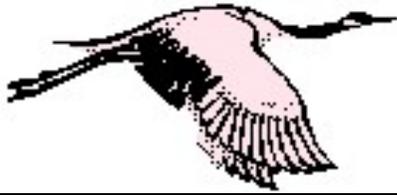


March/April 2016



Environmental Update



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And the rest of the
Southeast District:

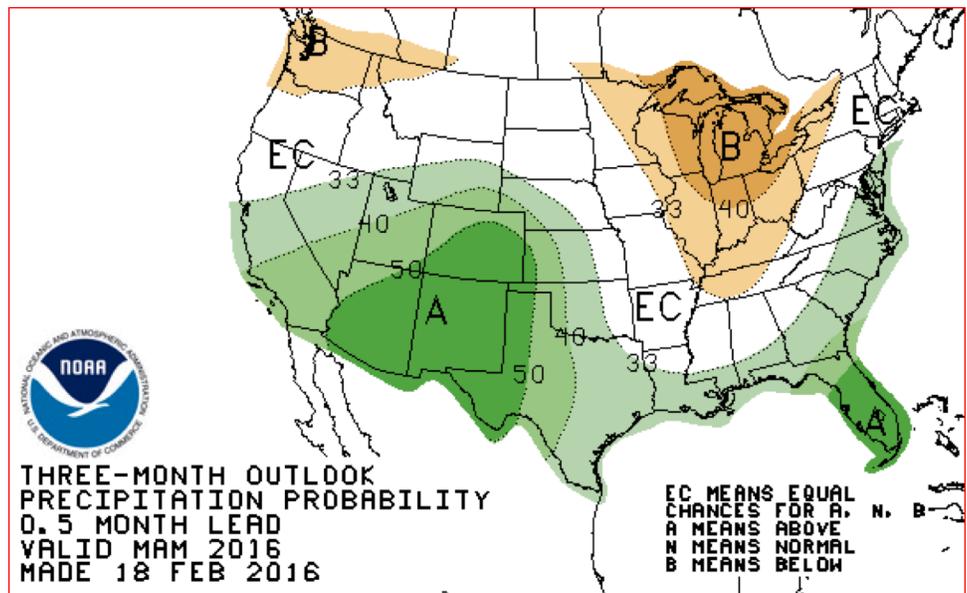
<http://southeast.ces.ncsu.edu/>

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Precipitation prediction ...

Yikes! It has been downright soggy outside for much of December, January, and February. The next couple of months are predicted to have a slightly higher chance of being wetter than average, as shown in the map below for March, April, and May. Then, we enter a period of equal chances, followed by below average precipitation for the fall.



Source:

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

The temperature, however, is another matter. The NOAA Climate Prediction Center website is predicting an increased probability of above normal temperatures from April onward. These predictions are based on the current El Niño gradually decreasing and changing over to a more-neutral situation, and then to La Niña in the fall.

It's amazing how sea surface temperatures off the California coast can be such a significant driver of conditions here in eastern North Carolina. For now, we just need it to dry out enough to be able to get into our gardens and fields. Will we be wishing for rain later this year? Maybe.

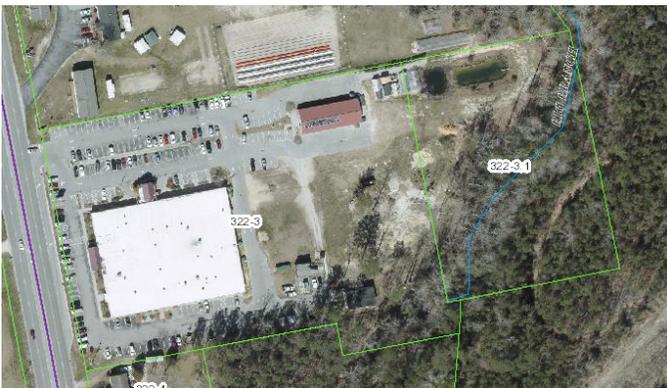
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Around the home ...

