COCORAHS – 25 Years
A Retrospective

YMCA of the Rockies – May 2017

THE COMMUNITY COLLABORATIVE RAIN, HAIL AND SNOW NETWORK
CoCoRaHS
25
ESTABLISHED 1998
TWENTY-FIFTH ANNIVERSARY

NATIONAL MESONET

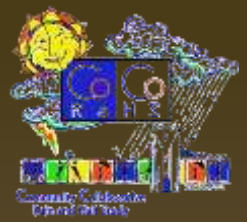
NOAA

PRISM

Colorado State University

CoCoRaHS over 25 years

Early Years



- Fort Collins Flood
- CoCoRaHS begins
- NSF Funding begins
- Website
- New Logo
- NOAA Funding for expansion
- Five for CoCo Fundraising begins
- PRISM funding begins
- Now in 50 states
- WxTalk Webinars
- International Expansion
- ET measurements
- White House Vegetable Garden
- Mobile Apps
- Educational Animations
- Drought/Condition Monitoring
- 50 Million observations
- Interactive Mapping System
- Expansion to Guam
- Data Dashboard

1997 2004 2010 2018 2023

Expansion

CoCoRaHS CANADA COMING SOON !

International and New Measurements

Pre-CoCoRaHS

THE VERY BEGINNING

EARLY VOLUNTEERS

THE FLOOD

CoCoRaHS

Community Collaborative Rain, Hail & Snow Network

THE ACTUAL BEGINNING

CoCoRaHS was born in response to the 1997 Fort Collins, Colorado Flood

The flood pointed out:

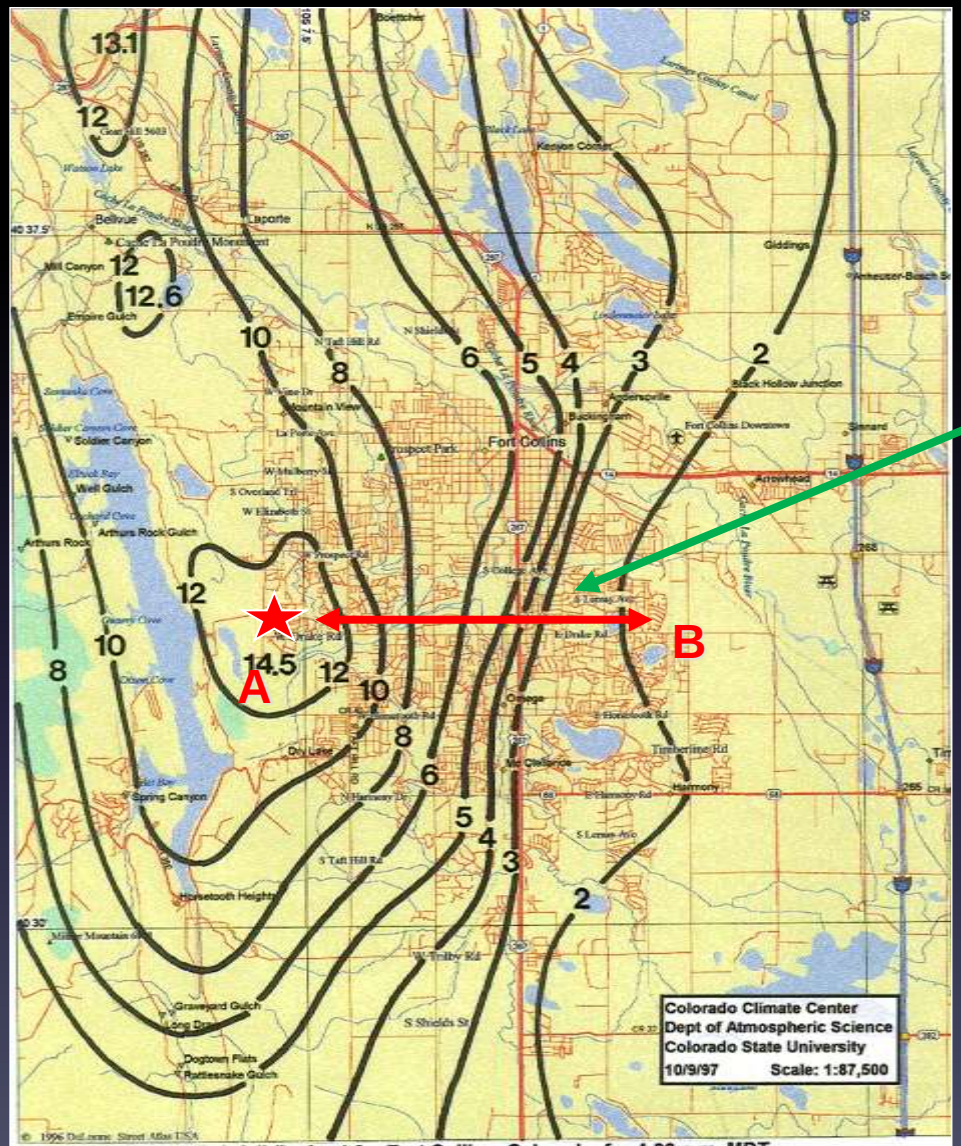


Figure 14. Rainfall (inches) for Fort Collins, Colorado, for 4:00 p.m. MDT July 27, 1997 through 11:00 p.m. MDT for July 28, 1997

1. The extreme local variations in rainfall possible from convective storms.
2. The important role individuals can play in measuring, mapping and reporting precipitation.

Distance between A and B = 5 miles

A = 14.5 inches

B = 2.0 inches

1998

2005

Today

A few dozen volunteers
in Northern Colorado

2,000+ volunteer observers
in communities across six states.

25,700+ volunteers in all
50 states, Canada, Puerto Rico,
the U.S. Virgin Islands,
the Bahamas and Guam

OVER 50 MILLION OBSERVATIONS
. . . submitted by CoCo observers! WOW!
50M
April 2020

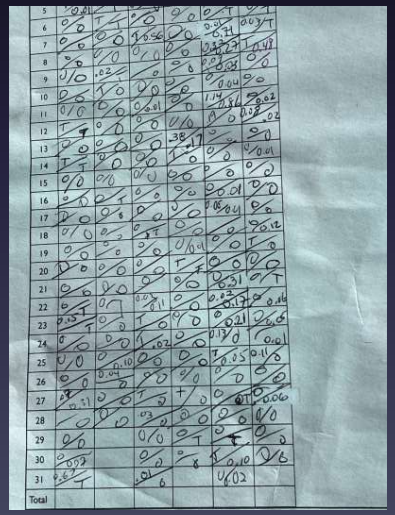
Over 5 Million+
observations per year

1998- 2004

Community Collaborative Rain and Hail Study

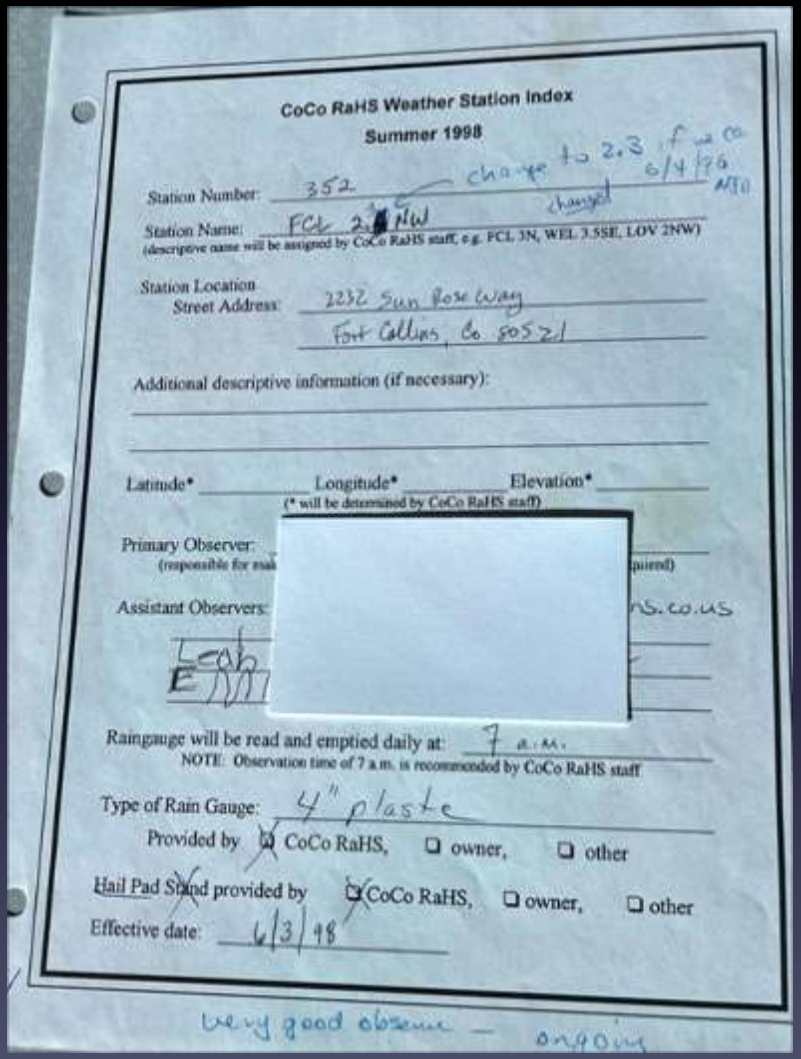
CoCoRaHS

Community Collaborative Rain, Hail & Snow Network



THE EARLY YEARS

The Beginning – Summer 1998



CoCo RaHS Weather Station Index

Summer 1998

Station Number: 352 — change to 2.3 if we do 6/4/98 MSO

Station Name: FCL 2[redacted] NW (changed)

(descriptive name will be assigned by CoCo RaHS staff, e.g. FCL 3N, WEL 3.5SE, LOV 2NW)

Station Location
Street Address: 2232 Sun Rose Way
Fort Collins, Co 80521

Additional descriptive information (if necessary):

Latitude* _____ Longitude* _____ Elevation* _____
(* will be determined by CoCo RaHS staff)

Primary Observer: [redacted]
(responsible for sub[redacted] quired)

Assistant Observers: [redacted] hs.co.us

Leah
E[redacted]

Raingauge will be read and emptied daily at: 7 a.m.
NOTE: Observation time of 7 a.m. is recommended by CoCo RaHS staff

