



Agenda

Santa Fe River Commission

Thursday, May 9, 2019 (Round House Room), 6 pm to 8 pm
City Offices at the Market Station Building at the Railyard
500 Market Street, Suite 200, Santa Fe, NM
505-955-6840

1. ROLL CALL
2. APPROVAL OF AGENDA
3. APPROVAL OF MINUTES FROM January 23, 2019; February 14, 2019; March 14, 2019
4. COMMUNICATION FROM OTHER AGENCIES /COMMITTEES
 - a. SF Watershed Report (Andy Otto, andy@santafewatershed.org) 5 minutes
5. INFORMATION/DISCUSSION/ACTION:
 - a. Presentation: Community Collaborative Rain, Hail & Snow Network (CoCoRaHS) Precipitation Monitoring, by Kerry Jones, Meteorologist in Charge, NOAA/Weather Services – (30 minutes)
 - b. Action Item: Approval of the 2019 – 2020 Target Flow Hydrograph (mamacdonald@santafenm.gov, 955-6840 and Alan Hook, aghook@santafenm.gov, 955-4205) (20 minutes)
 - c. Discussion/Action Item: River And Watershed Educational Series (Zoe Isaacson, zoe.isaacson@gmail.com) (15 minutes)
 - d. Discussion Item: Santa Fe River Fund Quarterly Report (mamcdonald@santafenm.gov, 955-6840) (10 minutes)
6. MATTERS FROM STAFF
 - a. Informational Item: WOTUS update, River Commission membership, Fishing Derby June 1st tentative, FEMA/Hazard Mitigation Grants, (Melissa McDonald mamcdonald@santafenm.gov, 955-6840) 15 minutes
7. CITIZENS' COMMUNICATION FROM THE FLOOR
8. MATTERS FROM COMMISSIONERS
9. ADJOURN

Next Scheduled River Commission Meeting is June 13th, 2019
Captions & Packet Material are due by 10 am on June 5th, 2019
*Persons with disabilities in need of accommodations,
Contact the City Clerk's office at
(505) 955-6521 five (5) working days prior to the meeting date.*

RECEIVED AT THE CITY CLERK'S OFFICE
DATE: May 1, 2019
TIME: 9:30 AM

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**Santa Fe River Commission
MINUTES
Thursday, May 9, 2019
6:06 pm to 8:00 pm**

1. CALL TO ORDER

Chair Zoe Isaacson called the Santa Fe River Commission meeting to order at 6:06 pm in the Roundhouse Meeting Room, Market Station Building at the Railyard, 500 Market Street, Santa Fe, NM. Roll call reflects lack of quorum.

ROLL CALL

PRESENT:

Zoe Isaacson, Chair
Emile Sawyer
Jerry Jacobi
Anna Hansen
F.M. Patorni
Phil Bove

NOT PRESENT/EXCUSED

John Buchser
Dale Doremus
Luke Pierpont

OTHERS PRESENT:

Melissa McDonald, River and Watershed - Staff Liaison
Andy Otto, Executive Director, Santa Fe Watershed Association and Intern
Susan Coulter
Alan Hook, Water Resources for City of Santa Fe
Anna Serrano for Fran Lucero, Stenographer

2. APPROVAL OF AGENDA

Ms. Hansen moved to approve the agenda as presented, second by Mr. Jacobi, motion carried by unanimous voice vote.

3. APPROVAL OF MINUTES FROM JANUARY 23, 2019, FEBRUARY 14, 2019 AND MARCH 14, 2019

Ms. Hansen moved to the minutes of January 23, 2019 as presented, second by Mr. Patorni, motion carried by unanimous voice vote.

Ms. Hansen moved to approve the minutes of February 14, 2019 as presented, second by Mr. Patorni, motion carried by unanimous voice vote.

Ms. Hansen moved to approve the minutes of March 14, 2019 as presented, second by Mr. Patorni, motion carried by unanimous voice vote.

4. COMMUNICATIONS FROM OTHER AGENCIES/COMMITTEES

a) Santa Fe Watershed Report (Andy Otto, Executive Director) *(Handout Included, Exhibit A)*

Andy Otto: Adopt a River and Arroyo update – it has been marvelous to have the river flowing. As a result of that our stewards like to get out and there is a lot of clean up going on. The Sierra Club went out and did some major thinning of some elms and the roots. We are never keen on using chemicals. They cleaned from Closson Bridge down to the Boys & Girls Club and last June we had done from Boys and Girls Club down to St. Francis, except for the last 20 feet it got to thick. This year on June 22nd we will include that stretch in our clean up. 25 river reaches and 10 arroyo reaches were done in March and April, 185 volunteers, 167 bags of garbage and 230 total hours which is phenomenal for this time of year. Upcoming events are described on handout. American Rivers Colorado Basin met in Santa Fe last Friday. They gave us a call informing us they wanted to do a couple of projects and we said they could plant more cottonwoods in the County greenway project and also the tree wells that the contractor had done down there, about 140 trees that they planted weren't big enough. They came with their crew and we worked together and got the work done. They had a reception in the evening and dignitaries to include Commissioner Anna Hanson and three Mayors, Mayors Gonzales, Webber and Coss and Marty Chavez.

Mr. Patorni asked if they remember that we are the most endangered river in the US in 2007. Mr. Otto said he was able to tell them that at a breakfast meeting and I thanked them for their work in 2007. The county greenway project is a result of a good working relationship since 2007. Commissioner Hansen reiterated that it was a successful meeting and she enjoyed the dialogue with Craig Childs, John Fleck and Matthew (from Colorado River) was poetry, a beautiful discussion on the importance of our river.

5. INFORMATION/DISCUSSION/ACTION:

a) Discussion Item: Presentation: Community Collaborative Rain, Hail & Snow Network (CoCORaHS) Precipitation Monitoring, by Kerry Jones, Meteorologist in Charge, NOAA/Weather Services

Ms. McDonald invited Kerry Jones to meeting. Rainwater monitoring is heavily supported by Councilor Ives. Ms. McDonald has purchased rain gauges and they will be received by the end of month. Thank you to Andy Otto and David Silver who have worked with this organization as well. It is important as we do our modeling, both the Water Division and Public Works are engaged in getting our modeling up to speed and rainwater is very important and getting the rainwater to specific places in town is very helpful because we don't have the money to put water stations everywhere.

Kerry Jones: I am a product of the UNM Water Resources program many years ago, I did a realm of work on snow pack, seasonal runoff and effect of dry windy spring. I have been involved with the Colorado program since 2000 so we are close to a couple decades and it is near and dear to my heart. This is a new program, do we have any volunteers who have rain gauges, good.

(Commissioners followed Power Point – Exhibit A)

We also do hill paths in the program. There is wonderful training in the web and when we recruit new volunteers we recommend that they go on line and do the training, and we are available to answer questions. David, State Climatologist based at NMSU in Las Cruces, we get together and we do trainings throughout the state. If that is something you would like us to do here in Santa Fe it takes about 3 hours. There are two websites that should be noted; one is a national web page and one customized for New Mexico. Mr. Jones stated that he is proud to report they have active volunteers in every county in New Mexico. He works hard with soil and conservation districts, mainly in northeastern New Mexico to recruit the population in very wide open areas to report. CoCoRaHS was born out of an event in Ft. Collins in response to the 1997 Fort Collins, Colorado flood. It was a fatal flood event that occurred at night just over 22 years ago. There was no indication that parts of west Ft. Collins had close to 15" of rain. As a result of the flash flood warning was not issued. Nolan Doesken at the time was the Climatologist for the state of Colorado, has now since retired and said there would be a better way. He went around and told individuals, if I gave you a rain gauge would you commit to reporting on a daily basis and CoCoRaHS was born. It is now in all states, Canada, Mexico and the Caribbean. I am proud to say that New Mexico we were the 5th state in the Union to join on in 2005 and is unique to our situation. It is now across the country and internationally. There are close to 20,000 volunteers in all 50 states. Mr. Jones addressed the flood in Santa Fe.

CoCoRaHS is the leading source of hill data in the country. It is a main source for rainfall but is increasingly used for hill study. There is poor radar coverage in Farmington, NM and one of the observers who sits up by the college had 2 ½" of rain in less than an hour from a thunderstorm. Based on that report alone we put out a flash flood warning and they closed down known areas in Farmington that flood and we believe that had an impact. Mr. Jones provided more information from the slides that occurred in 2010. The east part of Albuquerque had 1.32 inches, and we all know what happens when it rains in Albuquerque, the water goes toward the river at a high rate of speed. We issue warnings, not advisories based on the CoCoRaHS reports. Now a days with phones, if you move in to a flash flood area your phone goes off like an amber alert. We are promoting the program because based on those reports we are taking action on those. Snow Data is also a big source and it is not snow depth it is the snow water equivalent, it's how much water is in the snow pack and that also helps. We also have high elevation CoCoRaHS reports that assist us with that. In addition to the data from a weather stand point, hydrologic stand point, it is a great way to connect as a community with the schools, all different levels and ages. We do studies for Santa Fe and other high population areas in the state, we show trends, it isn't just about the airports in Santa Fe, Albuquerque or Las Vegas. As we go through the next 2-3 days we will be going through a significant precipitation event and when I say significant we are talking possibly 1-2" of liquid for Santa Fe and possibly even higher if you go up in elevation. That is a lot of rain for the month of May. If you see reports, whether newspaper, tv or websites it highly likely it is the CoCoRaHS network. We have written scripts that inject all the reports daily and spit them out. It is a great way to connect with organizations at all levels. We do a lot of work with soil and conservation districts around the state and it has definitely been successful. Mr. Jones offered his e-mail and indicated in Exhibit A.

When you get the gauge, we have found that if we give gauges to individuals it is not as successful because there is no buy in. I won't say that to this group as it sounds you are going to get a good rain gauge and have a good experience.

The gauges are not tracked or tagged. Ms. McDonald said it is a nice 4" gauge, not digital fancy.

Mr. Jones it is a 4" gauge and the opening is 10's larger than the inner opening which is very small so you can read to 100th of an inch which is measurable precipitation. During the winter time what you do is take the top off, you take inner tube out and you have a nice cylinder that collects snow. As we get to this time of the year you put the inner cylinder back in, top on and off you go. You measure daily, we recommend you do it between 7 am and 9 am every day, and there is an APP. Once you start doing it you are committed to put in the report, you want to be on the map and get your data in.

The Chair asked if there is an overflow on the center gauge. Mr. Jones said he has only overflowed three times since he has had his gauge. Since 2012 he has only seen more than 1" three times. In September 2013 we couldn't wait for the sun to come up.

Commissioner Hansen asked if Mr. Jones has presented at the Association of Counties?

Mr. Jones said that he has not presented to the Association of Counties meeting but he does work with each county individually. He welcomes a contact if Commissioner Hansen would like to send that to him. Commissioner feels that this is a go place to present and she asked if Mr. Jones works with NACO (National Association of Counties). Mr. Jones wasn't sure but he will follow up. Commissioner Hansen said they are always talking about draughts and is always a topic.

Mr. Jones stated that March is their big recruitment month. New Mexico was #1 in the country per capita, recruited over 122 and the goal is to continue.

Ms. McDonald has purchased the gauges and hopes that the members who remain and those who depart will continue to use their gauges. It is important to get the general public involved. Our goal would be to get 50 volunteers in the city and we will provide the gauge.

Mr. Patorni asked what do they do with the data besides warning of real time? Because you probably find a random amount of storms.

Mr. Jones said, when you say we do you mean the National Weather Service or me personally? I'm a data person I run charts and graphs for my own station. For the National Weather Service our primary purpose is to share outside for warning. For Water Managers, for Drought Monitors and Network based in Lincoln Nebraska, the draught maps we see every week, they are looking at it in much larger scale, they look at it in 1 month, 6 month, 12 month chunks, cumulative. We have enough data now where you can actually run prison data departure from normal. It is used at all different levels. It will chart it for you, it will track your precipitation, and it will show you how it compares to what is considered average for your location, average not normal. Precipitation is not normally distributed like temperature, it relates to average and you can compare it to other sites.

Mr. Jones said share your enthusiasm with the public. Thank you for allowing him to present this evening. Commission will work towards that goal of 50

b) Action Item: Approval of the 2019 – 2020 Target Flow Hydrograph, Alan Hook

Ms. McDonald: As an update she heard from the Mayor's Office that the new members will be on the May 29th Agenda and we will have information on who has been appointed. This is a requirement for applicants and soon to be appointed members. Every year as part of the living River Ordinance we review the target flow releases related to that amount. Ms. McDonald and Mr. Hook work closely, Mr. Hook creates the hydrographs, it helps to visualize it. There is an administrative document on the website that you can access when you become a commissioner. Ms. McDonald will distribute that in a PDF and she encourages new members to read through it and look at it so there is an understanding when looking at the hydrograph. It isn't hard to understand but important to read through. One of the major areas which Mr. Hook will talk on and members need to understand, there is a by-pass constraint and a lot of people do not get this. You cannot release more water than actually coming in. Water coming in to the reservoir you can't release more of that out, by-pass constraint is very important to understand. What you will look at today is last year and what we are proposing. After you review this we will move a memo forward with commission recommendations and staff recommendations, outlining what we anticipate for next year.

