



# EXTREME LESSONS: USING COCORAHHS DATA FOR STATE CLIMATE RECORDS

KEVIN BRINSON

DELAWARE CLIMATE OFFICE

UNIVERSITY OF DELAWARE

# NEW DELAWARE STATE RECORDS

Four (4) new state records declared in 2020-2021:

- Delaware 24-Hour Precipitation Record (Declared on March 26, 2020)
- Delaware Monthly Snowfall (Declared on April 17, 2020)
- Delaware Seasonal Snowfall (Declared on July 15, 2020)
- Delaware Maximum Snow Depth (Declared February 24, 2021)
- One record under review: Delaware Annual Precipitation

## ***State Climate Extremes Record***

**Delaware Daily Snow Depth**

Greenwood 2.9 SE (CoCoRaHS)

**28 inches**

February 7, 2010



NOAA National Centers for Environmental Information

# HOW ARE STATE RECORDS DETERMINED?

A: A new record is determined after being examined and voted on by the State Climate Extremes Committee (SCEC)

A SCEC typically consists of:

- The State Climatologist
- A representative from the NWS WFO with jurisdiction over where the record occurred
- A representative from the NWS Regional Headquarters
- A representative from the Regional Climate Center (RCC) covering the state in question
- A representative from NCEI

# SCEC CRITERIA

1. Is the observation meteorologically sound?
2. Does the observing platform meet siting standards?
3. Was the instrument capable of measuring the extreme?
4. Is the observation archived indefinitely with accompanying metadata and QC information?
5. Is the data and accompanying metadata publicly accessible?

# LESSON #1: THE INSTRUMENT MATTERS

- Annual Total Precipitation Record
- CoCoRaHS observer near Milford, DE measured 75.90 inches in 2020. Old (current) record is 72.53 inches in Millsboro, DE (1948).
- Observer contacted to inquire about gauge and siting conditions



# LESSON #2: SITING MATTERS

- Maximum Snow Depth Record
- CoCoRaHS Observer Reported the following:
  - 2/6/10 – New Snowfall: 10.2 inches / Snow Depth: 13.0 inches
  - 2/7/10 – New Snowfall: 14.0 inches / Snow Depth: **29.2 inches**
- Doing the math...  $13.0 + 14.0 \neq 29.2$
- So how could this happen?



Predominant Wind  
Direction on 2/6 and 2/7

Measurement Area



# WHAT HAVE WE LEARNED?

1. Double check that an official CoCoRaHS gauge is being used with every new observer.
2. Emphasize training – especially retraining of snow measurement methods before the first snow.
3. Show me your gauge!
4. Use QC Tickets as teachable moments
5. Stay on top of your (extreme) data