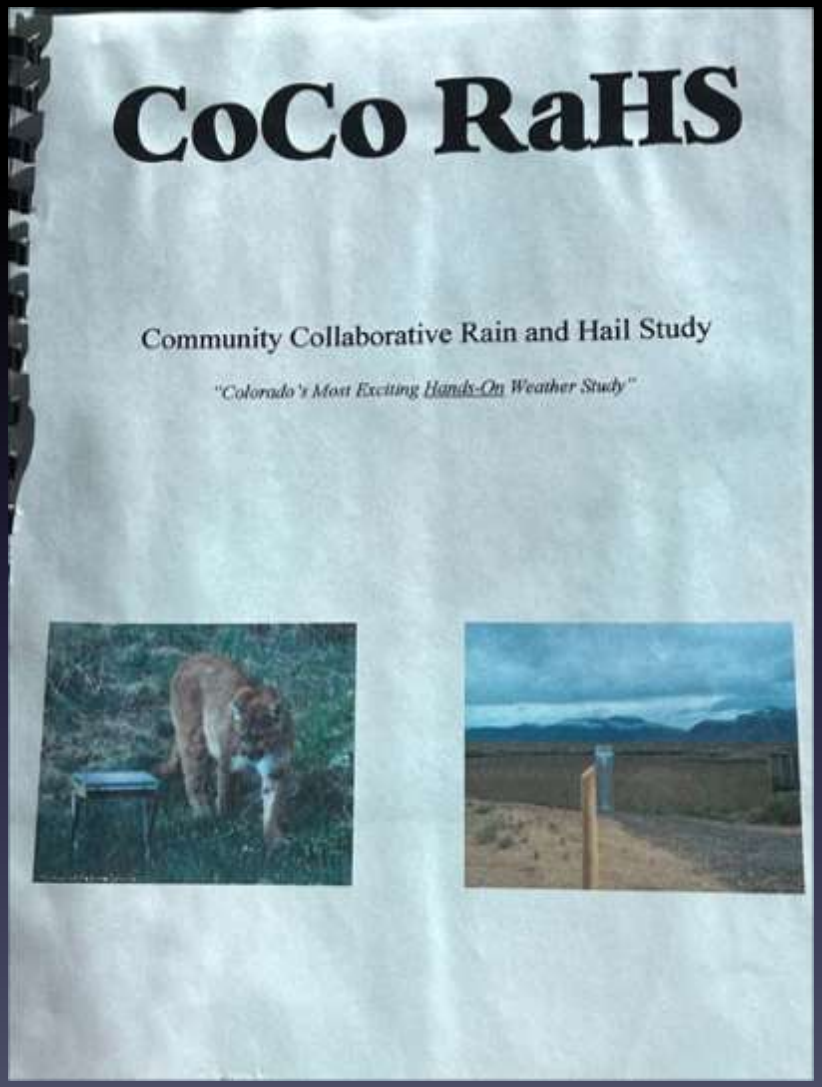
Type of Rain Gauge: 4" plaste

Provided by ☒ CoCo RaHS, ☐ owner, ☐ other

Hail Pad Stand provided by ☒ CoCo RaHS, ☐ owner, ☐ other

Effective date: 6/3/98

very good observer — ongoing

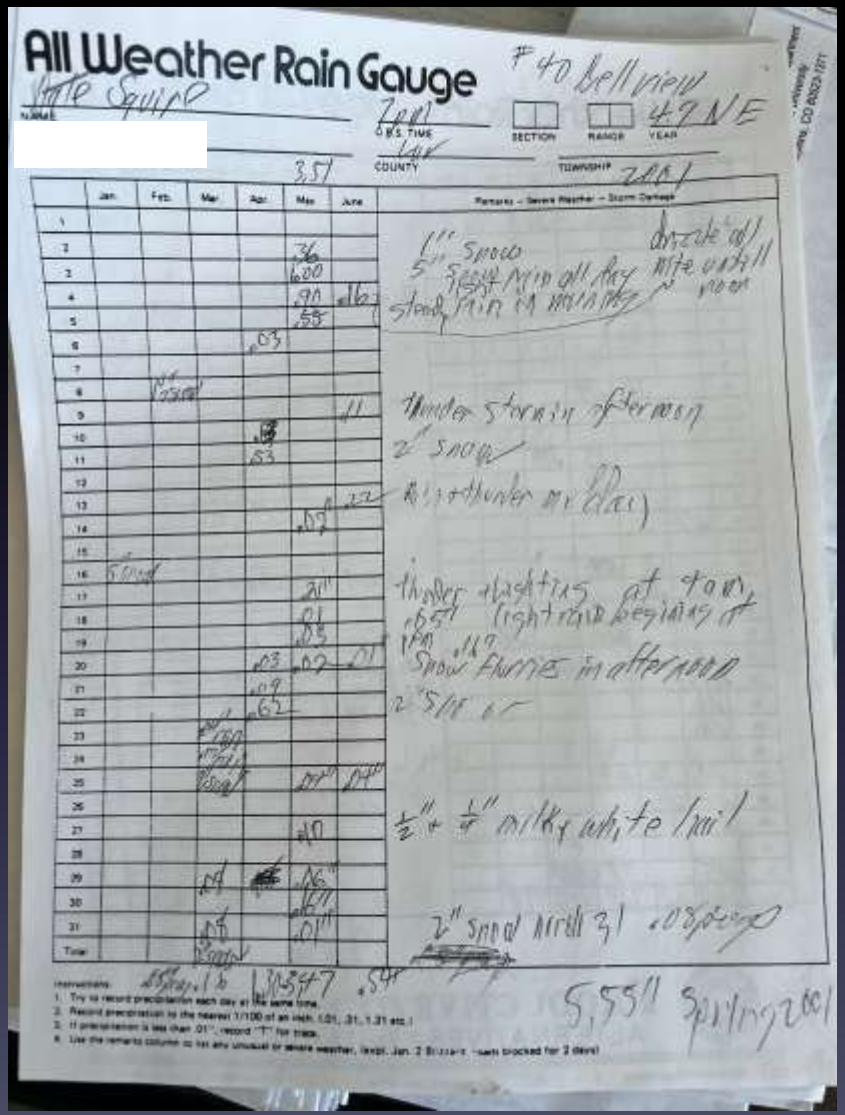


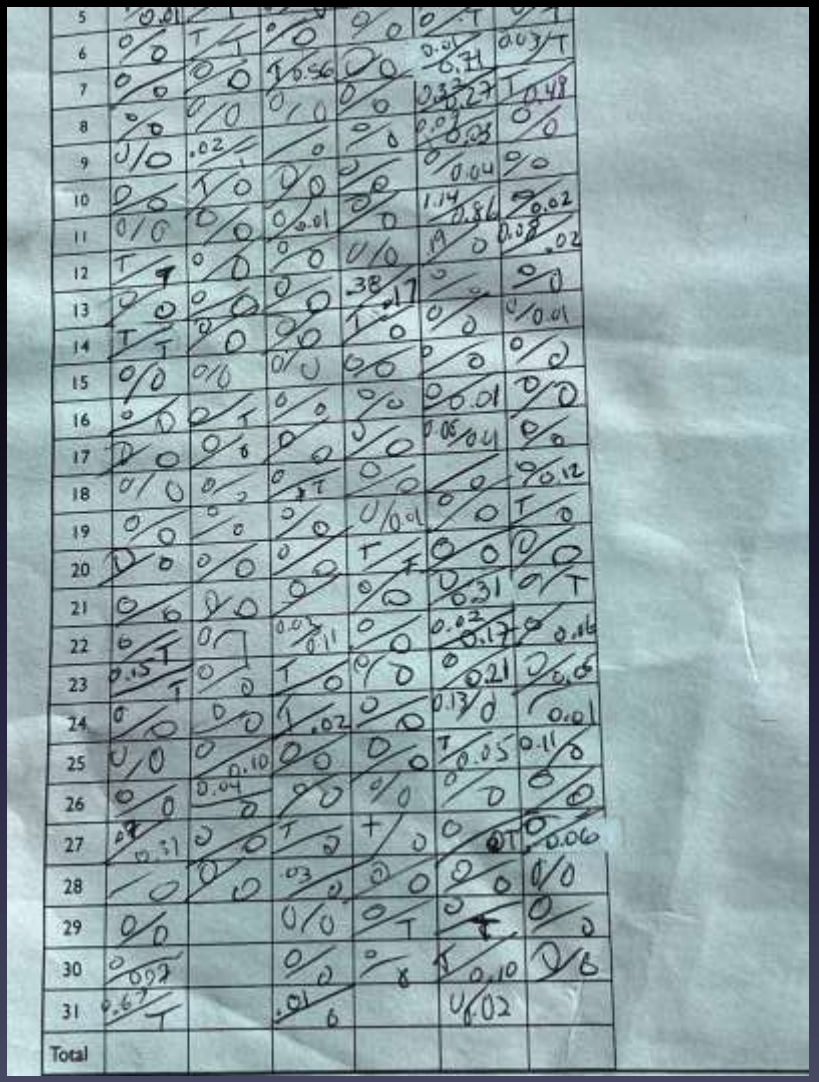
CoCo RaHS

Community Collaborative Rain and Hail Study

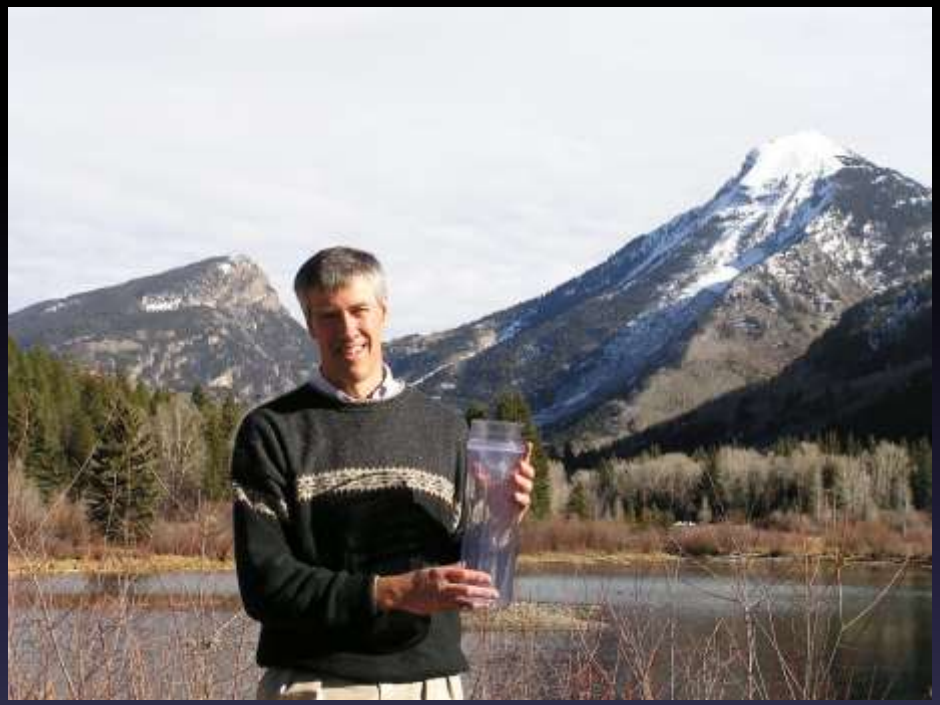
"Colorado's Most Exciting Hands-On Weather Study"

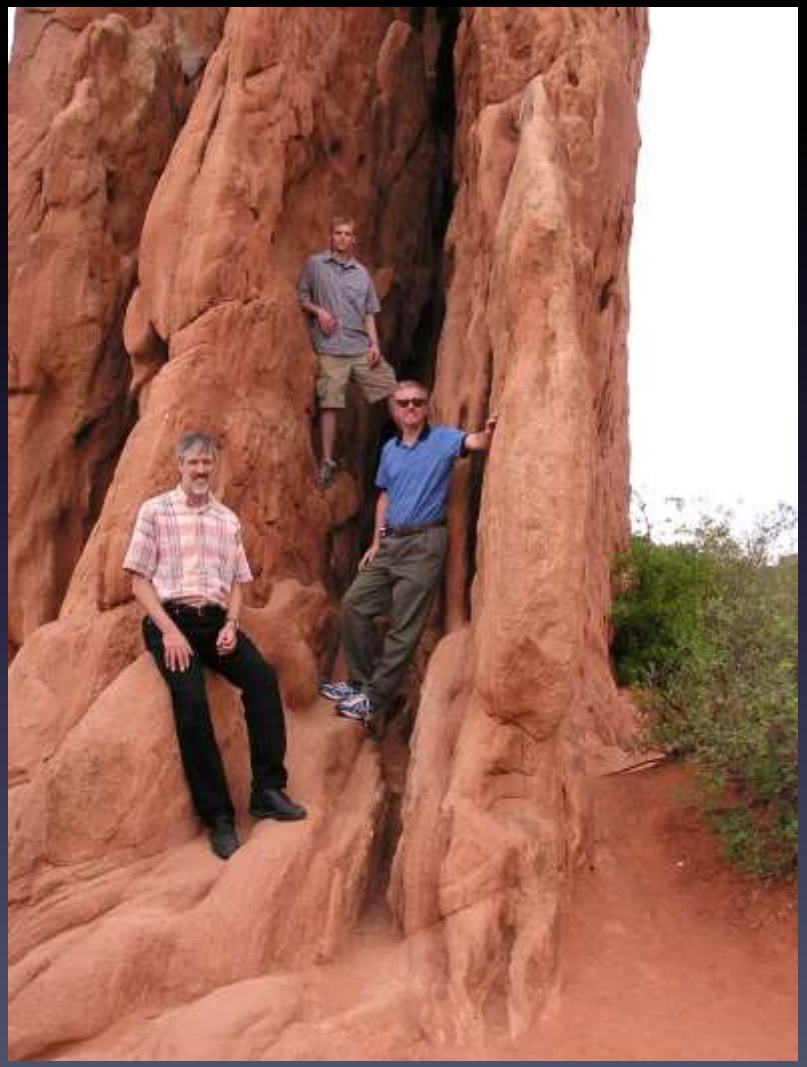
Observation forms





Things ramp up in late 2004 as we decide to go national with 2 years of NSF funding





Name change

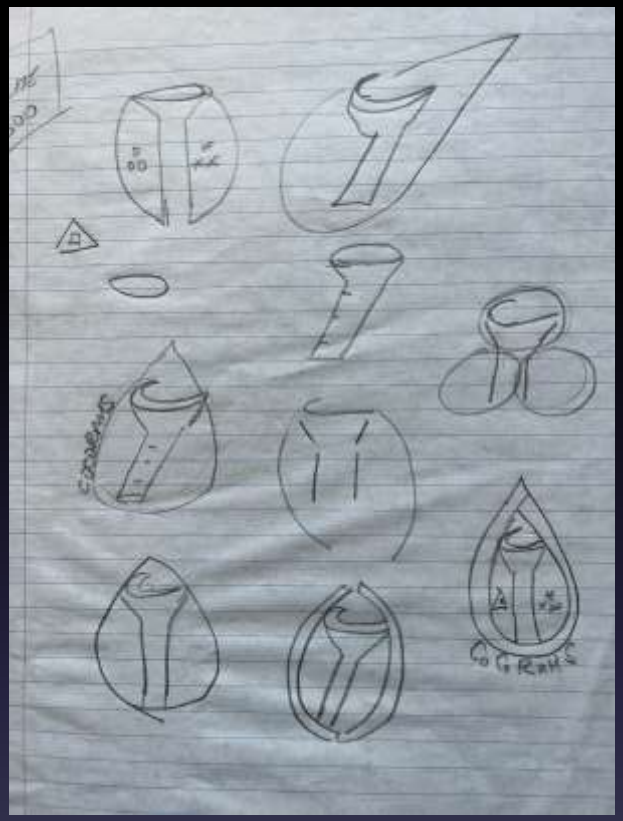
Colorado Rain and Hail Study (1998)

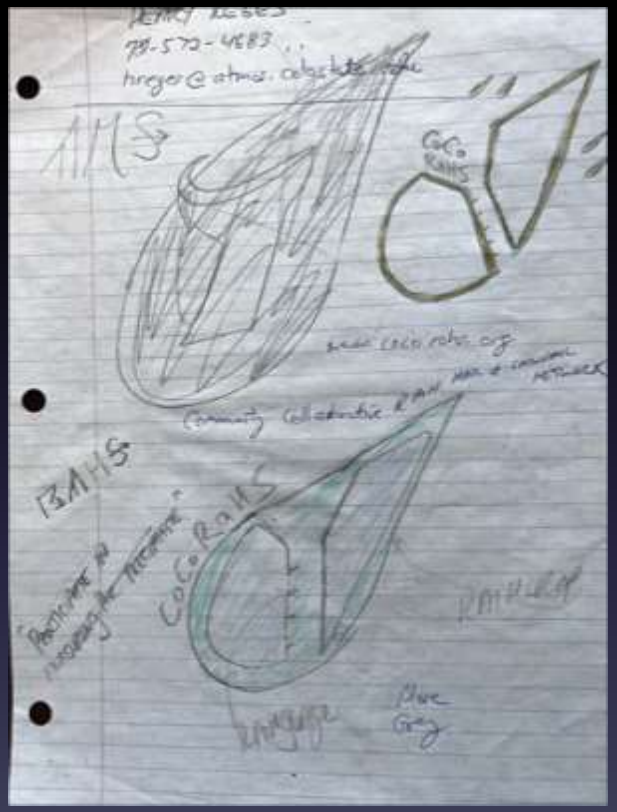
Community Collaborative Rain and Hail Study

Community Collaborative Rain , Hail and Snow Network

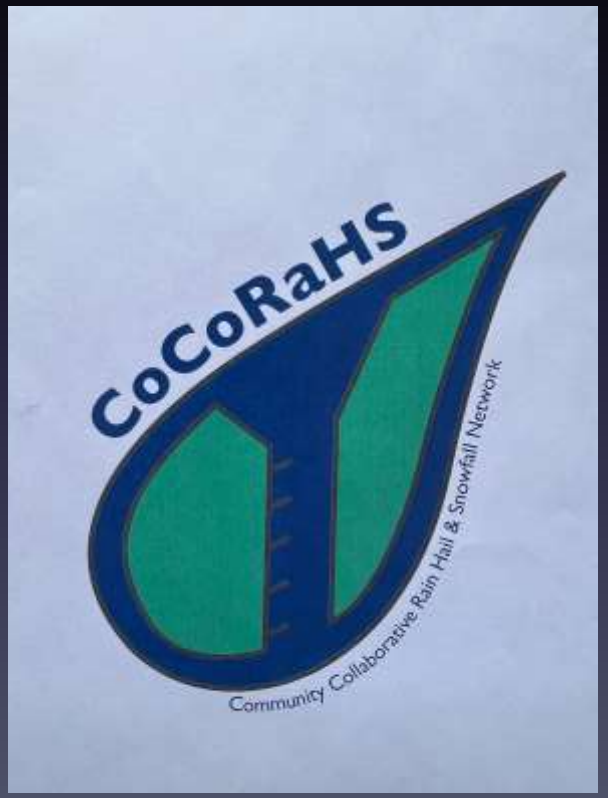
CoCoRaHS (2004)

New Logo - 2004





Henry's sketches



2005- 2009

COWS GIVING POWDERED MILK?

CoCoRaHS Drought Impacts

Report how drought is impacting you when you report your daily CoCoRaHS observation

CoCoRaHS March Madness 2008

March 1–31, 2008

HOW MANY NEW VOLUNTEERS CAN YOU RECRUIT IN YOUR STATE!