Alan Hook, Water Resource Coordinator (Exhibit B)

Under the Santa Fe River Target Flow Ordinance and the subsequent Administrative Procedures there is a process that dictates how much of the 1000 ac. feet we are going to by-pass from our reservoirs and that is based on the NRCS Basin Report, the New Mexico Basin Report that talks about all of the Basins, this being the Rio Grande Basin thus being the Santa Fe River. April 1st is the Basin Report looked at. (Commissioners followed the Power Point – Exhibit B) April 1, 2018 watershed yield = 17% of stream flow yield. A percentage of lower than 17% x 1000 will give you 179 acre feet. However, the Administrative Procedures say anything that low in the critical dry hydrograph say you will do 300 ac. ft. which is like a triple flow about .15 cfs throughout the year. There was no way we were going to accomplish this last year so instead we weren't going to do a spring pulse because we didn't have the inflows above McClure, that is the by-pass constraints so we did a trip flow of .15 and then in July we expected some monsoon activity so we were going to go up to .6 until September dropped back down to .3 and the rest of the year low flows .3 and expecting we would drop down a centimeter of 1.5 to get a total of 300 ac. ft. That is how we started last spring going in to the summer so what we did is track the actual daily flows above McClure, inflows indicated on the graph. May and June were the hottest months we had in a long time and then here came the Monsoons. In the Watershed we measured in the rural access station that the Forest Service has .2cfs, that is not even the center where the rain even happened in Santa Fe. September rains through end of October, we had 3-day storms carried us in to November and now you get snow packed and continuous run-off. Beginning of March we had an early melt off where we got above 8 and then continuing above 15 cfs. After March 15th we started getting flows about 20 cfs. So far through April we have reached about 40 cubic feet per second above McClure right now we are at about 35 cubic feet per second. A lot of inflow, night and day compared to 2018 going in to 2019 as compared to 2018 where it was just bleak on the upper Santa Fe runoff. What is key here is that now we have a gauge transfuser below Nichols, run and fits and starts, we coordinate with our Canyon Road staff who physically go down to read the gauge. We have set up the remote sensing system that goes in to Canyon Rd and try to calibrate our

transfuser. The green line shows all the flows below Nichols. Peak flows that you see are safety deliveries. Those are times we delivering to the acequias and you could say where we were accommodating the community events. We did not have a fishing derby this year it wasn't going to be achievable due to the by-pass constraints.

The Chair asked if the acequia deliveries are required regardless of.... Mr. Hook said they are required but not regardless. Ms. McDonald clarified it is also of acequia deliveries but not only acequia deliveries. We have had to do releases for the dam right now and that big spike is more than the acequias. The patterning is acequia. The Chair stated that last April – May it was real dry but we still delivered to the Acequias.

Mr. Hook stated there are two main acequias, Acequia Cerro Gordo and Acequia Madre and Acequia Madre normally takes _____ all the way down to Harry Lynch Road. The upper part takes about 2 and Cerro Gordo takes about .6 to get there. There was enough flow coming in to achieve that. What they were doing at Acequia Cerro Gordo and Acequia Madre they were piggy backing on each other because they knew they had to do shortage sharing so they were asking us to deliver on the same day at the same time to Cerro Gordo and only upper Acequia Madre. This was a legal question and you might say, there is not enough flow to get the acequias their delivery May, June and July. We were given the OK through the consultation of the City Attorney and the OSE that if we doubled up not doing it once per week but every other week, in other words using the previous weeks amount and the second weeks amount doubling up in a 2 week period that we could deliver that and it wouldn't count against our storage diversion permit with the OSE. This hard for the operators to do it accurately real time every 15 minutes to match it because they are trying to get pool water in to the pipe to treat it and they have to do enough inflow into Nichols to back flow to Nichols Dam and the pour out so they are trying to keep this constant flow and at the same time doing safety deliveries and going back and forth. It is a process.

The Chair asked Mr. Hook to touch on the storage constraints.

Mr. Hook suggested doing this next meeting, he has a better graph to explain that process. We have a diagram of Nichols Dam and how the plumbing and the outlet works to achieve this. It is hard to get real low at about .05 - .03 when they are trying to pull 85 million gallons on a daily basis.

Ms. Hansen: You said early on that it use to take 9 cubic feet and now it takes 7.

Mr. Hook: In the 2016-2017 report, in the channel when it gets more saturated you get more carried through the river channel. If it is bone dry it takes 9 cfs from Nichols to the wastewater treatment plant. Having said that, if you have already started the river flow, in 16-17 we had pretty good wet springs and even 15 was a good wet spring. The river channel itself with perched aquifer is pretty saturated and can actually carry further without having to push so much water.

Ms. Hansen: Do you think it is because we have done all this work on the river to keep the channels more harmonious.

Mr. Hook: There is a combination and I can't say that scientifically about exact data, we are trying to track that with monitoring wells so we now have one near St. Francis, by Frenchy's field and we are hoping to get one at Audubon so they have an old well so we

can track when these flows go down and we increase the rate of flow, what is our seepage rates and what is our response of the ground perched ground water near the river channel to see if that is actually happening. The city well field optimization study shows a lot of that response in the city well field, last year we had to turn to the city well field.

Ms. McDonald the green line is new, before it was all combined this is allowing you to see more. When the OSE came, the Acequias are now putting on the monitoring on their gates. This will get more and more refined so we can understand. With Alan's work monitoring the seepage studies and OSE doing the monitoring in real time on the acequias and we have different types of storm monitoring we are going to really be able to understand what is happening here soon.

Mr. Hook: This is exciting because this graph is showing you close to actual flows below Nichols. Prior to that it was sort of a block because we were allowing the operators to say, this is your target for the whole week or 2 week period and they would only track what was coming out of the Meter from Nichols. They were doing a once a day reading below Nichols but it is once out of a 24-hour period as to these are combined 15 minute intervals so you are getting more of a refined measurement of what is going on in the river channel.

Ms. Hansen: So are only monitoring the amount of water you aren't monitoring any contaminants.

Mr. Hook said, no strictly flows, all discharges.

Ms. Hansen: What would the possibility be to monitor some kind of contaminants or pharmaceuticals, would that just raise the price in a prohibitive way?

Mr. Hook: It would raise the price, who is going to do it, I don't think we are there and there isn't a reason for the Water Division to do it. We are tracking the flow per the ordinance.

Ms. McDonald: That is happening at the waste water treatment plant and our drinking water is more pure because it has been in the reservoir. I would like to see that money be used for monitoring in the Arroyo Chamiso for storm water monitoring and more gauges in the Santa Fe River. If we are looking at a budget that would be a low priority for us. Our drinking water is coming out of people's wells, there are wells in the city that still drink from it. When you look at a budget it is hard for us to say we need that.

Ms. Hansen directed a question to Mr. Otto, that water is actually making it to the Rio Grande?

Mr. Hook said he has not followed it beyond the La Bajada gauge. Mr. Otto said he has followed it and it is making it down there close to the Cochiti post.

Mr. Hook explained where we are right now referring to the graph. We were treating 5 million gallons, operationally Nichols can only move 15 million gallons out which is about 22 cfs so 5 of that 15 went for treatment and the other 10 went straight to the river. Eventually by April we were spilling another 5 million, so your talking 15 plus another 7 cfs = 22 cfs. Nichols is still full and has been full since April 8th and McClure is at 73%. Nichols has been spilling based on the lower elevation levels like Ojo Sarco sort of that

low elevation melt off that was talked about in the month of April. We are running well over my graph of 14 cfs and went up to 22 cfs +, you would never see this tiny portion.

Ms. Hansen asked how long will that run?

Mr. Hook said that it will probably run 22 cfs until the 3rd week of May potentially in to June. We are moving 15 to 20 million gallons out of McClure just to keep up with the inflow. That in flow of 32 – 25 cfs is about 20-35 million gallons. Doing the water balance we have more water in than we can move out of Mc Clure and Nichols?

Ms. Hansen: Are you keeping that like acequia spills?

Mr. Bove: They have used the water in Agua Fria. We have sent water back to the Indian School, back to Frenchy's Field, send it back to Maes Rd, and send it back from Henry Lynch Rd.

Mr. Hook said speaking for Cerro Gordo we don't know how much has gone in their ditch but we do know, because you can visually see it under the Cerro Gordo Bridge, their diversion under the bridge, it is a small one and can only handle about ½ cfs and it has been full and they have even had back flow. We are continuously moving water out for reservoir operations since March.

Ms. McDonald stated that the City Council makes the decisions ultimately on the goals and objectives of the hydrograph, we are putting forth this vision. This body can advise as to how this will look. In a year like this where there is so much water I don't anticipate you telling us not to release, it just isn't going to happen because we are watching it day by day. Tomorrow we will meet and talk about where the dam is at, people are really watching it. In a critically dry year there is some flexibility. One year this body suggested, we should do one pulse instead of 2 pulses. This body has the ability to suggest ways in which this could be looked at. If there was something radically different from what you think needs to be done then we would look at that and represent it here. That is one of the main responsibilities of this body.

Mr. Hook: Here is one example I have brought before the River Commissioners in the past. We have always had a hard time reaching this summer pulse at the end of June and July before the monsoons kick in because the inflow really drops off. While this was ideal there was no intention from the stakeholder notes before the ordinance was put together, there was no intention to get the water flowing in these warmer May-June months for the vegetation to get wetting before the monsoon kicks in but the problem is you have the by-pass constraint. If the inflow above McClure isn't occurring here then what do we do. We have talked about if we take this volume of water and add it in to the spring where there is inflow, and we did that during the construction of the structures and the vegetation when it was being planted down by Frenchy's and below Camino Alire and that was some of the River Commissions input that sort of changed this template to make it a little different that it was originally thought of.

Chair: The timing of the pulses, last year we suggested that they time the pulse with the planting from Frenchy's to Siler so the willows could get a wetting and get established in such a critically dry year. We do get to play with the timing as well.

Mr. Hook made the recommendation on the Fishing Derby, we do not know if we are going to see large inflows through the 3rd week and beginning of June that we can control at McClure. If we top over McClure what is coming in is what is coming out. Hold the Derby, put the fish in but you won't be able to keep the fish in that reach, they will move up and down.

Ms. McDonald: We will be talking about this tomorrow, the Fishing Derby is tentatively set for June 1st, which we need to evaluate if this is possible. Next time we are looking at is June 8th. Ideally the 1st would be better, it coincide with free fishing with Game and Fish. This is a fishing derby for children under 12. It is a chance for families to have a recreational day with their children. This is a big deal for the children.

The Chair said we have so much water this year, it would be nice to have it a little bit sooner.

Mr. Hook said they struggled with because they didn't have the QAQC, we were working with the data system, we are putting together a standard operation procedure with the operators, we will have a report for the monitoring this year with Shoemaker, I think we will be better prepared but this was the first year we were able to get better actual data. We will try to get it in a more timely manner.

Q: Do you know what when you make a decision on what you are going to allocate, is there a certain time of the year?

Mr. Hook: For the Living River, April 1st. We look at March to see how it is shaping up. From a utility perspective we look at it in February and in March we look at how it is developing. As we move in to that April 1st forecast we look at what is our plan. This year was unique because we had a lot of carry over storage from last year. Part of that reason was because May-June of last year got so hot we actually couldn't treat all the water, we had a lot of quality water issues. We carried over in the calendar year a lot of water, I let our Water Division Director know that we weren't empty, we are about 3/4th full and we will get a lot of run off from the snow pack that is developing from December going in to January and February. I kind of knew that this was going to happen and we would have to release for flood management. Yes, we do have those conversations.

Ms. McDonald reiterated that the final hydrograph would be sent by e-mail to the commissioners.

Ms. Hansen moved to approve what we have laid out in the hydrograph and move forward with that, second by Mr. Bove, motion carried by unanimous voice vote.

c) Discussion/Action Item: River and Watershed Educational Series, Zoe Isaacson

The Chair is pleased to announce that we have come close to finalizing the Education Series, we have six including the Children's Derby if that ends up happening. We have nice people who have volunteered in presenting to the community, all matters of the river. Our first will be an invitation to the Water Staff from Albuquerque to give a talk on how Albuquerque is planning for the future. Mr. Otto has extended that invitation.

Ms. McDonald: The date is: June 13th – River Commission Meeting at the Santa Fe Convention Center and we will have a social event. We will be welcoming new members on and saying goodbye to those leaving us.

Chair: Talk will be an illustration of how Albuquerque is focusing on the next 100 year plan.

Ms. McDonald: Coincidentally we discovered that the Next Generation Water Summit had a blank slot. We can support them and for those who want a stronger connection to the Water Conservation Committee they are a part of this summit.

Chair noted that on June 8th it would be a tour of the Buckman Water Facility, that will be limited to 25 people, June 29th – Acequia Culture in Santa Fe specifically the Acequia Madre by Phil Bove, July 20th Talk on Soil Hydrology – Erik Kaufman, Owner of SW Urban Hydrology, July 27th – tour of Santa Fe Watershed and Canyon Road and Mr. Jacobi will walking tour of river channel itself, limited to 25 people. The community is interested, people are talking about how beautiful the river is. Ms. Hansen would like to put it in to her newsletter once Ms. McDonald finalizes the arrangements.

Ms. McDonald: This will only be as successful as the outreach, thank you to all, get it out to the networks you have FB accounts. RSVPs will be sent to Ms. McDonald.

d) Discussion Item: Santa Fe River Fund Quarterly Report, Melissa McDonald

One of the other areas for new members that we do is we maintain the living river fund. This is a fund where the city matches dollar for dollar any contributions. We didn't use much of this money last year, this coming year we do plan to use this fund. This fund balance will be updated for this Commission more frequently. One of the projects is the Alameda Rain Project and these are projects that have been identified, areas where we are looking for rain gardens, things like that. In past years we have been working with the Watershed Association and other groups to stretch out that money even more. We have applied for grants more recently with the Water Shed Association. Not only would we have the dollar per dollar match from the city but that money would stretch even further. We are trying to figure out ways to make this work even better. We are looking at bio-infiltration but we are also looking at invasive species removal so removing things that are absorbing a lot of water and replacing it or not replacing it depending on the condition. Next year you will start seeing this, I will plan these activities at the end of the summer and we can look at the fall and winter.

The quarterly report shows that we have approximately \$170,000 in that fund.

6. MATTERS FROM STAFF

a) Informational Item: WOTUS update, River Commission membership, Fishing Derby June 1st tentative, FEMA/Hazard Mitigation Grants, Melissa McDonald

WOTUS was submitted; the Chair submitted the commission comments and Ms. McDonald submitted the city's comments. Those have been sent by e-mail to the commissioners, thank you to all. Follow up will be reported. There were a lot of groups that sent comments.

Mayor's Office will be submitting the names of the new members for the River Commission on My 29th and we will welcome those members very soon.

Fishing Derby is June 1st, please let people know so they can attend.

