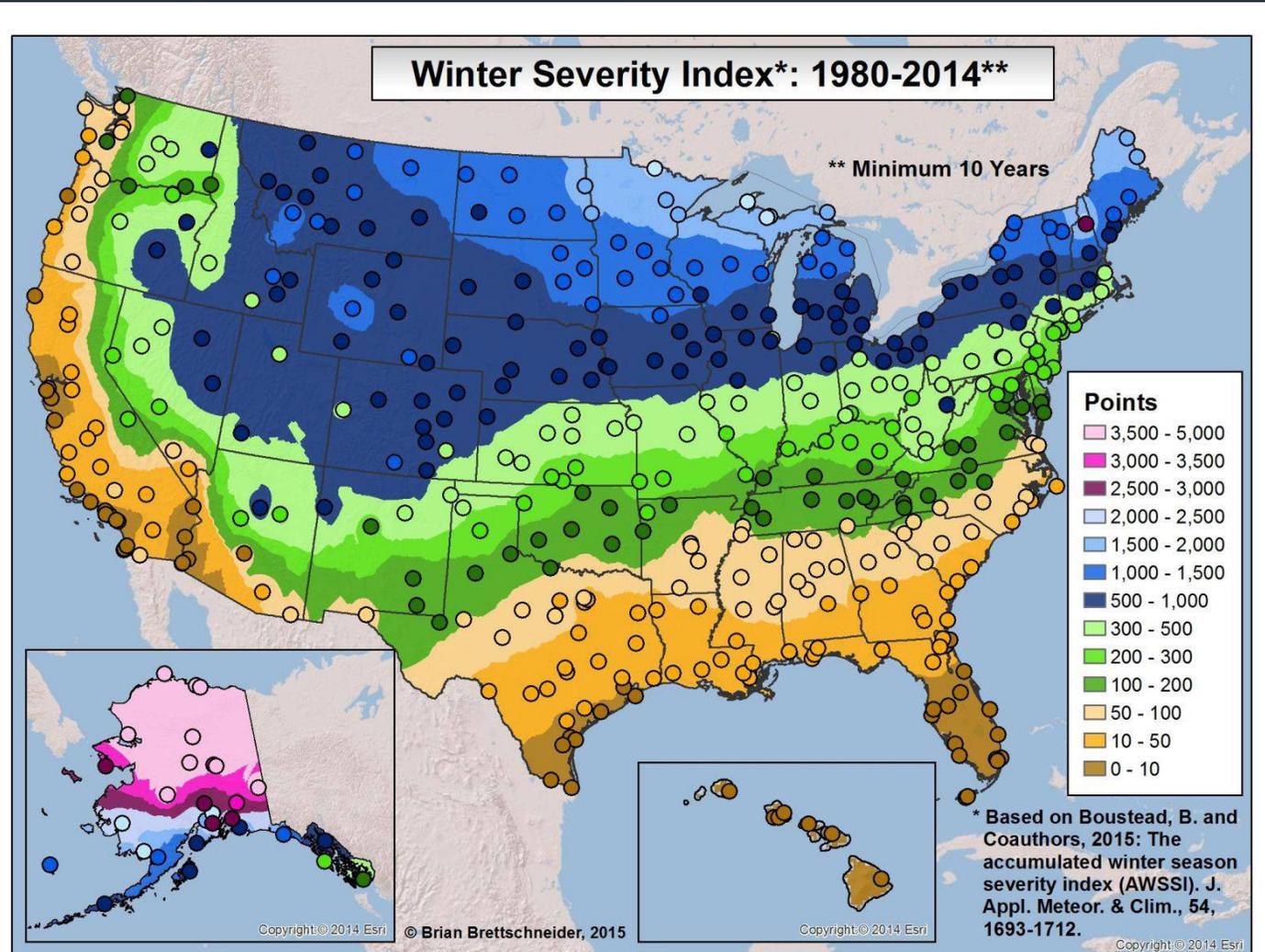
# AWSSI Tracking

<http://mrcc.isws.illinois.edu/research/awssi/indexAwssi.jsp>

# AWSSI Website: Daily Tracking by Site