US EXPANSION

Youngsters with ambition

Nolan

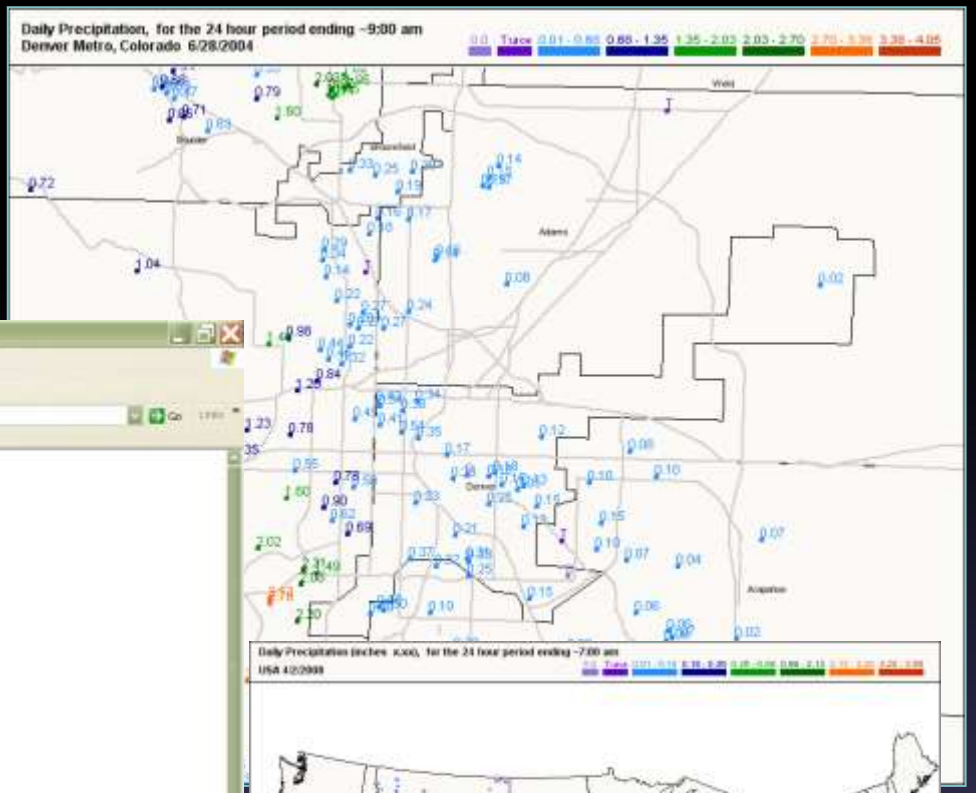
Henry

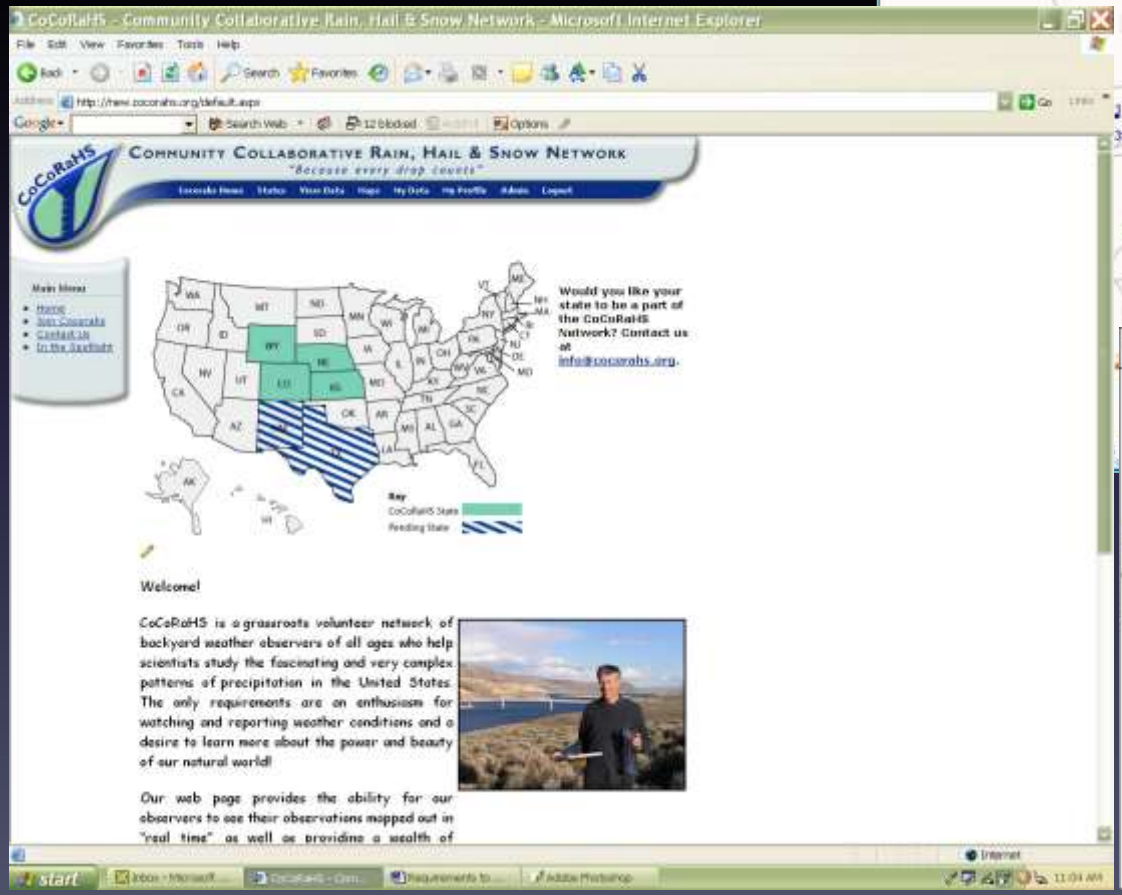
Julian

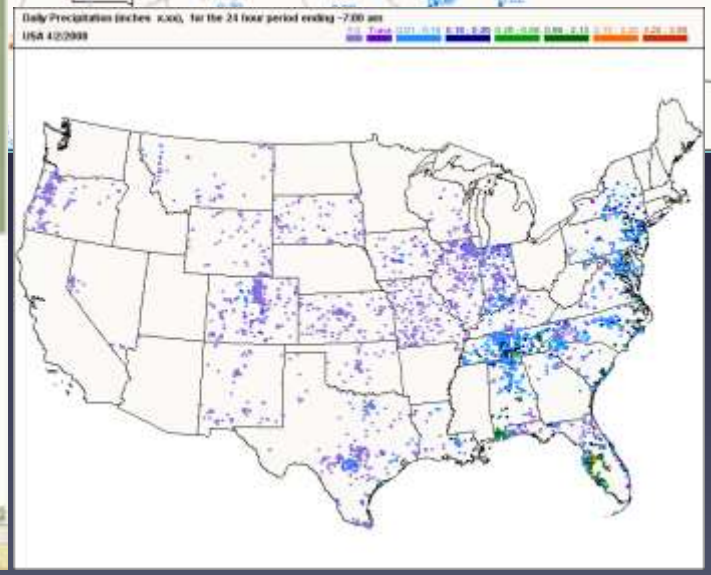
Noah

A new website and maps

January 2005



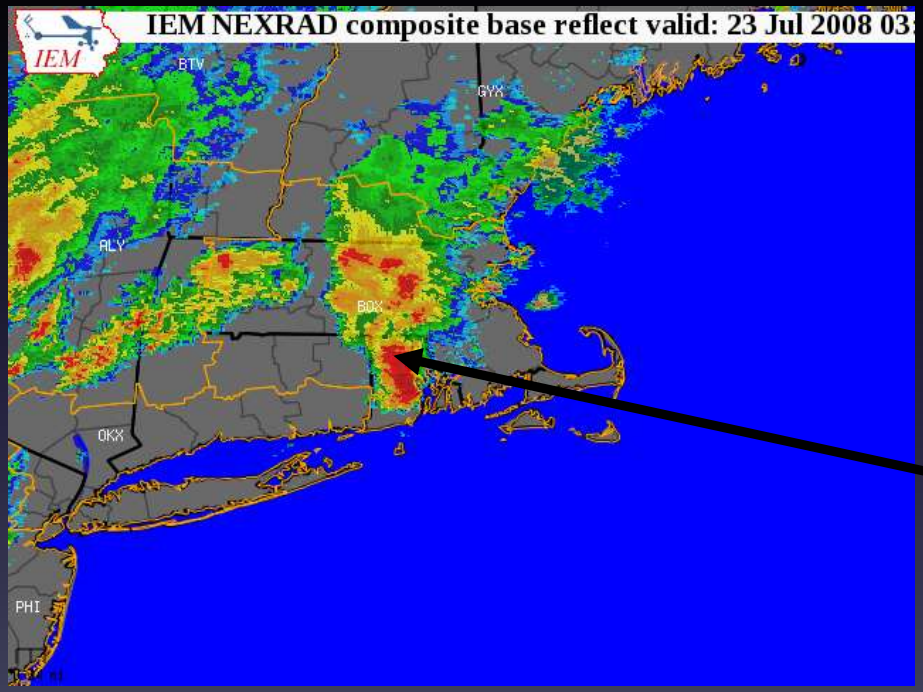




Addition of CoCoRaHS Significant Weather & Hail Reports

Advanced warning to the National Weather Service regarding potential flash flooding

Sends an immediate alarm to NWS AWIPS workstations



View Data : View Significant Weather Report

Significant Weather Report	
Station Number:	RI-WS-1
Station Name:	Hope Valley 3.7 S
Date:	7/23/2008 3:15 PM
Submitted	7/23/2008 3:23 PM
Notes:	
Taken at Registered Location:	True
Precip Duration Minutes:	15
New Precip Amount:	1.00
Total Precip Amount:	NA
New Snow Depth:	NA
Total Snow Depth:	NA
Flooding:	No

July 23, 2008 – A CoCoRaHS observer in Hope Valley, RI provided an intense rainfall report which led to the issuance of a timely Flash Flood Warning. Life threatening urban flooding was reported in Warwick and Providence at the start of the evening rush hour, where several cars were stranded in more than 2 feet of water, requiring people to be rescued. Lead time would have been much less without the CoCoRaHS report. - Joe Dellicarpini, NWS Taunton, MA

The Snow Swatter invented 2005

After a visit to the Colorado Farm Show in January

Snow measurements emphasized

The Catch and "Farm Stories" begin January 2005

The Catch

DRY WEATHER AGAIN—SO COME TO THE FARM SHOW

FORT COLLINS, CO – Saturday, January 22, 2005

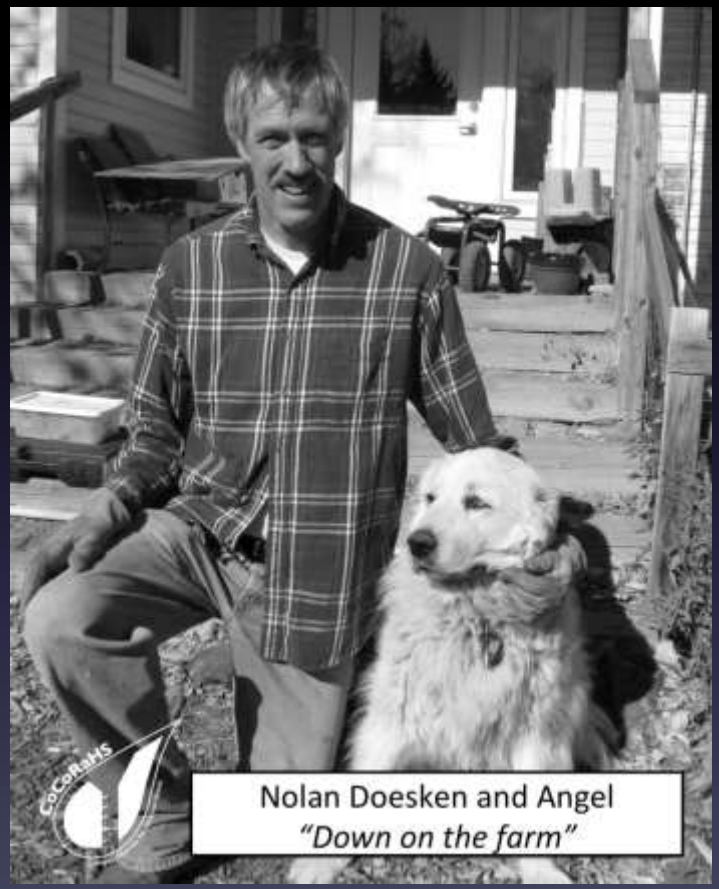
CoCoRaisins:

Recent weather update

What a week—four days in the 60s here in Fort Collins here in mid January and one was mightily close to 70. I guess this is what we call the "January Thaw". The ice had finally gotten good for skating on the local lakes, and now it's slush and open water again. Skiers report some slushy conditions on the slopes—especially down by the bases. It's a little early for spring, but the January thaw has felt pretty good this week.

Long range forecasts look like there will be a couple of opportunities for mountain snows before the end of the month. But for now enjoy the good roads and easy travel for I'm sure winter is far from over.

A few of you in SW Colorado sent some photos of what things looked like during and after your giant storm last week. We saw head-high and higher snows in a few areas—it was more like 10-15 feet deep down by Wolf Creek Pass. Very impressive.



Nolan Doesken and Angel
"Down on the farm"

A book deal by 2028?

Hail Pad Making Parties/Analysis

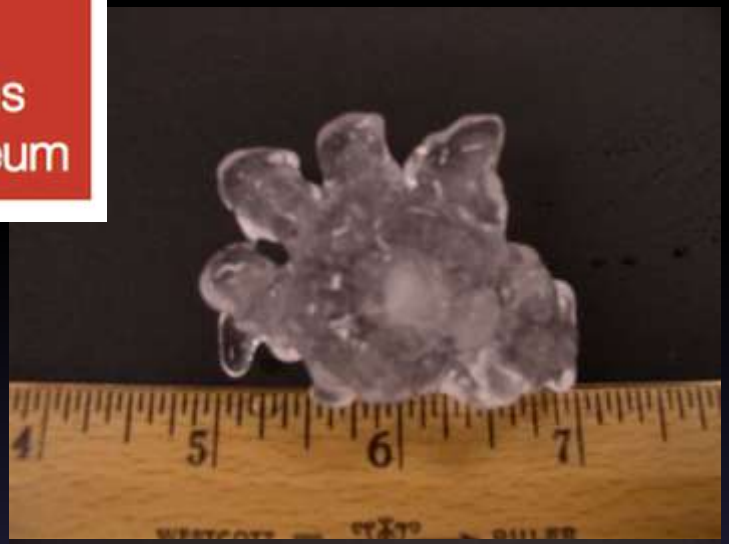
We ramped up our hail pad production and analysis and became one of the largest repositories of hail data in the United States.

