CITIZEN SCIENCE CONDITION MONITORING
One of 11 NOAA-funded *Regional Integrated Sciences and Assessments*

CISA works to be a regional resource for a variety of stakeholders to incorporate climate information into
- water and coastal management
- public health
- related decision making processes
• CISA’s Core Focus Areas
  • Drought
  • Climate and Watershed Modeling
  • Coastal Management
  • Health
  • Adaptation

• CISA Partners
  • Southeast Regional Climate Center
  • NC Sea Grant
  • SC Sea Grant Consortium
  • NC & SC State Climate Offices
  • Federal, State, and Local Agencies
  • Private Sector
  • Non-Governmental Organizations
National Partners

- Community Collaborative Rain, Hail & Snow Network (CoCoRaHS)
- National Integrated Drought Information System (NIDIS)
- National Drought Mitigation Center (NDMC)
The Project!

- Improve understanding of drought impacts and connect with decision makers
Drought Impacts in South Carolina

- Fire Risk
- Water Quality
- Plant & Animal Species
- Water Quantity
BUT….We aren’t in a drought!

U.S. Drought Monitor
South Carolina

May 27, 2014
(Released Thursday May 29, 2014)
Valid 8 a.m. EDT

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Nothing</th>
<th>D0-D4</th>
<th>D1-D4</th>
<th>D2-D4</th>
<th>D3-D4</th>
<th>D4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>5/27/2014</td>
<td>100.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Last Week</td>
<td>5/20/2014</td>
<td>100.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>3 Months Ago</td>
<td>2/25/2014</td>
<td>100.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Start of Calendar Year</td>
<td>12/31/2013</td>
<td>96.25</td>
<td>3.75</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Start of Water Year</td>
<td>10/1/2013</td>
<td>93.41</td>
<td>6.59</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>One Year Ago</td>
<td>5/28/2013</td>
<td>100.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Intensity:
- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought
Weekly Condition Monitoring

Connecting weather and climate with the environment

• To better understand the impacts of drought on plants, animals and people, it is very helpful to monitor conditions regularly, whether the weather is wet OR dry.

• Your knowledge about the local environment and how weather influences it can reveal much more than can be learned from just recording daily rainfall alone.
Weekly Condition Monitoring

Connecting weather and climate with the environment

- This type of regular monitoring can help to better identify drought impacts at the onset, rather than once they have become more severe.

- It can also help determine when the impacts of drought begin to subside and conditions begin to recover.
Using Existing Tools Developed by CoCoRaHS

CoCoRaHS’s main focus is to provide quality precipitation data & education opportunities to help the public better understand weather and climate
CoCoRaHS observations are used by:

- Nation Weather Service
- Other Meteorologists
- Hydrologists
- Emergency Managers
- City Utilities
  - Water Supply
  - Water Conservation
  - Stormwater Management
- Insurance Adjusters
- USDA – Crop Production
- Engineers
- Scientists studying storms
- Mosquito Control
- Farm Service Agency
- Ranchers and Farmers
- Outdoor & Recreation Businesses
- Emergency Managers
- Teachers and Students
  - Geoscience Education Tool
  - Taking Measurements
  - Analyzing Data
  - Organizing Results
  - Conducting Research
  - Helping the Community
Here’s how you can help…

• First
  • Sign up to be a CoCoRaHS Observer!
    • www.cocorahs.com

• Don’t forget to order your OFFICIAL CoCoRaHS rain gauge (about $30)

• Sign up by Monday, June 9th to win a free gauge!
Setting Up Your Equipment

Location is the key to good data!

- Places NOT to place your gauge:
Setting Up Your Equipment

Location is the key to good data!

- Places NOT to place your gauge:
Setting Up Your Equipment

Location is the key to good data!

Avoid anything that would artificially increase or decrease your catch

Example: a solid fence
Setting Up Your Equipment

Location is the key to good data!

- Away from any obstacles such as trees or buildings
- 3 to 5 feet off of the ground
- Make sure the gauge is level
- Place the mouth of the gauge above the top of the post to reduce rain splashing into the gauge.
Next: Begin Taking Daily Rainfall Measurements

Aim for Accuracy and Consistency

- Try to read your gauge and record your measurement at the same time each day.

- 7:00 a.m. is the preferred observation time, but anytime is ok as long as you are consistent.

- Your data will appear on the CoCoRahS precipitation map a few minutes after you enter it each day.
Your Most Common Measurements

When only a drop or two wet the gauge, record “T” for trace.

Between “T” and “one tenth” (0.10) of an inch.
Rainfall Measurement Decimal Placement

- Use 2 decimal places

- Be careful when recording your measurement – there’s a BIG difference between 0.40” and 4.00” of rainfall!

- Don’t Round Up – if you measured 0.98”, do not record 1.00”
Recording More Than 1.00” of Rain

• Your gauge will hold 11.00” inches of rainfall

• The inner tube holds 1.00” and the outer tube holds 10.00”

1. Pour out the first inch from the tube and note the 1.00” on a piece of paper

2. Pour the remaining water into the inner tube and note that measurement on a piece of paper. Repeat this step until all of the water has been measured.

