

Update on NWS use of Real Time CoCoRaHS Reports



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Significant Weather Reports to NWS Forecast Offices

- Significant weather reports are forwarded to the Boulder NWS office as part of the form submission process when the report is entered.
- Reports are checked for timeliness and lightly filtered to remove 1/8 inch hail and lighter rainfall amounts (<.50 inch, <1 inch in an hour).
- Reports are then forwarded to the relevant NWS offices under the AWIPS product header **DENCCRAHS** and can be set to alarm at the forecaster workstations.

CoCoRaHS Report Form

 **Enter My New Reports**

- Daily Precipitation
- Multi-Day Accumulation
- Hail
- Significant Weather
- Monthly Zeros
- Condition Monitoring Report
- Soil Moisture
- Ice Accretion - Pilot

FROST Reports

- Frost
- Optics
- Snowflake
- Thunder

List/Edit My Reports

- Daily Precipitation
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FROST Reports

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My Data Entry : Significant Weather Report Form

Notification:

- Use this form to report heavy rain or snow that has just fallen, or is still falling.

Significant Weather Report

Station Number : CO-WE-171 **Station Name :** Greeley 2.6 W

* Denotes Required Field

Observation Date 6/9/2024 **Observation Time** 9:10 PM 60 Minutes **Time duration that the report covers**

Rain

Gauge Catch: New Rain and Melted Snow that has fallen in. during the report duration, in inches to the nearest **hundredth**

Total Gauge Catch: Total Precipitation, rain and melted snow, since storm began, in inches to the nearest **hundredth** in.

Snow

Snowfall: Depth of New Snow that has fallen during the report duration, in inches to the nearest **tenth** in.

Snowpack Depth: Total depth of snow and ice on ground at the time of this observation to nearest **half inch** in.

Additional Information

Yes No **Report was taken at registered location?**

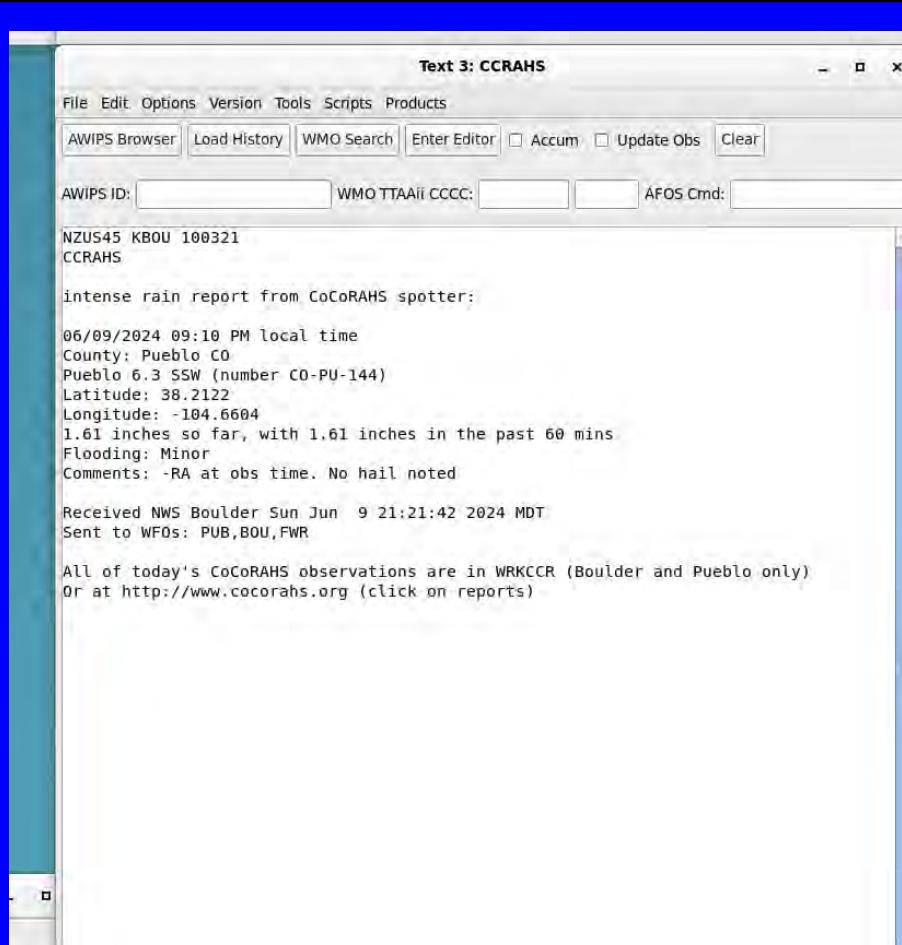
Was There Flooding?

