

PUBLISH DATE: AUGUST 28, 2024

**EASTERN NORTH CAROLINA
MONTHLY CLIMATE REPORT**

**JULY
2024**

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

National Weather Service

NEWPORT/MOREHEAD CITY, NC

MONTHLY SUMMARY

July ended the below-average precipitation streak across eastern North Carolina in dramatic fashion. Although all areas got beneficial rainfall, the coastal plain saw the highest totals. Martin and Pitt counties averaged over a foot of rain for the month, recording their wettest July in their respective histories. The water treatment plant in Washington recorded the highest precipitation total statewide, at 17.84". Average rainfall across our fifteen counties was 11.09", or 4.42" over the 20th century average.

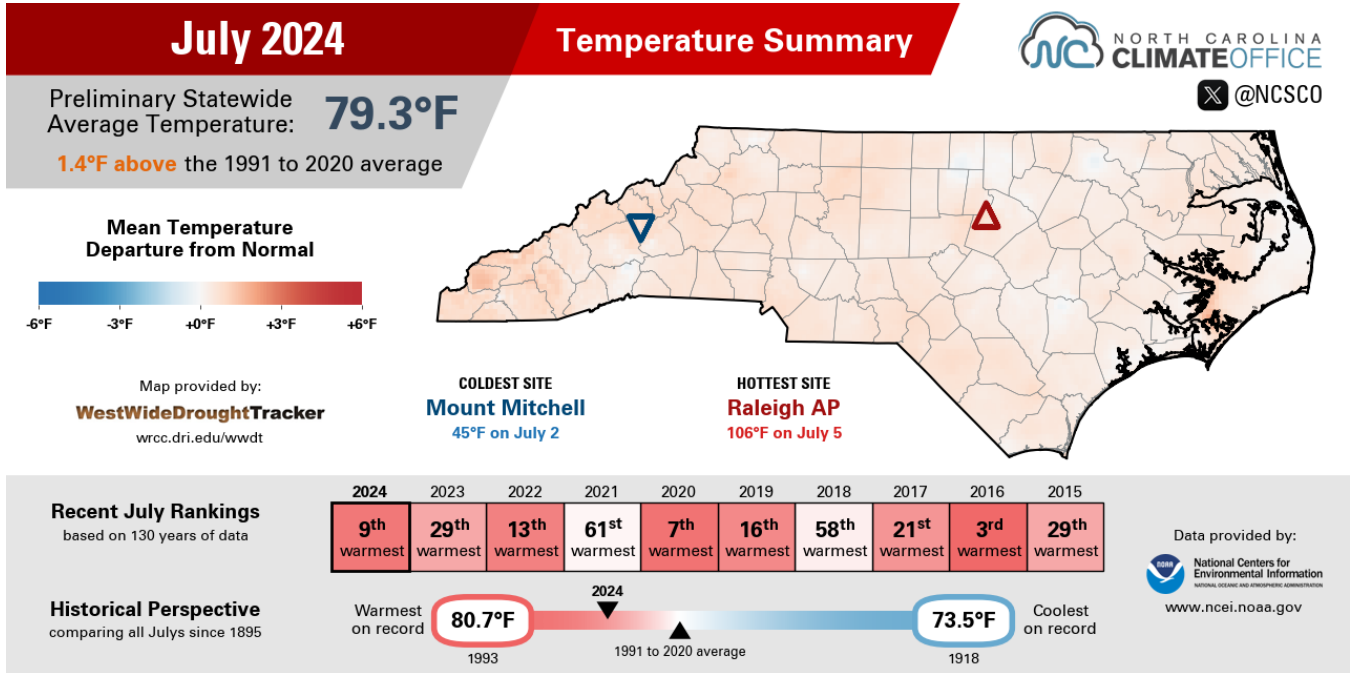
While dry weather relented, above-average warmth did not. Warm and humid weather persisted for much of July, but there were a few cooler moments at the beginning and end of the month as lows fell into the upper 50s and low 60s in unusually dry air masses. Cape Hatteras set the sole temperature record across the forecast area, a record low on July 29th. The area's average temperature for the month was 80.3°F, with most regions ending within 3 degrees of the 30-year average.