3. Add up all of the measurements to get to total rainfall for that day.
Entering Your Data on the CoCoRaHS Website

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

CoCoRaHS WxTalk Webinar Series

7,123 daily precipitation reports received today as of 8/20/2013 12:22 PM EDT

Daily Precipitation (inches x xx)
USA 8/26/2013

- 0.0
- Trace
- 0.00 - 0.10
- 0.11 - 0.35
- 0.36 - 0.90
- 0.91 - 2.15
- 2.16 - 3.22
- 3.23 - 6.77

Rain
Hail
Snow
What to do when you travel…

My Data Entry: Multi-Day Precipitation Report Form

- Station Number: SC-RC-51
- Station Name: Columbia 6.6 SE
- First day of accumulation period. This day should be one day after your last report.
- Date the rain gauge was emptied.
- Time the rain gauge was emptied.
- Yes ☐ No ☐ Report was taken at registered location?
- Multi Day Precipitation (in inches), or T for trace, or NA for unknown.
- Total Depth of Snow on Ground (in inches)
- Core Precipitation (in inches)

Notes
And remember....

- Reporting ‘zero’ is just as important as reporting rainfall!

Zeros are Heroes!
Once a week enter your Condition Monitoring Report

Connecting weather and climate with the environment

- CoCoRaHS offers a ‘condition monitoring’ checkbox on the Drought Impact Report form so that you may enter information at regular intervals to share how things look in your area.

A **Condition Monitoring Report** allows a regular observer to describe normal conditions that are likely to change during drought, to create a basis for comparison. Please check Condition Monitoring Report if that’s what you are submitting. If you aren’t sure, please leave it unchecked. [More information on categories of drought impacts and reports.](#)
Weekly Condition Monitoring

Tell Us What You Know

- Everyone is an bit of an expert in one way or another. You might be a business owner, gardener, fisherman, or birder.

- Use your local expertise to share information about those things which are of most interest to you.
## Ideas for Weekly Condition Monitoring

<table>
<thead>
<tr>
<th>Items</th>
<th>Questions to Consider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plants</td>
<td>Are plants lush and green, or are they droopy and dying? Have you noticed faster or slower plant growth?</td>
</tr>
<tr>
<td>Animals</td>
<td>Do you see animals visiting water sources more regularly, like birds at the birdbath? If you are a fisherman, have you seen any differences in the type and amount of fish you catch? Are the crabs or shrimp further upstream?</td>
</tr>
<tr>
<td>People</td>
<td>Are businesses affected by the weather at all, such as landscaping companies, garden centers, roadside markets, or seafood markets? Are people having to stay inside more because of hotter and/or drier days? Are there any seafood consumption restrictions?</td>
</tr>
<tr>
<td>Water Quality</td>
<td>Is the water in lakes, ponds, or waterways cloudy or murky? Do you see an increase in the amount of plants growing in ponds? Have you noticed any differences in the taste or color of your drinking water?</td>
</tr>
<tr>
<td>Water Supply</td>
<td>Are water levels in rivers or tidal creeks lower or higher than normal? If there are any lakes or ponds in your community, are the water levels lower or higher than normal? Have any water bodies flooded recently? Are there any water restrictions in place, such as whether or not you can water your lawn or wash your car?</td>
</tr>
<tr>
<td>Soil Conditions</td>
<td>Is the soil moist or is it dry and cracking? How does the soil look or feel in your lawn, garden or community?</td>
</tr>
<tr>
<td>Unique local conditions</td>
<td>Consider which plant and animal species or businesses might be unique to your local community. Has too little or too much rain impacted these species or the local economy?</td>
</tr>
</tbody>
</table>
Sample Condition Monitoring Report

• May 26th ~ Beaufort County
  • This past week has been hot and dry. The only rain received was 0.16” last night. It has been sunny and dry all week with temps in the high 80’s and low 90’s. On Thursday and Friday, the temperature reached 97 at the nearby SAV airport. Gardens and fresh sod need constant attention. Lagoon levels are down about 3” below the drain grates. A nearby transformer exploded on Saturday setting underbrush and nearby shrubs on fire with ease further demonstrating the dryness and ease with which fires could start.
How to Enter Your Weekly Condition Monitoring Report

1. Log into ‘My Data’ on the CoCoRaHS website
2. Select ‘Drought Impact Report’ from the ‘Enter My New Reports’ panel
3. Enter the date you are submitting your report. You do not need to enter an end date.
4. Be sure to select the ‘condition monitoring’ checkbox
5. Enter a detailed description of current conditions in your area.
6. Select the categories that correspond to any specific conditions you are monitoring. You do not need to enter a dollar amount.
7. Click the ‘Submit Report’ button
Recap of Volunteer Responsibilities

- Sign up to be a CoCoRaHS volunteer & purchase your official rain gauge
  - Send your CoCoRaHS station name and number to Amanda once you receive it from your regional CoCoRaHS coordinator

- 1 year commitment to the project

- Daily Rainfall Measurements
  - Use the Multi-Day Accumulation Form (when you’re out of town)

- Weekly Condition Monitoring Reports
  - Report as regularly as you can – once every two weeks is better than not at all!

- Tell us what you think!
  - 3 very brief online surveys over the course of the year
We’ll stay in touch!

• Monthly newsletter
  • http://www.cisa.sc.edu/CoCoRaHS.html

• Blog posts

• Contact us any time!
Thank You!

Questions or Comments?

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