Ms. McDonald and Mr. Hook participated in the Hazard Mitigation Grant Plan, this is a 5-year plan that the Emergency Management Plan of the city is putting out. Ms. McDonald is hoping that we will put in some rain gardens in, this is a 5-year plan and we want to get projects in it. This is run out of FEMA and it is quite a bit of money.

7. CITIZENS' COMMUNICATION FROM THE FLOOR

Mr. Otto introduced Shokie Bundy, Intern at the Watershed.

8. MATTERS FROM COMMISSIONERS

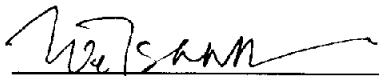
FM Patorni: This is to bring to your attention that on FB he ran across a discussion spearheaded by Vince Kadlubek, Meow Wolf Executive, a list of anti-housing falsities. It is a whole list of items to promote more housing. Lie #10 – We don't have enough water to sustain more residents. I don't know if it is true or not, should we have a position on it. (attached)

Ms. Hansen stated that these are items that Vince brought forward, he doesn't support them, but he is saying that the neighborhood network is saying, just to be clear. These are items that they have heard from the neighborhood.

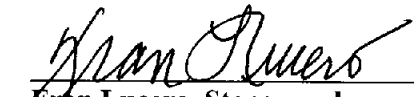
9. ADJOURN

There being no further business to come before the River Commission, the meeting was adjourned at 8:00 pm.

SIGNATURE PAGE:



Zoe Isaacson, Chair



Fran Lucero, Stenographer

CoCoRaHS

"A brief history and other things you wanted to know but were afraid to ask."

Kerry M. Jones
National Weather Service
Albuquerque, NM

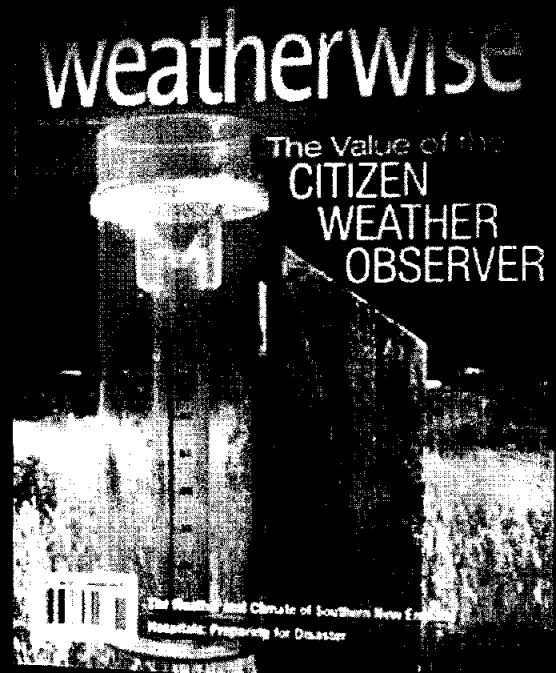
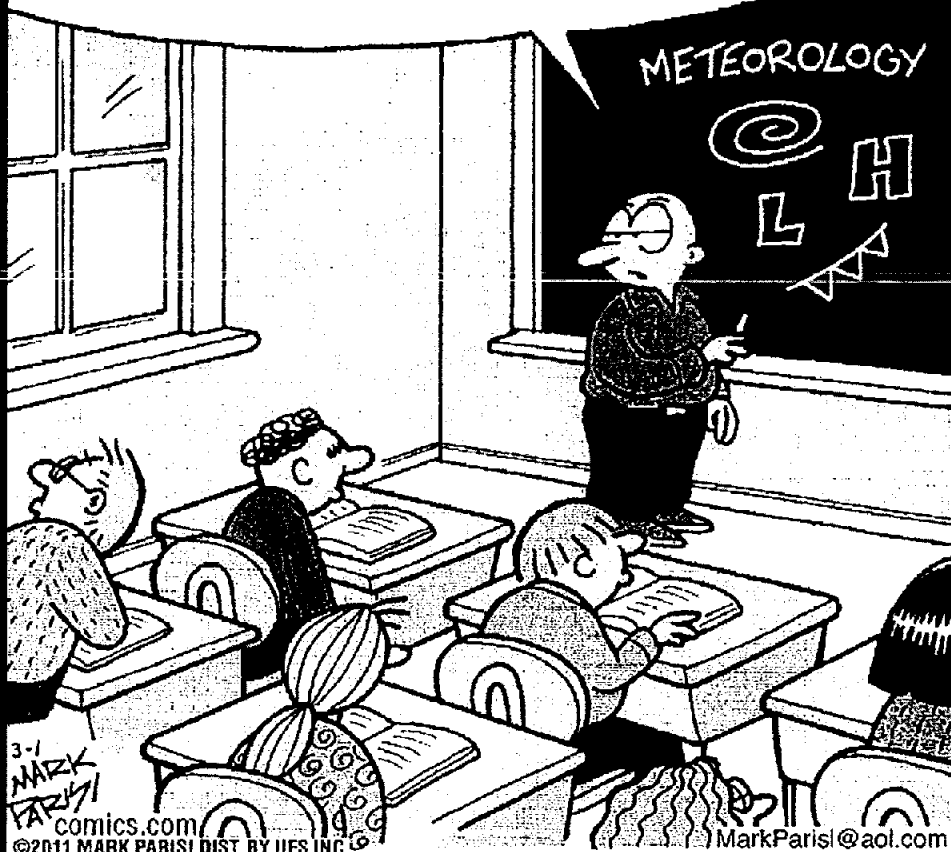


Exhibit A

EMMETT, ARE YOU STARING OUT THE WINDOW AGAIN?



EMMETT GETS EXTRA CREDIT



What is CoCoRaHS? An overview

JUST PRECIPITATION!





CoCoRaHS

Community Collaborative Rain, Hail & Snow Network

www.cocorahs.org

Become a
Volunteer Today!

A volunteer based precipitation only network. There are already over 750 active stations that report daily in NM!

Volunteers are trained to assure accurate, high quality data.

Once trained, volunteers collect data using low-cost measurement tools.

Observations are immediately available online for the NWS to use!

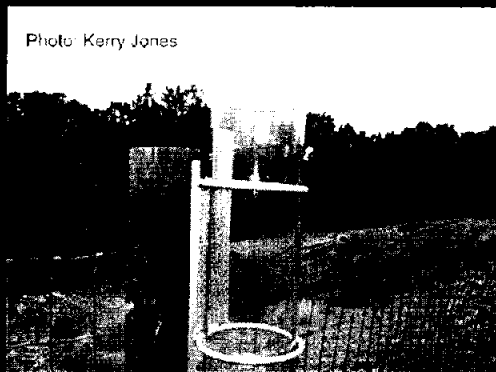
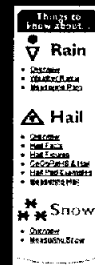
<https://www.weather.gov/abq/cocorahs>



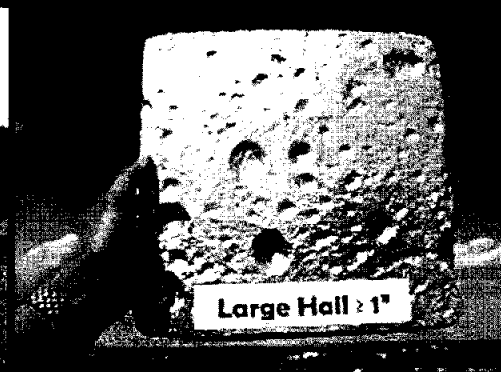
via the Web (preferred)



In-person (on occasion)



4-inch diameter
High capacity rain gauges



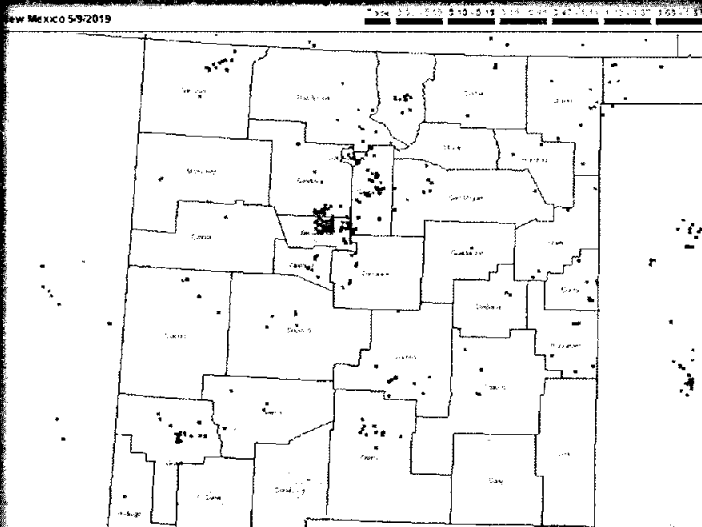
Aluminum foil-wrapped
Styrofoam hail pads

Volunteers report their daily observations on our interactive Web site:

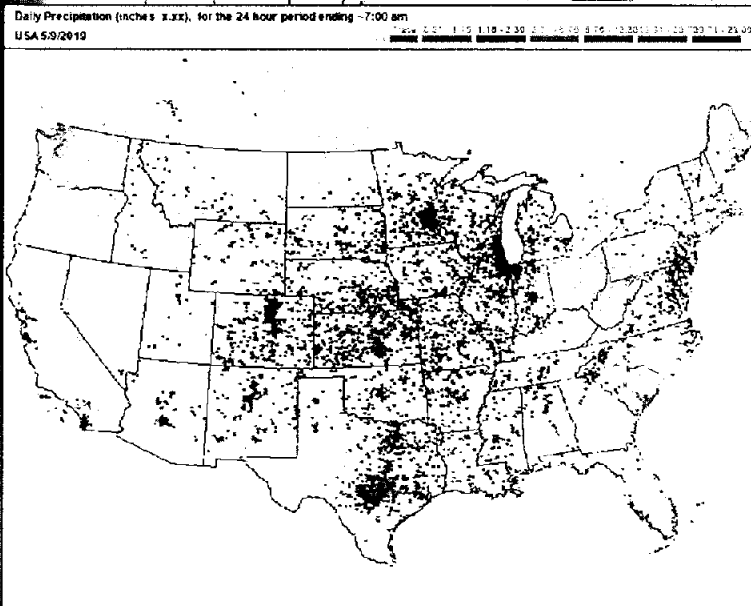
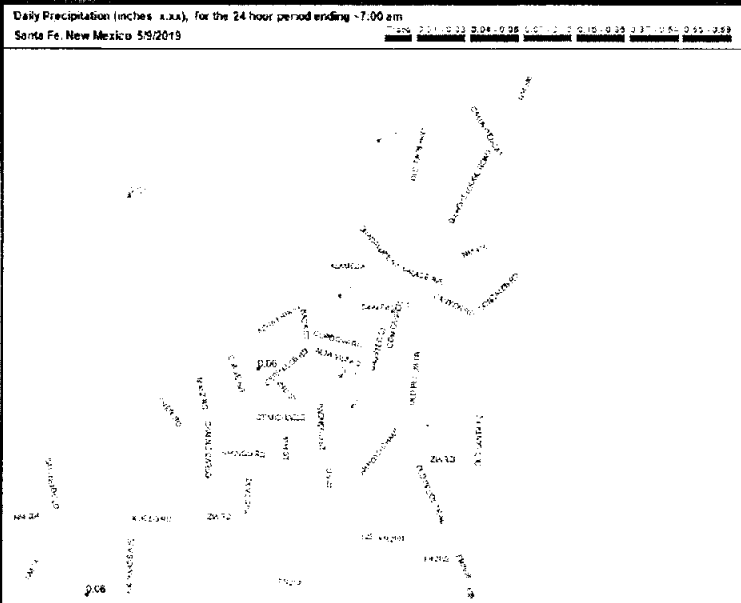
www.cocorahs.org

www.weather.gov/abq/cocorahs

[illegible][illegible]



Observations are immediately available in map and table form for the public to view.



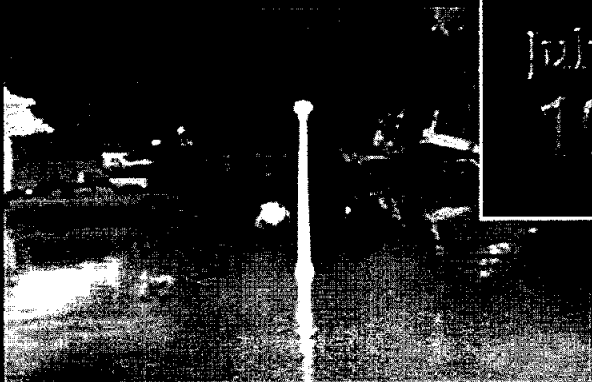
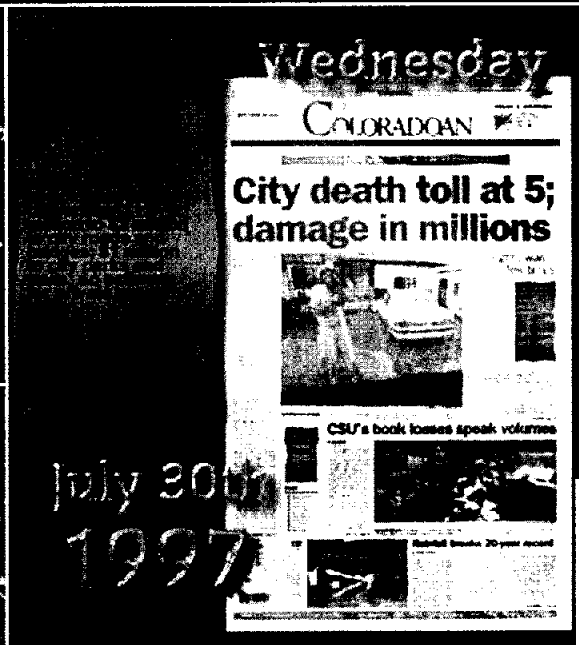
Currently, we have over 750 ACTIVE stations in New Mexico!