HAIL PAD SATURDAY

May 8, 2010

9AM - NOON

Ft. Collins Museum



Working with NASA on Hail

John Lane - NASA

Brochures developed

Getting the word out in the mid 2000's

United States Expansion

Oregon begins Dec 2007

gazettetimes.com

Corvallis Gazette-Times

Print Page

Wednesday, December 19, 2007
Last modified Monday, December 17, 2007 9:58 PM PST

Top Story

Rain doesn't fall the same on all

By KYLE ODEGARD
Gazette-Times reporter

Corvallis resident Len Maki is among 352 Oregonians who keep detailed records for the Community Collaborative Rain, Hail and Snow Network

Len Maki always has been fascinated by weather. Since he moved to Corvallis in 2000, he's kept detailed rain records from his house near Martin Luther King Jr. Park.

CASEY CAMPBELL/Gazette-Times
Len Maki shows the rain gauge that hangs off his back porch that he uses to measure rainfall, which he reports online.

"It's more curiosity than anything else," said the 78-year-old retired nuclear engineer. "We have amazing differences in microclimates here."

So far in December, the gauge hanging off Maki's back porch has recorded about 8.5 inches of precipitation. The National Weather Service monitoring station at the Hyslop Research Farm, about 10 miles away, gathered only 4.33 inches, said George Taylor, who manages the Oregon Climate Service at Oregon State University.

"You don't have to be very far from the hills to have the rain (total) drop off," Maki said.

Less than a month ago, he joined a network of weather buffs who will pinpoint the variations in Oregon rainfall. At 7 every morning, Maki heads outside to check the precipitation gauge. He then reports his data online.

"We're up to 352 people, which is pretty cool," Taylor said. The Oregon Climate Service at OSU is coordinating the statewide project, which includes 14 volunteers in Benton County. About 110 are signed up in Lane County alone.

The effort in Oregon is part of the "Community Collaborative Rain, Hail and Snow Network," which now is in 26 states. Washington and California will start similar projects in 2008.

Taylor said that other states "can't believe how quickly people are signing up in Oregon. I can't believe it, either."

Precipitation maps created by the project could help ranchers and farmers, engineers, meteorologists, hydrologists, outdoor enthusiasts and more, he said.

"There are a number of administrative rules — in some cases requirements — that are based on the amount of precipitation that falls. There are also strategies that growers use that are dependent on a certain amount of rain. From an agricultural standpoint, it's very important," Taylor said.

Before, there weren't enough recording stations to create an accurate map. "In a state like Oregon, with dramatically different land features and proximity to the ocean, this is especially problematic," Taylor said.

Weather researchers also are excited about using the rain, hail and snow network to learn more about huge weather events, such as the recent storms and flooding that hit northwest Oregon earlier this month.

Oregon has 250 weather stations administered by the National Weather Service. With the volunteers, that's more than doubled.

1 of 2 12/19/2007 12:12 PM
Print Version :: Corvallis Gazette-Times :: http://www.gazettetimes.com/articles/2007/12/18/news/top_story/baaa0...

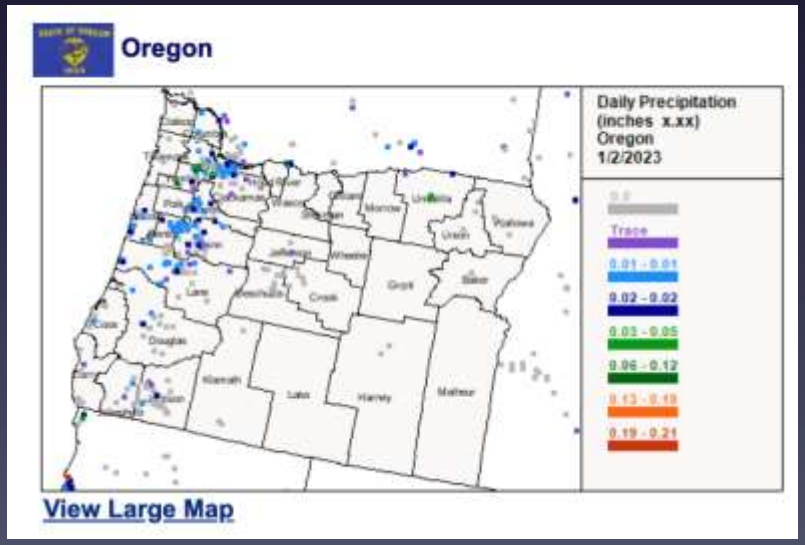
"Not everybody will be as dedicated as Len Maki, but we'll take what we can get," Taylor said.

Those interested in becoming volunteers should contact Taylor at taylor@coas.oregonstate.edu or Cadee Hale hale@coas.oregonstate.edu. The Oregon Climate Service also can be reached at 737-5705.

For more information on the project, see www.cocorahs.org.

Thanks to the late George Taylor, Oregon jumped out to the quickest start of any state!

This well-timed article came out on the day of a heavy winter rain in Oregon and over 200 new observers signed up that day.



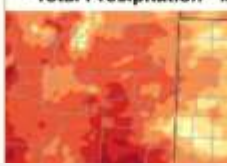
CoCoRaHS Funding

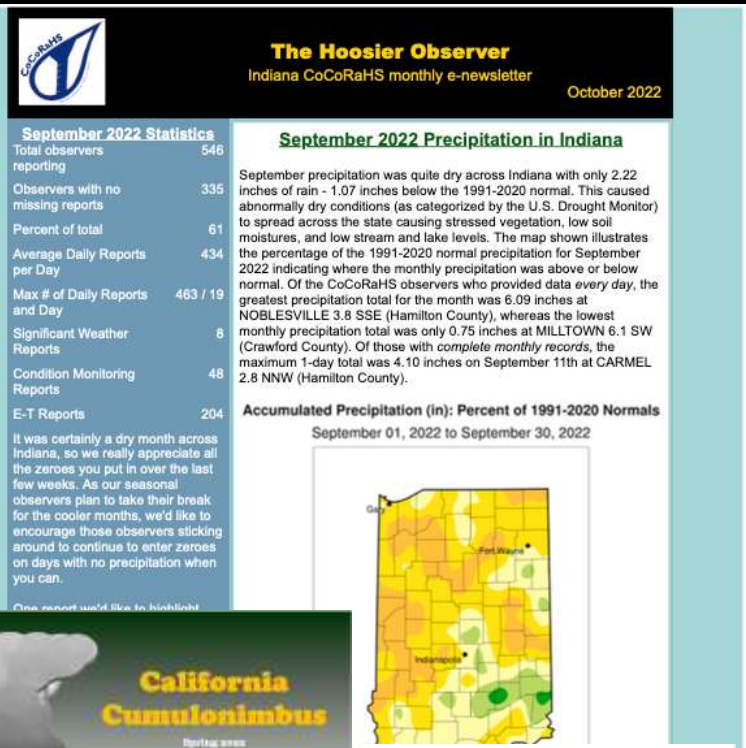
2007 the beginning of CoCoRaHS Fundraising

Local Picnics for Volunteers

CoCoRaHS State Newsletters

Begin around 2007





CoCoRaHS March Madness Begins in 2008

WERA CONFERENCE - 2009

Managing & Utilizing Precipitation Observations from Volunteer Networks

NEXT YEAR's CONFERENCE May 15 – 17 , 2024

Photo: Estes Park, CO – May 19, 2017

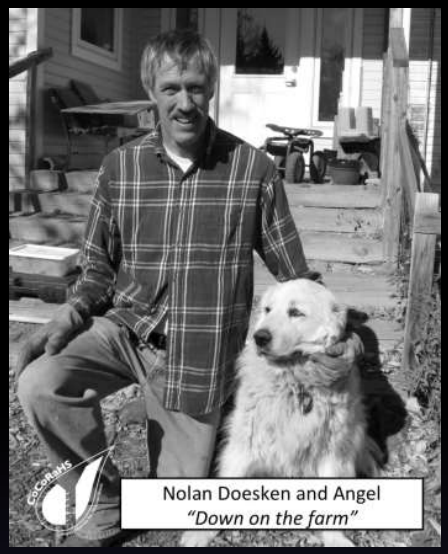

2008

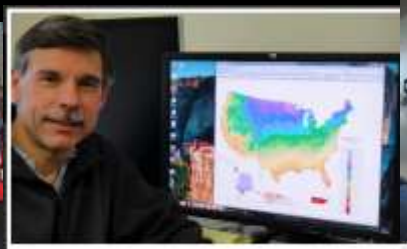

2009

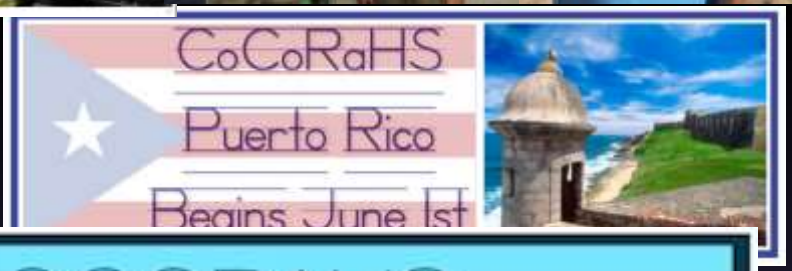

2013


2017

2010 - 2016







INTERNATIONAL AND NEW MEASUREMENTS

Launch of CoCoRaHS Hail Week

COCORAHS
HAIL WEEK
MAY 2-8, 2010

Monday, May 3rd
"Ten things you wanted to know about hail, but were afraid to ask." Don't be afraid, we have the answers.

Tuesday, May 4th
"Hail Yes or Hail No!" . . . the climatology of hail in the United States. A look at hail across the country.

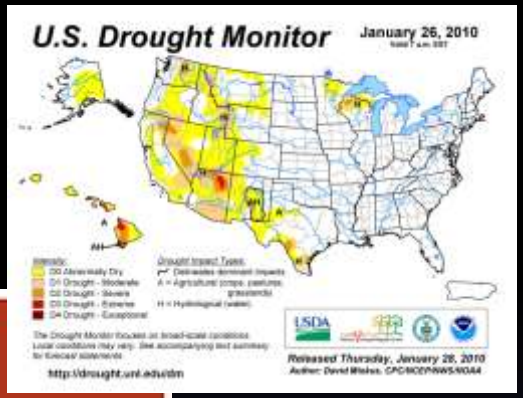
Wednesday, May 5th
CoCoRaHS Hail Reports . . . What are they, how can I access them? How you can help report hail.

Thursday, May 6th
CoCoRaHS Hail Pads. How to make a hail pad . . . its fun and easy to do.

Friday, May 7th
CoCoRaHS Hail Photo Day . . . Have a great photo of hail, e-mail it to us today!

Saturday, May 8th
"CoCoRaHS National 'Put out your Hail Pad' Day"
Have a hail pad? . . . join thousands around the country who will put out their hail pads today. It's that time of year!

Drought impact reporting begins 2010



COWS GIVING POWDERED MILK?

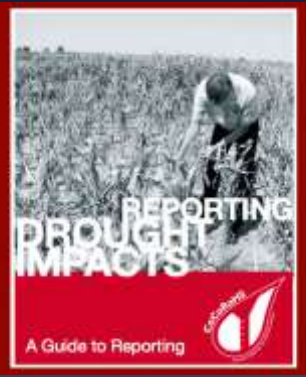
CoCoRaHS Drought Impacts

COUGHIN' MORE OFTEN?

DRINKING WATER TASTE DUSTY?

IS 'BROWN' THE NEW GREEN?

CoCoRaHS Drought Impacts



Drought Impacts

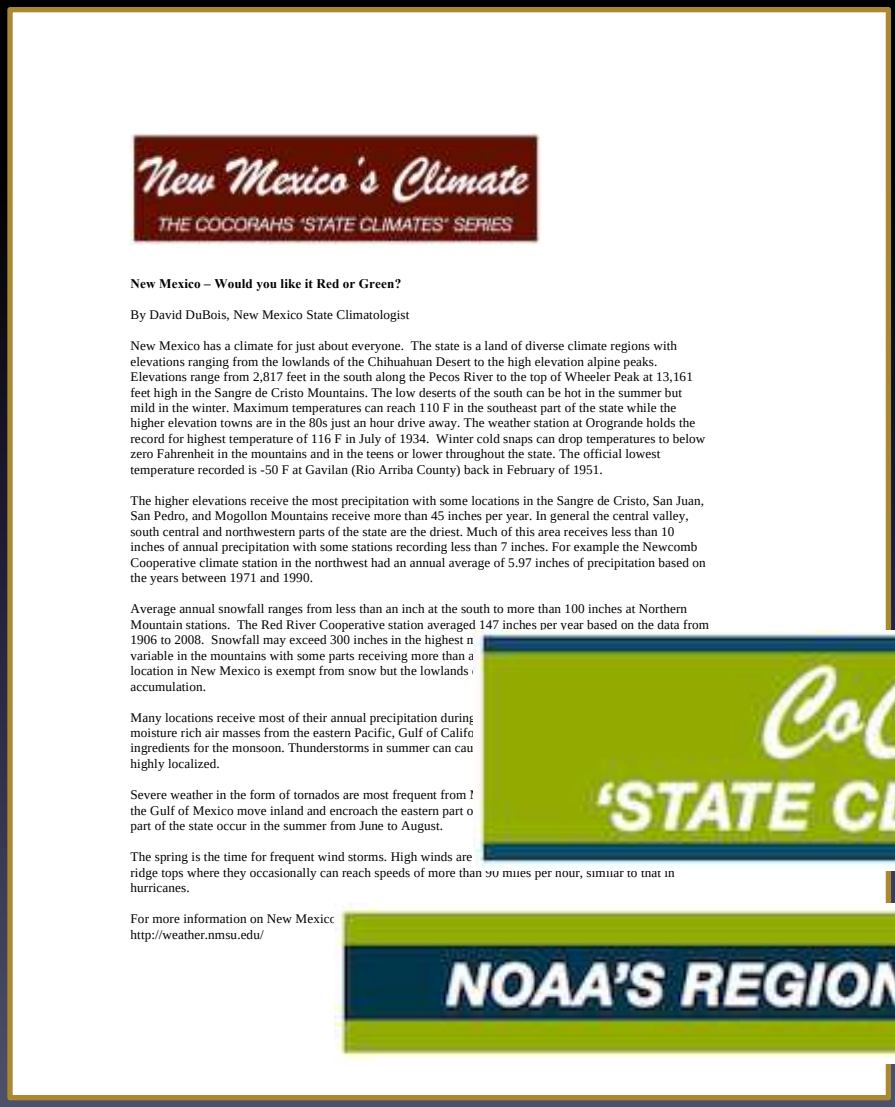
Report Your Drought Impacts
Beginning February 1, 2010

BOATING ACTIVITY HIT BOTTOM?

CoCoRaHS Drought Impacts

Report how drought is impacting your community with a "Drought Impact Report"

State Climate Series - 2010



New Mexico's Climate

THE COCORAHS 'STATE CLIMATES' SERIES

New Mexico – Would you like it Red or Green?