The heavy rainfall significantly reduced drought conditions across the region. By the end of the month, less than 20% of eastern NC was in abnormally dry (D0) conditions—a vast improvement from the beginning of the month, when a third of the region was in severe drought (D2).

The August 2024 report will be published around the end of September.

TEMPERATURES

Heat refused to relent in July, with above-average temperatures in North Carolina. The average temperature for the month was 79.3°F, or 1.4°F above the 1991-2020 average. This was the 9th warmest June since records began in 1895, with 130 years of data.



July 2024 Temperature Summary | Source: NC State Climate Office

Across Eastern North Carolina, temperatures were close to the statewide average and about 1.4°F above the 20th-century average. Since their respective records began, July 2024 was the 20th warmest at New Bern and the 17th warmest at Cape Hatteras. Additional observations can be found in Appendix A.

MHX Select Site Temperature Statistics: July 2024

Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
Beaufort (KMRH)	87.5	77.2	82.4	80.6	1.8
Hatteras (KHSE)	85.6	75.8	80.7	81.3	-0.6

Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
New Bern (KEWN)	89.7	73.3	81.5	80.4	1.1

Normals are based on a period from 1990-2020.

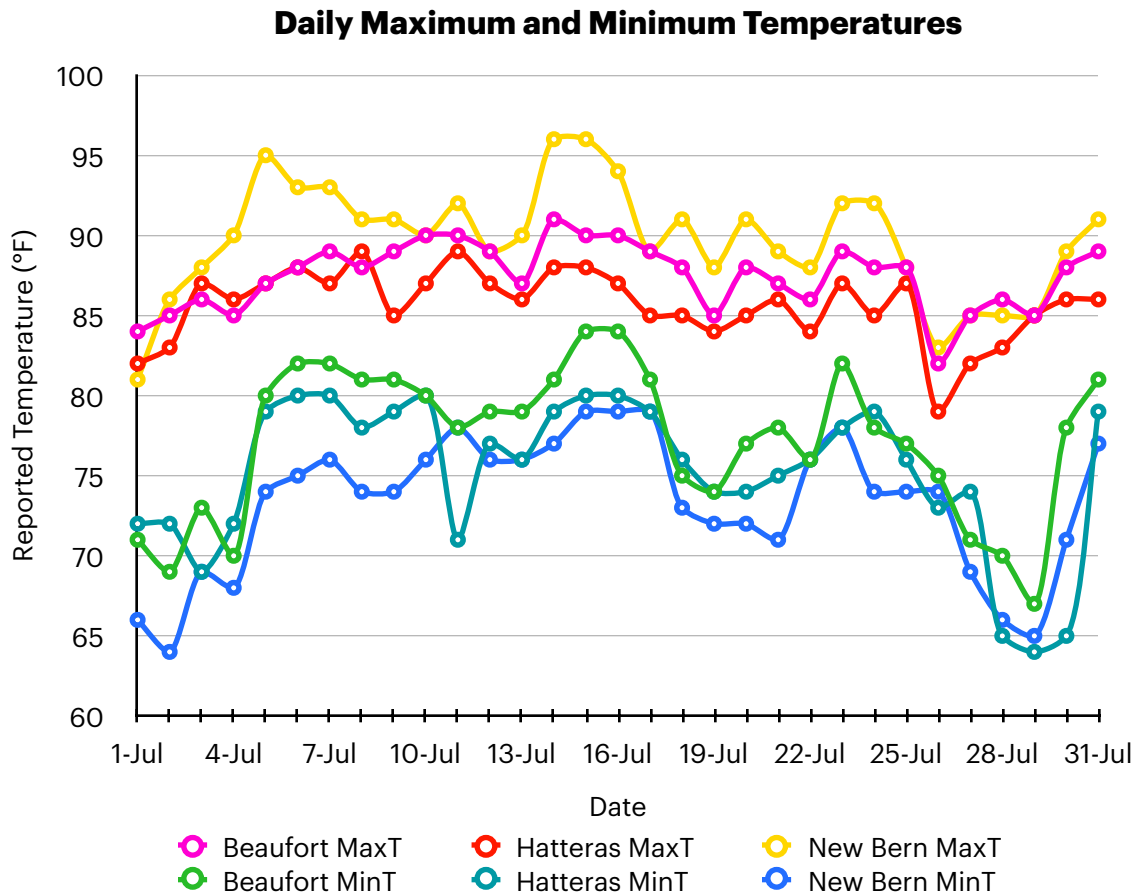
County-averaged statistics are presented in the following table. Note that mean temperature and anomaly calculations are based on a period of 1901-2000, rather than 1990-2020. Data courtesy of the National Centers for Environmental Information (NCEI).