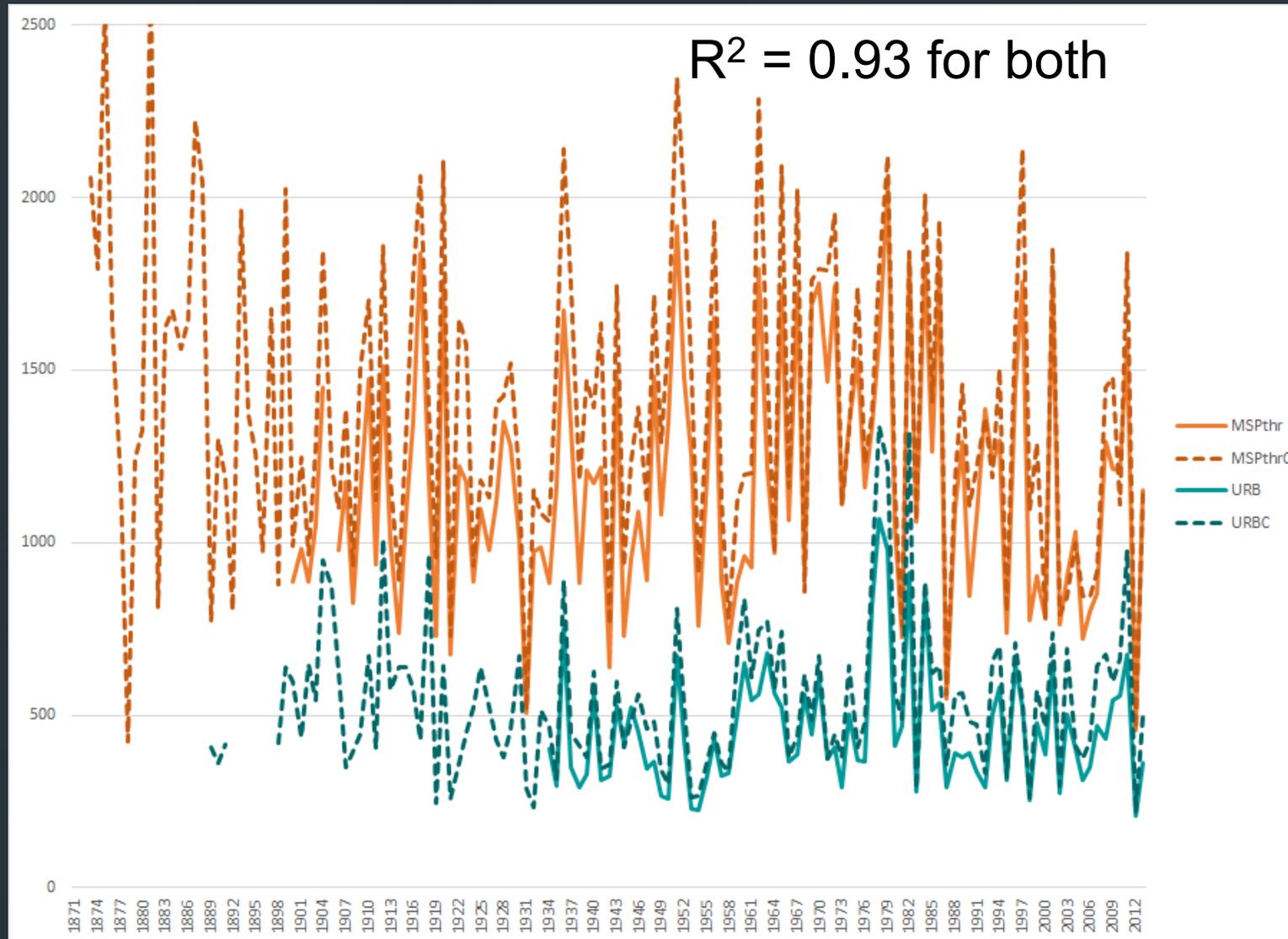
# Average AWSSI



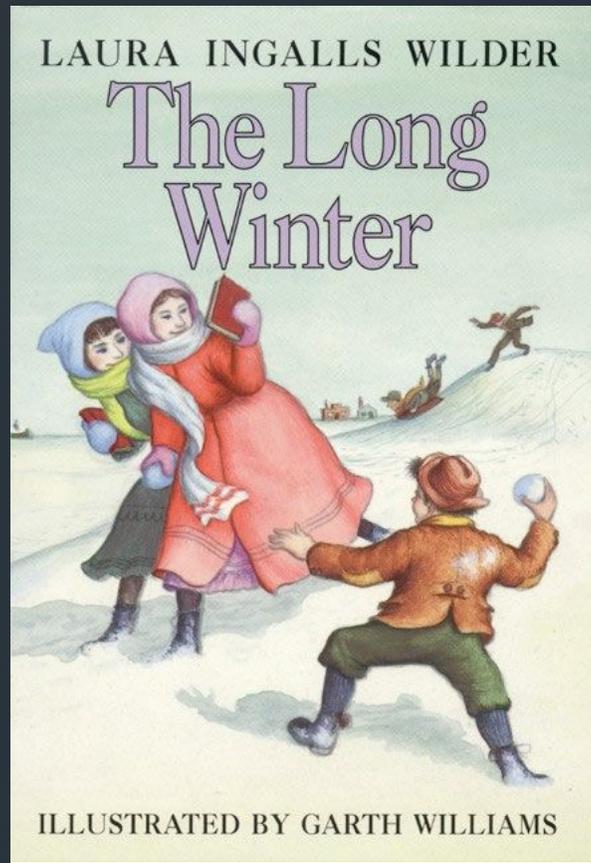
# Historical Winters and AWSSI



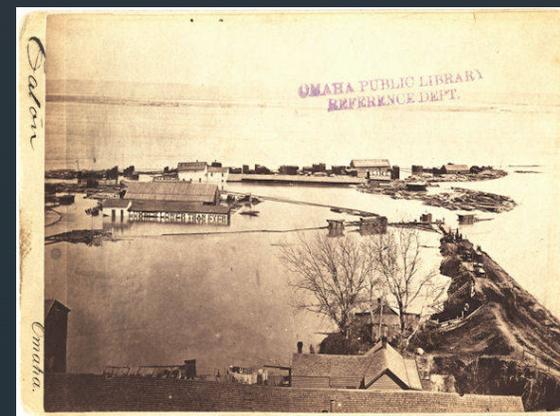