No
If Yes, how severe?
 Minor (typical). Street or field flooding.
 Unusual street or field flooding (only see this every few years)
 Severe Flooding
 Extreme (never seen it this bad before)

Observation Notes (This will be available to the public)

-RA at obs time. No hail noted.

Weather Forecast Offices



Report Filtering Criteria--Sent If:

- 0.50" in 15 minutes
- 0.75" in 30 minutes
- 1.00" in 60 minutes
- 1.50" in any time
- 0.25" diameter hail
- Snow > T
- Flooding greater than "minor"
- Mention of freezing rain, ice, or icing in comments
- Marked "STALE" if more than 60 minutes old
- Not sent if more than 28 hours old
- No filter for CA, AZ, NV, UT, NM

Why Filter?

Date ▲	Time	Station Number	Station Name	Average	Largest	Photo	State	County	View
7/5/2019	6:30 PM	CO-BO-149	Longmont 1.7 NNE	NA	1/2" Grape		-- CO	Boulder	
7/5/2019	7:10 PM	CO-BO-490	Boulder 1.5 WNW	3/4" Penny Size	1 1/4" Half Dollar Size		-- CO	Boulder	
7/5/2019	7:11 PM	CO-BO-491	Boulder 1.8 W	NA	NA		-- CO	Boulder	
7/5/2019	7:12 PM	CO-BO-472	Boulder 1.3 W	1/4" Pea Size	1" Quarter Size		-- CO	Boulder	
7/5/2019	7:30 PM	CO-BO-165	Boulder 1.8 ESE	1/4" Pea Size	1/2" Grape		-- CO	Boulder	
7/5/2019	7:30 PM	CO-BO-286	Boulder 3.5 S	1/4" Pea Size	1" Quarter Size		-- CO	Boulder	
7/5/2019	7:30 PM	CO-BO-446	Boulder 1.9 SSE	NA	1/2" Grape		-- CO	Boulder	
7/5/2019	7:33 PM	CO-BO-220	Boulder 4.7 ENE	3/4" Penny Size	1 1/2" Ping Pong Ball Size		-- CO	Boulder	
7/5/2019	7:35 PM	CO-BO-4	Boulder 2.9 S	1/2" Grape	1 1/4" Half Dollar Size		-- CO	Boulder	
7/5/2019	7:40 PM	CO-BO-446	Boulder 1.9 SSE	NA	1/2" Grape		-- CO	Boulder	
7/5/2019	7:40 PM	CO-BO-513	Lafayette 2.1 WNW	NA	2" Hen Egg Size		-- CO	Boulder	
7/5/2019	7:41 PM	CO-BO-8	Lafayette 0.4 WSW	7/8" Nickel Size	1 3/4" Golf Ball Size		-- CO	Boulder	
7/5/2019	7:45 PM	CO-BO-285	Erie 1.7 WNW	1/4" Pea Size	1/2" Grape		-- CO	Boulder	
7/5/2019	8:10 PM	CO-BO-165	Boulder 1.8 ESE	1/4" Pea Size	3/8"		-- CO	Boulder	
7/5/2019	8:28 PM	CO-BO-143	Longmont 2.1 N	5/8"	1 1/4" Half Dollar Size		-- CO	Boulder	
7/5/2019	8:30 PM	CO-BO-84	Longmont 2.6 NW	3/8"	3/8"		-- CO	Boulder	
7/5/2019	8:45 PM	CO-BO-220	Boulder 4.7 ENE	3/8"	5/8"		-- CO	Boulder	