County	Avg. Temperature (°F)	Mean (°F)	Departure (°F)	Rank
Beaufort	80.3	79.0	1.3	34 W
Carteret	80.3	79.3	1.0	40 W
Craven	80.2	78.8	1.4	29 W
Dare	80.5	78.9	1.6	31 W
Duplin	80.0	78.7	1.3	33 W
Greene	80.3	79.0	1.3	34 W
Hyde	80.6	79.5	1.1	35 W
Jones	80.0	78.5	1.5	28 W
Lenoir	80.1	78.8	1.3	30 W
Martin	80.2	78.4	1.8	27 W
Onslow	80.3	78.8	1.5	29 W
Pamlico	80.0	79.5	0.5	59 W
Pitt	80.3	79.0	1.3	34 W
Tyrrell	80.6	78.8	1.8	29 W
Washington	80.4	78.4	2.0	22 W
Area Average	80.3	78.9	1.4	

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

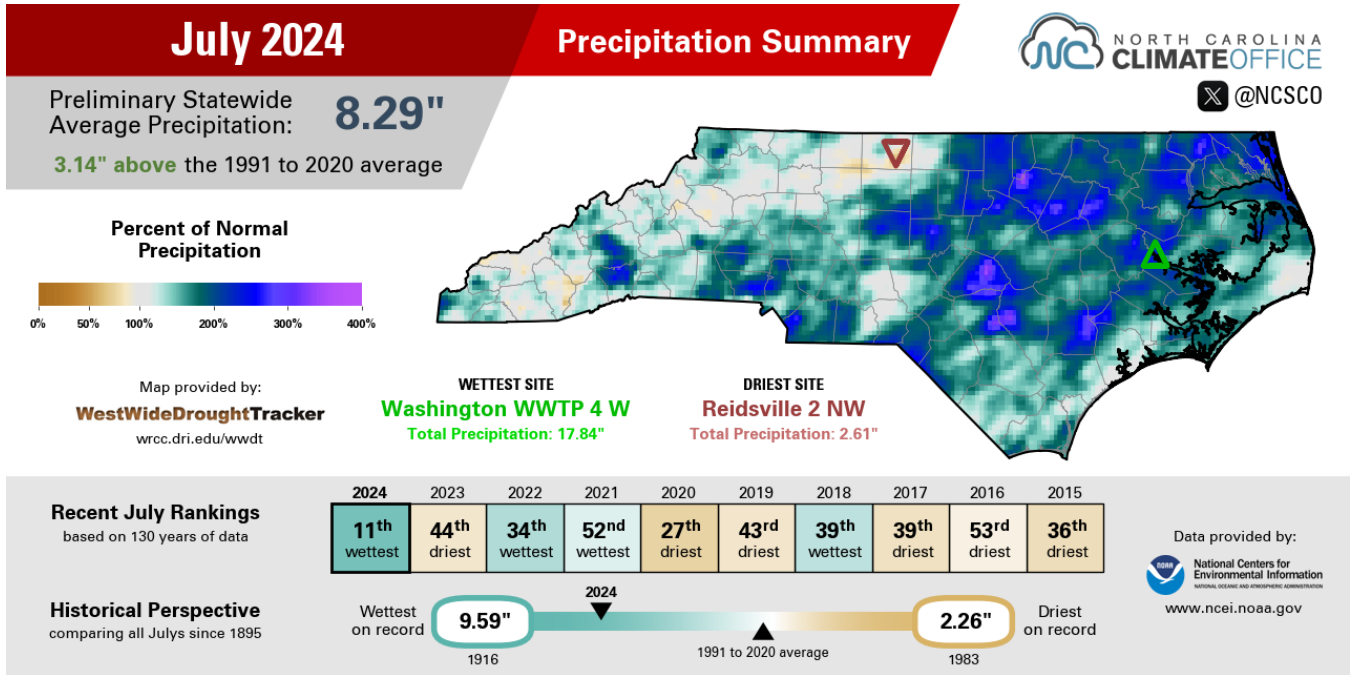
On average, the upper air pattern in July was characterized by ridging over both the western and northeastern U.S. while troughing lingered across the country's mid-section. Across eastern NC, temperature anomalies rarely diverged from within 3 degrees of average except at the beginning and end of the month, according to NCEI. The anomalies were most pronounced in overnight lows as temperatures fell well into the 60s (and even a few upper 50s well inland). Overall, temperatures area-wide were within 3 degrees of average for July.