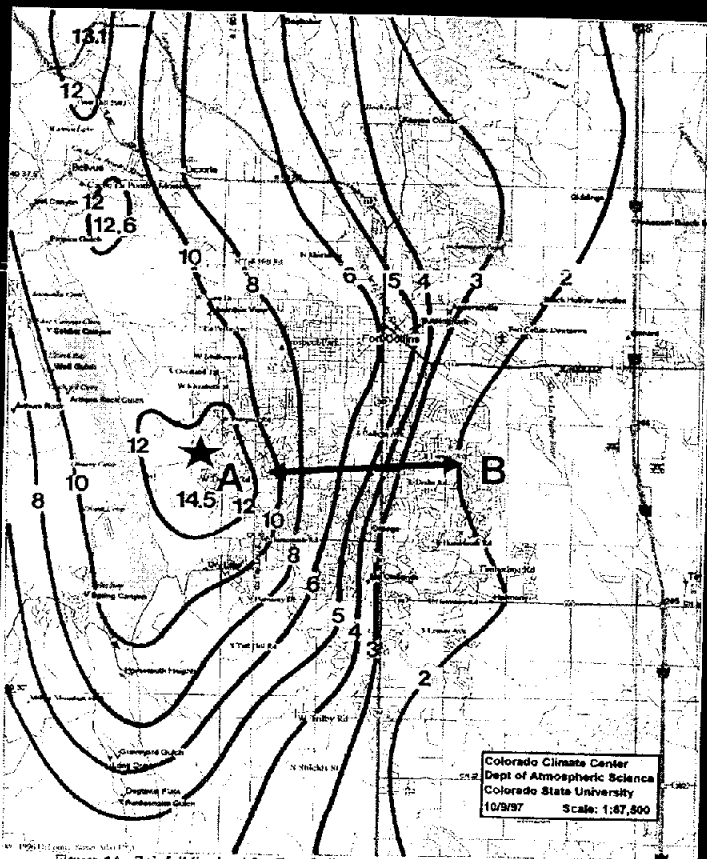
Photo: Virginia Waters

A short history of CoCoRaHS

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



The flood pointed out:



1. The extreme local variations in rainfall possible from convective storms

2. The important role individuals can play in measuring, mapping and reporting precipitation.

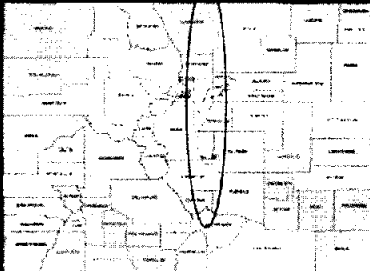
Distance between A and B = 5 miles

A = 14.5 inches

B = 2.0 inches

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

1998



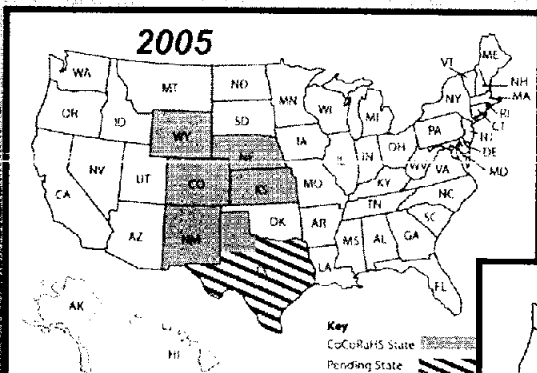
A few dozen volunteers
in Northern Colorado



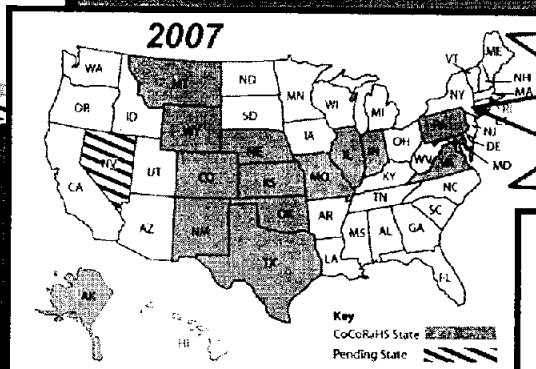
Nolan Doesken spreads the word around Colorado
asking for volunteers to measure rain.

Join Our Team of Precipitation Observers TODAY!

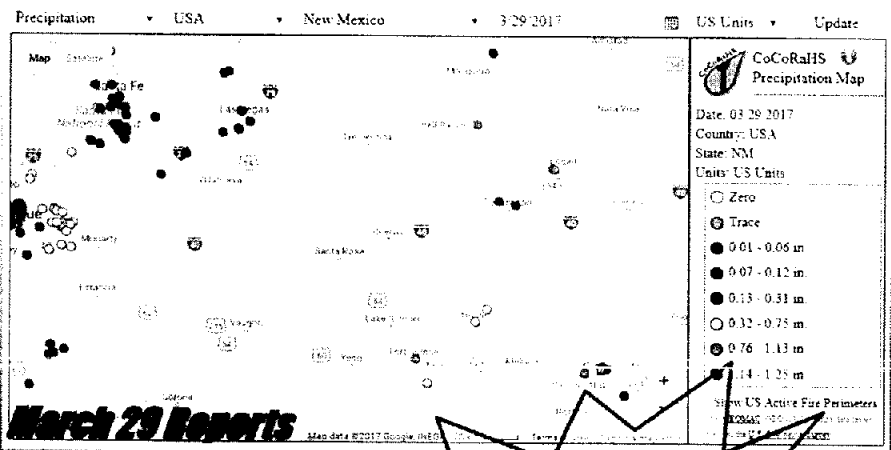
Visit cocorahs.org



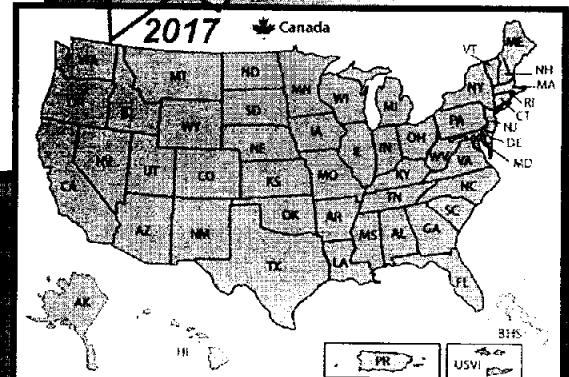
New Mexico was the
4th state to join the
network in 2005!



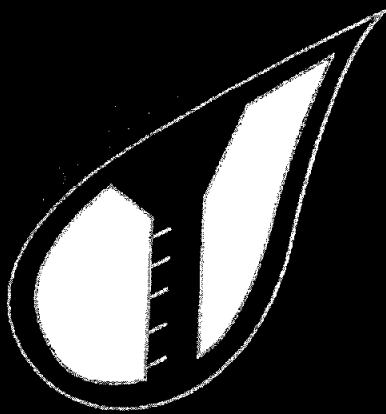
Today, volunteers from every state, Commonwealth
of Puerto Rico, U.S. Virgin Islands, Canadian
Provinces, and The Bahamas participate!



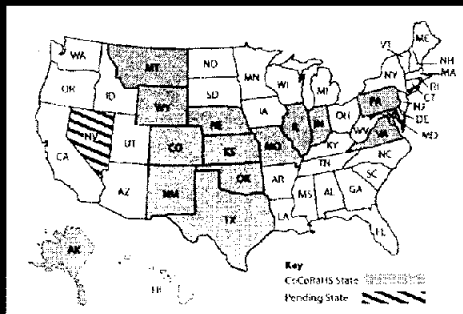
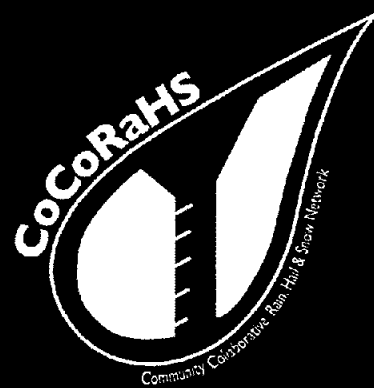
We especially
need volunteers
in NM!



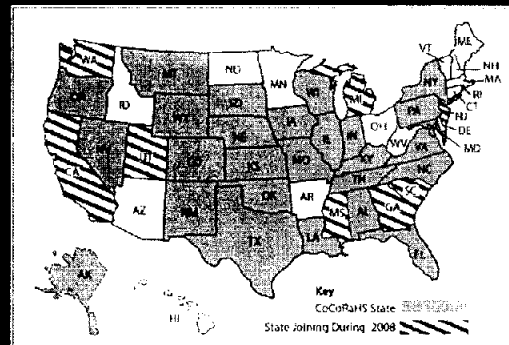
2007



2008



2,500 volunteers in 15 states



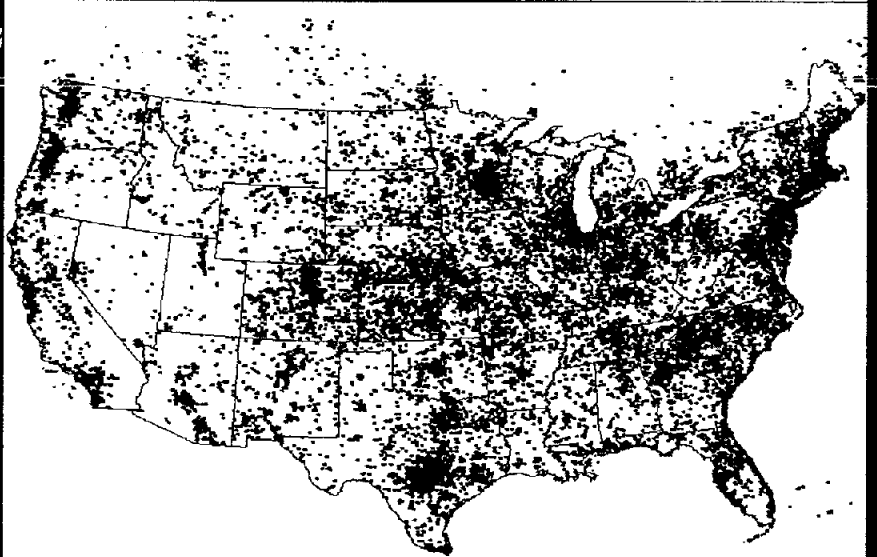
7,500 volunteers in 27 states

Today

CoCoRaHS

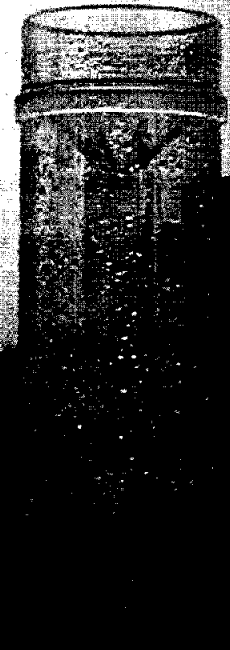
Community Collaborative Rain, Hail & Snow Network

Active Stations
USA



Nearly 20,000 volunteers in all 50 states

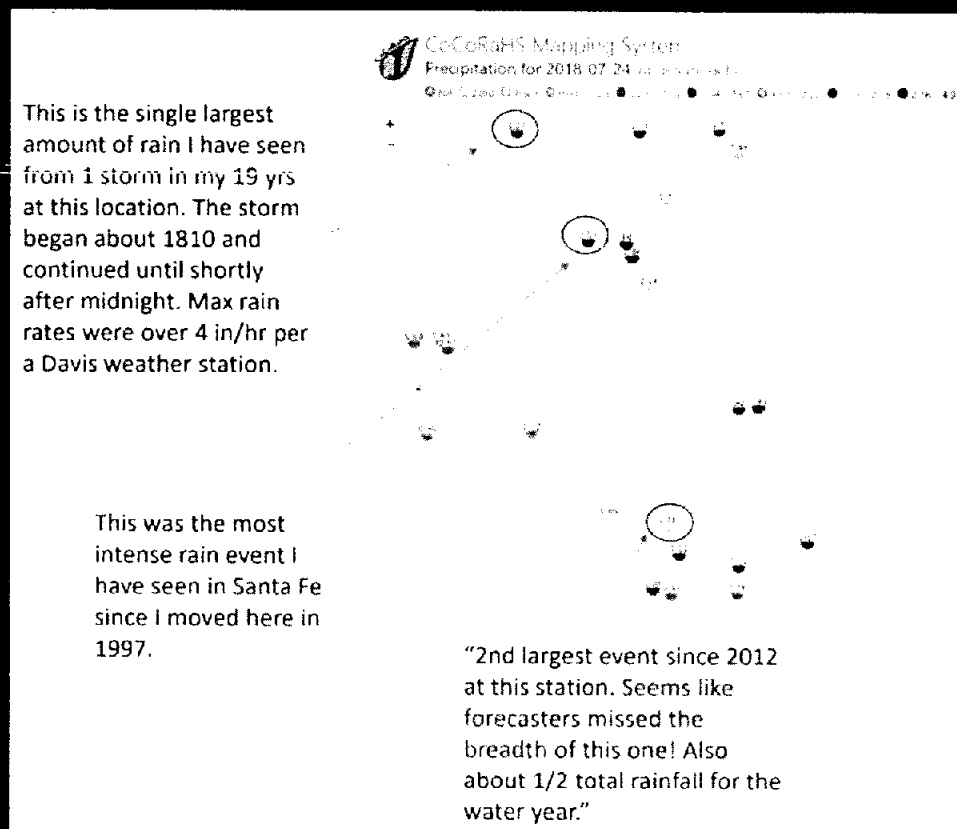
Why CoCoRaHS?

