

PUBLISH DATE: OCTOBER 29, 2023

**EASTERN NORTH CAROLINA
MONTHLY CLIMATE REPORT**

SEPTEMBER 2023

**WEATHER FORECAST OFFICE
NEWPORT/MOREHEAD CITY, NC**

National Weather Service

NEWPORT/MOREHEAD CITY, NC

MONTHLY SUMMARY

September 2023 across Eastern North Carolina saw near-average temperatures but generally below-average precipitation until the second tropical cyclone of the season, Tropical Storm Ophelia, impacted our area late. After a hot start, a strong cold front in the middle of September ushered in the true taste of fall across our area, knocking temperatures slightly below average for the remainder of the month.

Precipitation, like in August, ran well below average apart from a few spotty convective episodes. Our only truly appreciable rainfall came from Ophelia on September 22 and 23, bringing considerable rainfall along the Crystal Coast and along portions of the coastal plain. Overall precipitation was between 75 and 125% of normal, according to analysis from the National Centers for Environmental Information (NCEI).

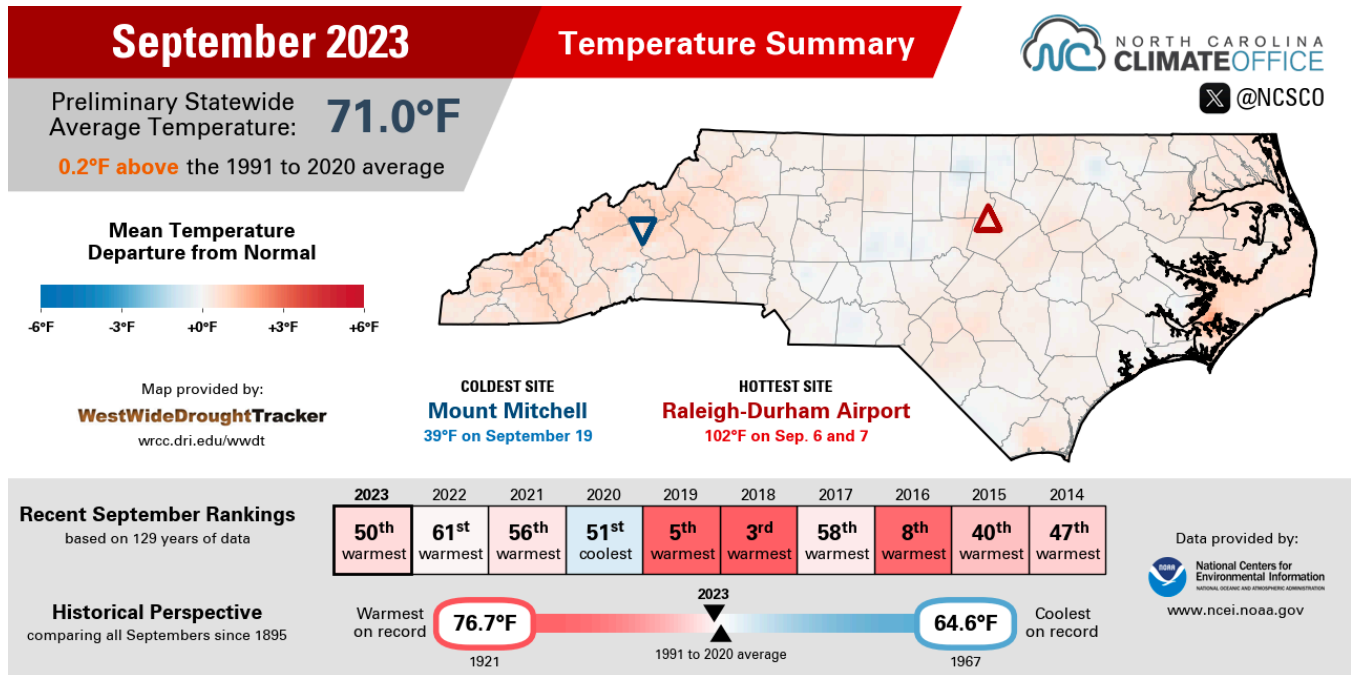
For more information on Tropical Storm Ophelia, visit the Tropical Event Summary page at <https://www.weather.gov/mhx/TropicalEventSummary>. The observational data summary and impact reports are good starting places, with more detailed information in CSV files. Our office event summary can be found here: <https://www.weather.gov/mhx/OpheliaReview2023>.

