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Dragonfly Gazette

GEORGIA PROJECT WET Environmental Protection Division

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Weather or Not?

Have you noticed how strange our weather has been recently? Just over two weeks ago it was in the mid-70's, unusually warm for the month of January. Last week, we had over 5" of rain around metro Atlanta, and in the mountains of north Georgia, they actually had snow! Rivers and streams are running full as the result of all of us having so much precipitation in such a short period of time. Plants that should be dormant at this time of year like native azalea and olive are blooming, while others are budding and beginning to leaf out. This week, the record cold weather is making the news! From Alaska to the Gulf of Mexico, oddities exist, and we can't help but wonder if this is or is

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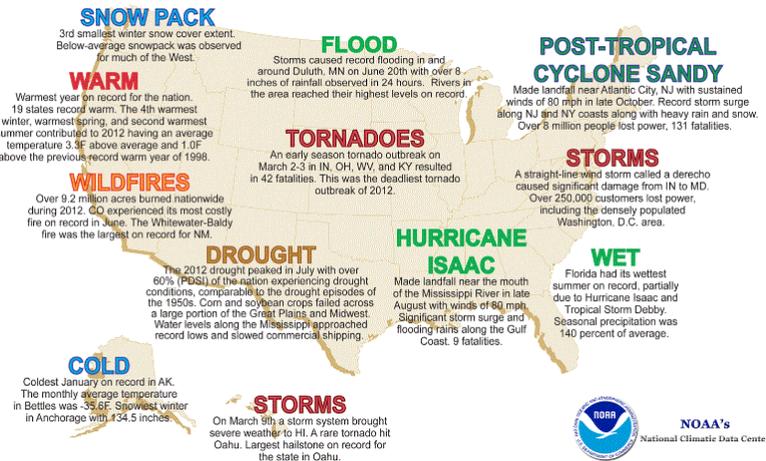
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not climate change.

US Weather Events in 2012:

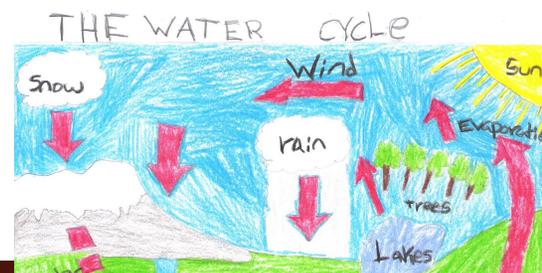


What is this all about?

You might think about climate change as the redistribution of water on Earth. The Earth still has the same amount of water it has always had, yet with changes in weather systems some areas could become wetter while others could dry up.

Around the world, warmer temperatures have been recorded and changes in weather patterns associated with increased temperatures have been observed. Changes in precipitation and air currents seem to coincide with the warmer temperature, which makes sense when we think about the water cycle.

We know as the air temperature increases, so does the rate of evaporation. As



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more

evaporation occurs, clouds begin to form as the result of condensation,



until they can hold no more water and it begins to rain (or snow). The increase in precipitation often leads to flooding, especially in areas that have previously been bone dry and cannot absorb it as a result.

In the ocean, warmer water temperatures are responsible for melting glaciers and ice caps, as well as for supplying energy to thunderstorms, adding to their intensity as they become tropical storms and hurricanes.



Geologist and photographer Dr. Taz Tally of Homer, Alaska recently stated, "Warmer temperatures associated with a change in the climate are very evident here in Alaska. As coastal water temperatures increase, the coastlines are expanding, alpine and coastal glaciers are retreating, the extent of permafrost has been reduced, and arctic sea ice is less expansive and much thinner."

Where will all of that water go?

Based on the data accumulated from around the world, scientists have created "models" on which they can predict what effects melting this enormous quantity of ice will have.