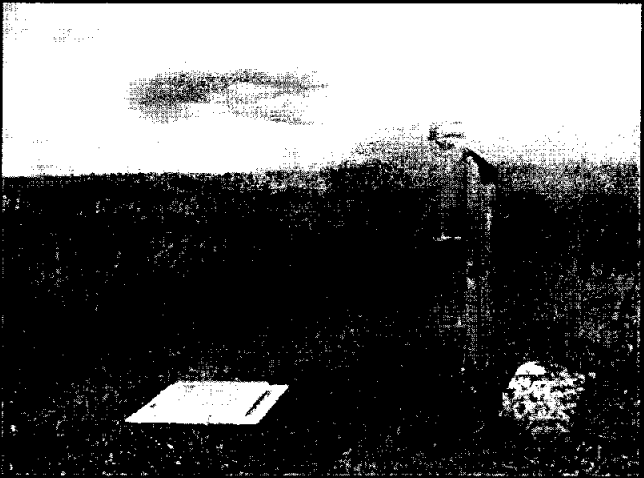


CoCoRaHS has quickly become the largest source of daily precipitation measurements in the United States

1) Precipitation is important and highly variable

Extreme precipitation events like this one below shows the importance of CoCoRaHS volunteer observations.





Rainfall can be extremely variable. With a dense network of rain gauges we hope to capture observations from that obscure storm.

2) Data sources are few and rain gauges are far apart

Airports serve as primary locations for collecting precipitation

National Weather Service Cooperative Observers (less and less each year)

CoCoRaHS observers contribute to more than 300 rain report each month



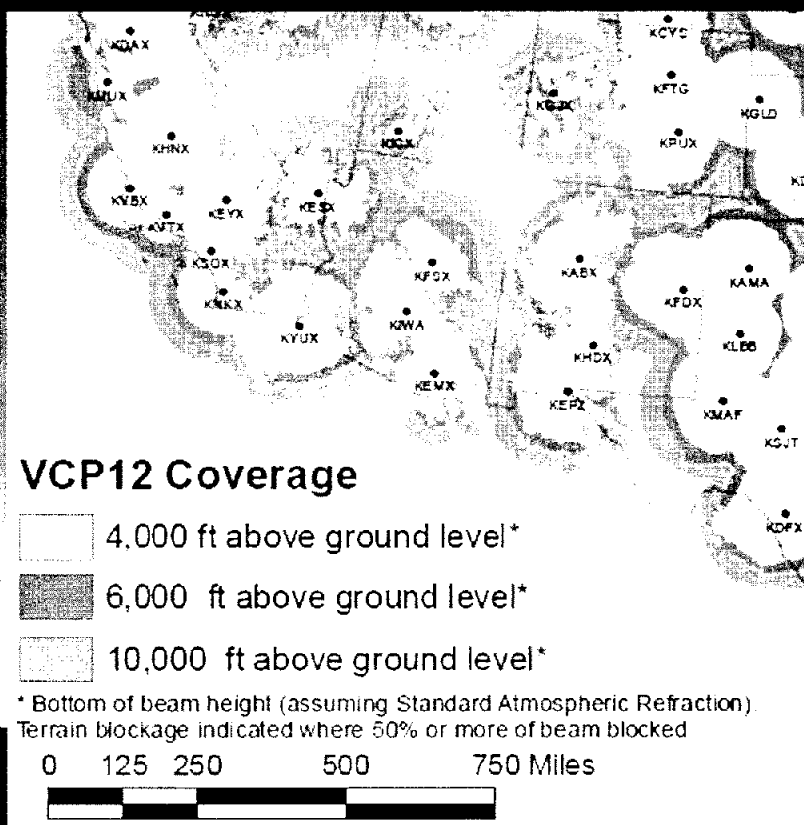
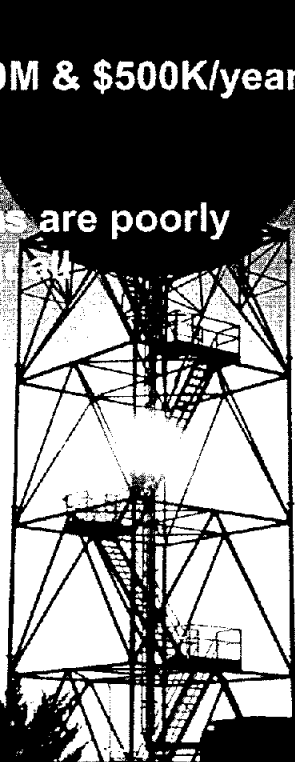
Weather stations in northwest New Mexico

Radar is a great tool but it doesn't cover everywhere

NEXRAD Weather Radar

Roughly \$10M & \$500K/year
to maintain

Several areas are poorly
covered, if at all



3)Measurements from many sources are not always accurate (especially snow)



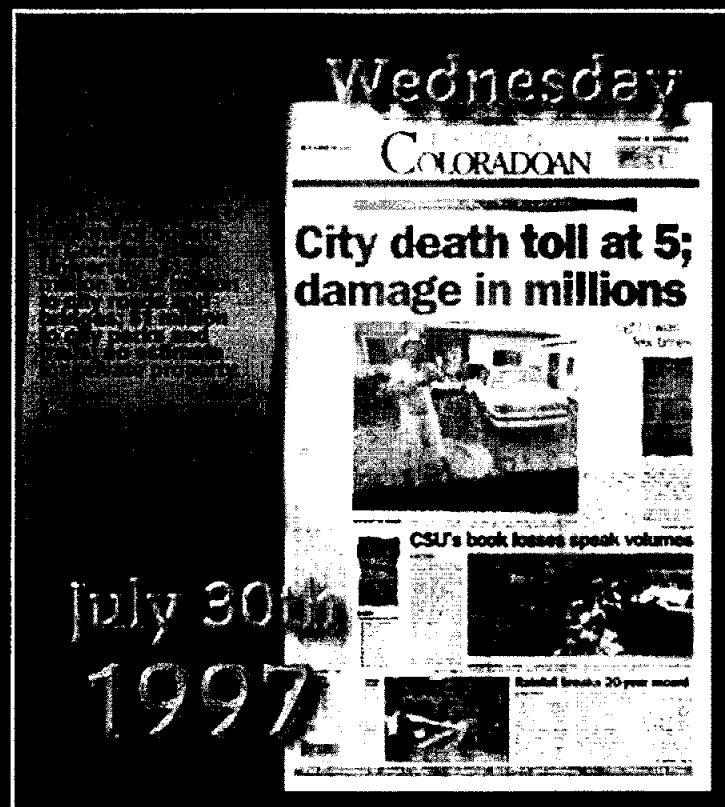
4)There is almost no quantitative data being collected about **hail**



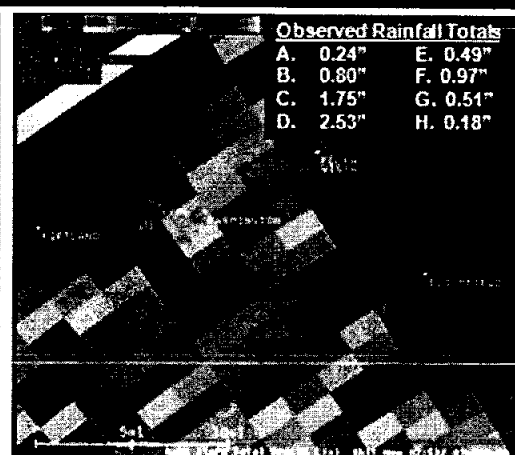
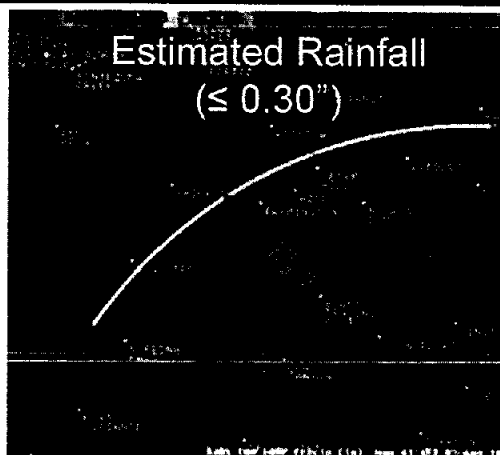
5) Storm reports can save lives

CoCoRaHS began after a flooding event in Fort Collins in 1997

CoCoRaHS volunteers reported 48-hr totals of up to 7.90"



August 1, 2010



Flash flooding at the San Juan Country Club in Farmington, NM on August 1, 2010.

ON PLAIN WASHING
 WHEN WEATHER SERVICE STATIONERS ARE
 ON THE JOB AND 1 1940
 NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS TOLD A
 PLAIN WASHING STATION
 CENTRAL SAN JOSE COUNTY IN MOUNTAIN VIEW AREA
 TELL SAN JOSE
 NATIONAL WEATHER SERVICE

[illegible]

Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am

Bernalillo County, New Mexico 7/25/2010

Trace 0.01 - 0.10 0.11 - 0.20 0.21 - 0.48 0.49 - 1.14 1.15 - 1.71 1.72 - 1.90

1.92" July 24, 2010, East ABQ

VABQ
C001-243100-
.NEW.XABQ.FF.W.0020.100724T2000Z-100724T2100Z/
0000.0.EP.000000T0000Z.000000T0000Z.000000T0000Z.000

UETIN - EAS ACTIVATION REQUESTED
ASH FLOOD WARNING
TIGUAL WEATHER SERVICE ALBUQUERQUE NM
6 PM MDT SAT JUL 24 2010

E NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A
FLASH FLOOD WARNING FOR...

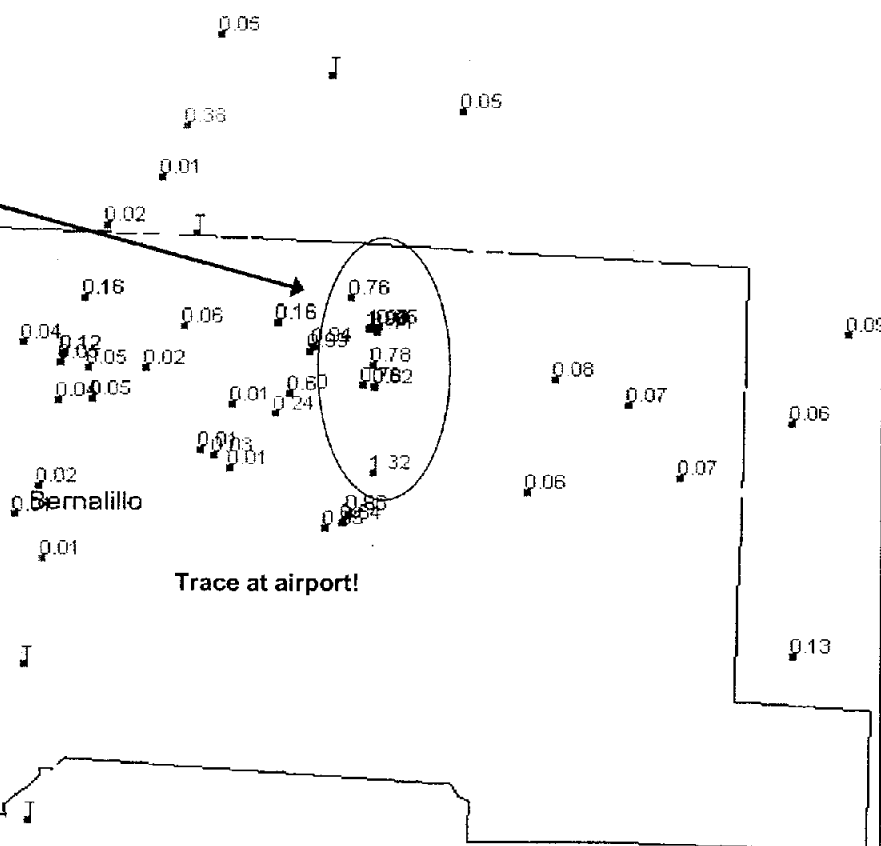
CENTRAL BERNALILLO COUNTY IN CENTRAL NEW MEXICO
UNTIL 300 PM MDT

AT 200 PM MDT...THE PUBLIC REPORTED VERY HEAVY RAIN FROM A
THUNDERSTORM OVER THE EAST SIDE OF ALBUQUERQUE. THE STORM
PRODUCING VERY HEAVY RAIN WAS NEARLY STATIONARY. RAINFALL
RATES WITH THIS STORM WILL APPROACH 2 INCHES PER HOUR.

CAUTIONARY/PREPAREDNESS ACTIONS...

TH LOCALIZED AND DISTANT HEAVY RAINFALL WILL CREATE SUDDEN AND
DANGEROUS FLOODS IN APPROXS AND OVER LOW WATER CROSSINGS.
POOLS...STREAMS AND NORMALLY DRY WASHES CAN BECOME RAGING CURRENTS
A MATTER OF MINUTES.

FLASH FLOOD WARNING MEANS THAT FLOODING IS IMMINENT OR OCCURRING.
YOU ARE IN THE WARNING AREA TAKE IMMEDIATE PRECAUTIONS TO PROTECT
LIFE AND PROPERTY.