Significant Weather Report

Station Number: CO-ME-69
Station Name: Grand Junction 4.0 W
Date: 8/11/2019 12:55 PM
Submitted: 8/11/2019 1:05 PM
Notes: Also some brief pea-sized hail. No thunder heard.
Taken at Registered Location: True
Precip Duration Minutes: 10
New Precip Amount: 0.07 in.
Total Precip Amount: 0.07 in.
New Snow Depth: 0.0 in.
Total Snow Depth: 0.0 in.
Flooding: No

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Significant Weather Report

Station Number: CO-PW-34
Station Name: Lamar 2.9 S
Date: 1/16/2019 3:45 PM
Submitted: 1/16/2019 6:32 PM
Notes: We were much cooler than the forecast. Started cooling off before lunch and fog moved in around 3:45pm. Never saw the sun today.
Taken at Registered Location: True
Precip Duration Minutes: 0
New Precip Amount: NA
Total Precip Amount: NA
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Flooding:

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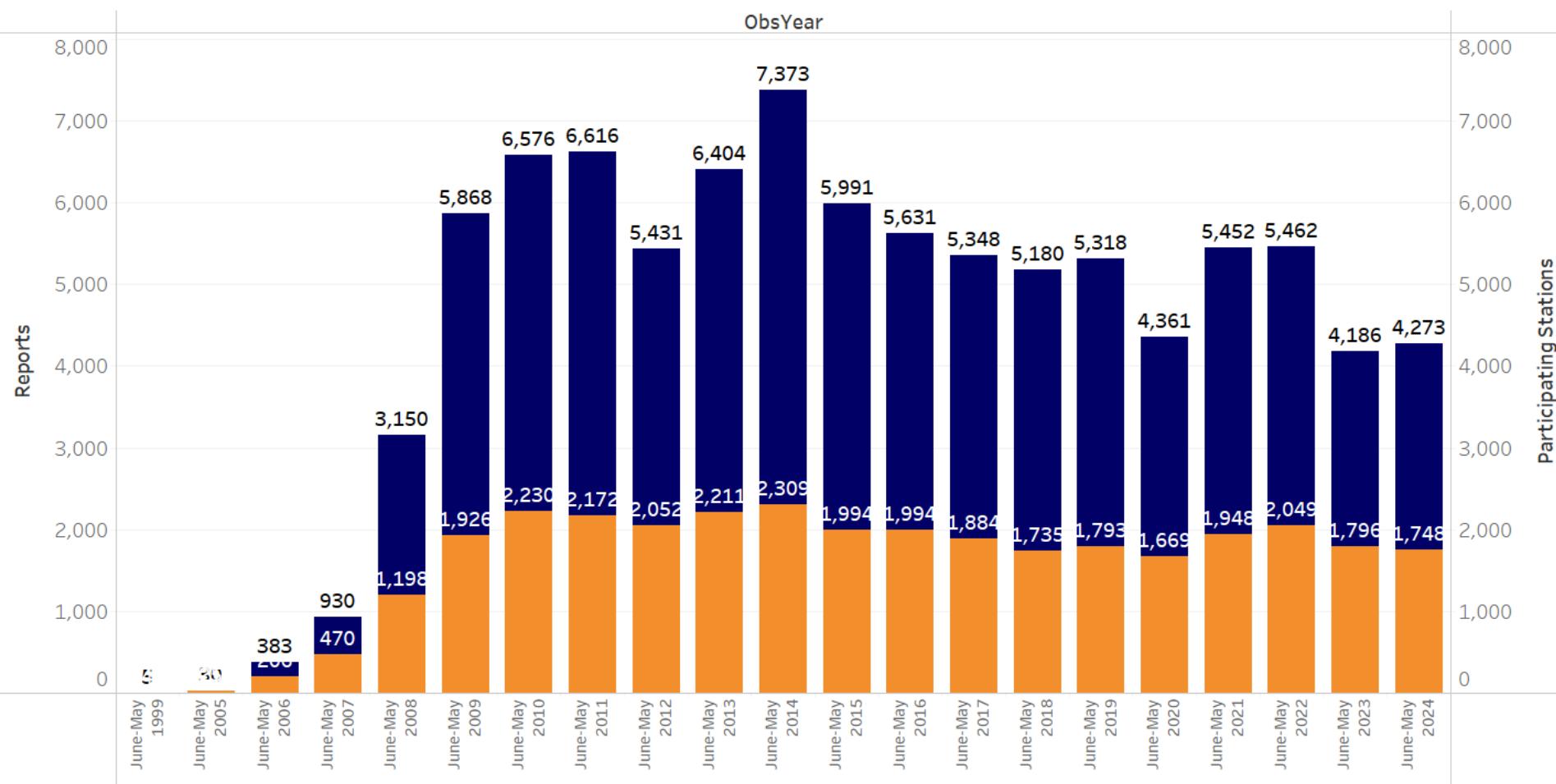
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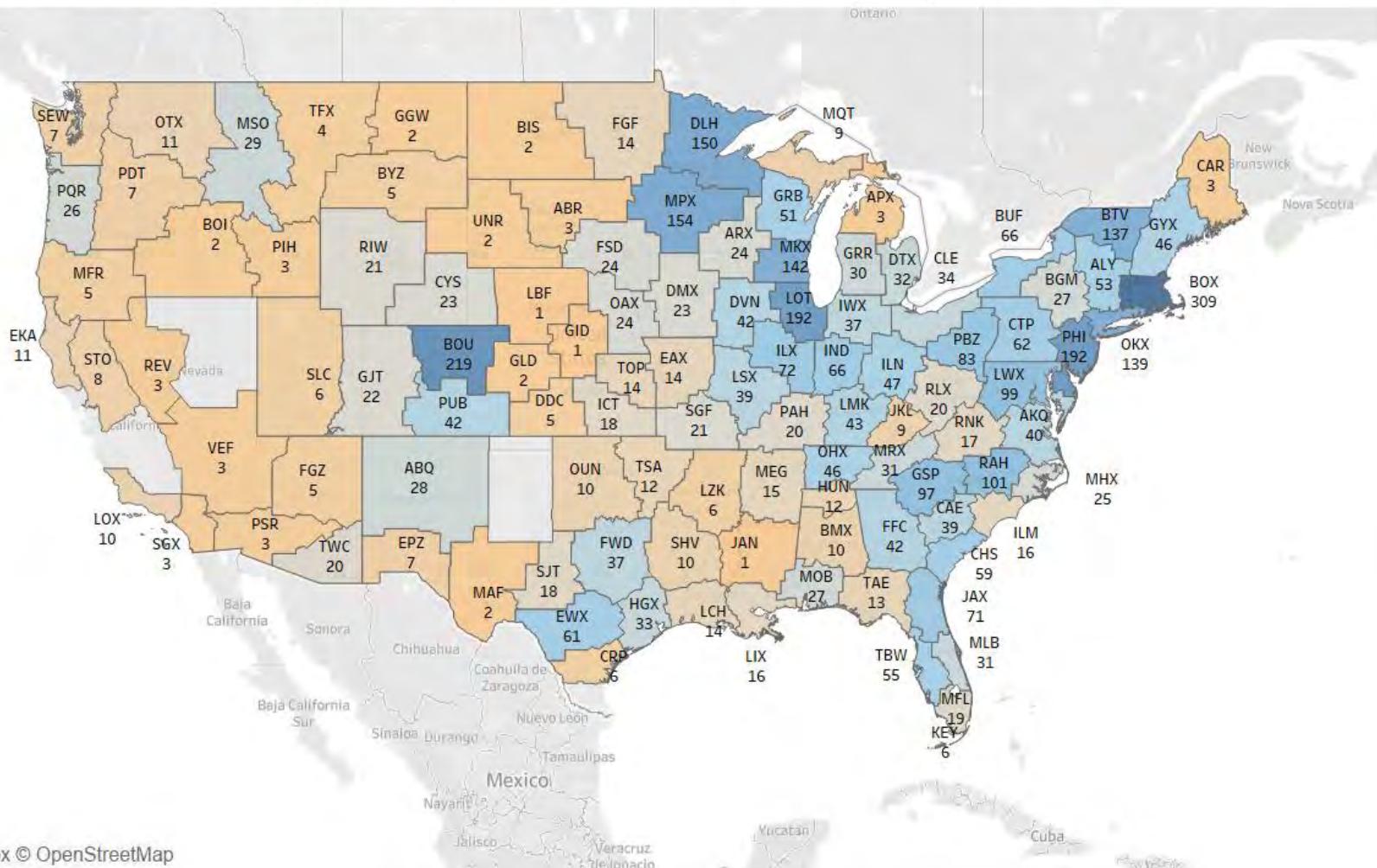
Significant Weather Report

