

PUBLISH DATE: JANUARY 29, 2024

**EASTERN NORTH CAROLINA
MONTHLY CLIMATE REPORT**

DECEMBER 2023

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

National Weather Service

NEWPORT/MOREHEAD CITY, NC

MONTHLY SUMMARY

December 2023 was an exceptionally active month for Eastern NC as the region was raked with three different storm systems, including a strong Nor'easter Dec 17-18 that brought coastal flooding, strong winds, and very heavy rainfall. Each storm dropped roughly 2 inches apiece, bringing an area average of around 6.5" to the area. New Bern and Cape Hatteras both set single-day rainfall records, and Onslow County recorded its wettest December since records began in 1895. Precipitation in December ended up 150-200% of average.

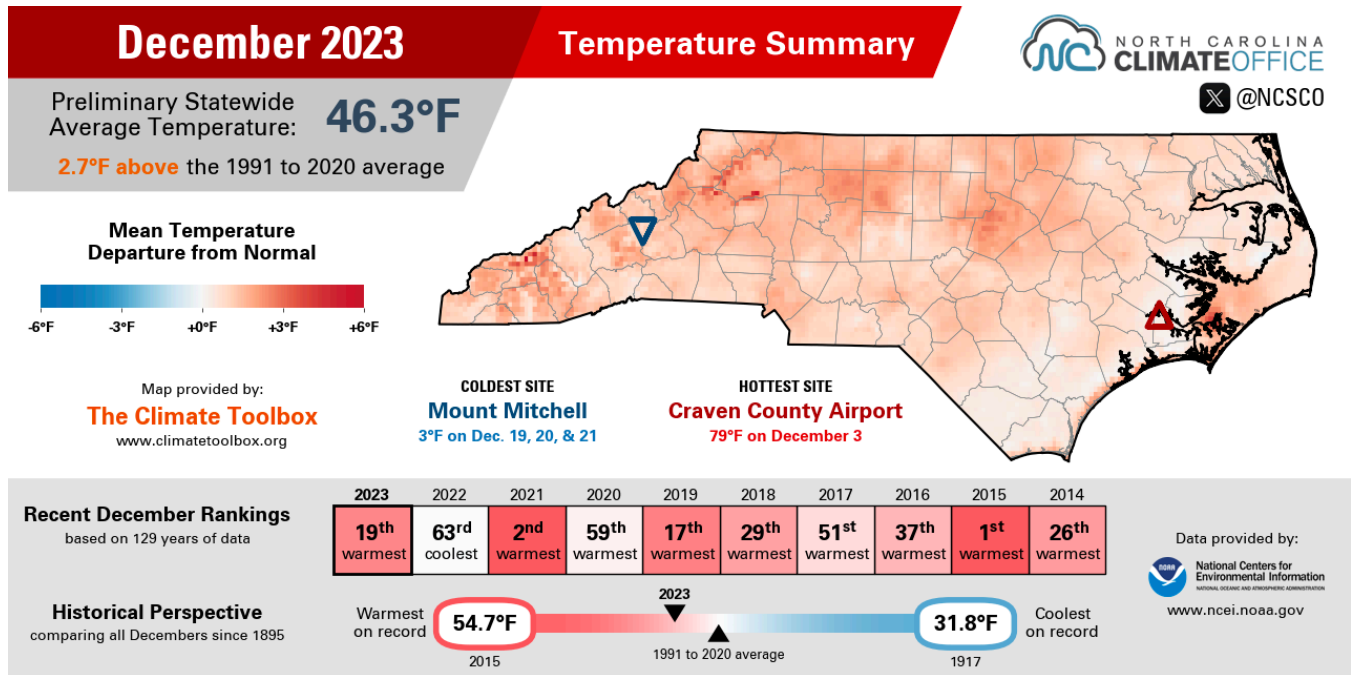
Temperatures were a roller coaster ride through December, swinging from about 10-15 degrees above average (highs in the 70s) to 5-10 degrees below average (highs only in the 40s and 50s) multiple times. New Bern was the warmest location in the state for December, reaching a high of 79° on the 3rd. Overall, temperatures across the area ran up to 3 degrees above normal, with an area average temperature of 49.6°F.

For a summary of the December Nor'Easter, please see our event review at: <https://www.weather.gov/mhx/DecemberNoreaster2023>

The January 2024 report will be published around February 29th, 2024.