Models show an increase in sea level of about one foot during the next decade in coastal Georgia. In other areas in the Southeast, especially those built at or below sea-level, the results could be

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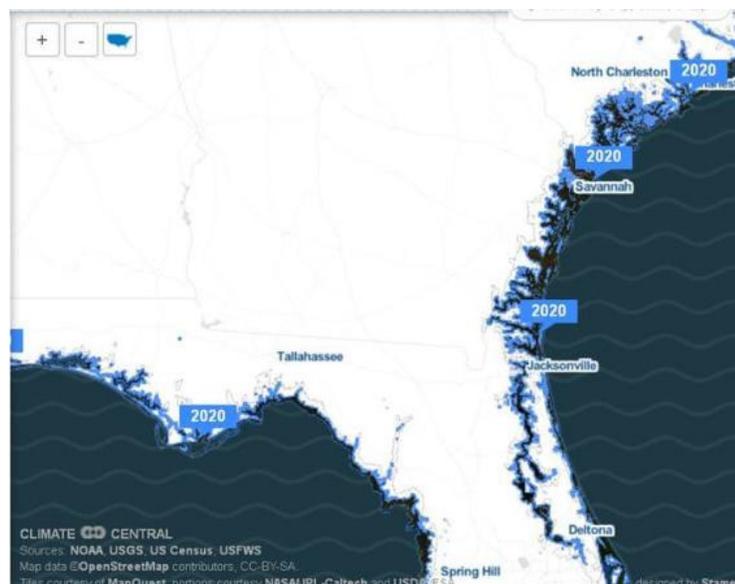
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catastrophic.



Surging Seas- predicting sea level rise

What can happen away from the coastline?

In many areas where there were once fields and forests, there are now parking lots and highways, countless acres of impervious surface created by urban development. During storm events, vegetation that once shaded these areas and slowed down the passage of water across the surface have been replaced by concrete and pavement, creating a virtual raceway for storm water. The increased volume and velocity of runoff during storm events scours soil and pollutants including chemicals, debris and excess nutrients. These pollutants, in conjunction with increases in water temperature caused by the heat island effect, can negatively impact local water quality, causing algal blooms and increasing the threat of waterborne diseases. Habitat is altered, leaving aquatic organisms buried in silt and may eventually disrupt the aquatic biodiversity of the area.

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Sweetwater Creek overflows I-20 near 6 Flags Theme Park

Yikes! What can we do?

Here in Georgia the redistribution of water is as likely to cause frequent droughts as it is to cause floods. How we address the issues of drought and flooding will undoubtedly improve the chance that we can make a difference as it relates to quality of life for future generations. **Of course, we believe education is the key!**

Try connecting these Project WET Activities to the climate change discussion you have with your students:

Earth Systems: Atmospheric: Weather:

- ***Blue River** – p.135 – Students simulate movement of water through a watershed based on weather and climate
- ***Nature Rules** – p. 277 – Students discuss the unpredictability of water-related disasters caused by extreme weather episodes or longer-term conditions
- ***Rainy Day Hike** – p. 169 – Extensions - Use Google Earth GIS to access information on rainfall, stream flow, etc.
- ***The Thunderstorm** – p. 209 – Students monitor and record "precipitation"

Earth Systems: Atmospheric: Climate:

- ***My Water Address, Take Action!** – p. 433 – Students determine their water address and identify unique characteristics associated with weather, assess their risk and create a Family Action Plan in case of a flood or other natural disaster.

Go further

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Each one of us can take small steps to reduce our impact on the Earth and become better prepared for extreme weather conditions. According to the [USGS](#), the average person in the U.S. uses between 80-100 gallons of water a day. Conserving water at home and at work is the easiest thing for us to do individually. If you haven't done so already, take the [40 Gallon Challenge](#).



Visit the [United States Global Climate Change Research Program](#) about redistribution of water

Visit here for more information on [Preparing for Climate Change](#)

Project WET USA has released a free [lesson plan](#) on drought, and produced "Discovering Drought" and "Conserve Water" Kids Activity Guides for sale on [projectwet.org](#)

Explore the work of photographer James Balog who has been documenting melting glaciers in Greenland, Alaska, Montana and Iceland. In a recent interview on ScienceFriday.com about his documentary, "[Chasing Ice](#)", Balog affirmed that "ice-caps in the Arctic and Antarctic are retreating 3 times faster than originally believed."