The last nine months have definitely allowed people to note the problem areas in their yards. These can include wet areas that drain poorly, areas that have eroded, and everything in between. There are things you can do to improve the situation. Some are complex and may require professional assistance. Others, however, may be relatively simple and can be done by homeowners. Some basic information will be needed about your site, which may be obtained by following the steps below.

Step 1: Map your site

This can be relatively simple, such as using the plat of your property or pulling it up online using Google Earth, your county GIS office, or other mapping tools. The Onslow Multipurpose Complex is shown below. Overlays of the soil types and other online features can be added. Print several copies of your base map, so you can draw and label features without overwhelming a single map.



Onslow Multipurpose Complex. Source: Onslow GIS

Step 2: Label problem areas

Problem areas may be wet, compacted, bare, and various combinations. Are the wet areas due to low spots, blocked drainage, or compacted soils? Are eroded areas due to steep slopes, sandy soil, or lack of vegetation? The cause is an important part in diagnosing possible solutions.

Step 3: Label site features

Site features include drainage easements, ditches, gardens, septic system drainfield and repair area,

downspout flow, buried utilities, and other items. Also note where water stands or the direction of water flow. Are there features you want to add? Gardens? Walkways? The site map can help you visualize possible impacts on your property or problems you will need to work around.

Step 4: Develop site solutions

This is where possible solutions are discussed and evaluated. For example, a low wet area of lawn may be either converted into a rain garden or connected by a subsurface drain to a nearby outlet. If you are considering adding soil to a site, be sure to check its impact on water flow from your neighbors' property. It is illegal in NC to impede the flow of water off of another's land. Also consider how water needs to flow to exit your property. You do not want standing water above your septic system drainfield or to cause it to move toward your foundation.

If the soil remains wet due to compaction, steps can be taken to improve infiltration. Compaction is often a problem in high use - high traffic areas, such as where pets have their paths. Besides being wet, the areas may no longer have much or any vegetation.

Compaction makes it difficult for roots to develop. Those that do develop tend to be stunted and shallow compared to roots in less-compacted soil. Whether sandy or clayey, lightly tilling the soil and mixing it roughly 50:50 with compost can help increase water infiltration.

A soil sample should be collected and submitted to the NC Dept. of Agriculture & Consumer Services (NCDA&CS). This will determine if the soil pH needs adjustment or if nutrients are lacking. As of April 1st, soil samples will be free until the end of November.

A good understanding of your site is important for the determination of the best solutions to use. "Best" can be a relative term and depend upon cost, ease of implementation, maintenance requirements, and other factors. NC Cooperative Extension has many resources available to assist you, both online and at the county offices. Some publications that may help you are:

The Piedmont Yardstick Workbook
https://www.ces.ncsu.edu/files/library/41/CYNW_orkbookfinal4.pdf

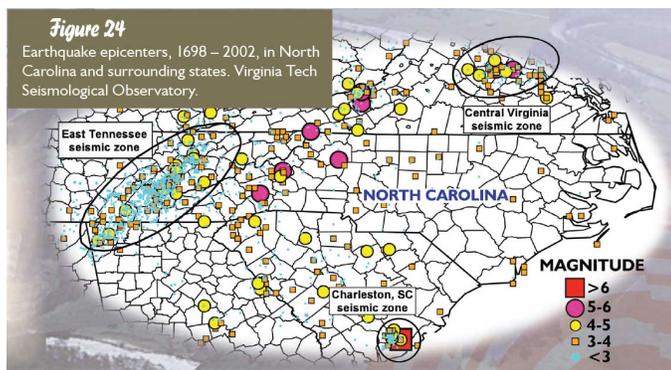
Small-scale Solutions to Eroding Streambanks
<https://www.bae.ncsu.edu/bae/srp/pdfs/online-BYSRGuide2015.pdf>

Carolina Yards and Neighborhoods
<https://www.ces.ncsu.edu/carolinayards/>

Happy anniversary ... sort of ...

Sunday, February 21 was the 100th anniversary of the strongest recorded earthquake to originate in NC. The magnitude 5.2 earthquake occurred in Skyland, NC. More recently, a magnitude 5.9 earthquake occurred just north of Richmond, VA on August 23, 2011. The tremors were felt in towns across eastern NC; including New Bern, Jacksonville, Greenville, and Kinston.