Cape Hatteras set a record low on July 29th, touching 64 degrees and breaking the old record of 65 set in 1957.



PRECIPITATION

Analysis conducted by the North Carolina State Climate Office showed a remarkable about-face in precipitation patterns compared to June. Statewide, precipitation averaged a whopping 8.29”, or 3.14” above the 30-year average. This was the 11th wettest observed July for the state since records began in 1895.



July 2024 Precipitation Summary | Source: NC State Climate Office

Eastern North Carolina was considerably wetter than the rest of the state. New Bern recorded its 4th wettest July, while Cape Hatteras recorded its 48th. Pitt and Martin counties recorded their wettest July in recorded history. The water treatment plant in Washington was the wettest in the state, picking up 17.84”.

MHX Select Site Precipitation Statistics: July 2024

Site	Total Precipitation (in.)	Normal (in.)	Departure (in.)
Beaufort (KMRH)	5.04	5.81	-0.77
Hatteras (KHSE)	6.00	5.39	0.61
New Bern (KEWN)	12.31	6.26	6.05

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).

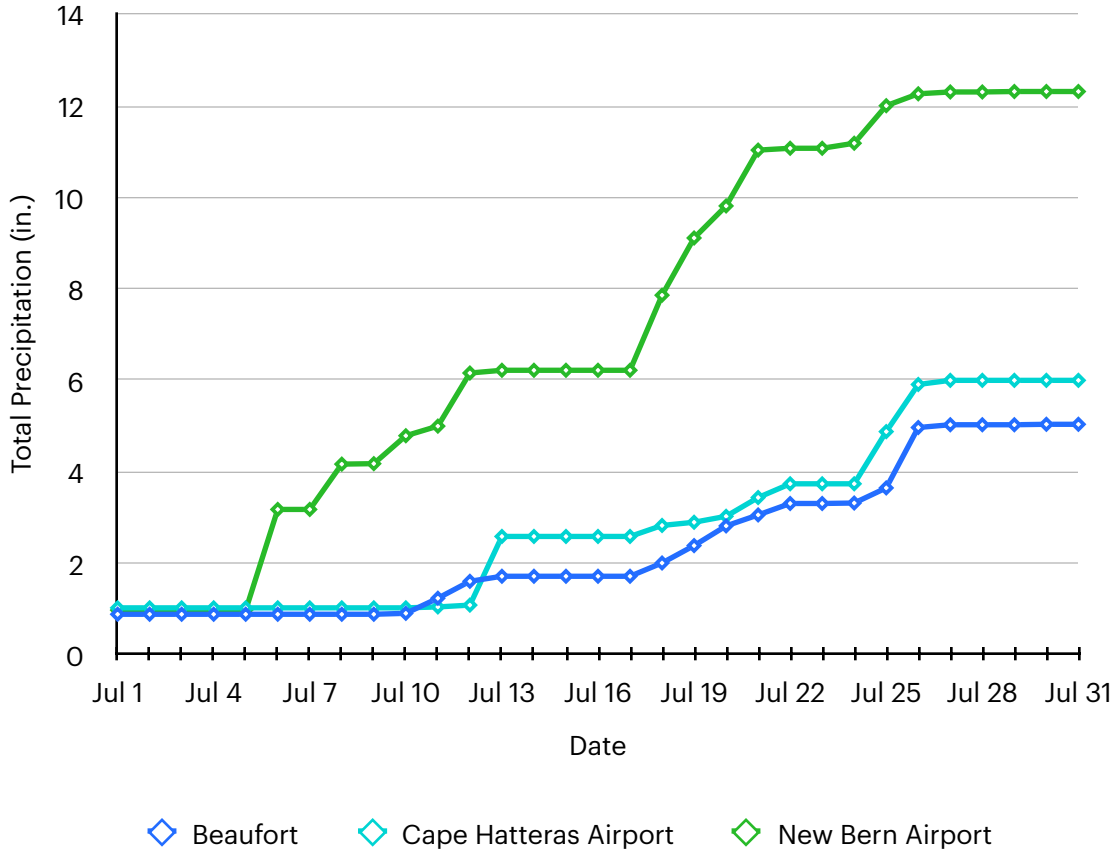
County	Avg. Accum. (in.)	Mean (in.)	Departure (in.)	Rank
Beaufort	13.21	6.71	6.5	3 W