TEMPERATURES

Temperatures across North Carolina closed 2023 out on a relatively warm note. The average temperature statewide for the month was 46.3°F, or 2.7°F above the 1991-2020 average. This was the 19th warmest December statewide since records began in 1895, with 129 years of data.



December 2023 Temperature Summary | Source: NC State Climate Office

Across Eastern North Carolina, temperatures were slightly below the statewide average but nearly 5 degrees above the 20th-century average. December 2023 was the 22nd warmest at New Bern and the 24th warmest at Cape Hatteras since their respective records began. Additional observations can be found in Appendix A.

MHX Select Site Temperature Statistics: December 2023

Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
Beaufort (KMRH)	62.1	43.8	53.0	50.0	3.0
Hatteras (KHSE)	60.0	46.3	53.2	52.1	1.1

Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
New Bern (KEWN)	61.8	37.9	49.9	47.7	2.2

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).

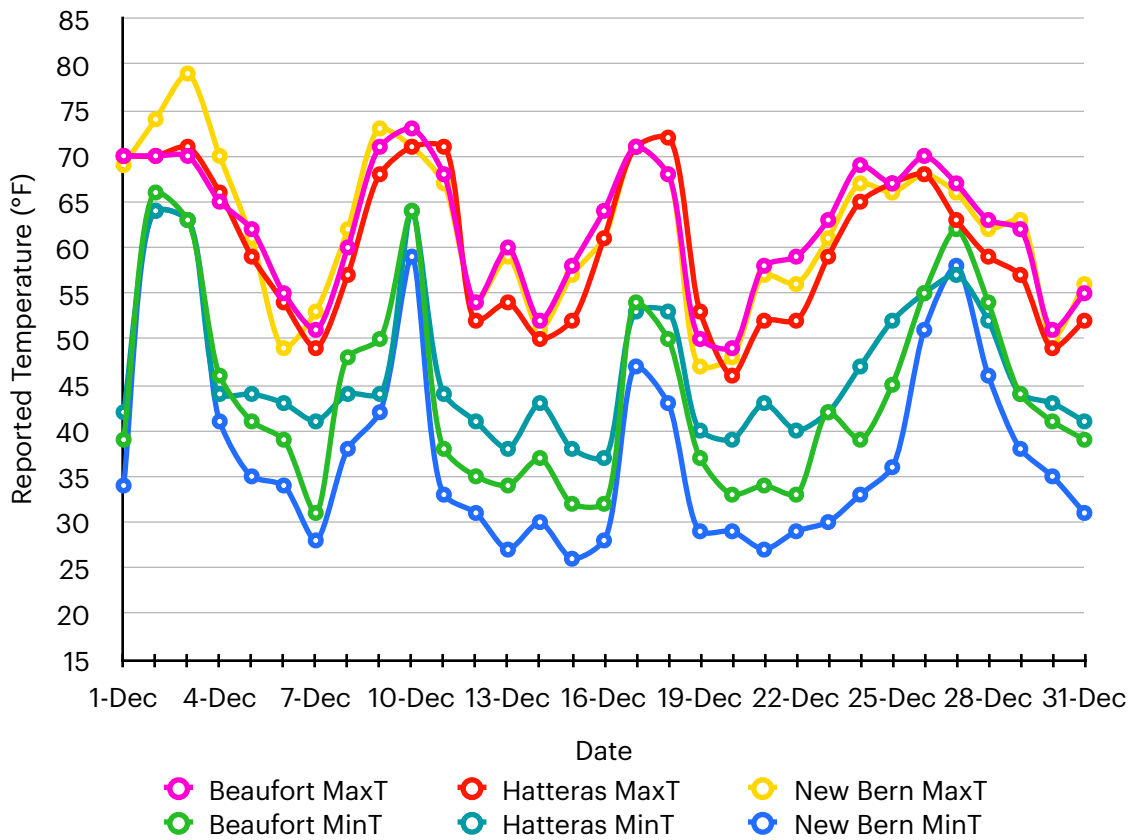
County	Avg. Temperature (°F)	Mean (°F)	Departure (°F)	Rank
Beaufort	49.5	44.6	4.9	21 W
Carteret	51.5	47.1	4.4	24 W
Craven	49.6	45.2	4.4	23 W
Dare	51.0	46.0	5.0	17 W
Duplin	48.7	44.4	4.3	23 W
Greene	48.3	43.5	4.8	20 W
Hyde	51.1	46.1	5.0	20 W
Jones	49.2	44.7	4.5	23 W
Lenoir	48.6	44.0	4.6	22 W
Martin	48.2	42.8	5.4	17 W
Onslow	50.0	45.8	4.2	23 W
Pamlico	50.2	46.1	4.1	24 W
Pitt	48.4	43.5	4.9	20 W
Tyrrell	50.2	44.8	5.4	14 W
Washington	49.4	43.7	5.7	15 W
Area Average	49.6	44.8	4.8	