A great example of CoCoRaHS making a difference

Bernalillo County, New Mexico 8/6/2010

Trace	0.01 - 0.08	0.09 - 0.16	0.17 - 0.39	0.40 - 0.94	0.95 - 1.41	1.42 - 1.58
-------	-------------	-------------	-------------	-------------	-------------	-------------

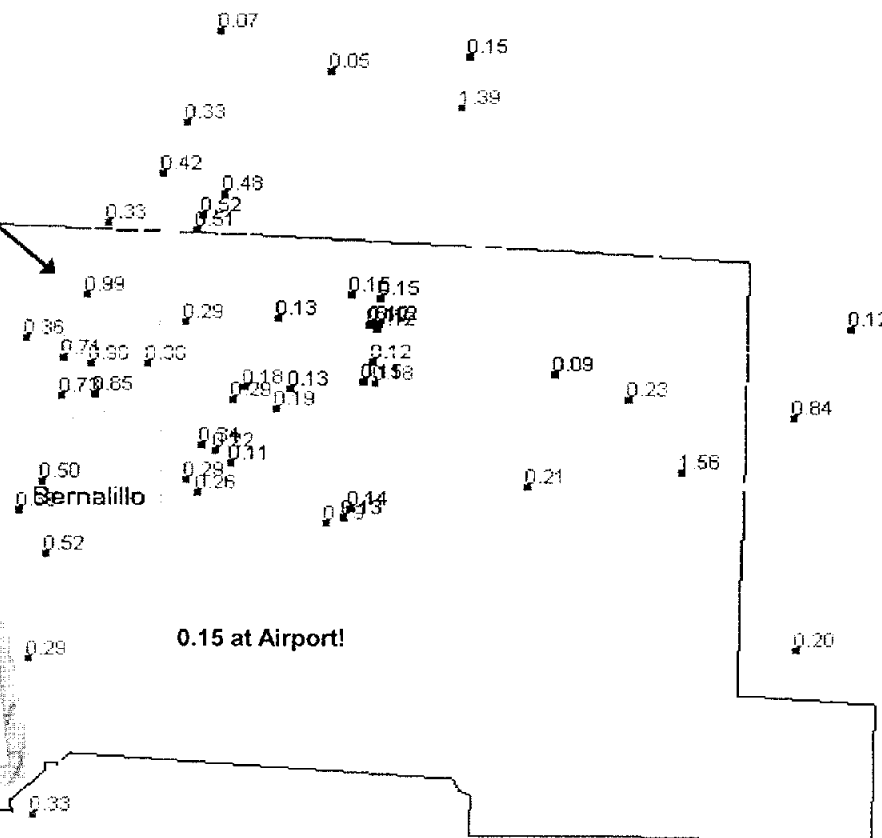
ATIONAL WEATHER SERVICE
68 PM MDT THU AUG 5 2010
HE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A

UNTIL 530 PM EDT

CAUTIONARY/PREPAREDNESS ACTIONS...

FLASH FLOOD WARNING MEANS THAT FLOODING IS IMMINENT OR OCCURRING.
YOU ARE IN THE WARNING AREA TAKE IMMEDIATE PRECAUTIONS TO PROTECT
LIFE AND PROPERTY.

0.15 at Airport!



Snow Data

CoCoRaHS

CoCoRaHS Volunteers measure both snowfall depth (new and accumulated), as well as the water content of the snow (SWE)

In some cities, there is
Approximately one CoCoRaHS
observer per sq. mile.

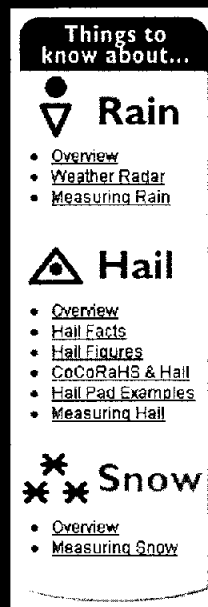
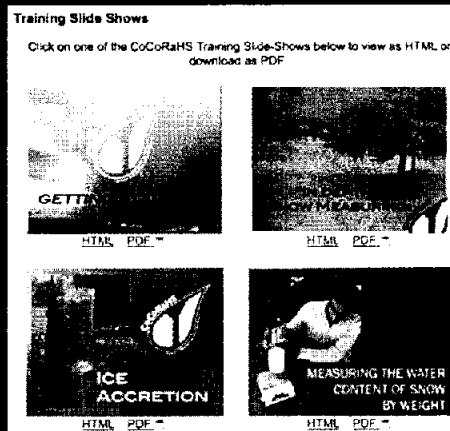
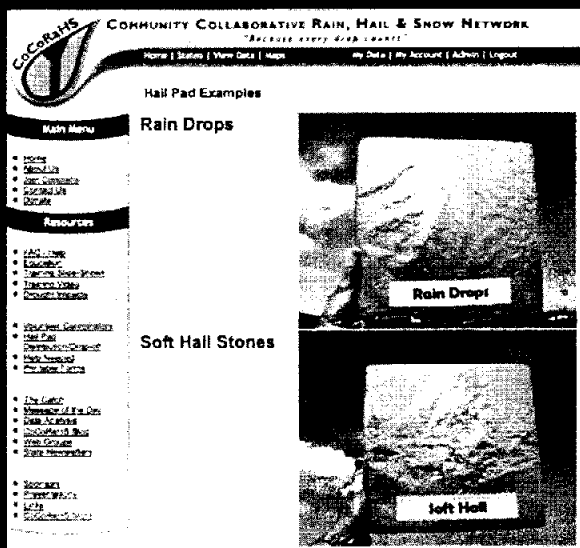


Hail Data

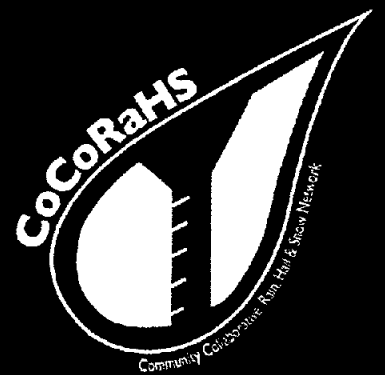
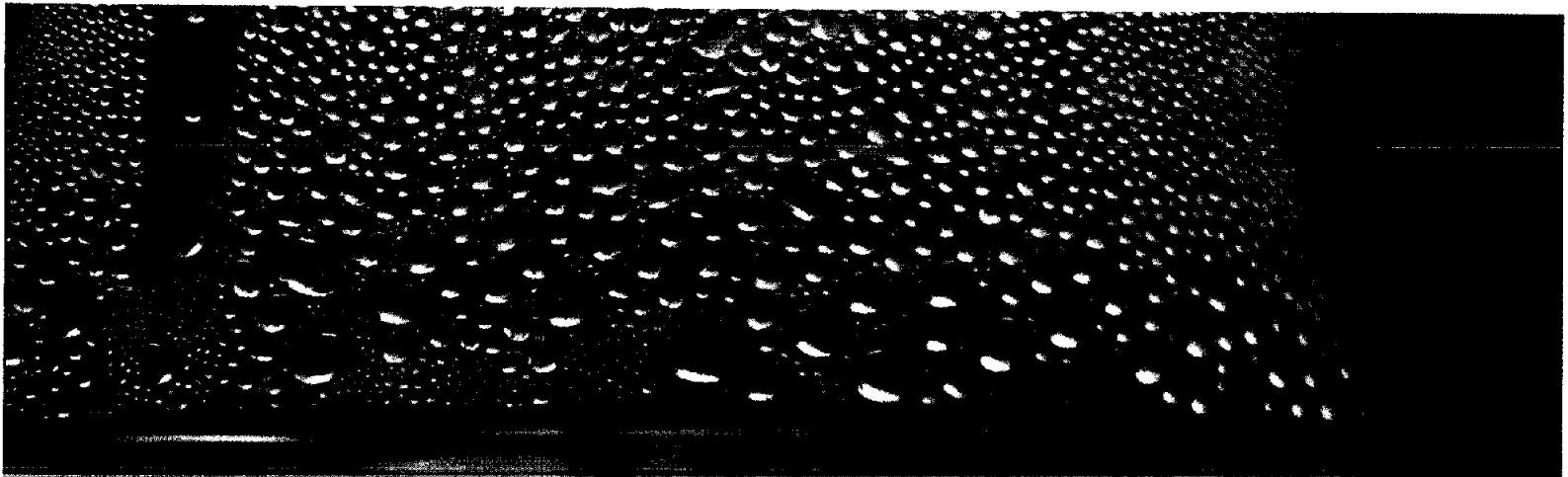


CoCoRaHS has become one of the largest repositories of hail data in the United States

Educational Outreach Opportunities

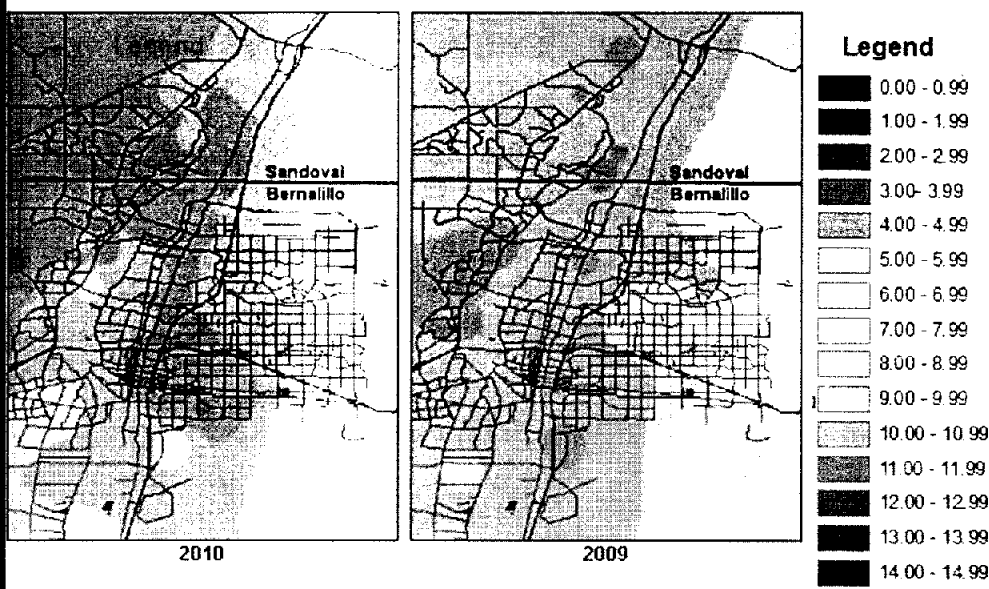


"Helping to provide the public with a better understanding of weather and climate"



Is CoCoRaHS data used? You bet !

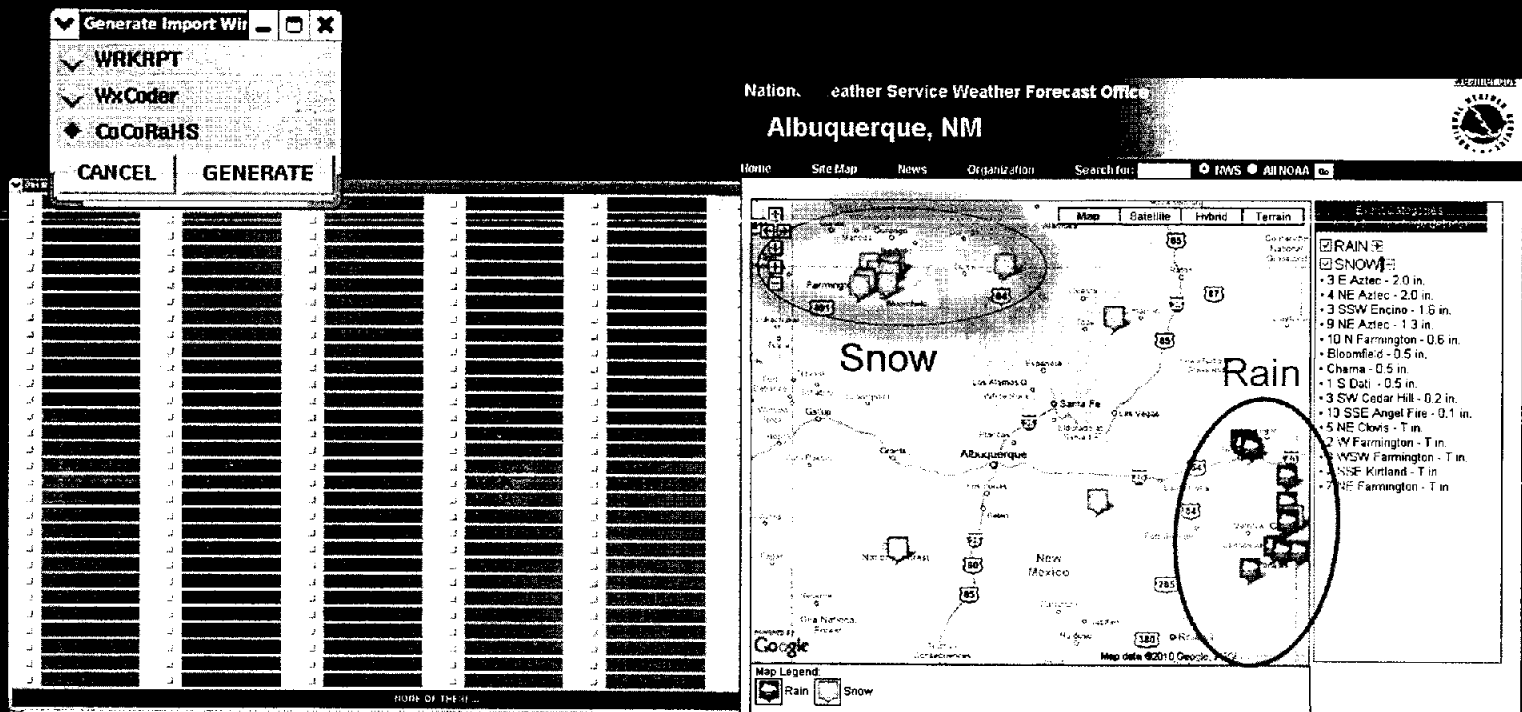
Summer Monsoon Comparison in Albuquerque Metro Area



“With CoCoRaHS it’s like increasing the number of pixels on your digital camera.

You get a much clearer picture of where precipitation did and did not fall!”

Near Real-Time Linked Directly on NWS Albuquerque Webpage → Media, Public



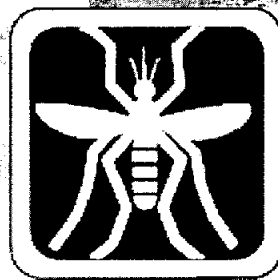
Data from CoCoRaHS observers in central/northern NM
automatically imported.