Our office released an 11-minute video on NOAA's Winter Outlook and what it means for Eastern North Carolina. You can view it [here](#).

The October 2023 report will be published around December 1st, 2023.

TEMPERATURES

Temperatures were near-normal across North Carolina during September. The average temperature statewide for the month was 71.0°F or a mere 0.2°F above the 1991-2020 average. This was the 50th warmest September statewide since records began in 1895, with 129 years of data.



September 2023 Temperature Summary | Source: NC State Climate Office

Across Eastern North Carolina, temperatures were generally in line with the statewide average. Cape Hatteras tied 1894 for the 32nd warmest September on record; New Bern recorded its 33rd warmest. Additional observations can be found in Appendix A.

MHX Select Site Temperature Statistics: September 2023

Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
Beaufort (KMRH)	81.9	67.6	74.8	75.4	-0.7
Hatteras (KHSE)	82.2	70.2	76.2	76.9	-0.7

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Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
New Bern (KEWN)	84.4	65.7	75.1	74.2	0.9

Normals are based on a period from 1990-2020.

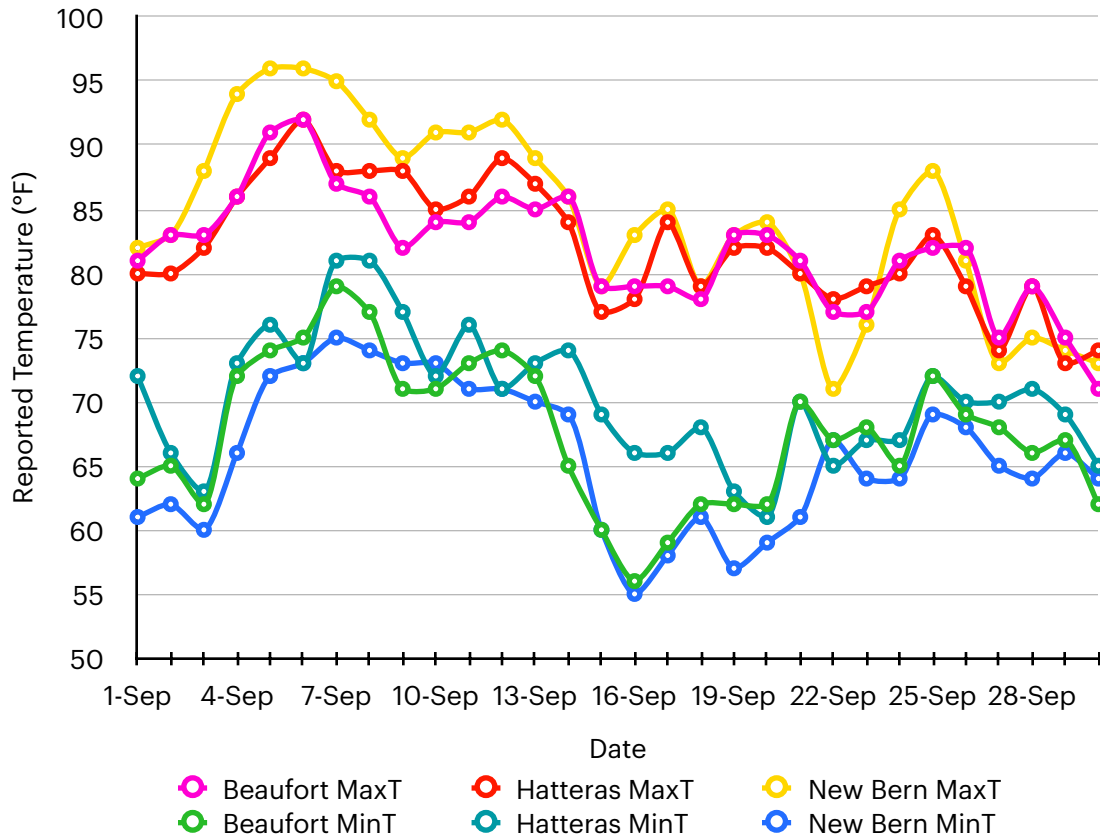
County-averaged statistics are presented in the following table. Note that mean temperature and anomaly calculations are based on a period of 1901-2000, rather than 1990-2020. Data courtesy of the National Centers for Environmental Information (NCEI).