Station Number: CO-PW-34
Station Name: Lamar 2.9 S
Date: 2/5/2019 12:39 PM
Submitted: 2/05/2019 12:40 PM
Notes: Why is it so hard to forecast the temp?
Taken at Registered Location: True
Precip Duration Minutes: 0
New Precip Amount: NA
Total Precip Amount: NA
New Snow Depth: NA
Total Snow Depth: NA
Flooding:

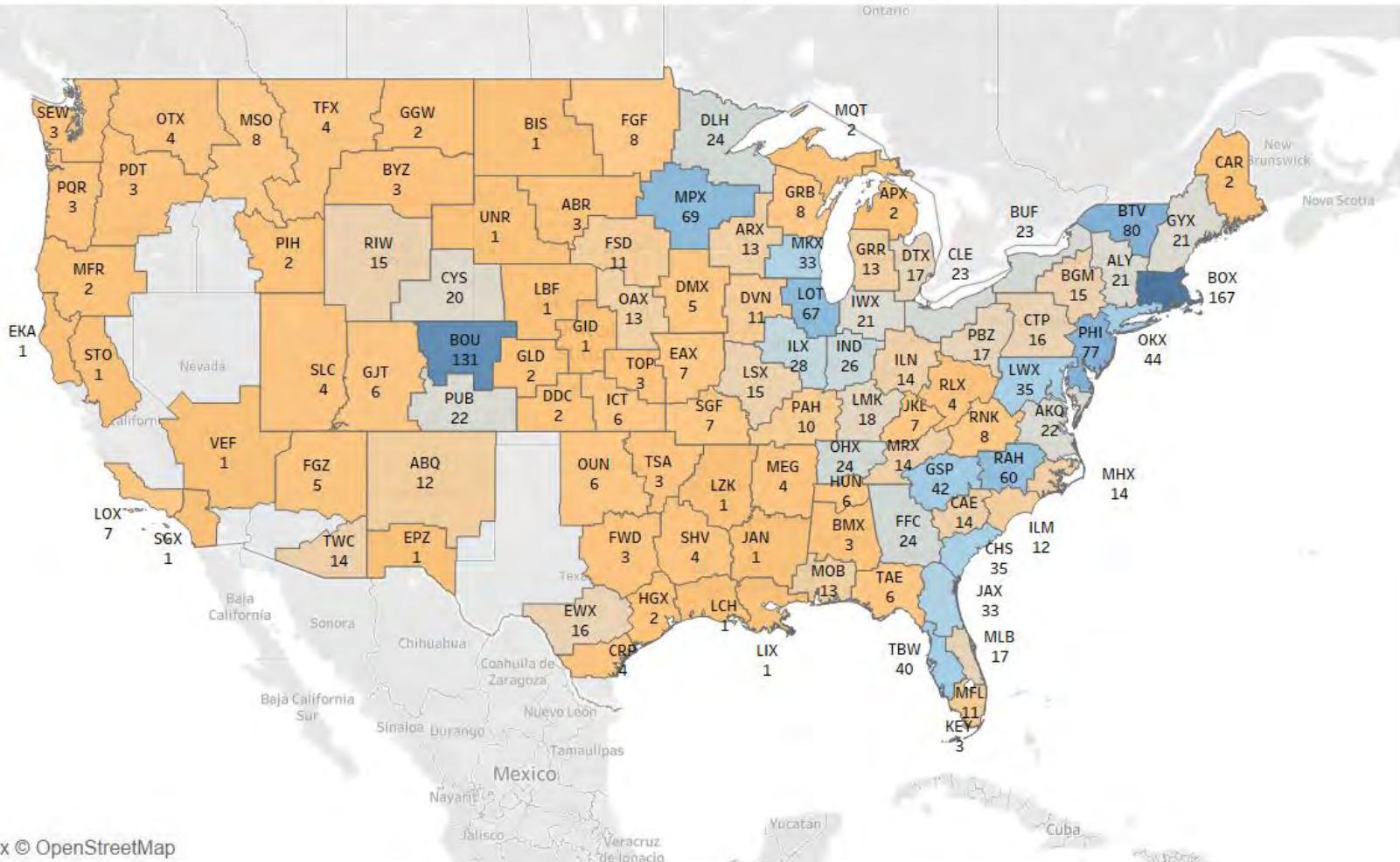
Significant Weather Reports and Participating Stations. Years span from June - May