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

December saw large temperature swings across eastern North Carolina as multiple powerful storm systems raked the area. In those cases, temperatures soared to around 70 degrees as sub-tropical air masses were pulled northward - about 10-15 degrees above normal. **Cape Hatteras** tied a record high on December 19th, hitting 72 degrees (the old record was 72, set in 1984). Each of these storms was followed by multi-day stretches of much cooler weather, with temperatures ranging from 5-10 degrees below average. December's closing days were the most persistently warm, averaging between 6-9 degrees above average per analysis from the [National Centers for Environmental Information \(NCEI\)](#).

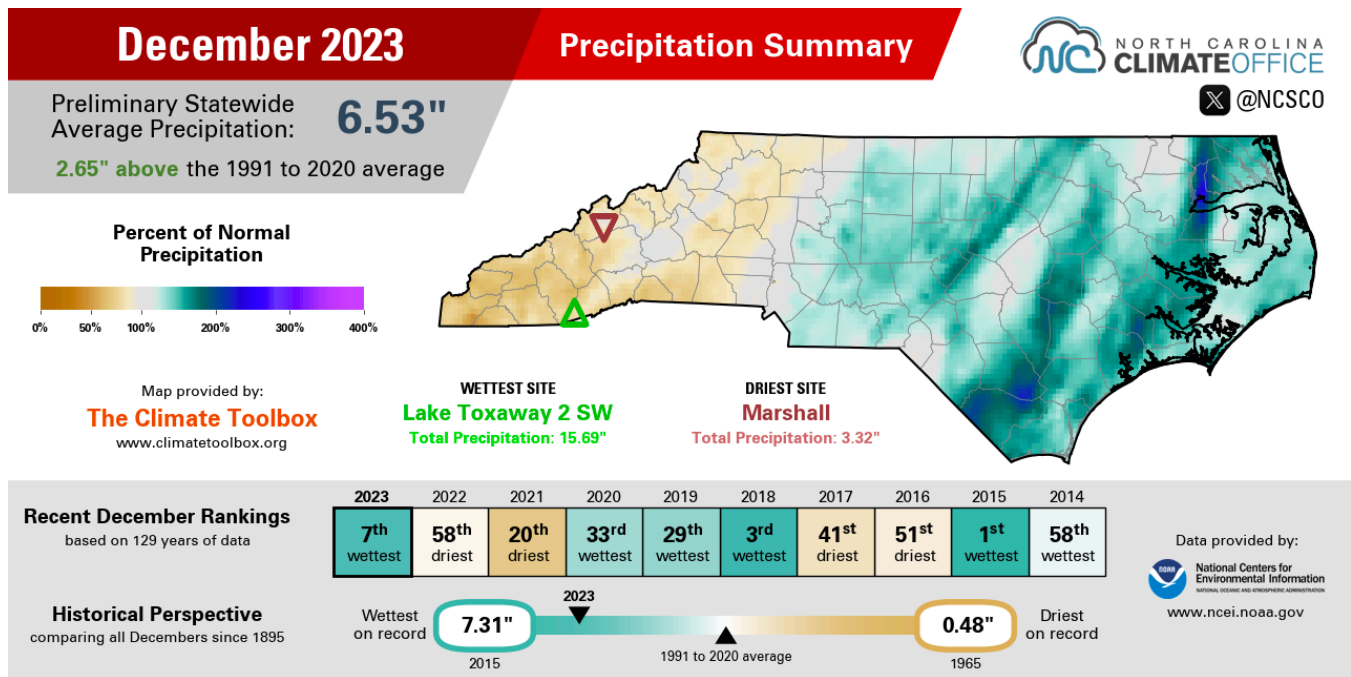
Of note, **New Bern** was the warmest spot across the state in December, hitting 79°F on December 3 and missing a record by a single degree.