County	Avg. Temperature (°F)	Mean (°F)	Departure (°F)	Rank
Beaufort	73.1	72.8	0.3	60 W
Carteret	74.2	74.4	-0.2	54 C
Craven	73.4	73.0	0.4	60 W
Dare	74.6	73.7	0.9	47 W
Duplin	71.9	72.6	-0.7	50 C
Greene	72.0	72.3	-0.3	55 C
Hyde	74.1	73.7	0.4	63 W
Jones	72.8	72.6	0.2	64 W
Lenoir	71.9	72.5	-0.6	54 C
Martin	72.1	71.7	0.4	60 W
Onslow	73.3	73.2	0.1	64 W
Pamlico	73.9	73.9	0	61 C
Pitt	72.2	72.3	-0.1	60 C
Tyrrell	73.8	72.9	0.9	48 W
Washington	73.0	72.1	0.9	52 W
Area Average	73.1	72.9	0.2	

Means are based on a period from 1901-2000. For rankings, "C" designates coldest and "W" designates warmest.

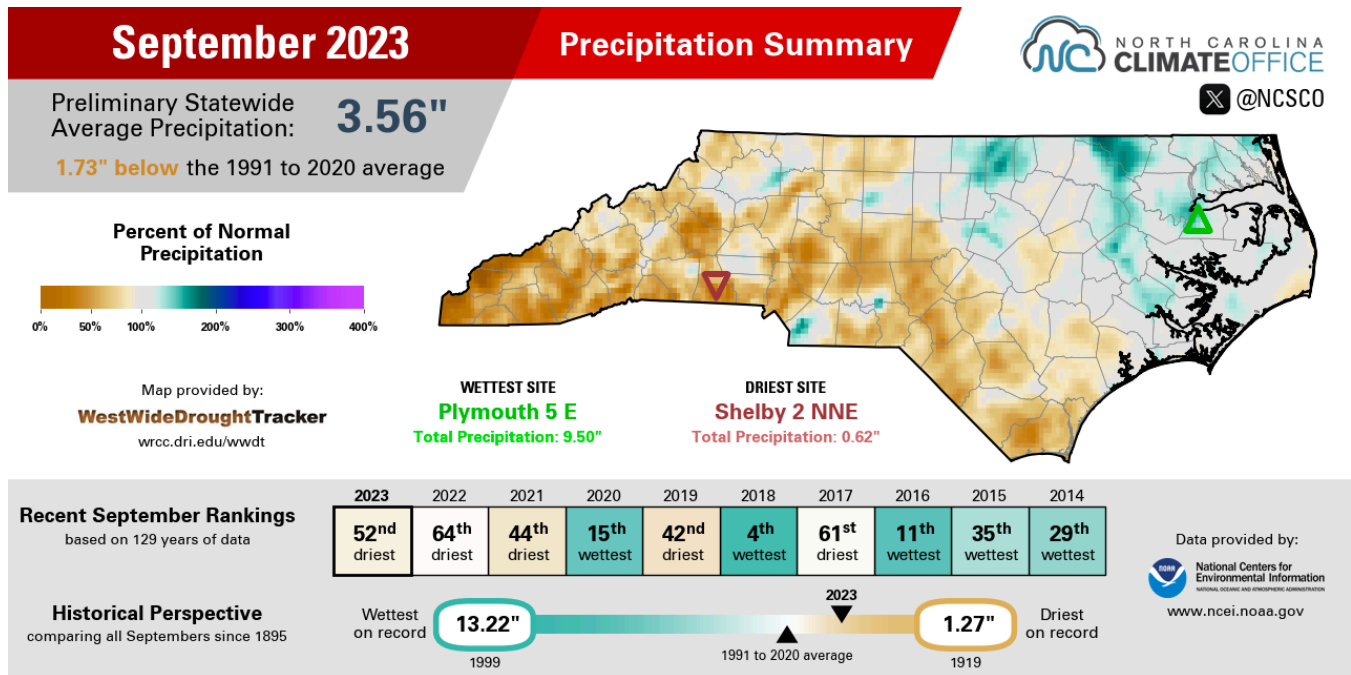
Temperatures generally followed the expected trend for September as the mercury climbed into the 90s on the first week. A strong cold front crossed the region by mid-month, and average temperatures sat near or slightly below average through the end of September. Only one record was set between the two primary climate sites: **Cape Hatteras** hit 89 degrees on Sept. 12, tying the previous record high set in 2018.