Significant Weather Reports by CWA. June 1, 2023 - May 31, 2024

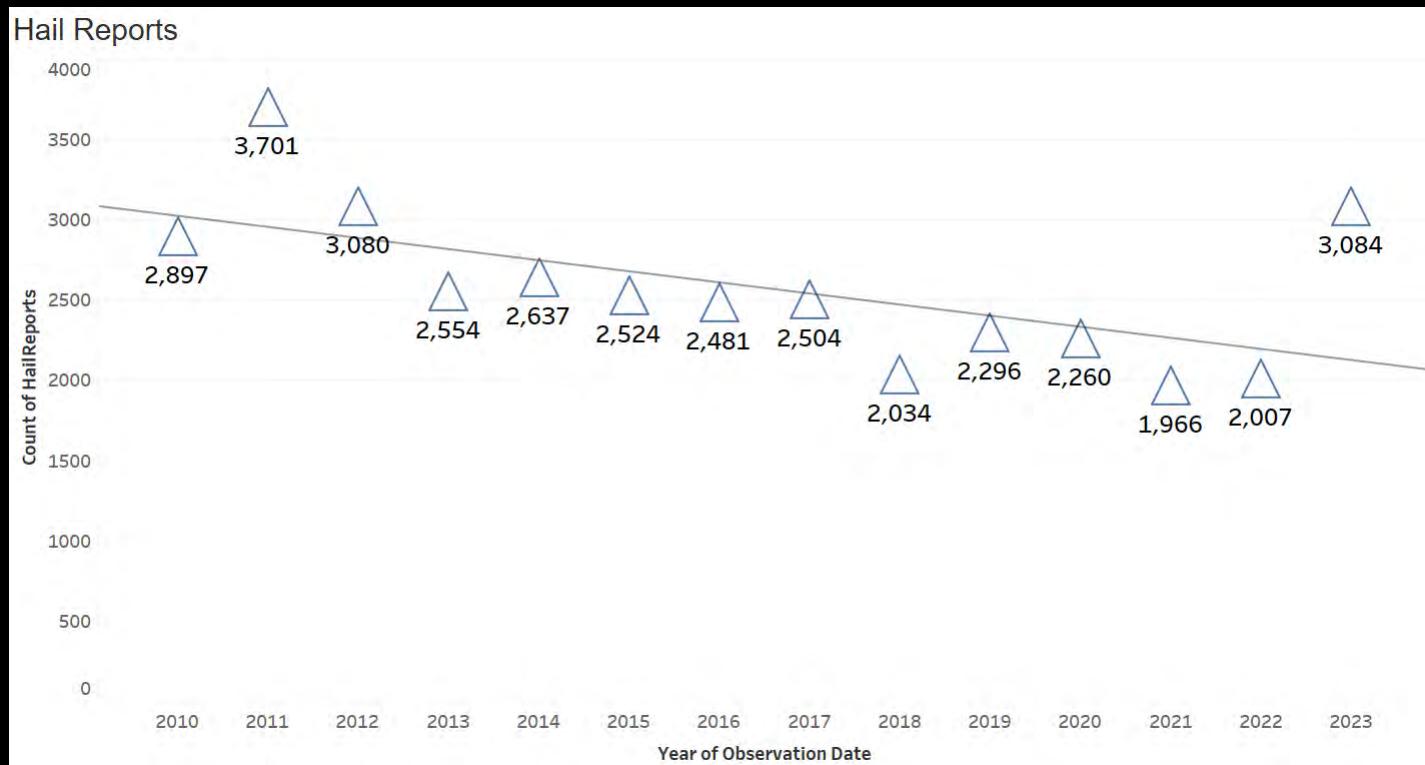
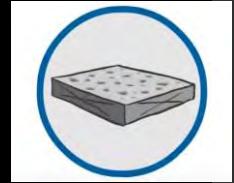