Daily Maximum and Minimum Temperatures



PRECIPITATION

Analysis conducted by the North Carolina State Climate Office showed a stark pattern change as wetter conditions dominated in December. Statewide, precipitation averaged a whopping 6.53", or 2.65" above the 30-year average. This was the 7th wettest November for the state since records began in 1895.



December 2023 Precipitation Summary | Source: NC State Climate Office

Eastern North Carolina was generally wetter than the rest of the state as it became a bullseye for several strong storm systems. New Bern recorded its 7th wettest December on record, while Cape Hatteras recorded its 14th wettest. **Onslow County** saw its wettest December on record with 7.75" of rainfall, beating the old record of 7.19" set in 2009.

MHX Select Site Precipitation Statistics: December 2023

Site	Total Precipitation (in.)	Normal (in.)	Departure (in.)
Beaufort (KMRH)	6.55	3.79	2.76
Hatteras (KHSE)	7.07	4.73	2.34
New Bern (KEWN)	6.92	3.63	3.29

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).

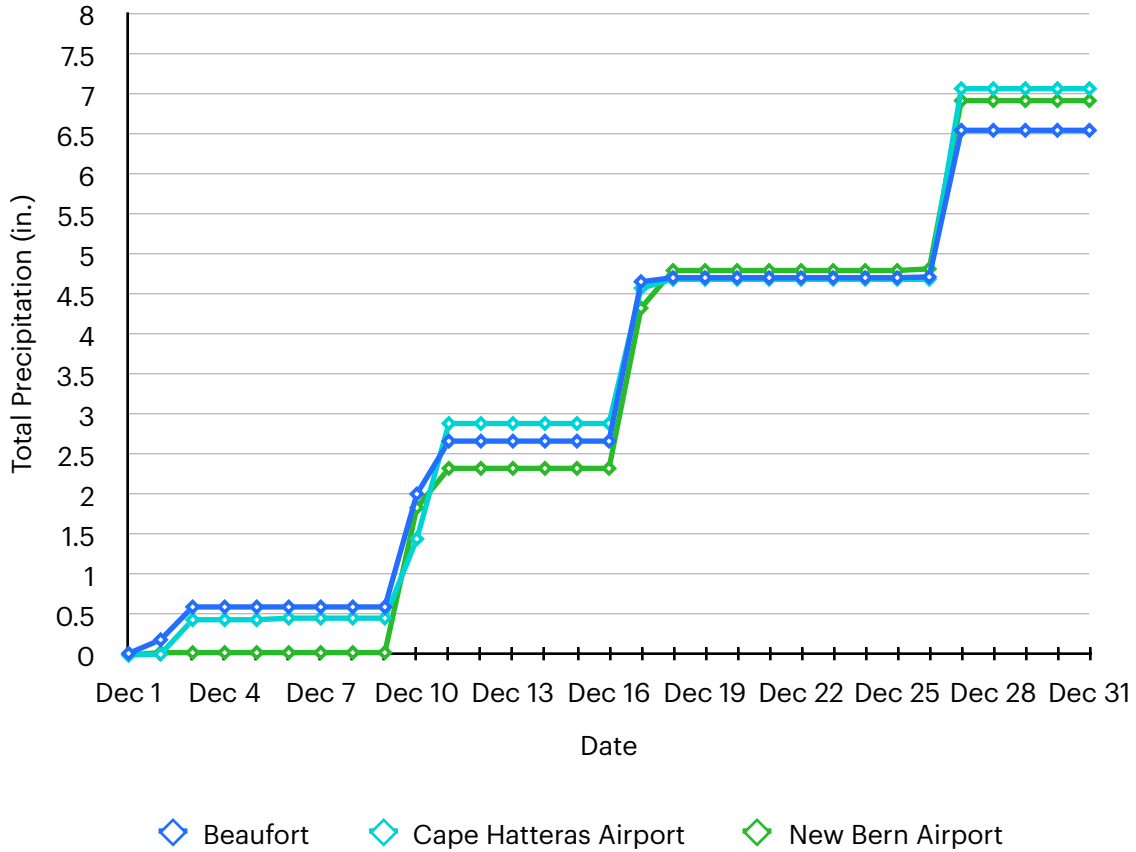
County	Avg. Accum. (in.)	Mean (in.)	Departure (in.)	Rank
Beaufort	6.43	3.55	2.88	6 W
Carteret	7.94	4.04	3.90	4 W
Craven	7.03	3.64	3.39	4 W
Dare	6.01	3.90	2.11	16 W
Duplin	6.63	3.30	3.33	4 W
Greene	5.48	3.30	2.18	9 W
Hyde	6.88	3.83	3.05	9 W
Jones	7.06	3.52	3.54	3 W
Lenoir	6.03	3.29	2.74	5 W
Martin	5.26	3.35	1.91	10 W
Onslow	7.75	3.61	4.14	1 W
Pamlico	7.50	3.83	3.67	4 W
Pitt	5.42	3.36	2.06	9 W
Tyrrell	6.59	3.67	2.92	7 W
Washington	6.77	3.52	3.25	4 W
Area Average	6.59	3.58	3.00	