Daily Maximum and Minimum Temperatures



PRECIPITATION

Analysis conducted by the North Carolina State Climate Office showed drier than average conditions for September, with statewide average precipitation of 3.56", or 1.73" below normal. This was the 52nd wettest September for the state since records began in 1895.



September 2023 Precipitation Summary | Source: NC State Climate Office

Eastern North Carolina was generally wetter than the statewide average, although considerable variability in observations remained owing to rain occurring primarily via convection. The highest totals were clustered along Crystal Coast owing to the passage of Tropical Storm Ophelia (although it did dump a significant amount of rain across Greenville, resulting in flash flooding near the ECU campus).

MHX Select Site Precipitation Statistics: September 2023

Site	Total Precipitation (in.)	Normal (in.)	Departure (in.)
Beaufort (KMRH)	4.88	8.46	-3.58
Hatteras (KHSE)	4.52	7.63	-3.11
New Bern (KEWN)	6.93	6.33	0.6

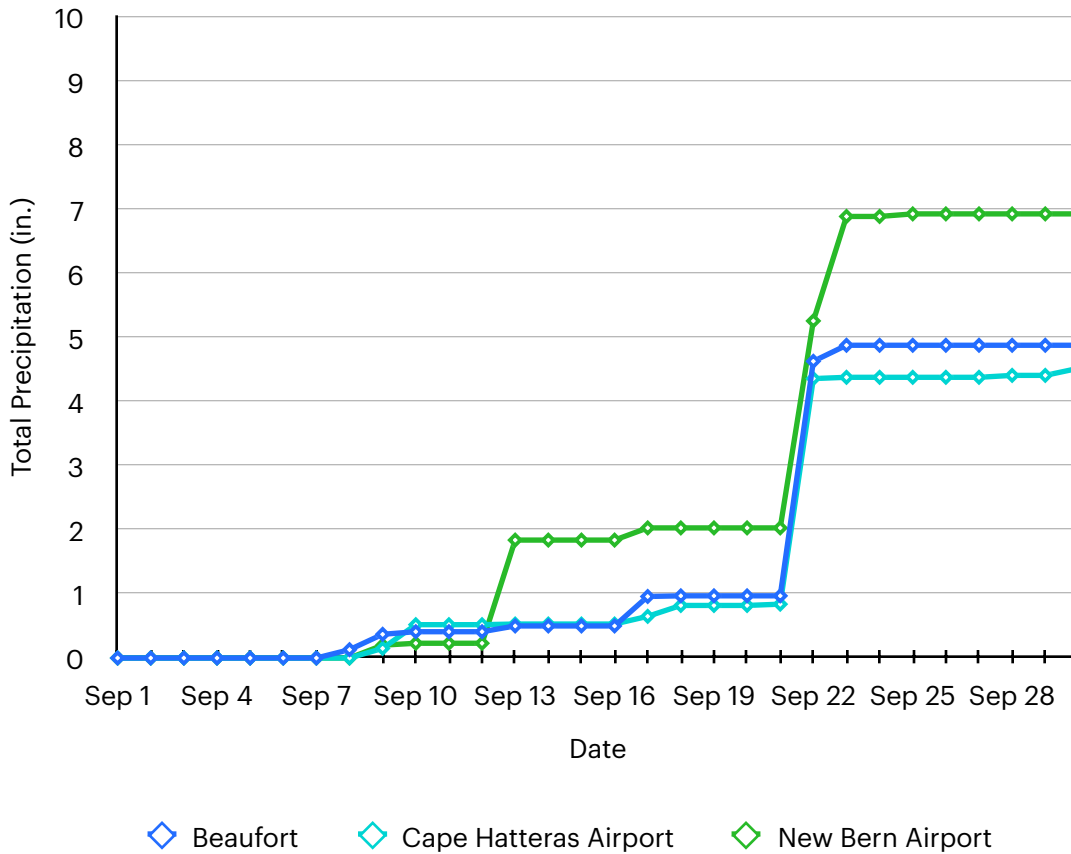
County-averaged statistics are presented in the following table. Like temperatures, mean and anomaly precipitation calculations are based on a period 1901-2000. Data courtesy of the National Centers for Environmental Information (NCEI).