Significant Weather Reports by CWA. June 1, 2023 - August 31, 2023

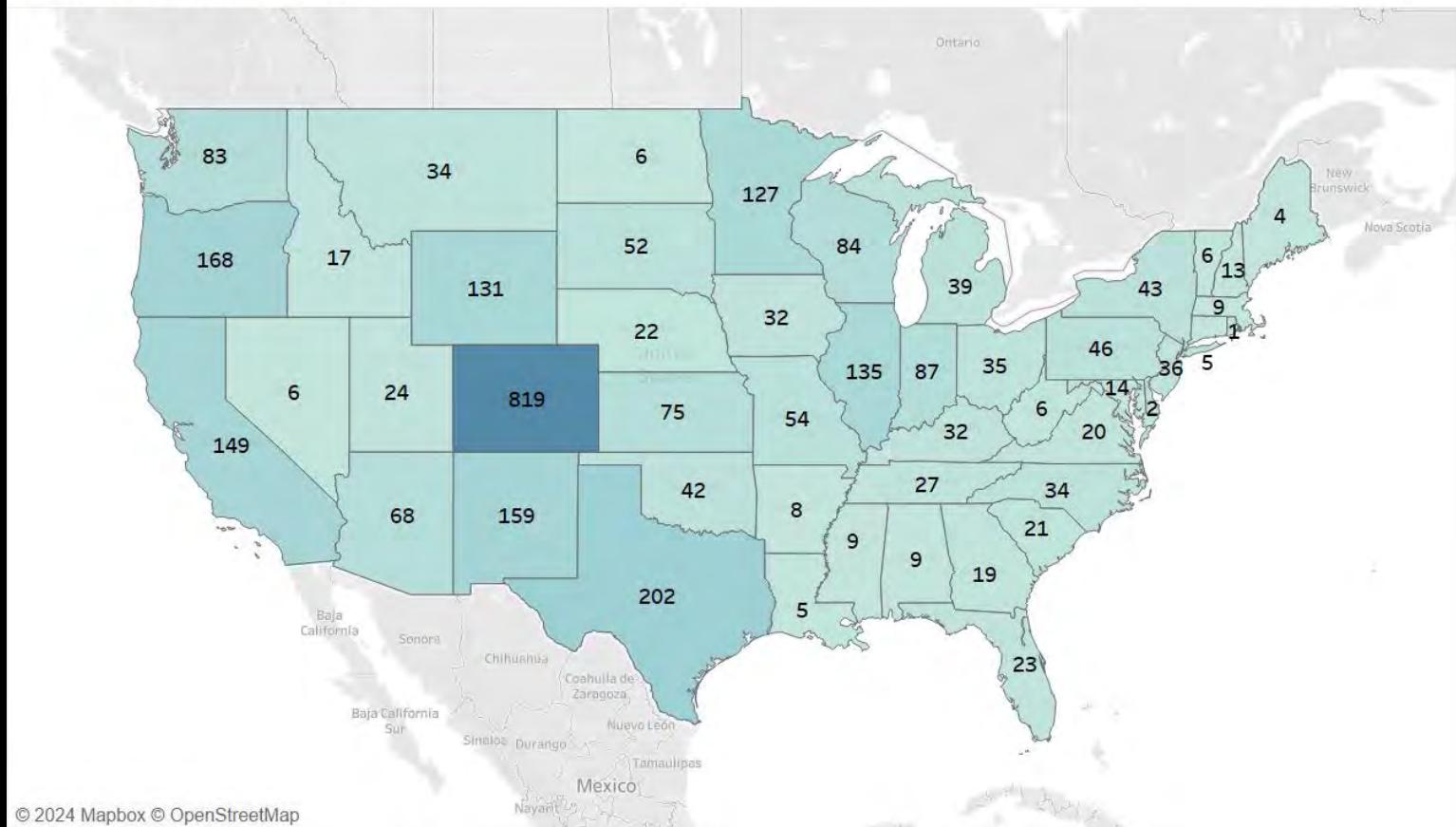


Count of Hail Reports

Year 2010 -> Year 2023



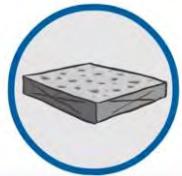
Year 2023 Hail Reports



819 out of 3,084 Hail Reports (27%) came from Colorado

Top 20 Hail Reporting Stations

Station Number	Station Name	First Report	Last Report	Count of Hail Rep..	Years Reporting
OR-BN-13	Blodgett 1 N	12/30/2007	2/26/2024	301	18
CO-JF-267	Golden 9.4 WNW	6/16/2006	6/1/2023	175	18
CO-SA-2	Crestone 1.2 SSE	9/4/2004	10/2/2023	165	20
CO-LR-220	Estes Park 0.6 SSE	4/29/2000	8/7/2017	138	18
OR-CC-66	Happy Valley 1.7 ESE	5/9/2014	3/12/2024	134	11
NM-CL-1	Angel Fire 10.2 SSE	6/21/2005	7/6/2021	134	17
CO-LR-247	Estes Park 3.3 SSW	5/24/2003	8/28/2023	133	21
CO-EP-24	Black Forest 2.1 SSE	5/6/2005	8/30/2019	130	15
CO-EP-12	Colorado Springs 18.7 N	7/28/2003	8/29/2017	125	15
CO-LR-251	Stove Prairie 2 WNW	5/17/2000	8/24/2016	117	17
CO-LR-36	Timnath 4.1 NNE	7/3/2002	10/2/2023	97	22
CO-LR-329	Red Feather 5.9 NE	4/29/2000	5/24/2023	95	24