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

December’s precipitation came almost entirely from 3 distinct storms, each bringing a fairly uniform 2-2.5” of rain to the area. The single wettest day across most sites was associated with the December 27th storm. **Cape Hatteras** set multiple one-day rainfall records, hitting 1.44” on the 11th (old record: 1.34” in 2003) and 2.38” on the 27th (old record: 2.2” in 2011). **New Bern** set a record on the 17th with 2.00” (old record: 1.15” in

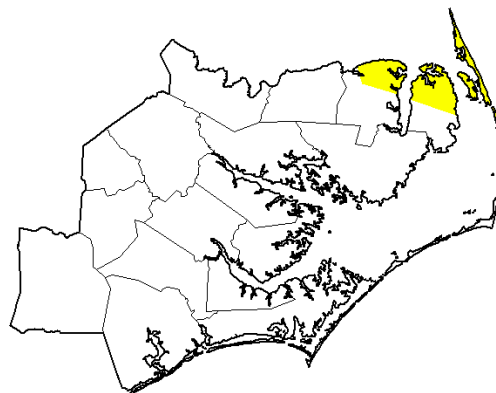
1975). Overall, precipitation across eastern North Carolina was between 150-200% of normal.

Monthly Accumulated Precipitation



Unsurprisingly, drought conditions improved across eastern North Carolina compared to November. Analysis conducted the first week of January showed only abnormally dry conditions across the northern Outer Banks and areas adjacent to the Albemarle Sound.

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



January 2, 2024
(Released Thursday, Jan. 4, 2024)
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	96.09	3.91	0.00	0.00	0.00	0.00
Last Week 12-26-2023	93.56	6.44	0.67	0.00	0.00	0.00
3 Months Ago 10-03-2023	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year 01-01-2024	96.09	3.91	0.00	0.00	0.00	0.00
Start of Water Year 09-26-2023	100.00	0.00	0.00	0.00	0.00	0.00
One Year Ago 01-03-2023	0.00	100.00	63.79	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=mrx>

APPENDIX A: ADDITIONAL TEMPERATURE DATA

Cooperative Observation Site Temperature Statistics: December 2023

Site	Avg. High (°F)	Avg. Low (°F)	Avg. Temp (°F)	Normal (°F)	Departure (°F)
Greenville	59.5	36.7	48.1	45.9	2.2
Kinston	60.2	36.4	48.3	48.5	-0.2
Williamston	59.6	36.3	48.0	45.8	2.2
Plymouth	59.9	38.0	49.0	46.7	2.3
Bayboro	61.2	37.4	49.3	47.7	1.6
Manteo	56.5	38.8	47.7	47.5	0.2

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

Maximum and Minimum Monthly Temperatures: December 2023

Site	Max High (°F)	Date Observed	Min Low (°F)	Date Observed
Beaufort (KMRH)	73	Dec 10	31	Dec 7
Hatteras (KHSE)	72	Dec 18	37	Dec 16
New Bern (KEWN)	79	Dec 3	26	Dec 15
Greenville	70	Dec 2-3, 9	27	Dec 7, 15, 21-23
Kinston	74	Dec 4	27	Dec 15, 21
Williamston	72	Dec 3-4, 10-11	25	Dec 1
Plymouth	71	Dec 3-4, 10	26	Dec 7, 15, 21
Bayboro	78	Dec 4	28	Dec 1, 7
Manteo	68	Dec 3, 5	32	Dec 13-14, 16, 20

APPENDIX B: ADDITIONAL PRECIPITATION DATA

Cooperative Observation Site Precipitation Statistics: December 2023

Site	Total Precipitation (in.)	Normal (in.)	Departure (in.)
Greenville	4.90	3.55	1.35
Kinston	5.13	3.29	1.84
Williamston	3.94	3.57	0.37
Plymouth	8.11	3.64	4.47
Bayboro	8.18	4.10	4.08

Sites in red have missing data in their record.