County	Avg. Accum. (in.)	Mean (in.)	Departure (in.)	Rank
Beaufort	6.12	5.17	0.95	40 W
Carteret	7.44	5.88	1.56	36 W
Craven	6.49	5.48	1.01	36 W
Dare	4.35	4.94	-0.59	64 D
Duplin	3.96	5.03	-1.07	55 D
Greene	4.85	4.65	0.2	45 W
Hyde	5.89	5.24	0.65	42 W
Jones	5.76	5.47	0.29	45 W
Lenoir	4.91	4.97	-0.06	51 W
Martin	5.39	4.56	0.83	38 W
Onslow	4.92	5.71	-0.79	64 D
Pamlico	6.89	5.56	1.33	37 W
Pitt	5.30	4.70	0.60	39 W
Tyrrell	5.72	4.90	0.82	40 W
Washington	6.94	4.87	2.07	27 W
Area Average	5.66	5.14	0.52	

Means are based on a period from 1901-2000. For rankings, “W” designates wettest and “D” designates driest.

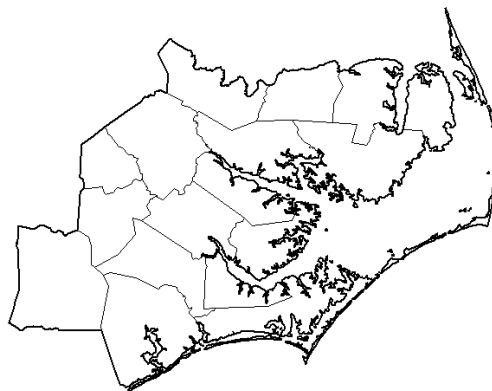
Like August, precipitation ran below average for much of the month, with only a few passing convective events boosting totals. Only with the passage of Tropical Storm Ophelia did rainfall totals jump appreciably, but after it lifted north, dry conditions once again dominated. This ended was the 28th wettest September for New Bern and the 62nd driest for Cape Hatteras.

Monthly Accumulated Precipitation



By the end of September, no areas in eastern North Carolina were experiencing abnormal dryness per the U.S. drought monitor - a slight improvement in conditions from the month prior. Seasonal outlooks favor little or no drought through the next three months.