By David DuBois, New Mexico State Climatologist

New Mexico has a climate for just about everyone. The state is a land of diverse climate regions with elevations ranging from the lowlands of the Chihuahuan Desert to the high elevation alpine peaks. Elevations range from 2,817 feet in the south along the Pecos River to the top of Wheeler Peak at 13,161 feet high in the Sangre de Cristo Mountains. The low deserts of the south can be hot in the summer but mild in the winter. Maximum temperatures can reach 110 F in the southeast part of the state while the higher elevation towns are in the 80s just an hour drive away. The weather station at Orogrande holds the record for highest temperature of 116 F in July of 1934. Winter cold snaps can drop temperatures to below zero Fahrenheit in the mountains and in the teens or lower throughout the state. The official lowest temperature recorded is -50 F at Gavilan (Rio Arriba County) back in February of 1951.

The higher elevations receive the most precipitation with some locations in the Sangre de Cristo, San Juan, San Pedro, and Mogollon Mountains receive more than 45 inches per year. In general the central valley, south central and northwestern parts of the state are the driest. Much of this area receives less than 10 inches of annual precipitation with some stations recording less than 7 inches. For example the Newcomb Cooperative climate station in the northwest had an annual average of 5.97 inches of precipitation based on the years between 1971 and 1990.

Average annual snowfall ranges from less than an inch at the south to more than 100 inches at Northern Mountain stations. The Red River Cooperative station averaged 147 inches per year based on the data from 1906 to 2008. Snowfall may exceed 300 inches in the highest n
variable in the mountains with some parts receiving more than a
location in New Mexico is exempt from snow but the lowlands
accumulation.

Many locations receive most of their annual precipitation during
moisture rich air masses from the eastern Pacific, Gulf of Califo
ingredients for the monsoon. Thunderstorms in summer can cau
highly localized.

Severe weather in the form of tornados are most frequent from
the Gulf of Mexico move inland and encroach the eastern part o
part of the state occur in the summer from June to August.

The spring is the time for frequent wind storms. High winds are
ridge tops where they occasionally can reach speeds of more than 90 miles per hour, similar to that in
hurricanes.

For more information on New Mexico
http://weather.nmsu.edu/

Southern Regional Climate Center

SRCC

THE COCORAHS 'STATE CLIMATES' SERIES

The Southern Regional Climate Center

As we continue our "State Climates" series, we move to the third region of the country and look at the states of the Southern Regional Climate Center, one of six regional climate centers in the United States.

The Southern Regional Climate Center (SRCC) was established in 1991 at Louisiana State University (LSU) as the last of six Regional Climate Centers providing regional climate services in the U.S. The SRCC consists of six states that include Oklahoma, Texas, Arkansas, Louisiana, Mississippi, and Tennessee. Our region is characterized by a highly variable rainfall regime that varies from the dry steppes of western Texas and Oklahoma, averaging as low as 10" per year, to the semitropical region of the Central Gulf Coast of Louisiana and Mississippi that averages of 60" per year. Our service support for sectors and industries is also diverse and includes areas such as transportation, construction, risk management, agriculture, and water resource management. Government agencies at local, state, and national levels are an especially important service sector at the SRCC. We provide climate information that supports planning, policy, and management decisions, and we monitor changing climate conditions that impact regional decisions. We also support emergency managers with tropical-storm and hurricane events in the Gulf of Mexico by providing planning and exercise support. During declared emergencies we provide operational information support as storms approach the coast and as storm recovery operations occur within impacted areas.

In addition to service provision and monitoring activities, the SRCC also maintains an active role in the development of leading-edge information technology. We develop and improve products for the Applied Climate Information System (ACIS), investigate and adopt new technologies for interactive graphical
al characteristics of climate
rting and tracking system that
progress of error corrections that
e data-collection systems.
ering with a NOAA Regional
acts Planning Program, to help
gion.

cus on the third region of our
/isit: http://www.srcc.lsu.edu

CoCoRaHS

'STATE CLIMATES' SERIES

NOAA'S REGIONAL CLIMATE CENTERS

Master Gardeners, Master Naturalists, Conservation Districts

The expansion of our observer base

Outreach at Weather Festivals

Not only at AMS, but NWA and others around the country

San Antonio, New Orleans, Phoenix, Atlanta, Seattle, Austin . . .


Rain
CoCoRaHS
Snow
HDR

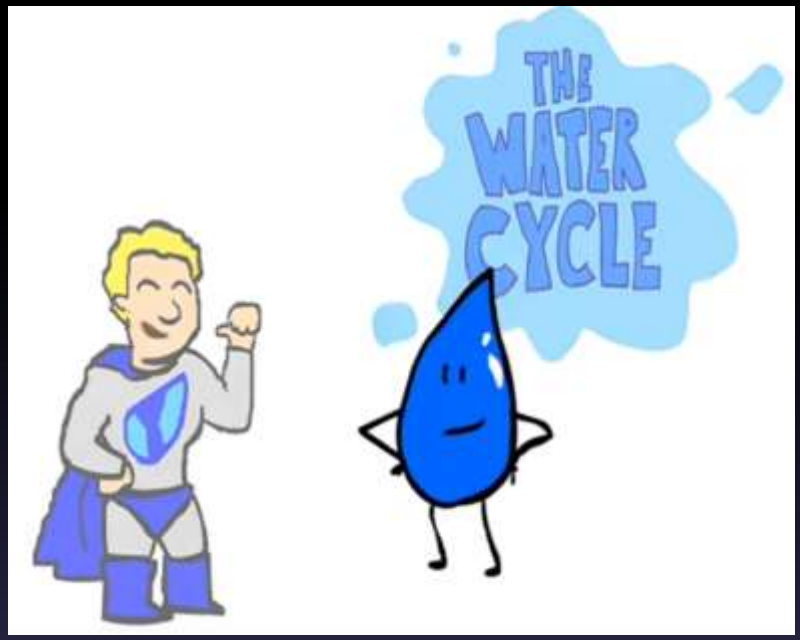

Information

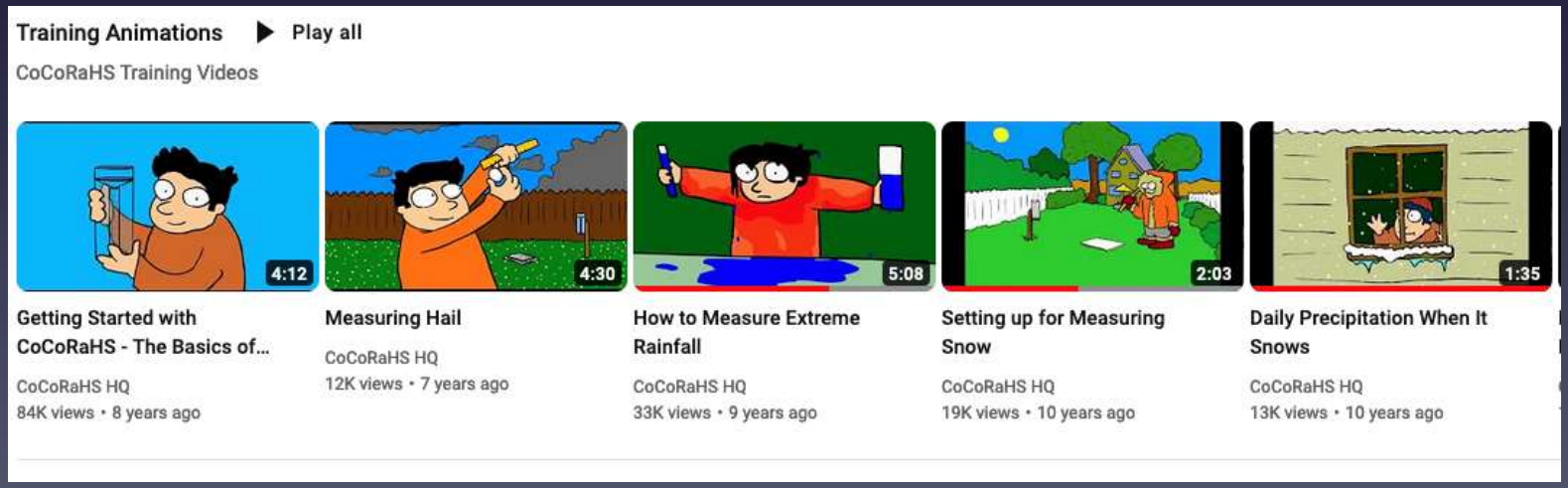

McWane
Science Center
IMAX DOME THEATER

Collaboration increases with State Climate office's and Universities

CoCoRaHS Animations

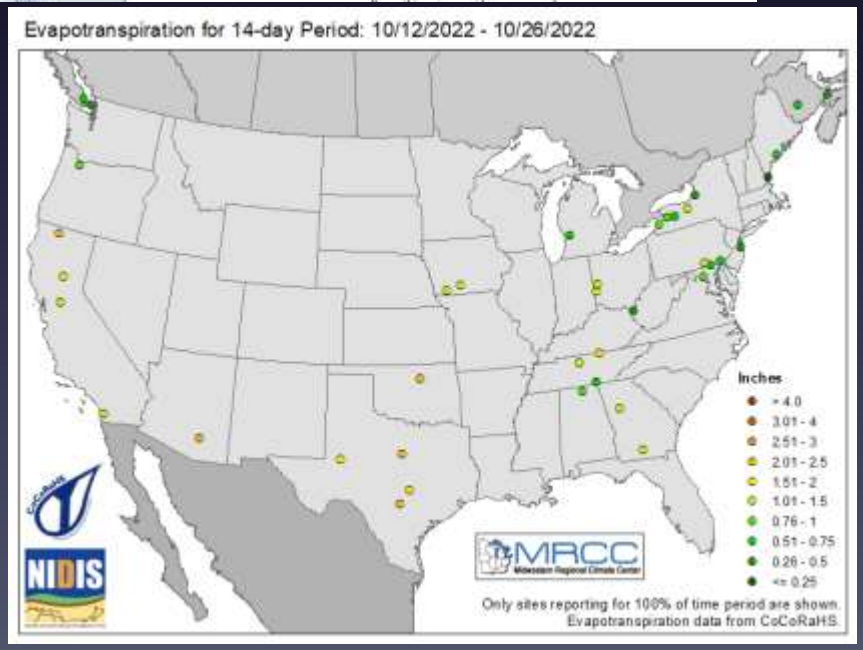
Early 2010's



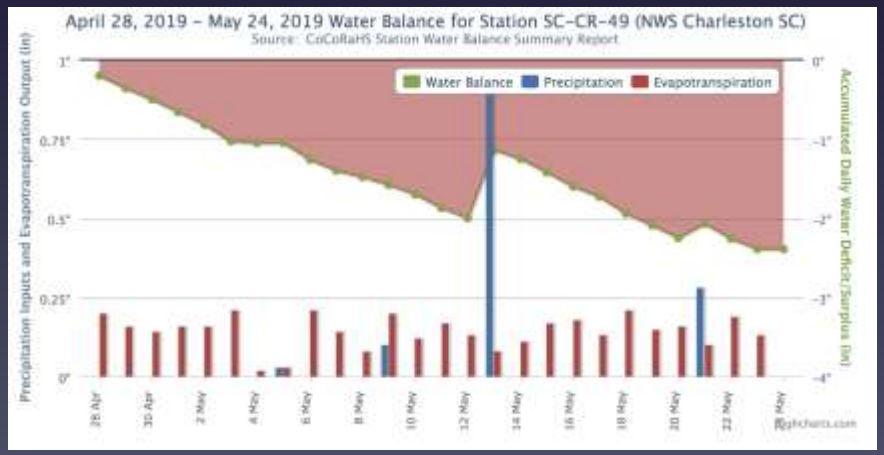


Reference Et_o 2011

Measuring Reference Evapotranspiration
"The 'up' side of the water cycle"
ET_o



Water balance



CoCoRaHS at Major League Baseball 2011

Target Field, Minneapolis, MN

CoCoRaHS Rain Gauge Calendars

CoCoRaHS WXTalk Webinars launched 2011

CoCoRaHS WxTalk Webinar #61: Storm Surge, Run From

CoCoRaHS WxTalk Webinar #60: The National Weather

CoCoRaHS WxTalk Webinar #59: Mesoscale Convective

CoCoRaHS WxTalk Webinar #58: What is the American

CoCoRaHS WxTalk Webinar #57: Carbon in the

Webinar #86 - Thursday, June 29, 2023

The 420,002,023rd Year of Biomass Burning on Earth

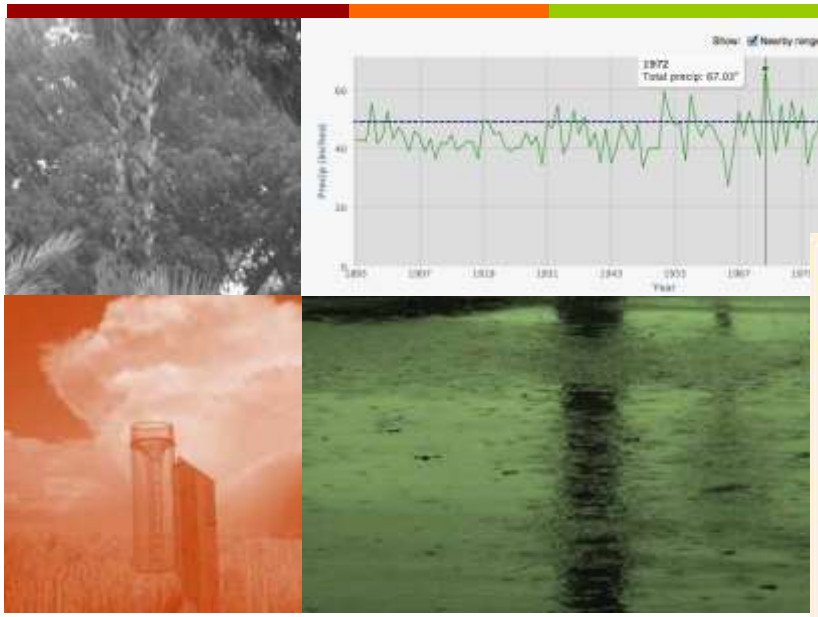
Tim Brown
Director, Western Regional Climate Center
Desert Research Institute
Reno, NV

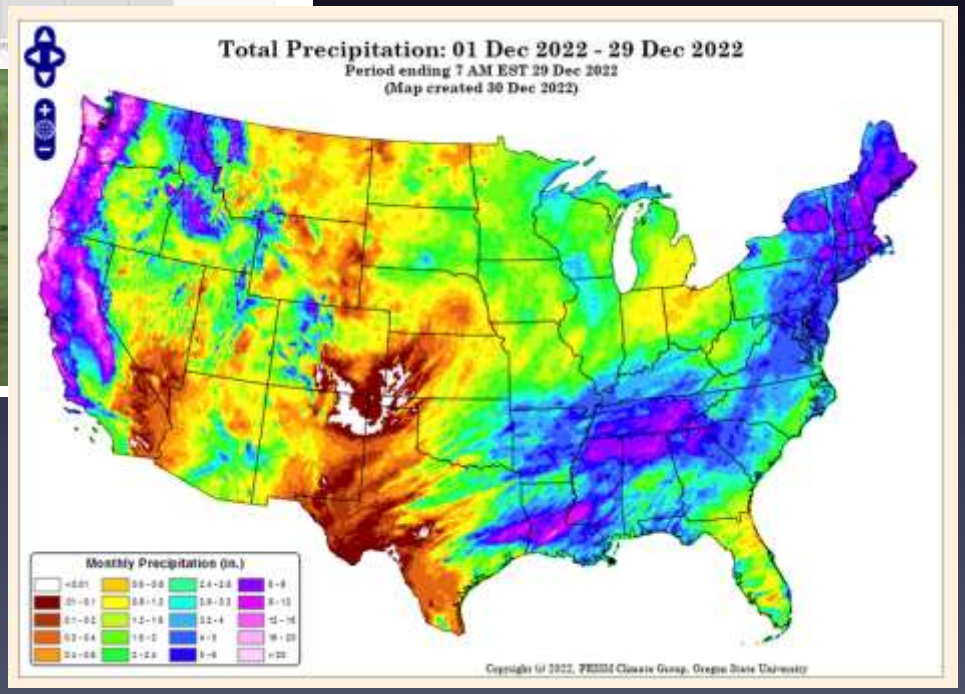
(biography)

Now in our 12th Season

Collaboration with PRISM

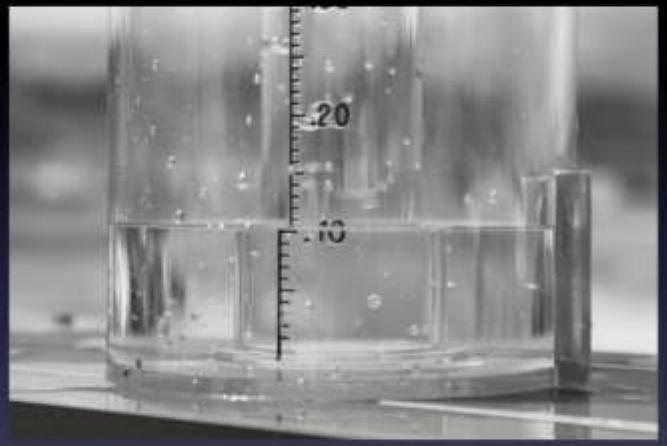
Early 2010's





CAMPAIGN to let observers know that their observations are used, that they make a difference

Who uses CoCoRaHS Observations?