Carteret	10.53	7.09	3.44	13 W
Craven	12.08	7.14	4.94	6 W
Dare	9.20	6.04	3.16	16 W
Duplin	9.42	7.03	2.39	18 W
Greene	10.45	6.21	4.24	10 W
Hyde	10.07	6.42	3.65	11 W
Jones	11.31	7.17	4.14	8 W
Lenoir	10.60	6.64	3.96	9 W
Martin	12.28	6.15	6.13	1 W
Onslow	10.04	7.42	2.62	20 W
Pamlico	11.37	7.09	4.28	8 W
Pitt	12.83	6.23	6.6	1 W
Tyrrell	10.99	6.30	4.69	8 W
Washington	11.96	6.41	5.55	4 W
Area Average	11.09	6.67	4.42	

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

Rainfall was most abundant across eastern NC during mid and late July, matching up well with a period of prolonged troughing over the central United States. The rainfall mainly came in convective episodes, but an abnormally moist airmass likely contributed to storms producing torrential rainfall rates. With slow-moving frontal boundaries, the same areas received rainfall day after day. New Bern received 3.69” of rain over four consecutive days (18th-21st) and saw five days with 24-hour totals exceeding an inch.

Areawide, precipitation ranged from 150-300% of normal - well above average and near record levels.

Monthly Accumulated Precipitation



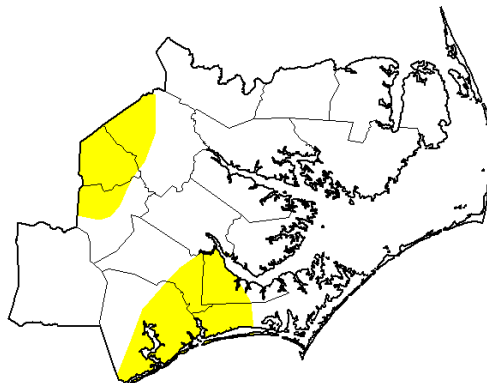
There were no precipitation records at our climate sites for the month of July.