CO-JF-51	Evergreen 5.3 S	8/5/2002	5/4/2023	93	22
CO-JF-32	Conifer 3 E	7/3/2002	6/15/2010	93	9
CO-LR-311	FCL 2.3 NW	6/17/1998	8/27/2023	92	26
CO-WE-171	Greeley 2.6 W	4/29/2000	6/6/2023	89	24
MT-DL-1	Anaconda 7.4 NW	5/7/2008	7/27/2023	87	16
CO-GR-29	Kremmling 7.8 WNW	7/20/2004	10/3/2023	87	20
CO-PK-39	Lake George 7.2 WNW	5/13/2004	6/30/2023	85	20
CO-PK-78	Fairplay 2.7 SW	6/8/2006	9/14/2023	83	18



Real Time Reports

- 50-75% are received within an hour of observation time
- For Significant Weather Reports, about 80%
- Hail reports are more complicated
- About 65% of snow reports are timely/warning related
- 35% for heavy rain, 15% for hail.
- Annually about 4,000 reports are forwarded to NWS offices within an hour of the event time.
- About 2,000 of these were warning related.

Real Time Reports Issues?

- Awareness:
 - NWS Offices don't all know about this despite reminders
 - Volunteer reporting varies considerably
- Filtering Confusion:
 - Generally accepted once it's explained
- Worth rewriting? Hasn't been yet?

Questions?