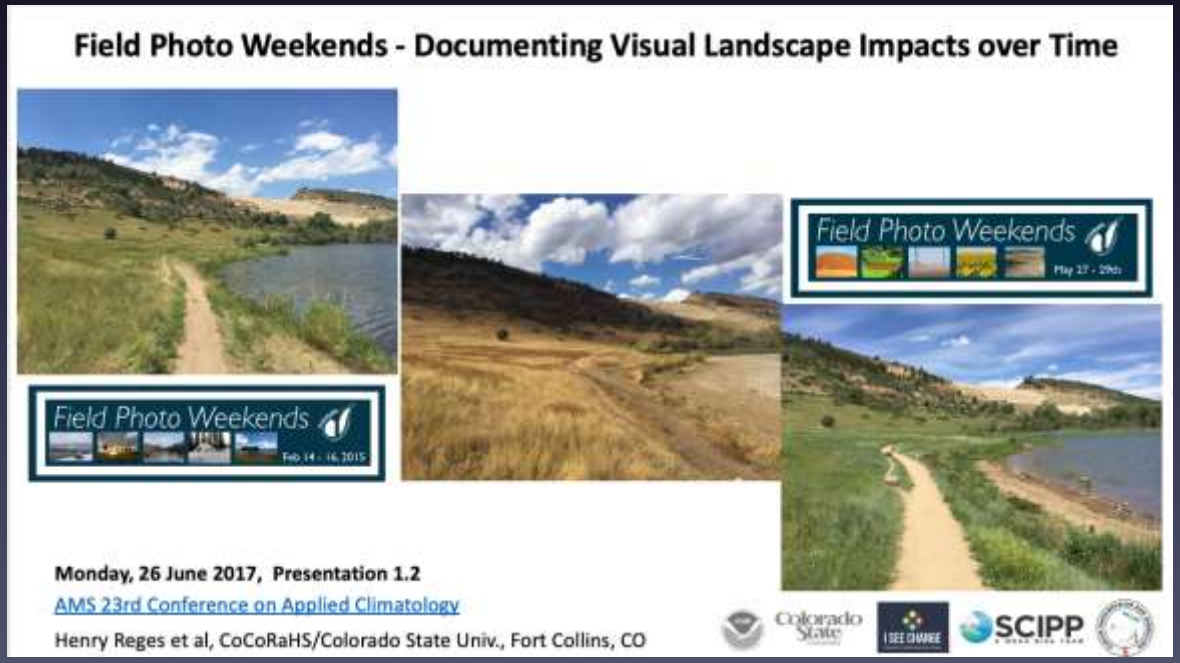


1. Weather Forecasters
2. Hydrologists
3. Water management
4. Researchers
5. Agriculture
6. Climatologists
7. Insurance Industry
8. Engineering
9. Recreation
10. Many others

*"CoCoRaHS is **CRITICAL** (my emphasis) to hazardous weather operations at the NWS Austin-San Antonio Weather Forecast Office. We utilize the daily precipitation reports to produce maps such as the one attached, which are used extensively by the media (directly shown on TV broadcasts), our emergency management partners (for briefing officials and planning search and recovery operations), and the general public."*

Jon Zeitler – *NWS Austin-San Antonio Weather Forecast Office*

Field Photo Weekends start in 2012



By 2012 coordination grows to over 267 volunteer state/regional coordinators

Current CoCoRaHS Headquarters Team

International Stage begins 2013

The addition of Canada, Puerto Rico, the U.S. Virgin Islands and the Bahamas

Recognition by the World Meteorological Organization (WMO), Commission for Environmental Cooperation, Caribbean Outlook Forum, National Hurricane Center

Expansion to Canada, Puerto Rico, the U.S. Virgin Islands and the Bahamas 2011 - 2016

CoCoRaHS CANADA COMING SOON !

White House Vegetable Garden - 2015

A CoCoRaHS rain gauge was installed at the White House Vegetable garden in 2015.

The observation was taken daily by the U.S. National Parks Administration. This promoted Citizen Science and provided a key observation point in the District of Columbia, which helped fill in a gap in a data sparse part of the District.

Unfortunately, the gauge was removed by the next administration and has yet to return. ☹