U.S. Drought Monitor Newport/Morehead City, NC WFO



October 3, 2023
(Released Thursday, Oct. 5, 2023)
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week 09-26-2023	100.00	0.00	0.00	0.00	0.00	0.00
3 Months Ago 07-04-2023	96.00	4.00	0.00	0.00	0.00	0.00
Start of Calendar Year 01-03-2023	0.00	100.00	63.79	0.00	0.00	0.00
Start of Water Year 09-30-2022	100.00	0.00	0.00	0.00	0.00	0.00
One Year Ago 10-04-2022	100.00	0.00	0.00	0.00	0.00	0.00

Intensity:
 None
 D0 Abnormally Dry
 D1 Moderate Drought
 D2 Severe Drought
 D3 Extreme Drought
 D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

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droughtmonitor.unl.edu

ADDITIONAL CLIMATE RESOURCES

For a look at climate on the national scale, as well as statistics from a CONUS-wide to county and city level, please visit the **National Centers for Environmental Information** at <https://www.ncei.noaa.gov/>. Additional maps and data, as well as teaching materials and a climate resiliency toolkit, can be found at **NOAA's** <https://www.climate.gov>.

For additional drought information, including a wealth of maps of data focused on topics such as agriculture, fire, and water supply, please visit **NOAA's National Integrated Drought Information System (NIDIS)** at <https://www.drought.gov>.

For climate statistics and real time observations across the state of North Carolina, please visit the **North Carolina State Climate Office** at <https://climate.ncsu.edu/>.

For climate forecasts and outlooks, visit the **Climate Prediction Center** at <https://www.cpc.ncep.noaa.gov/>.

For community-based precipitation observations from across the United States, visit **CoCoRaHS** at <https://www.cocorahs.org/>.

For climate statistics relevant to various regions of North Carolina, please visit the following climate pages:

Eastern (WFO Morehead City): <https://www.weather.gov/wrh/climate?wfo=mxh>

Southeastern (WFO Wilmington): <https://www.weather.gov/wrh/climate?wfo=ilm>

Northeastern (WFO Wakefield, VA): <https://www.weather.gov/wrh/climate?wfo=akq>

Central (WFO Raleigh): <https://www.weather.gov/wrh/climate?wfo=rah>

Northwestern (WFO Blacksburg, VA): <https://www.weather.gov/wrh/climate?wfo=rnk>

Southwestern (WFO Greer, SC): <https://www.weather.gov/wrh/climate?wfo=gsp>

Cherokee and Clay Co. (WFO Knoxville, TN): <https://www.weather.gov/wrh/climate?wfo=mrx>

APPENDIX A: ADDITIONAL TEMPERATURE DATA

Cooperative Observation Site Temperature Statistics: September 2023

Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
Greenville	82.4	64.1	73.3	73.6	-0.4
Kinston	83.0	62.9	73.0	74.0	-1.1
Williamston	81.9	62.7	72.3	73.0	-0.7
Plymouth	81.9	64.2	73.1	73.3	-0.3
Bayboro	82.8	62.2	72.5	73.1	-0.6
Manteo	81.2	69.4	75.3	73.9	1.4

Normals are based on a period from 1990-2020. Sites in red have missing data.

Maximum and Minimum Monthly Temperatures: September 2023

Site	Max High (°F)	Date Observed	Min Low (°F)	Date Observed
Beaufort (KMRH)	92	Sep 6	56	Sep 16
Hatteras (KHSE)	92	Sep 6	61	Sep 20
New Bern (KEWN)	96	Sep 5-6	55	Sep 16
Greenville	96	Sep 7	54	Sep 16-18
Kinston	95	Sep 6-8	51	Sep 16
Williamston	95	Sep 8	52	Sep 18
Plymouth	94	Sep 7	53	Sep 16
Bayboro	95	Sep 7	49	Sep 16
Manteo	92	Sep 7	61	Sep 21

APPENDIX B: ADDITIONAL PRECIPITATION DATA

Cooperative Observation Site Precipitation Statistics: September 2023

Site	Total Precipitation (in.)	Normal (in.)	Departure (in.)
Greenville	5.76	7.33	-1.57
Kinston	4.93	6.64	-1.71
Williamston	4.29	6.92	-2.63
Plymouth	9.50	6.13	3.37
Bayboro	6.81	7.14	-0.33

Sites in red have missing data in their record.