CoCoRaHS Monthly Accumulated Precipitation: December 2023

Site	County	Amount (in.)
Pantego 0.4 WSW	Beaufort	6.85
Bath 0.7 N	Beaufort	4.09
Pine Knoll Shores 1.4 E	Carteret	7.83
Cape Carteret 1.5 NE	Carteret	7.83
Morehead City 6.0 WNW	Carteret	7.49
Pine Knoll Shores 0.3 NE	Carteret	7.38
Swansboro 3.7 NNE	Carteret	7.32
Morehead City 2.9 WNW	Carteret	7.18
Cape Carteret 1.0 NNW	Carteret	7.13
Cedar Point 0.4 WSW	Carteret	6.95
Swansboro 2.7 NE	Carteret	6.86

Site	County	Amount (in.)
Beaufort 0.5 W	Carteret	6.76
Cedar Point 0.9 WSW	Carteret	6.76
Beaufort 3.8 N	Carteret	6.71
Newport 1.7 SSE	Carteret	6.68
Newport 0.2 SW	Carteret	6.47
Beaufort 5.3 N	Carteret	6.45
Newport 1.0 N	Carteret	6.29
Newport 2.5 W	Carteret	6.27
Beaufort 12.1 N	Carteret	6.22
Emerald Isle 2.3 WSW	Carteret	6.09
Cedar Island 0.3 SSE	Carteret	4.15
Trent Woods 0.9 WNW	Craven	8.52
Trent Woods 1.3 SSE	Craven	8.51
New Bern 5.3 SW	Craven	8.05
Trent Woods 1.2 ENE	Craven	7.87
Trent Woods 1.0 NNE	Craven	7.79
New Bern 7.3 ESE	Craven	7.38
New Bern 1.3 NNE	Craven	6.87
Havelock 1.9 SSE	Craven	6.76
New Bern 5.2 SE	Craven	6.37
Rodanthe 1.0 SSE	Dare	7.13
Manteo 2.8 NW	Dare	5.83
Southern Shores 1.9 NNW	Dare	5.58

Site	County	Amount (in.)
Southern Shores 0.5 NNE	Dare	5.53
Mount Olive 2.4 SW	Duplin	8.21
Wallace 14.8 E	Duplin	7.24
Rose Hill 0.1 NNW	Duplin	6.29
Ayden 6.5 WNW	Greene	4.83
Ocracoke 0.6 SW	Hyde	8.22
Kinston 5.1 WNW	Lenior	5.25
Kinston 4.4 WNW	Lenoir	5.61
Pink Hill 2.5 NE	Lenoir	5.53
Kinston 7.0 SW	Lenoir	5.28
Kinston 1.2 NW	Lenoir	4.66
Williamston 8.9 SSE	Martin	6.22
Jamesville 6.1 SW	Martin	6.01
Jacksonville 1.0 NW	Onslow	9.08
Jacksonville 5.4 WSW	Onslow	8.86
Lowland 0.2 SE	Onslow	7.99
Sneads Ferry 3.3 SW	Onslow	7.66
Oriental 2.1 WSW	Onslow	7.50
Oriental 4.3 NNW	Onslow	7.42
Merritt 1.5 WSW	Onslow	7.37
Holly Ridge 9.0 ENE	Onslow	7.27
Swansboro 2.8 WSW	Onslow	7.15
Sneads Ferry 1.2 SSW	Onslow	6.68

Site	County	Amount (in.)
Fountain 0.1 NE	Pitt	6.79
Winterville 3.5 W	Pitt	6.06
Greenville 5.7 NW	Pitt	5.45
Greenville 7.1 SSE	Pitt	5.44
Greenville 5.0 SE	Pitt	5.42
Winterville 1.0 ENE	Pitt	5.33
Columbia 0.8 NNE	Tyrell	4.94

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