CoCoRaHS data is used by many

- National Weather Service
- Other Meteorologists
- Hydrologists
- Emergency Managers
- City Utilities
 - Water supply
 - Water conservation
 - Storm water
- Insurance adjusters
- USDA—Crop production
- Engineers
- Scientists studying storms
- Mosquito control
- Farm Service Agency
- Ranchers and Farmers
- Outdoor & Recreation

Teachers and Students

- Geoscience education tool
- Taking measurements
- Analyzing data
- Organizing results
- Conducting research
- Helping the community



Informal Partnerships with many organizations

GLOBE, CSMATE,
EARTHWORKS,
UCAR, COMET



Water and Power Utilities

National Phenology Network

NCAR

Federal and State
Government Agencies

Resource Conservation
And Development

NOAA, NWS

School Districts

TV Stations

Other Universities

Cooperative Extension:
4-H and Master Gardeners

Watershed protection organizations

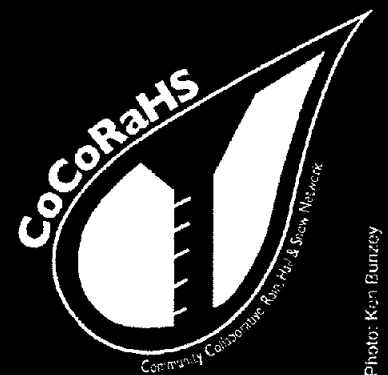


Photo: Kim Bunzey

CoCoRaHS has been successful!

Thank You!

kerry.jones@noaa.gov

Improved Drought Awareness

"Making citizens aware of how the lack of precipitation can impact they daily lives"

Drought Impact Report

Station Number: TX-BND-5

Station Name: Bandera 3.9 E

Start Date: 12/10/2010

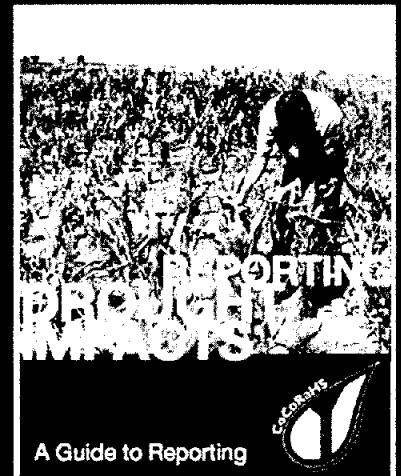
End Date:

Submitted: 12/10/2010 7:31 AM

Description:

Have curtailed outside burning. Native plants are suffering, large and small wildlife are attracted to any available water source, smaller ponds and creeks are drying up, level of Medina river (about 1/2 mile from property) is noticeably dropping. Local roads are deep in dust.

Drought Impact Categories: ☒ Fire : \$0.00
☐ Plants and Wildlife : \$0.00

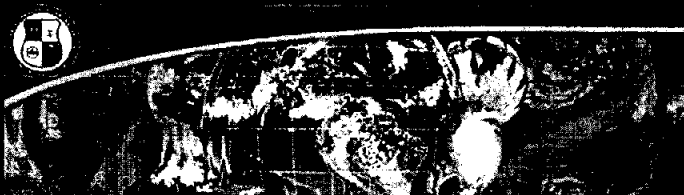


Water Supply and Water Quality

The effects of drought have significant impacts on our **water supply and water quality**.

Examples of drought-induced water supply and quality impacts include: Dry wells, water restrictions, changes in water rates, easing of water restrictions, increase in requests for new well permits, changes in water use in water use due to water restrictions, greater water demand, decrease in water quality, etc.

Citizens Reporting Drought Impacts



NexSat & CoCoRaHS

Used in ground truthing satellite precipitation measurements



GROUND TRUTH

[illegible]


http://www.nrlmry.navy.mil/htdocs_dyn/PUBLIC/nexsat/pages/conus/nexsat_conus.html

Interesting Familiar Subject

- Precipitation is something we are all familiar with. *“Ever notice how it often rains on one side of the street and not the other?”* *“Rain cancelled my picnic”*
- Rain, hail and snow not “new” concepts. They fall on everyone.
- Floods, drought, travel, gardens, it affects everyone.

Program laid out in simple laymen's terms

Website is attractive, professional and easy to use

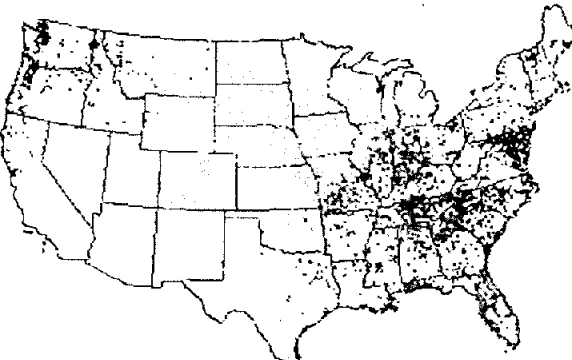


COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK
"Because every drop counts"

[Home](#) | [States](#) | [View Data](#) | [Maps](#) | [My Data](#) | [My Account](#) | [Admin](#) | [Logout](#)


Welcome to CoCoRaHS! "Volunteers working together to measure precipitation across the nation."

Has your community been
IMPACTED BY DROUGHT?
Tell us by submitting a "CoCoRaHS Drought Impact Report"




Daily Precipitation
(inches x.xx)
USA
3/22/2010

Trace
0.00 - 0.21
0.22 - 0.42
0.43 - 1.00
1.01 - 2.65
2.66 - 3.82
3.83 - 4.27



Join CoCoRaHS
[Click Here](#)

DONATE
CLICK HERE TO GIVE
TO COCORAHHS



**TRAINING
SLIDE-SHOWS**

Things to

Main Menu

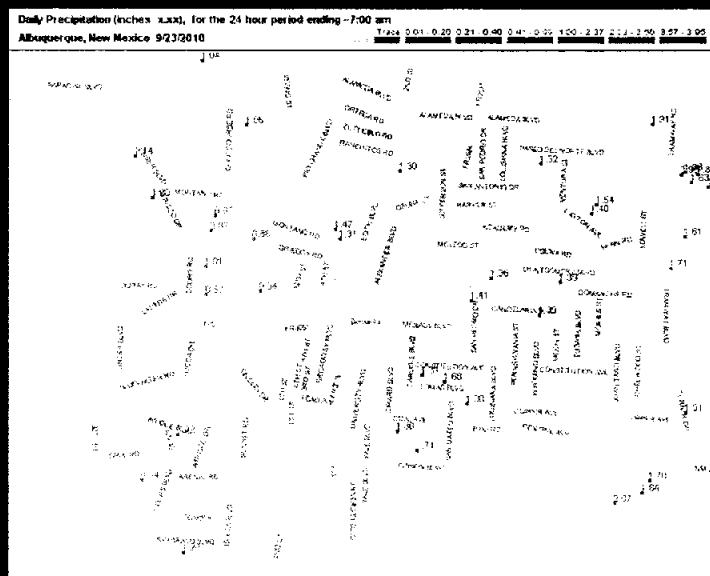
- [Home](#)
- [About Us](#)
- [Join Cocorahs](#)
- [Contact Us](#)
- [Donate](#)

Resources

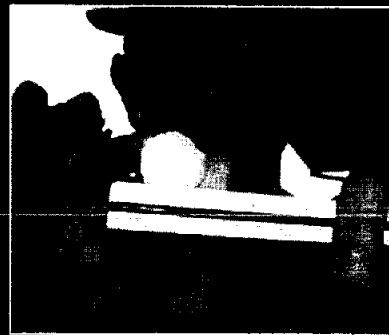
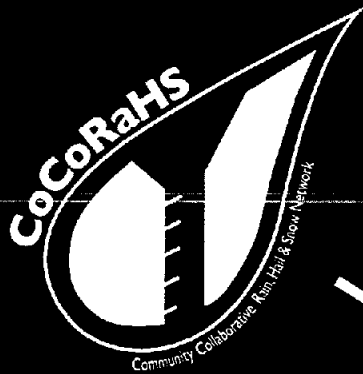
- [FAQ / Help](#)
- [Education](#)
- [Training Slide-Shows](#)
- [Drought Impacts](#)
- [Volunteer Coordinators](#)
- [Hail Pad](#)
- [Distribution/Drop-off](#)
- [Help Needed](#)
- [Printable Forms](#)

High quality data

- Training of volunteers in measurement and citing of gauges
- Daily QC by state/local coordinators



CoCoRaHS instantly provides the NWS with data for possible Severe Weather Warnings

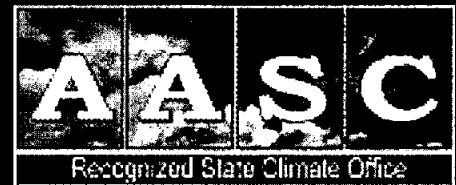
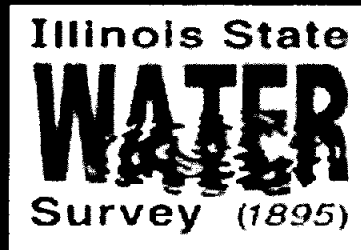


Severe Thunderstorm
Warnings issued



Collaboration with national and local agencies

- Over 200 volunteer state/regional coordinators – all weather, climate and water professionals w/ NOAA, BLM, city municipalities, state climate offices, etc.



National and local media coverage



Don't let your rain gauge go to waste. Turn it into a weather station. A rain gauge can be used to measure the amount of rain that falls in a given area. This information can be used to help predict the weather and to plan for future weather events.

Weather Now Maps Storm Center Weather Guys Weather and Climate Science Photo

Find a forecast: Enter Zip City Provided by

National network of volunteer weather observers snowballs

Sort by: Top | Date | Comments | ... | Page 1 of 1

By Doyle Rice, USA TODAY

As Tropical Storm Fay dumped record amounts of rain across Florida in August, hundreds of volunteer weather observers tracked the storm, feeding valuable data to forecasters at the National Weather Service. The observations helped the weather service keep track of life-threatening flooding as the storm moved across the state.

The observers are part of a fast-growing national network of about 12,000 volunteers in 39 states who measure rain, snow and hail each day, then record the amounts in an online database. The project, called the Community Collaborative Rain, Hail & Snow Network (CoCoRaHS), which began in Colorado, is in its 12th year.

"It's a great program that I'm passionate and excited about," says Melissa Griffin, co-state coordinator for the project in Florida. She says that even though the program was introduced in Florida just last year, 400 observers have already signed up across the state. "By having a dense network of dedicated observers, Florida CoCoRaHS was able to provide invaluable information during Tropical Storm Fay," Griffin wrote in an online report about the storm.

"Folks in Florida did a great job of measuring and reporting" a week of heavy rains, says project founder Nolan Doesken of Colorado State University-Fort Collins. Fay crossed Florida a record four times, killing 14 people and causing hundreds of millions of dollars in damage.

Henry Regas, the project's national coordinator, also of Colorado State University, says volunteers include "anyone who can devote five minutes a day to take a rain-gauge measurement and post the info online." Volunteers also must purchase a rain gauge, which costs about \$25.

FIND MORE STORIES IN: Texas | North Carolina | Ohio | Massachusetts | Arkansas | West Virginia | Idaho | National Weather Service | Vermont | Tropical Storm Fay

Regas says the volunteers act as a "term team" for the more established National Weather Service cooperative observer program, which has 11,000 volunteers who take a variety of measurements. That program started in 1890. The weather service also sponsors the CoCoRaHS program.

Volunteers not only measure excessive rainfall but "provide vital information in monitoring drought conditions," says Texas assistant state coordinator Bill Runyon of Maricopa, Texas. "We provide a lot of useful information about precipitation for the scientific community."

Regas says the information is used by hydrologists, emergency managers, city utility agencies, insurance adjusters, mosquito-control officers, ranchers, farmers, recreation agencies and teachers. "We're not just about data; 50% of the network is geared towards education," he says.

Says volunteer Dana Brackley of Boone, N.C., a self-described weather geek: "It's addictive. It's become a regular part of my day, and I love it."

Two states — Idaho and Ohio — have joined CoCoRaHS so far this year. The program hopes to expand into Massachusetts, Vermont, Arkansas and West Virginia this year, with a nationwide goal of 20,000 observers by 2010. Volunteers continue to be needed "everywhere and anywhere," Doesken says.

...of the ... and ...

Weather project engages backyard climatologists

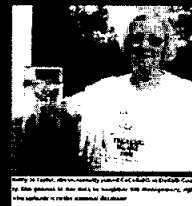
Volunteer weather enthusiasts in the High Country are helping researchers better understand the processes of precipitation in the region through the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS).

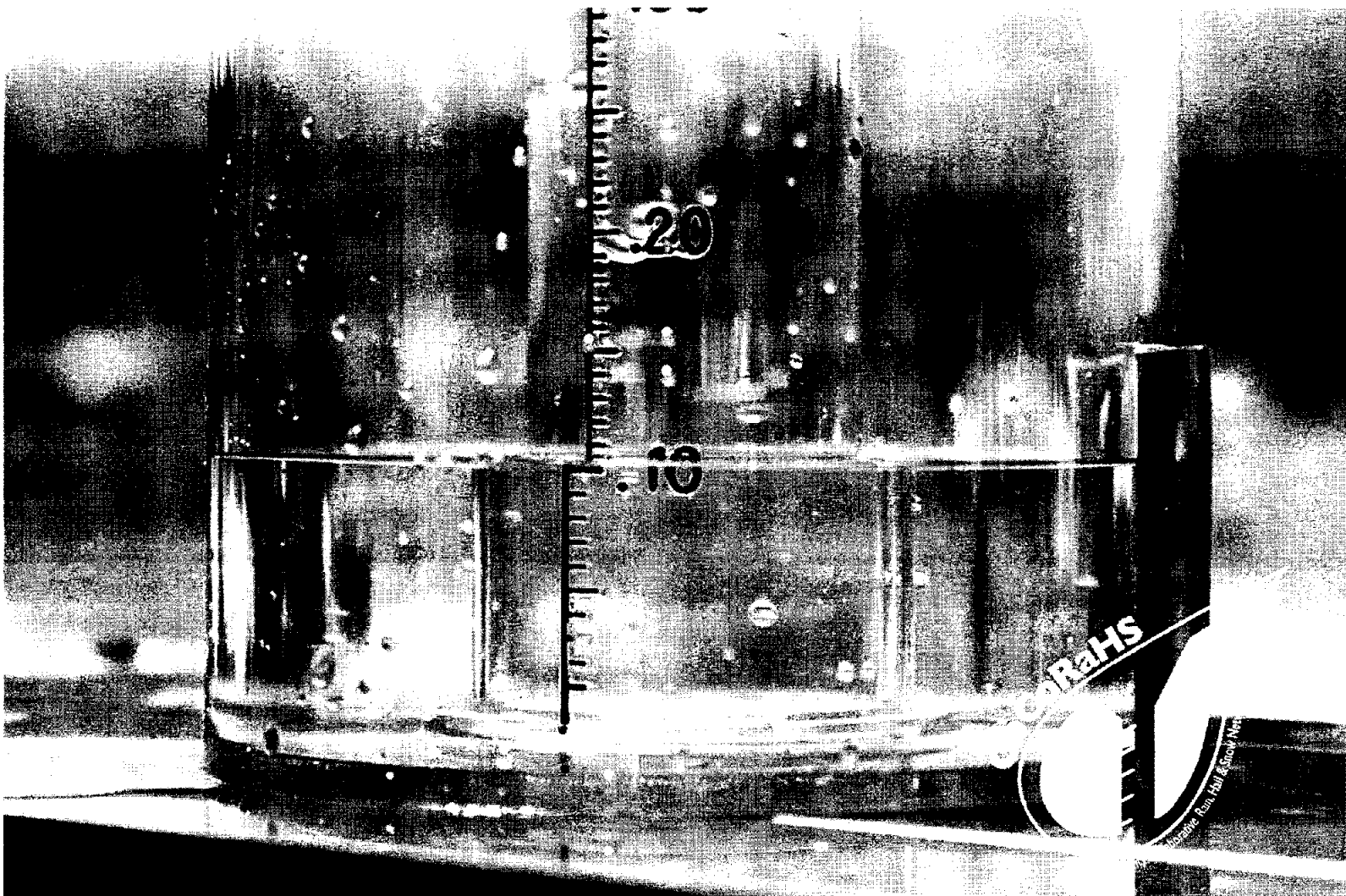
"It's very challenging to forecast precipitation in the mountains because of the complex topography," says CoCoRaHS national coordinator Henry Regas. "CoCoRaHS observers are located with the National Weather Service and their own's climate office."