PBS – The Crowd in the Cloud

2015

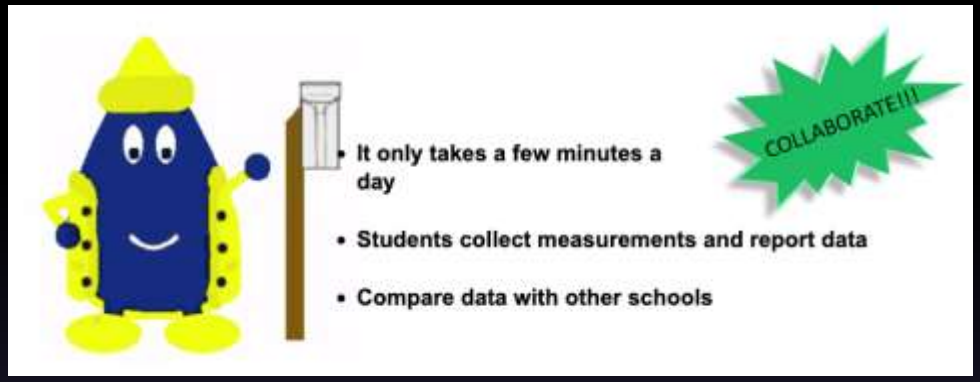
The Crowd & The Cloud

SERIES TRAILER

ROCKY MOUNTAIN PBS

The Mobile App – Mid 2010's

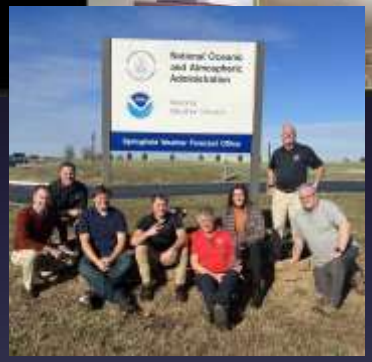
CoCoRaHS School Outreach



Visits to NWS and State Climate Offices to support coordinators

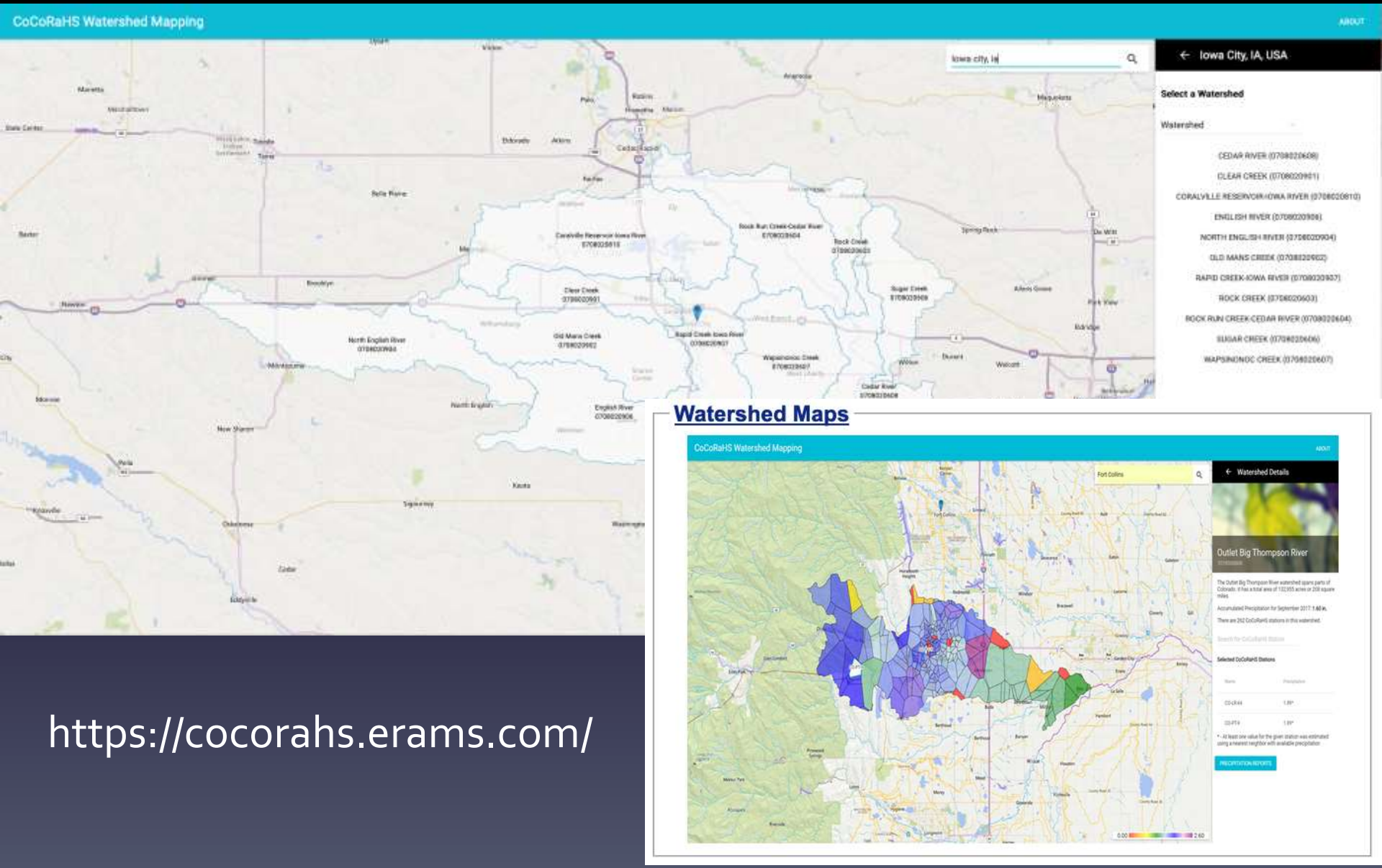
Begins in 2015

2017 - 2023



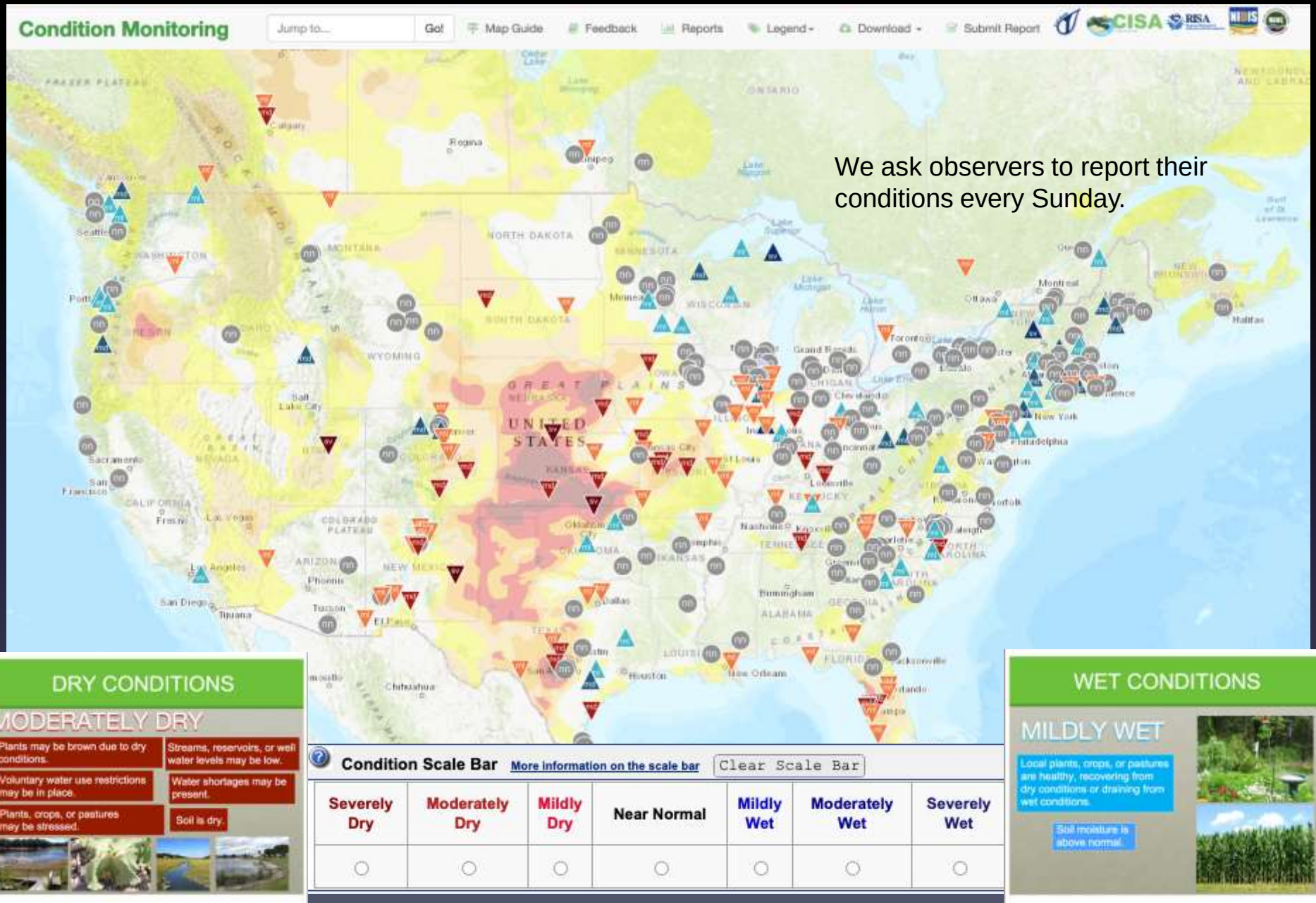
NEARING 25

CoCoRaHS Watershed Mapping Tool - 2017



https://cocorahs.erams.com/

Condition Monitoring 2017-18

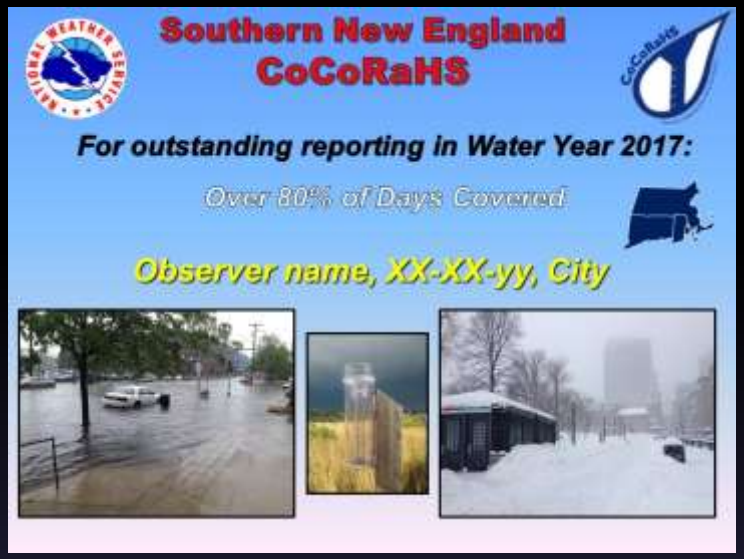


KS-FO-3	Dodge City 2.5 NW	Ford	6469
KS-DC-1	Norcatur 3.1 WSW	Decatur	6443
KS-DC-2	Norcatur 4.4 S	Decatur	6434
KS-RL-1	Manhattan 0.5 NE	Riley	6366
KS-PR-2	Preston 3.2 WNW	Pratt	6354
KS-SH-16	Goodland 10.3 WNW	Sherman	6325
KS-NS-6	Arnold 4.8 NNW	Ness	6248
KS-EL-6	Hays 1.7 NW	Ellis	6188
KS-EL-1	Hays 2.7 ENE	Ellis	6138
KS-GY-4	CIMARRON 7 SE	Gray	6128
KS-JO-6	Olathe 3.3 ENE	Johnson	6123
KS-SH-14	Goodland 13.2 SW	Sherman	6064
KS-DC-3	Traer 2.5 NNW	Decatur	6039
KS-SG-2	Maize 5.7 S	Sedgwick	5966
KS-SG-3	Maize 3.4 SSW	Sedgwick	5951
KS-NS-5	Utica 5.9 SSW	Ness	5928
KS-LY-2	Emporia 0.9 W	Lyon	5909
KS-SN-5	Topeka 8.5 E	Shawnee	5890
KS-SH-4	Goodland 0.5 ENE	Sherman	5860
KS-BA-6	Coats 6.6 WSW	Barber	5825
KS-CA-7	Minneola 4.1 SSE	Clark	5825
KS-NT-3	Norton 0.4 N	Norton	5822
KS-OS-4	Osage City 5.2 SW	Osage	5807
KS-CD-1	Jamestown 2.4 NW	Cloud	5784
KS-PT-1	Onaga 2.1 NW	Pottawatomie	5775
KS-HM-5	Syracuse 7.2 WSW	Hamilton	5770
KS-RN-19	Plevna 1.4 NE	Reno	5750
KS-RN-7	Andale 6.4 WSW	Reno	5749
KS-TH-18	Colby 0.6 NNW	Thomas	5728
KS-RN-11	South Hutchinson 10.	Reno	5726
KS-KM-2	Penalosa 0.4 N	Kingman	5723
KS-CR-3	McCune 1.6 NW	Crawford	5702
KS-BA-4	Medicine Lodge 0.4 W	Barber	5695
KS-SH-21	Goodland 12.1 NW	Sherman	5684
KS-ME-2	MEADE 12 NW	Meade	5669
KS-FO-13	Dodge City 1.9 N	Ford	5642
KS-KW-2	Mullinville 12.5 S	Kiowa	5636
KS-WS-5	Washington 7.3 NNE	Washington	5605
KS-CM-3	Coldwater 6.7 NW	Comanche	5602
KS-SF-2	Stafford 5.9 ESE	Stafford	5566
KS-TH-17	Colby 1.3 NE	Thomas	5566
KS-RN-30	Arlington 5.5 SSE	Reno	5537
KS-PR-4	Preston 1.2 SE	Pratt	5508

Many long-term observers with over 5,000 CoCoRaHS observations (over 13 years!)

Celebrating their dedication!!

Observer appreciation certificates



State Precipitation Records and CoCoRaHS

CAPITAL WEATHER GANG

This Baltimore suburb's seven feet of rain sets a new state record for Maryland in 2018

Last week, the National Oceanographic and Atmospheric Administration's State Climate Extremes Committee met and voted in favor of declaring Catonsville's seven feet of rain a new Maryland state record for annual precipitation.

The measurement was made by volunteer weather observer Tom Atkins, a participant in the CoCoRaHS network. CoCoRaHS stands for Community Collaborative Rain, Hail & Snow Network and is composed of thousands of citizen scientists who gather precipitation data, many in their backyards.

Maryland
- LOCATION: Catonsville 1.2 NW (MD-BL-39)
- YEAR: Calendar Year 2018
- PRECIPITATION TOTAL: 84.56

New Jersey

LOCATION: West Milford Twp 3.2 NE (NJ-PS-16)
- YEAR: Calendar Year 2011
- PRECIPITATION TOTAL: 90.65”

Kansas

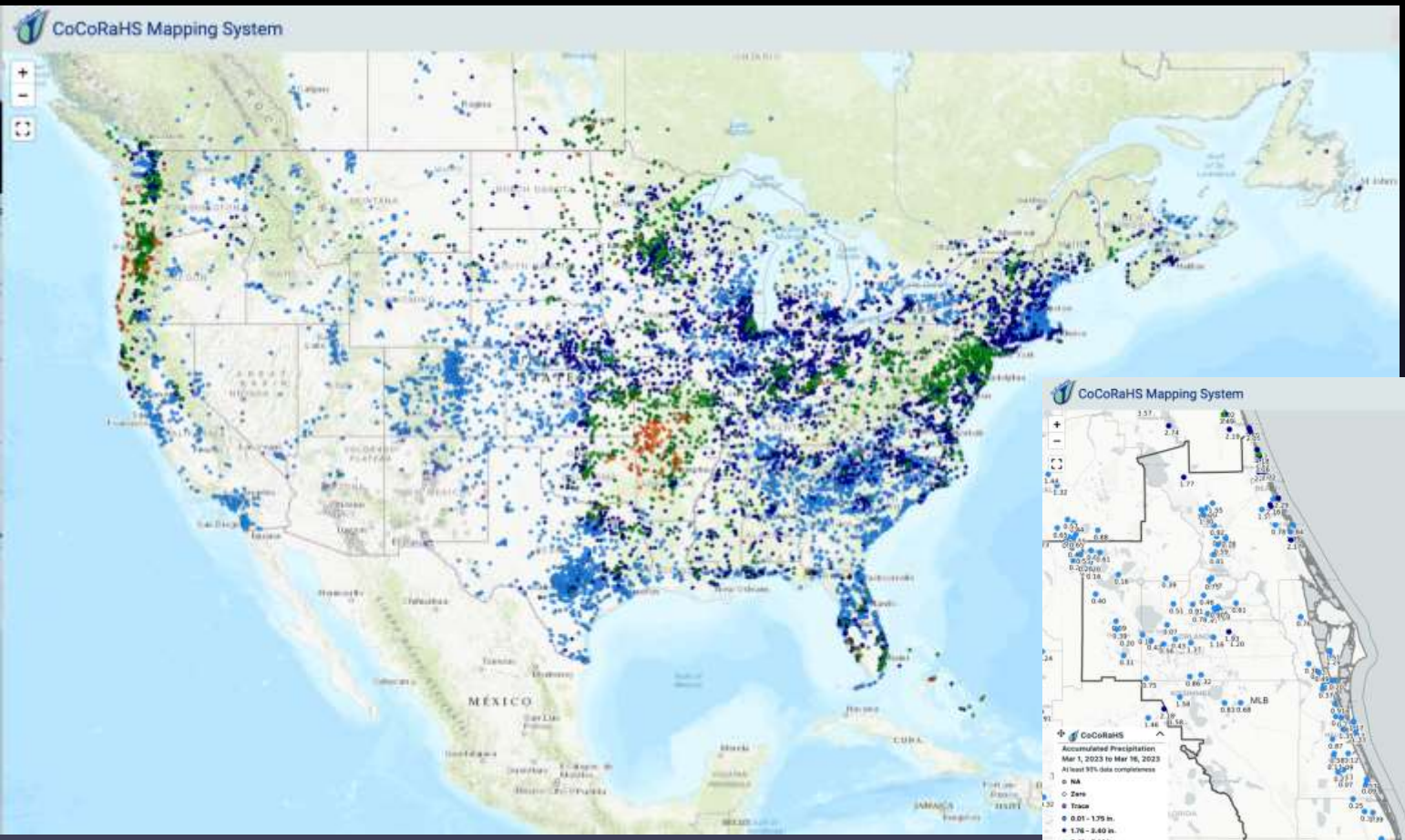
Location: Farlington 0.8 NNE (Farlington, KS)
- Date: 1 January – 31 December 2019
- Value: 75.33 inches

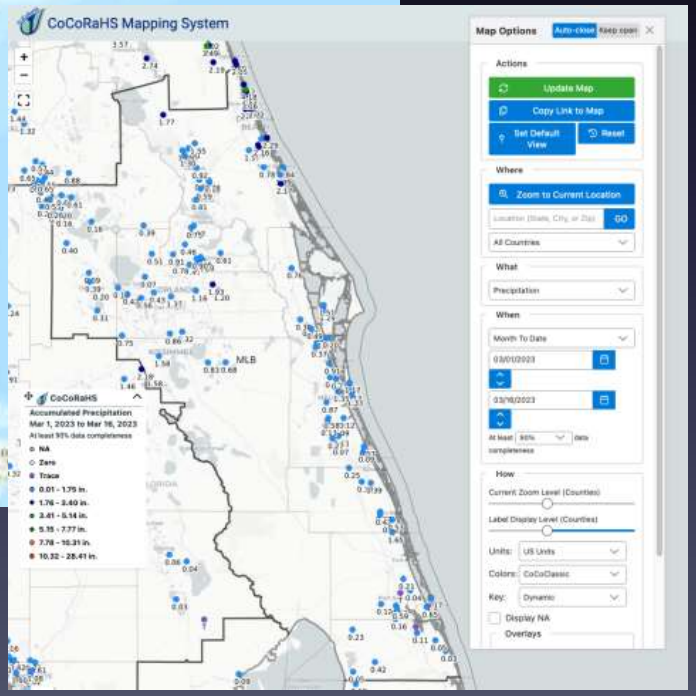
Delaware

Location: Greenwood 2.9 SE
- Site Type: CoCoRaHS Observer
- Daily Snow Depth Record: 28 inches
- Date: February 7, 2010

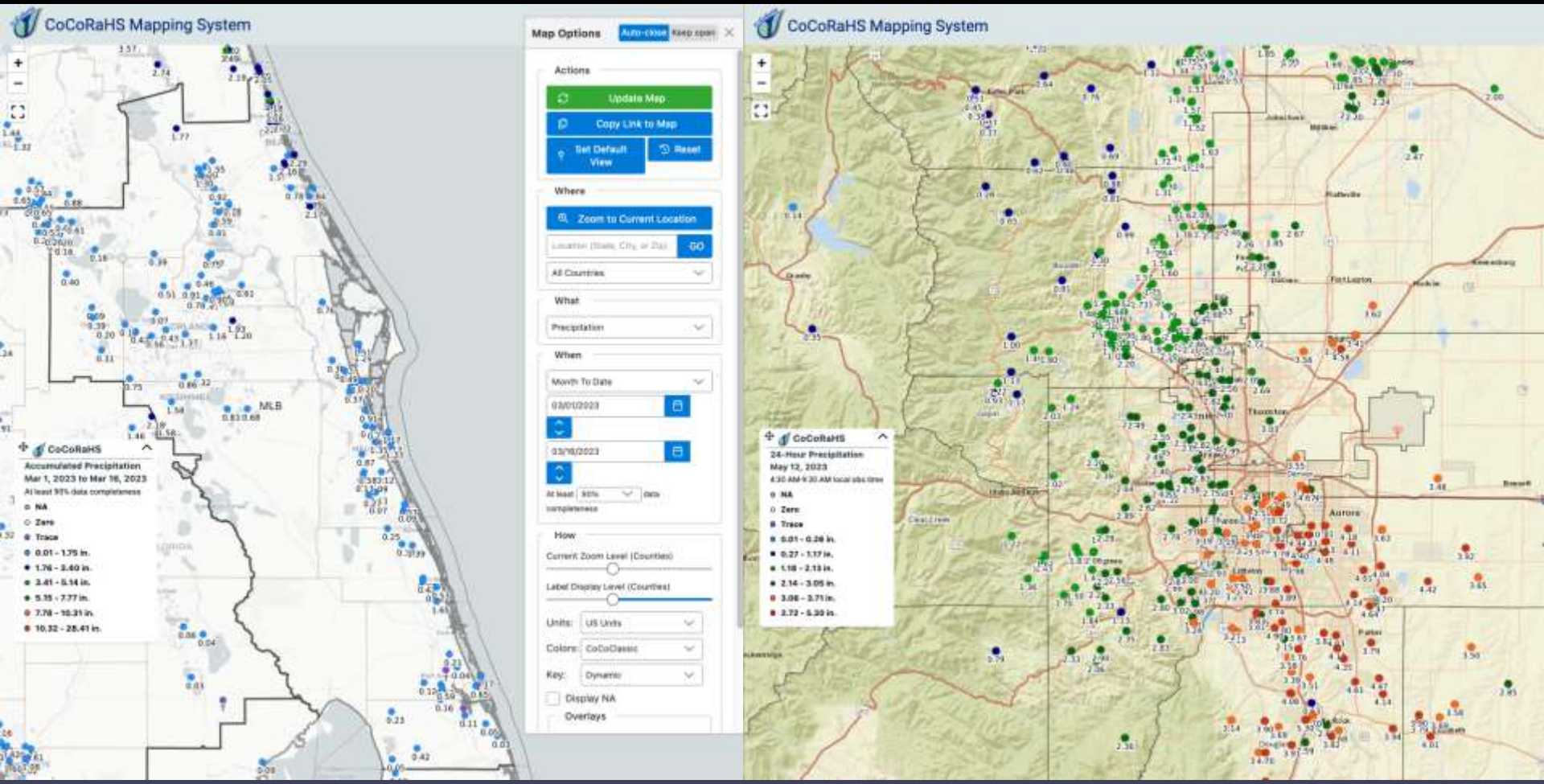
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL ENVIRONMENTAL SATELLITE DATA AND INFORMATION SERVICE
NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION
151 PATTON AVE ROOM 120
ASHEVILLE NC 28801-5001