We are excited about another great year with River of Words. The results will be out in April. This year the River of Words

To find more Project WET workshops visit [EEinGeorgia.org](#)

[TOP](#)

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Awards Ceremony has moved to the Decatur Library. Winners at the state and national level along with their teachers will receive recognition of their work during this special ceremony.

Get your students involved next year! [GAProjectWET.org/River of Words](http://GAProjectWET.org/RiverofWords)



Nominate a Georgia Project WET Organization or Educator of the Year!

It is time again for Georgia Project WET to take nominations for those individuals and groups making a special effort to train teachers and students with Project WET, Adopt-A-Stream, or other water education programs. The winners will be recognized at the EEA Awards ceremony in March. Please send us your picks!

[Nomination](#) (pdf form)



AAS Confluence

March 16, 2013

Confluence is a one-day conference event designed to support and educate Georgia Adopt-A-Stream volunteers about GA waterways and nonpoint source pollution.

[Click here for more information](#)

2013 Annual EEA Conference

March 22-23, 2013

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Theme: *21st Century Communication for Environmental Educators*

Look for the following Project WET presentations:

"Project WET v 2.0 Correlations to Standards"

"Using Project WET in Storm Water Education"

The [2013 EEA Conference](#) will be held on Friday, Mar 22, 2013 and Saturday, Mar 23, 2013 in Athens, Georgia



Have you seen our new searchable database for Standards? With it, all of the correlations are easy to access for WET 2.0 activities covering CCGPS, GPS, and National subject area standards. [Try it out!](#)



1) Triple (WET, WILD, and PLT!!) Educator Workshop

February 4-5, 2013; 8-6:00 Fortson 4-H Center, Hampton

[Contact Allen Nasworthy](#) for details and registration;

770-946-3278.

2) Triple (WET, WILD, and PLT!!) Facilitator Workshop

February 28-March 1, 8-6:00 Charlie Elliott Wildlife Center, Mansfield. *Become a facilitator for Project WET and hold your own Educator Workshops!*

[Registration Form](#)

3) Teacher Conservation Workshop (WET, WILD, and PLT!)

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June 17–21, 2013 Charlie Elliott Wildlife Center, Mansfield
[Registration Form](#)

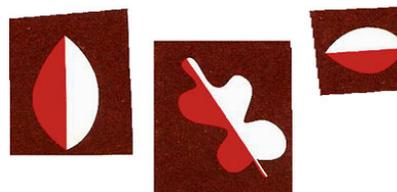
4) **Triple (WET, WILD, and PLT!!) Educator Workshop**

November 11-12, 2013; 8-6:00 Fortson 4-H Center, Hampton

[Contact Allen Nasworthy](#) for details and registration;

770-946-3278.

Find more workshops on [EE in Georgia!](#)



From Project WET USA:

Corrections have been made to the following student copy pages on the Portal:

- Adventures/Density: 11
- Zork: 31-32
- Ocean Habitats: 80, 81, 83, 85, 87-94
- On Track/Hydration: 106
- Super Sleuths: 121
- High Water History: 326
- Snapshot/Time: 385-386
- My Water Footprint: 446
- Water Quality/Bugs: 430
- Discover/National Parks: 506

Discovering Drought

Drought has been in the news each summer. Given what they are hearing at home and in the media, students need objective, interactive tools to help them understand what's happening. The

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award-winning children's activity booklet [Discovering Drought](#) is a great starting point, especially in conjunction with Project WET's [Conserve Water](#).

Conserve Water

With parts of the country facing the [worst drought](#) since record keeping began, we wanted to alert educators to our Project WET resources that address this topic. The [Conserve Water](#) is a wonderful resource for grades 3-8. When water conservation is the name of the game, everyone wins.

Discover Floods Educator's Guide and Kids Booklet

This valuable resource helps educators teach students about both the risks and benefits of flooding through a series of engaging, hands-on activities. Now available as a Download.

[Click here to order these activity books.](#)

Educator or facilitator for GA Project WET

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