Regas, along with Peter Smith in the Department of Geography and Planning, and Tim Bockheim of the Department of Physics and Astronomy, have recruited 17 CoCoRaHS observers in Watkins, Cochrane and several others in Perry and Lake counties.

"That also helps the National Weather Service and other forecasts better understand the processes of precipitation, ultimately improving weather forecasts," he said.

CoCoRaHS originated with the Colorado Climate Center at Colorado State University in 1998. It now includes more than 1,500 observers in 39 states. All CoCoRaHS observers are linked with the National Weather Service and their own's climate office.





Future Efforts . . . what lies ahead?



2011- 2013

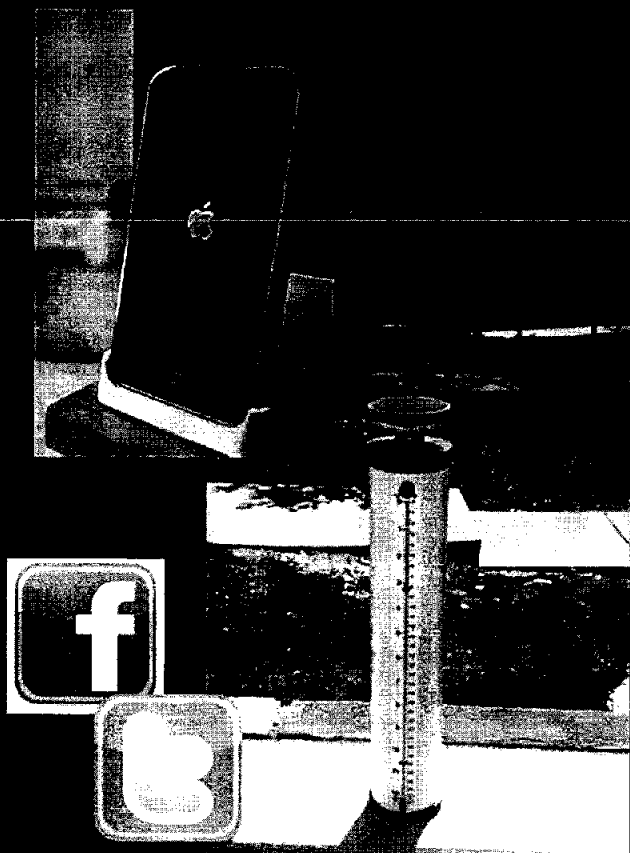


Additional 20-30,000 new volunteers

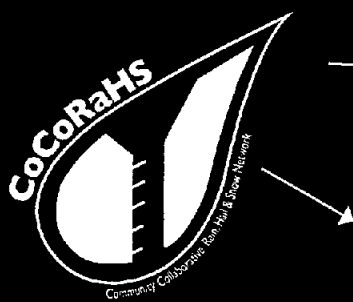
Expand our volunteer base to new
unreached audiences through
mobile device technology, social networking
and targeted recruiting efforts.

Addition of Evapotranspiration to our suite
of measurements. to improve water balance
monitoring we could help improve mesoscale
and regional scale modeling, as well as help
“ground truth” satellite measurements.

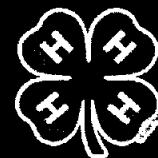
Enhanced training through video and
webinars to improve the connection between
Scientists and volunteers.



Continue to seek collaborators/partners



Project BudBurst



CoCoRaHS is a lowest common denominator that continues connections to scientists at universities, federal agencies and citizen-science networks all across the country.

Who knows what's
next . . .

*"Hey, there might be
water on the moon?"*



Contact Info

Leeann DeMouche, Water Resource Specialist, NMSU
cocorahs@nmsu.edu



5. B. Alan Hodges Handout

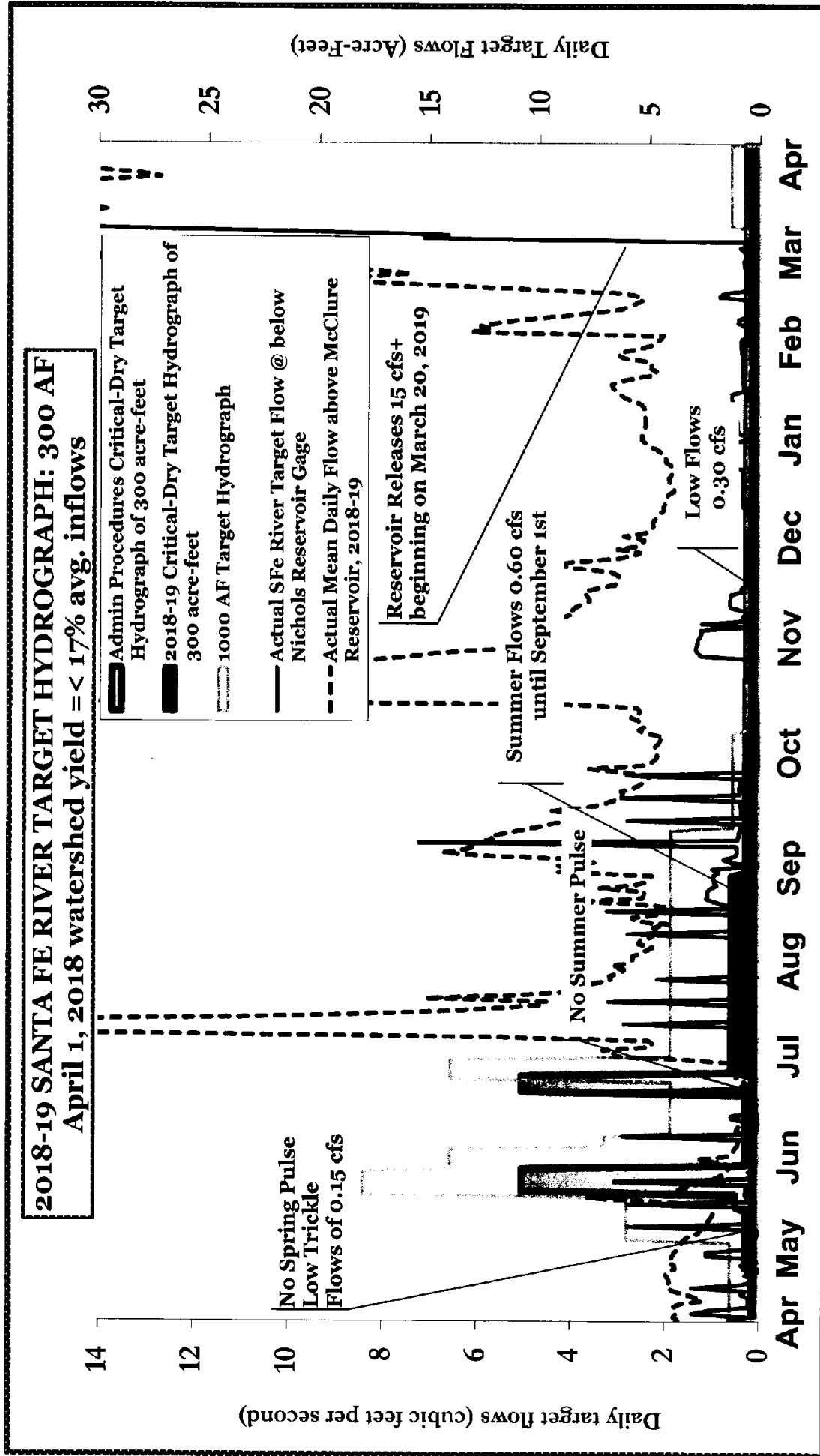


Exhibit B

8. matters from Comm. Fm Patarni brought in

May 9, 2019

Submitted by F.M. Patarni

For discussion at the River Commission meeting.

There is a discussion on Facebook here

<https://www.facebook.com/vince.kadlubek/posts/10156298719710922> which I find worrisome (some is about Santa Fe having plenty of water for growth).

*** Should the River Commission issue a statement about "Lie#10"?

Below is the main post (dated May 6) by Vince Kadlubek:

Below is a list of anti-housing falsities that The Neighborhood Network consistently spreads to our City Council in order to keep housing from being approved in our city.

Keep in mind that these lies have been disproven over and over again by experts, by actual data, but yet these lies still keep our elected officials from voting for new housing:

Lie #1: More housing will cause failing levels of new traffic

Lie #2: Affordable housing and rental housing will increase crime

Lie #3: More people living in Santa Fe will turn us into Portland

Lie #4: Renters ruin neighborhoods, because renters are criminals

Lie #5: Nobody wants to live in high-density developments

Lie #6: Santa Fe doesn't need market-rate rental housing

Lie #7: We don't even have jobs for people, why do we need housing?

Lie #8: New housing will destroy the beauty of our city

Lie #9: Our public schools can't handle more city residents

Lie #10: We don't have the water to sustain more residents

Lie #11: Everyone talks about all the young people in Santa Fe that need housing, but where are they?

Additions from Daniel Werwath:

Lie #12: if we don't build housing people won't move here

Lie # 13: affordable housing and infill developments lower property values

Lie # 14- its most ecologically sustainable not to build housing

Lie #15- density lowers quality of life in neighborhoods

Lie #16- all developers are motivated by greed

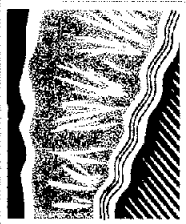
Lie #17- people who rent more than one unit on a property are slumlords

Lie #18- infill housing stresses existing infrastructure

Lie #19- homeownership > renting

We need to call The Neighborhood Network on their bullshit. They are actively fighting against the well-being of our people and the well-being of our city. And call out the elected officials who still listen to their lies.

Exhibit C-Inf.



**Santa Fe
WATERSHED
ASSOCIATION**

Adopt Update

MARCH + APRIL

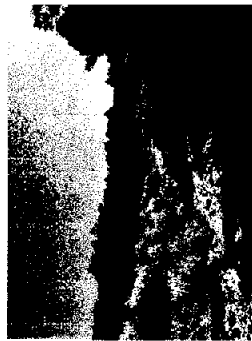
WE LOVE SNOW MELT

Snow is good for something besides sledding on after all! At the end of April, the Santa Fe River is still flowing as it once did in the good ol' days. The water is clear and the water is flowing all the way to the Rio Grande! Snow melt has traveled down many of our arroyos too. The Mascaras, Mora, and Cabra are just a few.



RIVER NEWS

The River has been running since late February. Has the trash stopped? Nope. Are our volunteers on top of it? Of course! The river has been visited 22 times by 248 volunteers! The City has taken 161 bags of trash to the landfill. At \$ 25 per hour we have all helped save the City \$ 6,200! Yep, our volunteers are the best!



SPONSOR NEWS

We'd like to welcome the homeowner's association of **Santa Fe Hills** to our growing team of Arroyo Sponsors. Thank you for supporting our program and caring for the **Arroyo Piedras!**



ARROYO NEWS

Ten visits have been made to the Pinos, several spots along the Chamisos, and the Mascaras.

In celebration of Earth Day, the Santa Fe Community Yoga Center volunteered some time on a Saturday morning to take care of the arroyo Pinos located next to their studio. These angel volunteers left the arroyo spotless!

MAY/JUNE

UPCOMING EVENTS

5.18.19 | WILD + SCENIC FILM FESTIVAL FUNDRAISER

Support us by coming to one of the best and brightest in environmental and adventure film. Tickets are \$15. For more info and ticket purchases, visit us at our website - santafewatershed.org

6.2.19 | SANTA FE RIVER SUMMER CLEAN + GREEN CLEAN UP 10:00 - 12:00

TO CLEAN OR TO GREEN

CLEAN - Join our community clean up to keep the river and the arroyos healthy. Meet us at our sign in table under the elms in Alto Park near the river. Sign in, get trash bags for the cleanup and enjoy light snacks before heading out to clean.

OR

GREEN - help improve our river habitat by volunteering to thin willows and elms along the river.

SF River + Arroyo cleanup totals = 2 months

ARROYO REACHES : 10*

HOURS : 230*

BAGS : 167*

VOLUNTEERS : 185*

RIVER REACHES : 25*

www.santafewatershed.org

820-1696

Santa Fe, NM 87505

1413 Second Street Suite # 3

Santa Fe Watershed Association