Interactive Mapping System debuts in August 2020

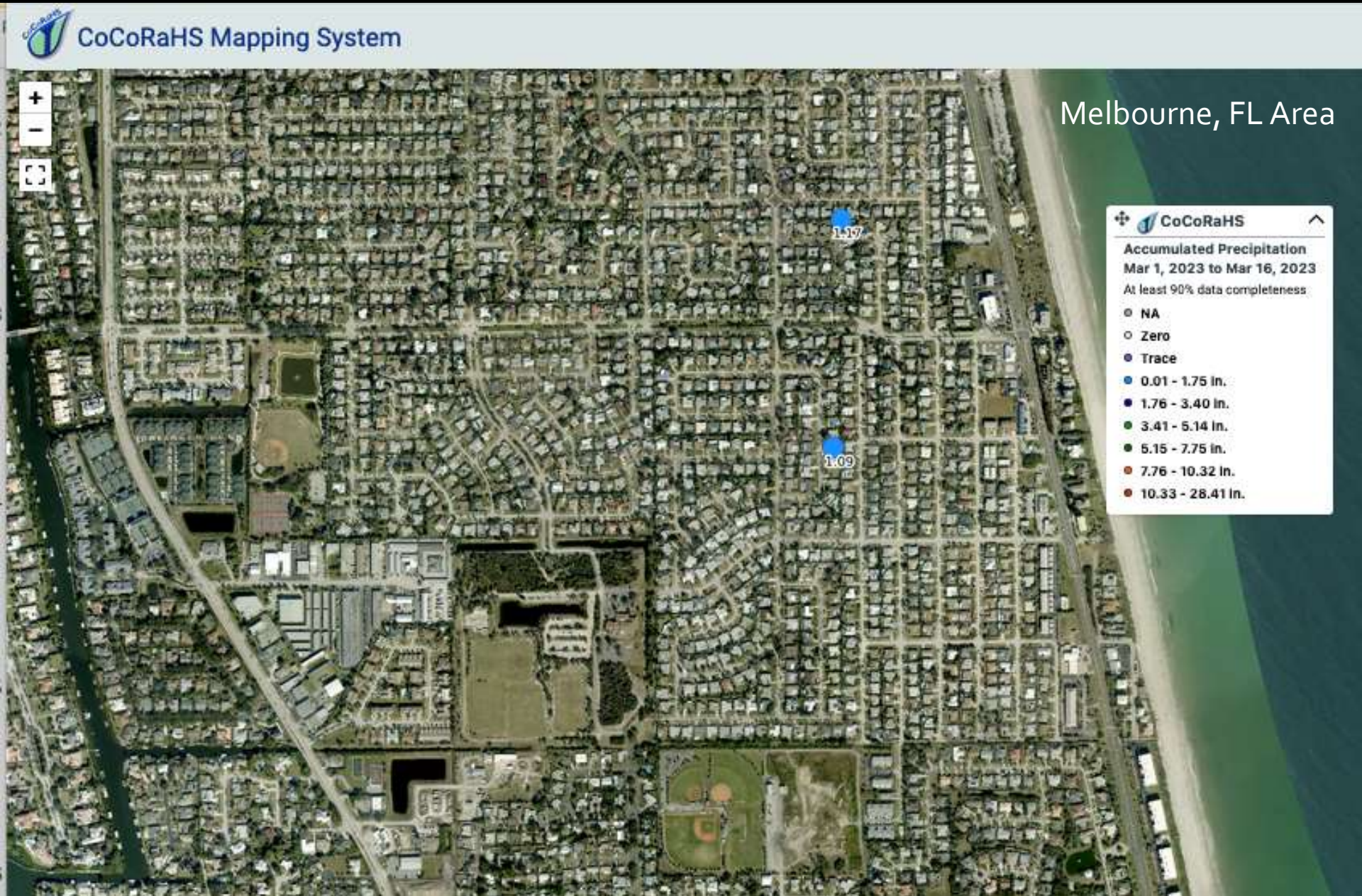




Dynamic Indeed!!



Drill down to the town/city level



Really zooming in!

Ice Accretion Pilot - 2022

Measuring Ice Accretion

Ice Accretion Pilot Training Guide

New!

Report impacts

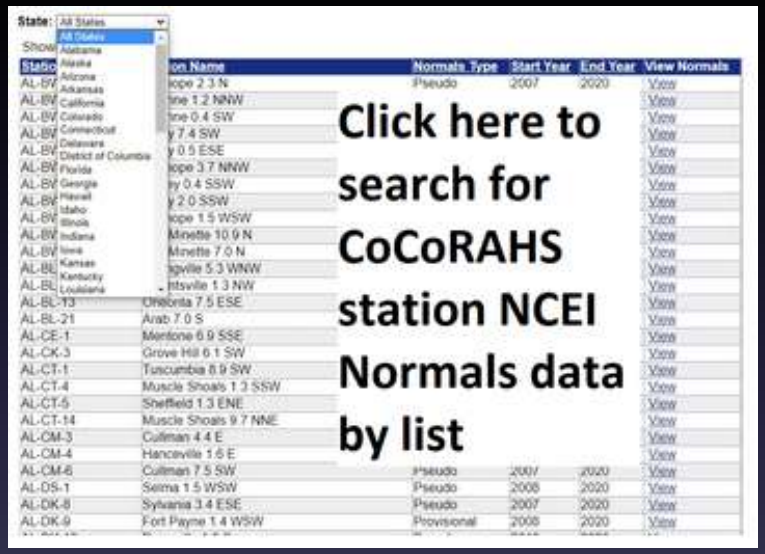
Submit photos

Category	Descriptions of Impacts
0	No ice or a trace
1	Enough to be annoying/need scraping off your car. Looks pretty on bushes, shrubs. Dangerous to walk or drive.
2	Shrubs and other non-native shrubbery weighed down, trees manage ok
3	Small tree branches start to bend
4	Small and medium branches bend, a few small branches may fail
5	Birch trees are starting to bend, minor branch damage to weak trees
6	Birch trees sag moderately, small and large limbs start to break, ~5-10% branch loss
7	Birch trees bent nearly completely, ~10-20% branch loss on small and large limbs
8	Moderate to significant tree damage, most trees have some damage
	Credit: Jason Shafer, Northern Vermont University-Lyndon

Measure and report ice accretion on branches or other flat objects

Continuing collaboration with NCEI

PSEUDO and Provisional NORMALS



A total of 5448 CoCoRaHS stations qualified for 1991-2020 climate normals, 4688 for Pseudo-normals and 760 for Provisional normals.

CoCoRaHS data archived daily in NOAA/NCEI's GHCN-D (Global Historical Climate Network)

After 100 observations

Examples of Publications using CoCoRaHS Data

Publications Using CoCoRaHS Data

These peer reviewed publications are instances where CoCoRaHS data contributed to the research and were cited in the bibliography:

2022

Joseph, Naveen et al., 2022: Evaluating the impact of turbidity, precipitation, and land use on nutrient levels and atrazine concentrations in Illinois surface water as determined by citizen scientists, The Science of the total environment, 158081. 16 Aug. 2022.

Elmore, K. L., Allen, J. T., & Gerard, A. E., 2022 : Sub-Severe and Severe Hail, American Meteorological Society, Weather and Forecasting, 37(8), 1357-1369.

2021

Spaccio, Jessica, Arthur DeGaetano, and Nolan Doesken, 2021: COVID-19 Stay-at-Home Orders Result in a Decrease in the Number of Missing Daily Precipitation Observations, Bulletin of the American Meteorological Society 102, 3 (2021): 207-209

2020

Goble, Peter E., Nolan J. Doesken, Imke Durre, Russ S. Schumacher, Abigail Stewart, and Julian Turner, 2020: Strength in Numbers: Daily Precipitation Extremes over CONUS, Bulletin of the American Meteorological Society 101, 8 (2020): E679-E682

2019

Smith, Kelly Helm, 2019: Drought Impacts: Detecting Deviation from Expectation across Space and Time. ETD collection for University of Nebraska - Lincoln. October, 2019, AAI27547805.

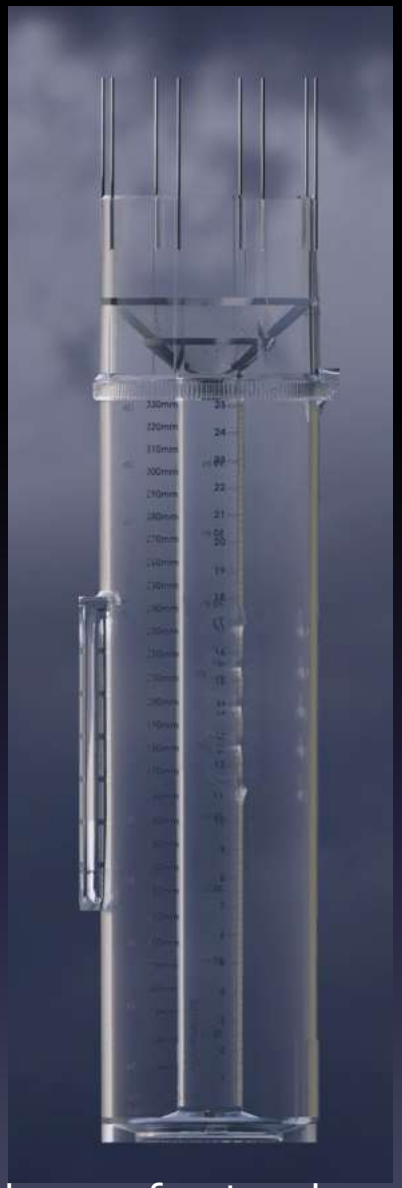
Spring 2023

CLIMALYTIC™
INSTRUMENTS, LLC

TROPO Precipitation Gauge

What's Included

- Handle
- Mounting Bracket
- Bird Deterrent Rods (x8)
- Cap
- Inner Tube
- Outer Tube
- Cable Ties (x2)
- Wood Screws (x2)
- Adhesive Strip
- Instruction Manual

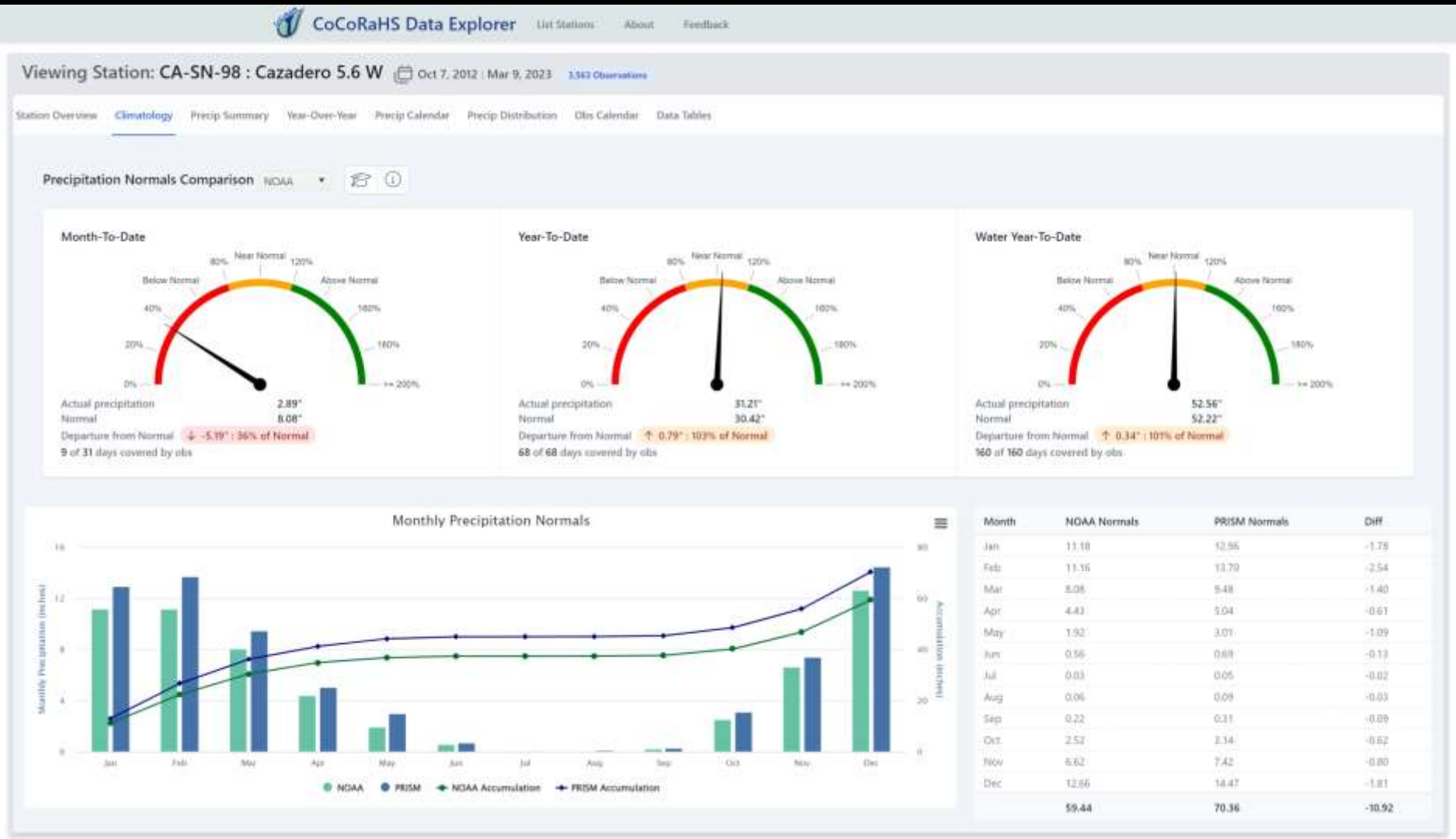


https://climalytic.com/tropo

The next generation 4-inch all-weather professional precipitation gauge that meets the accuracy and specification requirements of CoCoRaHS.

CoCoRaHS Data Dashboard

Customized for your individual station



Beyond 2023

THANK YOU

For more information visit: www.cocorahs.org

or contact: henry.reges@colostate.edu