Most of the NC earthquakes occur in the western part of the state. As seen in the figure below, those that do occur along the coast tend to be small in intensity, scattered in location, and few in number. An exception was the Charleston, SC earthquake of 1886. It was estimated to have been a magnitude 6.7 quake.



NC Earthquakes, Source:
<https://deq.nc.gov/about/divisions/energy-mineral-land-resources/north-carolina-geological-survey/geologic-hazards/earthquakes-north-carolina>

Congratulations NC Region 2 Science Fair participants ...

The NC Region 2 Science Fair was held at UNC-W

on Saturday, February 13. More than 160 projects were submitted. Forty students are going on to the state-level NC Science & Engineering Fair, April 1-2, at Meredith College. Several of these were recipients of a special award from the NC Section of the American Waterworks Association (AWWA) for water-related projects:

- Jillian Green, Holly Tree Elementary
- Bailey MacVaugh, St. Mark Catholic School
- River Carroll, New Bridge Middle School
- Kasey Kiser, St. Mary Catholic School
- Elizabeth Kinsey, Eugene Ashley High School

Best of luck to each of you! Two additional elementary students who received the AWWA award were: Reyde Jones and Maddie David.

WETS table for Onslow County ...

According to the USDA, “the objective of the WETS Table is to define the normal range for monthly precipitation and normal range for growing season required to assess the climatic characteristics for a geographic area over a representative time period.” The tables for Onslow are presented here; however, each county can be located by following the instructions at:

http://www.wcc.nrcs.usda.gov/climate/navigate_wets.html

Growing season dates, data from 1971 - 2000:

	Temperature		
Probability	24°F or higher	28°F or higher	32°F or higher
	Beginning and Ending dates, growing season length		
50%*	3/06 - 11/29 267 days	3/21 - 11/14 238 days	4/11 - 10/28 200 days
70%*	2/26 - 12/07 283 days	3/14 - 11/21 251 days	4/05 - 11/03 211 days

* Percent chance of the growing season occurring between the Beginning and Ending dates. The longer the time span, the greater the probability the range includes the Beginning and Ending dates; however, the chance of a frost also increases.

Table of Hofmann Forest temperature and rainfall data, from 1971 - 2000, plus MCAS and Wilm 2015 rainfall:

Month	Temperature (degrees F.)			Precipitation (inches)					Avg. # of days with 0.1 or more
	Avg. daily max	Avg. daily min	Avg.	2015 MCAS rainfall	2015 Wilm rainfall	Avg.	30% chance will have		
							Less than	More than	
January	56.9	34.2	45.6	6.58	4.98	5.09	3.88	5.92	9
February	60.5	35.8	48.2	4.82	4.34	3.85	2.37	4.65	6
March	67.4	41.2	54.3	2.98	3.43	4.58	3.54	5.31	7
April	75.7	48.0	61.9	1.55	2.16	3.11	1.84	3.77	5
May	81.7	56.8	69.3	5.04	5.66	4.01	2.99	4.69	7
June	87.3	64.6	76.0	11.23	7.11	4.85	3.20	5.82	7
July	90.4	69.8	80.1	3.14	3.31	6.72	4.81	7.95	9
August	88.8	68.9	78.9	11.73	8.95	6.82	4.62	8.15	9
September	84.7	63.2	74.0	2.93	5.47	6.45	3.28	7.87	7
October	76.3	51.0	63.7	8.67	15.91	3.65	1.85	4.46	5
November	68.8	43.1	56.0	6.93	6.65	3.71	2.56	4.42	5
December	60.0	36.0	48.0	5.07	5.5	3.65	2.33	4.40	6
Annual Average	74.9	51.1	63.0	70.67	73.47	56.49	51.86	60.51	83

Don't forget ...

Help save paper, postage, and your tax dollars!
 This newsletter and the annual reader survey are

available online at:

<https://onslow.ces.ncsu.edu/environmental-update-newsletter/>

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