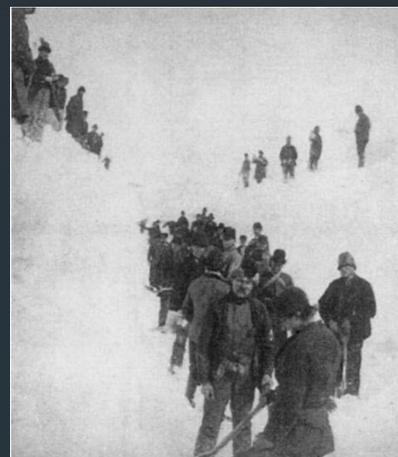
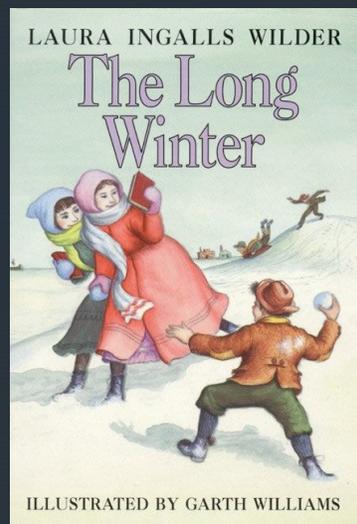
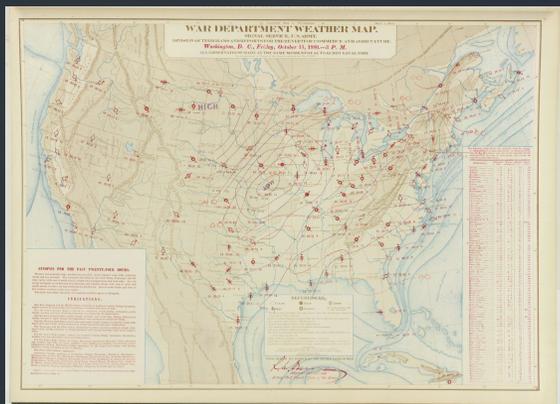
# AWSSI without Snow Data