CoCoRaHS Monthly Accumulated Precipitation: September 2023

Site	County	Amount (in.)
Pantego 0.4 WSW	Beaufort	5.84
Bath 1.6 SSE	Beaufort	5.10
Pine Knoll Shores 1.4 E	Carteret	10.70
Swansboro 2.7 NE	Carteret	7.52
Swansboro 3.7 NNE	Carteret	7.40
Newport 2.5 W	Carteret	6.67
Cedar Point 0.9 WSW	Carteret	6.51
Beaufort 3.8 N	Carteret	6.41
Beaufort 5.3 N	Carteret	6.34
Pine Knoll Shores 1.4 E	Carteret	6.15
Morehead City 2.9 WNW	Carteret	5.94

Site	County	Amount (in.)
Indian Beach 0.0 W	Carteret	5.83
Stella 2.5 SE	Carteret	5.79
Beaufort 12.1 N	Carteret	5.77
Newport 0.2 SW	Carteret	5.73
Pine Knoll Shores 0.3 NE	Carteret	5.54
Beaufort 3.4 NNW	Carteret	5.40
Emerald Isle 2.3 WSW	Carteret	5.34
Emerald Isle 2.1 E	Carteret	3.75
Trent Woods 1.2 ENE	Craven	8.08
Trent Woods 1.3 SSE	Craven	8.00
New Bern 3.8 S	Craven	7.59
Trent Woods 1.0 NNE	Craven	7.53
Bridgeton 0.3 SSE	Craven	6.77
New Bern 5.3 SW	Craven	6.68
Havelock 1.9 SSE	Craven	6.12
Buxton 0.3 ENE	Dare	4.55
Southern Shores 0.5 NNE	Dare	4.10
Manteo 2.8 NW	Dare	4.07
Rodanthe 1.0 SSE	Dare	3.49
Rose Hill 0.1 NNW	Duplin	3.94
Ayden 6.5 WNW	Greene	5.84
Ocracoke 0.6 SW	Hyde	6.35
SQ Tower	Hyde	5.97

Site	County	Amount (in.)
Kinston 3.7 WNW	Lenoir	5.98
Kinston 4.4 WNW	Lenoir	5.30
Kinston 5.1 WNW	Lenoir	4.76
Jamesville 6.1 SW	Martin	6.79
Williamston 8.9 SSE	Martin	5.85
Holly Ridge 9.0 ENE	Onslow	10.27
Holly Ridge 3.7 E	Onslow	10.20
Sneads Ferry 1.2 SSW	Onslow	6.21
Hubert 4.9 SE	Onslow	6.20
Jacksonville 5.4 WSW	Onslow	5.40
Swansboro 2.8 WSW	Onslow	5.35
Jacksonville 4.5 NW	Onslow	3.83
Merritt 1.5 WSW	Pamlico	6.39
Oriental 4.3 NNW	Pamlico	5.51
Oriental 2.1 WSW	Pamlico	5.20
Oriental 1.9 WSW	Pamlico	4.94
Lowland 0.2 SE	Pamlico	4.57
Greenville 2.8 ESE	Pitt	11.30
Greenville 5.7 NW	Pitt	9.35
Greenville 4.4 SSE	Pitt	9.12
Winterville 1.0 ENE	Pitt	8.70
Farmville 3.1 NW	Pitt	8.57
Winterville 2.8 WNW	Pitt	7.91

Site	County	Amount (in.)
Winterville 2.5 NNW	Pitt	7.66
Greenville 5.0 SE	Pitt	7.38
Greenville 7.1 SSE	Pitt	7.10
Winterville 3.5 W	Pitt	7.08
Fountain 0.1 NE	Pitt	5.64
Columbia 0.8 NNE	Tyrrell	6.86
Roper 2.4 NE	Washington	7.08

CoCoRaHS inclusion in this table is based on a complete 30-day liquid precipitation record. Thank you to all observers!