The rainfall was a welcome sight for drought-stricken areas, and by the end of July less than 20% of the forecast area was abnormally dry (D0 classification), focused across portions of the coastal plain and Crystal Coast.

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

July 30, 2024
(Released Thursday, Aug. 1, 2024)
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	81.38	18.62	0.00	0.00	0.00	0.00
Last Week 07-23-2024	36.13	63.87	7.97	0.00	0.00	0.00
3 Months Ago 04-30-2024	53.74	46.26	0.00	0.00	0.00	0.00
Start of Calendar Year 01-02-2024	96.09	3.91	0.00	0.00	0.00	0.00
Start of Water Year 09-25-2023	100.00	0.00	0.00	0.00	0.00	0.00
One Year Ago 08-01-2023	99.14	0.86	0.00	0.00	0.00	0.00



Intensity:
 None (White) D2 Severe Drought (Orange)
 D0 Abnormally Dry (Yellow) D3 Extreme Drought (Red)
 D1 Moderate Drought (Light Orange) D4 Exceptional Drought (Dark Red)

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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National Drought Mitigation Center



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=mrj>

APPENDIX A: ADDITIONAL TEMPERATURE DATA

Cooperative Observation Site Temperature Statistics: July 2024

Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
Greenville	90.1	72.9	81.5	80.8	0.7
Kinston	89.4	72.5	81.0	81.0	-0.1
Williamston	89.5	72.3	80.9	79.9	1.0
Plymouth	89.2	71.6	80.4	79.8	0.6
Bayboro	87.9	70.8	79.4	79.4	-0.1
Manteo	87.5	74.7	81.1	79.6	1.5

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

Maximum and Minimum Monthly Temperatures: July 2024

Site	Max High (°F)	Date Observed	Min Low (°F)	Date Observed
Beaufort (KMRH)	91	Jul 14	67	Jul 29
Hatteras (KHSE)	89	Jul 8, 11	64	Jul 29
New Bern (KEWN)	96	Jul 14-15	64	Jul 2
Greenville	99	Jul 5-6	60	Jul 2
Kinston	97	Jul 6-7, 16	59	Jul 2
Williamston	97	Jul 1, 8	59	Jul 2
Plymouth	97	Jul 7	59	Jul 2
Bayboro	94	Jul 15-16	59	Jul 2
Manteo	95	Jul 16-17	65	Jul 2

APPENDIX B: ADDITIONAL PRECIPITATION DATA

Cooperative Observation Site Precipitation Statistics: July 2024

Site	Total Precipitation (in.)	Normal (in.)	Departure (in.)
Greenville	14.30	5.87	8.43
Kinston	10.05	5.79	4.26
Williamston	11.96	5.75	6.21
Plymouth	12.47	5.70	6.77
Bayboro	11.24	6.79	4.45

Sites in red have missing data in their record.

CoCoRaHS Monthly Accumulated Precipitation: July 2024

Site	County	Amount (in.)
Pantego 0.4 WSW	Beaufort	9.54
Swansboro 3.7 NNE	Carteret	11.79
Cedar Point 0.9 WSW	Carteret	6.03
Cedar Point 0.4 WSW	Carteret	4.98
Cedar Point 0.7 NNE	Carteret	8.07
Cape Carteret 1.0 NNW	Carteret	11.92
Cape Carteret 0.8 NE	Carteret	11.95
Cape Carteret 1.5 NE	Carteret	14.88
Ocean 0.5 S	Carteret	8.39
Newport 2.5 W	Carteret	10.56
Newport 1.0 N	Carteret	9.27