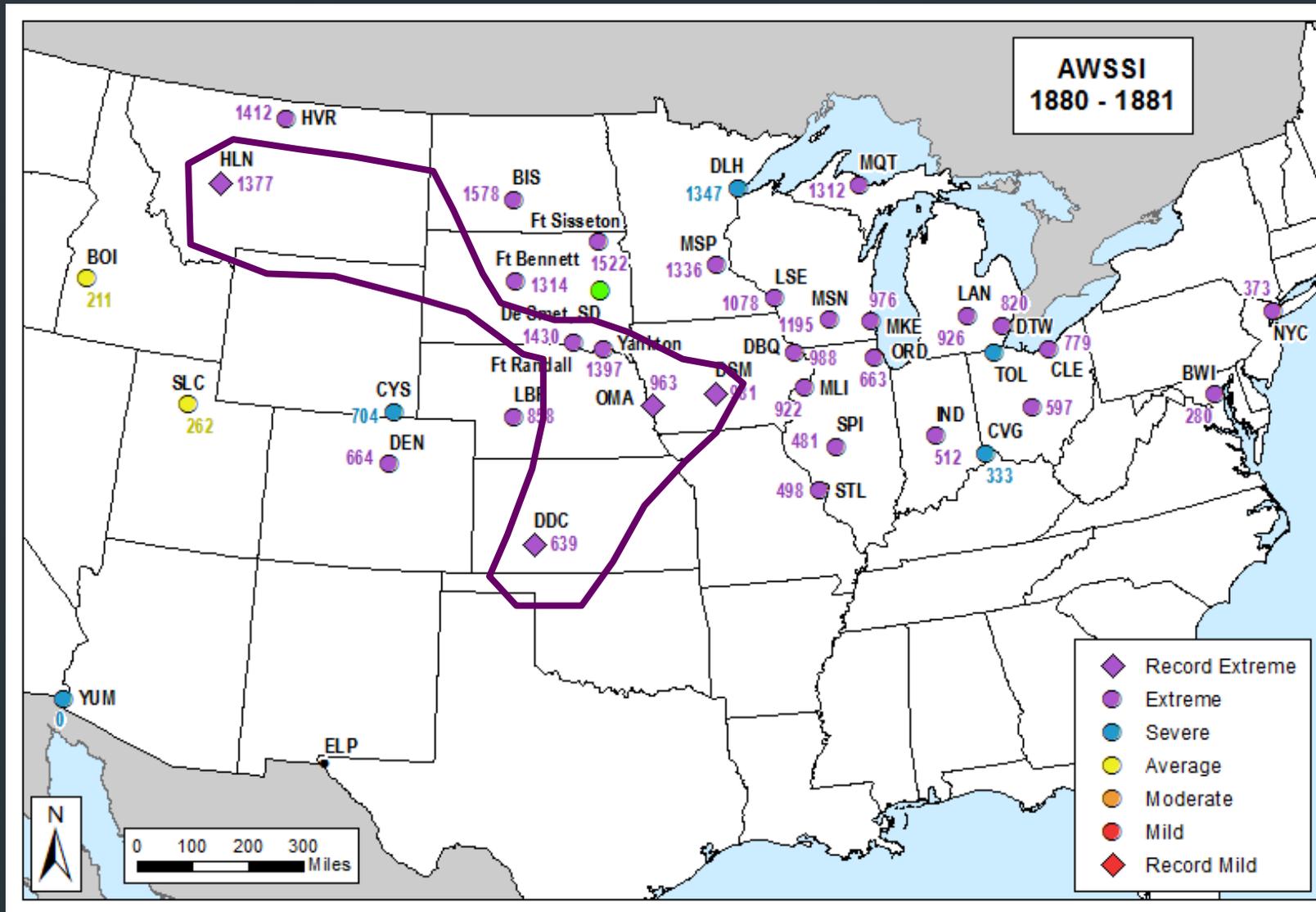
# AWSSI Severity of the Long Winter



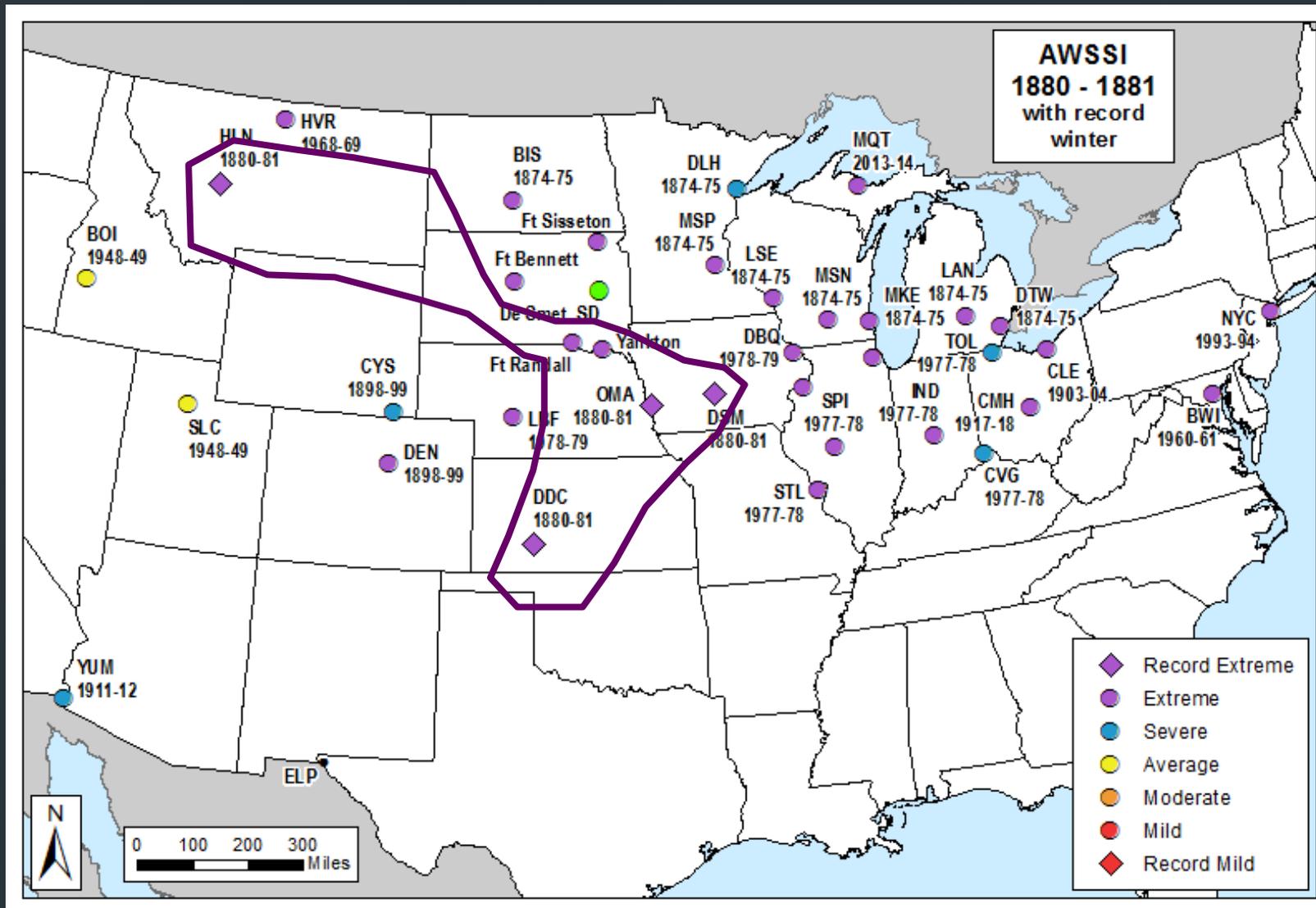
# The Story of the Long Winter



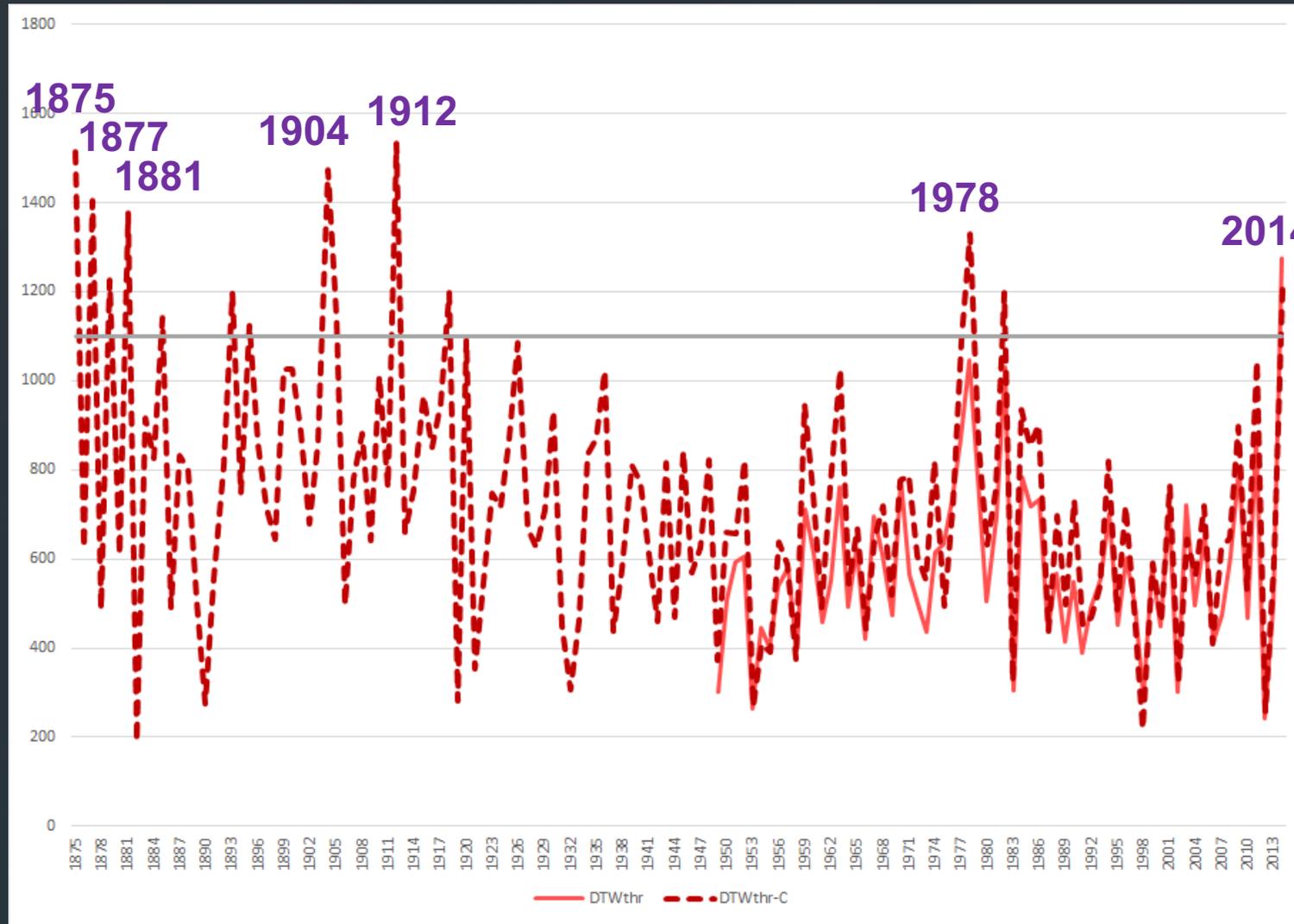
# The Long Winter of 1880-1881



# Most Extreme AWSSI Winters on Record



# Extreme Winters