Site	County	Amount (in.)
Newport 0.2 SW	Carteret	10.40
Newport 1.7 SSE	Carteret	9.45
Newport 2.3 SE	Carteret	9.39
Morehead City 6.0 WNW	Carteret	10.61
Morehead City 2.9 WNW	Carteret	11.35
Pine Knoll Shores 0.3 NE	Carteret	8.12
Pine Knoll Shores 1.4 E	Carteret	8.44
Morehead City 0.6 NW	Carteret	7.30
Newport 7.1 ENE	Carteret	9.09
Beaufort 5.3 N	Carteret	10.33
Beaufort 3.8 N	Carteret	9.39
Beaufort 0.5 W	Carteret	6.55
Beaufort 12.1 N	Carteret	13.43
Havelock 1.9 SSE	Craven	17.23
Trent Woods 1.3 SSE	Craven	12.77
New Bern 5.3 SW	Craven	12.39
New Bern 2.6 SW	Craven	13.49
Trent Woods 1.0 NNE	Craven	13.64
Trent Woods 1.2 ENE	Craven	14.34
New Bern 2.9 SSE	Craven	13.04
New Bern 1.3 NNE	Craven	13.04
Bridgeton 0.3 SSE	Craven	13.99
New Bern 7.3 ESE	Craven	10.18

Site	County	Amount (in.)
Southern Shores 1.9 NNW	Dare	14.52
Southern Shores 0.5 NNE	Dare	16.40
Manteo 2.8 NW	Dare	11.84
Rodanthe 1.0 SSE	Dare	9.34
Buxton 0.3 ENE	Dare	5.35
Mount Olive 2.4 SW	Duplin	8.56
Mount Olive 6.0 SE	Duplin	13.22
Albertson 1.2 WNW	Duplin	12.24
Albertson 1.8 SE	Duplin	12.95
Rose Hill 0.1 NNW	Duplin	12.79
Snow Hill 3.1 NNE	Greene	11.09
SQ Tower	Hyde	4.85
Engelhard 0.8 NW	Hyde	10.24
Ocracoke 0.6 SW	Hyde	6.80
Ocracoke 0.2 ESE	Hyde	6.72
Kinston 5.1 WNW	Lenoir	8.80
Kinston 4.4 WNW	Lenoir	9.99
Kinston 1.2 NW	Lenoir	10.77
Kinston 4.6 ESE	Lenoir	10.14
Kinston 7.0 SW	Lenoir	10.91
Williamston 8.9 SSE	Martin	12.70
Jamesville 6.1 SW	Martin	13.91
Jacksonville 2.4 NNE	Onslow	7.94

Site	County	Amount (in.)
Jacksonville 1.0 NW	Onslow	7.98
Jacksonville 5.4 WSW	Onslow	12.14
Swansboro 2.8 WSW	Onslow	7.53
Huert 4.9 SE	Onslow	7.84
Sneads Ferry 3.3 SW	Onslow	6.20
Holly Ridge 5.0 E	Onslow	6.91
Holly Ridge 3.7 E	Onslow	5.60
Lowland 0.2 SE	Pamlico	17.09
Oriental 5.2 NE	Pamlico	11.46
Oriental 2.1 WSW	Pamlico	9.77
Oriental 1.7 WNW	Pamlico	9.52
Oriental 4.3 NNW	Pamlico	9.81
Meritt 1.5 WSW	Pamlico	9.87
Grantsboro 4.6 SSW	Pamlico	10.05
Fountain 0.1 NE	Pitt	8.33
Greenville 4.6 W	Pitt	11.90
Winterville 2.5 NNW	Pitt	11.68
Winterville 3.5 W	Pitt	10.95
Winterville 1.0 ENE	Pitt	10.43
Greenville 2.8 ESE	Pitt	13.44
Greenville 5.0 SE	Pitt	13.92
Greenville 7.1 SSE	Pitt	14.11
Columbia 0.8 NNE	Tyrrell	10.41

Site	County	Amount (in.)
Roper 2.4 NE	Washington	15.14

CoCoRaHS inclusion in this table is based on a complete 31-day liquid precipitation record. Thank you to all observers!