Becoming More Rare



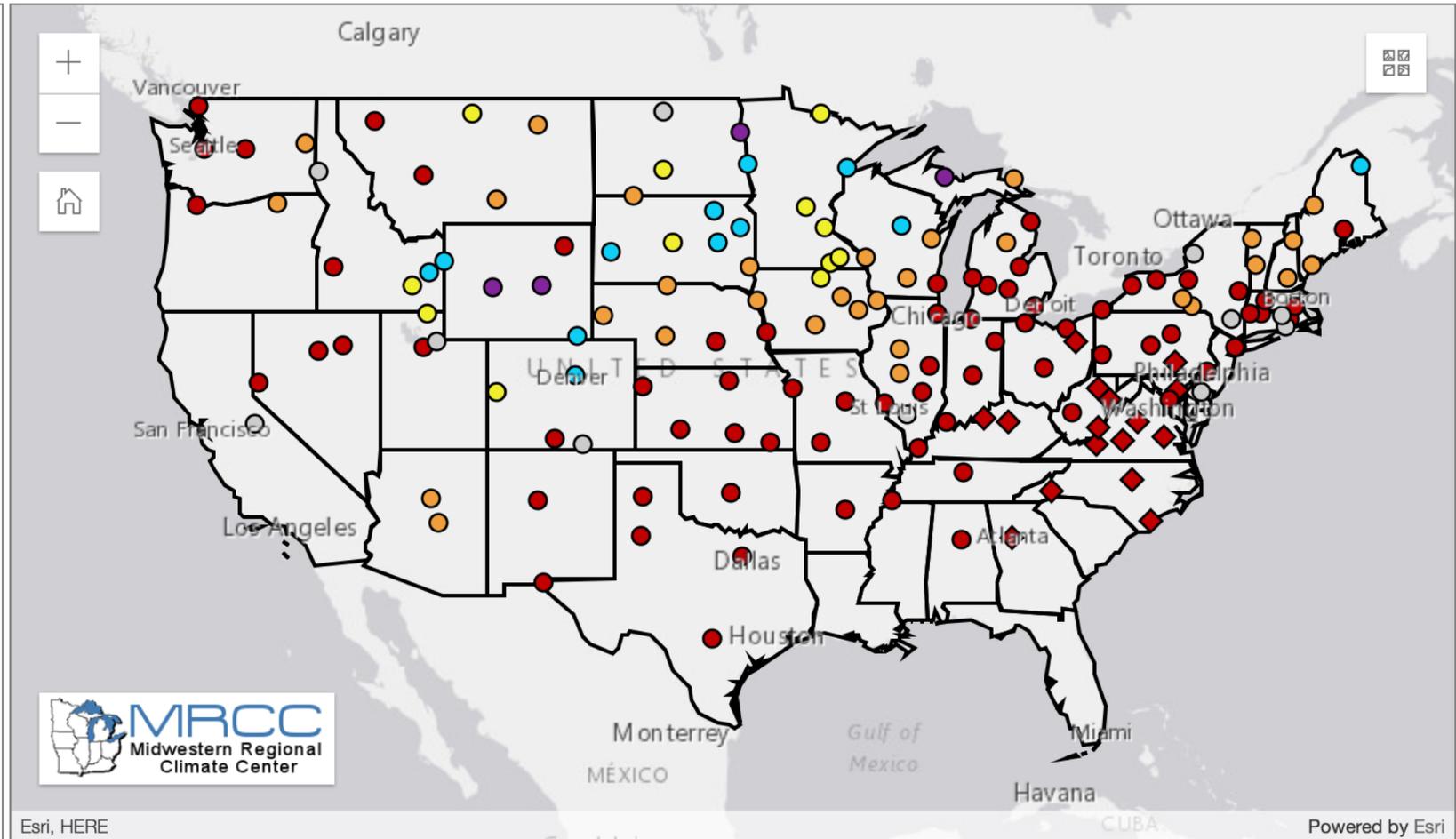
# Watch the MRCC AWSSI Page

## Current Season

### AWSSI Category

- Extreme
- Severe
- Average
- Moderate
- Mild
- Not current
- Record

Data Last Updated:  
6/1/2020 08:20 CDT



<http://mrcc.isws.illinois.edu/research/awssi/indexAwssi.jsp>

## For More “Wilder Weather” Information

Wilder Weather blog: [http://www.bousteadhill.net/wilder\\_weather/](http://www.bousteadhill.net/wilder_weather/)

Medium site: <https://medium.com/@windbarb>

Wilder Weather on Facebook: <https://www.facebook.com/wilderweather>

“The Long Winter of 1880-1881” in the *Bulletin of the AMS*:  
<https://journals.ametsoc.org/bams/article/101/6/E797/345570/The-Long-Winter-of-1880-81>

*The Beautiful Snow* by Cindy Wilson

# Thank You!

Questions? Ideas? Let us know!

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